

# The backbone of your intralogistics.

Our rack systems and warehouse equipment.

**JUNGHEINRICH**  
Machines. Ideas. Solutions.



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## Static small parts storage

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# Looking for turnkey solutions? We offer them. From a single source.

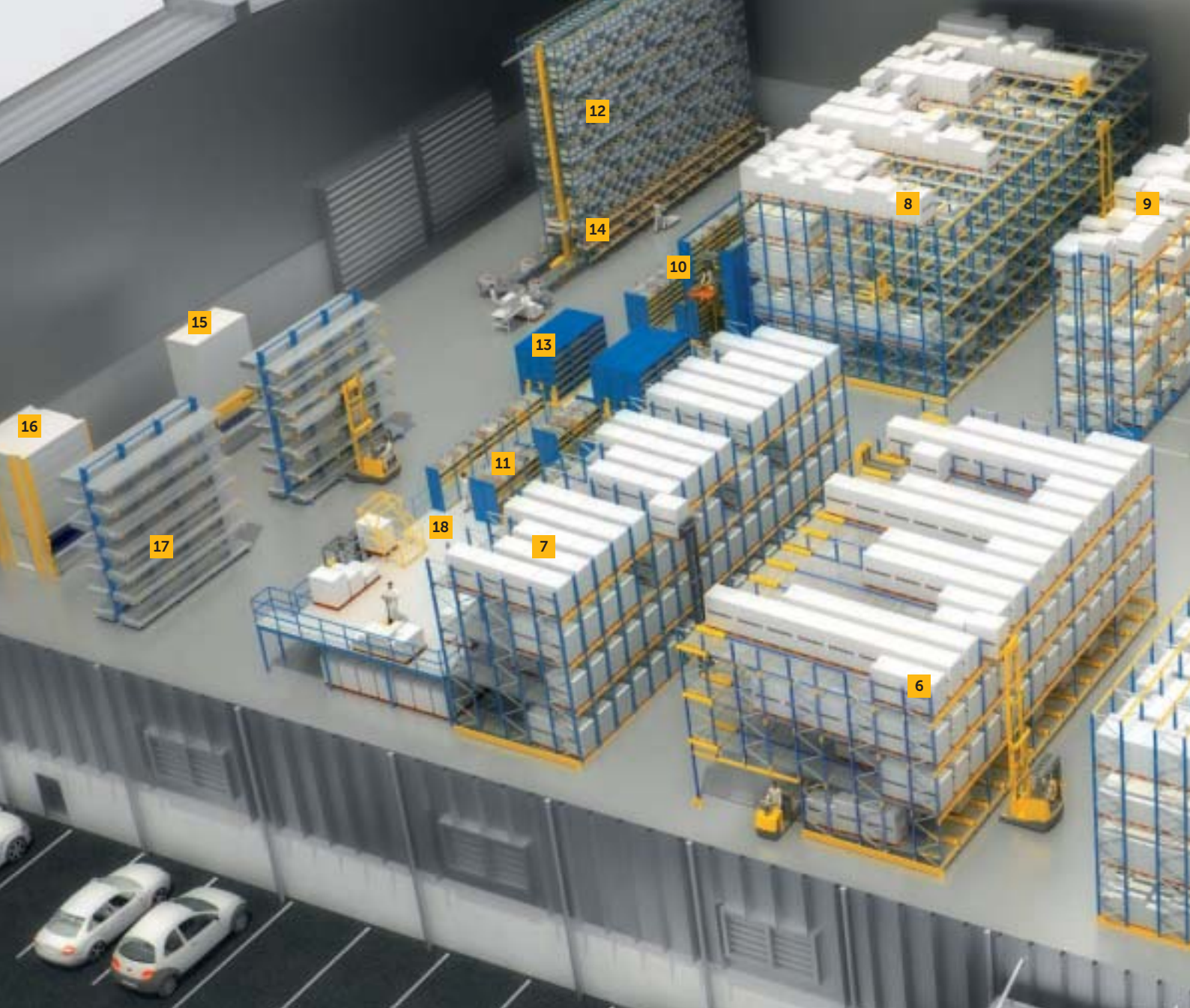
Racks are much more than just steel and iron. They are the key to optimum productivity. A Racking System can only optimize the efficiency of the material flow process if it is designed to meet the actual storage needs. We have that key for you: Rack systems, mezzanines and self-supporting stores (silos) with the right warehouse management system – the Jungheinrich WMS. For storing Pallets, Containers, Trays, Boxes and long awkward loads. We offer you a complete solution: to include warehouse planning, racking and forklift trucks. Operating equipment and a logistics system that works hand in hand. From rough planning through project planning to handover. From advice on tailor-made financing to one of the most comprehensive after sales services in Europe.

## **Our experience is your advantage**

As a leading manufacturer of industrial trucks, we know the requirements of stacker-operated racking. In developing our racking systems, we draw on our worldwide experience in planning, project planning, processing and commissioning of thousands and thousands of warehouses around the world.

## **Always well advised**

Our Area Sales Managers understand the requirements which need to be met to match racking and fork lift trucks to each other perfectly. It makes no difference whether the work cycles are performed with tiller-guided pallet trucks, front seat, reach mast or high rack stackers, rack operating equipment or order pickers. We offer you a complete solution including trucks and racking system.



# You know the problem. We know the solution.

## Static pallet storage

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# Single-bay racking.

## Optimum space utilisation, especially for mesh boxes.

### Features

Single-bay racking holds one load unit per bay between two uprights on each level. Angle profiles arranged in depth direction take on the shelf function – additional space is gained by omitting the beams.

### Applications

Single Bay Racking Systems are suitable for storing ranges of product in large quantities and heavy loads. The design of this type of racking system is ideal for picking directly from pallets or stillage boxes.

### Operation

Our single-bay racking can be operated either manually or automatically – using either trucks or rack operating equipment as required. The depth supports make the stacking process especially fast and safe. Advantages compared to block storage include direct access to all load units and safe stacking to great heights.

### Advantages

- Direct access to all items
- Available for manual/automatic racking operations
- Free bay allocation
- User-friendly order picking
- Fifo method







# Multi-bay racking for wide aisles.

## The classic rack system.

### Features

Multi-bay racking for wide aisles is the most commonly used racking system. In contrast to single-bay racking, several pallets are stored on each level between two up-rights. In the standard format they reach heights of eight to ten metres. They can be extended up to twelve metres for use in high-bay warehouses and with automated operation up to 45 metres in height. With additional depth support, pallets and other load aids can also be stored in any orientation.

