

INTRALOGISTICS

**OUR SOLUTION
FOR YOUR BUSINESS**

A leader in intralogistics.

We are by your side – worldwide.



• Our own direct sales companies in 40 countries.

○ Partner companies in over 70 other countries.

Over 17,000 employees.

• More than 5,000 after-sales service engineers worldwide.

Founded in 1953, Jungheinrich is one of the world's leading intralogistics solution providers. With a comprehensive portfolio of industrial trucks, logistics systems and services, we offer tailor-made solutions that allow you to concentrate on your core business giving you peace of mind. With our unique direct sales and service network, you have a reliable partner at your side, any time and anywhere in the world.

Complete intralogistics from a single source.

This is how we move industries.

Logistics keeps the world in flux, and intralogistics processes are a significant part of it. An effective and highly efficient in-house flow of goods is now one of the most important factors in making any company competitive.

That's why we devote all our passion to intralogistics. We make sure you get the most economical solutions for your needs, whatever the sector or company size.

This catalogue gives you an overview of our unique portfolio of products, systems and services. And you'll learn more about how we think and work to make your intralogistics processes efficient, flexible and sustainable.

New trucks & special build: Lifting, stacking, transporting, order picking – electrically, by combustion engine or by hand? We have the right trucks in our product portfolio for you.

Rental & finance: Whether short-term, long-term rental or financing – we offer you individual solutions that are tailored exactly to your needs and that guarantee you maximum flexibility and financial independence.

Used trucks: With our JUNGSTARS, you benefit from used trucks that are among the best in the market. They are reconditioned to the highest quality standards and delivered with a 12-month warranty – just like a new forklift truck.

Energy: To ensure the efficient use of energy, we are the only supplier of trucks, batteries and chargers as a complete system from a single source.

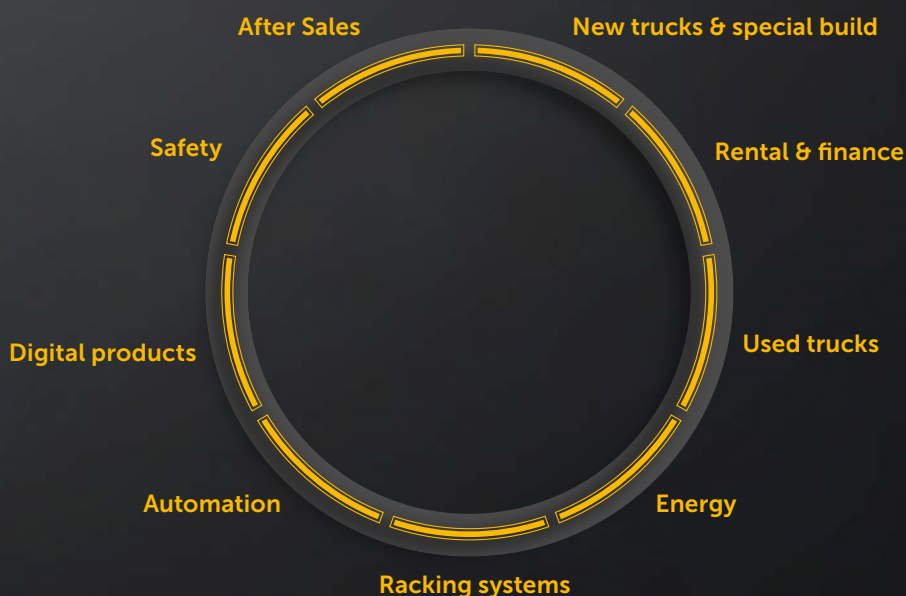
Racking systems: As a full-service provider, we can find the optimum racking solution for you – from static to dynamic racking systems to complex automated storage systems.

Automation: Systems with optimum automation levels take the efficiency and performance of your warehouse to a whole new level. We guarantee the highest process reliability. From planning through implementation to service and support.

Digital products: Digitalisation is also the key to success in intralogistics. This is based on the intelligent networking of the warehouse. With our digital products we support you in the transition from analog to digital and bring Industry 4.0 into your warehouse.

Safety: We help to protect people, goods, warehouse equipment, machines and data with a variety of safety options and assistance systems. This gives you 360° protection for all areas of your warehouse.

After Sales: The smooth operation of your intralogistics solution is our top priority. That is why we offer reliable support worldwide for your trucks and systems with more than 5,000 qualified after-sales service engineers. This means we can be on-site with you within a very short time and restore the availability of your trucks and systems.



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**Simple
answers
for a
complex world.**

**It tastes good anywhere
in the world: the potato. But the journey
from the field to the plate is
more intricate than you might think.**

1.4t

potatoes can be stored with a single truck load.

280

potato nets per load can be transported by an electric low lift truck directly from the lorry to the supermarket shelf.



15

runs are necessary to unload a whole truck full of potatoes.

Fields for spuds.

**From the field to our plates,
the potato has a busy life.
Jungheinrich's intralogistics play
a large part in this process.**

➤ The Incas first discovered the tasty spud, until finally the Spanish conquerors brought it to Europe at the beginning of the 16th century. From there, the potato became a huge success, conquering the world. Rich in vitamins and nutrients, low in calories, filling and delicious – each person in the world consumes on average 35 kilograms of potato products a year. The Poles are the world champions when it comes to potato food, at 115 kilos a year.

Most of the 380 million tons of potatoes that are dug out of the earth each year are delivered by the farmers directly to a middleman. The middleman stores the potatoes, packs and distributes them. Alternatively, he sells the spuds to the producers of potato products, such as French fries,

dumpling dough or similar. Peak activity in the potato market in Central Europe is from May to October, when crops are harvested.

EASY TO RENT

Seasonality brings both advantages and disadvantages for many companies. On the one hand, they can concentrate their forces when they are needed. On the other hand, purchasing a new forklift truck to process the potatoes shipped in large boxes from the field is often not worthwhile. But there are two alternatives. One is a "JUNGSTAR". At Jungheinrich there are about 60,000 used forklift trucks to choose from, which, after careful reprocessing, are in top condition to use in agricultural

01
In the field the tractor is still king, afterwards Jungheinrich forklift trucks take over transport tasks.

02
Harvesters separate the noble spud from the weeds.

03
Electric forklift trucks load the potatoes in boxes of up to 700 kg.



01



02



03

production. And this is also confirmed with a 12-month warranty. Those who like it even more flexible resort to alternative two: renting. A simple phone call suffices. The forklift truck arrives in no time, wherever it is needed. This is ensured by one of the largest rental forklift fleets in the world, with as many as 200,000 trucks.

Speed also matters when it comes to storing sensitive spuds in warehouses cooled to temperatures between four and eight degrees. This is the only way the goods can land fresh on the plate months after harvest. Jungheinrich electric forklifts actively support this. In order for this to be as energy-efficient as possible, they use, among other things, regenerative braking, which recycles 30 percent of the energy generated during deceleration to the batteries.

EASY TO WORK WITH

Anyone who has ever been to a harvest or has watched one, knows that both man and material are required in equal measure. Ergonomics and ease of use also count when it comes to choosing equipment. Jungheinrich forklift trucks enjoy a strong reputation among drivers because their controls can be adjusted in no time to any body size and driver type. After the goods have been sorted, washed, polished,

4-8 °C
is the optimal
storage
temperature
of potatoes.

electronically read and packaged, they must be loaded on pallets in trucks. Thanks to their manoeuvrability, electric forklift trucks master this task easily, even in confined spaces. They increasingly draw their power from lithium-ion batteries. These last three times longer than conventional batteries, are completely maintenance-free and even in the most rugged conditions still have enough energy for the final harvest push.

EASY FOR EVERYONE

The Jungheinrich lifting and transport capacities are also in demand in retail applications. For example, when the spud is unloaded, transported to the supermarket shelf and displayed in the shop. Here, lean solutions are needed, such as the Jungheinrich EJE electric low lift truck, with which pallets can be easily unloaded from the truck and manoeuvred nimbly in the narrow loading lanes without causing interference. That's why intuitively simple and safe operation of electric pallet trucks in the trade is the holy grail.

Finally the customer gets his turn – after buying the potatoes, he has to carry them home without any help and prepare them at leisure. And simply enjoy.



Jungheinrich lithium-ion batteries are completely maintenance-free and offer maximum performance.

04
The operator position of an electric forklift truck. Here, ergonomics is key.

05
Thanks to the attachment, the forks of this electric forklift truck can be tilted to dispense the goods.

06
Easy handling is key on pallet trucks.

07
Packing in networks for direct sale.

08
Jungheinrich pallet truck with on-board charger for fast intermediate loading.

09
When it comes to unloading, ease of use and high maneuverability of the pallet truck are key factors.

10
After a long journey, the potato is ready for the customer.

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EFG

PALLET TRUCKS ▶ from page 46
EJE | ERE | ESE

ENERGY ▶ from page 90
LITHIUM ION





Trust in solid connections.

**In production every
bolt is vital.
Logistics chains must therefore
be 100 % reliable.**

12

kilos of bolts,
nuts and washers
are contained
in an average-
sized car.

2,000

Newton/mm² is the
tensile strength of high
performance automotive
and aerospace bolts



50

kilos per container
are easily transported
in an automatic
conveyor system.

A fixed entity.

A car and more than 1,000 bolts: Intelligent logistics is required to enable just-in-time to bring together everything that needs to come together.

→ Bolts have been used for over 2,000 years. In ancient Greece, Archimedes (287 to 212 BC), one of the greatest engineers in history, used the principle of the bolt for a water lifting plant. He successfully made the thread out of wood. This allowed the people to irrigate their fields in a reliable manner. As a fastener and connector, as we know it, the bolt has been used for more than 500 years. Johannes Gutenberg, the inventor of modern letterpress printing, used these minor miracles, for example, in his printing presses. In this way, they helped to write the history of technology and culture and disrupt the old world.

Nowadays, bolts made from a wide range of materials, from metal to wood, have become indispensable in everyday life. Because they produce a reliable and

usually releasable connection of two parts. In Germany alone, manufacturers of bolts and rivets generate around four billion Euros in sales each year. For example, an average of more than 1,000 bolts are installed in every car today.

So that the bolts do not become the weakest link in a long chain, industrial manufacturing companies must be able to rely 100 % on transport and warehouse logistics. This is exactly where Jungheinrich comes in as a total solution provider of automated warehouse logistics systems via software interfaces to comprehensive customer service.

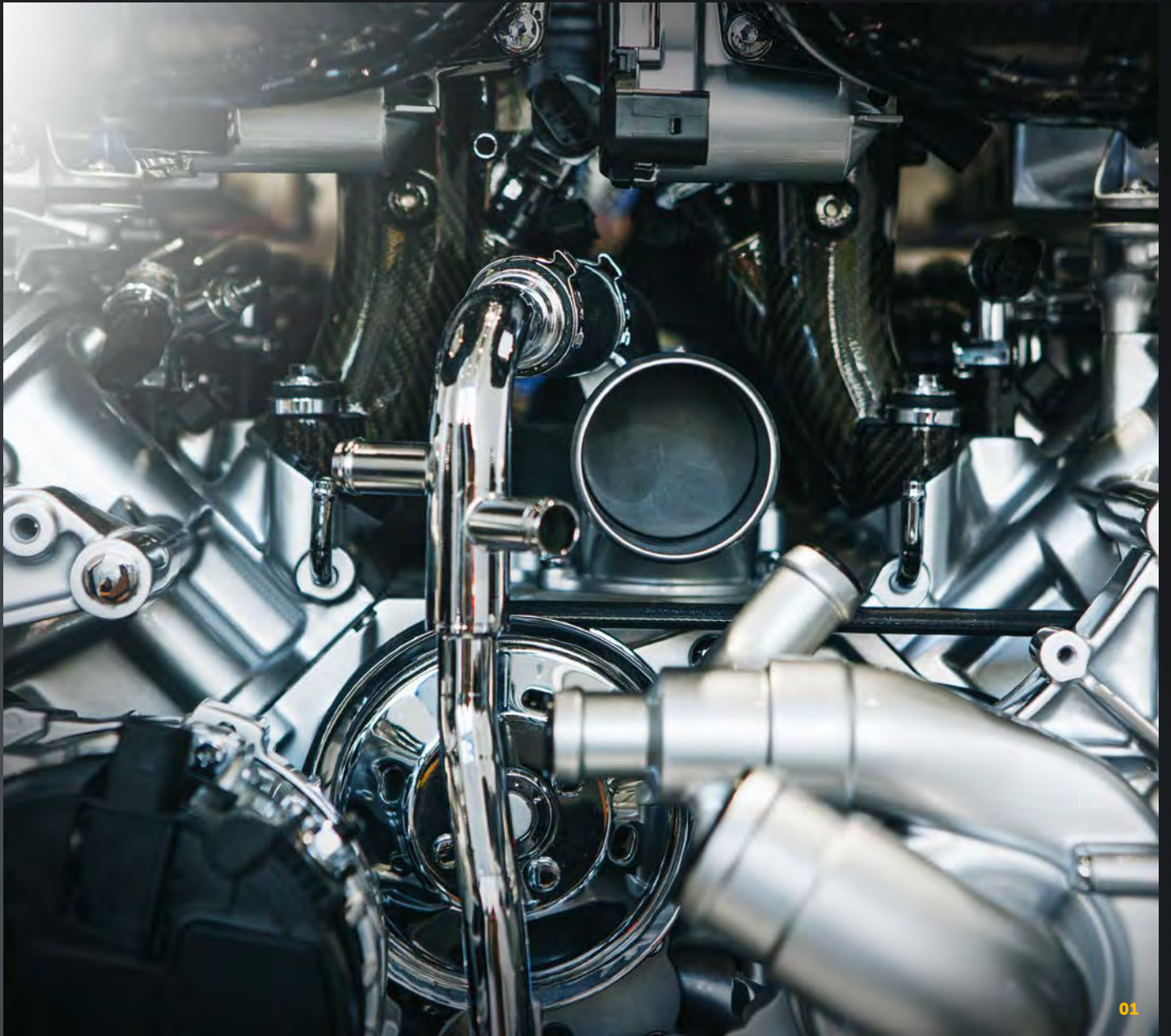
THE WMS IS THE "SUPER BRAIN"

Co-ordinating the timely delivery of thousands of bolts, for example, for the automotive industry, requires a "super brain". This must be able to survey the entire

01
Everything has to interact perfectly for the many parts to become a vehicle.

02
Automation of logistics processes is indispensable for the 24/7 availability of parts and components.

03
Complete transparency over the entire logistics chain in the warehouse: no problem with the Jungheinrich Warehouse Management System.



01



02



03

supply chain and control all necessary processes in the warehouse – such as the Jungheinrich Warehouse Management System (WMS). The task of this intelligent and award-winning software solution is to direct the entire digital interaction in the warehouse orchestra. The WMS maps all processes from goods receipt to goods issue and controls the entire process. Both for very large and tiny parts alike.

Bolts belong to the so-called C-parts, whose value is comparatively low, but which are needed in large quantities. The supply and delivery management of bolts is becoming increasingly complex as response and development times in the industry become shorter and shorter. Even though the speed and the complexity are increasing, the bolts still have to be in the right quantity, at the right time and in the right place at all times in production. The whole thing is maximally efficient, with the lowest possible capital commitment and absolutely reliable.

MATERIAL IN THE KANBAN FLOW

This is precisely what the automotive sector, which is greatly focused on the division of labour, attaches so much importance to. And the more complex the task, the more the systems used must be able to do. Here, the WMS can play to its strengths. For example, in controlling the material flow. The automotive industry mostly relies on the Kanban system developed in Japan (Kanban: Japanese or Chinese for “card”). Two containers always ensure maximum supply reliability and material availability. These are

“The WMS controls the entire process.”

“Used material is immediately replenished.”

each provided with a barcode, NFC or RFID tag with encrypted data on the customer, storage location, article, container, batch and filling quantity. When a defined reporting stock is reached, an order is automatically issued to the customer warehouse at the respective supplier. In this way, used materials are replenished immediately.

