AUTOMHA: Made in Italy technology for all sectors of storage

Since 1979, AUTOMHA, a leading factory in the automated warehouse sector, has developed significant experience and expertise. Currently capable of engineering specific solutions for every storage sector, it responds optimally to the different requirements that result from various fields of application (according to size, performance and storage methods, picking and operating conditions).

AUTOMHA creates personalised designs and customised services which ensure the highest levels of performance, and which are excellently suited to the various fields of application. The company philosophy is based on the principle of the fully automated warehouse: the idea of picking loading units without the need for a human operator has always been the challenge that has fascinated our founder, Franco Togni. The first prototypes date back to 2002, whilst in 2010, we created a battery-free vehicle equipped with a supercapacitor capable of charging the shuttle in just a few seconds for each operation; in 2015, this project received an honourable mention from the Compasso d’Oro International Award for Design.

AUTOMHA follows the client at every stage: from the design to the creation and installation of the system, taking care of every detail, both mechanical and electrical. All our products and systems are designed to suit even the most challenging of industries; as such, our machinery and solutions are able to maintain the same level of performance at a temperature range of between -30°C to +55°C. This has allowed AUTOMHA to gain a strategic advantage in the field of frozen foods.

AUTOMHA is also recognised as the best provider for the textile industry on an international level.
PRODUCTS, SYSTEMS, SOLUTIONS

**AUTOSAT**

Semi-automatic machine designed for multi-depth pallet storage. Distributed in the USA and Canada with a **PALLET RUNNER** brand owned by AUTOMHA.

**SUPERCAP**

Fully-automated satellite for intensive multi-depth pallet storage. Battery-free. Charging time from the main machine: 7 seconds.

**AUTOSATMOVED**

Fully-automated modular pallet storage system.

**RUSHMOVED**

A fast modular system of shuttles that travel simultaneously on the same track in a closed circuit, arranged in sequence but able to move independently, so as to increase the performance of handling flows.

**MINILOAD**

Fully-automated stacker-crane warehouse for the handling of any type of box or tray.

**SRM**

Fully-automated stacker-crane warehouse for storage of loading units of any size and of significant weight, equipped with various gripping systems.

**HANDLING**

We design, manufacture and install automated internal transportation systems to improve productivity and reduce costs.

**SOFTWARE**

Simple and aesthetically-pleasing software for the managing of all AUTOMHA automated and semi-automated warehouses.
A semi-automated machine designed for multi-depth pallet storage, ideal for all sectors of industry, suitable for all brands of rack.

**AUTOSAT**

Patented by AUTOMHA in 2002
More than 3,000 satellites installed in over 40 countries
Range of application -30°C/+55°C

AUTOSAT is the semi-automated shuttle created and designed by AUTOMHA for intense multi-depth pallet storage.

The satellite operates in traditional drive-in lanes and guarantees the highest levels of efficiency in situations requiring repeated filling/emptying of shelves.

The satellite is equipped with a special removable Lithium battery and is controlled by a simple multi-function radio controller with a multi-lingual LED display.

By moving autonomously within the lanes, AUTOSAT can be easily moved between various levels and shelves by a standard fork-lift truck as it picks, stores and reorders the pallets in the storage lanes according to FIFO (first in - first out) or LIFO (last in - last out) mode.

The use of this satellite allows for the use of the entire volume of the warehouse, cutting handling times for storage and picking manoeuvres in half, and improving safety levels for the personnel present in the warehouse.

AUTOSAT is suitable for the storage of all types of pallet and loading units and can be used in all industrial sectors; it guarantees excellent performance in extremely low or high temperatures (-30°C/+55°C).

AUTOSAT is technology which was first patented by AUTOMHA, and is sold in the USA and CANADA under the brand Warehouses equipped with AUTOSAT technology can be managed by the special LOG software, which manages and processes data regarding the inbound and outbound handling of Loading Units in manual or semi-automated warehouses.

**STANDARD**

Available for ambient temperatures or for refrigerated areas (AUTOSAT BZ).

The use of AUTOSAT BZ is permitted in temperatures as low as -30°C without any change in performance. The following measures should, however, be adopted:

- Do not move the satellite into areas at ambient temperature; the resulting condensation that would form in the satellite could compromise the functioning of the machine
- The BZ model is supplied with an external “red box” battery which substitutes the Lithium battery during charging. We recommend that the “red box” is used during the night, when the shuttle is not in use, or for periods of rest of over 2 hours

**INOX**

An innovative model, designed to respond to the specific requirements of the cheese production and food processing sector. Thanks to its 100% stainless-steel and washable structure, AUTOSAT Inox is an ideal aid for optimising warehousing time and space, maintaining the hygiene standards required for the food sector.

AUTOSAT Inox is also available in the BZ version.

**WIFI**

Semi-automated battery-powered machine fitted with wi-fi communication with PDA and AGV laser-guided shuttle carts.

With AUTOSAT WIFI, an operator to command the machine via radio controller is no longer required, as the satellite operates automatically via wi-fi commands sent by the WMS (warehouse management software). AUTOSAT WIFI is, in any case, supplied with a radio controller and has the same Lithium battery as the other models. AUTOSAT WIFI is also suitable for all industrial sectors.

- Advantages of the PDA
- Advantages of AGV

---

MODELS

**STANDARD**

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- Advantages of the PDA
- Advantages of AGV

---

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FUNCTIONS

STANDARD

Storage: the satellite, placed frontally in the “Home” position by a standard elevator/forklift truck, similarly receives the pallet to be stowed in the row. Via the “stow” button on the radio controller, AUTOSAT lifts the pallet and carries it to the first free position within the storage lane. Once the pallet has been stowed, it returns to the starting position.

