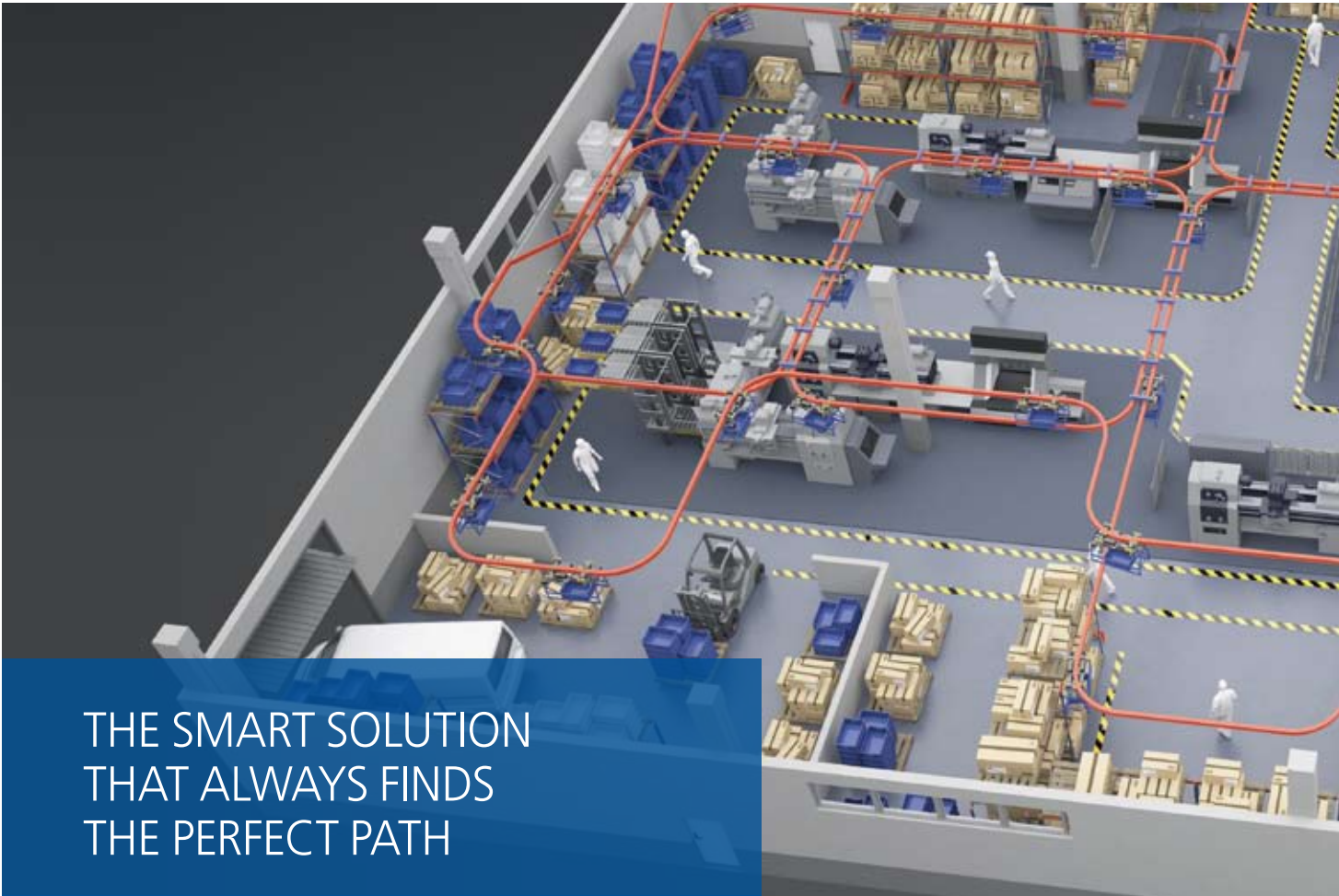


Overhead Conveyor System for Light Loads



THE SMART SOLUTION THAT ALWAYS FINDS THE PERFECT PATH

Market conditions are changing. Space and time are increasingly valuable resources. Product life cycles are getting shorter, requiring flexible and extremely versatile equipment that can adapt to changes in demand quickly, and at minimal cost. End customers demand highly customised products, which translates into more frequent, smaller orders with a greater variety of references. In a nutshell, the current market for logistics systems requires maximum agility and flexibility at the lowest possible cost.

