

TOP for your job.

As individual as your applications –
the new E20-E50 series.

Linde Material Handling

Linde



Your applications dictate the specification –
Linde provides the E-truck to match



Announcing a new, even higher performance electric truck series: the E20-E50. Wherever you use these unique new E-trucks, we have a model precisely matched to your needs – from the overall truck size and specific measurements to the driver assistance



system and beyond. Allow us to show you the economic advantages of a truck made by Linde, including facts and figures. As you'll soon discover, every truck made by **Linde is TOP for your job.**

The TOP 10 innovations:



Added comfort, enhanced performance, superior productivity



→ TOP 1

The Linde safety pilot

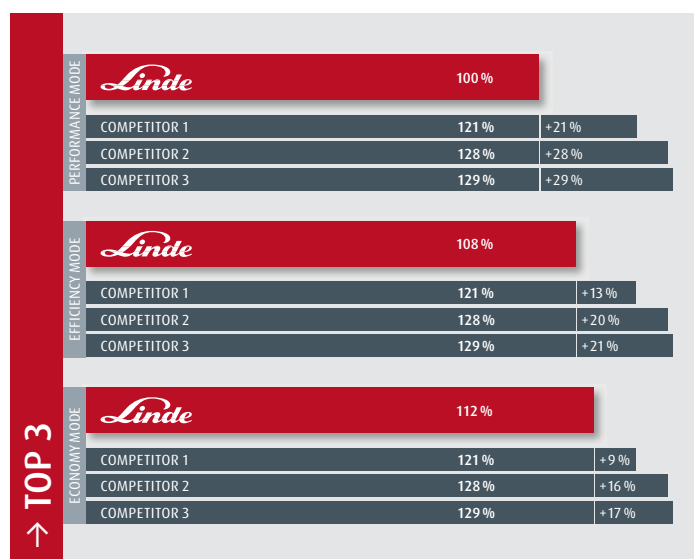
A world first that allows your new E-truck not only to measure the total weight of the load but also the torque. Highly sophisticated sensors calculate the maximum lifting height for each load. This is then shown on the display for the driver to see. The new electronic load capacity diagram shows the level the E-truck is operating at during the whole load handling process. At the maximum lifting height, the system automatically stops the E-truck lifting the load any higher. The Linde safety pilot will be available in late 2011.



→ TOP 2

Automatic ventilation while recharging

Recharging the battery with a fully enclosed cab could not be easier. No more doors or battery covers in the way. Simply open the rear cover and plug in the cable. Long after the driver has finished his shift, a sensor is monitoring the automatic extraction of gases. These are then carefully expelled through the back via the counterweight.



→ TOP 3

Individually adaptable to performance requirements

There are times when you don't need top-of-the-range performance, so every model comes with two additional operating modes as standard. These can be selected depending on requirements. This standard feature allows you to strike the perfect balance between performance and energy saving. Forklift truck testing – in which trucks are put through standard paces to see how they perform on a variety of everyday loading tasks, as certified by the German Technical Inspection Association (TÜV) – produces impressive results compared to three competitors: Linde trucks are by far the fastest and most powerful, in all operating modes!



→ TOP 4

Self-activating parking brake

Safe stops on the loading ramp thanks to the automatic parking brake – saving valuable energy that would otherwise be invested in reverse-current braking! If the truck stops, the parking brake is automatically activated. Drive away smoothly again, simply by depressing the accelerator pedal.



→ TOP 5

Traction control – as standard

The Linde dual motor drive has paved the way for the first forklift truck with traction control. Slippery ground? No problem. The traction control system redistributes power individually between the 2 motors so that even if one of the wheels starts to slip, the truck has optimum traction – whatever the weather.



→ TOP 6

Decoupled operator compartment

New realms of protection: by decoupling the drive axle and mast, the operator compartment is shielded from vibrations, bumps and noises – helping prevent driver fatigue even after a long, hard shift.



→ TOP 7

The display, showing remaining driving time by the minute

The remaining driving time on the display shows the exact number of minutes you can keep driving the forklift truck before changing or recharging the battery.



→ TOP 8

Reliable LED technology

We use long-lasting LED technology in our forklift trucks, right down to the optional working lamps – for up to 20,000 hours of use, not forgetting the energy this high-intensity lighting saves.



