

# THE QUIET GIANTS

The all-electric Linde E100 - E180 heavy-duty forklift trucks





"We are working consistently to reduce our CO<sub>2</sub> emissions in all areas of the company. Logistics naturally has to do its part as well. The efficient electric heavy-duty forklifts from Linde fit the bill perfectly, particularly as we will soon be able to charge them on site with the green electricity we produce ourselves."

Gavin Teague, Site Manager,  
Asset VRS, Newport, UK



"Until now, only diesel-powered heavy-duty forklift trucks were used to transport our motorway barriers and concrete elements, which can be up to 12 metres long. We were therefore eager to see how the E160 would perform in this demanding field. After just the first few jobs it was clear, everything is just right here, from performance and comfort to handling and the safety level."

Ryan Brown, Yard Manager,  
Asset VRS, Newport, UK

"We were particularly impressed by the low noise level: our people can communicate with each other normally, without having to rely on hand signals and the like. In addition, the drivers no longer have to wear hearing protection and the work is much more relaxed overall."



Patrick Hayes, Foreman,  
Asset VRS, Newport, UK



# WHEN DOES AN ALTERNATIVE BECOME A GAMECHANGER?

Simple: When it not only stands up to even the most demanding comparison with the tried and tested, but ideally even surpasses it in some cases.

With the Linde E100 – E180 models, you can put such game-changers to work for your operation. Our all-electric powerhouses bring the many advantages of electric drive technology to the heavy-duty class for the first time, from incomparably low noise levels and local emission-free operation to high operational flexibility and low service costs. All this is combined with powerful performance, high agility and the best all-round visibility in its class.

With qualities like these, the results can hold their own against all comers: because your employees can work in a healthier way thanks to the ergonomic workstation; because the excellent visibility reduces the risk of accidents; because your company can reduce its carbon footprint – and last but not least: because you can handle every conceivable application scenario perfectly, including 24/7 continuous operation. Speaking of which: The Linde E100 – E180 models allow you to flexibly switch between lead-acid and lithium-ion batteries without any hardware changes. If you want to be a real gamechanger, you've simply got to be unique in your class.

→ [www.linde-mh.de](http://www.linde-mh.de)



## Highlights

# EXPERIENCE BREEDS EXCELLENCE

We have not only incorporated the concentrated expertise of over 50 years of electric forklift construction into the development of our Linde E100 - E180 models, as you will notice in countless details; our electric heavyweights are also based on the proven 8-tonne series - with dual-motor drive, dual lifting hydraulics and two batteries. For maximum reliability even in the toughest operational scenarios.

### WORLD-CLASS ERGONOMICS

The spacious cab features intuitively placed controls – and thanks to Linde's proven ergonomics, creates the conditions for concentrated work.

### PERFECT COMBINATION OF VISIBILITY AND PROTECTION

The standard bulletproof glass roof offers the best possible protection against falling objects and a clear view upwards.

### BEST FIELDS OF VISION

Thanks to the batteries integrated in the chassis and the flattened counterweight, operators enjoy a virtually unobstructed view to the rear – and benefit from the smallest blind spot in the class.

### SERVICE WITHOUT OBSTACLES

The drive components are all easily accessible via a service cover. Access to the drive components is just as easy thanks to the electric forward-tilting cab.

### UNIQUE AND FLEXIBLE BATTERY CONCEPT

The design of the Linde E100 – E180 models makes it possible to switch between lead-acid and Li-ION battery pairs without any hardware changes; ideal for changing operating conditions.

### POWER FOR EVERY REQUIREMENT

Four power levels, distributed over two battery systems (Li-ION or lead-acid), different chargers – supplemented by the option of using existing battery or charging systems: Your requirements decide.

### POWERFUL LIFTING PERFORMANCE

Four powerful lift motors boasting 25 kW each enable your employees to lift even heavy loads quickly – which has a direct impact on turnover output.

### TWO ARE BETTER THAN ONE

Two coupled 18 kW motors per drive wheel not only provide plenty of power, but also ensure immediate power availability and thus high agility.

### THE FULL PICTURE

The easy-to-use, 7-inch colour touch display not only impresses with its high resolution; optionally, it can also visualise the images from the rear-view camera.

