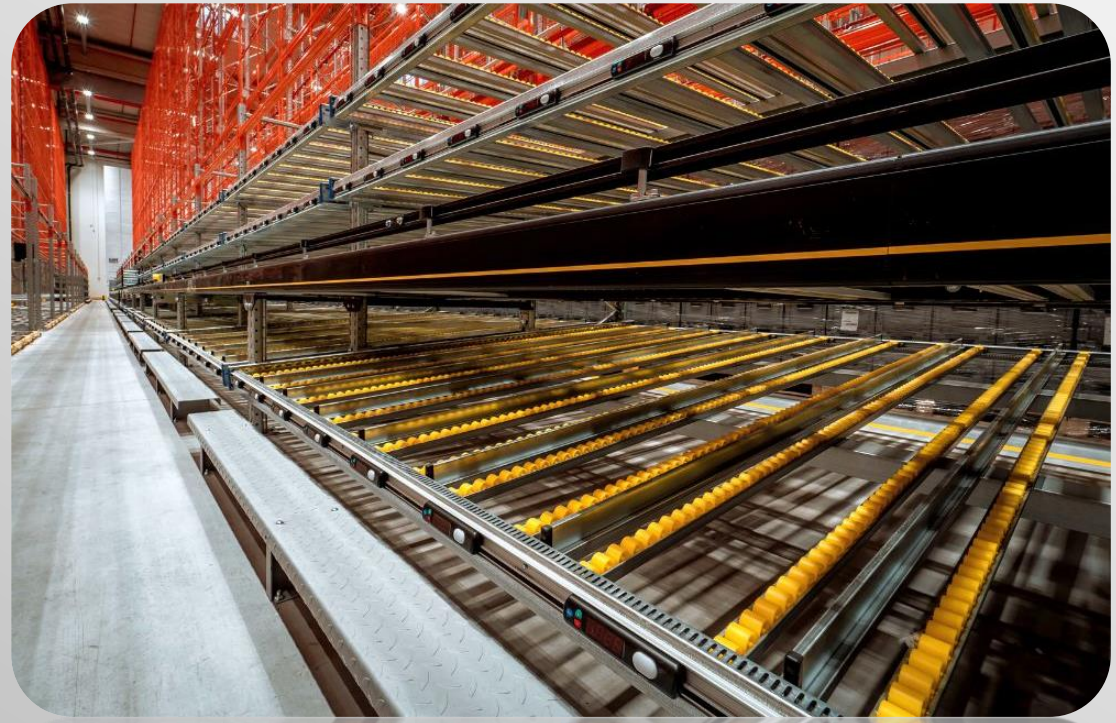
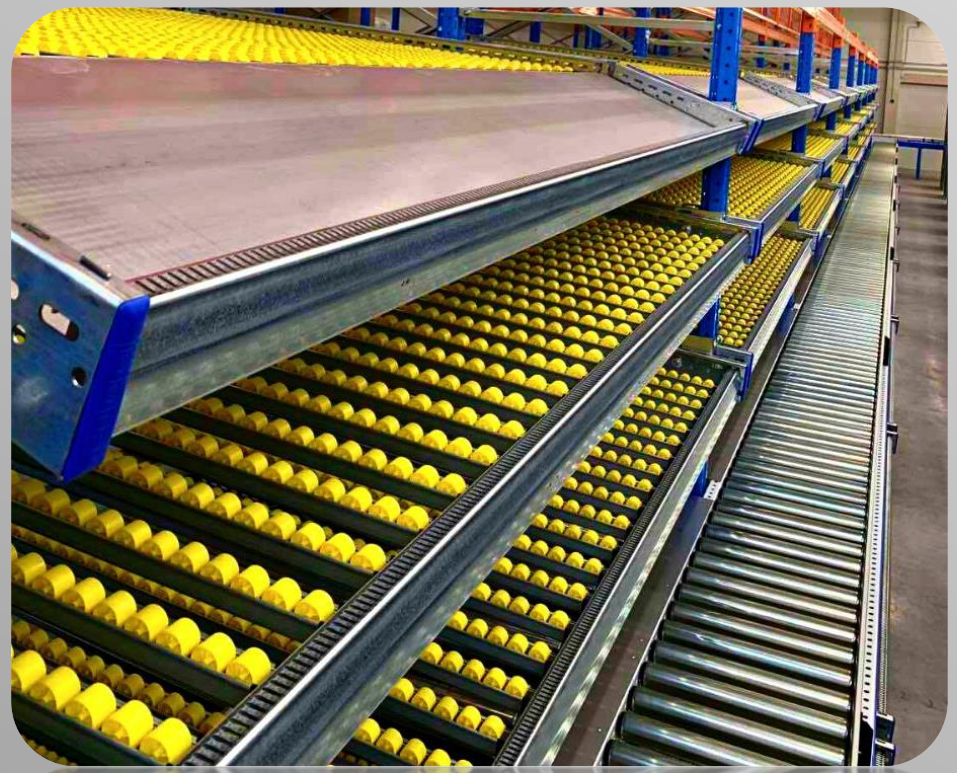
STAMH®

CARTON FLOW STORAGE SYSTEMS



General Features

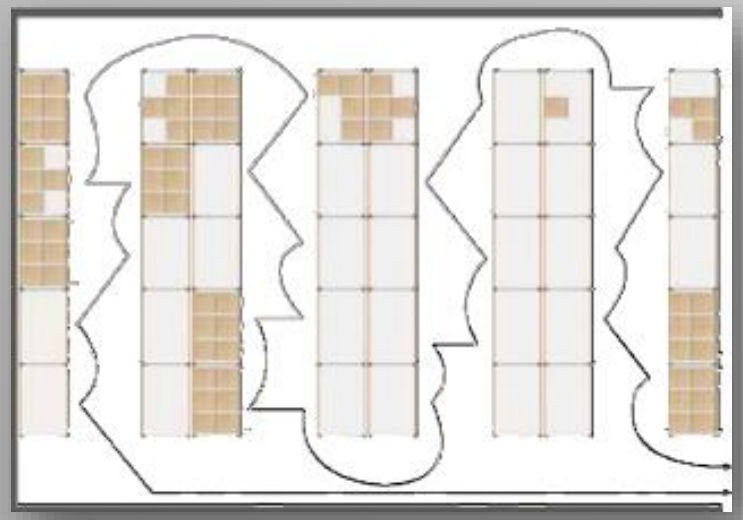
The Carton Flow Storage System is engineered with slightly inclined platforms of wheels and rollers. Restocking can often be done from the rear of the rack while picking continues from the front. This reduces the downtime associated with restocking, ensuring a smoother workflow. The SKUs slide down moved only by gravity forces. This system guarantees perfect products rotation, preventing replenishment interferences, increasing the order preparation velocity. It's designed for areas in the warehouse with a large volume of picking activities. Carton Flow Systems increase the number of orders preparation lines. Warehouse operators don't need to make unnecessary movements, covering large distances to search for products. The Carton Flow Racking Systems requires a loading or replenishment aisle beside the structure and a picking/orders assembly aisles;