### Applications

Multi-bay racking systems are suitable for storing large quantities of individual, primarily palletized items. In comparison with block storage, multi-bay racking systems in wide aisles offer the advantages of pressure-free storage and direct access to all pallets. The easy adjustment of the beams guarantees optimum usage of the warehouse. Double-deck storage is also possible.

### Operation

The racking is served by fork lift trucks or rack operating equipment. When narrow aisle trucks are used, it is also possible to stack/retrieve items lengthways. Consequently, the aisle width can be reduced to 1,400 mm (see Narrow-aisle, page 10).

### Advantages

- Direct access to all items
- Available for manual and automatic rack operation
- Free bay allocation
- Fifo method





# Multi-bay racking for narrow aisles.

## More output in less area.

### Applications

Narrow aisle racking systems are a major alternative to multi-bay racking systems. They offer all the performance features of multi-bay racking for wide aisles (see page 8) at heights above ten metres and are freestanding in the warehouse. They are characterised by the small amount of floor space required for aisles and the extremely high lift heights. Narrow aisle racking is used in particular when there is limited space available and there is a necessity for greater throughput in comparison with multi-bay racking systems.

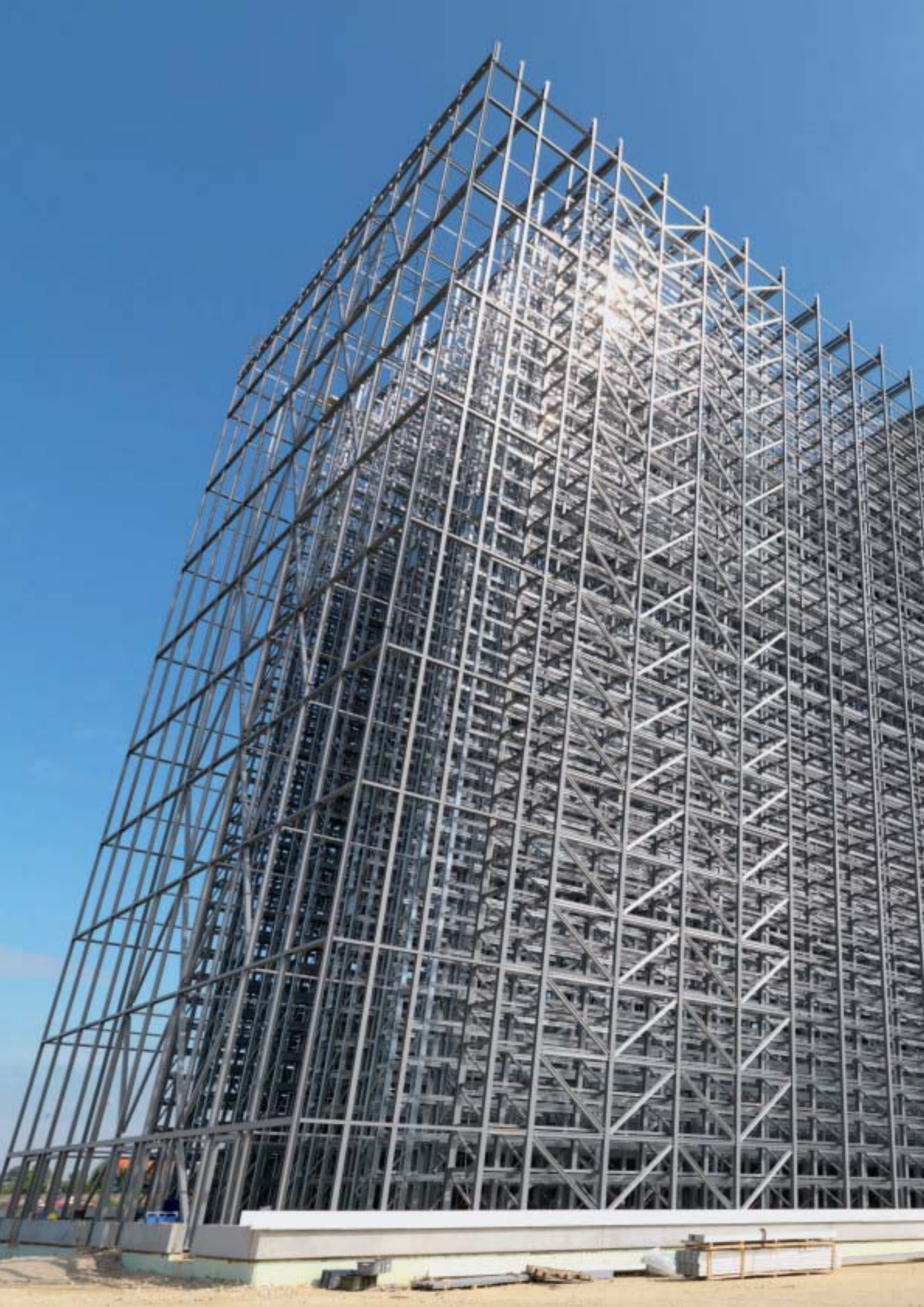
### Operation

Rail-guided or inductively guided semiautomatic or fully automatic narrow aisle trucks are used for the application. Operation with rack operating equipment is also possible.

### Advantages

- Excellent utilisation of space
- High productivity
- Narrower aisle widths
- Optional incremental upgrading to fully automatic





# High-bay silo. Warehousing in all dimensions.

## Features

Hi Bay Silos are Racking Structures the frames and beams of the system also support the roof and walls of the building. These Warehouses tend to be automatically controlled and reach heights in excess of 40 metres. The Silo design allows very short and cost effective building construction.

## Applications

High-bay silos are used to store large quantities of one item with a high throughput.

## Operation

This racking system is designed for automatic rack operating equipment. Our rack operating equipment is suitable for heights up to 40 metres. It can switch freely from one aisle to another. Key to the system is the cornering ability of the Cranes combined with our Europe-wide patented switch-point system. This system allows for reliable and fast aisle transfers.

## Advantages

- Heights of up to 40 metres possible
- Utilisation of storage space at great heights
- Reduces the need for warehouse area or buildings
- No delays due to building construction
- Can be flexibly extended





# Drive-in/drive-through racking.

## Compact systematic storage.

### Features

With drive-in/drive-through racking, load units are stored in the racking depth one behind the other on two continuous depth supports (also called pallet rails). A defined order of stacking and retrieval of pallets must be followed. The required order is determined by the type of the "drive-in racking" or "drive-through racking".

