

Linde Material Handling

# SOLUTIONS GUIDE



# LINDE MATERIAL HANDLING

Established in 1904, Linde Material Handling developed the world's first forklift with a hydrostatic system, dual-pedal control, and central control lever in 1959. Today, Linde stands as one of the world's largest manufacturers of forklift trucks and warehouse equipment, boasting a workforce of over 13,000 people in over 100 countries worldwide.

For over half a century, Linde has crafted high-performance material flow solutions, tailored to individual customer needs, enabling them to secure sustainable competitive edges.

Linde upholds high standards for solutions in industrial trucks, fleet management,

automation, driver assistance systems, and comprehensive service offerings, including operator training.

Linde's product range is unparalleled, featuring 75 series, approximately 370 model variants, and nearly 10,000 equipment options. Linde's Lithium-ION solution, customisable to our Performance Plus, Performance and Value range, leverages cutting-edge technologies to overcome traditional battery challenges, ensuring enhanced safety. Based on this modular system, Linde manufactures vehicles and fleets tailored precisely to the needs of each user in terms of transport, storage, picking and stacking.

## A proud member of KION Group

In 2006, leading and innovative industry companies, including Linde Material Handling, were unified to establish the KION Group. With the collective history of all its brands tracing back to 1819, the KION Group embodies over two centuries of evolving expertise and innovative product deployment. This consolidation aimed to position the KION Group as a leading innovator and provider of holistic solutions, delivering unparalleled value to global customers.

Today, the KION Group ranks as the world's second-largest industrial truck manufacturer and stands among the top suppliers of automation solutions for intralogistics. Originating in Europe, the KION Group employs more than 41,000 people in over 100 countries. Remarkably, over 1.7 million of its industrial trucks and 6000 automated warehouse systems are operational across six continents.

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## Exclusive Australian distributor for Baoli forklifts

Linde Material Handling is the proud exclusive distributor of Baoli in Australia. This quality brand represents Linde's 'Power To Choose - Value' range, specifically tailored for the Australian market's economy segment. Perfectly suited for lower demand operations where material handling is crucial, though not at the heart of your activities, Linde's Value range presents an economical choice.

Every Baoli forklift is backed by the Linde national service and support network. This provides every Baoli customer with peace of mind knowing they have access to a national after sales network of fully

qualified mobile technicians, all trained and graded on the Baoli product. This robust support system is further enhanced by local, experienced support centres.

Globally recognised, Baoli operates across 80 countries. Founded in China in 2003 and later becoming a part of the KION Group in 2009, Baoli offers excellent value for money across their range of electric, internal combustion and warehousing trucks. Their equipment stands out for its reliability, user-friendliness, and ease of maintenance, with the KION Group assuring the quality of all components.

# SOLUTIONS

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## Suited for every business

Whether you're seeking new or used forklifts, service, spare parts, fleet management services, or expert assistance with warehouse design and configuration, Linde has you covered, regardless of your business size or requirements.

Leveraging the combined strength of Linde Material Handling, Baoli and Linde reconditioned used trucks, we offer solutions tailored to your requirements and budget, serving businesses across Australia.

## Forklift management support

Every customer is unique. Whether you own one forklift or a fleet of 1000, we adapt to meet your needs. As a Linde customer, you'll experience top-tier support long after the installation. We understand time is money, so we help you manage your fleet proactively, ensuring minimal downtime with our 24/7 service support and parts available nationally.

## 24/7 service support

Our service technicians are highly experienced, so you can rest easy knowing you're fully supported 24/7, 365 days a year, wherever you are in Australia. We service our forklifts regularly and on time to ensure their durability and reliability. And if challenges arise, our national parts network is available to provide immediate support.

## National parts network

With a fast and efficient spare parts supply chain in effect nationally, we can ship any part you need, fast. Our service technicians can order, track, deliver and install parts anywhere in Australia, with same-day delivery in metropolitan areas. And if you need specialised parts from our global distribution centres, we can have it dispatched to Australia within 24 hours.

## Financing & long-term rental solutions

Save costs and conserve capital with our tailored financial plans.

### Leasing

Short or long-term usage at fixed monthly instalments.

### Long-term rental

All-in-one package of leasing, maintenance, and other services.

### Rent-to-own programs

Our rent-to-buy solution offers the flexibility of trying out a truck through rental before making a purchase. Opting to rent allows for better cash flow, flexible payment terms, and predictable periodic expenses.

# Forklift Rental

Whether you need a single truck or an entire fleet, for a couple of hours or up to five years, Linde is the go-to choice for forklift rental. We've got equipment reserved and maintained exclusively for our rental customers. Our offerings range from electric and internal combustion counterbalance forklifts to hand pallet trucks, powered pallet trucks, stackers, and very narrow aisle equipment.

Our rental equipment is selected, prepared and maintained from the huge short-term forklift rental fleet available through Linde's national branch and dealer network.

- ✓ **Equipment when you need it**
- ✓ **Rent durations from 1 day to permanent**
- ✓ **Access the latest Linde technology**
- ✓ **Rent a single machine or entire fleet**

# Linde's reconditioned used equipment

Linde's meticulously serviced reconditioned used equipment program is the ideal solution when you need quality, reliable equipment, but buying new isn't justified. A Linde reconditioned used forklift takes the risk out of purchasing used equipment and lets you buy a fully tested, reconditioned, and warranted truck that's competitively priced and backed by our nationwide network for parts supply, advice and forklift servicing.

You'll get a used forklift manufactured by a company renowned for its engineering triumphs and its commitment to quality, reliability and safety.

- ✓ **Nationwide support network**
- ✓ **Choose from our huge range**
- ✓ **Take the risk out of buying used**
- ✓ **Factory backed quality and reliability**



**Counterbalanced Forklifts**  
Electric & IC



**Reach Trucks**



**Turret Trucks**



**Order Pickers**



**Stackers**



**Pallet Trucks**



**Tow Tractors**



**Automation**



**Energy** - IC Engines, Li-ION Batteries, Fuel Cells, Lead-Acid Batteries



**Fleet Management**



**Intelligent Assistance Systems**



**Parts & Service**

Whatever system you select, we believe you'll have never experienced a more robust or straightforward method of equipment access control and compliance reporting.



# FLEET MANAGEMENT

## Linde FleetFOCUS

The world of intralogistics is rapidly digitising, prompting the expansion of modern solutions to promote streamlined processes. Modern logistics devices continuously collect data, which is analysed and used to optimise complex warehouse and transport processes. Advanced sensors enable forklift trucks to act autonomously.

This results in the fleet and fleet management becoming intelligent, with networking and real-time data access becoming increasingly important.

### What is Fleet Management?

Fleet management provides you the information you need to manage your fleet, which ultimately improves safety, efficiency and productivity, whilst ensuring compliance with government regulations. It can include vehicle tracking, mechanical diagnostics monitoring and driver behaviour analytics – at a minimal impact to your business.