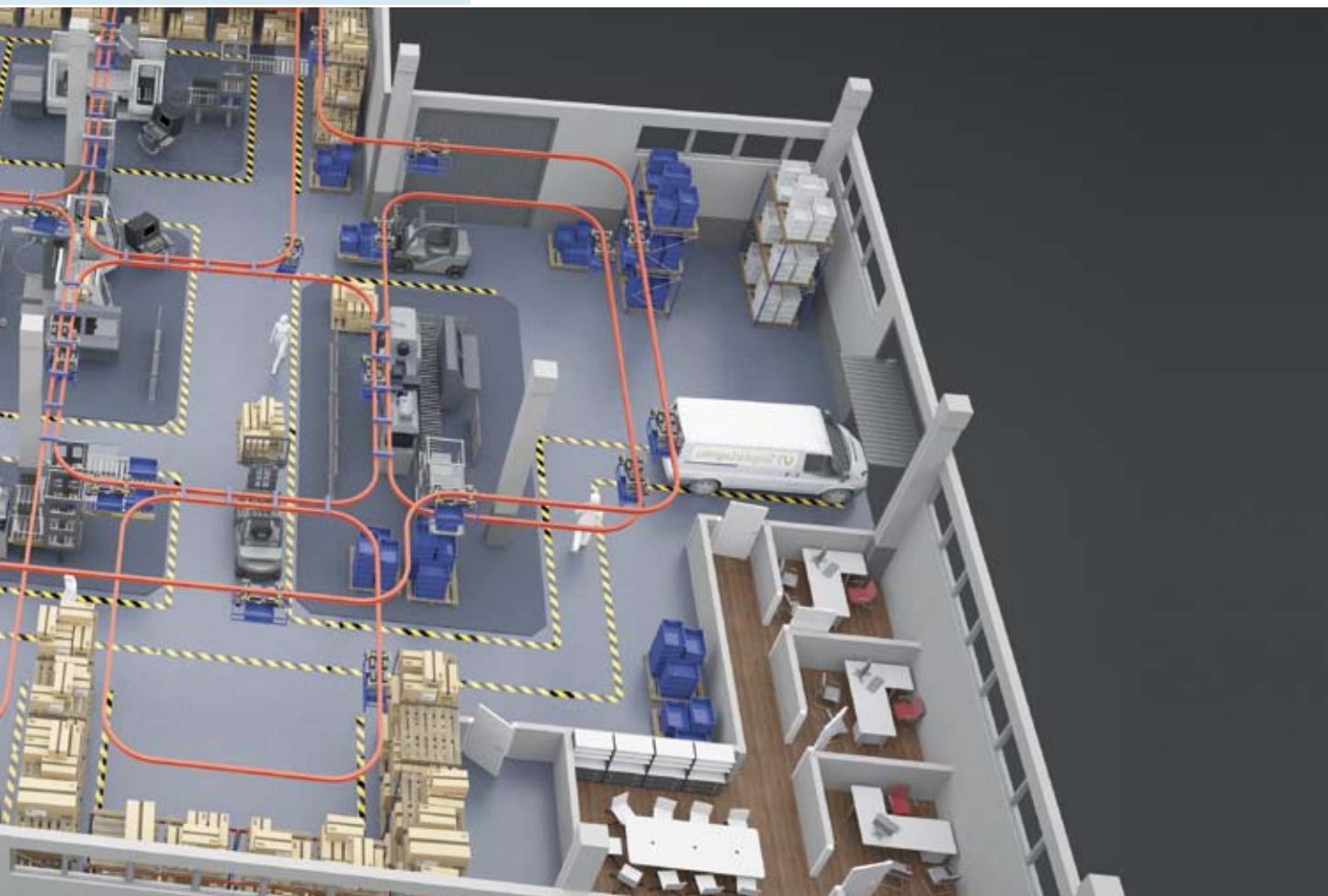
In view of this trend, Mecalux has developed a revolutionary automated overhead conveyor system. It is revolutionary in both its innovative technology, with each trolley possessing autonomous intelligence, and the low cost of implementation and maintenance. This patented technology reduces operation costs, optimises space and reduces execution times.

AN INNOVATIVE SYSTEM

The new overhead conveyor system for boxes or other light loads allows continuous transfer of merchandise between all points of the installation, at great speed and without taking up ground space.