### READY FOR EVERYTHING

Depending on your needs, you can choose from a wide range of optional equipment – whether it's high-tech assistance systems or precision-fit attachments.



## Driver's workstation

# INSIDE: EXTRAORDINARY



We strongly believe: a piece of work equipment is only really a good piece of work equipment when it is rigorously designed around the requirements of those who use it for many hours, day after day. So we've designed the driver's workstation in our Linde E100 – E180 trucks to ensure that your logistics staff can work more safely, more comfortably and with less impact on their health. With this high level of ergonomics, you not only maintain the performance of your team members, but also boost their motivation over the long term.



## SPACE FOR TOP PERFORMANCE

Here, in the bright, spacious cab, your employees will find optimal working conditions: starting with the many easily accessible storage options, the heated rear window and the controls. All the main lifting functions of the Linde E100 – E180 trucks, for example, can be controlled via ergonomically shaped joysticks. The operating arm can rest comfortably on the longitudinally and height-adjustable armrest, which of course also has an integrated storage compartment – ideal for personal items such as smartphones and keys. And of course the height and angle of the steering column can also be adjusted precisely to the needs and physical conditions of your employees.

The driver's workstation also offers optional finishing touches such as the powerful air conditioning system or the swivelling driver's seat. The latter can be rotated by up to 17 degrees to the right, which noticeably reduces the strain on the spine when driving backwards. The ergonomically designed premium driver's seats minimise oscillations, vibrations and jolts that can occur, for example, when driving over uneven ground – which also minimises the strain on the driver's back.

## STATE-OF-THE-ART

Load weight display, battery charge status – or even the camera images from the optional rear view camera: the high-resolution 7-inch colour display with touch operation oriented to the driver's workstation is a smart source of information for your employees, perfectly placed in their immediate field of vision. You can also equip the Linde E100 – E180 trucks with a radio including Bluetooth hands-free system – for safe phone use in every working situation.





## TRANQUILLITY IS A SOURCE OF STRENGTH

... or more to the point, a source of your employees' will to perform. Because while the forklift is doing heavy labour outside, they stay relaxed and focussed inside thanks to minimal human vibrations. This is partly due to the naturally extremely quiet electric motors; in addition, the drive axle has been completely decoupled from the chassis by means of special bearings – and the cab also rests on damping rubber bearings. When employees drive over rough terrain on outdoor jobs, for example, the cabin rocks much less.



## ABUNDANT POWER, PRECISELY DOSED

So big, so powerful – and yet so finely controlled. And our Linde E100 – E180 also offer the proven and patented Linde dual-pedal control system. Based on the hydrostatic drive, one pedal is used for forward travel and the other for reverse travel. The constant contact of the feet with the pedals gives operators direct feedback on the movements of the heavy-duty truck and allows them to manoeuvre it with extreme precision. Our heavy-duty trucks can, of course, also be ordered in a single-pedal version with a direction switch in the armrest. Choose the variant that best suits your goods-handling requirements.

Safety

# THE STANDARD: SAFEST IN ITS CLASS



On a scale of 0 to 10, does safety rate an 11 in your company? Then you'll be quite literally in safe territory with the Linde E100 – E180 models: our all-electric heavy-duty trucks not only offer your employees the best visibility on the market; they also impress with numerous intelligently designed safety features. The upshot of all this is minimised accident risks, maximum availability and smooth logistics processes.

## THERE'S A LOT TO SEE HERE

A gut feeling is good – but a clear view of matters is even better. And that's what your employees will have, in every possible direction, when working with the Linde E100 – E180 trucks. The slim mast profiles, for example, provide an exceptionally good view of the load and travel paths, while the large glass surfaces in the doors (which are optionally available in an all-glass version) also mean nothing is concealed on the sides of the vehicle either. When looking through the generously dimensioned rear window, logistics specialists are reaping the benefits of two special design features: the batteries fully integrated into the chassis and the flattened counterweight. Our heavy-duty trucks offer your employees the best all-round visibility in the segment. That leaves just the view looking up: this is where the standard armoured glass roof comes into play, offering the perfect combination of visibility and safety.



## SAFE EVERY STEP OF THE WAY

The shift is almost over, the last job of the day awaits and it's raining cats and dogs – or in other words, the perfect conditions for a dangerous slip and fall getting in or out. To keep this from happening in the first place, our all-electric heavy-duty trucks have four deep, specially perforated treads with serrations that provide optimal grip at all times. If your employees often have to transport goods in poor lighting conditions, the optionally available step lighting is also recommended.