Benefits of the Carton Flow Storage System

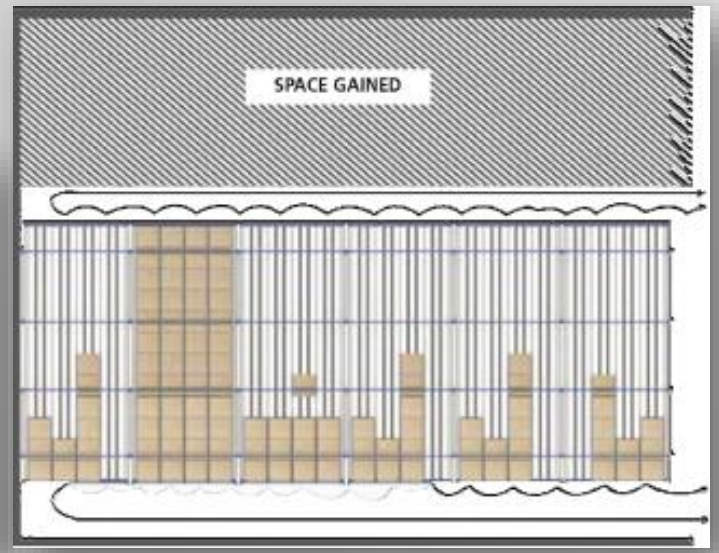
- Perfect products rotation;
- Greater number of references at the front end of the racks;
- Reduced orders preparation times;
- Higher storage capacity;
- Possibility to combine with a pick-to-light system (a screen which provides orders details to the operators, increasing orders preparation velocity)
- Labor costs reduction;
- Picking accuracy;

Conventional picking



References per bay:3
Boxes per reference: 12
No.of references: 120
Total capacity: 1,400
Space used: 100%

Carton Flow picking



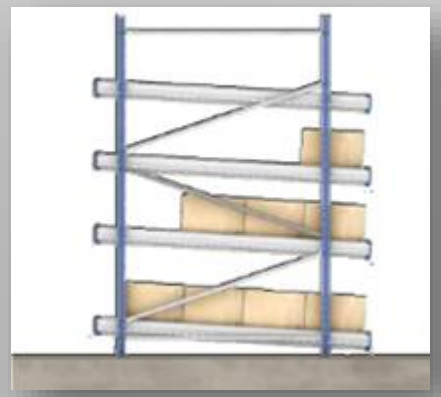
References per bay: 20
Boxes per reference: 12
No.of references: 120
Total capacity: 1,400
Space used: 70%

Perfect turnover and products rotation
It's achieved due to the FIFO system, where the first box or item to enter is the first one to leave;

Greater number of references near the picking area
In the Carton Flow Picking System, each reference occupies a space at the front end of the rack. The replenishment boxes are stored behind the front box, in the quantity permitted by the total depth of the Carton Flow Rack. In the Conventional system, the replenishment boxes are located at the side or above, thus occupying more surface area;

Reduction in picking and orders preparation times
Having a bigger number of references at the front part of the rack, reduces the time spent in the orders preparation process. The routes, warehousing teams need to cover to collect the different references of each order are much shorter;

Improved capacity
Racking depth is increased as the intermediate aisles are eliminated;



Possibility to integrate pick-to-light systems and conveyor technologies
This involves the integration of automated devices (screens) at the front of the racking system, connected to the WMS (Warehouse Management System). These devices inform the operator about the exact position of the next SKU to be picked and the amount needed to prepare the next order. Errors are eliminated and the performance is incomparably higher;

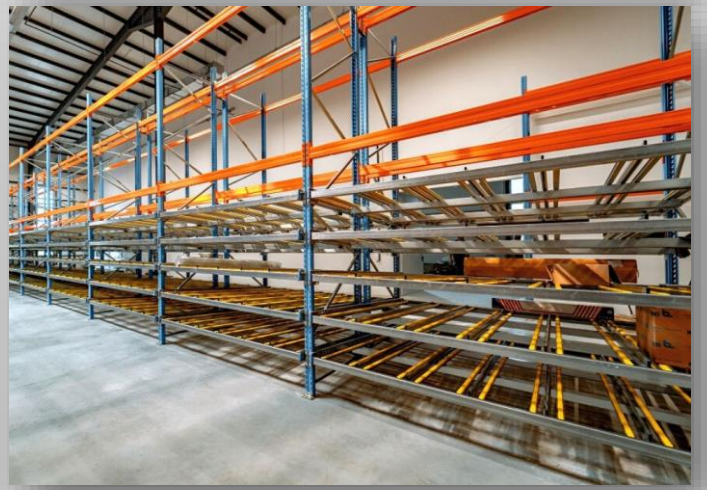
Areas of application

A wide range of sectors make use of the Carton Flow Storage System - from warehouses for mass consumption and fast-moving products to pharmaceutical companies, and cosmetics businesses. As a rule, they are installed in areas with considerable picking activity, but also in assembly chains or buffering facilities between two production plants;