At the heart of this innovation are the trolleys provided with an autonomous intelligence and ability to change rails independently, when necessary. This feature means that the structure required for transporting the trolleys is very simple and consequently inexpensive, as it is not necessary to install rail changes on the tracks.





BENEFITS

1 RECOVER YOUR INVESTMENT IN NO TIME

The simple structure, consisting of standard hot-rolled steel profiles, means a low initial investment, which is generally recovered in less than one year.

2 EFFICIENCY

The trolleys' navigation and communication system allows them to select the quickest route at all times, taking into account priorities, transit conditions, and the status of the installation as a whole.

3 INCREASED PRODUCTIVITY

Automation of box transportation means optimised handling and supply processes in loading and unloading areas, thereby substantially increasing productivity.

4 SCALABILITY

Its ease and speed of assembly mean that it is possible to expand or modify the structure at any time, without affecting the daily work flow of the warehouse.

5 ADAPTABILITY

It can be used in any space of any height, to carry loads of all types, up to a maximum weight of 50 kg per trolley. This makes it ideal for zones that connect different areas and production centres, regardless of their size.

6 CONTINUOUS FLOW AT ALL TIMES

To prevent bottlenecks, carriages can switch between rails to reach their destination on time.

7 EASE OF USE

Pressing a single button on the device's touch screen allows operators to issue pick-up and delivery commands to trolleys from different points in the facility.

8 AUTO REPEAT

Allows programming of one or several trolleys in a system to automatically repeat the same continuous movement between two specified points at a specified frequency.



ADVANTAGES STATE-OF-THE-ART OVERHEAD CONVEYOR

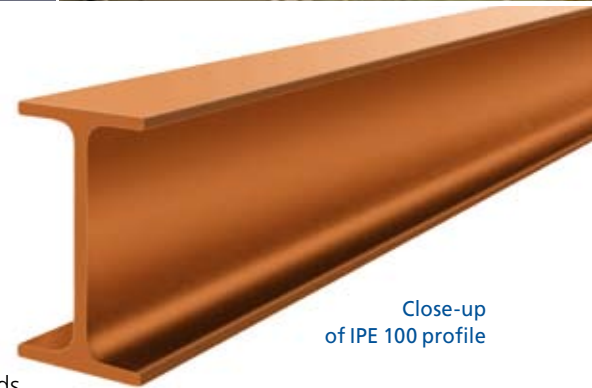
Reduced Costs

The primary benefit of the overhead conveyor is cost reduction:

- **The system uses standard IPE 100 beams for its structure.** This makes it much cheaper than a conventional infrastructure with rail changes on the tracks, resulting in lower installation and maintenance costs. This factor, together with the quick execution of instructions by the trolleys, reduces operating costs by up to 40%.
- **The assembly system is based on a weld-free anchoring system.** This simplification allows adaptations to be made in view of changes and expansions in the circuit at a minimal cost. As a result it is very

easy to adapt to the changing needs of the installation.

- **The structure can be supported by upright struts on the ground, suspended from the ceiling, or fixed to the walls.** In all cases, considerably less space is used on the work floor.
- **Trolleys move at a speed of 2 m/s.** This speed and the selection of the optimum path between two points make it one of the quickest material transport and delivery systems. In addition, trolleys have a grip system that allows boxes to be collected easily without having to stop. It is even possible to make changes in the circuit design without affecting



