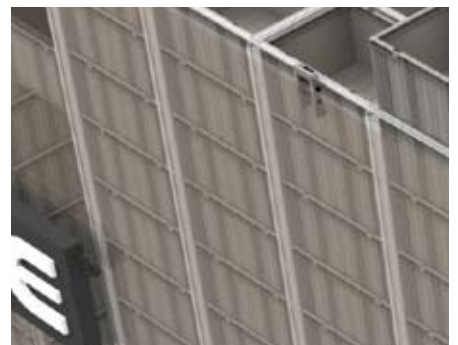
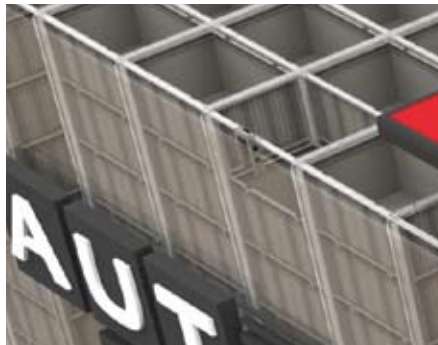


THE AUTOSTORE SYSTEM

EXTREME UTILIZATION OF WAREHOUSE AND VOLUME



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AUTOSTORE IN OPERATION



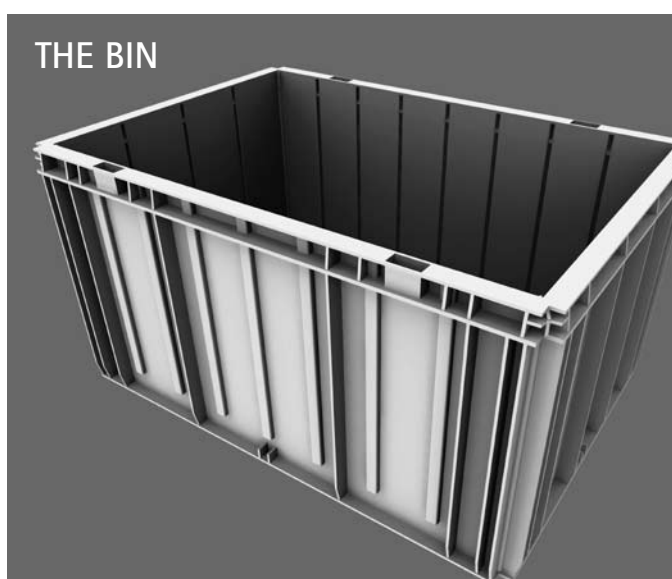
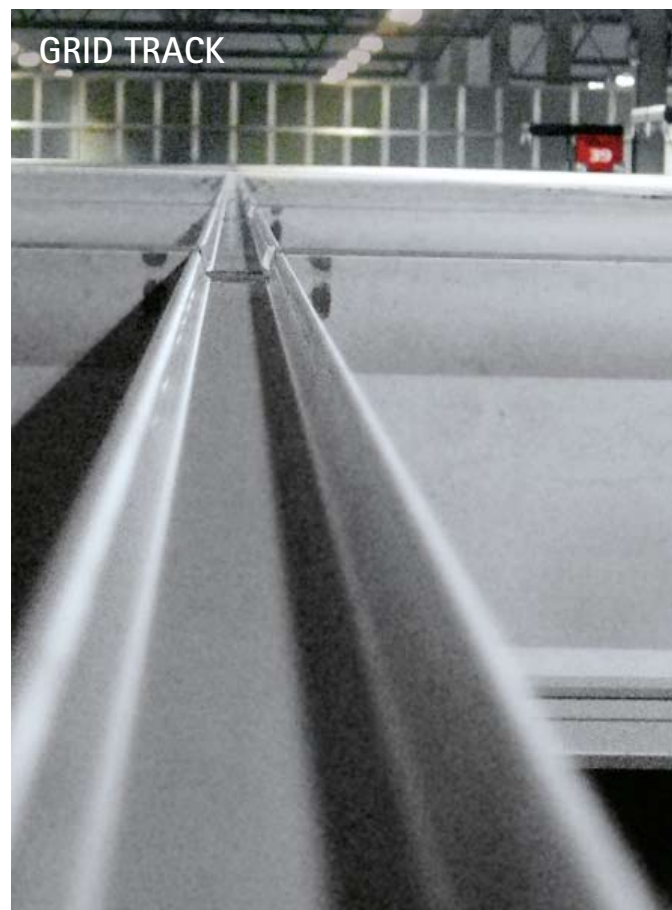
WORKSTATIONS IN PICKING AREA