Trucks have the opportunity to drive into the racking bays. With drive-in racking, the racking can only be serviced from one side (lifo method). By contrast, drive-through racking makes it possible to stack items on one side while other goods are simultaneously being retrieved from the other side (fifo method). Throughput is considerably higher with drive-through racking than it is with drive-in racking.

### Applications

Drive-in and drive-through racking are ideal for storing large volumes of heavy items with a limited variety of items. The racking system combines the benefits of block storage with those of racking storage: compact utilisation of space without the pressure of backups in the stored goods.

### Operation

The load unit is freely raised to a height above the desired beam level before entering the channel. Then the truck can slowly drive into the channel. It is especially important to ensure that the truck is suitable for the channel before it enters. The contours of the overhead guard and fork carriage are the main points to consider. Sideways-seated stackers are particularly suited to this work as they also give the operator a clear field of vision when in reverse.

### Advantages

- High level of space utilisation
- Can be flexibly extended
- Ideal for large volumes of identical items
- Particularly suitable for seasonal warehouses







# Pallet Live Storage.

## Best utilisation of space for fifo method.

### Features

Our Pallet Live Storage comprises racking uprights connected together to form a channel. Stacking is on one side with retrieval on the other side of the racking. As soon as a pallet has been removed, the following pallets automatically move up on the slightly inclined roller conveyors. Brake rollers keep the descent speed under control. An automatic separating mechanism ensures that the front pallet is never jammed by pressure from the following ones. Automatically driven roller conveyors inside the channel are also optionally available.

### Applications

Pallet Live Storage racking is suitable for storing palletized goods of the same type in large volumes. The fifo method ensures that no products become out of date.

### Operation

Stacking is typically done lengthways by fork lift trucks or by using support arm stackers.

### Advantages

- Optimum use of space through dynamic block storage
- Separation of loading and removal
- Shorter internal transport distances





# Pushback racking.

## Best utilisation of space for lifo method.

### Features

Our pushback racking comprises racking uprights connected together to form a channel. The tilt of the conveyors is three to five per cent. With this system, stacking and retrieval take place from the same side of the racking. If there are already load units in one of the channels, the new load unit must push the previously positioned load unit against the slope. When retrieving a load unit, the pallets already in the channel move up automatically. There are typically three pallets behind each other per channel.

### Applications

Drive-in racking is suitable for storing palletized goods of the same type in moderately large volumes.

### Operation

Stacking is typically done lengthways by fork lift trucks or by using support arm stackers.

### Advantages

- Optimum use of space through dynamic block storage
- Ideal for buffer channels
- Can be flexibly extended





# Compact storage shuttle

## Deep. Compact. Efficient.

### Features

Carriers travelling independently in the racking channel are the core of our compact shuttle storage systems – a complete solution consisting of the channel racking, carrier truck and carrier modules. Special feature of our shuttle system: It goes underneath the pallet (Under Pallet Carrier – UPC). It is also available in many different variants and can be adapted to individual applications. Our shuttle systems allow for fewer aisles and more pallet positions in the same warehouse area to achieve high filling levels.

### Applications

The application areas are the same as those for drive-in and drive-through racking (see page 14) with the advantages that the productivity of the shuttle systems is higher and single-article storage is only necessary for each channel. This greatly improves utilisation of space. The system is suitable for both large and medium numbers of items with medium to large stocks per item. Typical applications include cold stores, production buffer warehouses, restocking warehouses for order picking and the entire haulage services industry.



Under Pallet Carriers (UPC)



### **Operating the under pallet carrier (UPC)**

A UPC is used to achieve high turnaround levels with frequent channel changes (e.g. due to small number of pallets per item, shorter channels, combined orders from various articles or replenishment in picking tunnel systems). Pallets are deposited in the channel on a UPC from the carrier truck. While the carrier is in motion, the operator can retrieve another pallet and deposit it at the start of the channel. The next stacking operation can therefore begin. Retrieval is carried out accordingly.

### **Advantages**

- Ideal utilisation of floor and space
- High productivity
- Careful load handling
- Lifo and fifo can be implemented
- Different pallet types can be used in the same racking system
- Easy to set up a connection to your warehouse management system with our logistics





## **Powered Mobile racking system. Movable aisle for optimum level of space utilisation.**

### **Features**

Movable racks are mounted on electrically driven bases (also called carriages). This reduces the number of racking aisles to a minimum. Rack blocks with only one racking aisle are possible.

An aisle can be opened if necessary to drive in between two movable carriages, between a carriage and as well or between a stationary rack and a wall.



### Applications

Mobile racking is particularly suitable for medium quantities of goods and a medium number of different items with a low access requirement. Movable racking saves aisles, thereby creating additional storage space with the same floor area (up to 90 per cent compared to conventional racking for palletized goods). Despite this, every load unit is directly accessible at any time.

### Operation

Mobile racking can also be serviced by trucks with a wider aisle width requirement without losing much space, as only individual aisles are necessary. The racking rows can be controlled locally from the individual rack via remote control. Photoelectric light barriers on both racking fronts trigger an emergency disconnect as soon as they encounter an obstacle.

### Advantages

- Up to 90 per cent saving on racking aisles
- Better utilisation of space
- Access to single location





DP

DQ

DQ

DR



# Modular racking.

## Optimum access to every item.

### Features

Storage is on shelving made from steel plate over several levels. Our modular racking is available in slot-together or bolted design.

### Modular racking

It can be used in a narrow aisle warehouse for high-bay storage with a height of over twelve metres.

### Applications

If you have to store many different items in small to medium unit quantities, modular racking is the right solution for you. The racking system is suitable for a large number of goods, applications and industries. wherever manual control of the racking is required. The range of construction elements and accessory parts allows for the individual adaptation of the racking system to your space and usage specifications.

When order picking goods – based on the “goods to person” principle – the goods must always directly available to the order picker. Our modular racking is the best way to ensure this: Flexible in application, easily adjustable and with many different combinations possible, it is particularly suitable for non-palleted goods in small and very small containers. Order picking by hand is easier and access times are reduced.

### Operation

Modular racking can easily be operated manually, with horizontal or vertical order pickers and with rack operating equipment.

