

A Member of the Constructor Group



# CONSTRUCTOR STORAGE SYSTEMS

Increase efficiency and organization of your warehouse



# Increase productivity with Constructor automated storage.



**CONSTRUCTOR** Finland offers computer-controlled storage and transfer systems which fit perfectly with almost all types of storage requirements. With automated storage you can significantly improve the efficiency of picking by over 60 % saving even more than 70 % of floor space.

**CONSTRUCTOR** storage systems are tailored and customized for the sites

operating environment. The systems can be equipped with shelves, boxes or pallets adapted to products, which improves efficiency in processes even more.

**THE CONSTRUCTOR** storage system is easily connected to your company's operation control system. Accessories and controls can be selected as per your needs.

To energize and optimize your warehouse logistics, contact Constructor Finland, the country's leading manufacturer of storage fittings and automated solutions.

As professionals in storage engineering we are committed to develop more efficient solutions to your warehouse!

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Batch picking improves productivity pages 18-19.



# Constructor Tornado maximizes the capacity



Constructor Tornado offer modern techniques for picking and storing of all sizes of products. Thanks to its ingenious lifting device the Tornado is a swift, energy saving and noiseless automated storage system which functions with lift principle. It is individually specified to your products storage requirements.

First a product code is entered, either manually, with a bar-code reader or from a host system. The system then retrieves the required tray and brings it to the operator at the optimal height. The entire tray can even be transported to another work station.

Tornado offers safe and secure storage for valuable and sensitive items. Due to the system's intelligent control the machine attempts to place active trays as close to the retrieval point as possible. This makes the Tornado system espe-

cially useful for seasonal products. A password-protected access level can be set for additional security. Passwords can be set for individual trays as well.

Tornado offers short put away and picking times. In addition, with Tornado's wide tray the quantity of items to be picked is maximized and the additional tray movements are minimized. The structure of a tray enables increasing the width without less payload capacity. Tornado's simple structure makes the system reliable and low-maintenance.

### TORNADO DT DOUBLES THE CAPACITY

Constructor Tornado DT's storing capacity is doubled by integrating two standard Tornados into one device complex. As well as to a standard Tornado, a batch picking system can be connected to Tornado DT and it can be equipped with for example: a light pointer or light position indicator. With help of these accessories the location of items to be picked is shown on a tray. This speeds up picking and minimizes picking errors.



# Benefits of Constructor Tornado



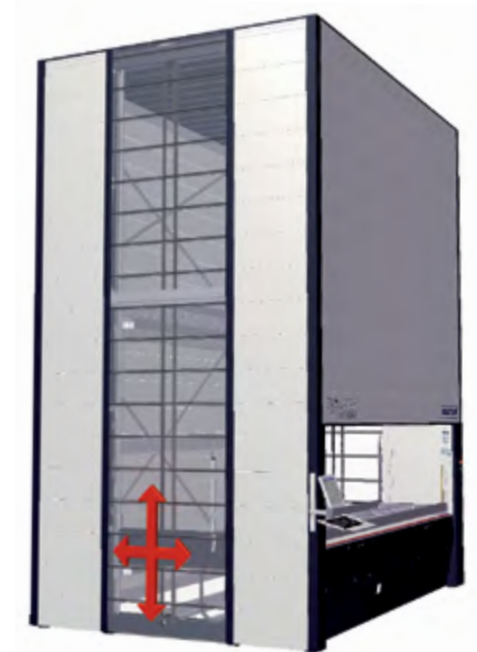
- Fit more goods in the same space. Saves floor space up to 70 %.
- Efficient picking. Up to 65 % reduction in picking times.
- Suitable for handling large and heavy items.
- Extra openings enable the use of Tornado on different floor levels.
- Ergonomic operation as the system brings the trays to optimized height.
- Prevention of unauthorized use. Reduction of losses.
- Reduced picking errors.
- Items remain clean and in order.
- Easy and paperless order handling.
- The Windows-based PC control system allows easy integration with many types of WMS.
- The latest technology on the market.
- Customization per customer requirements.
- Rapid and efficient support, guidance and service with Constructor remote support via internet.
- Constructor Tornado DT – the capacity of two machines with one pick opening.
- Enables the efficient use of storage space.