Components company

Central warehouse for a chain of airport shops

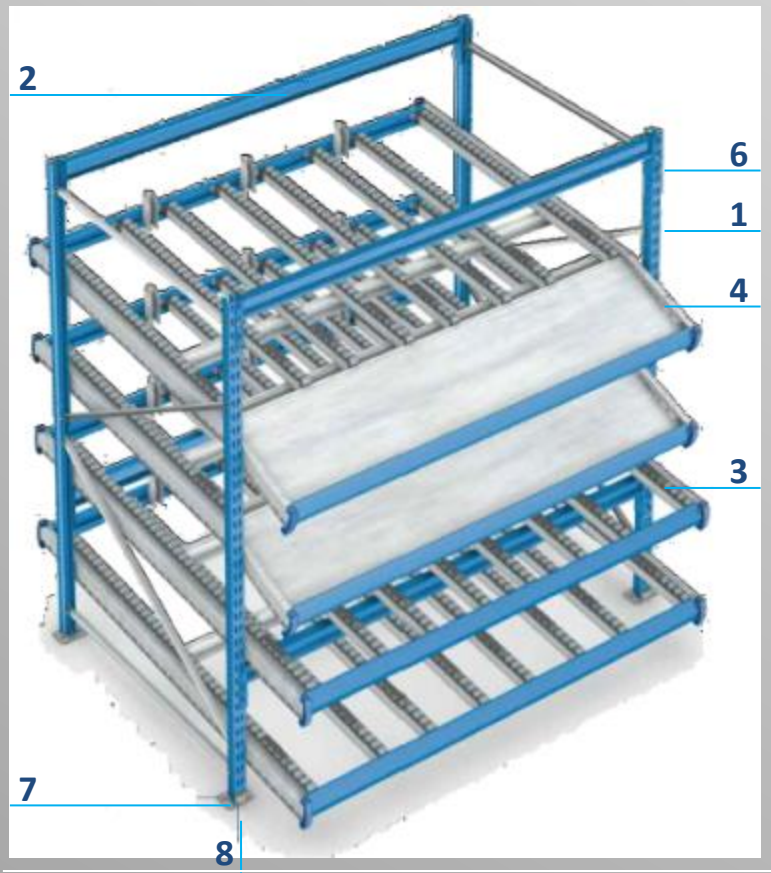
Pharmaceutical industry

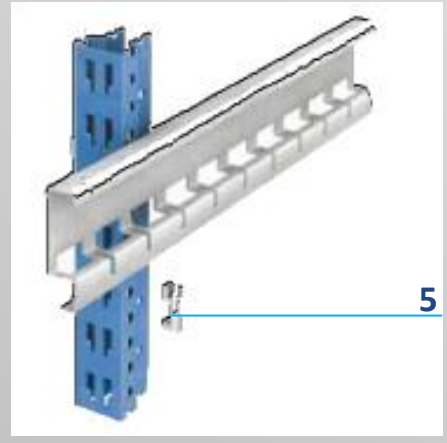


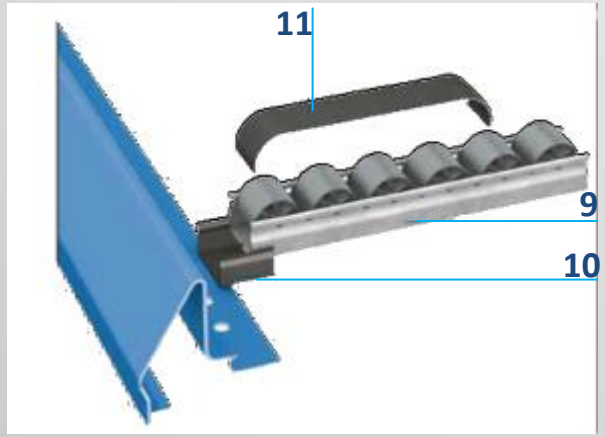
Cosmetics company

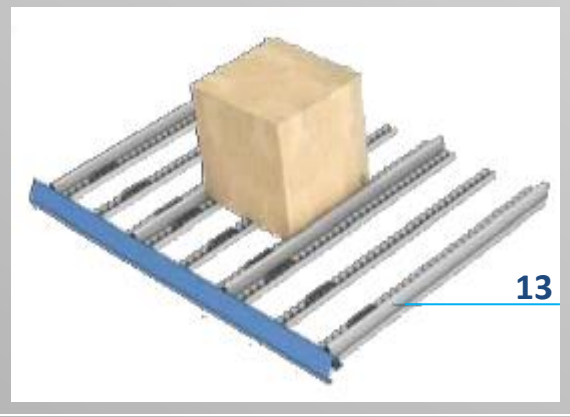
Medium-depth basic bays

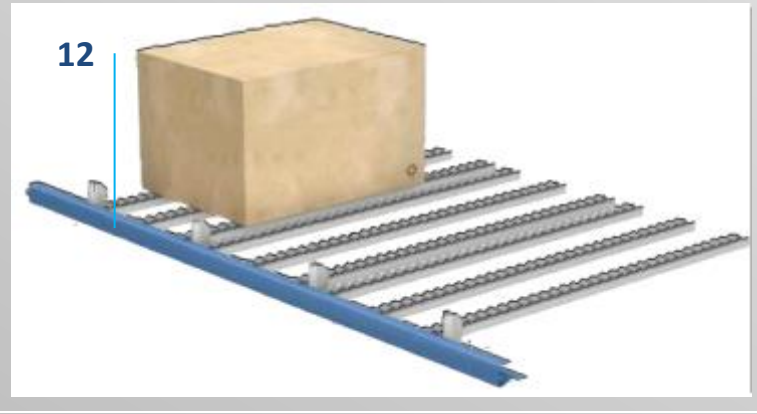
Medium-depth bays are the most used. They are engineered and constructed using adjustable platforms made of side panels, entry profiles, exit beams, cross-ties, mini-rails and securing components. The platforms can be standard bed frames (without inclined bed frames) or fitted with display trays. The incline of the latter can be adjusted to make it easier to extract the products, stored inside the boxes. It's possible to modify the height and the slope in gauges of 25 mm. In addition, the part protruding from the support points can be adjusted in order to find the most ergonomic position;











1. Frames and uprights
2. Beams
3. Complete bed frames: standard (without display tray)
4. Complete bed frames with display tray
5. PD3 bed frame supports
6. Safety pins
7. Anchor bolts
8. Levelling plates (shims)
9. Mini-rails
10. PKD mini-rail clips

Optional components

11. Mini-rail brakes
12. PD3 separators

Straightforward modification

It’s possible to easily rearrange the rails and the inclination in the initial layout, to adapt them to changes in the warehouse.

That means:

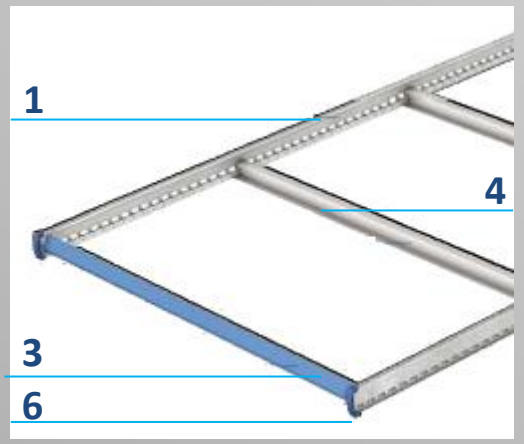
- Each type of box needs a given type of layout and inclination both due to the characteristics of the material with which it’s manufactured as well as its’ sizes and weight;
- Cardboard boxes are sensitive to damp and humidity in the warehouse. A different layout or inclination is required;
- A warehouse of these characteristics is a Carton Flow warehouse, with frequent changes of products. It may be due to ABC criteria, new goods or the seasonality of the products;
- The most ergonomic layout needs to be found. This will vary in function of the distribution, the height of the boxes, and the size and weight of the articles.