### Advantages

- Immediate access to any item
- Flexible expansion
- Available for manual expansion and automatic rack operation
- Can be combined as required
- Easy to assemble





# Modular racking floor system.

## Optimum use of space.

### Features

If large numbers of small parts have to be stored, the floor level is sometimes not sufficient. A modular racking floor system allows you to make optimum use of the available height of the warehouse. The advantage of the multi-level structure is that employees can simultaneously retrieve goods on several levels one over the other.

### Applications

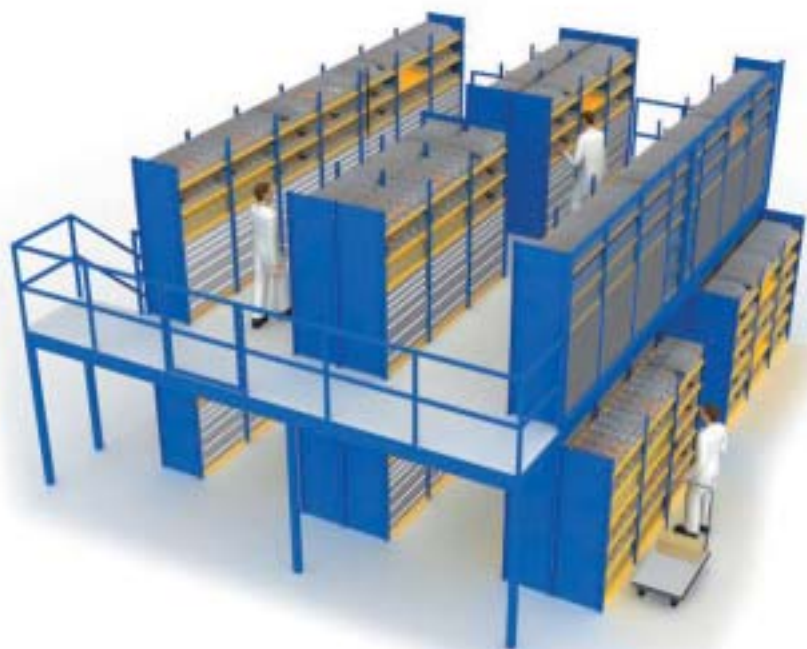
Modular racking floor systems incorporate the upper warehouse area into the picking zone. Consequently, the use of vertical order pickers is not necessary.

### Operation

Hand or electric pallet trucks support the picking process. Trucks from outside can set down entire pallets with goods to be separated into single items at transfer stations, or remove pallets with picked goods.

### Advantages

- Optimum use of space
- Short order-picking distances
- Simple retrofitting possible





# Automatic small parts warehouse.

## Maximum performance in the warehouse.

### Features

Automatic small parts warehouses guarantee excellent space-saving storage of small parts in containers, trays or boxes. These are stored in racking on angled beams – with full utilisation of the building height.

### Applications

Automated small parts warehouses are predominantly used for the storage of a wide diversity of small parts in limited quantities per item with high throughput requirements.

### Operation

Stacking and retrieval in an automatic small parts warehouse is done primarily with fully automatic rack operating equipment.

### Advantages

- Short access times
- High level of process reliability
- High productivity
- Optimum use of space
- Direct access to every item





# Mobile Modular Shelving.

## The best of two worlds.

### Features

Just like its “big brother”, movable pallet racking, a movable modular racking system facilitates user-friendly control: The carriages can be moved apart at the required point to create an aisle, thus providing direct access to any stored item.

