

AUTOMHA

HEAVYTOWER

**AUTOMATED VERTICAL STORAGE
OF LONG SPAN MATERIAL AND SHEETS**

AUTOMATION MADE SIMPLE

HEAVYTOWER

Automated vertical storage of long span material and sheets

HEAVYTOWER, automated vertical storage systems, is designed for storing long span material, sheets metal and heavy carpentry guaranteeing very high flow rates. They are usually used as a buffer near cutting machines and production or as an inter-operative warehouse. Typically, stored material is sheet metal or profile rods and tubes. These systems offer the benefits of dynamic storage - working in the „goods to operator“ mode and can maximize the space height utilization, while maintaining easy and fast availability of stored material assortments.

HEAVYTOWER vertical warehouse is offered as a mono-tower, double-tower or multi-tower storage system.

The lifting manipulator with the extractor performs the transfer of the loading units between the storage locations within the system and the operator transfer area, which is at the ergonomic height. The vertical system can be equipped with more operator areas, either at front and/or at side machine position.

The design of the operator area or picking area allows to load and unload the entire packages of heavy material using a forklift or to take individual pieces manually (using a crane) or automatically (by manipulator for material move to the machine working table). The operator area can be also a weighing point for recording the weight of the material being loaded or unloaded.

The control system, with touch screen on the control panel, enables manual or automatic mode of storage operations control.

The system provides high-quality visualization of operational and diagnostic information, important for operator's convenience. Vertical warehouse management is ready for external communications, for integration into user's intra-logistics management system or data connection with another external device - such as a dividing or a forming machine. From the individually working **HEAVYTOWER** machines is possible to create a controlled multi-warehouse system.



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TYPES OF VERTICAL WAREHOUSES



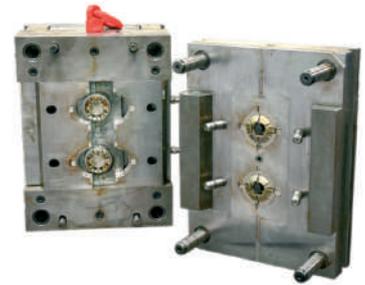
● Metal Sheet Tower

The system is designed for storing sheet material, the most often used for storing of metal sheets. Can be designed as Mono, Double and Multi Tower.



● Warehouse bars/long bodies

The system is designed to store long material, the most often used for storing of rods, bars and profiles. Can be designed as Double and Multi Tower.



● Special Tower

The system is designed for storage of special loading units, the most often used for storing of heavy and oversized products, molds, spare parts or semi-products.



● Mono Tower

Simple vertical warehouse system with one tower, lifting manipulator and fixed operator table.



● Double Tower

Set of two storage towers, with a single lifting manipulator. Horizontal manipulator (trolley) moves the loading unit from/to the operator station.



● Multi Tower

System compiled as a module combination of Double Tower(s). The combination creates a large storage capacity.

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WAREHOUSE FOR LONG SPAN MATERIAL - LS TOWER

The **LS TOWER**, vertical storage system, is designed for long span material storing. The most often it is used for storing of rods, bars and profiles.

The towers, with a customized layout plan and height, are made of a very robust welded structure, adjusted for vertical storage of individual handling units. The Double Tower is adapted for storing of individual loading units in two towers (columns). The Multi Tower is combination of Double Towers. Containers (loading units) are welded structures, dimensioned according to typical shipping formats and weights of metallurgical profiles, bars and tubes.

The extractor, which is a part of the lifting manipulator, performs horizontal displacements of the loading unit

from/to the storage location in both towers; the lifting manipulator moves the loading unit vertically from/to the transfer position. Construction of the mobile trolley ensures container and material moving to a defined distance from the device.

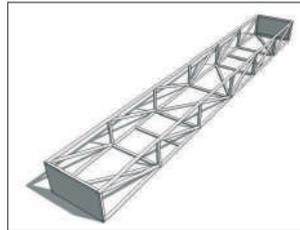
Manipulation of the packages and individual bars is usually carried out by crane with belt or a magnet.

If there is request for manipulation of entire package by using a forklift, the system can be optionally equipped by material lifting system in operator area.

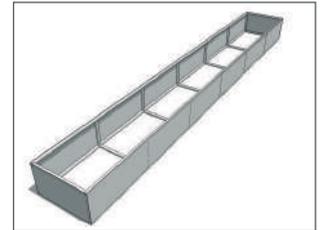
The double and multi tower system can be equipped with more operator areas, either at front, at back and/or at side machine position (depending on the design of the tower).