ROBOT FETCHING A BIN



AUTOSTORE GRID WITH ROBOTS

AUTOSTORE – YOUR BENEFITS



- > Makes better use of the available area and volume than any other system
- > Is easy to install in existing buildings
- > Increases the speed, and improves the quality of the internal logistics
- > Provides practical and effective automation
- > A flexible system that can be changed and developed
- > Very reliable, as the system units work independently of each other
- > Low energy consumption and reduction of carbon footprint

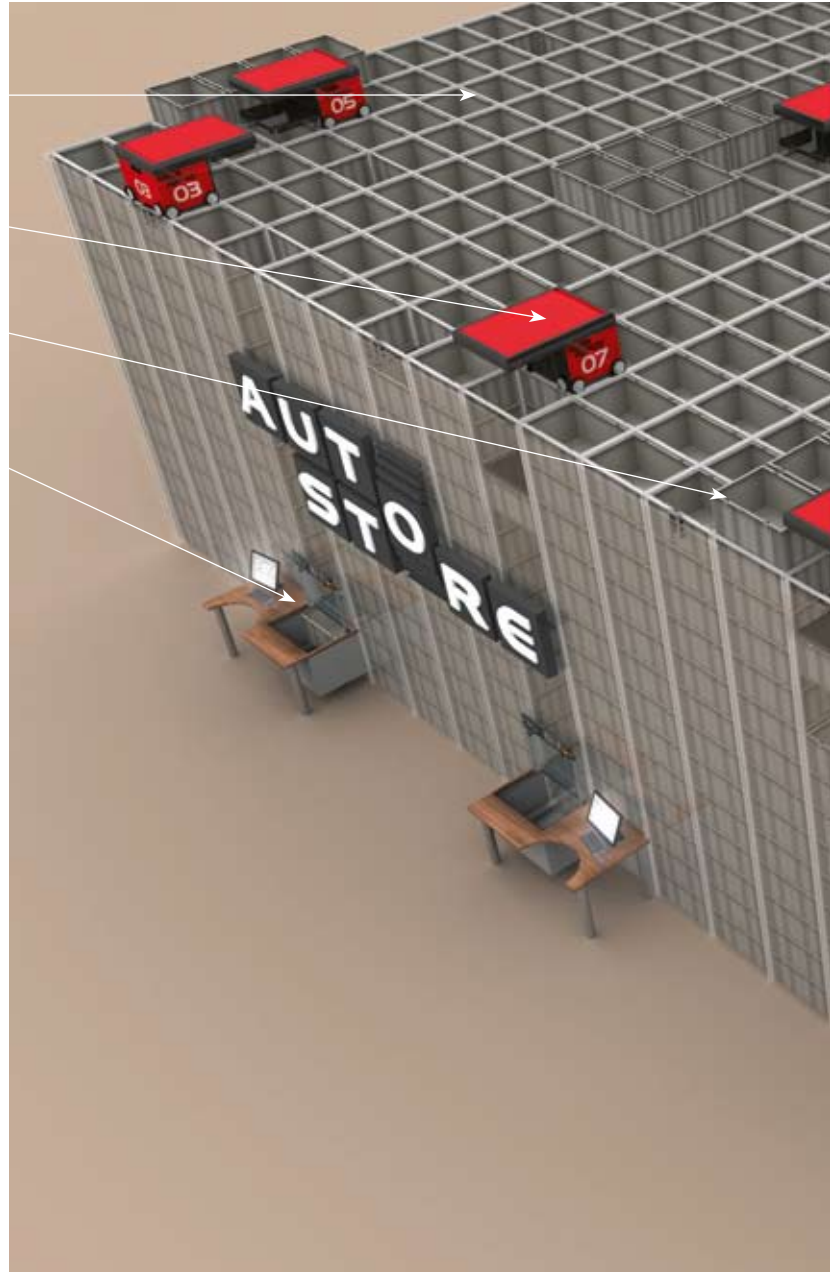
AUTOMATED BIN STORAGE - WITH AUTOSTORE MODULES