## GO AND STOP!

A heavy-duty truck that starts driving on its own is a real worst-case scenario. However, the factory-installed automatic parking brake in the Linde E100 – E180 prevents this eventuality. If the employee steps off the truck, the system activates automatically, ensuring a safe grip on inclines and ramps at all times.

## JUST IN CASE

If an acute emergency situation arises, a quick response is essential. For this reason, we have placed the emergency stop switch in the immediate vicinity of the armrest and thus within easy reach. Immediately after pressing the switch, both batteries of the heavy-duty truck are deactivated.



## SMART EARLY-WARNING SYSTEM

It's a well-known fact that conditions are often tight in the logistics world – and the higher the loads and the larger the forklifts, the more serious collisions can be. The Linde Safety Guard provides an effective remedy here. The smart assistance system works with special transmitter and receiver units that transmit their signals even through racks, walls and gates without interference using ultra-wideband technology. Wherever there is a risk of the unit getting too close to people or other equipment, the Linde Safety Guard warns everyone involved in good time. On the pedestrian side, this also works via the interactive warning vest: this intelligent wearable gives wearers both haptic and audible warnings; at the same time, highly visible LED strips light up in the signal colour.



## Energy system & drive

# POWER MEETS ENDURANCE



You can't make an omelette without breaking eggs. And you can't move large loads without a lot of power that can be called up as continuously as possible, even during long operations. Our Linde E100 – E180 trucks are the common denominator – and that applies to both lead-acid and lithium-ion batteries.



### LEAD-ACID: PROVEN TECHNOLOGY AT THE TOP OF ITS GAME

for light to medium-duty applications

- **Your requirements decide:** lead-acid batteries are available in two power levels – with 2 x 80 V and 74.4 kWh each, as well as 2 x 80 V and 100 kWh each (available for medium wheelbase and up)
- **Battery replacement made easy:** the battery units can be easily changed within less than 5 minutes thanks to flaps installed on both sides
- **Amazingly flexible:** Linde E100 – E180 trucks are also compatible with the lead-acid batteries of the Linde E35 – E80 trucks

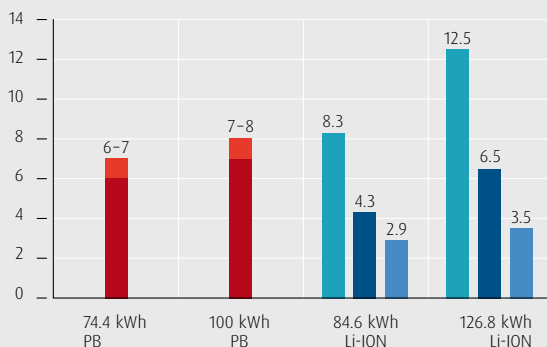
### LI-ION: HIGH-TECH AT ITS BEST

for intensive applications

- **Power made to measure:** with the modern Li-ION batteries, you have a choice of two power levels: with 2 x 90 V and 76.1 kWh each, as well as 2 x 90 V and 126.8 kWh each
- **Easy handling:** The Li-ION batteries require no maintenance, do not emit any battery gases and can be easily recharged at any time – for example during work breaks.
- **Not choosy:** The Linde E100 – E180 trucks are also compatible with the Li-ION batteries of the Linde E35 – E80 trucks.

#### Battery systems and chargers: performance comparison

Charging time in hours



(PB = Latin Plumbum "lead" = lead acid)

4 chargers available  
(1 x PB, 3 x Li-ION):

- PB charger 80 V 180A 14 kW
- Li-ION 90 V ready 110 A 9 kW
- Li-ION 90 V ready 210 A 17 kW
- Li-ION 90 V ready 375 A 30 kW

Customer benefit

- The right charger for every need
- Proven charging technology
- Suitable for almost any infrastructure
- No extreme power peaks
- For less power-intensive applications, one charger can be used to charge the two batteries one after the other



Harmonised CAN bus communication between the Li-ION battery and the charger ensures safe and smooth operation and extends the service life of the components.