→ TOP 9

The new, ergonomic armrest

The completely newly designed armrest is easy and quick to adjust horizontally and vertically with a simple movement of the adjustment wheel. The integrated storage compartment has plenty of room for a mobile, gloves, a wallet and similar belongings.



→ TOP 10

The new seat – all-round comfort for all

Thanks to extra cushioning and a broader base, the optimised seat leaves nothing to be desired, including air-suspension. With E35H/600 trucks and higher spec versions, we even offer active cooling.



The TOP 10 of
legendary Linde
quality:



Tried and tested, tens of thousands of times in everyday use

→ TOP 1 + 2



The combined benefits of Linde load control and the original Linde control valve

Many have tried to replicate the Linde load control but in functional terms, it's simply inimitable. Combining the contact-free central control lever with the Linde control valve was a formula for success. This allows the operator to control mast functions with the slightest movement of the hand, millimetre by millimetre.

→ TOP 3



The Linde driver assistant

Our Linde driver assistant knows a thing or two about tight corners: drive too fast round a corner and it automatically decelerates the truck for you. Making sure everything makes it round every corner – quickly and safely.

→ TOP 4



The durable high frequency onboard charger

Whether you use our trucks on uneven floors, in extremely dusty environments or the extreme cold, the onboard charger has what it takes. Open the rear cover. Connect the cable. And before you know it, you can recharge or charge all types of batteries.

→ TOP 5



Safe controller – redundant safety thanks to twin processors

Linde trucks come with active safety features such as twin processors within the controller. All control signals with a bearing on safety – such as driving and lifting – are monitored twice. That way, even in the unlikely event of a false signal coming from a single processor, the control command is halted. Even the ultra-stable aluminium housing around the controller provides its own unique kind of passive safety.

→ TOP 6



Patented steering axle

The high-hinge combi-axle (the steering axle) gives this four-wheel truck the turning radius of a three-wheeler, resulting in ultimate manoeuvrability in confined areas (available in models up to and including E35/500). Simultaneously, the axle reduces the tilting point on corners compared to conventional oscillation axles on the market.

→ TOP 7



Top-mounted tilt cylinder

The top-mounted tilt cylinder is not just built into Linde forklift trucks for appearances – it makes use of the laws of physics. Longer levers result in less force, placing less stress on profile sections. As a result, the profile sections on the mast can be made slimmer, maximising visibility for the operator.

→ TOP 8



Individual battery changes

All our solutions are adaptable to your on-site requirements. Choose between vertical battery changes using an overhead crane, and the horizontal method using a second forklift truck or warehouse equipment.

→ TOP 9



Linde fleet management (LFM)

With the Linde fleet management system, you no longer have to remember PINs. Operators confirm their identity quickly using RFID (radio frequency ID) chips in key rings or chip cards.

→ TOP 10



Dual motor front wheel drive for active steering

The two motors positioned on the drive axle actively control the front wheels. When the rear wheel angle exceeds 70°, the wheel on the inside of the curve counteracts movement. The trucks turn so easily, they now offer our best ever turning radius and aisle width. The system also minimises power consumption and significantly reduces tyre wear.



High? Low? Long?
Compact?

A thick red horizontal line is positioned to the left of the word "Compact?", extending from the left edge of the frame towards the text.

What's more important? High or low?

Good fit, better fit, Linde: we are the only supplier worldwide in a position to supply every model in the range in a low version – ideal for low entrances, container loading, and situations where the operator needs to repeatedly get on and off the vehicle, such as picking and packing. For ultimate flexibility, we can mix and match model specifications to suit your needs: select between 'low and compact', 'low and long', 'high and compact' or 'high and long'. For really tight areas and ultimate manoeuvrability, we recommend our compact models. For maximum battery capacity and operating times, we recommend the longer models.

