

A low-angle, upward-looking photograph of industrial equipment. On the right, a yellow scissor lift extends towards the top of the frame. On the left, a silver extension ladder is also angled upwards. The background is a ceiling of corrugated metal panels. The lighting is dramatic, with strong highlights and deep shadows.

**2**

**CURIOSITY  
CONNECTS.**

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# HOW DO YOU DEVELOP THE BEST SOLUTION?

Jungheinrich doesn't just supply first-class material handling equipment, but also comprehensive expertise in intralogistics solutions. Our technological expertise reaches far beyond forklift trucks. The decisive factor is always the needs of our customers. From individual trucks for specific deployment areas to complex complete intralogistics systems, we produce the perfect solutions. With the introduction of automation and digitalisation to warehouses, the challenges in each sector have changed fundamentally and are presenting completely new opportunities – welcome to intralogistics 4.0!

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# EVERYTHING CONSIDERED FROM A SINGLE SOURCE

**Solving our customers' problems – this is the driving force behind our evolution from forklift truck manufacturer to a world-leading solutions provider for the intralogistics sector.**

Jungheinrich trucks and racks have been an integral feature in warehouses and workshops around the globe for decades. We understand the processes and requirements of different sectors completely. We always use this comprehensive knowledge to develop tailored logistics solutions in collaboration with our customers. This allows us to keep improving efficiency and productivity in the warehouse, lifting it to the next level.

## Everything from a single source

In order to be able to offer our customers the best solutions for their warehouse set-ups, we have to be a partner that thinks of everything and supplies everything from manual to fully automated forklift trucks, racking systems, stacker cranes and software. We interconnect the individual components with an intelligent complete system, the logistics system.

In addition to analysis, planning and realisation, we also provide service and support once the system is operational.



## The next level

In a digitalised world, where the speed at which goods are moved is increasing rapidly, perfectly coordinated processes are becoming more important than ever. As a system supplier, we support our customers in harnessing potential to the full extent possible with optimal automation components for the right degree of automation.

For the highest level of performance, we introduced our first stacker crane in the STC family in 2018. Our Miniload combines maximum speed and energy efficiency with optimal space usage – meeting the main needs in automated warehouses. The aim is to move the goods into and out of storage as quickly as possible, keeping operating costs to a minimum.



**More speed** – The STC moves containers and boxes around the warehouse with a record acceleration of more than  $5.3 \text{ m/s}^2$  and speeds of  $6 \text{ m/s}$ . This allows a marked increase in goods handling.

**More efficiency** – The integrated SuperCaps are unique on the market. These energy storage devices store the energy released during braking and rerelease it during acceleration. Using these devices reduces the energy requirement and associated provisioning costs by up to 25 per cent, compared to competitors.

**More space** – The revolutionary rail concept and the optimal placement of the Omega drive in the mast base significantly reduce the approach dimensions. The running surface of the main wheels is only about 55 mm above the floor instead of the market standard of 150 to 250 mm. This means the existing space is optimised, maximising warehouse volumes.

**More flexibility** – The new design and extremely lightweight construction with a lattice of aluminium extrusion profiles keep the crane's total weight low, provide maximum stability and allow a flexible scalability of the mast height up to 25 metres.

Implemented during ongoing operations –  
open-heart surgery in intralogistics. Curious?

Find out more: [youtube.com/JungheinrichAG](https://youtube.com/JungheinrichAG)



# ANYTHING IS POSSIBLE

**A logistical challenge with no solution?  
Not with Jungheinrich!**

**Our colleagues from the customised trucks division can deal with any challenge, no matter how difficult. At the Jungheinrich plant in Lüneburg, individual trucks are designed and constructed according to customers' needs. Even single trucks.**

"Now I'm curious," exclaims Oliver Hiekel as he opens the door to the workshop. "Project throughput is high, so there's something new to see here almost daily." The head of product management calls special construction "the supreme discipline in customer focus" – and for good reason. The employees in this field must recognise, understand and develop a solution for customers' logistics problems within a short period of time. They can turn to more than 25 years of experience, the right amount of ingenuity and the full Jungheinrich product range. Series-produced trucks normally provide the foundation for customised trucks.