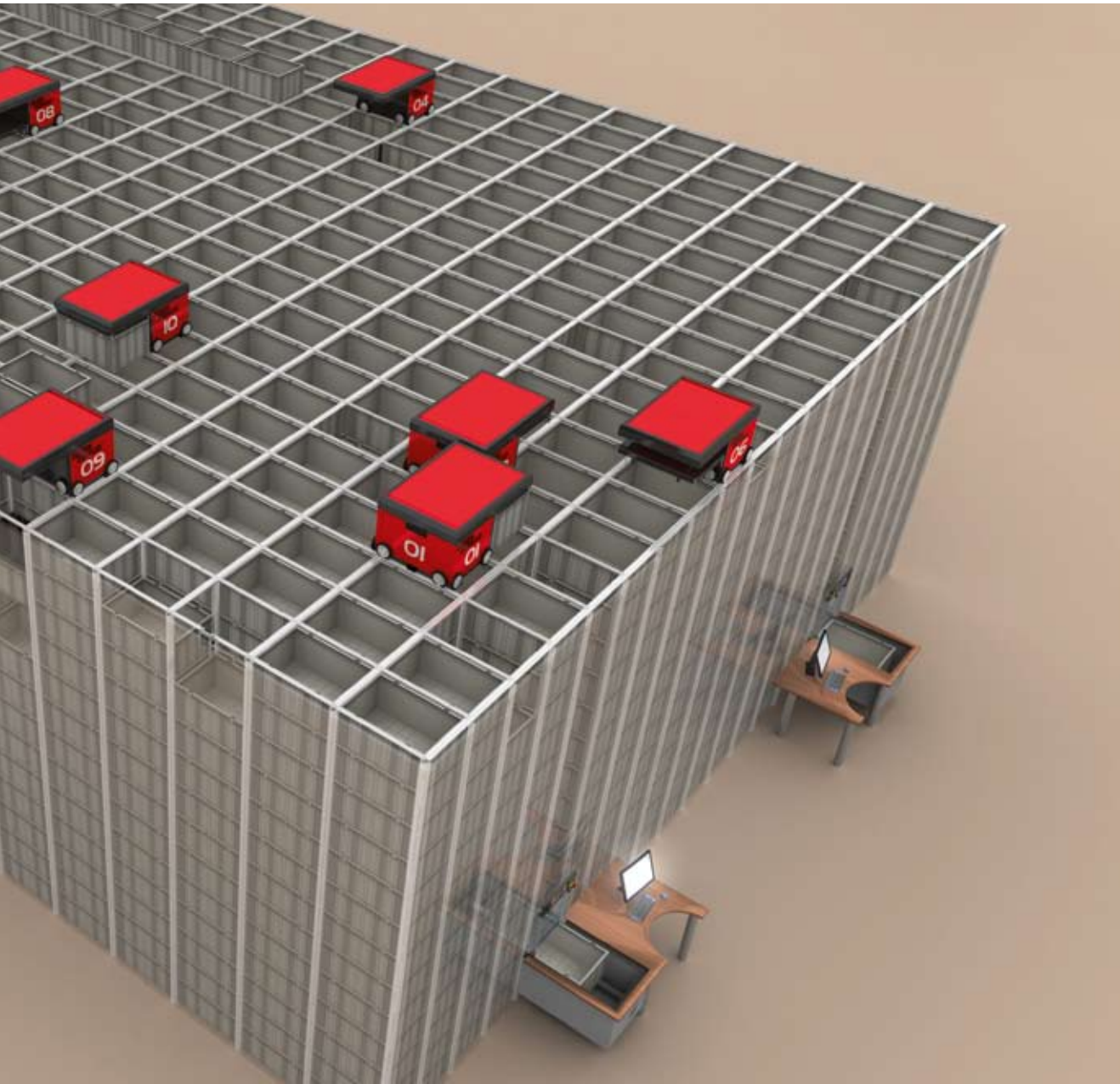
GRID

ROBOT

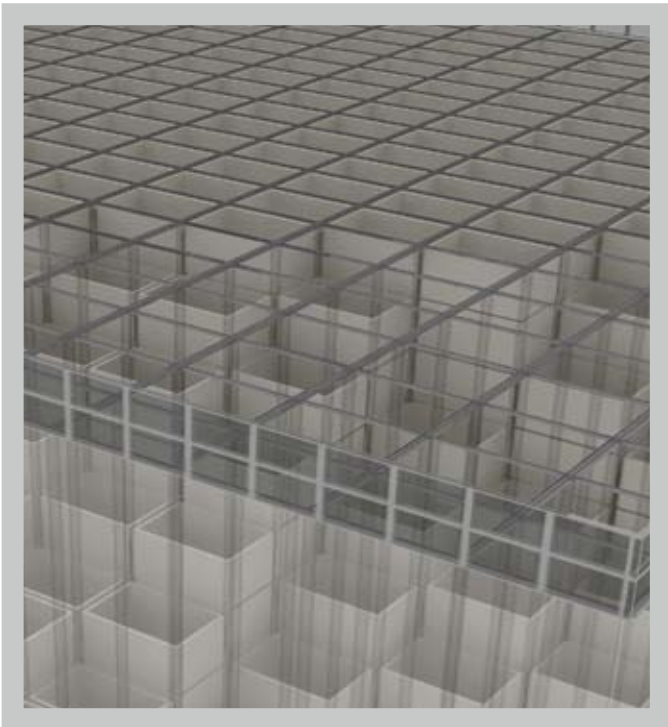
BIN

PORT



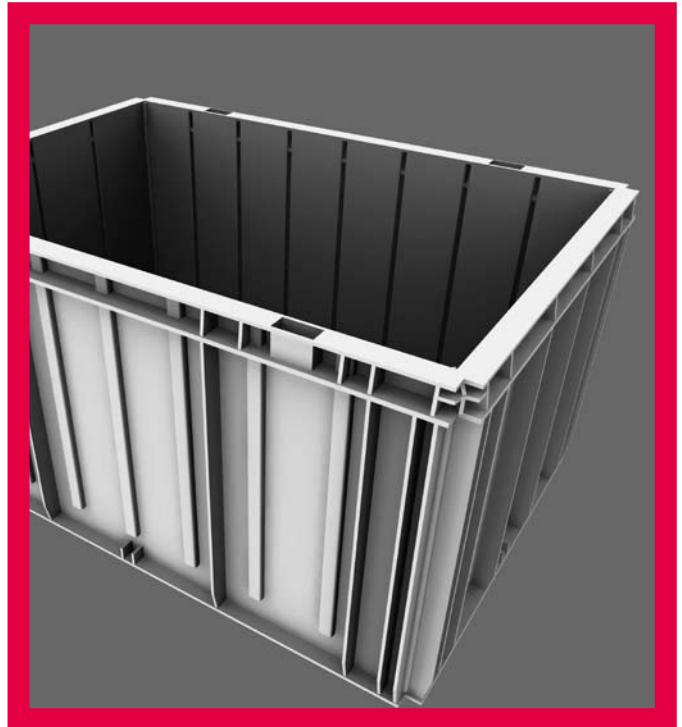


AUTOMATED BIN STORAGE - WITH AUTOSTORE MODULES



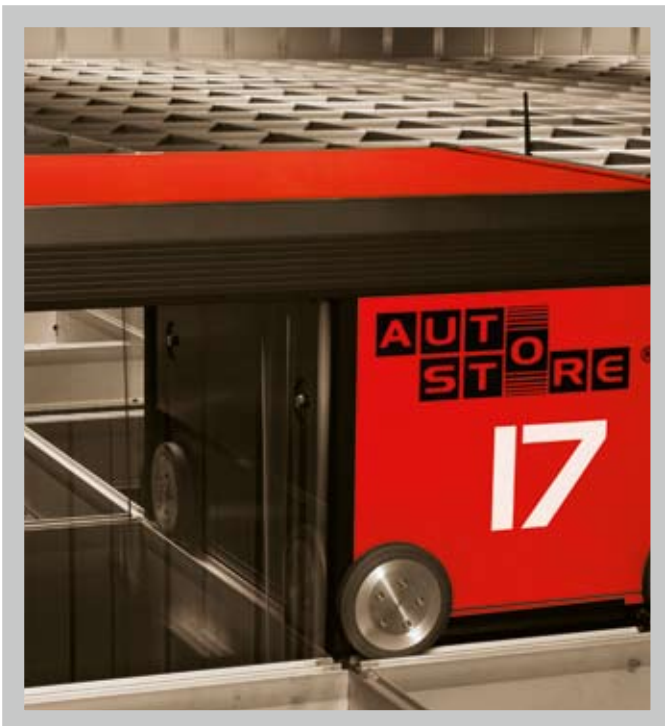
GRID

The grid is an aluminium structure organized in rectangular cells. Each cell has room for several bins that are stored on top of each other. Different configurations of height and form are possible, making the AutoStore grid able to surround pillars and other obstacles. On top of the grid there are tracks for the robots.



BIN

This is the basic module in which the goods are stored. The bin is available in different heights and can be produced in different materials in order to achieve particular properties for example anti-static bins for the electronics industry. Standard inner measurement: 601 mm x 401 mm x 310 mm (i.e. standard packages fit into the bin).



ROBOT

This is the module that most people associate with AutoStore. It is the worker that moves the bins around. The robot has two sets of wheels that enable it to move along two axis. This makes it possible for all robots to reach any position on the grid. The robot is equipped with a lift for picking up, carrying and putting bins that are stored in the grid. The robot communicates with the control system by a wireless link and is automatically recharged when needed (charging is normally done during night time).



PORT

This module presents the bins to the operator. Ports can be installed on all sides of the grid, or under it, if the grid is on the level above. When a robot delivers a bin to a port, the port exchanges this bin with the previously used bin, and the robot returns it back to storage. Thus, new bins are delivered back-to-back and the operator rarely has to wait for bins. There is an operator panel on every port that shows status information and provides simple support functions.

YOUR BENEFIT: HIGH FLEXIBILITY



Every now and then there are cases where standard solutions do not meet the requirements. Also for these situations is AutoStore the best choice.

The AutoStore system shows a very high flexibility - it fits into each existing building and is therefore as individual as your company.