## CONSTRUCTOR TORNADO – TECHNICAL INFORMATION

- Tray width (inside measure) 1250–4250 mm
- Tray depth (inside measure) 520, 620, 720, 820 and 1220 mm (special dimensions by request)
- Load capacity 300, 500 and 600 kg
- Loading height 850 mm
- Total capacity 60 tons
- Machine height max. 15 m
- Electricity 400 VAC, 16 A
- Control system – TC1100
- Connection with ERP, WMS, robot

## ACCESSORIES

- Light position indicator
- Light pointer
- Confirmation strip
- Bar-code reader and label printer
- Batch picking and a lot more



*Tornado's depth, width and height are easily customized to accommodate different sized products.*

# Constructor Paternoster – saves time and space



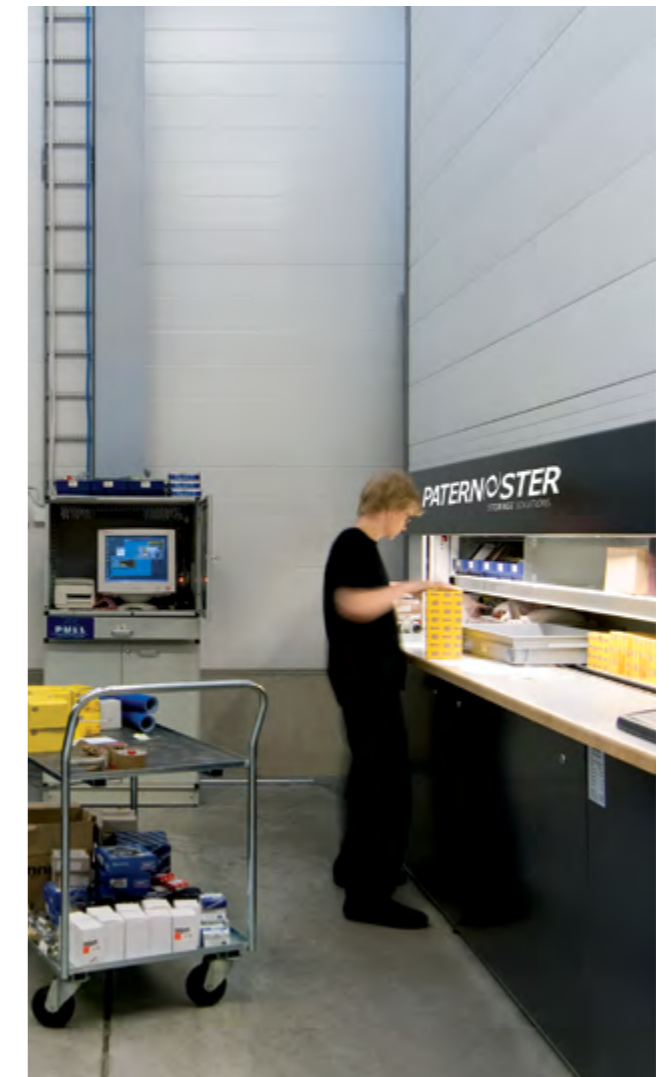
The Constructor Paternoster is a secure and safe storage system where items do not have to be searched for. It is also an excellent solution for the optimal reduction of picking times.

A large reduction in picking times is achieved with batch picking, offering a quicker stock turnover. Stock item handling is safe and ergonomic, as the shelf is brought to an optimal working level.

The rotating automated storage solution Paternoster keeps the products away from dust and light. The Paternoster

saves floor space and offers efficient height-optimized storage. Retrieval points can be located on different floor levels.