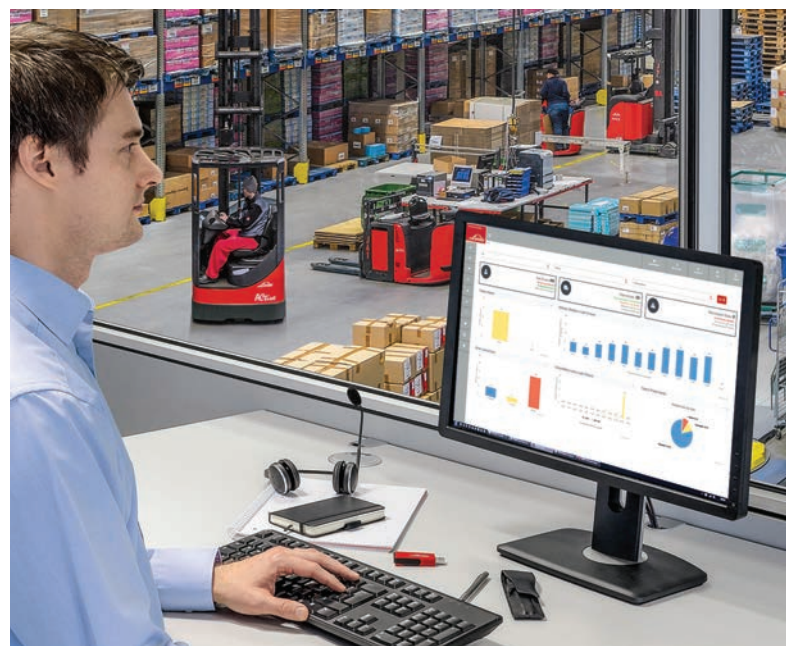
### Linde FleetFOCUS

FleetFOCUS is an Australian top-of-the-range, easy-to-use fleet management and Workplace Health and Safety (WHS) solution that enables communication between you, your fleet, your operators, and your supplier to optimise forklift productivity. Linde's FleetFOCUS solution is a comprehensive fleet management tool that is designed to put you in total control of your resources and optimise your operations.

FleetFOCUS allows you to monitor and manage your fleet in real-time to optimise your operations efficiently by:

- ✓ Identifying under or over-utilised equipment
- ✓ Monitoring daily usage of materials handling vehicles
- ✓ Observing vehicle conditions and driving patterns
- ✓ Controlling vehicle access through an access control system
- ✓ Collecting data reports on improvement areas

Review WHS compliance, cost efficiency and accountability in real time via an online portal on your PC, laptop, tablet or smartphone anytime, anywhere.



# Manage your fleet intelligently

Here are a few of the benefits you can expect when you use FleetFOCUS - and they all cover vital business operations:

## Optimised Fleet Utilisation

FleetFOCUS enables businesses to identify and address fleet utilisation and operational issues before they impact the bottom line.

## Transforms Workplace Safety

Regardless of the size of your operation, FleetFOCUS helps you monitor forklift usage and infrastructure damage, enhancing forklift safety and transforming your workplace.

## Access Real-Time Information

The system continuously collects and organises data, enabling 24/7 access to real-time information from any device via an online portal.

## Monitor Vehicle Usage and Condition

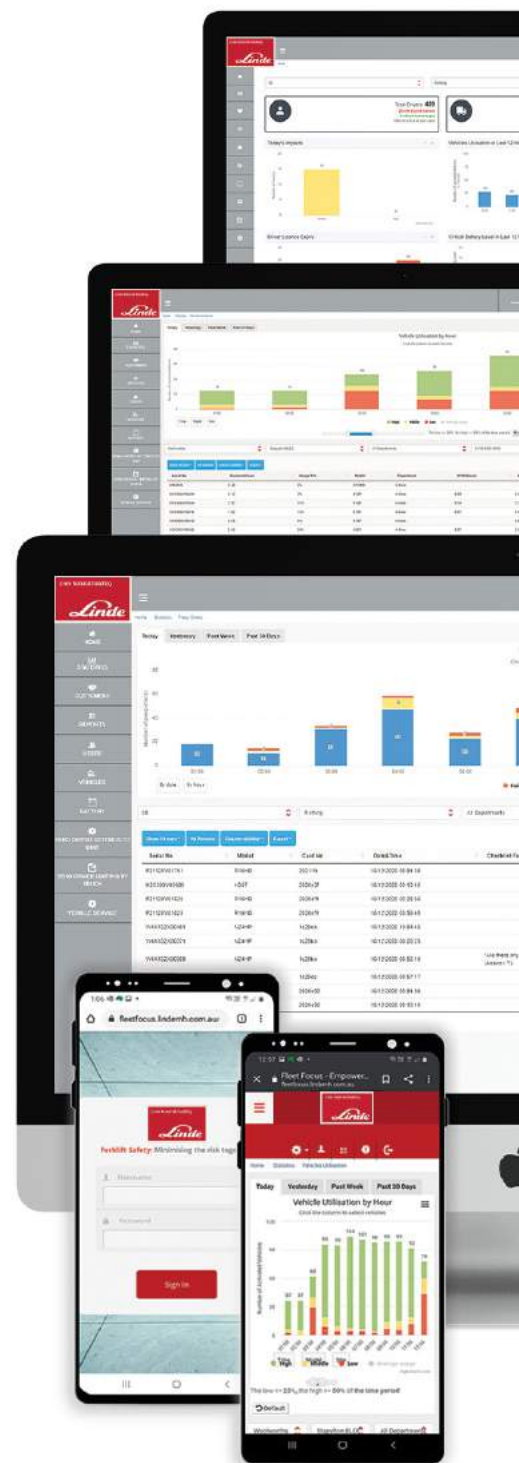
The system continuously monitors the usage, condition, and driving patterns of material handling vehicles, enabling efficient usage by providing insights that guide data-driven operational decisions.

## Saves Costs

FleetFOCUS assists in understanding equipment usage, identifying overuse and underuse, which can lead to cost savings. It aids in optimising resource allocation and enhancing operational efficiency.

## Customised Solution

FleetFOCUS can be tailored to the type and usage of the equipment a company has, even adapted to fit your business's existing security swipe cards.





# Why FleetFOCUS is the leader in Fleet Management

## Reprogrammable firmware

- Adapt and customise software to meet your unique requirements
- Linux-based operating system
- Efficient 2-way messaging enables easy communication between supervisors and drivers with single-touch reply
- Programmable to support 99% of security cards and fobs in the market, reducing the number of cards operators need to carry

## Impact reporting

- Impact reporting enhances WHS and ensures safe operation post vehicle impact
- All impacts are recorded in real-time on the FleetFOCUS system and can be viewed on the website
- Upon an impact, where the vehicle has exceeded the pre-determined impact level, the vehicle will be reduced to 'limp' mode
- A supervisor is required to reset the unit and must provide a reason for the incident before the driver must complete the pre-operational questionnaire again

## Driver access control

- Driver access can be limited
- Access control can be managed via a single fob, integrated card system or pin code
- System has built-in HID and EM Card readers to accommodate customer cards or fobs

## Electronic tag out for unsafe vehicles

- The Electronic Tag Out system allows supervisors or technicians to log in as a driver, unlock a locked-out unit, and put the unit in Vehicle Off Road mode (VOR)
- In VOR mode, access is restricted to supervisors and Linde Technicians to prevent unauthorised use of the truck. The truck can still be moved to a safer location or workshop by a Linde Technician

## Pre-operational questionnaire

- Linde FleetFOCUS offers a customisable pre-operational questionnaire system, managed by the customer post initial installation and training to enhance WHS and ensure safe operation prior to equipment usage
- Drivers are required to complete the pre-operational questionnaire before they can operate the unit
- If any answers are not completed correctly or within the allowed timeframe, the unit will enter 'limp' mode as a safety measure, and a supervisor will be required to unlock the unit

# Why FleetFOCUS is the leader in Fleet Management

## GPS tracking as standard

FleetFOCUS provides GPS as standard, enabling you to monitor the movements of any vehicle, including model, serial number, and last reporting time. This feature enables better management and allocation of your resources.