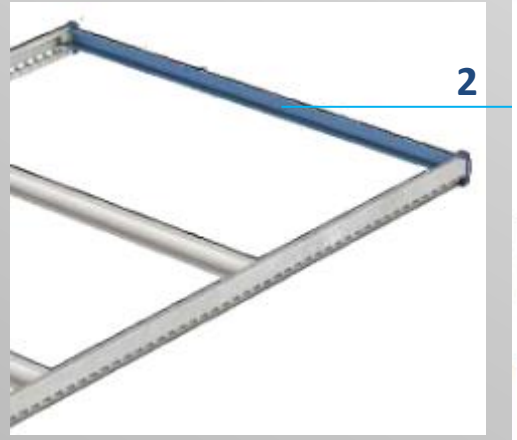
Composition of bed frames without a display tray

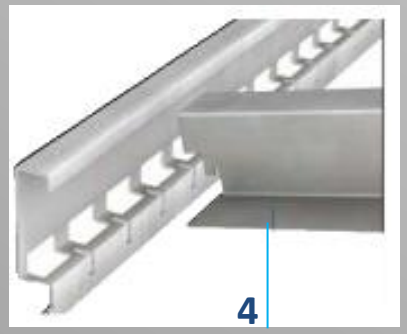
The bed frames or platforms hold the stored goods. They are designed to join the different components and can be fully adjusted. Assembly and the modification of the positions of their adjustable components are both very simple;

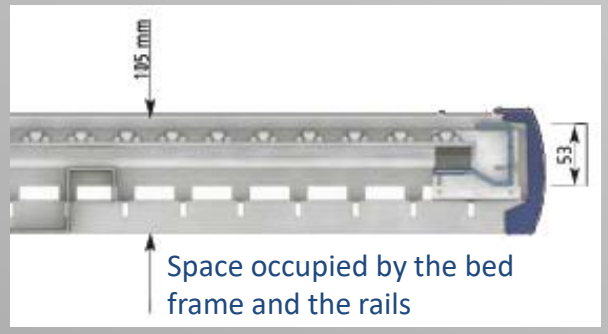
Two types of bed frames:

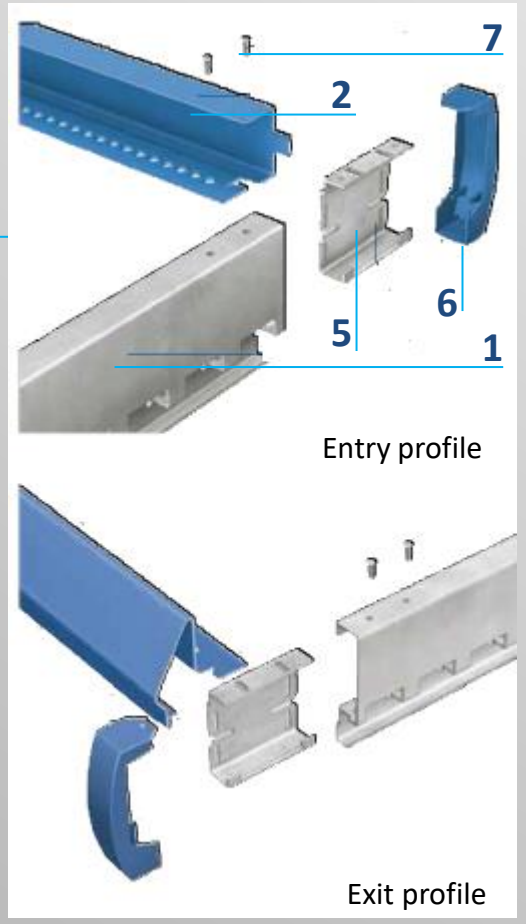
- Standard bed frames
- Bed frames with a display tray











Standard bed frames

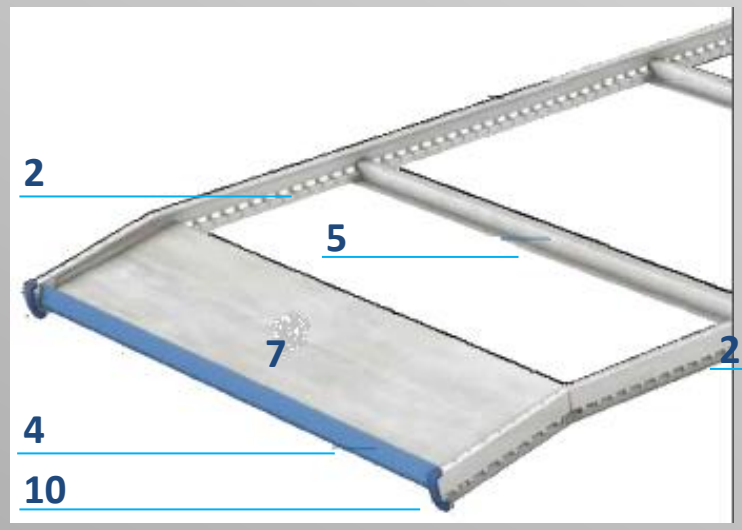
The following are required in order to build standard bed frames:

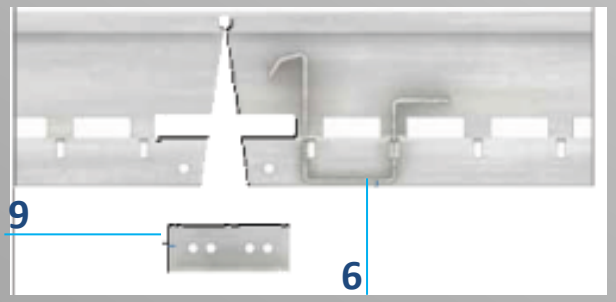
1.PD3 bed frame side profiles (2 units)
2.PD3 entry profiles (1 unit)
3.PD3 exit profiles (1 unit)
4.PD3 cross-ties (depends on the depth and the weight)
5.PD3 bed frame ties (4 units)
6.Bed frame side profile plugs (4 units)
7.PD3 bed frame safety bolts (8 units)