## LEAD-ACID OR LI-ION? YOU DECIDE – AT ANY TIME

With the Linde E100 – E180 trucks, the question of the right battery technology for your company is no longer the conundrum it once was. Our all-electric power packs offer you the option – unique on the market – of switching (back and forth) between the two technologies. In other words: you can switch from lead-acid to Li-ION batteries and vice versa without any hardware changes. With this flexible solution, you're prepared for all eventualities, whether it's because you still have batteries from compatible series in your inventory or want to recycle the device later.



The batteries can be replaced quickly thanks to the flaps integrated into the chassis on both sides – for 24/7 availability of the trucks.



## POWER ON THE SPOT

With four 18 kW drive motors and four 25 kW lift motors, Linde E100 – E180 trucks are optimally equipped for even the most challenging heavy-duty applications. At the same time, you can be sure that a large proportion of the energy used is converted into pure power. No matter whether you choose lead-acid or Li-ION batteries: when the forklift brakes, part of the kinetic energy is always fed back into the battery cells via recuperation. It's an advantage that pays dividends both economically and environmentally.

Optional extras

# MADE TO FIT



The fact is, no two material handling operations are alike. But it's also true that regardless of processes, type of goods and other factors, we have made it our goal to enable you to achieve maximum productivity when using Linde E100 - E180 trucks. So at Linde MH, you can choose from a wide range of attachments, fork carriers and other customer-specific solutions. In these pages you will find a small selection of high-performance special equipment, as is available in identical form for our diesel-powered heavy-duty trucks.

## ATTACHMENTS



### Multiple pallet clamp\*

This enables your employees to pick up to eight Euro pallets at the same time with Linde E100 – E180 trucks – a decisive advantage for use in the beverage industry, for example. So this attachment not only saves trips, but ideally also several small forklifts.



### Coil boom\*

From paper to wire reels: you can transport bulky and hollow items efficiently and safely around your facility. Our robust coil booms are available in different variants – either integrated directly into the mast or for hooking onto the fork carriage.

## WORKS WITHOUT A HITCH: EASY VEHICLE TRANSPORT THANKS TO THE LOWERABLE MAST\*

A heavy-duty forklift truck in road transport? What used to be a challenge is now much quicker and easier with the Linde E100 – E180 trucks. Instead of having to dismantle the fork carriage and the lift mast, which can be up to seven metres high, the latter can optionally be tilted forward by up to 43.5 degrees. This reduces the overall height of the heavy-duty forklift truck and thus allows proper road transport – which is also more budget-friendly thanks to lower staffing costs. Even frequent movement of the equipment from A to B, for example in the context of short-term rental operations, is significantly easier as a result.



## FORK CARRIAGE



### Multifunctional fork carriage

An exclusive value-added solution, made by Linde: with the multifunctional fork carriage, your employees can safely move even bulky loads, such as large metal plates, from A to B. In addition to the basic version with end position sideshift (separate sideshift), versions with additional fork adjustment or individual fork adjustment are also available.



### Fork positioner with level adjustment

Do you want to use Linde E100 – E180 trucks in difficult ground conditions? Then the fork positioner with level adjustment (+/- 5 degrees) is the fork carriage of choice for you. The Linde solution is available to you with both integrated and hook-mounted forks.

## HEIGHT ADJUSTABLE FORK

It ensures safe load handling of goods that are not stored horizontally: Height-adjustable forks (+/- 100 millimetres) are particularly suitable for use in sawmills where boards, beams and pallets are stored at an angle or on uneven ground. This practical aid can be combined with all variants of standard and full-taper forks.



## PIPE CLAMP\*

Pipes, reels and other round materials present a particular challenge in logistics applications. It is essential to effectively prevent unintentional slippage of the moving load. This is exactly what the pipe clamp developed by Linde does for you; the attachment securely clasps the goods and thus allows reliable transport at all times.



\*Illustrations show Linde HT100 – HT180 trucks. Optional equipment is fully compatible with Linde E100 – E180 models.