HIGH SPEED IN THE AUTOMATIC SMALL PARTS WAREHOUSE

The warehouse management system of the supplier registers the incoming order entry and triggers the provision of the required bolts in the automatic small parts warehouse. These are stored in containers and cartons or on pallets, so that they are ready to ship as soon as possible. High-speed rack operating devices and conveyor technology ensure additional speed, transporting the bolt containers to the picking station at lightning speed. And if, with so much high technology in the automatic small parts warehouse, something breaks down, a service technician can be reached at any time. Production will therefore not stop because of a missing bolt.

After picking by an operator at the terminal, the requested bolts are consolidated and packaged. They are then also booked out of the Warehouse Management System and can be loaded onto the lorry. The lorry brings the bolts to the production site, where they are driven seamlessly just-in-time into the assembly process via automated guided vehicles. Once applied, the majority remain invisible behind panels, trims and covers in the car.

04

Small parts logistics at the highest technical level.

05

As the system runs, a human always has full control.

06

Automated guided vehicles keep production running 24/7.

07

Always the right bolt, at the right time, in the right place – this is how assembly works today.

08

The automotive industry relies on “just-in-time” in its production lines.

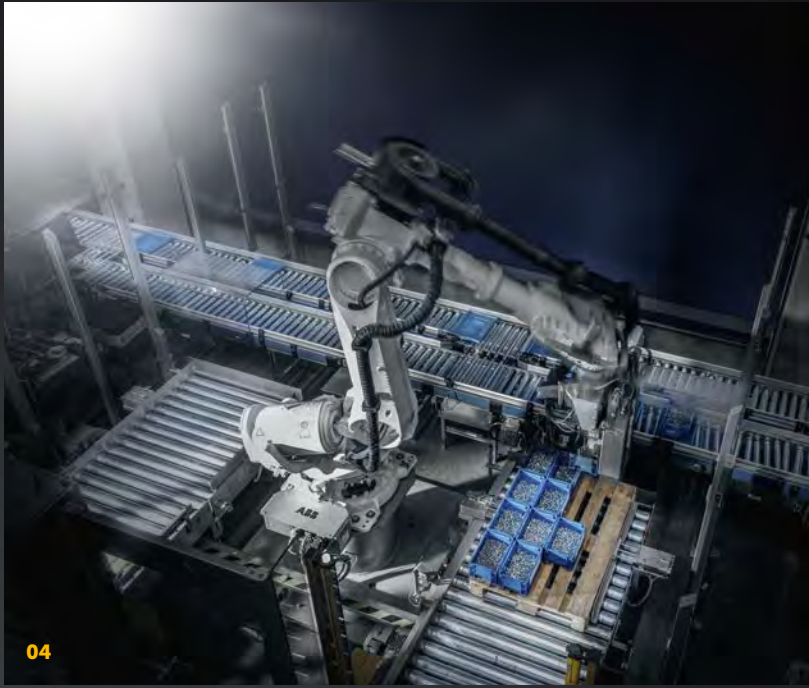
09

Perfectly bolted, goal achieved: reliable cars for safe driving pleasure.

PRODUCT FINDER

AUTOMATION ▶ from page 104
**AUTOMATIC SMALL PARTS
 WAREHOUSES | CONVEYOR
 SYSTEMS | AGVs**

DIGITAL PRODUCTS ▶ from page 116
WMS





Cheers to efficient processes.

When it comes to beer, the 500-year-old German Beer Purity Law is the measure of all things. Logistics, on the other hand, is state-of-the-art.

40

beer crates can be raised by a forklift truck with a Europallet. This corresponds to 800 kg in total.

5

minutes is what it takes for a forklift truck to load a beer truck in a brewery with four pallets of full stock.



30

pallets per hour is the average turnover of a brewery forklift.

A tasty tradition.

From hop growing to the final barrel delivery: Beer lives on its traditions and well-rehearsed fermentation and brewing processes.

➤ Na zdraví, sláinte or Prost: This is how it is said when the top three in global beer consumption – the Czechs, Irish and Germans – toast their well-being. Each year, around 157 litres per capita are consumed by beer lovers in the Czech Republic, 131 litres by the singing and drinking Irish and 116 litres by the Germans. The latter claim to have raised the enjoyment of beer to a high level of quality at a very early stage. The German Purity Law of 1516, which is valued worldwide and regarded by many as the first consumer protection act, contributed significantly to this.

Demand certainly appears to have been high over 500 years ago. Ancient writings tell of intoxicating henbloods, eggs, pitch, chalk, toadstool or ox gall which are said to have been turned into

beer. This must have tasted horrible and in the worst case toxic, sometimes even fatal. Fortunately, the Purity Law put an end to such adulteration and instead opted for an absolutely puristic “four wins” principle: Hops, yeast, malt and water – nothing else is allowed in the beer.

TRADITION WITH MODERNITY

The Purity Law combines tradition and perfect craftsmanship and also sets the guidelines for the creative development of beers and new brewing technology. This, of course, also applies to the logistics around the brewing industry, which has long since evolved from haulier transport to an innovative beer value chain. The family-owned company Jungheinrich has

01
Hops belong to the hemp family and are cultivated every year from March on scaffolding plants.

02
The hops are dried in an “oast”.

03
170 kilograms of hops are needed to produce 10,000 litres of beer.



01



02



03

been a partner of the beer industry for many decades, which has consistently developed this value chain for and with its customers. In the beverage industry, speed and flexibility are becoming more and more important due to ever shorter ordering processes. And all this while at the same time meeting the highest standards for perfect cleanliness and freedom from emissions, which is essential in the sensitive and strictly monitored hygienic areas of food production. The ingredients – such as hops in fresh, dried or extract form – are delivered by truck to the brewery, where they are collected by electric forklifts or electric pallet trucks to be transported and provided for further processing in the various stages of the process.

AS BEFORE

The brewing process still follows a traditional pattern with three to six weeks of fermentation in the brewing kettle. When it comes to monitoring and controlling the fermentation process however, digitised measuring and testing technology today support the master brewers. But in the end everything reverts to tradition: The master brewer must declare the brew to be good before it migrates to the bottling plant after a possible interim filtration for the characteristic golden yellow beer colour. Here, the beer is automatically filled into bottles and barrels. Incidentally: the appearance of beer containers has changed little over the centuries. Only that nowadays the “wooden barrels” on closer inspection tend to be made of aluminium or stainless steel.

It has to be pure.

In

1516

Dukes Wilhelm IV and Louis X introduced the Bavarian Purity Law.

4

ingredients (hops, malt, yeast and pure water) are enough to create an almost limitless variety of brews.

51,500

hectares are used to grow hops worldwide. This equates to an area of 72,145 football fields.

After bottling, the barley juice must be temporarily stored on the lorry until it is loaded. When it comes to selecting the type and number of forklift trucks or pallet trucks, flexible solutions are particularly in demand: After all, the beverage industry is always subject to major seasonal fluctuations. When summers are dry and hot or a major football tournament such as the World Cup or the European Championships is taking place, the thirst for beer and demand for all types of beer increase.

FLEXIBLE SOLUTION

To ensure that the supply of beer never runs dry, many breweries rely on flexible fleet solutions in their logistics processes. Jungheinrich has an extensive fleet of rental trucks ready for this, which enable brewery customers to react to seasonal peaks and demand fluctuations as needed. This helps to control and reduce costs. On the other hand, these trucks can

be easily exchanged if the logistic process changes. As a further advantage, cost-conscious brewers appreciate short repair response times for their reliable transport helpers, regardless of whether they are rented or bought. Expensive downtime should be avoided at all costs. Thanks to intelligent one-stop solutions, this is also a thing of the past in a partnership with Jungheinrich.

The many varieties of beer – loaded onto lorries – now quickly make their way into the pubs and beverage markets of the world. And there it is brought a step closer to consumers with pallet trucks. Because the thirst for beer is not easily satisfied in the world – that too is traditionally proven.

04
The master brewer is a “master of beer”: His knowledge and experience determine the quality.

05
Also part of the purity law: hygiene in the boiler is a top priority.

06
The bottle is the measure of things: full operation in the bottling plant.

07
Thanks to flexible rental solutions always the right truck on site.

08
The forklift trucks perform heavy work during loading.

09
At the end of the beverage logistics process comes the delectation.

PRODUCT FINDER

ELECTRIC COUNTERBALANCED TRUCKS ▶ from page 66
EFG

HAND PALLET TRUCKS ▶ from page 42
AM | AMW | AMX

PALLET TRUCKS ▶ from page 46
EJE | ERE | ESE





When the interplay is perfect.

Football inspires big and small.
Intelligent intralogistics
plays an important part.

6 m/s

and above is the speed
of a stacker crane to
pick up an order like
this ball.

7

times a ball is
moved from
production to
shipping on
average.



345

footballs stacked on
top of each other equals
the maximum height
of a high-bay warehouse.

When the round has to go into the square.

When a football is ordered, things have to move fast. What is required is perfect logistics team play.

➤ To celebrate like Antoine Griezmann, Kylian Mbappé or Paul Pogba: France's Équipe Tricolore scorers at the World Cup final are the revered heroes of many little kickers around the globe. For the competition on the street to be as close to reality as the World Cup final, many budding football stars request the original "Telstar" World Cup ball. Its predecessor "Brazuca", with which Germany won the World Cup in 2014, sold more than 14 million copies worldwide.

PLASTIC INSTEAD OF PIG'S BLADDER

Today, a football is no longer made of leather-covered pig's bladder, as it was in the early days of the sport about 150 years ago. The current World Cup balls are mainly produced in Asia from plastic. Thanks to

constant optimisation and ongoing development, they are nowadays true high-tech products – and a great deal of technology is involved even when it comes to buying.

Because many of the balls are no longer sold in the store, but ordered on the Internet. Obviously, after major finals, such as in Russia, delivery within a very short time places the highest demands on logistics. The young clientèle is not known for its patience. They want to celebrate right away. The speed of the sophisticated logistics processes is therefore breathtaking: nowadays, the goods sometimes reach the customers on the same day as the order. This is only possible when you have a tactically sophisticated, highly automated process in which all logistics

01
From the moment the customer places an order in the eShop, the supply chain gets going right away.

02
In the automatic small parts warehouse, the rack operating device removes the ordered goods.

03
The Jungheinrich Warehouse Management System has everything under control.



01



02



03

players work together as perfectly as a professional team. As a total solution provider, Jungheinrich has considerable advantages in terms of deployment and its team potential.

LINE-UP AND KICK OFF IN THE NETWORK

The match analysis shows how the dream of a World Cup ball becomes reality: Mum or Dad, who order the football after extensive browsing through the online shop, usually kick off the game. When they click on the buy button a complex machinery is set in motion in the background. The flow of goods and data is synchronised – in breathtaking speed with many consecutive actions in real time.

First, the order goes directly to the warehouse via the ERP system of the online retailer. There, the Jungheinrich Warehouse Management System (WMS) takes over direction. The award-winning software solution always keeps track of everything from goods receipt to outgoing goods and controls all processes in the warehouse in the style of the best playmaker.

LIKE A FOOTBALL TEAM

Online retailers are interested in optimum cube utilisation through space-saving storage with 24/7 availability and therefore rely mostly on individual automatic small parts warehouses. Due to their short access times and the high throughput, these

“The goods and data flow are synchronised.”

guarantee the fastest possible readiness for dispatch for all items. Behind this lies sophisticated technology playing at a similar or even higher level than Messi and Ronaldo: It starts with the dream football usually being stored in a container. It is retrieved by rack operating devices as per the instructions of the WMS and brought to the order picking station via automatic conveyor technology. This requires, as on the field, an instinctive understanding of all system components.

The football is given the customer data of the little kicker (or the mum or dad) and is then passed on to the next teammate. Arranged by destination, it is transported to the next conveyor system, which – under the guidance of the WMS playmaker – brings the ordered items to the packing station. Here, the round object for the first time is made into a square, that is to say, the football is packed in a package. Now comes the address label of the mini star. And then through a conveyor or a chute towards goods issue.

THE CROWD GO WILD

The truck is already waiting there, bringing the football to the parcel distribution centre in a flash or delivering it directly to its destination. At the latest, when the delivery person rings at the door, the child's anticipation becomes sheer delight. The long-awaited football has arrived! Off to the football field – where the other hungry world champions are also eagerly waiting.

“The WMS is the playmaker in the warehouse.”

04
Regular maintenance prevents downtime in the automatic small parts warehouse.

05
Reliable picking processes thanks to Jungheinrich system components.

06
After order picking, the parcels set off for goods issue.

07
The loading area for transporting to the distribution centres.

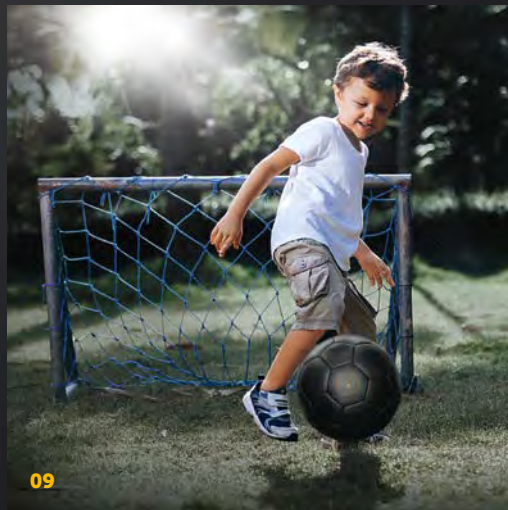
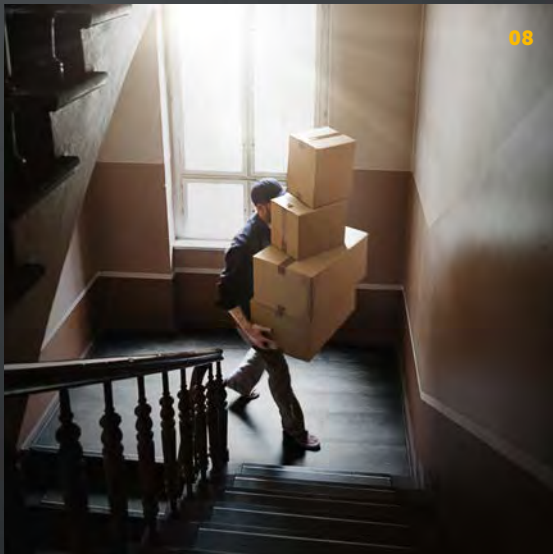
08
Logistics right up to the flat door: In e-commerce, this is almost always part of the service.

09
Having reached the destination, the next phase of the teamplay begins.

PRODUCT FINDER

AUTOMATION ▶ from page 104
AUTOMATIC SMALL PARTS
WAREHOUSES | AUTOMATIC
PALLET WAREHOUSES |
CONVEYOR TECHNOLOGY

DIGITAL PRODUCTS ▶ from page 116
WMS





Moving paper means moving people.

**Books inspire and educate. However,
there is a long journey from production
to the pleasure of reading.**

57.9

percent is
the recycling rate
of paper.

22

A fountain pen and a yellow pencil are shown resting on a dark notebook. The pen is silver and black, and the pencil is yellow with a black eraser. The notebook has some faint handwriting on it.

minutes is how long
a paper roll lasts
in the press. A forklift
truck then provides
replenishment.

3,000

different types
of paper are produced
worldwide.

The stuff of stories.

Despite digitalisation, printed material remains highly popular with readers. Books are as individual as the logistics behind them.

→ A goose walking proudly, puffing out its chest, a chick curiously craning its beak in the sky, a hare resting, stretched out at full length: 4,000 years ago, the ancient Egyptians were already scribbling their view of the world in the form of hieroglyphics individually on papyrus scrolls – unique pieces for stately use. These pre- and early-historical “comics” were the ancestors of our books, which continue to captivate people around the globe year after year. The Bible has been printed over three billion times, the adventures of Harry Potter 325 million times and every year in Germany alone there are about 90,000 new book publications. In other words, something to suit every desire and interest.

INDIVIDUAL INGREDIENTS

The story of a book starts with the basic constituent of the paper: the wood. It consists of cellulose, hemicellulose and lignin. Depending on the tree species, the wood fibres have individual properties that can be used to produce a wide variety of paper types. For more than a decade however, man has used more recycled paper than fresh wood fibres, especially in Europe. And while heavy semi-trailers still take over the overland transport of raw materials, the essential transport tasks within a paper mill are carried out by forklift trucks of various designs. The paper industry is increasingly embarking along the path of sustainability in its intralogistics. For example, by the increasing use of lithium-ion technology, which contributes significantly to reducing the CO₂ balance.