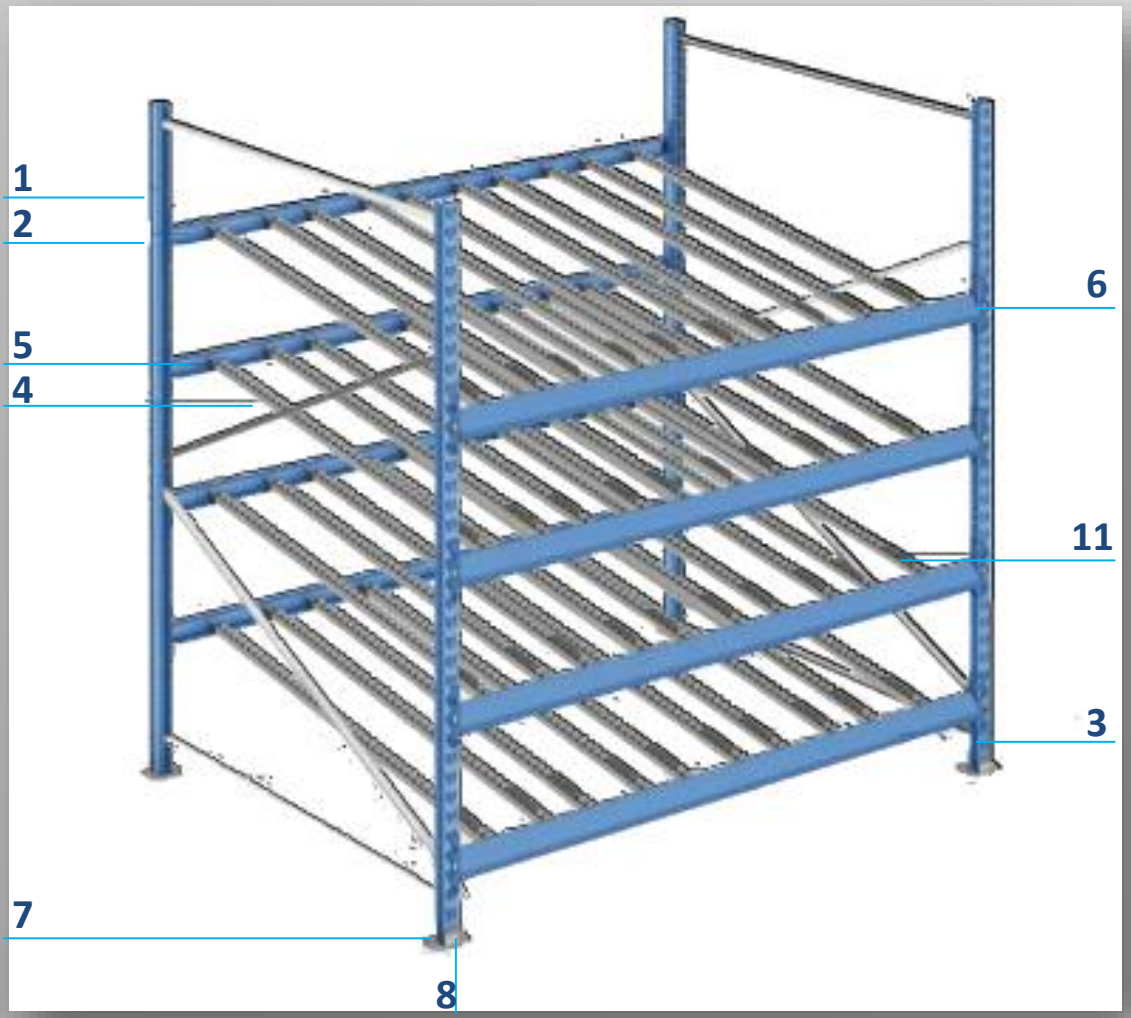
Side section of a complete bed frame

Bed frames with display tray

1.Right PD3 tray bed frame side profiles (1 unit)
2.Left PD3 tray bed frame side profiles (1 unit)
3.PD3 entry profiles (1 unit)
4.PD3 exit profiles (1 unit)
5.PD3 cross-ties (depends on the depth and the weight)
6.PD3 tray cross-ties (1 unit)
7.PKD trays (1 unit)
8.PD3 bed frame ties (4 units)
9.PD3 tray side profile fixing supports (2 units+ bolts)
10.Bed frame side profile plugs (4 units)
11.PD3 safety bolts (8 units)





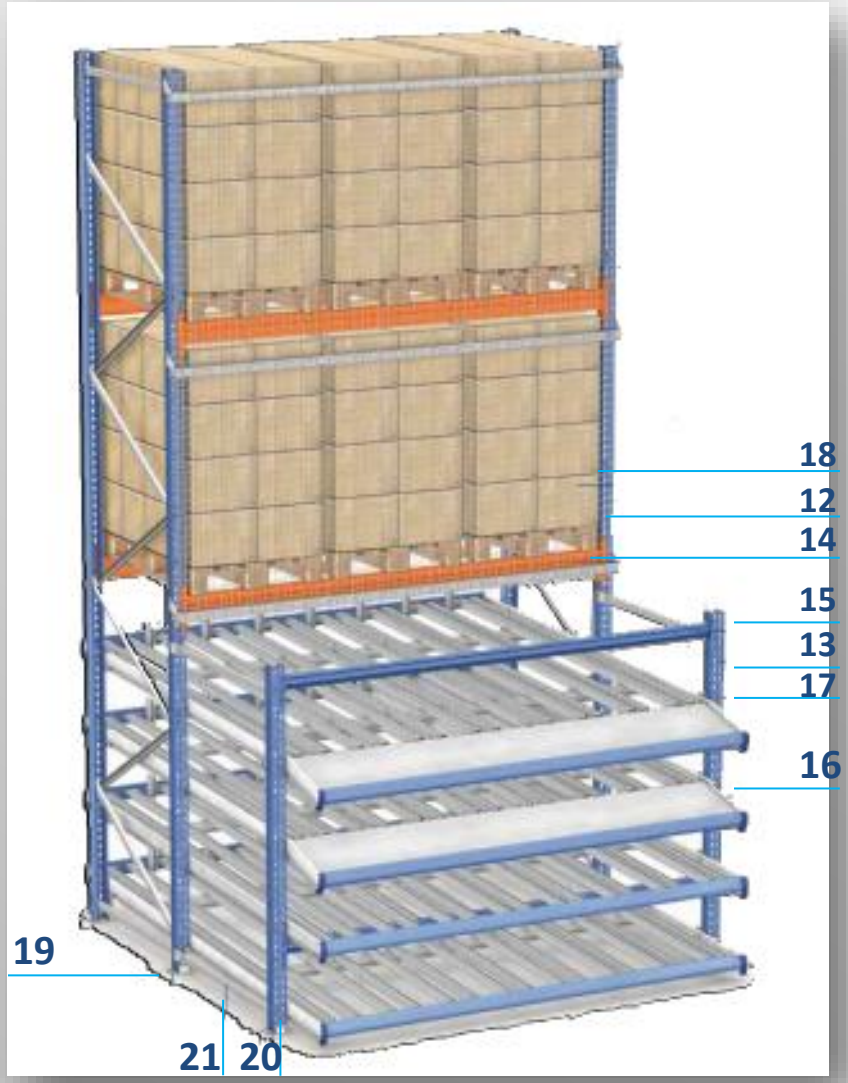


Basic components:

1.Frames
2.PD entry beams
3.PD exit beams
4.Mini-rails with wheels
5.Rail fixing clips
6.Safety pins
7.Anchor bolts
8.Levelling plates (shims)

Optional components:

9.Separators
10.Guides
11.Brakes
12.Pallet racking frames
13.80MLD uprights with ties
14.2C pallet racking beams
15.MS beams
16.Complete bed frames with mini-rails and accessories
17.PD3 adapters
18.End-stops and protection mesh
19.Anchor bolts
20.Levelling plates (shims)
21.Connecting components
22.PD3 frame supports