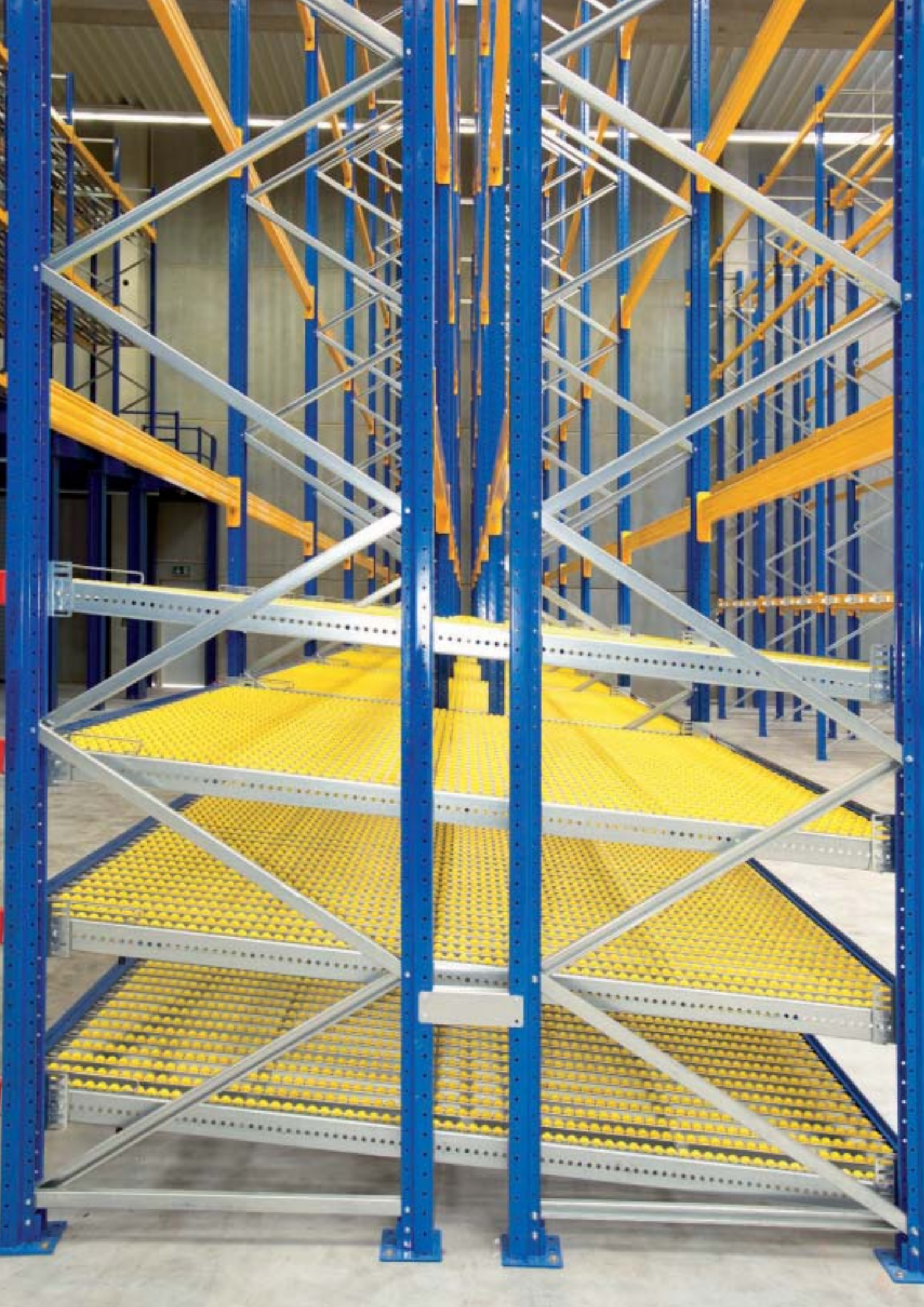
### Applications

Can be used as conventional archiving racking for files and boxes or as goods storage for items that are not suitable for storage on pallets: Whatever you do not need continuous access to can be conveniently stored high up in our movable modular racking system. The principle is very simple: The aisle is always wherever work is going on. And only there.

### Advantages

- Excellent space utilisation
- Goods are practically dust-free, even after extended storage in the enclosed aisle
- Automation can be implemented







# Carton Live Storage.

## The solution for small parts.

### Features

Carton Live Storage racking works according to the "fifo" method for small parts or packages of any size. Roller conveyors ensure that the stored goods move forward automatically to the retrieval point. This strict adherence to sequence ensures that nothing gets out of date in drive-through storage. The very compact form of storage allows for extremely short order picking routes. Optional guide rails help mark clear divisions, thereby reducing errors.

### Applications

Carton Live Storage racking is used especially for order picking of small parts. As a drive-through frame it can also be installed in standard pallet racking, which makes it the ideal addition to our varied range of pallet Carton Live Storage racking is also available for cold stores, either freestanding or integrated. A pick-by-light solution is also optionally available for our Carton Live Storage racking.

### Operation

Operation is by hand and with horizontal/vertical order pickers, or in multi-level systems also with picking platforms arranged for that purpose.

### Advantages

- Continuous reserve zones
- Separation of stacking and retrieval
- Can be flexibly extended
- Fifo method





# Vertical Carousel.

## Compresses storage space.

## Increases storage area.

### Features

The compact design of our Vertical Carousel offers maximum storage area on a minimum floor area. It can be set up as freestanding carousel racking or connected to the structure of levels in the building, up to 10 metres in height and with multiple service openings. This high-density storage taps the greatest possible capacity of your warehouse.

### Applications

Automated storage and holding system can be used effectively in areas close to production or in the warehouse, wherever space or order picking time is no longer sufficient with static storage. It can be connected to the warehouse management system through our logistics interface at any time.

### Operation

Our Vertical Carousel is a self-contained system of connected shelves. Based on the "Goods to person" principle, it is perfectly suited for small stored goods with high access frequency.

### Advantages

- Vertical carousel racking for efficient and customised storage
- High circulation speed – rapid access to all stored goods
- High-density storage for more storage area
- Maximum use of space using minimum floor area
- Extensive safety features and ergonomic design





# Vertical Lift.

## Reduces footprint.

## Increases storage area.

### Features

High travel speeds, minimum wait times and therefore high order picking performance – our lift racking will boost productivity in your warehouse. Regardless of where the system is located, the employee receives the goods in the shortest time possible. The side bearing angles in the service opening make it possible to position several trays within the working area. That means the order picker can work on one tray while the extractor is preparing the next tray in the background.

### Applications

The automated storage and holding system can be used for high-density storage on a small footprint. It is suitable for use in areas close to production or in the warehouse proper. The optional logistics interface to your warehouse IT system ensures efficient integration of the lift racking into your warehouse processes.

### Operation

Our lift racking is a self-contained system with trays stored vertically on both sides, an extractor and a control unit to deliver the required goods to an ergonomically arranged service opening.

### Advantages

- Vertical lift system for high-density storage on a small footprint
- Increased storage capacity with a significantly smaller footprint
- Accurate inventory stocks due to integration in internal ERP systems
- More security and protection for operator and goods
- Modular expandability





# Cantilever racking.

## For long loads of any type.

### Features

Any number of cantilever racks can be set up next to each other. This racking is especially suitable for storing long loads such as bars, pipes and boards. The racking uprights are equipped with projecting beams called cantilever arms to securely hold the loads. The distance between the uprights depends on the weight of the stored goods. Optionally available limit pieces on the cantilever arms secure the load in addition.

### Applications

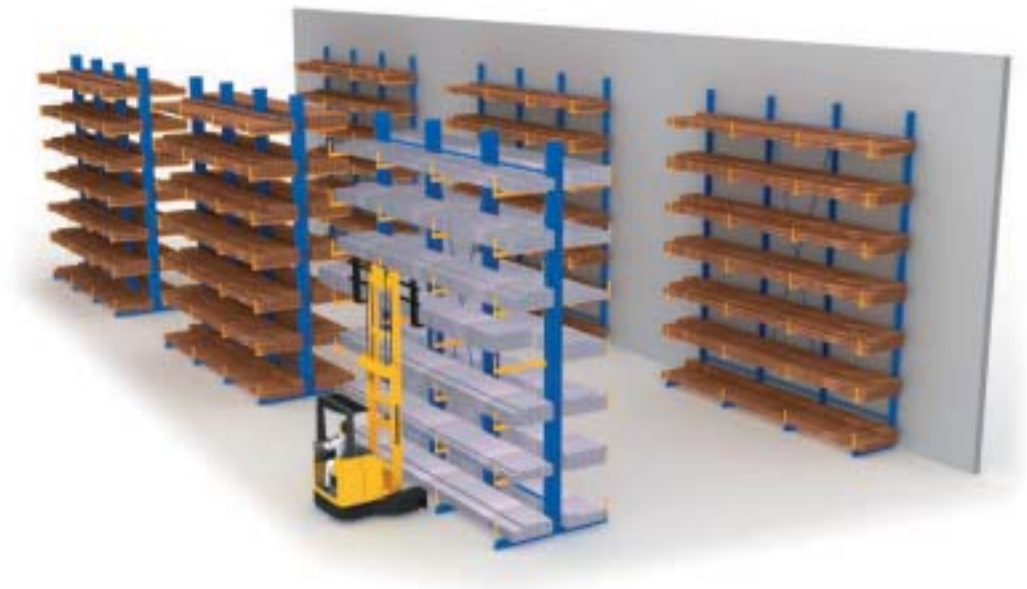
Goods of medium to high weight, in small to large quantities per item at medium throughput are stored on cantilever arms. The cantilever arms can also optionally be connected with each other by galvanised mesh or shelving. This makes it possible to store goods with different widths on pallets without being limited to a specific pattern. Movable racking can also be used to create additional space.