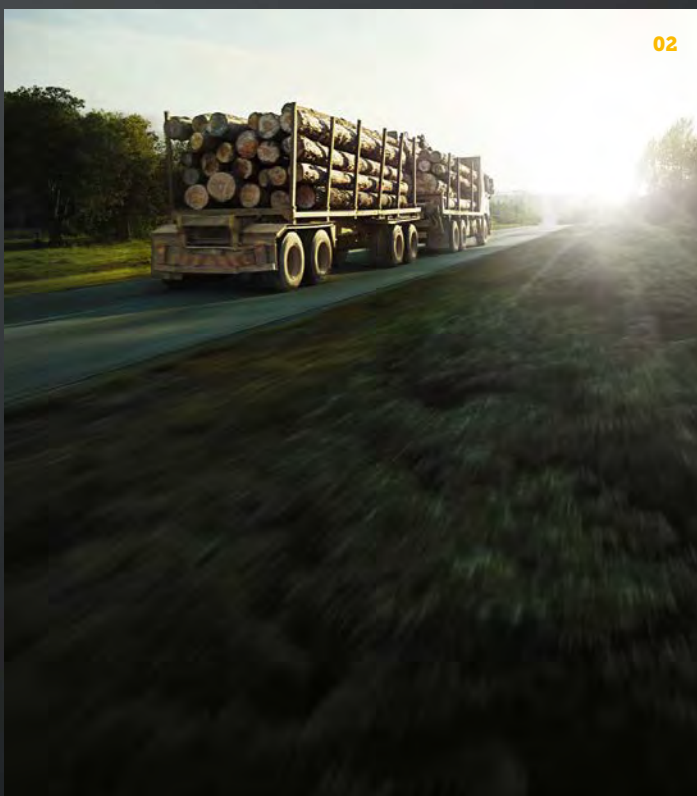
01
Responsibly managed, wood is a sustainable, constantly renewing resource.

02
Sustainable forestry means only removing as much wood as you can regrow.

03
In industrial paper-making, in addition to wood, waste paper and other cellulosic materials are processed.



01



02

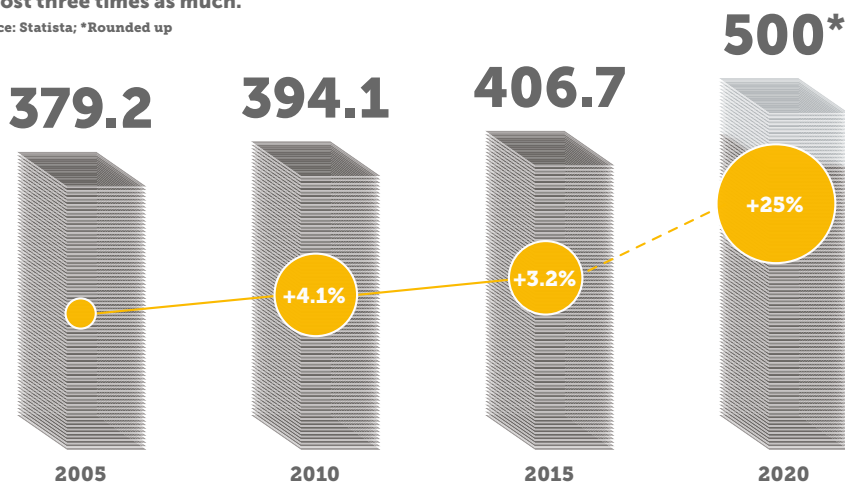


03

Worldwide production volume of paper and cardboard in millions of tons.

Even in times of digitisation, paper consumption is steadily increasing as opposed to decreasing. In 1970, 130 million tons of paper were produced worldwide, 35 years later it was almost three times as much.

Source: Statista; *Rounded up



PATIENT PAPER

In paper production, the finely minced raw materials are first boiled or ground in water, depending on the type of production. The resulting pulp is also called groundwood. This is then poured onto a large sieve and evenly distributed. Using steel and rubber presses, the water is removed from the pulp. Before steel rollers press the final paper, mineral fillers such as kaolin, talc and calcium carbonate are added. They ensure that the paper becomes smoother, whiter and more printable. Then the finished pressed paper is cut to different sizes and supplied in huge rolls or to a lesser extent as paper sheets for the printing industry.

Special transport solutions are needed even for transport to the printers. In collaboration with the paper industry, Jungheinrich has developed a range of special build solutions. These solutions range from electric tow tractors with a plough blade based on the snow plough model to collect paper leftovers after cutting, to vehicles that can collect the

man-high paper rolls via a mandrel or tub. The solutions are as varied as the number of different types of paper. Once the paper is in the machine, printing can begin, for example in a web offset press. To change the printing plates and start a new product, nowadays the machine does not even have to be stopped. At this speed of work, the ideal transport solutions for paper replenishment also play a decisive role. These are as individual as the printed products themselves.

TREASURE BOOK OF KNOWLEDGE

At the end of the logistics chain of the finished printed book are the specialist retailers or an online shop. Here too, Jungheinrich forklift trucks are sought-after helpers in the warehouses and shelves. Especially when printed matter needs to be brought to the people quickly. From being inspired by a cookbook to experiencing an exciting story of ancient Egypt, the possibilities are endless.

04
Chopped wood and waste paper are the basic materials of the paper.

05
The paper is pressed from cooked, ground-wood pulp.

06
The raw material is constantly checked by experts.

07
Jungheinrich trucks keep the paper rolls ready for printing.

08
Jungheinrich also offers trucks specially designed for printing tools.

09
Paper sheets are adjusted by hand at the press.

10
The print product comes out of the machines perfectly cut and sorted.

11
The joy of books and stationery remains unabated.

PRODUCT FINDER

ELECTRIC COUNTERBALANCED TRUCKS ▶ from page 66

EFG

SPECIAL BUILD ▶ from page 84

ENERGY ▶ from page 90

LITHIUM ION



The whole range of intralogistics in view.



CONSULTING

Together for the best overall solution.

40–41

First-class technical know-how combined with in-depth industry knowledge and unique process know-how enables holistic consulting. Our aim: To always find the products, systems and services that best fit your needs.

INDUSTRIAL TRUCKS

Easy manoeuvring with heavy loads.

Hand pallet trucks
42–45

Electric pallet trucks
46–49

Electric stacker trucks
50–53

Low level order pickers
54–57

Medium/high level order pickers
58–61

Electric tow tractors & trailers
62–65

Electric forklift truck
66–69

Diesel & gas forklift trucks
70–73

Reach trucks
74–77

High rack stackers
78–81

Rack shuttles
82–83

Special build
84–85

RENTAL & FINANCE

Power on demand.

86–87

Rental solutions for every requirement. With over 60,000 trucks available worldwide.

USED TRUCKS

As Jungheinrich as new.

88–89

JUNGSTARS are used trucks at 5-star quality.

ENERGY

Packing a whole lot of power.

Lithium-ion batteries & warranties
90–91

Lead-acid batteries
92

Chargers
93

Energy management
94

Diesel & fuel gas
95



SYSTEM PROVIDER

**System provider
with experience.**

102–103

We optimise the flow of goods for you – for highly efficient warehousing processes.

SAFETY

**Everything safely
under control.**

96–97

Our 360° protection for the five risk areas in the warehouse: People, goods, storage facilities, machinery and data.

RACKING SYSTEMS

**The backbone of
your warehouse.**

98–101

Future-proof planned warehouses that not only bear loads but also withstand changes.

AUTOMATION

**Efficiency
in motion.**

Automation process
104–105

Automatic small parts
warehouses
106–107

Automated pallet
warehouses
108–109

Conveyor technology
110–111

Automated guided
vehicles
112–113

Order picking &
palletisation
114–115

DIGITAL PRODUCTS

Intelligent networking.

Warehouse Management Systems
116–117

Radio data & system components
118–119

Fleet management
120–121

AFTER SALES

Always by your side.
122–125

In the increasingly complex world of intralogistics you can rely on a fixed constant: Our strong team in after sales service and support.

Together for the best overall solution.

Products and services must match your requirements precisely. That is why we combine excellent technical know-how and process knowledge with in-depth knowledge of the sector.

Each industry, company and warehouse has its own unique features, for which there are rarely off-the-peg solutions. As a company that can provide not only process consulting but also the right products, systems and services, we have made it our business to work with you to get the most out of your intralogistics processes. We benefit from our many years of worldwide experience in numerous industries. This allows us to adapt to your specific requirements and individual goals. Whether you want to take your throughput to a new level, increase efficiency,

relieve em-

“The best solution is always an individual one.”

ployees through automation or provide more security and sustainability in the warehouse: We are the competent partner at your side with a unique portfolio of products and services, and above all, with the passion to create the best individual solution for you.

THE HIGHLIGHTS

- ▶ Sound industry knowledge and international experience.
- ▶ Excellent technical know-how and innovative strength.
- ▶ Individual customer orientation, from regional operations to globally successful companies.
- ▶ Comprehensive consulting services – from goods flow analysis, planning and implementation of logistics systems to safety and energy consulting.



Before we recommend a product, a service or a system solution, we focus on your specific requirements.

Genuine Jungheinrich quality hand pallet trucks.

Reliable and resilient for transporting large loads over short distances and in confined spaces.

THE HIGHLIGHTS

- ▶ Easy to use by anyone without special training.
- ▶ Precise and easy to manoeuvre even in confined spaces due to a short headlength.
- ▶ Comfortable to work with thanks to ergonomic control handle.
- ▶ Particularly robust construction for high durability and fatigue-free operation.
- ▶ Numerous truck types for a wide variety of application scenarios.

SERIES	AM ①	AMW ①	AMX ①	HC
MODEL NAME	22 30 15l V05 G20 I20 I20p	22 22p	10 10e I15 I15p I15e I15ep	110
AISLE WIDTH (MM)	From 1,584	From 1,763	From 1,630	From 2,145
LIFT HEIGHT (MM)	120–390	122	710–714	1,600–3,000
CAPACITY (KG)	500–3,000	2,200	1,000–1,500	1,000

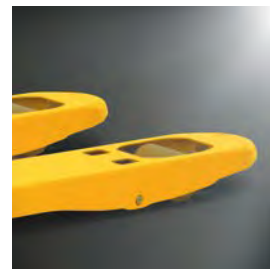
① These models may come with weighing function (p), as inox version (l) or with electro-hydraulics (e).



Maintenance-free hydraulics.



Ergonomic control handle for easy manoeuvring.



Easy sideways lifting of pallets possible due to rounded forks.



Short, compact
and easy
to manoeuvre:
The AM 22,
proven over time.



The **AM 30** can effortlessly move unusually heavy loads.

Ideal for moving display pallets: The **AM V05**.



AM SERIES
22 | 30 | 151 | V05 | G20 | I20 | I20p

The AM series hand pallet trucks are reliable and resilient, as a result of being processed with particularly high-quality materials. They are easy to operate even without previous knowledge.

- ▶ Highly resilient with capacities up to 3,000 kg.
- ▶ Maximum manoeuvrability due to short chassis length.
- ▶ Safe manoeuvring thanks to the ergonomic control handle.



The **AM G20** is perfect for outdoor use.



For pallets with low entry height: The **AM 151** with flat forks.



AMW SERIES 22 | 22p

When weighing and transporting goods, these pallet trucks excel as mobile weighing systems thanks to the "weigher to goods" principle.

- ▶ Maximum productivity thanks to precise weighing system with 2,200 kg weighing capacity for immediate weighing directly at the handling point.



AMX SERIES 10 | 10e | 115 | 115p | 115e | 115ep

If required, the scissor lift trucks are also available in corrosion-resistant inox, where absolute hygiene is required, such as in the food or pharmaceutical industry.

- ▶ Can be used as a lift platform or workbench to allow maximum flexibility.
- ▶ High resistance thanks to corrosion resistance even in humid environments.



HC SERIES 110

Electric hand stacker for occasional stacking operations and loading and unloading of commercial vehicles. Cost-effective alternative compared to trucks with a drive motor.

- ▶ Maximum efficiency thanks to powerful electric lift motor for lift heights up to 3 meters.
- ▶ Time savings through simple and fast charging at the socket.

Electric pallet trucks. Tireless helpers for transport tasks.

Easy-to-use, extremely agile and efficient on short, medium and long-haul routes.

THE HIGHLIGHTS

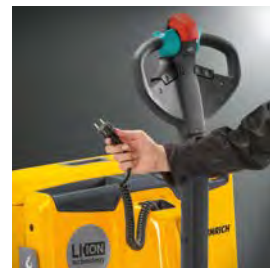
- ▶ Fatigue-free operation with electric drive and outstanding user-friendliness.
- ▶ Powerful three-phase technology for up to 25 % more efficiency.
- ▶ Easy to manoeuvre in the tightest of spaces.
- ▶ Robust construction for fatigue-free operation.
- ▶ 5 truck types, from the M series entry-level models, through the compact EJE 1 to the ESE 5.



Easy and safe to manoeuvre: The safety control handle of the pedestrian trucks.



The electric low lift trucks for medium distances have stand-on platforms.



Intermediate charging at any socket: The integrated charger.

SERIES	SHORT HAUL				MEDIUM HAUL	LONG HAUL
	EJE M	EJE 1	EJE 2	EJE C20		
MODEL NAME	M13 M15	112i 114i 114 116 118 120	222 225 230 235 220r 225r	C20	ERE 1-2 120 125 225 230	ESE 1-5 120 220 320 420 430 533
AISLE WIDTH (MM)	From 1,493	From 1,762	From 1,977	From 2,322	From 1,919	From 2,197
LIFT HEIGHT (MM)	120	122	122	540	122	115-125
CAPACITY (KG)	1,300-1,500	1,200-2,000	2,000-3,500	2,000	2,000-3,000	2,000-3,300
TRAVEL SPEED (KM/H)	5	5-6	6	6	6-14	12.5-20

Individually adaptable:
from the entry level
to the high performance truck.

The ERE 120 offers
four different stand-
on platform versions
for maximum
ergonomics.

Powerful and efficient
drive concept for
maximum productivity.

LI-ION
technology



SHORT HAUL

Compact and easy to operate:
The **EJE 120**.



EJE SERIES M M13 | M15

Trucks are not always required to work across multiple shifts. For lighter and occasional use, our entry-level models are therefore ideal.

- ▶ For occasional use.
- ▶ Maximum manoeuvrability with short front-end length.
- ▶ Easy and fast charging thanks to on-board charger.



EJE SERIES 1 112i | 114i | 114 | 116 | 118 | 120

For transporting goods over short distances and in particularly tight warehouse environments and sales areas.

- ▶ Maximum manoeuvrability with shortest front-end length on the market.
- ▶ Up to 25 % lower energy consumption when compared to the competition.

EJE SERIES 2 220 | 225 | 230 | 235 | 220r | 225r

Effortless, efficient operation even with heavy loads thanks to modern three-phase current technology and outstanding user friendliness.

- ▶ Extremely robust for the toughest applications with heavy loads.



EJE SERIES C C20

Perfectly suitable for use in retail shops with additional mast lift for back-friendly order picking and stacking.

- ▶ With ergonomic picking stroke.

MEDIUM HAUL



Our ERE trucks have many options for energy efficient operation.

ERE SERIES 1-2

120 | 125 | 225 | 230

For loading and unloading trucks, transporting heavy loads and picking various goods. These trucks are perfectly suitable with a folding or fixed stand-on platform.

- ▶ Robust frame for the toughest applications.
- ▶ With 14 km/h the fastest truck on the market.
- ▶ Up to 23% lower energy consumption compared to the competition.
- ▶ Best ergonomics thanks to adjustable, cushioned driver platform.

LONG HAUL



ESE SERIES 1-5

120 | 220 | 320 | 420 | 430 | 533

These electric pallet trucks are side-seaters, the position of the operator is transverse to the direction of travel. This allows maximum visibility and relaxed operation over longer distances.