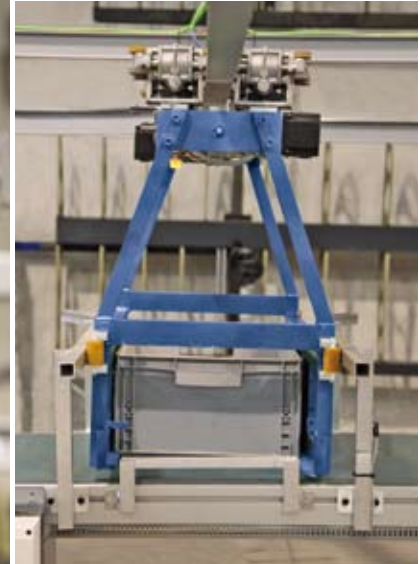
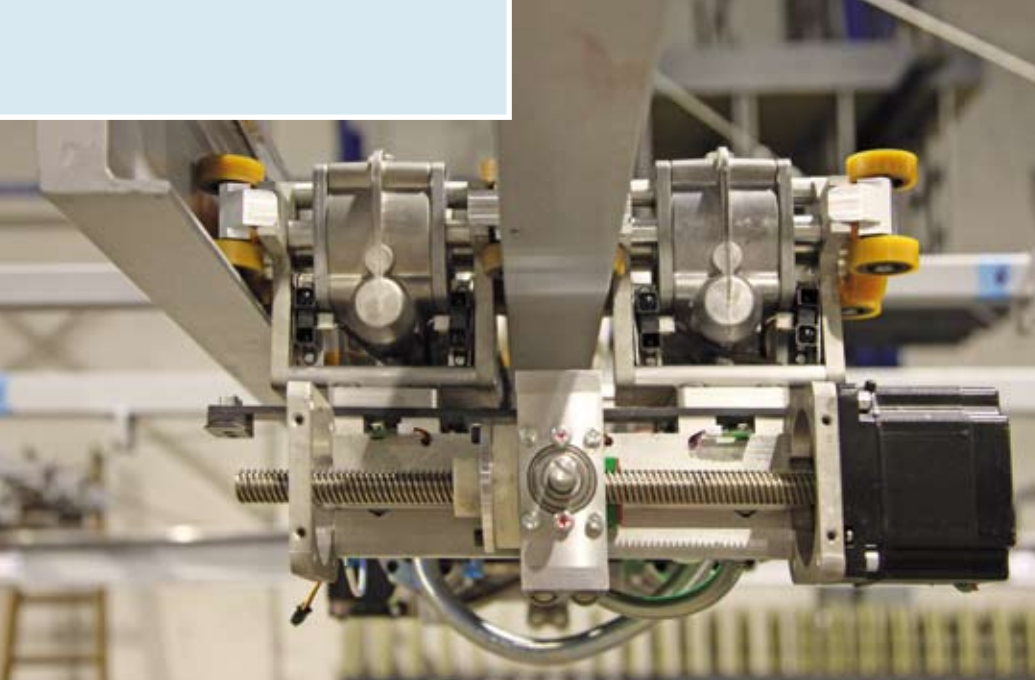
Close-up
of IPE 100 profile

operating speed. This ensures a continuous product flow, using a product-to-person strategy, with the resulting savings in operating costs.

- **The autonomous navigation system** of each trolley eliminates the need for a central computer or control centre.
- **The investment needed for implementation is recovered in approximately one year.** It therefore offers a high return on the investment.

Technical features of the trolley

Maximum speed	2 m/s
Maximum load per trolley	50 kg
Optimum distance between trolleys	1.5 to 3 m
Communication frequency between trolley and control device	315 MHz
Compatibility with WMS / ERP	Yes
Power consumption of trolley	350 W



Top: Close-up of gripping system.

Bottom: Lift for moving the load between different levels.