Low models: load centre 500 mm

- Only Linde supplies low models as standard
- 2080 mm truck height: ideal for low entrances and tighter gaps
- Ideal when the operator needs to get on and off the truck more frequently (e.g. picking and packing)
- Low seat to ease alighting
- Low centre of gravity – enhanced safety



→ LSP 500

Low

High models: load centre 600 mm

- Only Linde supplies 600mm load centre models as standard
- More options for individual attachments
- Still fits into standard containers, despite truck height
- Improved visibility with higher loads
- Enhanced battery capacity



→ LSP 600

High

Then decide: compact or long

Compact models

- Separate model for confined areas and narrow aisles
- Excellent battery operating time, despite smaller battery, thanks to enhanced energy consumption




Long models

- Longer vehicles have bigger batteries
- Longer battery life, freeing up reserve power
- Standard pool batteries can be used with the high models

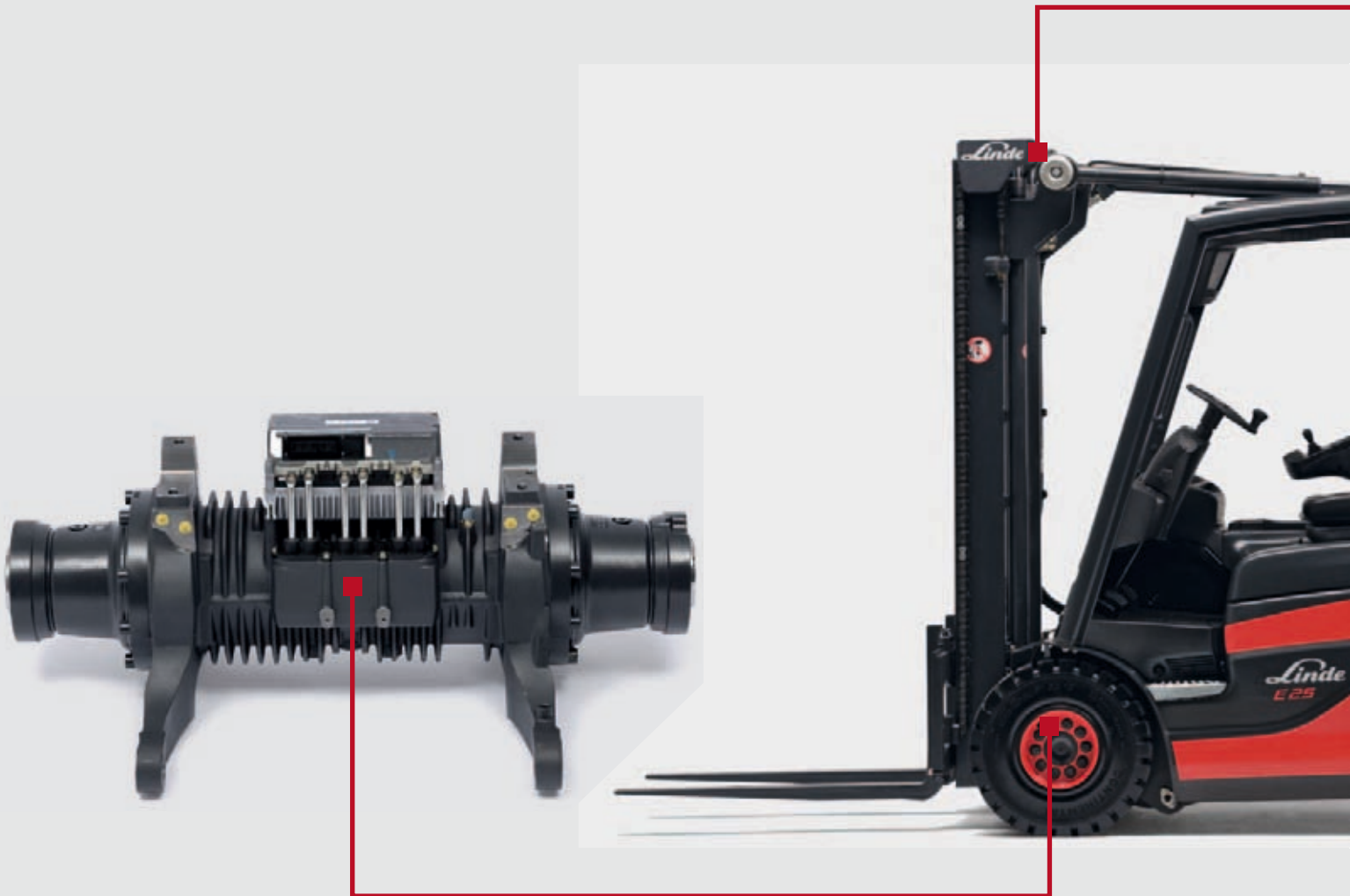




What makes Linde
forklift trucks
 so different?

