A large warehouse interior with high ceilings and multiple levels of industrial shelving. The racks are filled with pallets of goods, many wrapped in clear plastic. A yellow automatic trilateral stacker crane is positioned in the aisle, moving along a track. The crane has a long vertical mast and a horizontal fork assembly. The lighting is bright, and the overall scene is clean and organized.

# HOW TO AUTOMATE YOUR WAREHOUSE IN A FAST AND ECONOMICAL WAY

Automatic Trilateral Stacker Crane



- » Perfect solution to automate conventional racks up to 15 meters in height.
- » No need to modify the warehouse structure.
- » Integrated trilateral extraction system.

Automatic trilateral stacker cranes make it very easy to automate warehouses with conventional racks where a man-operated lift truck is used, both in pre-existing warehouses and in new facilities.

The stacker cranes move the pallets to the ends of the passageway, leaving the load on a rack or automated transport system. This is possible due to their rotating head, enabling operators to pick up and leave pallets in three positions: one frontal and two lateral.



Trilateral forklift



Automatic trilateral stacker crane



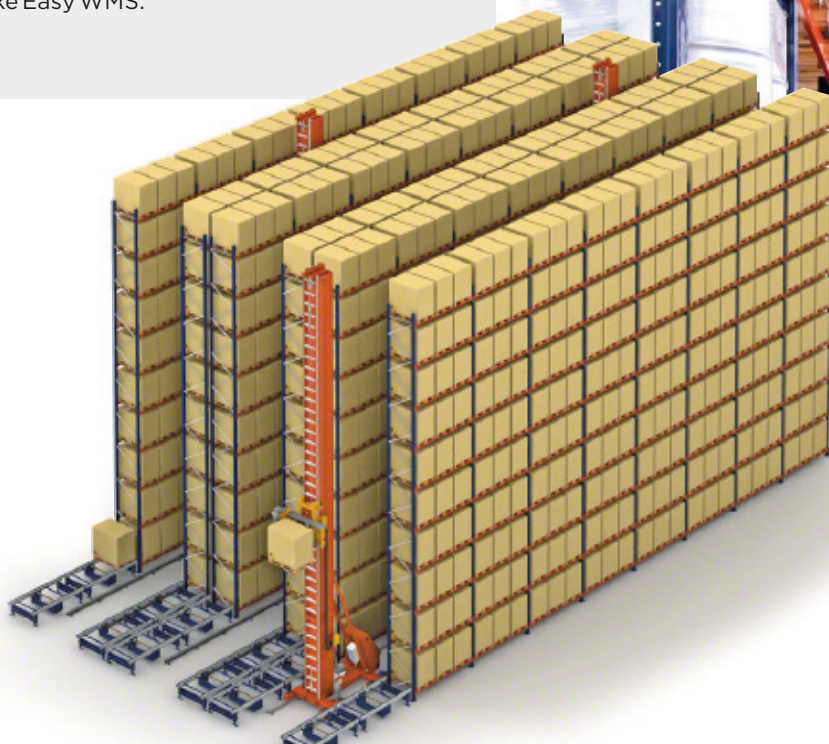
Guided on three rails, automatic trilateral stacker cranes have only four supporting points on the ground. They have no top guide, making them easier to install in any warehouse where lift trucks are normally used. They also adapt to virtually all spaces with direct access to pallets and do not require extremely level flooring.

They are totally automatic, and all stacker crane movements respond to storage and extraction orders sent by a control system that optimises these movements.