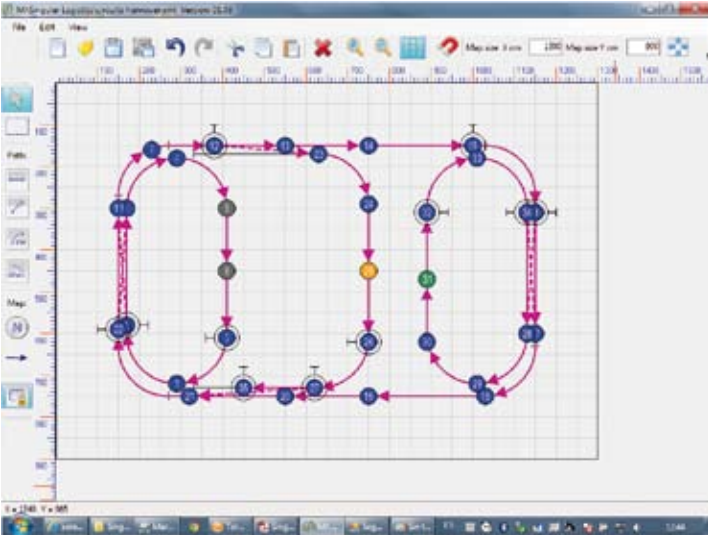
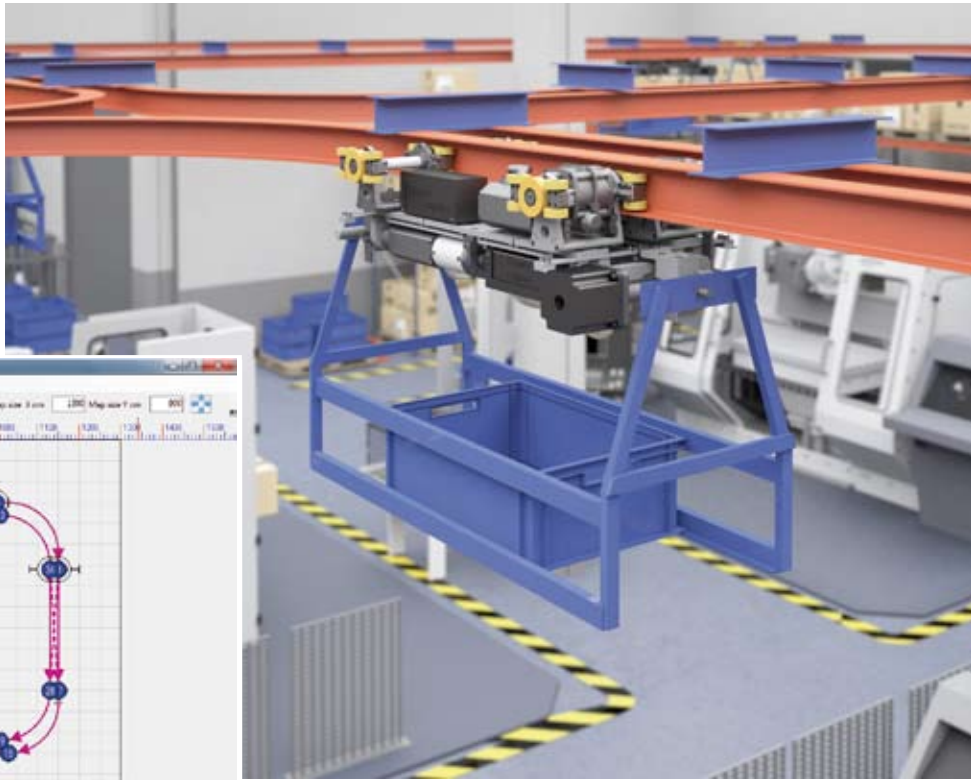
Versatility

Another of the main features of this system is its versatility.

- **Its basic structure simplifies implementation**, while providing great flexibility in case of subsequent expansions or changes to the circuit.
- **Its transportation capacity depends on the number of trolleys** incorporated in the circuit, and is therefore completely adaptable to the needs of each company.
- **The gripping system is designed for Euro boxes of all sizes.** Moreover, the grip can be adapted to other specific loads.

- **The structure of the trolley can be modified** to conform to the customer's load type.
- **This system can be combined with lifts** at any point along the track, with different kinds of hooks, or with automated storage systems. It is also fully compatible with other handling systems.
- **It is integrated with the company's warehouse management system**, as well as the ERP software used, optimising the management of all the processes and resources of the plant.

- **This versatility makes it ideal for non-linear production chains**, that is, those which do not always follow the same path from A to B. As no pre-set path is specified, it provides great freedom of motion.
- **The system does not require a minimum installation size**, making it suitable for industrial or logistics centres of all sizes.
- **Trolleys can also work with inclined profiles**, allowing the use of circuits with different levels.



Example of a circuit with overhead conveyors for light loads.

OPERATION

The system essentially works like a Sat Nav system. Each trolley has a built-in a navigation system that allows them to determine the best possible path at all times, making adjustments if an incident or jam is detected at any point. The logic of car transport is transferred to the world of conveyor systems. It is that simple.