## Wi-Fi & GPRS (3G & 4G connectivity)

- FleetFOCUS' reliable Wi-Fi & GPRS connectivity ensures you never lose touch with your fleet. It's a standout feature, offering seamless, real-time data accessibility, regardless of the size and complexity of the warehouse environment
- The only fleet management system in Australia to have both Wi-Fi and GPRS integrated and will switch between depending on signal strength
- Memory card backup for network loss to ensure data is not lost, then is automatically updated to server once connection is re-established

## Fleet reporting

- FleetFOCUS offers up to 30 real-time reports to identify areas for continuous improvement and enable informed decision-making
- All fleet updates and data are reported back to the website
- The system features a live interactive dashboard for constant monitoring of impacts, battery charge, and operator checks, eliminating the need for email reports or logging into multiple reports
- FleetFOCUS provides comprehensive tracking reports on battery consumption, hardware conditions via impact sensors, and operator licensing status

## 7-Inch colour touch screen

- Enhances user experience and allows for customisation to suit operator needs without expensive hardware modifications
- Screen saver to reduce screen brightness perfect for safe night operation
- Toughened glass screen protector for protection against touchscreen damage

# AUTOMATION

## The case for automation

Scalable and cost-efficient automation is crucial for optimal material flow. Automated procedures ensure efficiency and flexibility, improving your goods handling times while minimising personal injuries and damages to goods and infrastructure.

## Why choose Linde?

Linde offers a compelling choice for your automation needs. We provide automated trucks, the latest technology, and a comprehensive material flow consulting service to unlock your full economic potential. From the initial delivery to dispatch, we leverage our extensive knowledge and understanding of intralogistics to analyse individual process steps and entire material flows.

## Optimise efficiency through automation

Whether you have an existing system or a new project, the objective of automation is to optimise your efficiency gains. Our offering extends beyond just automated trucks; together with our partner companies, we deliver an all-encompassing solution tailored to your automation requirements.



# Linde MATIC trucks

These are the future of the efficient flow of materials. They take over tiring transport tasks from employees, increase the handling volume, and reduce the error and accident rates in the warehouse.

Linde Material Handling offers a wide range of cutting-edge automation solutions with electric forklifts, and pallet trucks from the MATIC series.

All models come equipped with intelligent navigation and safety technology, but can also be manoeuvred conventionally via manual control.

The MATICs can be used for a wide range of applications in the material flow.

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## Pallet Trucks

Ideal for the low-level lifting, transportation and setting down of goods.

## Pallet Stackers & Reach Trucks

Used for storage and retrieval at medium to high rack levels.

## Very Narrow Aisle Trucks

Make it possible to automate work even in the tight spaces and great heights of a high rack warehouse

## Customised automation solutions

All trucks in the MATIC series can be customised with features to meet your specific needs. You can equip these trucks with various drive and lifting motors, choose from different battery sizes, opt for adjustable hydraulic forks, use electronically authenticated battery locks, and set programmable mast height restrictions.

For enhanced navigation, you can add a 3D “omni-safety” scanner and extra laser sensors on the sides of the truck.

## Optional charging technologies

Maximise productivity with Linde MATIC. Linde’s automated trucks can be equipped with lithium and wireless charging technology. The best feature is the ability to manage charge cycles through the Linde MATIC software. Based on your workload or demand, the software intelligently decides when to top up the battery.

# Advantages of using a Linde MATIC



## They work safely alongside people

The MATIC trucks navigate so precisely that they can work safely together with people.

They can detect people and other trucks in the immediate environment as well as register suddenly occurring obstacles such as fallen pallets.

The intelligent control brakes the truck so that they adequately respond to a blockage or obstacles, they then automatically resume their task.

An easily accessible emergency stop switch provides additional safety.



## They are user-friendly for easy handling

All forklifts and pallet trucks in the MATIC series have a 7-inch LED touchscreen that displays all the necessary information to the truck user. This shows information such as the travel path as well as the current battery status.

The screen lists the current logistics tasks in real time and provides information about their completion status.

A PIN code can be used to export all the service information for the trucks and the data via a USB port.



## They are cost-effective

MATIC trucks excel in optimising efficiency in areas where monotonous logistics tasks are a constant. They seamlessly integrate into warehouse logistics, operating around the clock across shifts.

Each truck comes equipped with intelligent control software that enables real-time management of the entire MATIC fleet. It assigns tasks to individual trucks and ensures precise coordination of routes and speeds.

The control software also offers interfaces for integration with applications like ERP (Enterprise Resource Planning) and WMS (Warehouse Management System) and synchronises the trucks with automatic hall doors and conveyors.



# ENERGY

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## Use it only when required

As intralogistics evolves, the selection of an energy system becomes even more critical, especially when considering the Total Cost of Ownership (TCO).

With this in mind, it's not just the purchase price that plays an important role when buying a forklift truck, it's also the operating costs and therefore the energy costs.

Each application has its own requirements including space needed for refuelling or charging, energy costs, and environmental sustainability.

This is why, alongside combustion engines and lead-acid batteries, Lithium-ION batteries and fuel cells are increasingly being mentioned among the preferred solutions.

# Why choose Linde?

Linde Material Handling offers the latest technology for every energy system, along with a wide range of models and comprehensive advice and services.

## Combustion engines

For decades, Linde Material Handling has been setting the standards for productivity and cost-effectiveness in the development of Internal Combustion (IC) trucks. Users can choose between diesel engines, LPG or CNG (Compressed Natural Gas) power. Diesel IC trucks are used outside the covered business premises whilst LPG/CNG trucks are best suited for applications where the truck is required to also operate indoors.

Trucks with IC engines offer a particular advantage over other systems in that their large ground clearance enables them to handle even the most uneven ground conditions. Above all, they are suitable for heavy-duty applications thanks to their powerful engine performance which can handle load capacities of up to 18 metric tonnes.

Linde forklift trucks have low-noise and economical engines, and can be used for many operating hours without interruption. These service intervals are impressively long and easy to access service modules ensure that maintenance processes are quickly dealt with.

- ✓ **Best suited for heavy duty applications**
- ✓ **Diesel = Outside the covered business premises**
- ✓ **LPG/CNG = Indoor/outdoor applications**
- ✓ **Handles most uneven ground conditions**
- ✓ **Load capacities up to 18 metric tonnes**



## Hydrostatic drive with Linde two pedal system

Linde was the first company to use a hydrostatic drive for IC trucks. This features a pump which is covered by the internal combustion engine. This pump transmits power in the form of oil pressure via a closed circuit linked to the two hydraulic motors in the drive axle.

The Linde two pedal system control allows the driver to control the volume and direction of the oil flow, and therefore the speed and direction of the truck, using two pedals.