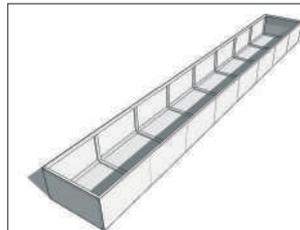
Types of containers:



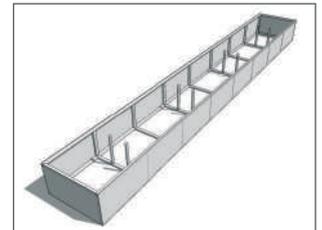
Standard container with beams



Container with side covering



Container with side and bottom covering



Container with optional accessories - dividers

	Container payload (t)	Material dimension (mm)	Max machine Height (m)	Operator area type	Material lifting	Module Control SW	Loading cells
Double Tower	1,5/3/5	Max width 1000 Max length 6000	12	Front with trolley (optional: back/side)	yes	Recommended	Optional
Multi Tower	1,5/3/5	Max width 1000 Max length 6000	12	Front with trolley (optional: back/side)	yes	Necessary	Optional

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WAREHOUSE FOR SHEETS - MS TOWER

The **MS TOWER**, vertical storage system, is designed for sheet material storing. The tower, with a customized layout and height, is made of a very robust welded structure, adjusted on inner side for vertical storage of individual handling units. Containers (handling units) are welded structures, dimensioned according to typical shipping formats and weights of metal sheets.

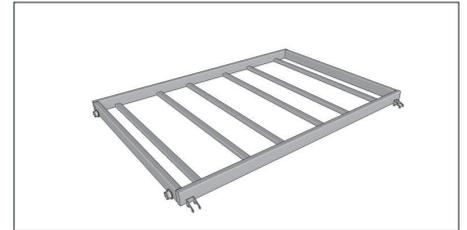
The extractor, which is a part of the lifting manipulator, performs horizontal displacements of the loading unit from/to the storage location in the tower; the lifting manipulator

moves the loading unit vertically from/to the transfer position. The specific construction of the operator area ensures lifting of the material above the container (handling units), which allows the manipulation of the entire bundle of sheets using forklift.

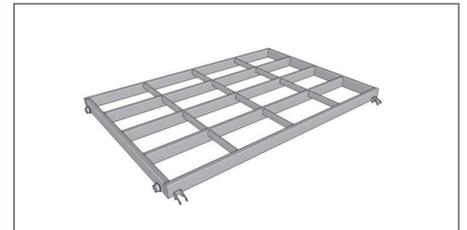
Manipulation of the individual sheets is usually carried out by vacuum manipulator or a magnet. The double and multi tower system can be equipped with more operator areas, either at front, at back and/or at side machine position (depending on the design of the tower).



Types of containers:



Special container



Standard container with optional number of beams

	Container payload (t)	Material dimension (mm)	Max machine Height (m)	Operator area type	Material lifting	Module Control SW	Loading cells
Mono Tower	1,5/3/5	1250x1500 1500x3000 2000x3000 2000x4000	7,5	Front	yes	Optional	Optional
Double Tower	1,5/3/5	1250x1500 1500x3000 2000x3000 2000x4000	12	Front with trolley (optional: back/side)	yes	Recommended	Optional
Multi Tower	1,5/3/5	1250x1500 1500x3000 2000x3000 2000x4000	12	Front with trolley (optional: back/side)	yes	Necessary	Optional

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WAREHOUSE FOR OTHER MATERIAL - SPECIAL TOWER

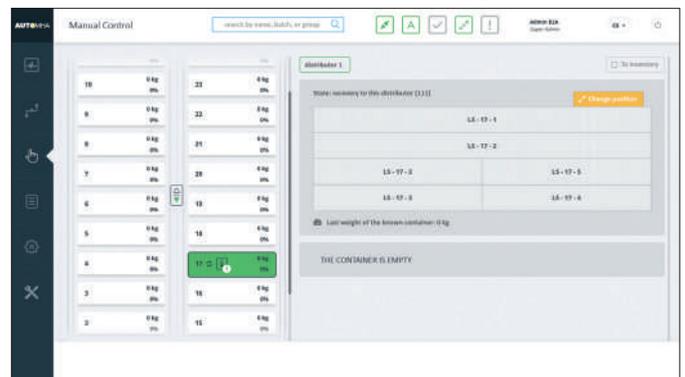
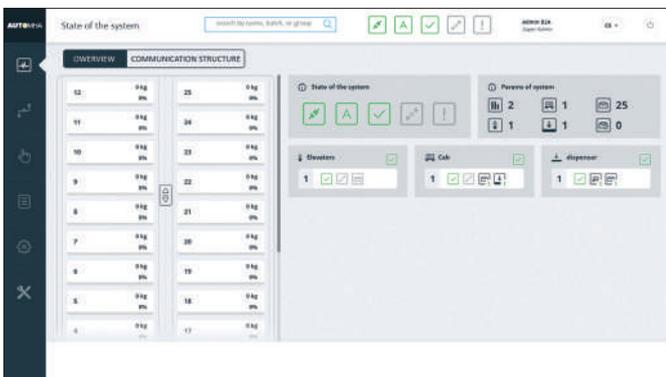


The **SPECIAL TOWER**, vertical storage system, is designed for storing heavy materials of different sizes or oversized. The most often it is used for storing press molds or very heavy goods on special pallets.