### **Supreme discipline in customer focus**

Lüneburg receives up to 40 special construction requests every day. Each customer receives a swift reply in the form of a binding quote. If the order is placed, the customer will usually receive an individual solution to suit their needs within 12 to 14 weeks.

Efficient processes are necessary to bring innovations onto the market so quickly. "The aim is to always use as many series components as possible. This ensures the quality, longevity and certified security typical of Jungheinrich products. Adapting them to customers' needs then means adding special parts," explains Oliver Hiekel.

### **Outstanding specialists**

In many cases, individual load adjustments are required, such as a truck based on a series-produced reach truck that makes handling extremely large and heavy pallets in the field of air freight easier. Another truck was designed specifically to move off-road vehicles for use in skiing areas, known as piste bullies, from A to B in the manufacturer's production facilities. The EKM 202 is very different. The small-parts order picker covers a number of deployment areas and is an efficient and safe alternative to traditional ladders in shops, such as DIY stores.

Oliver Hiekel specifically remembers the work on an EJK 325. "In 2016, we developed this model, with a batch size of one, for one of the largest German rail mobility providers." They needed a solution for picking up ICE wheel sets and changers. In the same year, Jungheinrich received an IFOY award in the "Special Vehicle" category for this technically very complex and unique accomplishment.

#### **Always thinking of market potential**

But the division for customised trucks deals with more than just the creation of one-offs. "Our department is very close to our customers and their industries, and we have an in-depth understanding of their processes," says Hiekel. "Our job therefore also includes evaluating the market potential for custom-made models. Does the device meet wider needs? Could it become a small series or possibly even a mass-produced model in the future? To find out, we regularly discuss other application areas for our products within the team."

If the truck is produced in series, it usually means the model leaves Lüneburg and is produced at another location. Once this happens, the team from the customised trucks division will already be working on new products for very special deployment.



# Far away yet right here



**Advances in digitalisation make it all possible. New technologies such as augmented reality (AR) are no longer science fiction, they are here and increasingly used to support processes in companies. At Jungheinrich, one area we are looking into is how our technical after-sales services can use AR profitably. The first promising field is remote support.**

An after-sales service technician on site working on a truck and an expert in repairing this particular fault thousands of kilometres away can both work together to solve the problem as quickly as possible for the customer. Soon, this scenario will be nothing new.

#### **Using expert knowledge efficiently**

AR remote support makes it all possible. An expert can work virtually on a 1:1 representation of the customer site from any location and support the technician on site as if they were standing side by side. With the help of visual overlays, for example on data glasses, both have the same view of the truck.

This improves the efficiency in more ways than one: Trucks and logistics systems are becoming increasingly complex in our growing global network. That is why it is so important that the availability of all devices is ensured continually and reliably. Should devices still fail, downtimes must be minimised through swift support. AR makes this possible.

Our on-site after-sales service technicians can answer a wide variety of questions and in the majority of cases have a direct solution. But if they need to call on an expert, the expert often has to cover long distances to get to the customer. This costs time and money, and blocks valuable resources. AR on the other hand, makes expert knowledge available any time, anywhere. This means we not only provide our customers with the best, but also the quickest solution.



The term **“augmented reality”** describes the principle of this technology very well. Digital content is added to the real world to supply valuable (additional) information using data glasses or even conventional smartphones and tablets. This is not the same as virtual reality (VR), in which the user enters a completely virtual environment and the real world is blocked out.



**The STC miniload** is nominated for renowned IFOY Award 2019 in the category "AGV & Intra-logistics Robot" – further proof of **Jungheinrich's innovative power** in intralogistics.