The truck's direction can be changed simply by switching pedals. When doing so, the closed oil circuit brakes the truck, meaning the braking system is just as superfluous as a clutch and transmission. This way, Linde's hydrostatic drive is able to work continuously, entirely uniformly, and smoothly.

This innovative form of transmission is what gives Linde's IC trucks their dexterity, dependability and efficiency.

# Lead-Acid batteries

Electric forklift trucks and warehouse trucks with lead-acid batteries remain a good alternative for light to medium-duty applications, for example, retailers who only need the truck for loading and unloading for a few hours each day. Investment costs are similar for both IC trucks and electric forklift trucks with lead-acid batteries.

Lead-acid trucks are generally more economical in terms of servicing and are also suitable for indoor use.

In order to ensure accurate operational planning, the remaining battery level display on Linde electric forklift trucks and warehouse handling equipment is accurate to the minute. In a multi-shift operation, a battery change is generally required but, with a total of five options for Linde electric forklift trucks, this process is particularly flexible.

There is also the option of ordering the truck with an integrated charger. Since the truck's applications are extremely varied, Linde offers a variety of different battery capacities for the relevant intensity and duration of use.

Through our partnership with a trusted supplier, we also offer the following advanced battery and charging solutions:

- Thin Plate Pure Lead (TPPL): A type of lead-acid battery known for its unique plate structure.
- Absorbent Glass Mat battery (AGM): A design where the electrolyte is held between glass mats.
- Valve Regulated Lead-Acid (VRLA) gel: A lead-acid battery where the electrolyte is suspended in a gel form.
- Fast Charge: Rapid charging technology for quicker battery replenishment.

- ✓ **Best suited for light to medium-duty applications**
- ✓ **Investment similar to IC trucks**
- ✓ **More economical than IC trucks in terms of servicing**
- ✓ **Suitable for indoor and outdoor use**
- ✓ **Remaining battery level display accurate to the minute**

# Lithium-ION batteries

Electromobility demands that electric trucks match the availability of combustion engines, and Lithium-ION (Li-ION) technology addresses this by providing advantages for electric forklift trucks and warehouse trucks over lead-acid batteries. Linde's in-house developed Lithium-ION batteries ensure seamless integration and alignment of vehicle control and battery management.

These batteries are suitable for all applications; however, they are particularly beneficial for intensive applications such as multi-shift operations, cold

stores, the beverage industry, and sensitive sectors like pharmaceuticals and food. Even though they come with a higher initial cost compared to lead-acid batteries, their longevity results in a lower cost per cycle, rendering them more cost-effective over time. Charging Lithium-ION batteries is convenient as they can be fast-charged during short breaks, eliminating the need for costly battery changes. We also offer different battery capacities in combination with different charging capacities, ensuring greater flexibility. When paired with a Linde charger, efficiency improves by 30% compared to lead-acid

batteries, leading to lower energy costs. And, their constant voltage ensures consistent performance, even when the battery's charge level is depleting.

One significant benefit is their eco-friendliness. Not only do they not produce any emissions, but they also do away with needing special battery charging areas and ventilation. And in challenging environments – be it rough surfaces, high usage settings, or low temperatures – Lithium-ION batteries have been shown to outperform their traditional counterparts.

For companies looking for an eco-friendly alternative, Linde's forklifts and warehouse

equipment powered by Lithium-ION are good options. Linde also offers a customisable Total Cost of Ownership (TCO) tool to help identify the most suitable energy package for your application.

- ✓ **Generally suited for all applications**
- ✓ **30% efficiency improvement compared to lead-acid batteries**
- ✓ **Fast charging during short breaks**
- ✓ **Consistent performance**
- ✓ **An eco-friendly alternative with no emissions**
- ✓ **Maintenance-free and easy to clean**

## Fuel cells

Fuel cells work in a similar way to batteries, meaning that energy is generated by a chemical reaction, in this case hydrogen and oxygen react to produce electricity, heat and water – this process is also called 'cold combustion'. Hydrogen can be produced in an environmentally friendly way from regenerative sources such as biogas, which reduces CO2 emissions. This makes fuel cells suitable for use in hygiene-critical sectors such as the pharmaceutical and food industries. Another advantage is that fuel cells have an average service life of 10,000 operating hours, reducing life cycle costs and the environmental impact.

The high availability of the trucks makes them perfect for tough multi-shift operations, such as production environments or intensive logistics services, as they can be refuelled with hydrogen

in just 1-3 minutes. The infrastructure for hydrogen refuelling requires less space thanks to the elimination of battery charging stations/battery rooms, and as battery changes are not required the handling of fuel cells is safer for users.

- ✓ **Best suited for tough multi-shift operations**
- ✓ **Refuel in 1-3 minutes**
- ✓ **No emissions during operation**
- ✓ **Average service life of 10,000 operating hours**
- ✓ **Battery charging stations, battery rooms and battery changes not required**

**At Linde, our experts have all the right tools to determine your energy solution needs based on your specific applications.**





Solutions for

# SAFETY

## Enhanced safety in material handling operations

Linde Material Handling is committed to ensuring optimal safety for operators, goods, and overall business operations.

Our primary goal? Avoid 100% of accidents in intralogistics.

This is the driving force behind our safety philosophy, "Vision Zero". This philosophy aims to enhance safety in internal transportation, prevent forklift accidents, and avoid the mishandling of goods.

Given the increasing demands on material handling, it is essential to implement reliable measures, not only to protect drivers and other employees, but also goods in transit, shelving, and any other additional equipment.

To meet these demands, we continuously develop technical innovations for our industrial trucks, as well as intelligent assistance systems, comprehensive training programs, and consulting services.

The result? Integrated solutions that empower businesses to master the diverse challenges of modern, safe intralogistics.

### Safety pilot

The Linde Safety Pilot, a driver assistance system, was designed to enhance forklift safety and productivity. It functions as an intelligent 'passenger', constantly monitoring and guiding the driver, and warning of precarious truck driving conditions.

The system is equipped with a rotary push-button mounted in the armrest underneath the operating lever. This allows drivers to easily pre-select lifting heights, set lifting and lowering limits, and precisely control elevations at the touch of a button.





## Linde Safety Guard

The Linde Safety Guard system is an innovative monitoring system designed to increase the safety of truck operators and pedestrians working in close proximity to industrial trucks.

With transmitters and sensors installed on trucks, racks, and even carried by pedestrians, it can help prevent accidents before they happen by issuing simultaneous warnings to all parties, with an accuracy of up to ten centimetres. This system is particularly crucial in environments where industrial trucks operate, ensuring safe interaction between man and machine.



## Pedestrian warning band

The latest addition to Linde's Safety Guard System, the pedestrian warning band warns the wearer of potential dangers ahead of time.

Designed for pedestrians and forklift operators, this smart assistance system provides active advance warnings of potential hazards, through loud acoustic signals, flashing LED lights, or vibrations, allowing for immediate response to help prevent physical injuries or collateral damage and ensure workplace safety, whether indoors or outside.

## Specific to the Linde K truck

### Aisle Safety Assistant

Linde's Aisle Safety Assistant enables Linde VNA trucks to adjust their movement to their warehouse environment in order to minimise collision risks and damages to goods and the warehouse infrastructure.