Our patented solutions

We believe in always going one step further than the competition. So we carefully analyse stacking demands placed on both the forklift truck and the operator. Only that way can we come up with the types of ingenious Linde solutions and technical innovations that make your day-to-day work easier. Just one of these innovations is the unique marriage between the Linde combi-axle and the dual motor front wheel drive – not forgetting our uncoupling system.



The dual motor front wheel drive

You notice the unique advantages of a Linde forklift truck as soon as you take a large load off the rack and turn the steering wheel to full position. The rear wheels don't slide (as is common with the competitors), they actively steer with you. This active steering function was achieved using a steering angle sensor. When the rear wheel angle exceeds 70°, the motor on the inside of the curve is told to counteract the wheel movement. The truck then turns around a point at the middle of the front axle – rather than outside the turning circle. This also reduces tyre wear and energy consumption.

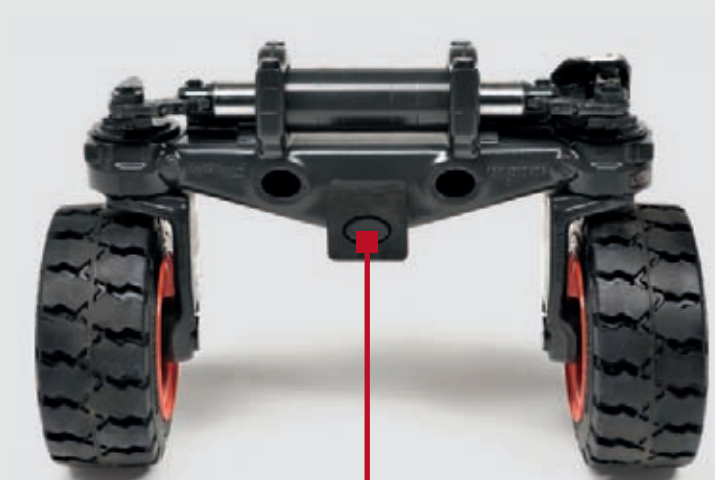
A perfect couple: the dual motor front wheel drive and the combi-axle

Linde is continuing the international success of its dual motor front wheel drive and patented combi-axle, with the 'perfect couple' featured in its new electric trucks. After all, this turned our E-trucks into the European market leader. With its traction control system, the dual motor front wheel drive optimises performance. Combined with the high-hinge combi-axle, this has resulted in the best ever aisle width and turning radius.



The decoupling system

Ultimate ergonomic performance – combined with superior driving comfort – reduces operator fatigue and ensures high output over extended periods. Especially when forklift trucks are used both outdoors and indoors, they go through a lot of rough treatment – uneven floors, ramps, bumps and small holes. The new generation of E-trucks offers more driver and vehicle protection than ever before. The combined unit of the drive axle and mast has been kept separate from the chassis using a rubber/metal mount. This innovative system shields the truck and all its key components from vibrations and knocks, ensuring it keeps on working under even the toughest conditions. And to make working with Linde E-trucks even more pleasant, they even offer noise protection.



The patented Linde combi-axle

The new generation of Linde E-trucks enjoys all the advantages of an optimised centre of gravity, a long wheel base and the high suspension of the combi-axle. The high-hinge combi-axle reduces the tilting point compared to conventional trucks. The patented combi-axle makes it possible to turn the wheel to 104°, offering all the manoeuvrability of a 3-wheel truck. Also, the steering cylinders are positioned in the counterweight, away from dust and knocks.



Performance,
efficiency and
 economy:

Individual operating modes, tailored to different uses

Forklift truck testing, as certified by the German Technical Inspection Association (TÜV), puts the ratio of performance and energy efficiency in the spotlight – and has clearly demonstrated that the new Linde E-trucks excel when it comes to performance. Because not all applications require the maximum performance we can offer, Linde has also done something quite unexpected with the performance to improve energy efficiency. If you don't need maximum performance, but you still want to enjoy all the tried and trusted, unbeatable quality benefits you've come to expect from Linde, simply switch operating mode – to efficiency mode or economy mode. These two additional options allow anyone using the truck to strike the perfect balance between performance, energy consumption and thinking about the environment – even if Linde already outstrips the competition on all three modes!