The Paternoster is recommended especially for storing many different types of goods. It offers rapid processing and minimization of picking errors and always brings items to the operator by the shortest route.



# Benefits of Constructor Paternoster



- Fit more goods in the same space.
- Carrier dimensions suited for most standard picking boxes.
- Average picking time 15 s / row.
- Reduces picking errors by two thirds.
- Prevents unauthorized use. Reduces loss.
- Safe and ergonomic work environment.
- The controller is equipped with graphical touch screen.
- Well-lit access opening that can be closed and secured by electronic door. Optionally multiple-access openings in different locations, even on different floors.
- Guarantees the safety of both users and goods with a safety light curtain and photoelectric cells above and below the opening.
- Fits well with batch picking.
- Combines reliable technology with decades of experience in global deliveries.
- Low maintenance requirements.
- Easy to integrate with many WMS solutions.
- Durable and solid frame.



## CONSTRUCTOR PATERNOSTER – TECHNICAL INFORMATION

- Carrier width 2850 and 4100 mm
- Carrier depth 420, 520 and 620 mm
- Carrier load capacity up to 600 kg / carrier
- Carrier free height 201–493 mm
- Total capacity up to 16 tons
- Machine width 3703 and 4953 mm
- Machine depth 1836, 2036 and 2236 mm
- Machine height 3040 – 14890 mm
- Electricity 400 VAC, 16 A
- Control system PaC100
- Connection with ERP, WMS, robot, RJ45-connection



Constructor Paternoster brings goods to the operator by using the shortest route.

# Constructor HOCA is suited for large quantities of goods



Constructor horizontal carousel is an excellent solution for large warehouses or low roofed buildings. The horizontal storage system can accommodate the whole warehouse to efficient picking by optimizing HOCA to pick goods repeatedly from the right locations and to bring those to the selected picking point.

The idea of the Constructor HOCA-concept is to combine horizontally moving shelves into the smallest area, at the same time utilizing the available space. The horizontal storage system can accommodate large quantities of bulky goods, reducing picking times significantly.

HOCA brings goods to the operator rapidly and ergonomically. By combining several machines to one user, the productivity can be significantly improved. Modern technology allows picking from several different locations. Compared to traditional methods, the HOCA system reduces picking errors by two thirds.

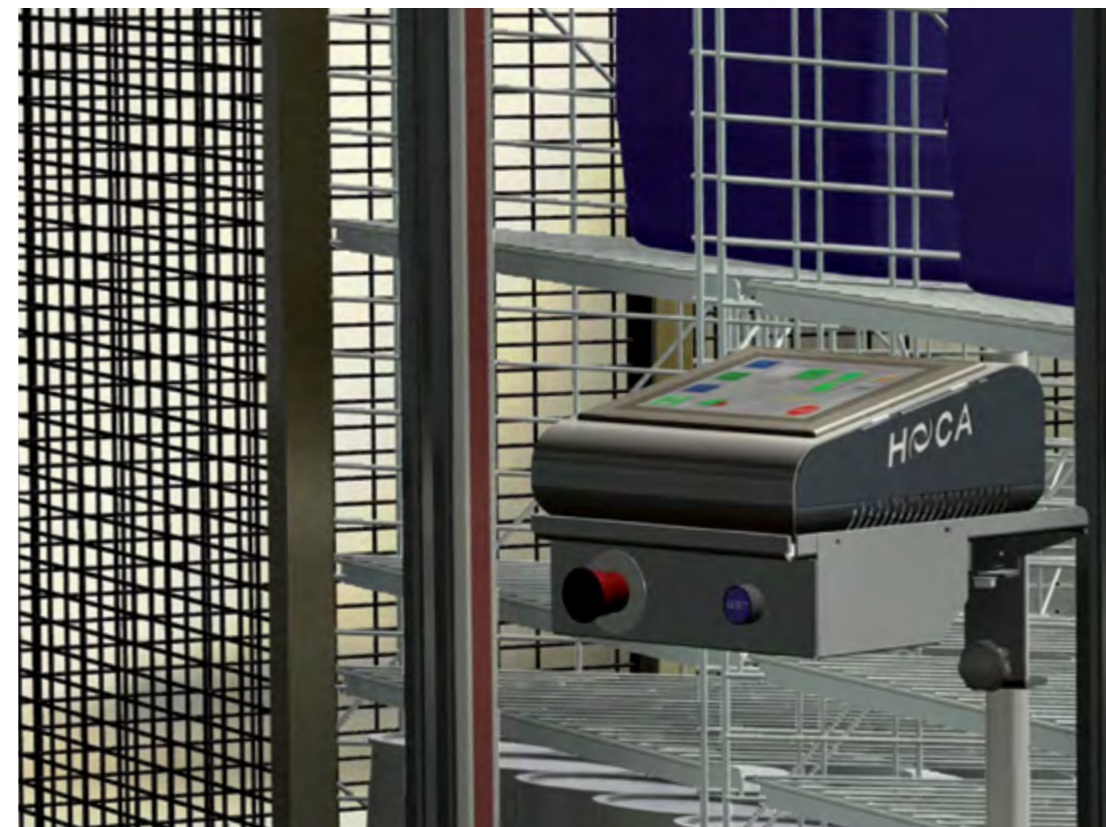
HOCA is easily connected to the production, logistics and sales databases, as well as the other Constructor storage automates. The own control system of the storage system always chooses the quickest route.