- ▶ High speed and acceleration values for efficient long-haul transport.
- ▶ Maximum visibility for the operator thanks to lateral seating position.
- ▶ Electric steering for easy manoeuvring of heavy loads with few turns of the steering wheel.

Real packers in the warehouse: Electric stacker trucks.

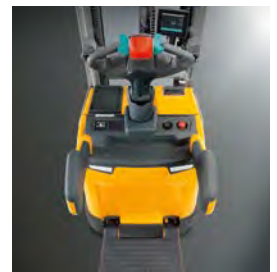
Perfect for storage and retrieval as well as occasional order picking on short, medium and long hauls.

THE HIGHLIGHTS

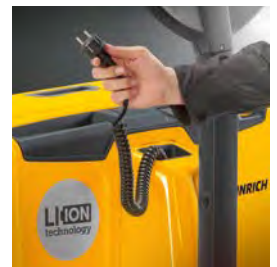
- ▶ High travel performance and throughput thanks to powerful three-phase technology.
- ▶ Longer operating times thanks to battery that can be quickly removed from the side or on-board charger (optional).
- ▶ Particularly robust construction for fatigue-free operation.
- ▶ 10 truck types, ranging from the M series to the compact EJC and the ESD for loads of up to 2 tons.
- ▶ Customisable thanks to numerous options for a wide range of application scenarios.



Easy and safe to manoeuvre: The safety control handle of pedestrian trucks.



Plenty of room for movement for the operator as well: The stand-on platform of the ERC 216z.



Easy intermediate charging thanks to on-board charger.

SERIES	SHORT HAUL						MEDIUM HAUL		LONG HAUL	
	EJC M ①	EMC ①	EJC 1-2 ①	EMD 1	EJD 1-2	EJG 1-2	ERC 2 ①	ERD 1-2	ESC 2-3	ESD 1-2
MODEL NAME	M 10E M 10bE M 10 M 13 ZT	110 B 10	110 112 112z 212 212z 214 214z 216 216z 220 220z B12 B14 B16 B20	115i 118	118 220	106 108 110 112 212 214 216	212 212z 212b 214 214z 214b 216 216z 216b 220 220z 220b	120 220	214 214z 216 216z 316 316z	120 220
LIFT HEIGHT (MM)	1,540-3,300	1,540	2,800-6,000	600-1,520	1,660	2,500-2,800	2,800-2,900	1,660	2,800-2,900	1,660
CAPACITY (KG)	1,000-1,300	1,000	1,000-2,000	1,500-1,800	1,800-2,000	600-1,600	1,200-2,000	2,000	1,400-1,600	2,000
TRAVEL SPEED (KM/H)	5	5	5.5-6	6	6	5.2-6	8-9	9-14	9.1	9.1-12
LIFT SPEED (M/S)	0.22	0.16	0.15-0.25	0.3	0.25-0.3	0.2-0.25	0.18-0.25	0.32	0.23-0.24	0.22-0.39

① These models are available with Duplex mast (ZT), Monomast (E), support arm lift (z) or as wide track version (B).

Enhanced safety thanks to 3-sided protection and fixed platform

Extremely compact and highly manoeuvrable thanks to fully integrated lithium-ion battery.

Optimum energy efficiency for extremely long service life thanks to lithium-ion technology.

LI-ION
technology



EJC SERIES M **M10E | M10bE | M10 | M13 ZT**

The entry-level models for low-intensity, lightweight stacking tasks.

- ▶ For occasional short assignments.
- ▶ Maximum manoeuvrability even in tight environments.
- ▶ Fast and easy charging thanks to on-board charger.



EMC SERIES 1 **110 | B 10**

For easy stacking tasks: Performance, ease of use and safety in a single truck.

- ▶ Maximum flexibility thanks to optional use as a work table.
- ▶ Fast and easy charging thanks to on-board charger.

SHORT HAUL



EJC SERIES 1-2 **110 | 112 | 112z**

| 212 | 212z | 214 | 214z | 216 | 216z | 220 | 220z | B12 | B14 | B16 | B20

Maximum performance even for inexperienced operators. With numerous truck options for every purpose and every storage environment.

- ▶ Effortless, efficient operation thanks to electric drive and outstanding user-friendliness.
- ▶ Robust and reliable even under the toughest conditions.

EMD SERIES 1 **115i | 118**

The world's shortest universal forklift in its class, the EMD 115i with integrated lithium-ion battery.

- ▶ Maximum flexibility with integrated support arm lift.
- ▶ Fast and easy charging thanks to on-board charger.



EJD SERIES 1-2 **118 | 220**

These universal trucks combine the capabilities of low lift and stacker trucks.

- ▶ Greater productivity with the inclusion of two pallets in the double deck.

EJG SERIES 1-2 **106 | 108 | 110 | 112** **| 212 | 214 | 216**

With adjustable forks, obstacles are overcome effortlessly.

- ▶ Maximum stability on uneven ground thanks to large load wheels.
- ▶ Maximum manoeuvrability due to small truck length.

MEDIUM HAUL

**ERC SERIES 2**

**212 | 212z | 212b | 214 | 214z | 214b
| 216 | 216z | 216b | 220 | 220z | 220b**

The electric pedestrian controlled truck with a folding or fixed stand-on platform combines the manoeuvrability of a pedestrian stacker with the comfort and speed of a ride-on.

- ▶ Maximum safety thanks to the four-wheel design, cushioned stand-on platform and permanent monitoring of the current load weight to warn of overload.
- ▶ Powerful three-phase technology ensures strong acceleration and high speeds with low consumption.

**ERD SERIES 1-2**

120 | 220

These universal trucks combine the capabilities of electric pallet and stacker trucks. As versatile as they are, they are equally suitable for double-deck loading and unloading of lorries as well as for transporting or stacking goods.

- ▶ Greater productivity by handling two Euro pallets simultaneously in double-deck mode.

LONG HAUL

**ESC SERIES 2-3**

214 | 214z | 216 | 216z | 316 | 316z

Electric sideways seated stackers offer the highest travel and acceleration performance over longer transport routes. With a very narrow width and a short aisle width, the ESC comes to the fore in particular when used in narrow storage areas and operating block bearings.

- ▶ Maximum manoeuvrability through compact dimensions.
- ▶ Powerful, innovative three-phase drive motor for maximum travel and acceleration performance.

ESD SERIES 1-2

120 | 220

Versatile electric ride-on and sideways seated stacker, ideal for lorry double-decker loading.

- ▶ Optimal visibility through side seat position.
- ▶ Greater productivity by handling two Euro pallets simultaneously in double-deck mode.

Low level order pickers for maximum picking performance.

Perfect interaction between man and machine: Intelligent assistance systems and operating concepts make order picking faster and more precise than ever before.

THE HIGHLIGHTS

- ▶ Fast and safe picking from the first rack level up to an order picking height of 5.30 meters.
- ▶ Robust construction for the toughest applications.
- ▶ Optional performance packages for performance improvement.
- ▶ Up to 30% more picks per hour with remote solutions easyPILOT Control and Follow.
- ▶ The perfect, individualised truck for every application scenario.



The perfect workplace with a variety of storage options.



Semi-automatic control of the ECE with easyPILOT.



Height-adjustable jetPILOT multifunction steering for automotive style driving.

SERIES	ECE 2	ECE 3	ECE 3	ECD 3	EKM 202
MODEL NAME	220 225	310	320	320	202
LIFT HEIGHT (MM)	125	750	750	700	3,000
CAPACITY (KG)	2,000–2,500	1,000	2,000	2,000	215
TRAVEL SPEED (KM/H)	9.5–12.5	11.5–12.5	9.5–12.5	9.5–12.5	8
FORK LENGTH (MM)	1,150–2,400	1,150	2,400	2,450	–



Order picking is really simple with easyPILOT: The ECE 225 follows automatically to the next picking station without the operator having to climb or drive.





ECE SERIES 2 220 | 225

Robust horizontal order picker with high level of travel comfort. Ideal for loads up to 2,500 kg.

- ▶ The classic amongst our order pickers. It represents optimal picking performance and balanced energy consumption.



ECE SERIES 3 310

The ECE 310 with ergonomic lift can lift loads up to 1,000 kg to an ergonomic back-friendly order picking height.

- ▶ Optionally with hydraulically raising stand-on platform for secure order picking in the second rack level.

ECE SERIES 3 320

Horizontal order picker with scissor lift for picking in back-friendly height. The fork length allows two pallets to be raised. Loads of up to 2,000 kg can therefore be raised to an ergonomic, back-friendly order picking height.

- ▶ Maximum throughput thanks to high acceleration and speed values.
- ▶ Best energy consumption on the market.

The **EKM 202** replaces the classic ladder up to the third rack level.



ECD SERIES 3 320

The truck can transport a previously picked pallet with its double-length forks on the initial lift, while another pallet is ergonomically picked on the mast lift.

- ▶ Increased throughput thanks to double picking quantity and reduced number of routes to goods issue.



EKM SERIES 2 202

The compact small parts order picker for reach heights up to 5.30 m is used for small quantities of goods, avoiding the need for pallets. The EKM 202 is also perfect for hanging price tags or for minor maintenance work such as changing ceiling lights.

- ▶ Automatic closing doors for maximum safety.
- ▶ Thanks to its compact dimensions, it is ideal for manoeuvring in narrow aisles and passing through low doors.
- ▶ With optional, generously designed and electrically adjustable shelf.

Medium/high level order pickers for picking rates at the highest level.

Optimum interaction between man and machine: Intelligent assistance systems and digital networking bring maximum efficiency and picking performance to your high-bay warehouse.

THE HIGHLIGHTS

- ▶ Fast and safe picking up to an order picking height of more than 14 meters.
- ▶ Numerous operating and assistance systems, safety options and various service packages for even greater efficiency and picking performance.
- ▶ Semi-automatic approach with warehouseNAVIGATION for up to 25 % increase in throughput.
- ▶ The perfect, individualised truck for every application scenario.

SERIES	EKS 1	EKS 2	EKS 4
MODEL NAME	110	210	412s
AISLE WIDTH (MM)	3,039–3,245	From 1,200	From 1,200
ORDER PICKING HEIGHT (MM)	2,800–4,600	7,845	14,325
CAPACITY (KG)	1,000	1,000	1,200
TRAVEL SPEED (KM/H)	9–13	9	12
LIFT SPEED (M/S)	0.15–0.31	0.29–0.31	0.4–0.5



Connection to the warehouse management system with the Jungheinrich logistics interface.



Energy-saving three-phase technology for long periods of use.



The state-of-the-art control panel design of the EKS ensures maximum ergonomics.

The EKS 412s sets standards with maximum picking performance up to 14 meters in height.

Thanks to the integrated warehouseNAVIGATION system, the EKS 412s reaches its destination by the shortest route possible and in no time at all.

High travel and lift acceleration for maximum throughput.

LION
technology



EKS SERIES 1 110

With a travel speed of up to 13 km/h and a platform height of up to 3 meters, this is the ideal order picker for free movement up to the third rack level.

- ▶ Maximum flexibility thanks to order picking heights up to 4,600 mm.
- ▶ Particularly robust with shock-protected drive panel.



EKS SERIES 2 210

The Series 2 order pickers with their narrow frame construction are also intended for use in free-ranging mode in wide aisle warehouses.

- ▶ Maximum flexibility thanks to order picking heights up to 7,845 mm.
- ▶ Ideal for commissioning tasks in wide aisles.

The narrow frame construction of just 900 mm gives the Series 2 maximum manoeuvrability.



Maximum performance
in the narrow aisle
in multi-shift operation
with the **EKS 412s**.

EKS SERIES 4 412s

The Series 4 stands for maximum picking performance and efficiency in narrow aisles up to 14 meters in height. Precise, fast and over the shortest route.

- ▶ Intelligent assistance and personal protection systems for more safety.
- ▶ Optimised operating concept with ergonomic design.
- ▶ Faster lifting and lowering speed for more picks per hour.

Electric tow tractors with trailers for efficient transport tasks.

Electric tow tractors with trailers as tow trains are highly efficient links in logistics and production supply.

THE HIGHLIGHTS

- ▶ Highly efficient due to the simultaneous transport of various loads.
- ▶ Up to 70 % energy savings when used as a tow train compared to forklifts.
- ▶ High towing capacity of up to 28 tons.
- ▶ For every application scenario, the perfect tow tractor with a wide variety of towing capacities and trailers.
- ▶ Competent, individual system consulting – from route planning to connection to control systems.



Thanks to three-phase AC technology, electric tow tractors are emission-free, quiet and powerful.



Comfortable, ergonomically designed and performance-enhancing workplace.



Automotive-style pedal arrangement on the EZS 7280.

SERIES	TILLER OPERATED TOW TRACTOR	RIDE-ON TOW TRACTOR			SIT-DOWN TOW TRACTOR		PLATFORM VEHICLE	TRAILER TOW TRAINS	
	EZS	EZS	EZS	EZS	EZS	EZS	EZW	GTE	GTP
MODEL NAME	010	130	C40	350	570 580 590 5100	7280	515	106 212 312	110 210 216
TOW CAPACITY / LOAD IN KG	1,000	3,000	4,000	5,000	7,000–10,000	28,000	1,500 ①	600–1,200 ①	1,000–1,600 ①
TRAVEL SPEED (KM/H)	5.4–6	9–10.5	8–12.5	8–12.5	7–18	12–25	18	–	–

① This information refers to the load.

Ideal for transporting heavy loads on the airport apron field: the EZS 7280.

With compact dimensions and a large steering angle, it masters even the tightest places.

LI-ION
technology





EZS SERIES 0 010

The versatile mini-hauler is ideal for transporting small loads over short distances and in tight spaces for maximum loads of up to 1 ton.

- ▶ Ergonomic safety tiller arm.
- ▶ Maximum flexibility with the possibility of turning the truck on the spot.
- ▶ Easy and fast charging at any outlet through on-board charger.

EZS SERIES 1 130

With a width of just 600 mm, it is the ideal vehicle for particularly narrow and compact areas. By coupling several trailers, the loading areas can be varied for flexible and economical material handling.

- ▶ Maximum flexibility thanks to the small turning radius.
- ▶ Maximum efficiency thanks to powerful acceleration and high top speed.

EZS SERIES C C40

With its superelastic drive wheel, this versatile tow tractor with 4 tons of towing capacity offers optimum traction even on smooth industrial floors and uneven floors outdoors.

- ▶ Increased ground clearance for comfortable driving on uneven ground.



EZS SERIES 3 350

The high-performance EZS 350 electric tow tractor features a robust design for the toughest applications with tow loads up to 5 tons.

- ▶ Maximum safety when cornering thanks to the curveCONTROL steering angle-dependent assistance system.
- ▶ Outstanding handling and ergonomics.
- ▶ Maximum efficiency thanks to powerful acceleration and high top speed.



EZS SERIES 7 7280

With its enormous pulling power of 28 tons, the EZS 7280 comes into its own when transporting heavy loads over long distances and especially on ramps.

- ▶ Safe travel through automatic parking brake and hill start assist.
- ▶ Maximum flexibility thanks to small turning radius for tight spaces.
- ▶ Ergonomic cab.

EZS SERIES 5 570 | 580 | 590 | 5100

With their superelastic tyres these vehicles are suitable for indoor and outdoor use and pull heavy trailers up to 10 tons total weight.

- ▶ Maximum efficiency due to powerful three-phase motor.
- ▶ High level of travel comfort through cushioned suspension.



EZW SERIES 5 515

The compact and manoeuvrable EZW 515 electric platform truck can carry up to 1.5 tons on its loading area, making it suitable for almost any application area, both indoors and outdoors.

- ▶ Maximum efficiency through powerful acceleration and high top speed thanks to three-phase motor.
- ▶ High level of travel comfort through cushioned suspension.
- ▶ Version with and without cabin.



GTE 106 | 212 | 312

The compact E-frame trailer can be coupled as desired. This allows loading/unloading on both sides.

- ▶ Maximum safety thanks to directional stability even on long trains.
- ▶ Optimum ergonomics for efficient operation.



GTP 110 | 210 | 216

Portal-style trailer for large and heavy loads that can be loaded on both sides.

- ▶ Maximum safety thanks to tracking of the trains.