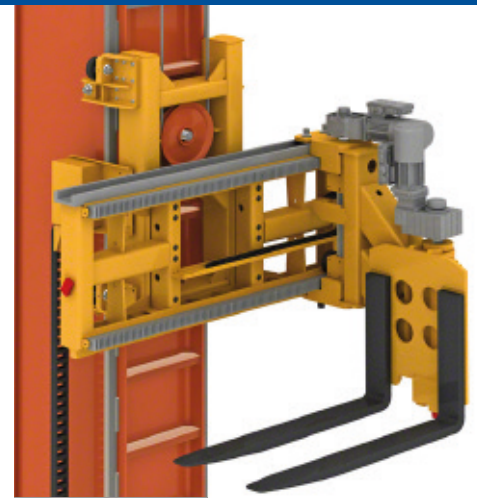
**Replacing a trilateral forklift with an automatic trilateral stacker crane is very simple. The aisle dimensions remain the same**

## WHY AN AUTOMATIC TRILATERAL STACKER CRANE?

- » **Adapts** to all pallet warehouses with man-operated lift trucks.
- » **Economical automation.** The return on investment is quick.
- » **Easy to implement,** both in new and pre-existing warehouses, since it does not require any changes to the warehouse structure.
- » **Brings down personnel costs.** It makes it possible to manage all pallet movements without an operator on board.
- » **Uses all available space** since it does not have a top guide and can pick up pallets from level 0.
- » **Reduces errors** as it is an automatic system.
- » **Improves safety in the facility.** Operators do not work in the passageways, meaning the system is safer and reduces the risk of accidents.
- » **Lowers maintenance costs.**
- » **Easy to integrate** the automatic system connecting it to a warehouse management system like Easy WMS.



## AUTOMATIC TRILATERAL STACKER CRANE STRUCTURE



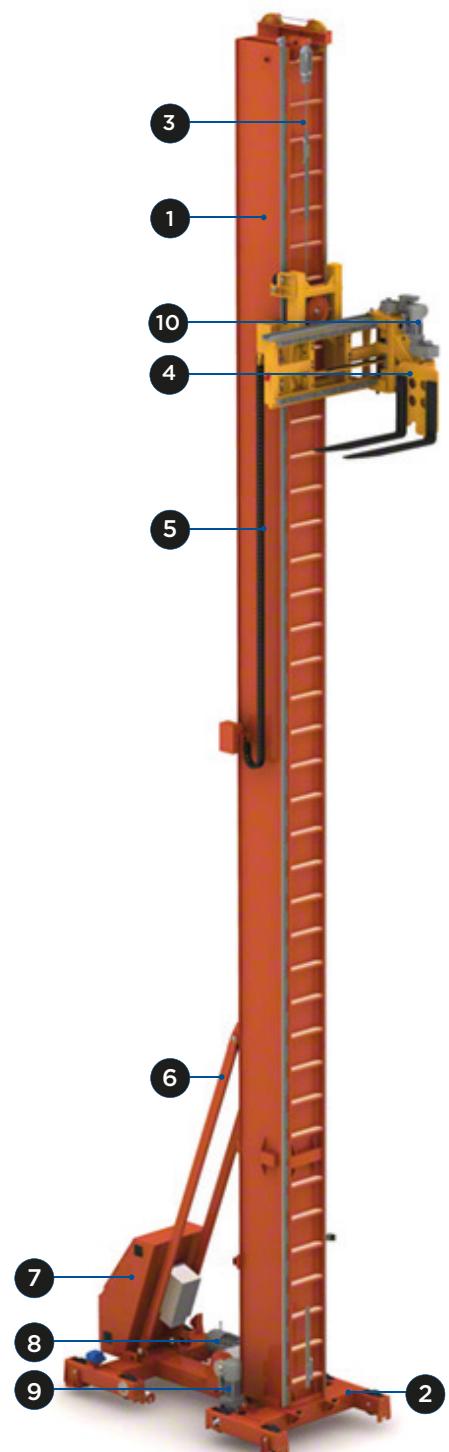
It consists mainly of three parts:

- » **Bottom guide base.** This supports the whole structure and moves it lengthwise.
- » **Column.** This element makes it easy to reach all different heights.
- » **Extractor element.** Trilateral fork moved using a head that can travel left, right and forward to access the load.