### Operation

Trucks are used for operation, for example our reach trucks. They work without turning in the aisles and therefore only require very narrow aisle widths.

### Advantages

- Can be extended and expanded as required
- Rapid response to changes in product range
- Can be flexibly extended







# Structural steel platform.

## Additional storage space without changing the building fabric.

### Features

The structural steel platform is a self-supporting, walk-on platform of steel construction which can sometimes also be driven on. The new level that is added creates new work areas without changing the basic dimensions of the building.

### Applications

Structural steel platforms create additional storage area on the platform itself with a new area underneath as well, for example for production, without the need for structural changes to the building to create new working areas. Compared with integral mezzanine floors, structural steel platforms offer many individual design options. For instance, they can also be used as order picking platforms.

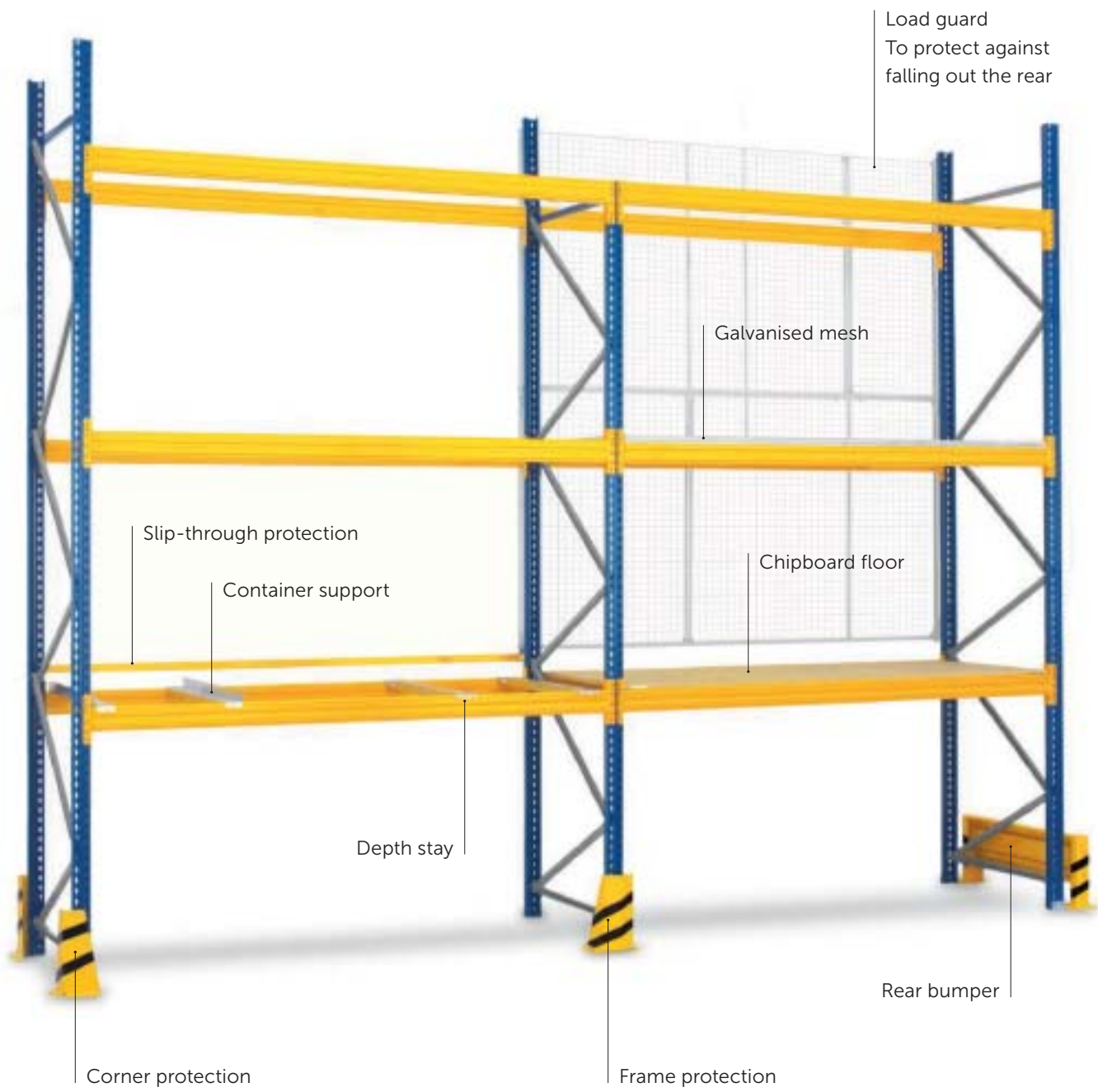
### Operation

Structural steel platforms can be designed so that not only hand pallet trucks but also electric pallet trucks can work on them. The material flow from the ground floor to the platform is handled by fork lift trucks or conveyor systems. Personnel access is provided by stairs or integrated lifts.

### Advantages

- Enlarges the storage area
- More efficient use of room height
- Flexibility on and under the platform







## Pallet rack



• Conduct regular inspections.  
• Before operating instructions.  
• Check for damage due to accidents or disengagement of structural components.



Please report all damage to the company safety officer!



Modifications to the construction may only be executed after consultation of and approval by the manufacturer.



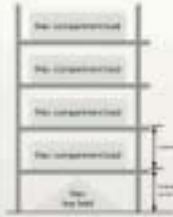
Do not climb racking!



If in doubt always contact manufacturer!



The operation and maintenance of the storage equipment has to be carried out according to the EN 15635 - Steel static storage systems.