The Aisle Safety Assistant guides the truck using RFID tags in the floor or barcodes on the rack columns. Additionally, it uses a height sensor to determine the truck's cab height as well as its exact position, ensuring safe and efficient navigation in tight spaces.

### Active Stability Control

Efficient load handling in high rack warehouses requires precision, as even minor uneven floor surfaces can become a problem, causing very narrow aisle trucks to oscillate dangerously. This can lead to safety risks and economic losses.

The Linde VNA K truck introduces the Active Stability Control assistance system, which detects and counteracts uneven floor impacts and vibrations, ensuring safe and efficient operation. This enables the K truck to operate effortlessly in very narrow aisles, even on imperfect flooring.



## Reverse Assist Camera

When forklifts and pedestrians encounter one another in tight spaces, this can easily lead to an accident. That's because operators may notice pedestrians in their immediate vicinity too late. Unfortunately, reversing trucks pose the greatest risk.

The Reverse Assist Camera is an AI-based camera system designed to help prevent warehouse accidents by detecting pedestrians, alerting the operator and automatically slowing down the truck when necessary. The detection zones and warning mechanisms can be adapted to specific truck and site requirements.

## Linde Motion Detection

Often, drivers are focused on loading and unloading tasks and fail to notice pedestrians or other forklifts behind them.

The Linde Motion Detection solution is a reverse sensor system retrofitted to counterbalance forklifts. As it detects movement behind it, it automatically slows down the truck and alerts the operator, significantly reducing accidents in hazardous areas.

## Linde Steer Control

Linde's Steer Control solution replaces the traditional steering wheel with a mini wheel or joystick integrated into an additional armrest on the truck. This innovative solution offers ergonomic benefits like reduced driver strain and clearer visibility of the forklift tips.

For maximum movement precision, Linde Steer Control automatically adjusts the steering sensitivity based on the truck speed, ensuring precision regardless of the driving situation.

## Automatic travel speed & Curve assist

A dual assistance system that's got your back, Linde prioritises safety with solutions designed to manage truck speeds to help prevent hazardous situations. With our partners, we provide a range of technological solutions for zone speed control, and our team of experts is always ready to assist you with your specific needs.

**Speed assist:** This system automatically controls a truck's speed, both indoors and outdoors, ensuring trucks move at appropriate and safe speeds based on their environments.

**Linde Curve Assist:** This feature automatically adjusts a forklift's speed during cornering. If a forklift approaches a curve too quickly or if the curve's radius is too small, the centrifugal forces could pose a risk. However, Linde Curve Assist reduces the speed to prevent the truck from tipping over.





## Dynamic mast control

Linde Dynamic Mast Control, the latest operator-assist system for reach trucks, automatically ensures smooth, simultaneous lift and reach movements for optimum productivity at all lift heights. It automatically compensates and minimises mast oscillations and mast deflections through precise and seamless counter-movements of the reach carriage - yet another way that Linde innovation puts you in front.

## Load management

The Linde Load Management system automatically calculates the truck's residual capacity based on the height and weight of the load on the forks and displays these values for the operator's convenience. The system also identifies safety-critical situations and issues both visual and audible warnings, while automatically reducing speed and acceleration in relation to steering angle and residual capacity.



## Optimal visibility

Linde's design minimises obstructions to the operator's view, helping to prevent damage to racking, trucks and goods. This not only reduces work stress but also maximises productivity and prolongs equipment life.

Available solutions include an overhead guard with a panoramic, armoured glass roof, overhead tilt cylinders, slimmer mast profiles, CCTV monitors, a panoramic interior mirror, and a reversing camera.

## Linde Rack Protection Sensor

Warehouse rack damage is often caused by industrial trucks as drivers tend to focus on pallets at higher levels, thus overlooking their proximity to racks. This leads to costly incidents and damages.

The Linde Rack Protection Sensor, acting as a driver's eyes at ground level, automatically slows the truck down before an incident occurs, improving warehouse safety.



# Ambient warning solutions



## TruckSpot

The innovative TruckSpot warning system builds on the proven advantages of the Linde BlueSpot and introduces an important enhancement: a large 1.25-metre warning triangle with bold contrasting colours. This feature provides an even more effective warning to pedestrians and other forklift

operators about an approaching reversing forklift. TruckSpot can easily be mounted on the frame of the driver's overhead guard and is an ideal solution for increasing safety in racking aisles and in areas with visually restricted intersections.



## BlueSpot system

Enhancing both pedestrian and vehicle safety in the workplace, the innovative Linde BlueSpot™ driving path warning system minimises risk without making a sound.

The system uses two bright, anti-glare LED lights mounted on the driver's protective roof frame and projects a blue warning spot onto the floor, alerting pedestrians and other forklift operators of an approaching truck.