# The benefits of HOCA

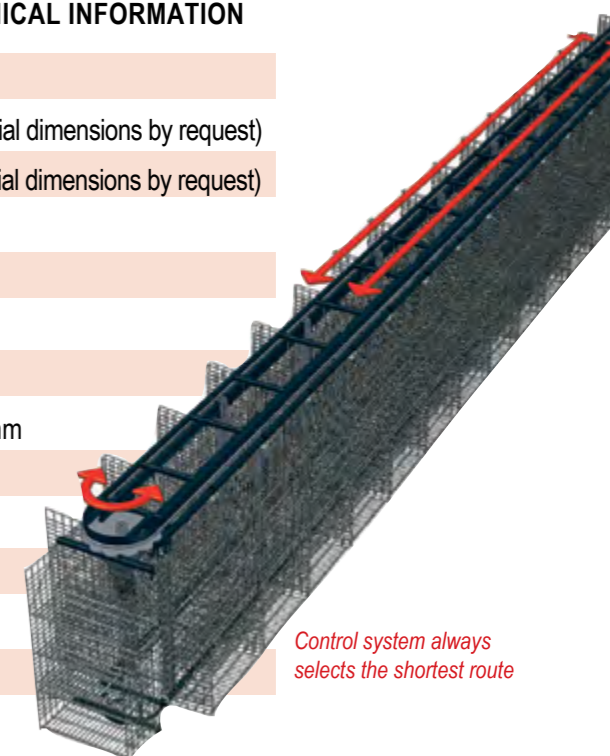


- Optimal use of floor space and low building height.
- Enables by its flexible dimensions the storage of different goods into one system.
- Efficient batch picking.
- One operator can pick from several machines.
- A safe way to store and handle material.
- Easily integrated to the whole logistics environment of the warehouse and into the company's WMS.
- Rapid and easy way of picking goods. Picking time very short.
- User-friendly and safe.
- A simple re-stocking system.
- Controller equipped with a graphical touch screen.
- Option of several pick openings.
- Many options for bay shelf configuration.
- Two horizontal carousels can be installed one above the other.