## Maintenance & repair

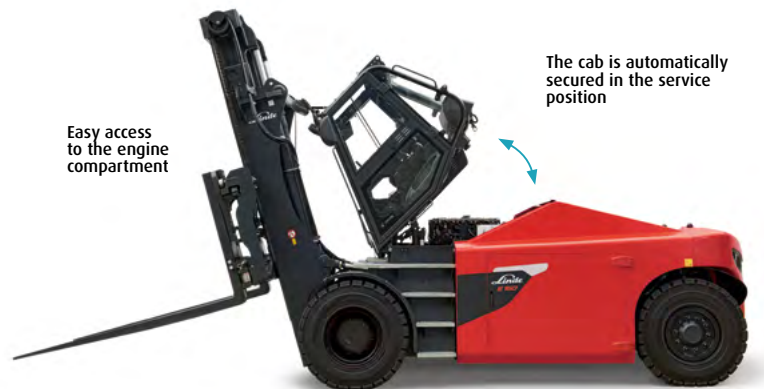
# SERVICE: OPTIMISED



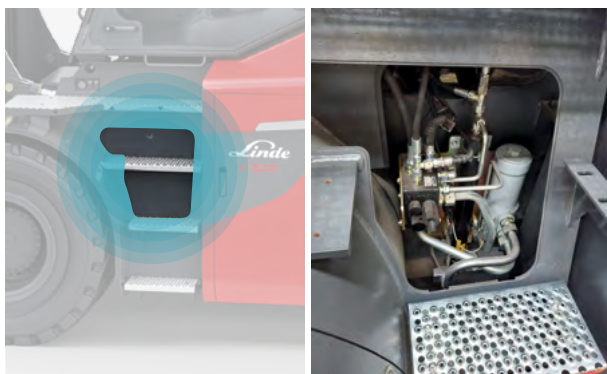
With us, service is more like a pit stop. To ensure the highest possible availability of your all-electric "heavy-duty workers", Linde E100 – E180 trucks have been uncompromisingly designed for service-friendliness: all relevant components can be quickly accessed, checked, maintained and replaced if necessary. You can depend on our broad Linde service network around the clock – with over 8,000 service technicians and more than 700 sales and service locations in around 100 countries.

## ACCESS AT THE TOUCH OF A BUTTON: THE TILTING CAB

It's a well-known fact that the best path to speedy service is the shortest one. And on Linde E100 – E180 trucks, this is via the tilting cab, which can be tilted forward in a space-saving manner. This provides quick and easy access to the motor area under the cab, where all components are clearly arranged and easy to reach. This is also where the transparent wiper water tank is located, the fill level of which can be seen at a glance. Once in the tilt position, a self-locking safety system ensures safe working in the motor compartment.



**Generously dimensioned: regular service on the Linde E100 – E180 trucks is only due once every 1,000 operating hours. The result is longer operating times – with reduced service costs.**

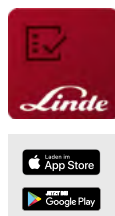


## RECORD-BREAKING FLAP TIMES

Access to the hydraulic high-pressure filter and the pressure accumulator is also extremely easy for service personnel thanks to an easy-to-open service cover on the side of the vehicle.

## HERE'S HOW IT WORKS: THE LINDE PRE-OP CHECK APP

The Pre-Op Check app is part of the Linde connect fleet management software. Employees have to go through a short list of questions on the proper condition of the vehicle via their mobile device. Only if no defects are found can the truck be put into operation. In this way, your employees play an important role in ensuring the greatest possible operational availability of the respective truck.





Linde connect

## EVERYTHING IN VIEW, EVERYTHING UNDER CONTROL

Data-based connection, management and optimisation: When it comes to making the best possible use of your (heavy-duty) truck fleet, Linde connect fleet management software is the tool of choice. The modular service can be optimally adapted to the specifics of your fleet and your goods flow processes.



### **Linde Material Handling GmbH**

Linde Material Handling, a KION Group company, is a leading global manufacturer of forklift trucks and warehouse trucks, and a solutions and service provider for intralogistics. With a sales and service network that spans more than 100 countries, we are close to customers in all major regions around the world.

With over 100 years of experience in providing material handling solutions to companies in virtually every industry, we help our customers optimise their entire material handling process. Our experts analyse all workflows from goods receiving to shipping and work with the customer to develop solutions that fully meet their individual requirements. Linde Material Handling guarantees smooth implementation, reliable commissioning and responsive service.

For further information, please visit: [www.linde-mh.de](http://www.linde-mh.de)

Linde Material Handling

The Linde logo, featuring the word "Linde" in a white, stylized script font on a red rectangular background.

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