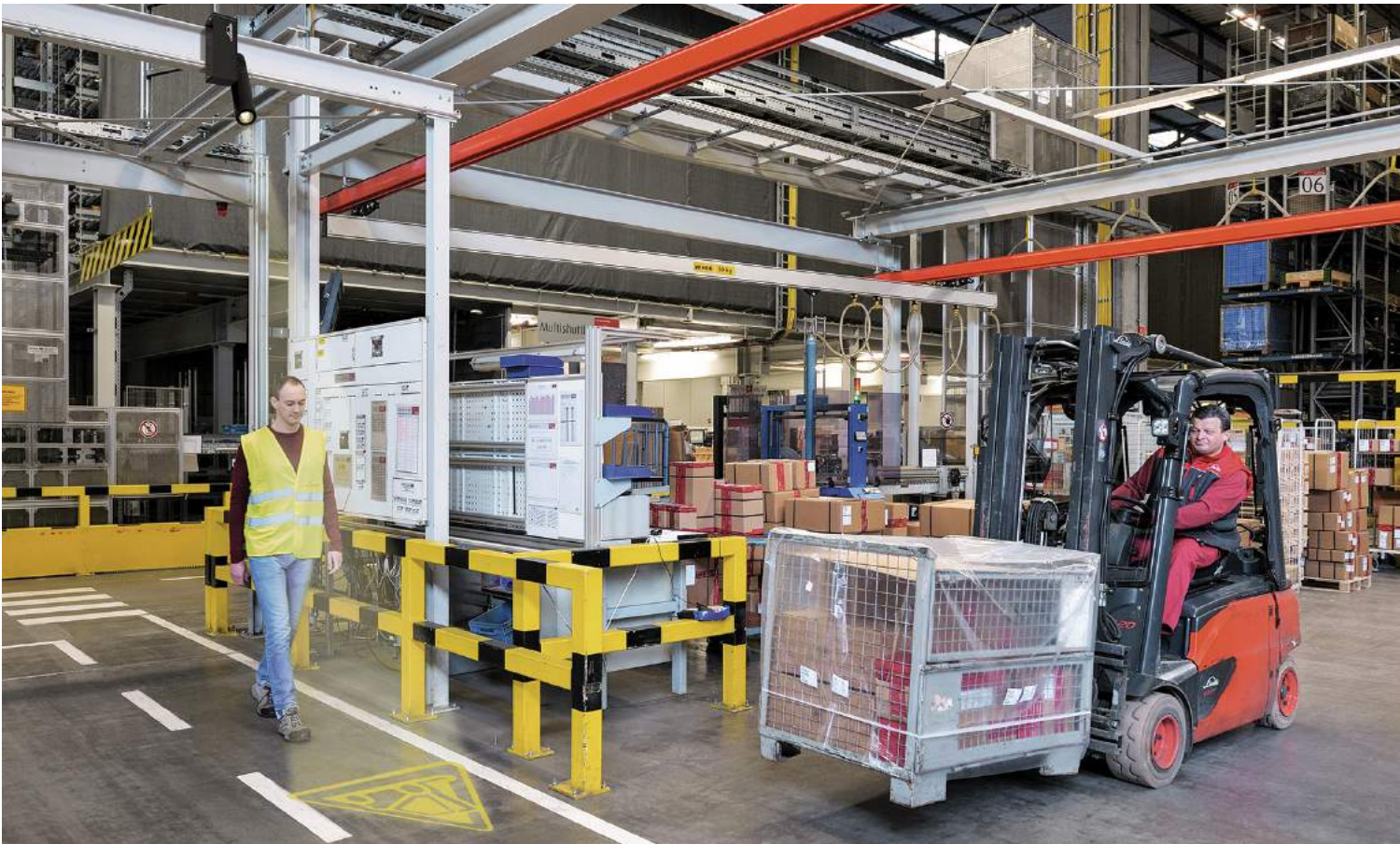




## Warning lines

Linde's Warning Lines system safeguards pedestrians from potential hazards by projecting bright, clearly visible lines onto the workspace floor. These lines are displayed to the left, right, and even the rear-side of trucks to clearly indicate danger zones.

With options available in red or blue and built with energy-efficient technology, this system is suitable for a range of applications.



## Stationary warning projector

This compact, high-performance LED spotlight projects warning symbols from a fixed position. It provides an early warning to anyone in the path of an oncoming forklift, and ensures excellent visibility, even in low-light environments.

This warning projector can be linked to the Linde Safety Guard so that warnings are only shown when there's danger.



# Truck lighting solutions



## LED stripes

Visibility is vital for the safe operation of industrial trucks within workspaces; however, many lighting systems fall short, leaving workspaces poorly lit.

Linde's LED Stripes light up the direction of travel, offering optimal illumination even in a dimly lit warehouse. These two-colour LED Stripes shine white when moving forward and red when reversing, improving visibility for both the driver and other vehicles/pedestrians.

Mounted on the truck's mast and rear-end, they provide consistent lighting similar to the Vertilight, enabling safe, precise and efficient work in any environment.

## VertiLight

Mounted to the side of the mast, it illuminates a large working area thanks to its half-circular design with wide light band and seven LEDs. The LEDs cast even lighting from the floor to the top of the shelf, improving the visibility of the shelf, load, and forks.

The anti-glare LEDs minimise distractions for oncoming vehicles, pedestrians, and the driver by reducing reflections from goods or the truck's interior.



# The most ergonomic workplace



## Operational vibrations

Linde forklifts come standard with a suspended operator's compartment, isolating shocks and vibrations caused by uneven surfaces.

The adjustable, ergonomic controls and a seat that automatically adjusts to the operator's weight provide optimal support for different physiques, minimising stress.

## 17° Swivel seat

Linde provides a versatile seating solution with the choice of either a 10° and 17° rotating seat and armrest. This feature minimises physical neck strain by enabling operators to rotate their seat toward their load and travel direct as needed, promoting comfort and efficiency.

## Teardrop Steering wheel

The Linde Teardrop steering wheel is an effective solution for reducing the rate of occupational injuries (ROI) due to its innovative and ergonomic design. By encouraging operators to use their elbow rather than solely relying on their shoulders, it significantly reduces shoulder fatigue.

## Rotatable from 0 to 180°

Linde's IC and electric forklift trucks can feature rotating operator workstations and cabins, especially for heavy-duty models.

This allows clear visibility and ergonomic work conditions, reducing physical strain, fatigue, and discomfort for operators. By rotating the workstation instead of the operator, it improves the view of the load and travel direction, decreasing downtime and errors due to fatigue.



# THE POWER TO CHOOSE

Value, Performance, Performance Plus. When it comes to material handling requirements, one size simply doesn't fit all. That's why Linde gives you the power of choice.

Whether your business requires equipment for low, medium or high demand applications, or even a mix of all three, you now have the power to choose the perfect solution.





## Choose Value

Understanding the difference between price and value is especially important when it comes to material handling equipment. Linde's Value range is ideal for lower demand applications. It consists of quality equipment suited for those situations where material handling equipment is not at the heart of your activities but is essential and must be reliable.

## Choose Performance

Our staff are experts in liaising with customers to fully understand their equipment needs, particularly to identify those medium demand applications where competing operational and commercial demands can make it all too easy to choose the wrong forklift. That's where Linde's Performance range is more than just a good solution, it's the best.

## Choose Performance Plus

Linde equipment has a hard-won reputation for unrivalled performance in high-demand applications where other equipment cannot perform as required and doesn't last the distance. Our Performance Plus range brings together the best of the best, presenting you with choices and models which will satisfy even the most demanding requirements hour after hour, day after day, and year after year.



# STACKING

## Electric Counterbalance Trucks



**E10**  
E-Truck, Three Wheel  
Capacity: 1.0 t

PB ION

Series 8917



**E12-E20 EVO**  
E-Truck, Three Wheel  
Capacity: 1.2 t – 2.0 t  
Variants: C, L, H

PB ION H2

Series 386



**E16-E20 EVO**  
E-Truck  
Capacity: 1.6 t - 2.0 t  
Variants: P, PH, PL, PHL

PB ION H2

Series 386



**E20-E35**  
E-Truck  
Capacity: 2.0 t – 3.5 t  
Variants: H, L, HL

PB ION H2

Series 1252



**X20-X35**  
E-Truck  
Capacity: 2.0 t – 3.5 t

ION

Series 1252



**X35-X50**  
E-Truck  
Capacity: 3.5 t – 5.0 t

ION

Series 1254



**E35-E50**  
E-Truck  
Capacity: 3.5 t – 5.0 t  
Variants: H, L, HL

PB ION H2

Series 1254



**E60-E80**  
E-Truck  
Capacity: 6.0 t – 8.0 t

PB ION

Series 1279



**E100-E180**  
E-Truck  
Capacity: 10.0 t - 18.0 t

PB ION

Series 1471



**E16-E20**  
E-Truck, Three Wheel  
Capacity: 1.6 t - 2.0 t  
Variants: C, CH

PB ION

Series 1275



**E16-E20**  
E-Truck, Four wheel  
Capacity: 1.6 t - 2.0 t  
Variants: P, PH

PB ION

Series 1275



**E20-E25 B (HP)**  
E-Truck  
Capacity: 2.0 t - 2.5 t

PB ION

Series 1293



**E25-E35**  
E-Truck  
Capacity: 2.5 t – 3.5 t  
Variants: S, SH

PB ION

Series 1276



**E30-E35 B (HP)**  
E-Truck  
Capacity: 3.0 t – 3.5 t

PB ION

Series 1294



**E40-E50**  
E-Truck  
Capacity: 4.0 t – 5.0 t

PB ION

Series 1287

C: Compact  
E: Electric Counterbalance Truck  
EVO: Evolution  
H: High chassis

L: Long chassis  
P: Four-wheel configuration  
X: High Performance

PB Available with Lead Acid Batteries  
ION Available with Lithium-ION Batteries  
H2 Available with H2 Technology