## CONSTRUCTOR HOCA – TECHNICAL INFORMATION

- Bay width 830–1010 mm
- Bay depth 508 and 608 mm (special dimensions by request)
- Bay height 1700–3900 mm (special dimensions by request)
- Bay load capacity 600 kg
- Shelf capacity 100 kg
- Shelf division 60 and 120 mm
- Machine load capacity 40 tons
- Machine width 1700 and 1900 mm
- Machine length even up to 50 m
- Machine height 2150–4350 mm
- Electricity 400 VAC, 16 A
- Control system HoC100
- Connection to WMS, ERP, robot



*Control system always selects the shortest route*



# Constructor warehouse management systems



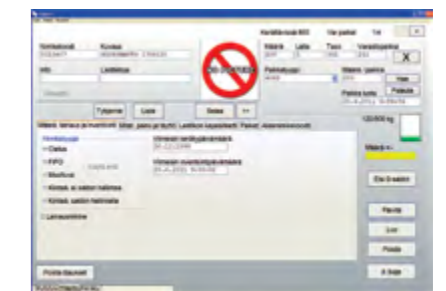
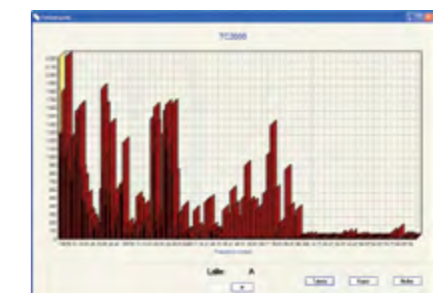
Warehouse management and accurate stock balance control has become more important in storage and logistics. In automated storage, the orthodox use of stock control systems and their ability to fit into the company's other operations and to a host system has taken a bigger role.

Easily used warehouse management systems, developed and maintained by Constructor Finland, guarantee the efficient and functional storing solution. The systems can advance from a small user-friendly system of controlling one automated system in to a multi-user version and in to an efficient batch picking process.

equipment with flexible controls for all types of storage requirements. TC2000 planned for the Windows- environment offers a simple, user-friendly and flexible operating program. The user can choose the most suitable language from the system.

TC2000 is easily connected to the customer's own operating management system. If required, TC2000 can be tailored to meet the specific requirements of a customer.

The Constructor TC2000 warehouse management system is designed for all the Constructor automatic storage



## THE BENEFITS OF THE CONSTRUCTOR WAREHOUSE MANAGEMENT SYSTEM

- One system that fits to all storage systems.
- Flexible controls all types of storage functions.
- Batch picking utilizes all characteristics of the automated storage system.
- The modular structure allows additional features to be easily implemented.
- Multi-lingual operating system.
- Visual and clear graphics.
- Support for label printing and bar-code reader.
- Common database for several storage systems.
- Varied back-up functions.
- Flexible integration into several production control systems.

## The software is available in wide packages, divided in three different levels:

- TC2000 Std
- TC2000 Pro
- TC2000 Pro Ext

# More efficiency with batch picking



Batch picking is the most efficient way to pick as many pick lines as possible per day while minimizing errors.

Batch picking combines the products in orders into one picking batch. The control system guides and optimizes the picking order. The system brings the tray to the operator and provides information on the product and its location.

The control system also displays the quantity to be picked and the related

order. Dozens of orders can be picked in the same batch.

This allows optimal picking during one picking batch. In other words, the shelves move and the operator stays in one position. While the picker places products into picking compartments the system places the next product so that

it is ready for picking. This reduces waiting times and increases efficiency.

Traditional systems do the reverse: they collect all orders separately, traversing the picking route again for each one.



## THE BENEFITS OF BATCH PICKING

- One user can operate several machines at once
- Several orders are collected at a time
- Individual products are picked for several orders at once
- Paperless picking possibility
- Picking costs are reduced by up to 50 %
- Picking errors are reduced even up to 70 %
- Ergonomic and efficient working environment



PLEASE CONTACT YOUR LOCAL SALES OFFICE FOR MORE DETAILS!

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Constructor Finland is a part of Constructor Group that has more than 25 years of experience in storage automation. Latest technology is used in all our products. We have satisfied customers all around the world.

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