By combining of features and benefits of **MS** and **LS TOWER** storage systems, it is possible to design a special storage system that respects the specific features of the stored units, the customer's requirements for storage and manipulation or the protection and availability of the stored units.

● Standard system control

Standard system control allows simple stock records, container number calling and error diagnostic.



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ADVANTAGES

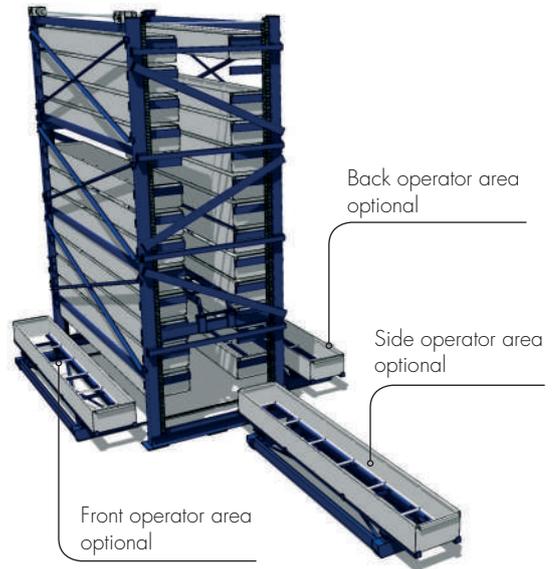
- "Goods to operator" principle
- Effective space utilization
- High capacity on a minimum area
- Easy material manipulation

High material protection
 Warehouse management, remnants included
 Easy system control and maintenance

OPTIONAL

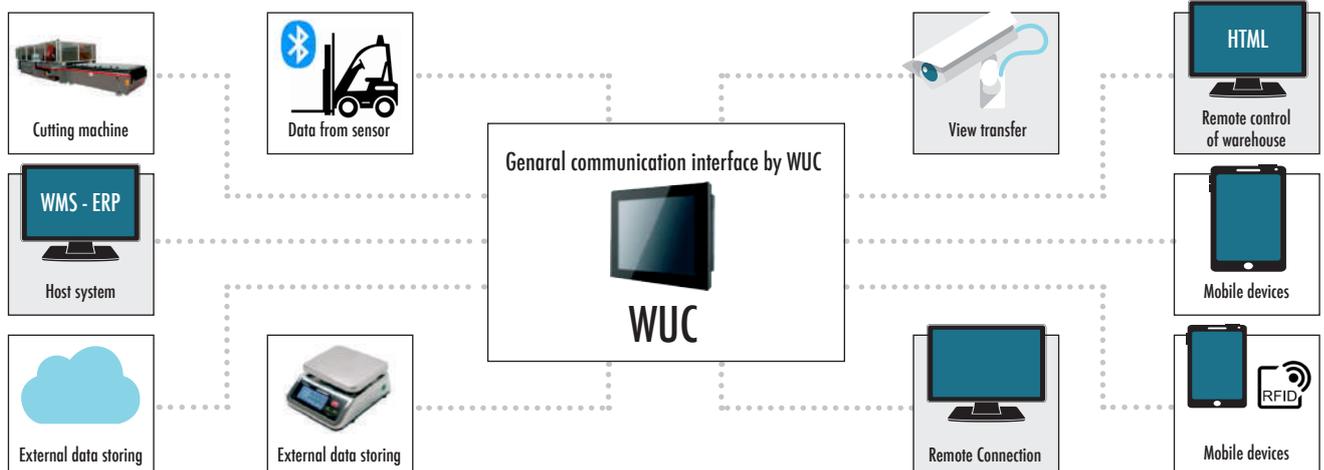
● Loading cells-weighing of the loading unit

The manipulation area can be equipped with load cells for weight control to avoid overloading the machine



● Control SW module

Using of optional control SW module allows full stock records and system control by individual items. SW provides diagnostic and operational information. Software allows warehouse management, container calling by items, connection to other systems and other features.



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