PERFORMANCE MODE		100 %	
	COMPETITOR 1	121 %	+21 %
	COMPETITOR 2	128 %	+28 %
	COMPETITOR 3	129 %	+29 %



Performance mode

Sheer power. Linde has been building the highest-performance counterbalance forklift trucks on the market for decades, and the new generation of E20-E50 E-trucks is set to considerably raise the bar yet again. And top-of-the-range performance allows you to reduce other expenses, such as personnel costs.



EFFICIENCY MODE	<i>Linde</i>	108 %	
	COMPETITOR 1	121 %	+13 %
	COMPETITOR 2	128 %	+20 %
	COMPETITOR 3	129 %	+21 %

Efficiency mode

The efficiency mode is set in the factory during commissioning and is calibrated to be exactly halfway between performance mode and economy mode. So if energy bills are important to you, but you don't want to compromise on performance either, efficiency mode is precisely what you need.

ECONOMY MODE	<i>Linde</i>	112 %	
	COMPETITOR 1	121 %	+9 %
	COMPETITOR 2	128 %	+16 %
	COMPETITOR 3	129 %	+17 %



Economy mode

You probably don't always need to squeeze the last ounce of performance out of your forklift trucks. So reduce operating costs by cutting energy consumption. Economy mode is ideal when there is lots of traffic on your production site, when the truck has to navigate its way down lots of narrow aisles or between machinery. It's also just right for careful handling of fragile goods. By reducing the pace of work, you can also minimise breakages and accidents, which also means less clearing up. Depending on the season – or if you simply want to do more for the environment – it often makes sense to switch to economy mode. An excellent way to cut costs, make careful use of resources and make a personal contribution to the business.



New battery
changing
options:



From above or from the side – you decide

We thought that making battery changes so simple and flexible was not enough. So whether you're replacing the battery or just want to charge it, you can now plan your moves precisely: the display shows you to the precise minute how long you can keep driving the truck. The new Linde E20-E50 aims to answer your every need when it comes to battery changes. So Linde is unique in offering you the option of changing the battery from above or from the side.

Easier battery changes ...



Changing the battery with a second truck and a battery pallet

Given the weight of the batteries, changing them from the side using another forklift truck is a sensible option. To make this possible, the battery is positioned on a pallet so it can be lifted out by a second truck. Then the battery can be stowed away complete with the pallet.



Changing the battery with an overhead crane

One way to change the battery is to use a C-hook with an overhead crane. Due to the unique top-mounted tilt cylinders and the solid protection provided by the completely closed overhead guard, the Linde E20-E50 has no slot in the roof for battery changes. Instead, the C-hook allows you to change the battery using an overhead crane.

... and loading



Automatic ventilation while recharging

Long after the driver has finished his shift, a sensor monitors the automatic extraction of gases generated during the charging process. An electric fan carefully extracts the gases and expels them via the counter-weight. This saves all the time and effort of opening doors and the battery cover.



Hydraulic battery extension

It's even easier with versions with the hydraulic battery extension. Before overhead crane use, push the battery out (up to 60%) at the touch of a button. The steering axle is locked hydraulically for all-round safety. The battery can be changed in 40% less room.



Change the battery with a forklift truck and traverse

Battery changes are also possible with a fork rigged with a traverse. Simply hang the traverse over the forks of another truck, position it over the battery, hook up the four eyes in the battery tray and pull up and to the side.



Simple battery changes using warehouse equipment

No overhead crane or another forklift truck? No problem: use a dedicated warehouse equipment. Position support arms over the battery, lower, slide into place and then secure. Then lift the battery out for charging.



Charging the battery with the onboard charger

Open the rear cover, connect up the two ends of the cable and before you know it, you can charge all types of batteries, wherever you are. Whether you use the truck in extremely dusty environments or the extreme cold – the onboard charger has been specially developed to get the job done!





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