Our electric forklift trucks EFG. Energy for growth.

The EFG electric counter-balanced trucks combine performance and efficiency in a very impressive way.

THE HIGHLIGHTS

- ▶ Powerful lithium-ion technology or lead-acid battery with 2Shifts1Charge.
- ▶ Pure Energy: optimum efficiency through perfect co-ordination of original Jungheinrich components.
- ▶ High dynamic level and precise handling thanks to three-phase AC technology for drive and lift motors.
- ▶ Energy recovery through regenerative braking.
- ▶ Simple to control with intelligent operating concepts.
- ▶ The perfect, individualised truck for every application scenario.



An ergonomic and productivity-enhancing workplace in every respect.



Maintenance-free but extremely powerful: Lithium-ion technology for the EFG.



3 different controls are available for the individual workplace.

SERIES	EFG 1	EFG 2	EFG 3	EFG 4	EFG 5	EFG 6
MODEL NAME	110 110k 113 115	213 215 216 216k 218 218k 220	316 316k 318 318k 320	425 425k 430 430k S30	535k 540 540k 545 545k 550 S40 S50	660 660k 670 670k 680 680k 690 690k S70 S70k S80 S80k S90 S90k
TYPE	3 WHEEL	3 WHEEL	4 WHEEL	4 WHEEL	4 WHEEL	4 WHEEL
LIFT HEIGHT (MM)	2,300–6,500	3,000–6,500	3,000–6,500	2,900–7,500	2,846–7,320	2,710–7,580
CAPACITY (KG)	1,000–1,500	1,300–2,000	1,600–2,000	2,500–3,000	3,500–5,000	6,000–9,000
TRAVEL SPEED (KM/H)	12,5	16 Ⓞ	17 Ⓞ	20 Ⓞ	17–18 Ⓞ Ⓞ	17 Ⓞ Ⓞ
OVERALL LENGTH (MM)	2,773–2,935	2,924–3,145	3,140–3,248	3,446–3,617	3,805–4,102	4,654–5,542

Ⓞ Some of these models are available with a smaller wheelbase and turning radius (k).

Ⓞ Some of these models are available with higher capacity and larger tread (S).

With load capacities up to 9 tons.

Heavy duty hydraulic block for the heaviest load handling attachments.

addedVIEW for 360° view and added safety.

Various equipment packages for rugged outdoor use.

LI-ION
technology



EFG SERIES 1 **110 | 110k | 113 | 115**

With its compact vehicle dimensions, the smallest EFG series is extremely manoeuvrable and at the same time extraordinarily powerful up to 1,500 kg and a lift height of 6.5 meters.

- ▶ Ultra-compact 3-wheel truck.
- ▶ 180° turns possible on the spot.
- ▶ Only 990 mm truck width for maximum manoeuvrability.

EFG SERIES 2 **213 | 215 | 216 | 216k | 218 | 218k | 220**

The Series 2 is also ideally suited for tight storage environments up to 6.5 meters lift height and 2000 kg load capacity. With numerous equipment and safety options, these trucks can be perfectly adapted to your individual requirements.

- ▶ Very agile 3-wheel truck.
- ▶ 180° turns possible on the spot.
- ▶ High flexibility for every application.



EFG SERIES 3 **316 | 316k | 318 | 318k | 320**

The highly articulated suspension axle of this EFG series distributes the load to all 4 wheels and also absorbs rough road bumps. And all this with a capacity of 2,000 kg and a lift height of 6.5 meters.

- ▶ Agile with maximum stability and travel safety.
- ▶ Maximum stability due to high-mounted floating axle.



EFG SERIES 4

425 | 425k | 430 | 430k | S30

The 4 Series electric four wheel counterbalanced forklift trucks are suitable for a wide range of indoor and outdoor applications, with a capacity of up to 3,000 kg and a lift height of up to 7.5 meters, especially when using attachments.

- ▶ Maximum throughput with up to 10 % less energy consumption than competitor models.
- ▶ Top speed up to 20 km/h.
- ▶ S line for heavy loads with attachments.

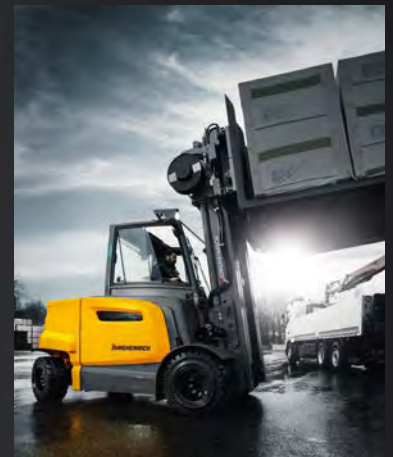


EFG SERIES 5

535k | 540 | 540k | 545 | 545k | 550 | S40 | S50

The 4-wheel trucks are optimally designed for heavy-duty interior and exterior use and for using complex attachments. And all this with a capacity of up to 5,000 kg and a lift height of up to 7.5 meters.

- ▶ Optimum energy efficiency even in the most difficult applications.
- ▶ S line for heavy loads with attachments.



EFG SERIES 6

660 | 660k | 670 | 670k | 680 | 680k | 690 | 690k | S70 | S70k | S80 | S80k | S90 | S90k

The Series 6 excels with maximum performance and up to 9 tons capacity and numerous truck variants for every application scenario.

- ▶ Perfect for rugged outdoor use thanks to the various equipment options.
- ▶ High level of comfort for the operator through generously designed driver's workplace.
- ▶ Maximum safety through optimum visibility and intelligent assistance systems.

Diesel and gas forklift trucks for tough outdoor use.

These sturdy powerhouses provide highest reliability for maximum throughput.

THE HIGHLIGHTS

- ▶ Low-consumption engine technology with low emissions.
- ▶ High torque even at low speeds.
- ▶ Optional hydrostatic drive for maximum performance or hydrodynamic drive.
- ▶ Three truck classes for loads up to 5 tons and up to 7.5 meters lift height.

SERIES	DFG TFG 3 ①	DFG TFG 4 ①	DFG TFG 5 ① ②
MODEL NAME	316 316s 320 320s	425 425s 430 430s 435 435s	540 540s 545 545s 550 550s S50 S50s
LIFT HEIGHT (MM)	2,900–7,500	2,900–7,500	2,480–7,500
CAPACITY (KG)	1,600–2,000	2,500–3,500	4,000–5,000
TRAVEL SPEED (KM/H)	19–20	18–20.8	18–21
LIFT SPEED (M/S)	0.58–0.62	0.48–0.61	0.53–0.56

① These models are optionally available with hydrostaticDRIVE (s).

② All models of the DFG Series 5 are only available outside the EU.




The high residual capacity allows for sophisticated attachments.



The high-performance cooling system of the truck is fully resilient even at very high ambient temperatures.



Powerful and robust motors for maximum throughput.



Optimum visibility in all directions, thanks to the compact lift frame with visibility-optimised hose and chain guide.

When things get tough, the **DFG 425** is in its element.



A DFG 320 can be maintained easily, quickly and inexpensively.



The agile DFG 320 is always wherever it is needed.

DFG | TFG SERIES 3 316 | 316s | 320 | 320s

For light to medium-heavy work up to 2 tons in outdoor areas, the entry-level IC engine trucks operate at a high level. The optional hydrostaticDRIVE ensures fast reversing and precise travel. Alternatively, the hydrodynamic drive version shows its strengths over longer distances.

- ▶ Maximum efficiency with high torque even at low speeds.
- ▶ The individually adaptable operating concept ensures optimum ergonomics.



Efficient and resilient: The DFG 320 is ideal for outdoor use.

Hard outdoor use on dirty, uneven ground – no problem for a DFG 425.



DFG | TFG SERIES 4
425 | 425s | 430 | 430s | 435 | 435s

The diesel and fuel gas forklift trucks of the 4 series are suitable for use with loads of up to 3.5 tons. With proven motors and optimally matched components, they stand out in rugged conditions with maximum reliability, load capacity and durability.

- ▶ Encapsulated components for maximum reliability.
- ▶ Low environmental impact through low consumption.



Even in damp and dusty environments, a DFG 430 is always ready for use.



Unbeatable in reverse mode: The TFG 435s.

DFG | TFG SERIES 5
540 | 540s | 545 | 545s
| 550 | 550s | 550 | 550s

Maximum performance and unsurpassed economy – the strongest of our IC engine forklifts offer both: They effortlessly lift up to 5 tons. They are economical in consumption and uncomplicated in handling.

- ▶ Maximum resilience, even under extreme loads.
- ▶ Stable handling thanks to low centre of gravity ensures highest levels of safety.

Our reach trucks. A blueprint for flexibility.

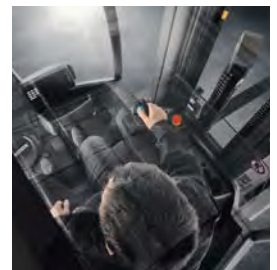
Compact, agile and intuitive to use. These precise all-rounders set standards in confined spaces.

THE HIGHLIGHTS

- ▶ Major space gains and maximum efficiency through reach mast technology.
- ▶ Productive working thanks to intuitive operation.
- ▶ Maximum safety through intelligent assistance systems.
- ▶ Fast, accurate and safe storage and retrieval on the rack.
- ▶ Optimum control of operating cycles through 180° and 360° steering.
- ▶ The perfect, individualised truck for every application scenario.



Jungheinrich reach trucks, such as this ETV 216, can be used universally.




A comfortable and, above all, safe workplace with the best all-round visibility.



Precise approach to the storage area with the help of intelligent assistance systems.

SERIES	ETV 1	ETV ETM 2	ETV ETM 3	ETV C	ETV Q	ETR
MODEL NAME	110 112	214 216 216i	318 320 325	C16 C20	Q20 Q25	230 235 340 345 335d
AISLE WIDTH (MM)	From 2,608	From 2,652	From 2,737	From 2,784	From 2,756	From 2,872
LIFT HEIGHT (MM)	4,550–7,100	4,550–10,700	4,250–13,000	4,550–7,400	4,250–10,700	7,595–11,430
CAPACITY (KG)	1,000–1,200	1,400–1,600	1,800–2,500	1,600–2,000	2,000–2,500	1,400–2,000
TRAVEL SPEED (KM/H)	11	14	14	12.2	14	14
LIFT SPEED (M/S)	0.48–0.70	0.48–0.81	0.38–0.64	0.32–0.7	0.35–0.64	0.70



The revolutionary design of the ETV 216i offers a terrific 360° visibility and a perfect view of the support arms and the load. With panoramic glass roof for optimum visibility and safety.

With 23% higher lift speed.

Significantly larger driver's cab with a wide range of adjustment options.

With fixed lithium-ion battery: Full power at all times. Also in multi-shift operation. Maintenance-free.

LI-ION
technology



ETV SERIES 1 110 | 112

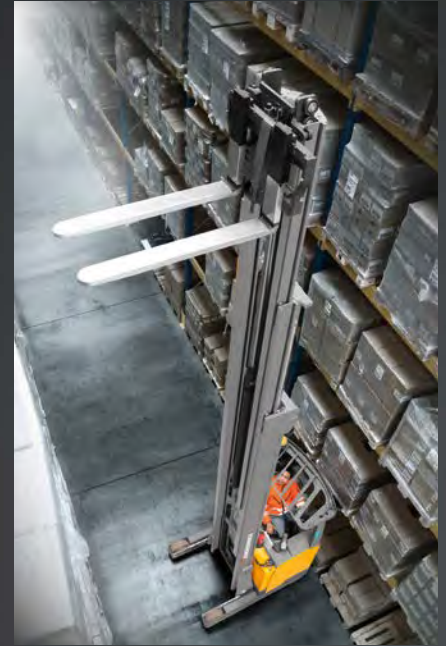
Ultra-compact reach truck that can handle the tightest of warehouse environments.

- ▶ Particularly suitable for small aisle widths.
- ▶ Extremely agile due to compact dimensions.

ETV | ETM SERIES 2 214 | 216 | 216i

Also one of the most agile in its class. In confined spaces, it sets the standard with maximum control and maximum efficiency. The highlight of this series: The ETV 216i with a powerful built-in lithium-ion battery.

- ▶ The classic among reach trucks with high manoeuvrability and optimum energy efficiency.
- ▶ A load capacity of up to 1.6 tons ensures optimum handling performance.



ETV | ETM SERIES 3 318 | 320 | 325

With their extremely stable mast and heavy frame, the 3 series reach trucks lift loads to heights where other trucks give up. Here, the triple mast can make itself extremely small, for low headroom.

- ▶ Maximum handling capacity thanks to a load capacity of up to 2.5 tons and a lift height of up to 13 meters.



ETV SERIES C C16 | C20

The all-rounder for indoors and outdoors. In both scenarios, it can lift up to 2 tons to a lift height of 7.4 meters. In combined use, this can save the acquisition costs of another forklift truck.

- ▶ Designed for combined indoor and outdoor use.
- ▶ Superelastic tyres and a high ground clearance for different ground conditions.



ETV SERIES Q Q20 | Q25

The multi-way reach truck is particularly suitable for transporting and storing long goods in narrow aisles.

- ▶ Travels in any direction through the electronically controlled four-wheel steering.
- ▶ Five steering programs for optimum cube utilisation at the touch of a button.



ETR SERIES 2-3 230 | 235 | 340 | 345 | 335d

The reach trucks for easy and double-deep storage. The fork is moved back and forth by means of a scissor mechanism. The mast is firmly bolted to the frame and therefore allows the use of different support arms. These can be chosen so that even pallets with a width of up to 1,200 mm can be withdrawn at ground level between the load wheels.

- ▶ Outstanding residual capacity – even with double-deep stacking.
- ▶ Maximum throughput due to superior lift speed.
- ▶ Highest variance in the dimension between the support arms enables optimal adaptation to your storage requirements.

Narrow aisle high-performance carriers: High rack stackers.

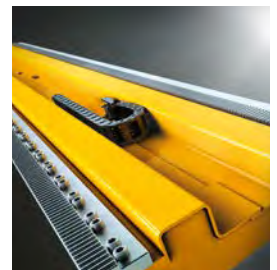
Impressive travel and lift speeds plus intelligent technology for highest throughput with optimum cube utilisation.

THE HIGHLIGHTS

- ▶ Modular design with up to 5 million configuration options for every application scenario.
- ▶ Optimum connection to warehouse management systems through Jungheinrich logistics interface and RFID technology.
- ▶ Manual, semi-automated or fully automated operation.
- ▶ Storage and retrieval operations up to lifting heights of 18 metres.



Maintenance-free synchronous reluctance motors with the best efficiency in their class.



Vibration damping for greater safety and performance on uneven ground.



Greater productivity in less space with intelligent narrow aisle warehouse solution.

SERIES	EKX 4-5 ①	EFX 4	ETX 5
MODEL NAME	410 412 514 516 516k	410 413	513 515
LIFT HEIGHT (MM)	3,000–18,000	3,000–7,000	3,000–13,000
CAPACITY (KG)	1,000–1,600	1,000–1,250	1,200–1,500
TRAVEL SPEED (KM/H)	10.5–12	9	10.5
LIFT SPEED (M/S)	0.40–0.60	0.41	0.45–0.46

① Some of these models are available in the short version (k).



Up high in a confined space: With lift heights of up to 18 meters.

Easy multi-shift operation with high-performance lithium-ion technology.

Thanks to warehouseNAVIGATION, the EKK 516 finds the most efficient route to the destination by itself.

LI-ION
technology

Greater safety and travel comfort on uneven floors with Floor Pro.



High rack stackers can be continuously automated and are optimally equipped for every task up to 24/7 operation.

EKX SERIES 4-5 **410 | 412 | 514 | 516 | 516k**

The EKX sets new standards in the narrow aisle. It achieves true maximum performance during storage and retrieval and order picking up to a lift height of 18 meters. With numerous truck options and high modularity, it fits perfectly into any storage system and storage strategy.

- ▶ Maximum individuality thanks to over 5 million configuration options for every application.
- ▶ 7 individually selectable service packages to increase performance.
- ▶ Flexible expansion of the application areas, from manual to semi-automatic to fully automatic operation.

Perfectly geared to the needs of the driver:
The ergonomic workplace.