Performance Plus  
Performance  
Value



## Electric Counterbalance Trucks



**KBE 18-20**  
E-Truck, Three  
Wheel  
Capacity: 1.5 t - 2.0 t

PB ION

Series 6089



**KBE 20-25**  
E-Truck  
Capacity: 2.0 t - 2.5 t

PB ION

Series 1293

## Internal Combustion Engine Counterbalance Trucks



**H14-H20 EVO**  
IC-Truck  
Capacity: 1.4 t - 2.0 t

DIESEL LPG

Series 391



**H20-H35**  
IC-Truck  
Capacity: 2.0 t - 3.5 t

DIESEL LPG

Series 1202



**H35-H50**  
IC-Truck  
Capacity: 3.5 t - 5.0 t

DIESEL LPG

Series 1204



**H50-H80 EVO**  
IC-Truck  
Capacity: 5.0 t - 8.0 t

DIESEL

Series 396



**H100-H180**  
IC-Truck  
Hydrostatic Drive  
Capacity: 10.0 t - 18.0 t

DIESEL

Series 1401



**H25-H35**  
IC-Truck  
Capacity: 2.5 t - 3.5 t

DIESEL LPG

Series 1220



**H25-H35 DB**  
IC-Truck  
Capacity: 2.5 t - 3.5 t

DIESEL LPG

Series 1289



**HT100-HT180**  
IC-Truck  
Hydrodynamic Drive  
Capacity: 10.0 t - 18.0 t

DIESEL

Series 1411



**KB(D)G 15-20**  
**KBG 25-35**  
IC-Truck  
Capacity: 1.5 t - 3.5 t

DIESEL LPG

Series 6004 | 6009 | 6010\*

\*not available in diesel



**KB(D)G 25-35**  
IC-Truck  
Capacity: 2.5 t - 3.5 t

DIESEL LPG

Series 1289



**KB(D)G 40-50S**  
IC-Truck  
Capacity: 4.0 t - 5.0 t

DIESEL LPG

Series 6011 | 6012



**KBD 50-100**  
IC-Truck  
Capacity: 5.0 t - 10.0 t

DIESEL

Series 6013 | 6014

H: Internal combustion engine powered counterbalance truck with hydrostatic drive

HT: Internal combustion engine powered counterbalance truck with torque converter

DIESEL Available with diesel drive

LPG Available with fuel gas drive

Performance Plus

Performance

Value

# TRANSPORTING

## Pallet Trucks



**T14-T20**  
Pedestrian Pallet Truck  
Capacity: 1.4 t - 2.0 t

PB ION

Series 1155



**T14-T25 S**  
Stand-on Pallet Truck  
Capacity: 1.4 t - 2.5 t  
Variants: SF, S

PB ION

Series 1154



**T16 L**  
Pedestrian Pallet Truck  
Capacity: 1.6 t

PB ION

Series 1152



**T20-T25 AP**  
Stand-on Pallet Truck  
Capacity: 2.0 t - 2.5 t

PB

Series 1153



**T20-T25 AP | SP**  
Stand-on Pallet Truck  
Capacity: 2.0 t - 2.5 t

PB ION

Series 1156 | 131



**T20-T25 R**  
Sit-on Pallet Truck  
Capacity: 2.0 t - 2.5 t  
Variants: SR

PB ION

Series 1154



**T25-T30**  
Pedestrian Pallet Truck  
Capacity: 2.5 t - 3.0 t

PB ION

Series 1153



**T20-25 RW**  
Sit-on Pallet Truck  
Capacity: 2.0 t - 2.5 t

PB ION

Series 1154



**T16-T20**  
Pedestrian Pallet Truck  
Capacity: 1.6 t - 2.0 t

PB ION

Series 1151



**T20-T24 AP | SP**  
Stand-on Pallet Truck  
Capacity: 2.0 t - 2.4 t

PB ION

Series 1158



**T30 AP**  
Stand-on Pallet Truck  
Capacity: 3.0 t

PB

Series 1158



**M25**  
Pedestrian Pallet Jack  
Capacity: 2.5 t

Series 033



**MT15**  
Pedestrian Pallet Jack  
Capacity: 1.5 t

ION

Series 1133



**EP15**  
Pedestrian Pallet Truck  
Capacity: 1.5 t

ION

Series 6159

AP: Foldable platform  
B: Best Value  
L: Low lift  
M: Hand Pallet Truck  
MT: Pallet Truck (Light Range)

R: Sit-on  
SF: Stand-on front position  
SP: Fixed platform  
S/SR: Stand-on crosswise position  
T: Pallet Truck  
W: Wide version

PB Available with Lead Acid Batteries  
ION Available with Lithium-ION Batteries  
H2 Available with H2 Technology  
PIEK PIEK certified. Low noise pollution, max. 60dB(A)

Performance Plus  
Performance  
Value

# Tow Tractors



**P40-P60 C**  
Stand-on Tow Tractor  
Capacity: 4.0 t - 6.0 t

**PB** **ION**

Series 4595



**P60-P80**  
Sit-on Tow Tractor  
Capacity: 6.0 t - 8.0 t

**PB**

Series 1191



**P120-350**  
Sit-on Tow Tractor  
Capacity: 12.0 t - 35.0 t  
Variants: SWB, LWB, VLWB

**PB** **ION**

Series 5007-10



**W20-W30**  
Sit-on Platform Tractor  
Capacity: 2.0 t - 3.0 t  
Variants: SWB, LWB

**PB** **ION**

Series 5007-10



**MP13**  
Light Pedestrian  
Tow Tractor  
Capacity: 1.3 t

**PB**

Series 8904



**P20**  
Stand-on Tow Tractor  
Capacity: 2.0 t

**PB**

Series 1193



**P30-P50C**  
Stand-on Tow Tractor  
Capacity: 3.0 t - 5.0 t

**PB** **ION**

Series 1189

**B:** Best value

**LWB:** Long wheelbase

**MP:** Tow Tractor

**P:** Tow Tractor

**SWB:** Short wheelbase

**VLWB:** Very long wheel base

**W:** Platform Tractor

**PB** Available with Lead Acid Batteries

**ION** Available with Lithium-ION Batteries

**H2** Available with H2 Technology

**Performance Plus**

**Performance**



# STORAGE

## Reach Trucks



**R10-R25**  
Reach Truck  
Capacity: 1.0 t - 2.5 t  
Variants: B, HD, W, N, DD

PB ION H2

Series 1120



**R14-R17 X**  
Compact Reach Truck  
Capacity: 1.4 t - 1.7 t  
Variants: High, HD

PB ION

Series 116



**R14-R20 G**  
Reach Truck  
Capacity: 1.4 t - 2.0 t

PB ION

Series 1120



**R20-R25 F**  
Four Way Reach Truck  
Capacity: 2.0 t - 2.5 t

PB

Series 8923



**R14-R20 S**  
Reach Truck  
Capacity: 1.4 t - 2.0 t

PB ION

Series 115

## Very Narrow Aisle Trucks (VNAs)



**A**  
VNA Turret Truck for full pallet handling, man-down  
Capacity: 1.5 t

PB ION

Series 5224



**K**  
VNA Combination Turret Truck for full pallet handling and order picking, man-up  
Capacity: 1.5 t

PB ION

Series 5231

## Automated Solutions



**L-MATIC**  
Pallet Stacker  
Capacity: 1.2 t

PB ION

Series 133



**L-MATIC AC**  
Pallet Stacker  
Capacity: 1.2 t - 1.6 t  
Variants: B

PB ION

Series 1170 | 1183



**R-MATIC**  
Reach Truck  
Capacity: 1.6 t

PB ION

Series 1120



**K-MATIC**  
Turret Truck  
Capacity: 1.5 t

PB ION

Series 5231



**C-MATIC**  
Guide Cart  
Capacity: 0.6 t - 1.0 t  
Variants: B

AC: Counterbalanced-version

B: Best Value

DD: Double Deep

F: Four way

G: Indoor/Outdoor

HD: Heavy duty

N: Narrow version

R: Reach Truck (with reach mast)