### BASIC COMPONENTS:

1. Column
2. Bottom guide base
3. Lifting cable
4. Trilateral extractor
5. Cable carrier
6. Cross bracing
7. Electrical cabinet
8. Lift motor
9. Travel motor
10. Trtraction motor

FEATURES	
Minimum machine height	4,670 mm
Maximum machine height	14,840 mm
Maximum heigh of the last load level	12,930 mm
Extraction system	Trilateral fork system
Maximum permissible load	1,200 kg
Maximum travel speed	100 m/min
Lifting acceleration	0.3 m/s <sup>2</sup>
Maximum lifting speed	30 m/min
Maximum lifting acceleration	0.3 m/s <sup>2</sup>
Aisle equipment	
System of bumpers in the aisles	Hydraulic buffer on stacker crane
Data communication system	Infrared optical system
Position establishing system	Laser radar
Rolling systems	
Rolling surface	Rail
Colours	
Structure	Orange RAL 2001
Lifting cradle and control cabin	Yellow RAL 1033
Working conditions	
Room temperature	Between 0 °C and 40 °C
Maximum humidity	70%
Return system of energy to the network	
Energy retrieval system	Optional
Safety systems	
Safety systems in accordance with EN-528: Security category 3 for the means of access/ Hydraulic buffer with 70% of absorption / Anti-tilt system along the route / Accurate positioning due to beam detectors / Pallet fall protection system with laser detectors.	



Contact us for special projects including this product.



*"We've achieved absolute efficiency  
in our processes and maximum safety for the people  
working in our warehouse."*

Jaume Segrià, Operations Director, Disalfarm

BEFORE

## CASE STUDY DISALFARM

### Company

Disalfarm, S.A. is a company created by Bayer Laboratories, Boehringer Ingelheim and Novartis to carry out all their storage and distribution operations in Spain from a single logistic centre to cut costs.

It started its activities in the middle of 2000 aiming to become a leader in the pharmaceutical product distribution sector. This is why Disalfarm has pushed for efficiency in all its procedures and has always shown its strong commitment to excellence towards its customers.

For this reason, in 2000, a conventional pallet warehouse was built with 15 aisles, served by five manned trilateral forklifts.

### Need

Over time, there arose a need to optimise resources to become more efficient and shorten delivery times. The solution provided by Mecalux involved implementing an automated system to increase warehousing operations and performance considerably.

It was essential for the implementation of this new system not to affect the everyday operations in the logistics centre to avoid having a negative impact the warehousing operations. The repercussions of stopping a warehouse moving 110 pallets an hour that supplies all the pharmaceutical centres in Spain would be huge.

### Solution

One stacker crane was installed in each of the 15 aisles to replace the five trilateral forklifts. This has automated the system and reduced the workforce used to store the pallets. As a result, Disalfarm was able to cut costs and, at the same time, allow for more agility and safety on the premises.

With the implementation of this system, the company increased its productivity and managed to improve its warehousing costs.

Disalfarm is an example of how a warehouse using trilateral lift trucks can be automated without making any changes to its structure and with a very fast return on investment.



AFTER

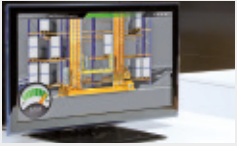
[Video of this case study at mecalux.com/disalfarm](https://mecalux.com/disalfarm)

## The added value of Mecalux:



### Maximum safety

All our products comply with the applicable regulations in force in any part of the world.



### Technology

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



### Quality

Mecalux has performed thousands of tests in order to determine the actual characteristics and performance of the materials used.

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



### After-sales service

Mecalux will provide all its clients with post-sale service to review the system installed and offer advice in the event of changes, damage or warehouse expansions.



WOULD YOU LIKE MORE INFORMATION ABOUT OUR PRODUCTS?  
REQUEST A QUOTE WITHOUT COMMITMENT

Enter our website: [mecalux.com](http://mecalux.com)



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**Mecalux has a presence in more than 70 countries worldwide**

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