EFX SERIES 4 **410 | 413**

The EFX tri-lateral stacker can be operated in both guided and free-ranging mode. This makes it ideal for combined use in narrow aisles, wide aisles and in the apron field. Its front seat and laterally positioned mast allow unrestricted visibility of fork, load and route.

- ▶ **Maximum ergonomics thanks to optimally aligned controls.**
- ▶ **Integrated, handy steering wheel for precise and safe handling.**
- ▶ **Maximum safety through outstanding visibility.**



ETX SERIES 5 **513 | 515**

High rack stackers with swivel or telescopic forks set standards in terms of flexibility, profitability and ergonomics. Intelligent assistance systems also increase performance and safety. Thanks to their modular system, these trucks can be adapted to any warehouse and logistics strategy.

- ▶ **Maximum individuality thanks to over 5 million configuration options for every application.**
- ▶ **Camera/monitor system for effective storage and retrieval of pallets at great lift heights.**
- ▶ **Expandable to automatic mode for maximum efficiency.**
- ▶ **At 13 meters, the largest lift height on the market.**

Rack shuttles for high handling capacity.

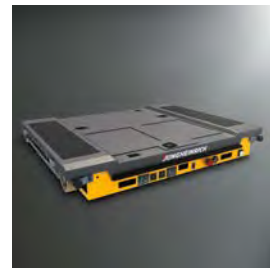
Semi-automatic shuttles save time, protect the stored goods and optimally utilise the available storage space.

THE HIGHLIGHTS

- ▶ Maximum cube utilisation of the warehouse due to compact storage.
- ▶ Time savings through simultaneous use of industrial truck and autonomous rack shuttle.
- ▶ Collision-free storage and retrieval of pallets.
- ▶ High degree of flexibility due to the inclusion of different load carriers in the same racking system.
- ▶ Storage and retrieval available according to both LiFo (Last-in-First-out) and FiFo (First-in-First-out).
- ▶ Pallet shuttle can be used up to -30°C in cold store version.



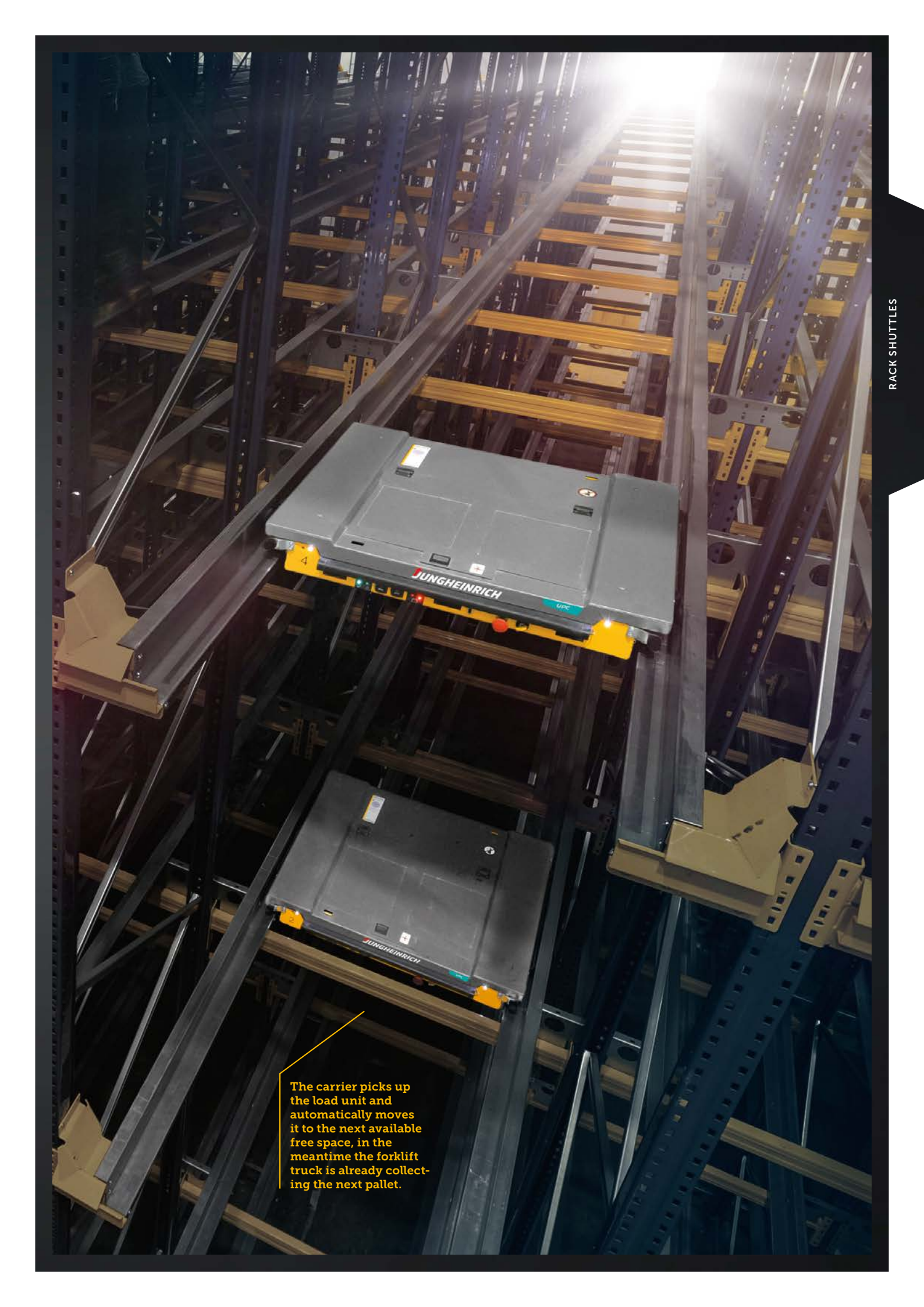
Operation of the shuttle via handheld radio terminal.



The UPC Shuttle (Under Pallet Carrier) travels independently underneath the stored pallets.



Different UPC variants facilitate the handling of different load carriers.



The carrier picks up the load unit and automatically moves it to the next available free space, in the meantime the forklift truck is already collecting the next pallet.

Special build for special requirements.

**Do you have specific transport
and production tasks?
We have the tailor-made solution.**

When goods are in transit, environmental conditions are very specific or if ultimate savings potential is to be achieved, standard products can reach their limits. Special builds are the solution here, which we tailor to the specific application. This can be a specific load part that is combined with a standard drive part, a special crane attachment, or a particularly heat-resistant truck cover. Depending on the degree of customisation and quantity, we produce these special devices in short-run, custom or one-off products. The decisive factor is that your logistics processes become even more efficient.

THE HIGHLIGHTS

- ▶ The perfect solution for every requirement.
- ▶ High savings potential thanks to perfect fit for your business.
- ▶ Fast implementation by supplementing standard trucks with special components.
- ▶ All safety standards and regulations are met as in series production.

01
Carries even the heaviest wine barrels effortlessly: The **EJC 370** with its reinforced special load section.

02
The **EJB 320** crucible transporter for foundries withstands even extreme temperatures thanks to its heat-resistant all-round cover.

03
The **ETW 22** with roller conveyor load unit is used in the furniture industry.

04
The wide track load section with welded monomast makes the **EJB 3100** ideal for transporting printing equipment.

05
The **ERK 390** bar transporter with flanged special load part for cable drums.

The right special build for every industry.

The requirements for special build are as different as the various industries and sectors. In mechanical engineering and the steel industry for example, these are often very robust solutions with higher capacities for heavy and bulky loads.

Environments with gas and dust present require forklift trucks with explosion protection. Others must meet special hygiene requirements, such as those found in the food industry. In any case, our special build forklift trucks make transport processes more efficient and safer. The significantly lower process costs justify any extra initial costs in the long term.



The most important part of a successful special build: You. Good special build always requires comprehensive advice and close cooperation with our customers. Because only you know what you really need. According to your logistical task, we then take over the construction and production in a specially created plant for special build equipment in Lüneburg, Germany. Your advantage: Maximum reliability and efficiency from mass production combine with innovative power and sophisticated engineering for sophisticated, investment-proof designs.



Power on demand.

Rental solutions for every requirement, with over 60,000 trucks available worldwide.

Short Term Rental: Whenever things get tight, our rental trucks are the right choice. Always the right forklift truck at the right time and in the right place.


Long Term Rental: When it's more about the pure intralogistic benefit rather than owning a truck, our flexible rental models are just the thing.

Li-ion Performance Rental: Li-ion batteries and chargers as a fully integrated rental solution.

Rental Fleet Management: Make your forklift fleet flexible to combat changing scenarios. More security and transparency at reduced costs.

Power Buy the Hour: Pay only for the time that is actually required with our attractive pay-per-use packages.

Financing: Flexibility also when it comes to purchasing the truck at the end of the rental period: From instalments to leases with a purchase option.



Forklift trucks, racks, storage facilities, chargers and batteries. Complete rental solutions in the warehouse have long been reality.

RENTING VERSUS BUYING

The sharing economy is not based on rigid ownership but on the flexible use of goods. This thinking is revolutionising the entire world of intralogistics.

Forklift rental is not only worthwhile to cover short-term, seasonal requirements or cost-effective deployment in changing locations. To be able to use the required power with the right vehicle, at the right time and in the right place on demand, is becoming increasingly attractive for the efficient operation of a warehouse. Investing in processes and auxiliary equipment that are not directly related to the core business of the company is often not economical. Rental frees up capital for further business growth.

THE HIGHLIGHTS

- ▶ Rapid availability of all vehicles.
- ▶ Always on the cutting edge of technology.
- ▶ The entire Jungheinrich product portfolio also available as a rental solution.
- ▶ No risk due to potential truck changes and flexible returns.
- ▶ No overcapacity.
- ▶ More capital for your core business.
- ▶ Flexible and transparent billing models.

As Jungheinrich as new.

**JUNGSTARS. Our best
used trucks at 5-star quality.**

JUNGSTARS – Jungheinrich’s used trucks are among the best on the market. Because they are reprocessed by us according to the highest safety and sustainability standards. We are so confident of the quality and useful life of these trucks that each one comes with a 12-month warranty – like a brand new forklift.

YOUR ADVANTAGES AT A GLANCE:

- ▶ Large cost savings with the highest quality.
- ▶ Readily available. JUNGSTARS are available immediately.
- ▶ 12 month warranty on the truck.
- ▶ 12 month warranty on the battery.
- ▶ 12 months maintenance-free.
- ▶ Optional full service with mobility guarantee.
- ▶ Attractive financing options.
- ▶ New safety inspection.
- ▶ 10 day refund policy.
- ▶ Guaranteed spare part availability throughout entire service life.
- ▶ Trade-in of your used truck.

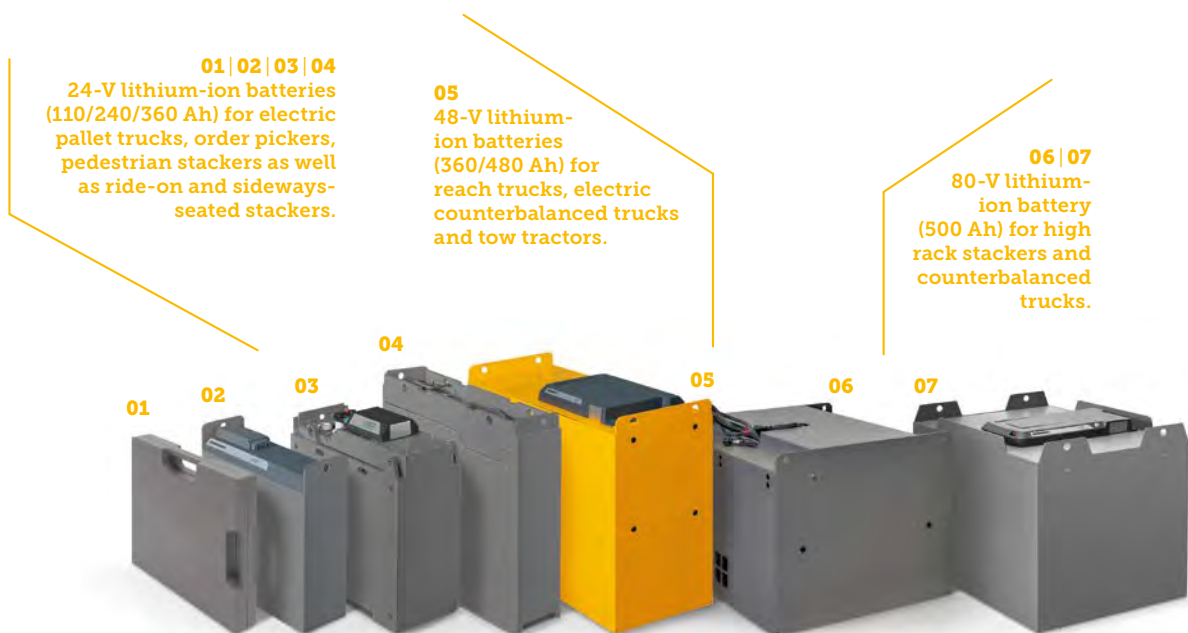


The 5 star principle: Each refurbished JUNGSTAR forklift leaving our factory meets the demands of our 5 star quality standard – for safety, technology, appearance, reliability and sustainability.

Packing a whole lot of power.

The efficient use of energy has high optimisation and savings potential. Above all: Lithium-ion power.

Efficient energy use for you means the reduction of your total costs, higher ranges, continuous availability of the trucks, zero emissions and a positive energy balance. To ensure all this, we are the only provider that not only develops and produces the trucks and control modules in-house, but also the software, batteries and charging technology. This way, all components function in perfect harmony and reach their full potential.



Lithium-ion technology: Continuous performance, ultra-fast charging times and zero maintenance make lithium-ion batteries by far the most enduring energy source. The trucks can be used almost non-stop, power is always fully available, and with an extremely long service life, Jungheinrich offers a 6 month satisfaction guarantee. In addition, we offer you our 5 year warranty on all Li-ion batteries. If you consider the TCO, it's worth making the transition – and in most cases a li-ion battery can be retro-fitted, regardless of operating hours.

THE HIGHLIGHTS

- ▶ Up to 20 % less energy consumption than lead-acid batteries.
- ▶ Charges in just 30 min. to 50 % and in 80 min. 100 % charged.
- ▶ More endurance in multi-shift operation.
- ▶ No maintenance.
- ▶ 3 times longer service life than lead-acid batteries.



LI-ION
technology



Full li-ion power.
Full conversion right.

5 YEARS
GUARANTEE
ON LI-ION BATTERIES



Benefit from proven technology
in 24 V, 48 V and 80 V versions.

Lead-acid batteries: Robust battery technology for strong performance and maximum reliability – our closed standard lead-acid batteries are available in 24 V, 48 V and 80 V. We rely on liquid electrolyte and the proven tube plate technology.

TWO SHIFTS – ONE CHARGE. GUARANTEED.

With 2Shifts1Charge the trucks are able to complete two shifts at a time, without having to have their batteries replaced or recharged. You save valuable time, valuable energy and at the same time reduce operating costs. This is achieved by the highly efficient control technology, ingenious energy management and state-of-the-art motor technology. Our newly developed synchronous reluctance motor in conjunction with lead-acid batteries converts around 93 percent of the energy into power, reducing energy loss by half.



**Two shifts without battery
change: Only Jungheinrich
guarantees this.**



Jungheinrich chargers come largely from in-house development and production.

01

Our on-board chargers work with 230 volts for Europe and many other countries and 115 volts for North America.



02

The flexible all-purpose charger **SLH 300/300i** can recharge both li-ion as well as lead-acid batteries.



03

The **ETV 216i** with its integrated lithium-ion battery on the stationary charger.



Stationary chargers: Whether it's for highly efficient lithium-ion batteries or conventional lead-acid batteries – at Jungheinrich you will find the right charger for every battery technology. It guarantees the maximum life and performance of your battery and the optimal availability of your trucks. Whether this is for one, two or three-shift operation, in light, medium or heavy duty, with or without intermediate charge. The Jungheinrich SLH 300/300i high-frequency charger and our SLT 150 charger with transformer technology are suitable for all applications with 24, 48 and 80 volts.