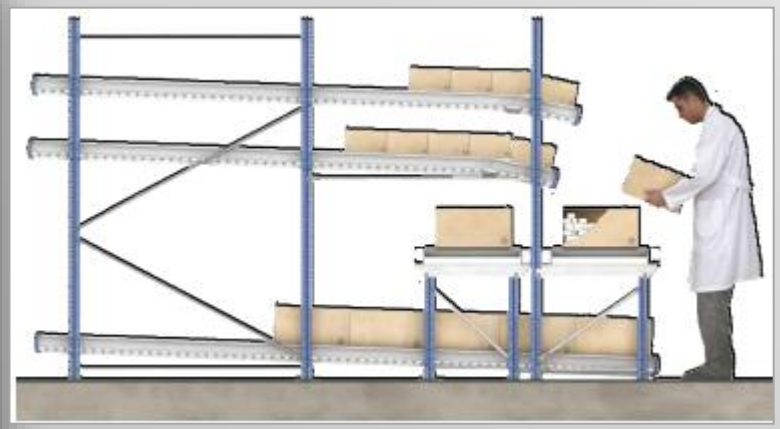


Solution with one conveyor

This is the most used solution. The operator moves the box or the picking bin along the conveyor line and puts the products for every order inside;

Solution with two conveyors

The inner conveyor is moving constantly. The boxes or the picking bins are filled with complete orders, and the warehouse operator doesn't need to set them aside;



Mobile bays

Using the same components as a basic bay (both for bays built with frames and those built with beams), mobile bays can be formed by fitting a platform with wheels inside the bay;

Systems with more depth

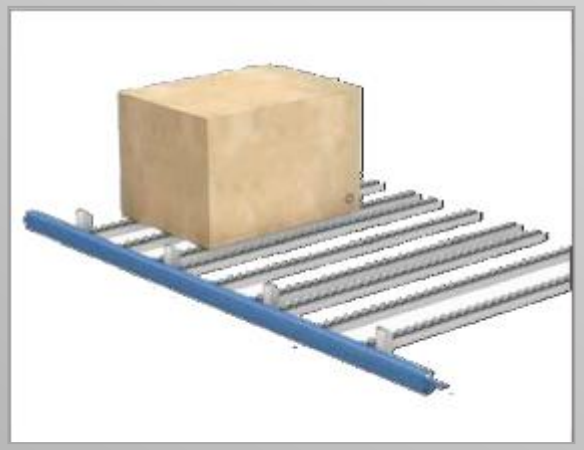
In installations with a bigger depth, the frames are spliced together using frame side profiles. Bed frame ties are used to connect the pieces. The rest of the components are the same;

Bed frame tie

Mini rail splice

Separators

They are fitted in the beams or entry profiles in order to help to center the box in the rails. They are optional but recommended;



Guides

They guide the boxes along the depth of the rack. They are fitted in the beams or in the entry and exit profiles, maintaining a fixed space between parallel boxes, preventing them from brushing up against each other.

Brakes

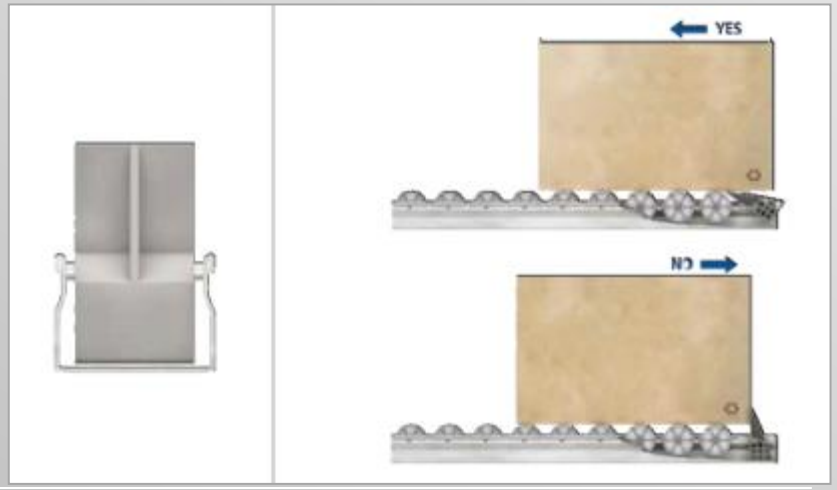
Fitted at the end of the rail. They reduce the speed and prevent the box from colliding into the exit profile;

Arrangement of the mini-rails

The arrangement, number and model of mini-rails varies, depending on the characteristics of the boxes and their dimensions and weight.

Safety device

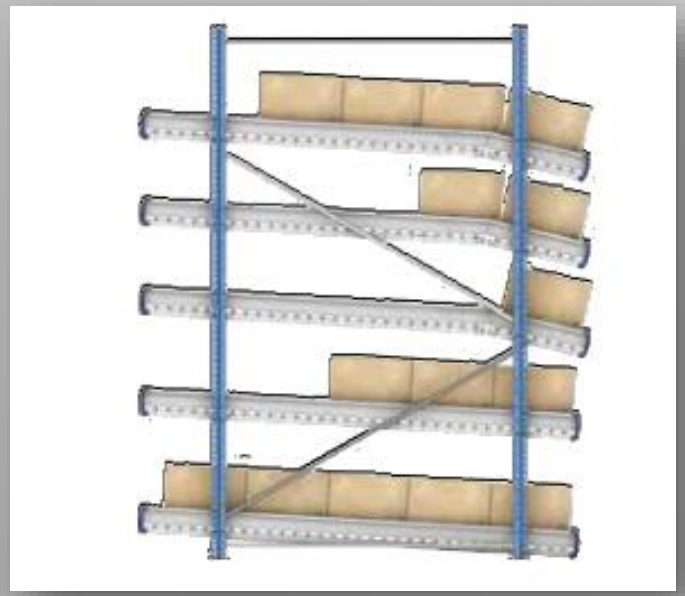
Device manufactured in plastic with a metal axis joined to the mini-rails at the entries. It allows the box to move towards the exit and prevent it from moving back after being accidentally pushed by the operator. It's used when Automated machines are used to load the rack, preventing therefore accidents due to incorrect handling;



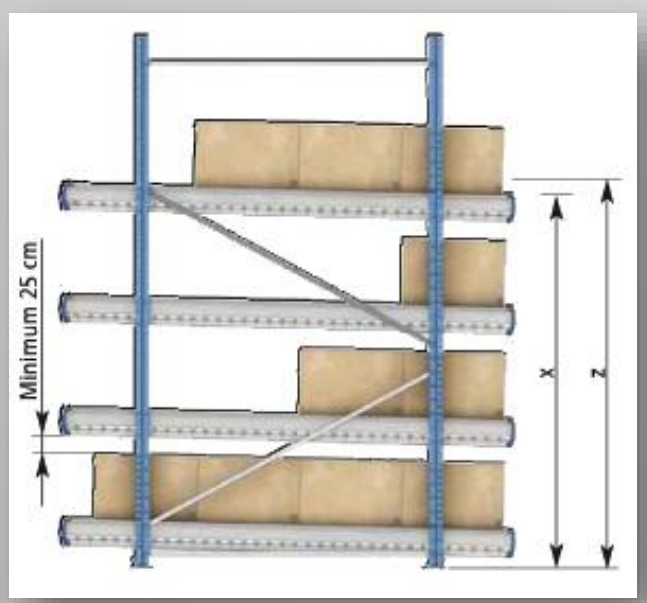
Different levels layout

In addition, when arranging the levels and in order to guarantee the correct functioning and access to the stored products, the margins must be considered. The proper distribution depends on the load unit (sizes, weight and shape), how it should be picked (complete or broken-up units), the size of the product to be picked within the boxes, and the working system. The method of picking the product conditions the layout in height and whether to fit display trays in the levels.