Year of manufacture 2011  
 Rack type MP-B  
 Order number 1112040259  
 Max. bay load\* 25.200 kg  
 Max. level distance 9.100 mm  
 Frame profile E 30 P

| Clear bay | Profile    | Max. compartment-width |
|-----------|------------|------------------------|
| 1.000 mm  | 145/50/L75 | 3.600 kg               |

\*The basis of the static verification is the DIN EN 15512

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**JUNGHEINRICH**  
 Material Handling Solutions

# Our rack accessories. Making your warehouses run smoothly.

From protection barriers to protect the racking to numbering of the X, Y and Z axes in a complex racking system, we offer everything you need to ensure optimum interaction of trucks and racking system: racking rows, racking aisle and position number plates, warning signs, information signs, mandatory and prohibition signs, depth stays, load guards, galvanised mesh and chipboard floors.

It starts with our warehouse labelling: Systematic numbering is the first step in getting a warehouses organisationally under control. At the same time, our organisational numbering also forms the basis for manual and IT-supported organisational systems.



# **The rack inspector.**

## **Our man for safety in your warehouse.**

According to EC Directive 2009/104/EC, employers are obligated to have working equipment that requires maintenance and could result in hazards for employees checked on a regular basis by a competent person. We offer you the right solution for this: professional examination by our racking inspector.

Even the best racking system is subject to wear and tear over time. And even when working with the utmost caution, damage to racks can hardly be avoided. Pallet sizes change, beams are swapped accordingly and the capacity signs are mislaid ... The result is major safety risks in some cases, plus loss of performance, and in the hustle and bustle of the working day, these are often only recognised when it is too late. Our racking inspection service can help you to prevent this. It includes a wide range of tests which make a major contribution to ensuring the safe operation of every racking system.

- Racking system inspection in accordance with EN 15635 (use and maintenance of warehouse equipment)
- Comparison of the signage for racking load capacity with the actual setup
- Check on the setup of the racking system in accordance with the assembly drawing (where available)
- Visual inspection of uprights and beams for visible deformation and damage, carried out from the warehouse floor
- Test sticker is issued to document successful inspection
- Test report is provided
- Quotes are submitted for replacement of damaged parts

# Are your warehouse facilities subject to inspection?

## Play close attention if that's the case.

### What are the statutory requirements?

The obligation of the employer to assess the working conditions arises from section 5 of the German Occupational Safety and Health Act [Arbeitsschutzgesetz]. The risk assessment is substantiated by the German Ordinance on Industrial Safety and Health [Betriebssicherheitsverordnung]. Section 4 of this ordinance states: "The employer shall perform the activities called for (...) to ensure that the employees shall be provided with work equipment (...) which guarantees that safety and health at work are ensured if it is used according to its intended operating conditions."

Section 10 of the Ordinance on Industrial Safety and Health stipulates in which cases inspections are required: "The employer shall ensure that work equipment exposed to conditions causing deterioration which is liable to result in dangerous situations is subject to periodic inspections at intervals determined according to section 3(3) by qualified persons."

### Inspection required for all racking types?

According to the trade association, in principle, all racking types are required to undergo inspection. These include:

- Pallet racking
- Modular racking systems
- Multi-level systems
- Cantilever-type racking
- Drive-in and drive-through racking
- Drive-through racking
- Manual mobile racking
- Archive racking

### What inspections are necessary on a regular basis?

Since August 2009, the European standard DIN EN 15635 (see [www.din.de](http://www.din.de)) has been applicable to racking. The standard explicitly states that racking is designed only for careful and proper use. No additional forces or impact loads may be introduced, such as those incurred by incorrect operation. Chapter 9 of the standard requires the operating company to carry out regular checks. A distinction is made here between immediate notification, visual inspections and expert inspections:

#### Immediate notification

All employees must immediately notify the safety officer of any damage they discover.

#### Visual inspections

Visual inspections are to be undertaken weekly by trained personnel. However, alternative intervals may be selected if determined by a risk assessment. A formal, written report must be maintained.

#### Expert inspections

An inspection is to be conducted by an expert at intervals of not more than twelve months. According to the trade association, the expert is to be qualified in accordance with the German Technical Rule for Operational Safety 1203.

#### What characterises a qualified person?

German Technical Rule for Operational Safety 1203 requires that the qualified person must have specialist expertise. They must have acquired this expertise by completing professional training, through professional experience and through contemporary professional activity in the scope of the upcoming inspection of the item to be inspected and appropriate further training. Also the qualified person may not be subject to any technical instructions.

Racking Inspection



▲  
Your next inspection

Note: The inspection sticker does not replace the full inspection report.

**JUNGHEINRICH**

# The right truck for every kind of racking. Cost-effective. Reliable. Tailored to needs.

We offer you the right pallet truck, fork lift, order picker or tow tractor for every application. Irrespective of the lift height, load-bearing surface or transport distance – with more than 600 truck models, you can be certain we will find the right solution for you. Our range of products offers manual, semi-automatic and fully automatic machines for your every need. If not – which is hard for us to imagine – then we will custom build your “dream truck”, 100 per cent according to your specifications and unique in the world. But first you should have a look at our standard trucks (overview on the right) to see if we

have what you need. For example, if you need to transport goods over short distances without having to stack them on a rack, you will find the AM hand pallet truck and EJE C electric pedestrian pallet truck under the headings “Transport” and “Short distance”.

So now you’ve taken an important first step. Of course we will be available with help and advice for all your detailed questions.