On-board chargers: The high-frequency technology ensures a gentle charge, for all battery types. More than 60 years of experience with electric drives have gone into the development of our on-board chargers. They are best suited for use without battery replacement, also as an accompanying device. They are easy to handle: At the end of the shift or in between, the truck can easily be connected to a conventional power outlet, anywhere in the world.



Battery, charger service and replacement batteries for your electric industrial trucks.

Energy management: Electrically operated industrial trucks must be permanently energised to ensure that all work processes in the warehouse are cost-efficient. We have a comprehensive service package for the electrification of your vehicles: From providing replacement or rental batteries to care tips, status inspections via battery check to battery maintenance. The Jungheinrich charger service ensures the functionality of your chargers so that your batteries are not damaged during charging cycles and will be fully operational in the long term.

Energy consulting: For an easy transition to our lithium-ion technology, we can carry out an integrated energy consultation at your premises. Our area sales managers are also on hand during the implementation phase: From the retrofitting of individual trucks to the conversion of entire truck fleets.

THE HIGHLIGHTS

- ▶ Our holistic energy management ensures safety in your warehouse and the performance of your trucks.
- ▶ Take advantage of our comprehensive energy consulting and simply switch to our high-performance lithium-ion power.



Made for tough outdoor use:
Diesel and fuel gas forklift trucks.

Diesel and fuel gas forklift trucks: The power behind our gas and diesel forklifts is durable and has proven itself over and over again: Powerful engines that have already been extensively tested in the automotive industry. Even at low speeds, they achieve high torque – perfect for your daily work in warehouses or production.

State-of-the-art engine technology gives the trucks particularly low to extremely low emission levels. And all this with minimal noise.

Our new generation of diesel and gas forklifts are equipped with hydrostatic drive. As this technology requires fewer mechanical components, these trucks are correspondingly low maintenance. Compared to competitor trucks, they also offer the highest throughput with the lowest fuel consumption.

THE HIGHLIGHTS

- ▶ Robust and durable even in the most rugged applications.
- ▶ Efficient with state-of-the-art engine technology.
- ▶ Low noise for use near residential areas and to protect your operators.
- ▶ Low maintenance with hydrostatic drive in the latest generation of trucks.
- ▶ Highest throughput with lowest consumption levels compared to the competition.

A warehouse is not a children's playground. But it should be as safe.

Everything safely under control.

Our 360° protection for the five risk areas in the warehouse: People, goods, storage facilities, machinery and data.



360° PROTECTION

- 1 Protecting people:** You can fully rely on our holistic safety concept. To protect your employees in the warehouse from collisions with industrial trucks or other accidents, we offer a variety of truck options. And because the health of your employees is important to us, we ensure that the workplace is ergonomically designed, enabling your operators to always work safely, ergonomically and efficiently.
- 2 Protecting goods:** Your stored goods are a precious commodity. A range of assistance systems help you protect them professionally while saving time and money. This not only secures your goods and employees in the warehouse, but also improves productivity and delivery reliability.
- 3 Protecting warehouses and storage facilities:** Our preventative services help to prevent dangers caused by damaged storage facilities. This keeps your processes safe and your valuable goods protected.
- 4 Protecting machinery:** With a vast range of features and regular maintenance, we help you to minimise accidents involving industrial trucks and to ensure their long-term availability. This not only protects your personnel, but also reduces the cost of repair and maintenance. This also means lower costs.
- 5 Protecting data:** In times of increasing digitisation and networking, solutions for outage and data security are part of every safety concept. We attach great importance to ensuring that our digital solutions meet the highest security standards. So that hackers have no chance, we have our software and web applications certified by independent experts. This effectively protects your valuable company data and information.

Racking systems from Jungheinrich. The backbone of your warehouse.

**Future-proof planned warehouses
that not only bear loads
but also withstand changes.**

Future-proof planning is the be all and end all when it comes to your warehouse. That is why we at Jungheinrich have been focusing on in-house developments, tailor-made solutions and top quality for more than 60 years, from planning through to after sales. Our wide portfolio ranges from the storage of pallets, containers, trays and boxes to long goods. Even when your racking solution is up and running, we continue to ensure consistent quality and safety levels in your warehouse. On request, one of our over 120 certified inspectors will carry out the annual inspection required by DIN EN 15635. If something is missing, the original spare parts will be supplied straight away. The inspection takes place during operation in the warehouse using a standardised inspection protocol and is subsequently documented with a test sticker.



**Racks are the backbone of your
warehouse. That's why we
have been relying on tailor-made
solutions for more than 60 years.**

PALLET STORAGE STATIC



Wide-aisle multi-bay racking: The systems carry several pallets per level between two uprights and are well suited for large quantities of individual articles.

THE HIGHLIGHTS

- ▶ Direct access to all items.
- ▶ Heights up to 20 meters can be realised.
- ▶ For manual and automatic rack operation.
- ▶ Highly versatile storage system with high degree of flexibility.



Narrow aisle multi-bay racking: Ideal for a small area. With extremely high lift heights, they enable greater handling rates at lower aisle widths.



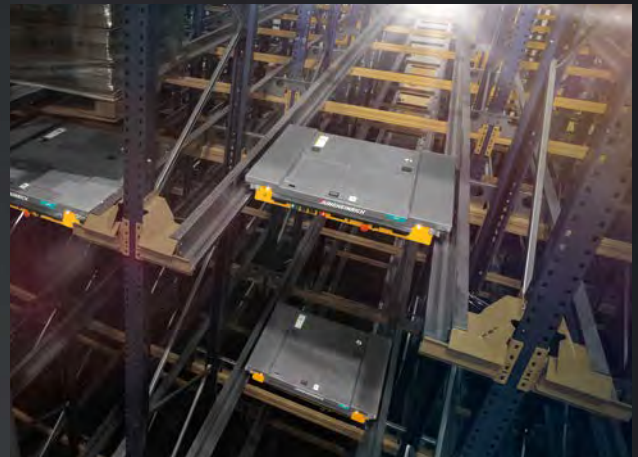
Single-bay racking: This offers direct access to all items and optimum space utilisation especially for wire mesh boxes and high individual loads.



Drive in/drive through racking: Ideal for storing large quantities of heavy goods with a small variety of items. Combines compact use of space with protection of stored goods.

Pressure-free storage and direct access to all pallets in the wide aisle multi-bay racking.

PALLET STORAGE DYNAMIC



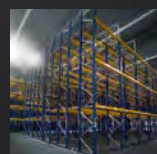
Shuttle channel racking: Carrier shuttles move underneath the stored pallets to transport them through the rack channel. This allows for improved space utilisation and greater throughput.

THE HIGHLIGHTS

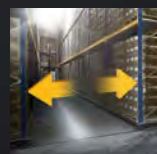
- ▶ Maximum space utilisation of the warehouse through dynamic block storage.
- ▶ Collision-free storage and retrieval of pallets.



Drive-through racking: In contrast to pushback racking, storage takes place here on one side, and removal on the opposite side of the rack.



Pushback racking: Stacked rack frames form a slightly inclined channel in which pallets are stored and retrieved from the same side.



Mobile racking: These racks save up to 90% of rack aisles, as entire rack blocks can be moved back and forth on rails so that only a single aisle is required.

SMALL PARTS STORAGE

STATIC



Modular racking: Immediate and direct access to any item by storage on rack units.

THE HIGHLIGHTS

- ▶ Quick access to all items.
- ▶ Highly variable adaptation to the stored goods through extensive range of accessories.
- ▶ Efficient use of room height, realisable over 12 meters.
- ▶ Perfect combination with our vertical order pickers.



Modular racking floor system:

Thanks to the multi-storey design, staff can pick and place on several levels one above the other and at the same time.



Modular high bay racking:

Immediate and direct access to any item by storage on rack units. Thanks to simple components, the modular high bay racking allows for tailor-made adaptation to your space and use.

SMALL PARTS STORAGE

DYNAMIC



Lift/Paternoster racking: A closed system in which the small parts are transported by the shortest route either by lift or by rotation to the operating opening.

THE HIGHLIGHTS

- ▶ Save up to 85% warehouse space by building upwards.
- ▶ Goods-to-man principle shortens distances and speeds up throughput.
- ▶ Pick-to-light systems reduce error rate.
- ▶ High efficiency through connection to any warehouse management system.



Drive-through racking:

Here the stored goods move forward automatically on slightly inclined runways to the removal point. The compact shape allows for short distances during order picking.



Mobile modular high bay racking:

For storing items that are not constantly required. The rows of racks can move apart at the required point, thereby creating a single working aisle.

LONG GOODS STORAGE & PLATFORMS



Cantilever racks are suitable for long goods of any kind.

Cantilever racking: In this racking system loads are carried by cantilevers on the rack frames. It can be extended by additional elements for the clearest storage of long goods.

THE HIGHLIGHTS

- ▶ Suitable for outdoor use, with canopy and wall cladding available.
- ▶ Can be used as a mobile racking system.



Steel staging: Self-supporting, walk-on and optional drive-on steel construction, which creates new working surfaces through additional levels.

RACK INSPECTION



Even when your racking solution is up and running, we continue to ensure consistent quality and safety levels in your warehouse. On request, one of our 120 certified inspectors will carry out the annual inspection required by DIN EN 15635.

THE HIGHLIGHTS

- ▶ In-house association-tested Jungheinrich rack inspectors.
- ▶ Replacement with original parts.
- ▶ Inspection sticker according to legal requirements.

System provider with experience.

Intelligent intralogistics is the best possible interaction of man, machine, software and individual storage environment.

We optimise the flow of goods for you – for highly efficient warehousing processes.


Based on our comprehensive process know-how and experience, we develop the best individual intralogistics solution for you. For small businesses as well as for global companies with complex warehouse environments and a high degree of automation. We will find the right strategy for you and will make things happen – from intelligent software solutions to the construction of turnkey, automated logistics facilities. We are always at your side, starting with the consultation, analysis and planning, through implementation to the maintenance and training of your employees.

THE HIGHLIGHTS

- ▶ Comprehensive process knowledge and experience in a wide range of industries.
- ▶ Individual system identification.
- ▶ In-house development and production of the critical system components.
- ▶ Everything from a single source, from analysis and planning to maintenance and training.

“More efficiency in the warehouse through creative lateral thinking.”

This gives you the certainty that everything is perfectly interlinked at all times and your intralogistics processes remain reliable and highly efficient in their flow. In this way, we fulfil our responsibility as your global solution partner and uncompromisingly support you in implementing your long-term corporate vision.



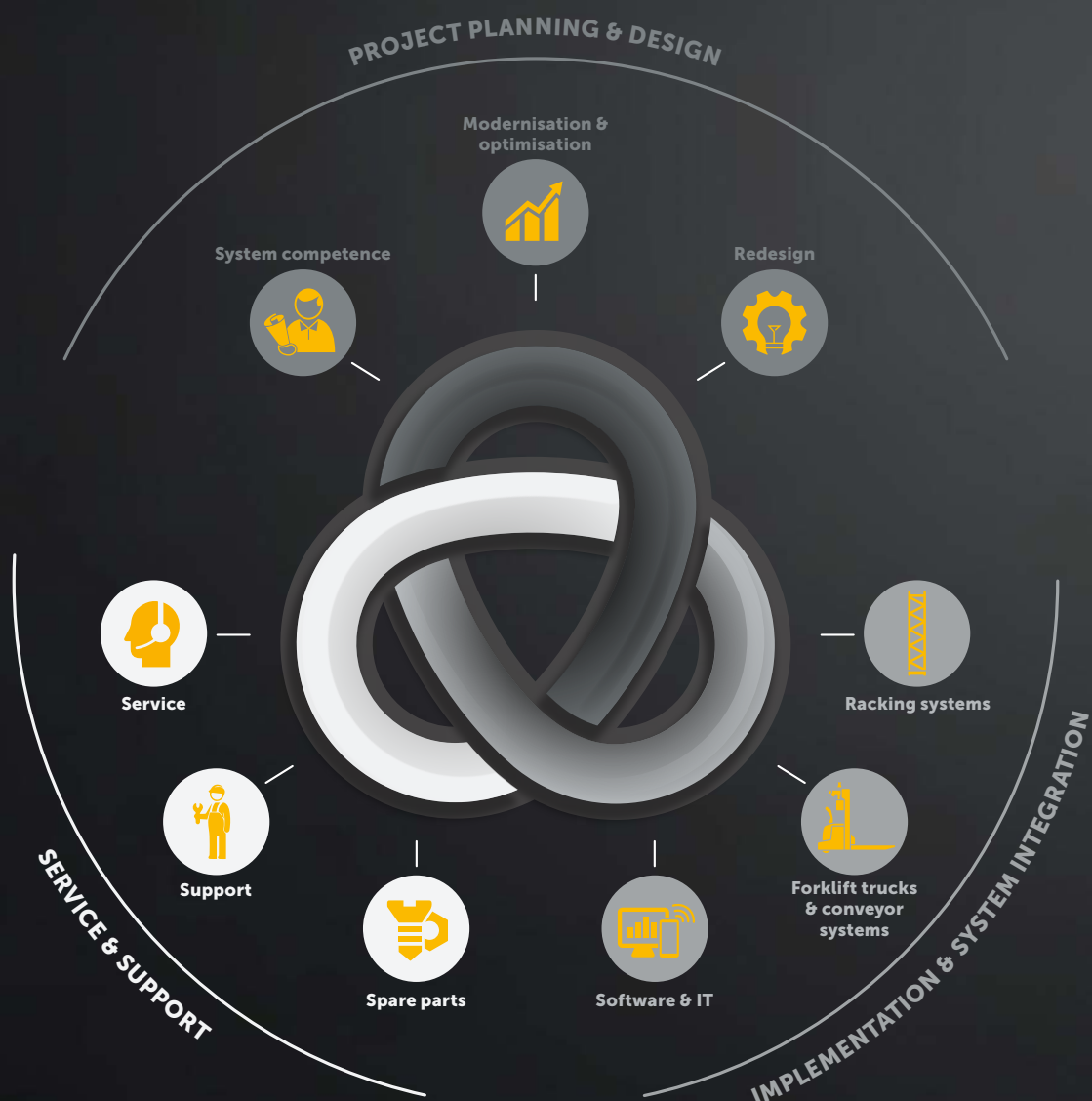
Successful companies need a strong partner to be able to design intra-logistics processes for the future.

Whether manual, semi or fully automated storage systems. We are your solution partner for new ways and strategies.

If you think laterally, you will reach your destination faster.

Efficiency in motion. Automation from analysis to satisfaction.

Automation can take the efficiency and performance of your warehouse to a whole new level. Together with you, we develop new solutions and implement the system with the optimum degree of automation for you. Step by step. From planning through implementation to service and support.





Planning and development. **Customised logistics process.**

Together with you we plan and project your new logistics solution. With our experience from many industries and for different company sizes, we also put in place for you the solution tailored to your needs.

- ▶ Questioning old structures and creative thinking.
- ▶ Individual solution identification with optimal degree of automation.
- ▶ International experience in a wide range of industries.

Implementation and system integration. **A one-stop shop.**

As a general contractor, we ensure that every step in the process is carried out with pinpoint accuracy and ensure that all components interact perfectly. Maintaining everything from a single source means optimal process reliability for you – during the project and when operating your system.

- ▶ Reliable, transparent project management.
- ▶ One contact partner for all functions.
- ▶ Everything from a single source, ensuring all components work perfectly together.



Service and support. **By your side for the long term.**

With a service network that is unique in the industry, we are always at your side even after the project has been completed. Our service technicians carry out maintenance, inspections, safety inspections and repairs. And our support hotline is available around the clock if you wish – to minimise downtime and ensure optimal system availability.

- ▶ Worldwide, reliable and cost-transparent service.
- ▶ A competent partner by your side around the clock.
- ▶ Highly qualified service technicians for all requirements.

Automatic small parts warehouse.

High storage density, speed and precision are crucial for small parts storage. The Jungheinrich rack operating device excels with top values in terms of throughput, cube utilisation and energy efficiency.

Automation brings maximum performance to the small parts warehouse.