S: Stand-on

W: Wide version

X: X-range

PB Available with Lead Acid Batteries

ION Available with Lithium-ION Batteries

H2 Available with H2 Technology

Performance Plus

Performance

# Pallet Stackers



**D06-D08**  
Pedestrian Double  
Pallet Stacker  
Capacity: 0.6 t - 0.8 t

Series 1160

PB ION H2



**D10**  
Pedestrian Double  
Pallet Stacker  
Capacity: 1.0 t  
Variants: AP, FP

Series 1163

PB ION



**D12 S**  
Stand-on Double  
Pallet Stacker  
Capacity: 1.2 t  
Variants: SF

Series 1164

PB ION H2



**D12 R/RW**  
Sit-on Double  
Pallet Stacker  
Capacity: 1.2 t

Series 1164

PB ION H2



**L06-L16 AC**  
Pedestrian Counterbalanced  
Pallet Stacker  
Capacity: 0.6 t - 1.6 t

Series 1171

PB ION



**L10-L12**  
Pedestrian Pallet Stacker  
Capacity: 1.0 t - 1.2 t  
Variants: B, i

Series 1172

PB ION



**L10-L12 AS**  
Pedestrian Straddle  
Pallet Stacker  
Capacity: 1.0 t - 1.2 t

Series 1172

PB



**L12 AP**  
Stand-on (Straddle)  
Pallet Stacker  
Capacity: 1.2 t

Series 133

PB ION



**L14-L16 SP**  
Stand-on Pallet Stacker  
Capacity: 1.4 t - 1.6 t

Series 1177

PB ION



**L14-L16 AS**  
Pedestrian Straddle  
Pallet Stacker  
Capacity: 1.4 t - 1.6 t

Series 133

PB ION



**L14-L16 R**  
Sit-on Pallet Stacker  
Capacity: 1.4 t - 1.6 t

Series 1174

PB ION H2



**L14-L16 RW**  
Sit-on Pallet Stacker  
Capacity: 1.4 t - 1.6 t

Series 1174

PB ION

A: VNA Truck, Man-down  
AC: Counterbalanced-version  
AP: Foldable platform  
AS: Lateral load arms (straddle version)  
B: Best Value  
i: initial lift  
K: VNA Truck, Man-up

L: Pallet Stacker  
R: Sit-on  
S: Stand-on  
SP: Fixed platform  
VNA: Very Narrow Aisle  
W: Wide version

PB Available with Lead Acid Batteries  
ION Available with Lithium-ION Batteries  
H2 Available with H2 Technology

Performance Plus  
Performance

# Pallet Stackers



**L14-L20**  
Pedestrian Pallet Stacker  
Capacity: 1.4 t - 2.0 t  
Variants: AP

PB ION H2

Series 1173



**L10-L14 C**  
Pallet Stacker  
Capacity: 1.0 t - 1.4 t

PB

Series 1169



**MM10 | ML10**  
Light Pallet Stacker  
Capacity: 1.0 t  
Variants: i

PB

Series 1167



**ES12**  
Pedestrian Pallet Stacker  
Capacity: 1.2 t

PB

Series 6139



**ER15**  
Pedestrian Pallet Reach Stacker  
Capacity: 1.5 t

PB

Series 8907

- AP: Foldable platform
- AS: Lateral load arms (straddle version)
- C: Compact
- D: Double stacking
- FP: Fixed platform, front position
- HP: High performance
- i: initial lift
- L: Pallet Stacker

- ML: Pallet Stacker (light range)
- MM: Pallet Stacker (light range, monomast)
- R: Sit-on
- S: Stand-on
- SF: Stand-on front position
- SP: Fixed platform
- W: Wide version

- PB** Available with Lead Acid Batteries
- ION** Available with Lithium-ION Batteries
- H2** Available with H2 Technology

- Performance Plus
- Performance
- Value



# ORDER PICKING

## Order Pickers



**N16 Li**  
Low-level Order Picker  
Capacity: 1.6 t

Series 1115

**PB** **ION**



**N20 C L**  
Low-level Order Picker,  
Man-up  
Capacity: 2.0 t

Series 4590

**PB** **ION**



**N20 C LX**  
Low-level Order Picker,  
Man-up  
Capacity: 2.0 t

Series 4590

**PB** **ION**



**N20 D**  
Low-level Order Picker  
Capacity: 2.0 t  
Variants: HP

Series 1115

**PB** **ION**



**N20 XL**  
Low-level Order Picker  
Capacity: 2.0 t

Series 1115

**PB** **ION**



**N20-N25**  
Low-level Order Picker  
Capacity: 2.0 t - 2.5 t  
Variants: B, HP

Series 1115

**PB** **ION**



**N20-N25 C (HP)**  
Low-level Order Picker,  
Man-up  
Capacity: 2.0 t - 2.5 t  
Variants: B, HP

Series 4587

**PB** **ION**



**V08-01-02**  
Low-level Order Picker,  
Man-up  
Capacity: 0.7 t - 1.0 t

Series 4594

**PB** **ION**



**V10**  
Mid-level Order  
Picker, Man-up  
Capacity: 1.0 t

Series 5021

**PB** **ION**



**V Modular B**  
High/Mid-level  
Order Picker, Man-up  
Capacity: 1.2 t

Series 5214

**PB** **ION**



**MV01**  
Light Low-level  
Order Picker, Man-up  
Capacity: 90kg on  
tray, 100kg on base

Series 8905

**ION**



**N20-N24**  
Low-level Order Picker  
Capacity: 2.0 t - 2.4 t  
Variants: HP

Series 1159

**PB** **ION**



**V15**  
Mid-level Order Picker,  
Man-up  
Capacity: 1.3 t

Series 5215

**PB**

**B:** Best value  
**C:** Compact  
**D:** Double stacking  
**HP:** High performance  
**i:** initial lift  
**L:** Low lift

**LoL:** Long load arms  
**LX:** Scissor lift  
**MV:** Multi Function Vehicle  
**N:** Ground-Level Order Picker  
**V:** Lifiable driver compartment  
**V:** Medium- and High-Level Order Picker

**PB** Available with Lead Acid Batteries  
**ION** Available with Lithium-ION Batteries  
**H2** Available with H2 Technology

**Performance Plus**  
**Performance**



Members of **KION**  
GROUP

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