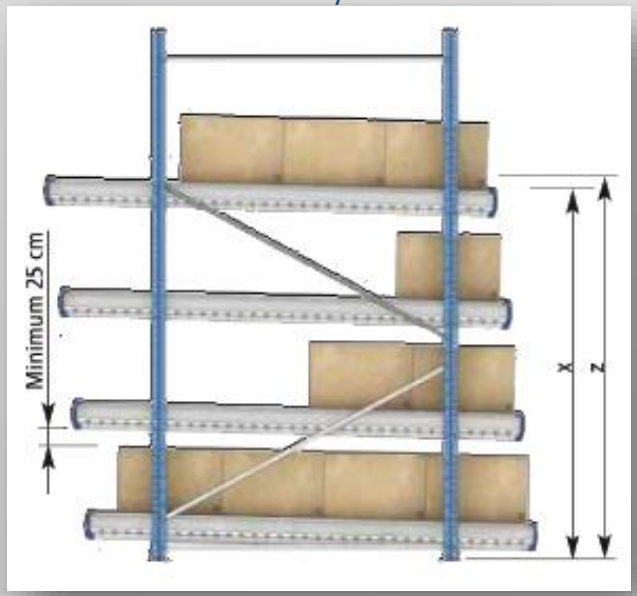
Standard levels alternating with others. fitted with a display tray



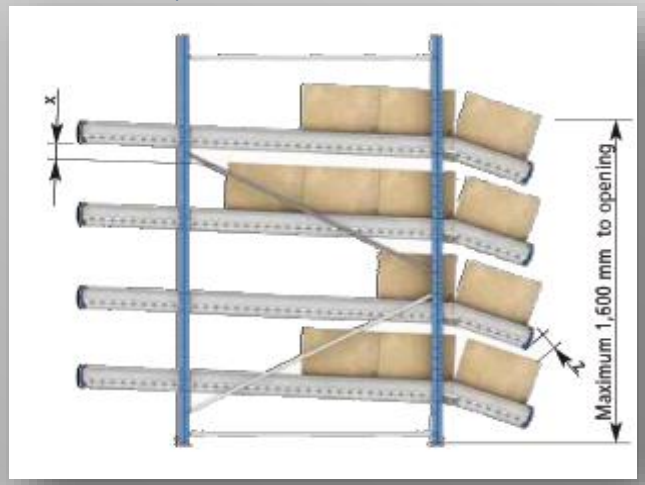
For load units picked as complete units or with a front opening. Not fitted with display trays



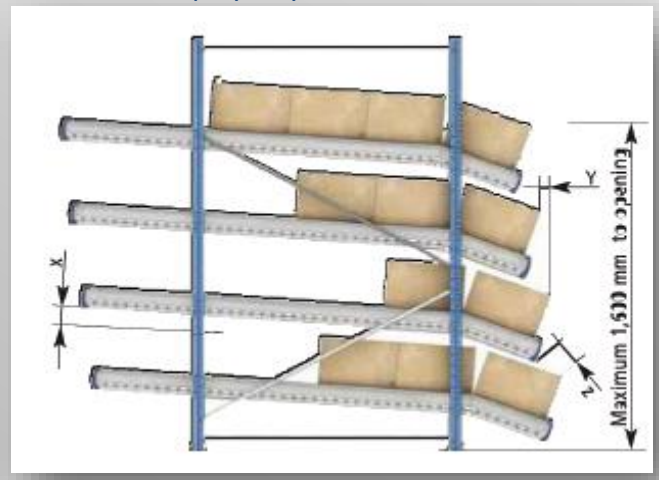
The perfect layout to pick small products from inside of boxes (from the top) or medium-sized products in boxes with semi - opening at the front. Not fitted with display trays



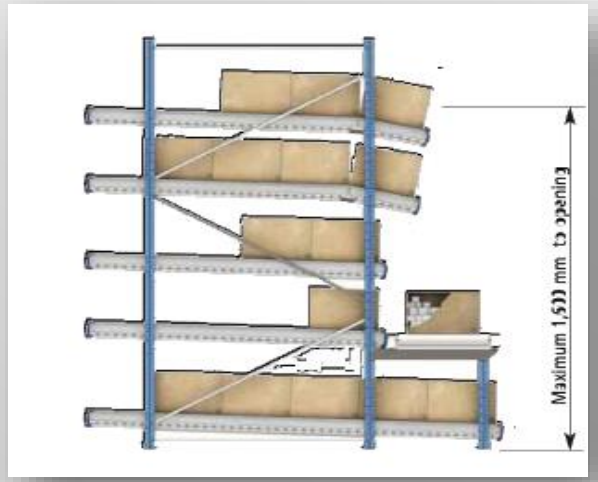
Storage of boxes with top opening for picking medium sized products. Display trays are fitted in each level;



This example is perfect for the storage of boxes with a top opening with medium sized and large products. Fitted with display trays in each level;



This layout, in addition to combining standard levels with display trays, is designed to fit a bench with a conveyor;

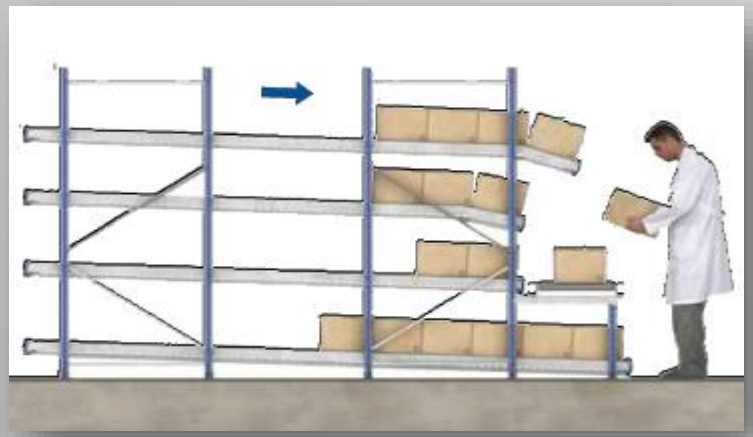


A very wide range of applications and combinations are possible. A selection are shown below;