Automatic small parts warehouses are designed for extremely space-saving storage of small parts in containers, cardboard boxes or trays. The goods are stored on angle supports or racking units – in conjunction with our stacker cranes with full use of the ceiling height of up to 25 meters. Automatic small parts warehouses can be used both under normal temperature conditions as well as temperature-controlled and as deep-freeze storage up to -30°C . Depending on the industry, we plan and implement your small parts warehouse individually according to your requirements.



Stacker crane for small parts.

The most powerful rack operating device in its class excels with both high travel dynamics and reduced start-up dimensions. Energy storage systems (SuperCaps) specially adapted to the travel and load pattern store the energy generated during braking processes and feed it back into the drive system during subsequent accelerations. The result: Significantly reduced operating costs.

- ▶ Top performance values: Maximum acceleration of $> 5.3 \text{ m/s}^2$ for maximum travel speeds of $> 6 \text{ m/s}$.
- ▶ Highest energy efficiency levels through brake energy storage in SuperCaps.
- ▶ Outstanding cube utilisation thanks to the lowest starting dimensions in its class.



High-density small parts storage under full cube utilisation up to 25 meters in height in connection with our rack operating device product family.

Maximum throughput, optimal use of space and energy efficiency: The rack operating device with energy storage in SuperCaps.

Storage of boxes, containers and trays for every industry and individual requirements.

Maximum handling capacity in the optimal interaction of rack operating unit, rack, conveyor technology and software.

Automated pallet warehouse.

Greater throughput, more speed and safety in material flow – automatic warehouses provide answers to increased market requirements.



ETX 513a | 515a

Automated high rack stacker based on the proven Jungheinrich man-down ETX forklift. Automatic components make them particularly reliable and efficient automated guided vehicles. The step-by-step automation allows for highly flexible use.

- ▶ With a lift height of up to 13 meters.
- ▶ Maximum efficiency thanks to pinpoint approach.
- ▶ Extremely flexible in operation.



EKX 516a

The EKXa is characterised by maximum performance in the automatic processing of warehouse tasks at high lift heights. Thanks to its low energy consumption, it can run for two shifts without a battery change, even in demanding applications. With an optional on-board charger plus busbar and collector, the EKXa is also well equipped for 24/7 use.

- ▶ With a lift height of up to 13 meters.
- ▶ Scalable performance thanks to step-by-step automation.
- ▶ Power supply by battery replacement or by charging via busbar for 24/7 use.



Pallet rack operating unit

These represent maximum speed in the pallet warehouse with reach lift heights of up to 45 meters. They can be used either as an aisle-bound rack operating unit with the highest degree of cube utilisation or as a roaming version that can serve several rack aisles at the same time. A range of load handling devices enable easy, double or multi-depth storage, thus ensuring maximum throughput in the warehouse.

- ▶ With a height of up to 45 meters and a capacity of up to 7 tons.
- ▶ Available as a free-standing silo or built-in warehouse version.

The perfect combination of racking system, software and machine makes the automatic pallet warehouse highly efficient.

Highly reliable and based on tried-and-tested standard vehicles, supplemented by an automatic kit.

Highest throughput – if required 24/7 operation using busbars.



Conveyor technology.

Innovative pallet and container conveyor technology for new plants and existing installations brings greater productivity into your warehouse.



Container conveyor technology

Automatic container conveyor technology is the key to intelligent warehouse automation. The focus here is on the conveying, sorting, inward and outward transfer as well as the buffering and stowage of goods. In conjunction with the Jungheinrich Warehouse Management System, this will raise your material flow to a higher level and automate your overall process.


- ▶ Flexible transport of containers, boxes, trays and products up to 50 kg.
- ▶ Fast work processes with transport speeds of up to 1.50 m/s.



Pallet handling technology

Thanks to its modular design, our pallet handling technology can be tailored precisely to your material flow requirements. Whether roller, belt or chain conveyors, transfer cars, lifting and rotary tables or belt lifters – your profitability and productivity are always the focus when selecting the right components.

- ▶ Modular design of the systems allows flexibility for standard applications or more complex requirements.
- ▶ Pallet conveying speed of 0.45 m/s for high throughputs.



Flexible warehouse automation
for highly efficient intralogistics
processes, perfectly controlled
by our Warehouse
Control System.

Efficient bridging of long
distances and innovative
conveyor and distribu-
tion solutions in the
smallest of spaces.

Synchronised with in-house
control technology for the
highest performance of the
material flow.

Automated Guided Vehicles.

The heart of an automated warehouse: Well-trieved standard vehicles supplemented with automation components and controlled by intelligent software.

Automated guidance on a reliable basis.

Automated guided vehicles (AGVs) handle repetitive tasks with large handling volumes particularly safely and efficiently. The basis for this are tried-and-tested standard vehicles, which we individually adapt to your warehouse requirements. Integration into existing warehouse structures is very simple, subsequent layout changes can be flexibly implemented. And to avoid downtime in the launch phase of an AGV in your warehouse, we simulate the optimal routes in advance and thoroughly test the hardware and software. As a result, you achieve maximum process reliability right from the start – even in mixed operations mode. Extensive safety sensors protect people, load and machines.



ERE 225a

The ideal automated vehicle for transporting heavy loads on ground level and particularly efficient for multi-pallet transport.

- ▶ With a capacity of up to 2.5 tons.
- ▶ Long forks for multiple pallet transport.

EZS 350a

The driverless tow tractors take the strain off your personnel and ensure highly efficient processes.

- ▶ With a tow capacity of up to 5 tons.
- ▶ Use already existing routes.



EKS 215a

This automated vehicle is ideal for transporting special load carriers and closed pallets thanks to its cantilevered forks.

- ▶ With a lift height of up to 6 meters and a load capacity of up to 1.5 tons.



ERC 215a

The ideal automated transport vehicle for transport applications even in confined spaces and in narrow aisles.

- ▶ With a lift height of up to 3.1 meters and a capacity of up to 1.5 tons.
- ▶ Wide range of applications thanks to compact design.

With personal protection scanner installed in the drive direction.

The EZS 350a accurately transports loads to millimeter precision thanks to laser navigation.

Laterally mounted laser scanners for predictive recognition of objects.

Also available with lithium-ion technology for even more power





Order picking and palletisation.

Our efficient order picking solutions ensure significant performance increases in your warehouse: fast, powerful and error-free.

The voice-based **Pick-by-Voice** dialogue system intuitively supports your employees in optimising their workflows.

Order picking systems

We offer a wide selection of order picking systems to meet your specific needs. The various picking techniques cover everything: From full pallet shipping to the smallest lot sizes in e-commerce real-time shipping. The uncomplicated systems are intuitive to use and increase your productivity significantly.

Pick-by-voice

Thanks to intelligent voice control, your employees have their hands free at the picking workstations. The order picker works with a headset instead of manual or digital order lists and verbally communicates with the picking system.

THE HIGHLIGHTS

- ▶ Greater handling capacity thanks to increased picking speed.
- ▶ Language independent and easy to use for every user.

Pick-by-light

Paperless Pick-by-light picking ensures faster warehouse processes. The bin directly displays the quantities to be withdrawn. By connecting to the Warehouse Management System and reducing the process to a minimum, your staff will pick more efficiently and in real time.

THE HIGHLIGHTS

- ▶ High level of comfort and ease of use.
- ▶ Increased handling capacity with free hands during order picking.
- ▶ Minimisation of error rate by displaying the quantity to be withdrawn.

With the semi-automatic **easyPILOT Follow** control, the vehicle automatically follows its operator and stops as soon as he or she stops.



easyPILOT Mobile control system

The intuitive easyPILOT remote control system increases the performance of our best-in-class ECE low level order picker even further. The mobile control system is connected to the vehicle via NFC and automatically steers it to its destination. Unique feature: easyPILOT can even be connected to the Warehouse Management System.

THE HIGHLIGHTS

- ▶ Up to 30 % more picks per hour.
- ▶ Increase the picking performance by automatically controlling the vehicle to its destination.
- ▶ The only remote solution on the market that can be connected to the Warehouse Management System.



Robot order picking

For order picking on pallets we also supply fully automatic systems: from simple layer palletisation to the construction of complex mixed pallets. Depending on the application, the optimum robot and gripping technology is used – for high-performance picking.

THE HIGHLIGHTS

- ▶ Increase pick rate by up to 50 %.
- ▶ Seamlessly integrated into existing systems.
- ▶ Maximum picking quality thanks to state-of-the-art technology.

Software and IT systems.

Intelligent networking is the basis for optimal processes in the warehouse, whether manual or automatic. With Jungheinrich, you also get Industry 4.0 in your warehouse.

THE HIGHLIGHTS

- ▶ Individual and industry-independent Jungheinrich Warehouse Management System (WMS) for intelligent and efficient warehouse management and control.
- ▶ Easy transition to the digitisation of warehouse processes with the tried-and-tested and standardised processes and functions of the Jungheinrich WMS Series 2.
- ▶ Perfect communication between trucks, warehouse equipment and warehouse management system through the specially developed Jungheinrich logistics interface IoT connector.
- ▶ ISM Online digital fleet management for increased availability and productivity of the fleet.
- ▶ Guaranteed future-proofing thanks to forward compatibility of systems, unique in the industry, with constant further development based on the latest intralogistics trends.



Intelligent warehouse management for sustainable, efficient processes: The Jungheinrich WMS.



Jungheinrich Logistics Interface: Networking made easy.



Efficient fleet management with ISM Online: commercial data and truck data at a glance.

From analog to digital: The Jungheinrich WMS Series 2 is the simple and cost-effective solution for efficient control of small and medium warehouses.

Digitisation as the key to success.



Product Code: 10000031
Description: Recorder
Quantity: 1 Box
Batch: BG-01-033-01



Unique licensing model and financing options.





Whether customised Jungheinrich WMS or low-priced WMS Series 2: Digitisation and networking make logistics processes more efficient.

Jungheinrich WMS

When it comes to optimising the flow of goods in the warehouse and managing your warehouse more easily and more efficiently than before, the intelligent and industry-independent Jungheinrich Warehouse Management System (WMS) is the solution. It manages your warehouse holistically and thereby ensures sustainably optimised and simple processes. From goods receipt, via order picking, to loading in goods issue. In addition, we guarantee a uniquely high degree of user-friendliness and future-proofing for your warehouse management through constant further development, basic adaptability through modular design and multi-dimensional configuration model.

THE HIGHLIGHTS

- ▶ Intelligent warehouse management system for maximum efficiency.
- ▶ Intuitive operation thanks to user-friendly interface.
- ▶ Full forward compatibility for unique future security.

Jungheinrich WMS Series 2

The software package provides a basic introduction to digitisation with field-proven and standardised processes and functions. You can keep an eye on your inventories and orders and manage all processes efficiently. Like our WMS, the WMS Series 2 is forward compatible and can be expanded at any time to match your new requirements.

THE HIGHLIGHTS

- ▶ Rapid and easy integration.
- ▶ Efficient process optimisation.
- ▶ Attractive entry price.



Data radio terminals are connected directly to the Warehouse Management System and reliably ensure greater productivity.

Jungheinrich Logistics Interface

Our innovative Jungheinrich Logistics Interface software is the first IoT connector to ensure the perfect networking of trucks, warehouse equipment and the Warehouse Management System and can be easily integrated into your existing software environment. The specially developed middleware is installed on the radio data terminal of the vehicle and provides for the translation of the exchanged information. The trucks are therefore directly connected to the IT landscape and optimised and efficiently controlled.

THE HIGHLIGHTS

- ▶ Easy integration of different technologies such as RFID and warehouse navigation into existing software environments.
- ▶ Wide range of applications.
- ▶ No functional changes to the Warehouse Management System are required.

Radio data or system components

Throughput, efficiency and quality can be significantly increased by mobile connection of staff in the warehouse. It is also possible to react more flexibly to changed order priorities by using data radio systems. We plan and integrate the complete data infrastructure for you. From truck and handheld terminals to barcode scanners and label printers to WLAN infrastructures and much more.

THE HIGHLIGHTS

- ▶ Real-time receipt of transport orders and information from the WMS directly on the truck.
- ▶ Paperless order processing for greater efficiency, flexibility and quality.



Safe, cost-saving and efficient fleet management with vehicle and commercial data at a glance.

ISM Online

With this truck management information system, you can manage your entire truck fleet regardless of size and complexity. It allows for a detailed analysis and monitoring of your vehicle fleet – also of third-party industrial trucks. Both commercial data such as master and contract data as well as the technical data of the trucks are recorded. With ISM Online you can also get information about your vehicles from anywhere in the world – directly to your laptop or smartphone.

THE HIGHLIGHTS

- ▶ Analytical collection, observation and evaluation for maximum transparency.
- ▶ Optimise fleet costs by understanding maintenance costs and quickly identifying cost drivers.
- ▶ Web-based and intuitive to use.
- ▶ Maximum flexibility thanks to worldwide access to all fleet data.
- ▶ Certified security.



Effective protection for your trucks: Easy access control without universal key directly via the truck display.

EasyAccess

The EasyAccess access control system protects industrial trucks against unauthorised use and thereby effectively increases safety in the warehouse. The intelligent "key technology" allows access directly via the truck display. These access codes are assigned individually to employees, which makes the universal vehicle key unnecessary. EasyAccess is available in three variants: EasyAccess softkey – here you can set and manage 10 different codes on the display. EasyAccess pin code – where 100 different codes can be assigned to different operators. And EasyAccess transponders that use transponder cards for access control. Here too, up to a hundred different transponders can be read in and managed.

THE HIGHLIGHTS

- ▶ Increased safety in the warehouse thanks to protection against unauthorised use.
- ▶ Reduction of operating costs by avoiding forced damage to vehicles and racks.
- ▶ Management of access codes or transponder IDs directly on the truck display – no setup and administration costs.

Always by your side: Jungheinrich Service.

In the increasingly complex world of intralogistics you can rely on a true constant: Our strong team in after sales service, support and spare parts logistics.

THE HIGHLIGHTS

- ▶ Premium services with manufacturing expertise not only for all Jungheinrich trucks but also from other manufacturers.
- ▶ Best-in-class spare parts availability and shortest response times to avoid expensive downtime.
- ▶ Worldwide supply of Jungheinrich original spare parts.
- ▶ Worldwide 24/7 service and support for your logistics systems.
- ▶ Individual service and support packages for maximum cost security and transparency.



Perfect service and support. Around the clock and always nearby.



More than 5,000 highly trained Jungheinrich after-sales service engineers are deployed worldwide.



We guarantee maximum availability of original spare parts.

High process reliability by ensuring system availability.

Minimal downtime thanks to rapid spare parts availability.



All services at a glance.

Whether maintenance, repair or safety inspection:
We guarantee all-round service at the highest level from
a single source – worldwide.





Service for trucks

More than 5,000 highly trained Jungheinrich after-sales service engineers ensure that your industrial trucks are operational every day. Regardless of whether they come from us or another manufacturer. We not only take care of necessary repairs in case of service, but also the regular maintenance of the trucks. We also do all the prescribed safety inspections for you.

- ▶ Minimal downtime thanks to fast spare parts supply.
- ▶ Shortest response times through a compact, world-wide service network.
- ▶ Premium service with manufacturing expertise.
- ▶ Permanently high level of truck availability thanks to regular interval services.



Original spare parts

We offer a worldwide, fast and reliable supply of Jungheinrich original spare parts. More than 100,000 original spare parts, which are generally available for more than 10 years, can reach any location within a very short time thanks to our worldwide distribution network.

- ▶ Maximum reliability with 98 % spare parts availability.
- ▶ Shortest response times through overnight express delivery within Europe.



Service and support for logistics systems

We ensure 24/7 that your system works constantly at a high level. Our individual support and service packages guarantee you maximum cost security and transparency. Worldwide, 365 days a year.

- ▶ High process reliability by ensuring system availability.
- ▶ Longer system life through regular inspection and maintenance.
- ▶ Shortest solution times through service and support from a single source.

- A Access control:** 07, 121
After Sales: 05, 07, 14, 20, 26, 39, 98, 122, 124, 125
After Sales service engineers: 05, 07, 122, 125
AM: 24, 42, 43, 44
AMW: 24, 42, 45
AMX: 24, 42, 45
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