|                  |                                |   |   |   |   |   |
|------------------|--------------------------------|---|---|---|---|---|
| Handling         | From the floor                 | <b>EFG</b><br>Electric three-wheel truck with front or rear drive             | <b>EFG</b><br>Electric four-wheel counterbalance fork lift truck                        | <b>DFG/TFG</b><br>Diesel/LPG fork lift truck                                  | <b>ETV C</b><br>Reach truck for indoor and outdoor operation                        |   |
|                  | Over ramp                      | <b>AM</b><br>Hand pallet truck  | <b>EJE</b><br>Electric pedestrian pallet truck  | <b>ERE</b><br>Electric pedestrian pallet truck with stand-on platform         | <b>ESE</b><br>Electric stand/sit pallet truck                                       | <b>EJD</b><br>Electric pedestrian controlled pallet truck/stacker |
|                  |                                | <b>ERD</b><br>Electric pedestrian pallet truck/stacker with stand-on platform | <b>ESD</b><br>Electric stand-on and sideways seated stacker for double-deck loading     |   |   |   |
| Transporting     | Short distance                 | <b>AM</b><br>Hand pallet truck  | <b>EME</b><br>Electric pedestrian pallet truck  | <b>EJE C</b><br>Electric pedestrian pallet truck with mast lift               |   |   |
|                  | Medium distance                | <b>EJE</b><br>Electric pedestrian pallet truck                                | <b>EJD</b><br>Electric pedestrian controlled pallet truck/stacker                       | <b>ETV Q</b><br>Multi directional reach truck for long goods                  |   |   |
|                  | Long distance                  | <b>ERE</b><br>Electric pedestrian pallet truck with stand-on platform         | <b>ESE</b><br>Electric stand/sit pallet truck and electric sideways seated pallet truck | <b>ERD</b><br>Electric pedestrian pallet truck/stacker with stand-on platform | <b>ESD</b><br>Electric stand-on and sideways seated stacker for double-deck loading | <b>EZW</b><br>Platform truck                                      |
| Storage/stacking | Lift height up to 5,350 mm     | <b>HC</b><br>Electric hand stacker  | <b>EMC</b><br>Electric pedestrian controlled truck                                      | <b>EJC</b><br>Electric pedestrian controlled truck                            | <b>ERC</b><br>Electric pedestrian controlled truck with stand-on platform           | <b>ESC</b><br>Electric sideways-seated stacker                    |
|                  | Lift height up to 7,000 mm     | <b>EFG</b><br>Electric three-wheel truck with front/rear drive                | <b>EFG</b><br>Electric four-wheel counterbalance fork lift truck                        | <b>DFG/TFG</b><br>Diesel/LPG fork lift truck                                  | <b>ETV Q</b><br>Multi directional reach truck for long goods                        | <b>EFX</b><br>Tri-lateral stacker                                 |
|                  | Lift height up to 17,000 mm    | <b>ETM/ETV</b><br>Reach trucks  | <b>ETR</b><br>Reach fork lift truck   | <b>EKX</b><br>Order picking/tri-lateral stacker with lifting control cab      | <b>ETX</b><br>Tri-lateral stacker   |   |
| Order picking    | Picking height up to 2nd level | <b>EJE C</b><br>Electric pedestrian pallet truck with mast lift               | <b>ECE</b><br>Low level order picker  | <b>ECD</b><br>Low level order picker  | <b>ECR</b><br>Low level order picker  |   |
|                  | Picking height up to 11,345 mm | <b>EKS</b><br>Medium/high level order picker with lifting control cab         |   |   |   |   |
|                  | Picking height up to 17,000 mm | <b>EKX</b><br>Order picking/tri-lateral stacker with lifting control cab      |   |   |   |   |
| Automation       | Lift height up to 4,000 mm     | <b>EKS 210a</b><br>Auto Pallet Mover  | <b>ERC 215a</b><br>Auto Pallet Mover  | <b>EKS 225a</b><br>Auto Pallet Mover  |   |   |
|                  | Lift height up to 14,500 mm    | <b>ETXa</b><br>Automatic high-rack stacker                                    | <b>EKXa</b><br>Automatic high-rack stacker  |   |   |   |
| Towing           | Drawbar pull up to 1,000 kg    | <b>EZS 010</b><br>Tow tractor   |   |   |   |   |
|                  | Drawbar pull up to 3,000 kg    | <b>EZS 130</b><br>Tow tractor   |   |   |   |   |
|                  | Drawbar pull up to 4,000 kg    | <b>EZS C40</b><br>Tow tractor   |   |   |   |   |
|                  | Drawbar pull up to 5,000 kg    | <b>EZS 350</b><br>Tow tractor   |   |   |   |   |
|                  | Drawbar pull up to 9,000 kg    | <b>EZS 570/580/590</b><br>Tow tractor   |   |   |   |   |
|                  | Drawbar pull up to 25,000 kg   | <b>EZS 6250</b><br>Tow tractor  |   |   |   |   |

# Yes or no?

## Opt for the best solution.

### A one-stop shop

We devote ourselves to your individual requirements, from the initial analysis of your existing system to the design of an optimal "new system" to implementation and successful handover. We always find the right solution for you. A competitive edge is only possible with a logistics system that has been perfectly matched to your business procedures. We have taken our core competency in the field of truck and rack manufacturing and expanded it to create an excellent product portfolio. The goal: To optimise the process flow for semi- and fully automatic warehouses and to make it as efficient as possible.

### Responsible system integration

Jungheinrich not only ensures that its hardware such as racking, racking operating equipment and trucks are in the right place at the right time. As a general contractor and system integrator, we also ensure that all the systems work inter-dependently and optimally with each other. We place tailor-made software programs in operation which bring your warehouse solution to fruition. The goal is to hand over a high-performance turnkey system.

### Service with the manufacturer's expertise

Benefit from our service. Benefit from the manufacturer's expertise. Whether you choose a full service agreement or individually arranged maintenance intervals, you will be impressed by our diverse range of services, flexibly adapted to your specific application to ensure long-term investment and planning security. In addition, our comprehensive direct sales network and superbly trained engineers ensure rapid response times, minimum down-times and low operating costs.

### Lower CO<sub>2</sub> emissions and energy costs

Our technological innovations and advanced development in the last ten years have led to a drastic drop in the CO<sub>2</sub> emissions of our products, in the two-digit range. Our entire product cycle now features these innovations, from manufacturing through usage to refurbishing. And our high-tech solutions are really setting standards in the usage phase, which is where more than 80 per cent of all emissions occur. You can easily use this advantage to your benefit, immediately reducing your energy costs considerably while simultaneously achieving maximum throughput rates.

### TÜV certified product life-cycle assessment

TÜV-Nord has systematically analysed the life-cycle assessment and certified it in accordance with DIN EN ISO 14040, giving us the environmental rating "Geprüfte Produkt-Ökobilanz" [Certified Product Life-cycle Assessment].

[www.jungheinrich.com/oekobilanz](http://www.jungheinrich.com/oekobilanz)





System (2014)  
(2015)  
(2016)

Funktions

ent. Verantwortung  
Personal  
Leistung  
+A  
+B  
Planung  
Kontrolle  
Beratung

**ISO 9001** The German production facilities  
**ISO 14001** in Norderstedt, Moosburg  
and Landsberg are certified.

 Jungheinrich trucks  
conform to the European  
Safety Requirements.

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**JUNGHEINRICH**  
Machines. Ideas. Solutions.