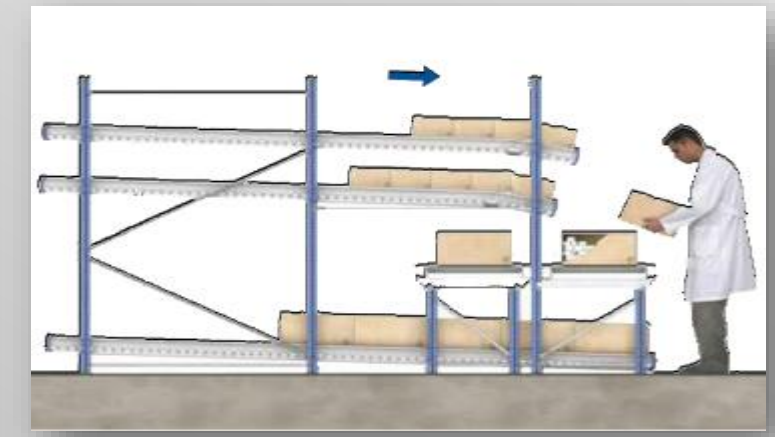
In this image, the solution involves returning empty boxes using the level above. This is a common solution in assembly chains;

The picking of boxes in live picking levels is combined with picking on pallets in the level below, and on surfaces slanted with rollers;

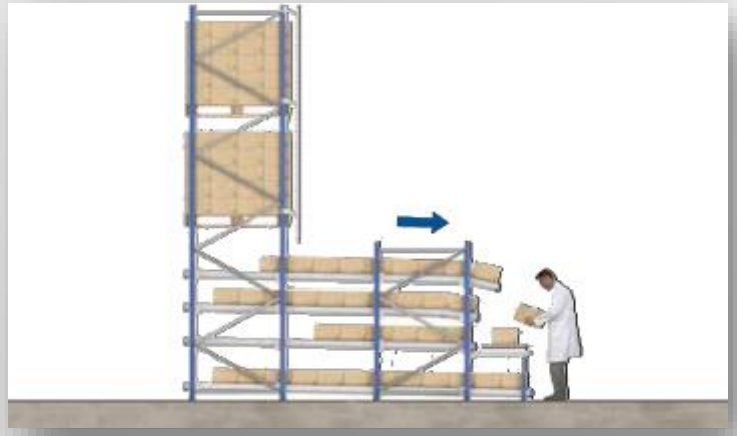
This image represents a classic solution with the conveyor fitted flush with the rack and forming part of it. In this case, the operator picks up a box or container which moves along the conveyor, and puts the prepared products in it;



There are two conveyors: one with rollers without traction and used to prepare the order and manually move the box or container; and one motorized inner conveyor to send the boxes along with the completed orders;



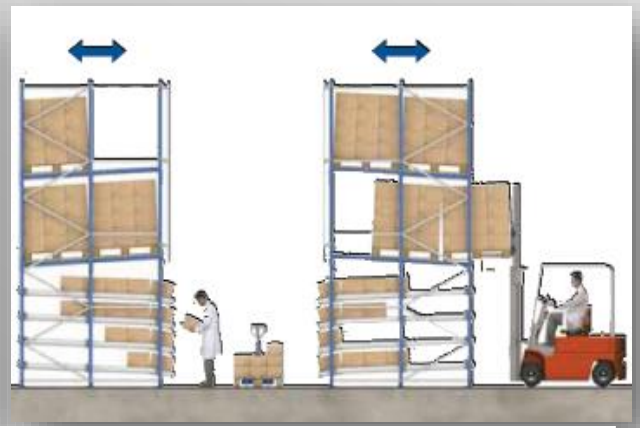
Levels are fitted above the Carton Flow Racking Solution in order to store pallets, with a reserve of products placed below;



The operator deposits the goods on a conveyor line in the middle. This moves the load to the dispatch or consolidated areas;

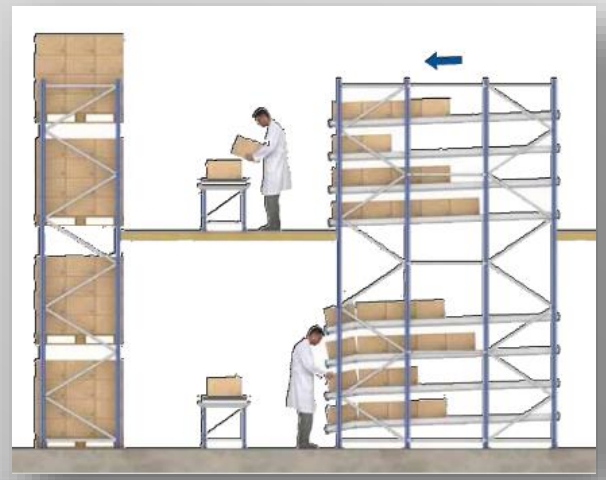
A pallet racking warehouse in which Carton Flow System levels are in the lower part. There are load or replenishment aisles along with others for preparation;

The solution is used to make better use space above the Carton Flow System to store pallets. The pallets are stored and extracted on the same side;

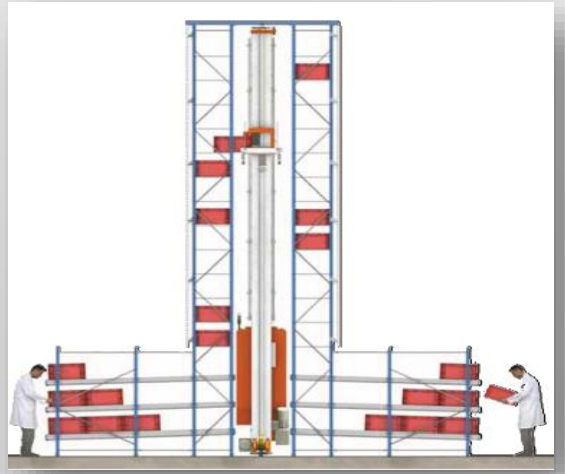


The upper volume of the preparation aisles is used as a reserve area and, in addition, picking is performed on one of the sides from pallets deposited on slanted roller paths;

A high-bay Carton Flow warehouse with an intermediate Gangway solution. In one of the sides the picking is performed from pallets deposited on pallet racking;



This solution represents a Carton Flow warehouse automatically supplied by a stacker crane, which makes full use of the height of the warehouse as a reserve area.;



A high-bay Carton Flow Solution is combined with a Gangway Storage System. One rack is automatically supplied by a stacker crane and the other with a VNA machine which takes the pallets laden with goods which the operator deposits in the levels.

Thank you for Your attention!
We welcome your questions you can find us at
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