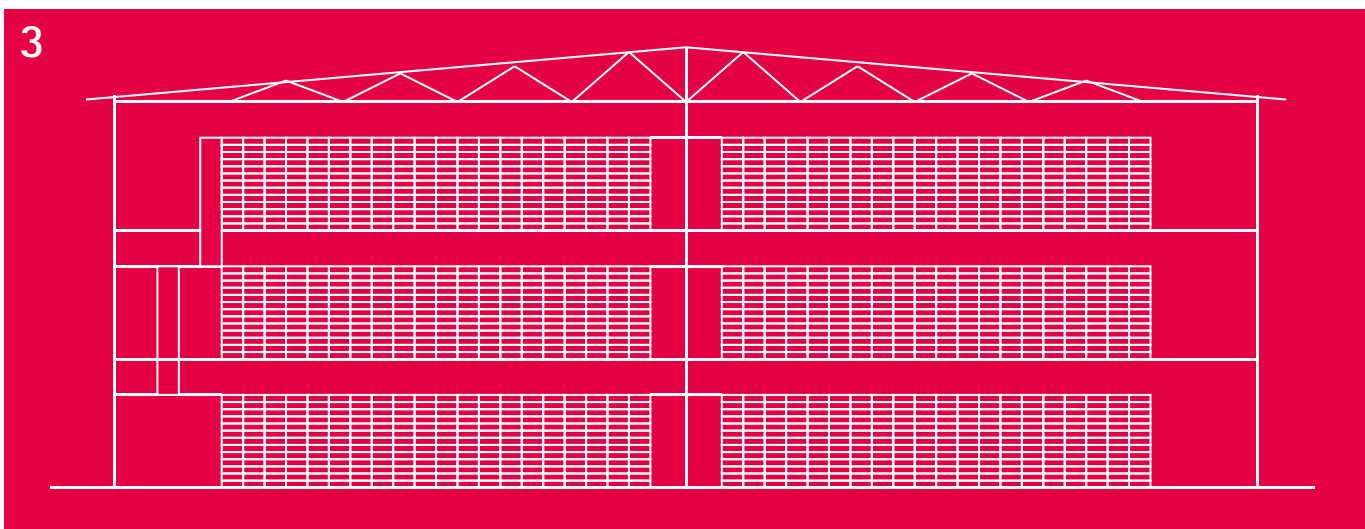
There are several ways to configure the grid for AutoStore. The grid can be tailored to suit every customer's need. Some examples are shown on the following pages.

AutoStore - a flexible system that can be easily installed in existing buildings and does make optimal use of the available area.

Available options:

- 1. Surrounding columns**
- 2. Mezzanine placement**
- 3. Several levels**
- 4. Different heights**
- 5. Several cubes with extension track**

Note: Possible configurations are not limited to the examples.



YOUR BENEFIT: RELIABILITY

Each application is different. Each environment is different. The requirement is always the same: reliability. A maximum of productivity requires a maximum of reliability.

AutoStore consists of several identical modules. Even if any one of these modules should fail, the system will still operate at near full capacity. For example if a robot is in the middle of a job and fails, then the robot can be parked and another robot will come and finish the job. By designing AutoStore with overcapacity this warehouse solution can be designed to meet any reliability requirements.



YOUR BENEFIT: HIGH SPEED AND CAPACITY



The total performance of the system is controlled by several different parameters.

Each installation will have its unique configuration that is adjusted to the customer's need. The type of logistics (short/long handling time e.g. serial number registration) and the picking speed requirement will determine the number of ports and robots.

In most scenarios the number of robots will have a linear effect on system performance. Almost any speed can be configured to handle several thousand picks an hour if needed.

YOUR BENEFIT: EASILY CONFIGURABLE



One of the major benefits of the AutoStore system is that the flow of goods can be easily modified. The actual position of a bin inside the grid does not depend on any physical factors. The factors that influence the bin movements are all changeable software options.

AutoStore will (if not forced to different behavior) have high-runners on the top, and low-runners further down in the grid. The bins are kept this way because recently used bins are put on top of the grid when brought back to storage.

This is a benefit, but not a mandatory option for the system. It is possible to override this option if some products should always be on the top level. In other cases the warehouse owner may not want to store some types of goods on the top level for security reasons.



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