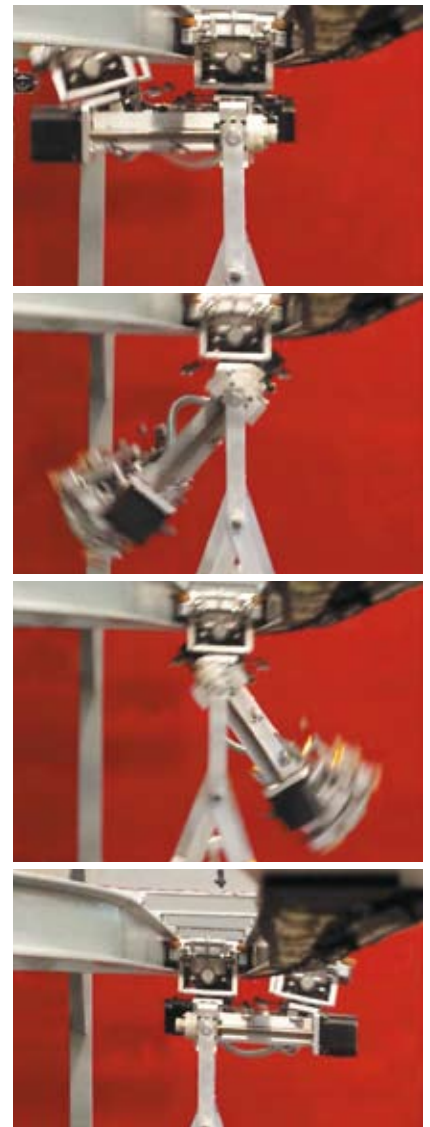
The operator can issue the instructions from any of the devices located at each delivery and pick-up point. The system then determines in fractions of a second which trolley needs to be sent and the best path for the requested service, calculating it in view of existing traffic and the layout of the installation. This is made possible by the radiofrequency system that allows trolleys to communicate with one another.

When the trolley detects a problem in the selected track, it simply moves automatically to the parallel track.

To change or “jump” from one track to another, the track attachment system turns 180° about its axis, attaching itself to the outer profile of the new track.

Each individual control device has a touchpad built in that shows the different instructions available, providing a visual and intuitive operating system. The software for including the layout in the system has also been made as straightforward as possible, with a simple drawing program in which the installation map can be easily edited, without affecting the workflow at any time.

The end result is a high-performance system, with a flow of materials that is easily adapted to the volume, weight, space and time needs of each company.





SAFETY

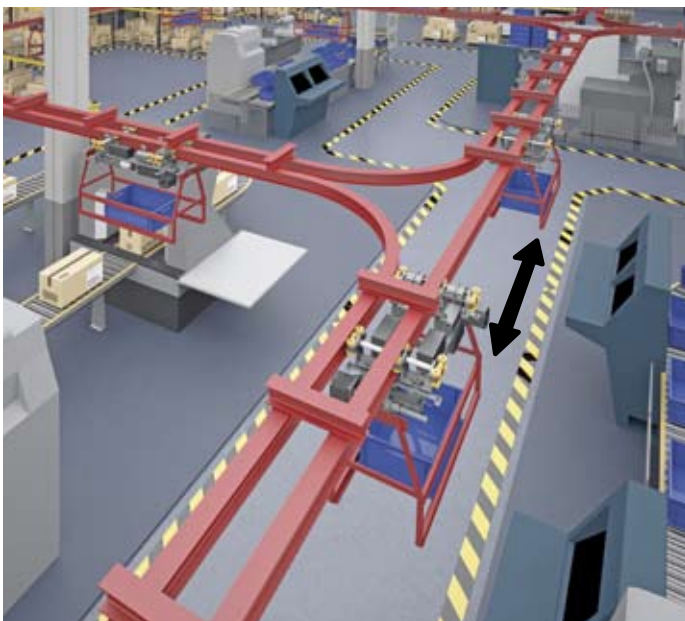
This overhead conveyor system for boxes includes a powerful safety system that protects both workers and goods.

To avoid accidents caused by falling objects, protective metal mesh is placed along the circuit that allows

work to be performed underneath it in full safety.

To prevent impacts that could damage the installation or the merchandise, each trolley has built in ultrasound sensors that detect the presence of nearby obstacles.

In addition, real-time communication between trolleys allows them to adjust their speed in the event an incident on the rails is reported in the overall view of the system. This ensures a safer and more efficient flow of products.



Mecalux's added value:



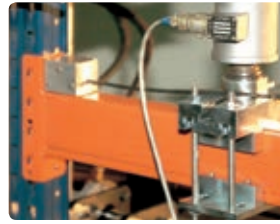
Maximum safety

All products are compliant with the regulations in force all around the world.



Cutting-edge technology

Mecalux uses the most advanced warehouse calculation and implementation programs on the market.



Distinguished by quality

Mecalux has conducted thousands of tests in order to examine the real characteristics and behaviours of the materials it uses.



After-sales service

Mecalux offers an after-sales service to all its clients to check installations, or give advice in the event of modifications, damage or expansion of the warehouse.

Certifications:
ISO 9001 / 14001 -
OHSAS 18001 - TÜV-GS



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