Picking: the satellite, placed frontally by a standard elevator/forklift truck, receives the command to pick merchandise via the “Pick” button on the radio controller. It runs along the rack, stops in below the first available pallet, lifts it and carries it to the “Home” position. The operator can therefore easily collect the pallet with the forklift truck and free the machine.

Continuous picking: with a single press of the “Continuous picking” button, the operator sets off an activity consisting of multiple picking missions, without the need to repeatedly press the buttons on the radio controller. This is useful for multiple picking operations in the same lane.

Manual setting of distance between pallets from 20 to 150 MM
In the case of pallet overflow, the distance between pallets can be managed automatically via radio controller.

MANUAL CONTROL OF AUTOSAT

The satellite’s functions are controlled manually via radio controller.
Every step of the operation is controlled by separate commands, such as lift, stow, move.

Radio controller suitable for managing up to 4 AUTOSAT simultaneously

Mission counting capacity

Automatic maintenance warning

OPTIONAL

“Compacting push” pallet reorganisation mode
AUTOSAT automatically reorganises the lane, compacting all of the pallets to fill empty spaces. (Function available for FIFO mode, compacting from production)

“Compacting pull” pallet reorganisation mode
AUTOSAT autonomously reorganises the lane, compacting all of the pallets to fill empty spaces. (Function available for FIFO mode, compacting from shipping)

Anti-collision between AUTOSAT units in the same lane
Required if multiple satellites are used in the same lane. The satellites communicate with each other, avoiding collisions. (Function available for FIFO mode)

Stock taking: pallet quantity count
The satellite, moving along the lane, counts the pallets via the upper sensors. The total number of pallets handled is shown on the radio controller display. Useful for medium and long lanes.

Multipallet: handling of pallets of different sizes in the same channel (FIFO or LIFO)
Ensures flexible handling within the warehouse and allows for the use of pallets of different sizes within the same lane.

“PLUS” continuous picking
Allows for rapid picking. The satellite behaves in the same manner as with continuous picking, but each mission is independent of the pallet being collected. If the first pallet made available is not collected, the satellite proceeds with the second picking operation, which will then be queued. In this manner, there are always two pallets ready to be collected.

Partial picking
Via the AUTOSAT radio controller, it is possible to define the number of pallets to pick in continuous mode.

Continuous storage
With a single press of the “Continuous storage” button, the operator starts an activity consisting of multiple storage missions. This is useful for multiple storage in the same lane.

Bi-directional operation
AUTOSAT is capable of operating in FIFO mode, inverting direction via the radio controller.

Controlled pallet storage
Via the AUTOSAT radio controller and the relative menu, it is possible to define the position for the storage of the first pallet in the lane.

Odometer
Counts the km travelled.

Camera
AUTOSAT is equipped with an on-board camera to provide real-time vision of AUTOSAT’s movement and immediate diagnosis via WiFi.

QR Code
Lane identification using a QR code tag.

Inclinometer
Detects incorrect positioning of the pallet shuttle within the lane.

Distance between pallets of up to 240 MM

Distance between pallets of up to 350 MM

Special functions on request

Diagnosis software
In the case of mission errors, the radio controller displays the problem code to the operator.

OPTIONAL

“Compacting push” pallet reorganisation mode
AUTOSAT automatically reorganises the lane, compacting all of the pallets to fill empty spaces. (Function available for FIFO mode, compacting from production)

“Compacting pull” pallet reorganisation mode
AUTOSAT autonomously reorganises the lane, compacting all of the pallets to fill empty spaces. (Function available for FIFO mode, compacting from shipping)

Anti-collision between AUTOSAT units in the same lane
Required if multiple satellites are used in the same lane. The satellites communicate with each other, avoiding collisions. (Function available for FIFO mode)
# TECHNICAL SPECIFICATIONS

## TECHNICAL DATA

<table>
<thead>
<tr>
<th>AUTOSAT MODELS</th>
<th>Data</th>
<th>cm</th>
<th>mm</th>
<th>inch</th>
<th>cm</th>
<th>mm</th>
<th>inch</th>
<th>cm</th>
<th>mm</th>
<th>inch</th>
<th>cm</th>
<th>mm</th>
<th>inch</th>
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<tbody>
<tr>
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<td>270</td>
<td>SAT.1010</td>
<td>10.1</td>
<td>255</td>
<td>SAT.1111</td>
<td>11.1</td>
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<td>SAT.1112</td>
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<td>800(D)x1200(F)</td>
<td>800(D)x1200(F)</td>
<td>1000(D)x1000(F)</td>
<td>1000(D)x1200(F)</td>
<td>1000(D)x1200(F)</td>
<td>1100(D)x1100(F)</td>
<td>1100(D)x1200(F)</td>
<td>1140(D)x1140(F)</td>
<td>1165(D)x1165(F)</td>
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<td>Temperature range ST / BZ / HT °C</td>
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<td>L2 total width (wheels in forking)</td>
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<td>Wheel size front / rear</td>
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<td>Load/min/Unladen travelling speed</td>
<td>m/min</td>
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<tr>
<td>Up speed</td>
<td>s</td>
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<td></td>
<td></td>
<td></td>
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<td>Down speed</td>
<td>s</td>
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<td>Travelling motor power</td>
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<td>Lifting motor power</td>
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</tbody>
</table>

## IDENTIFICATION

- Dimensions
- Wheels
- Motors
- Battery and battery charger
- Remote controller

## AUTOSAT MODELS

<table>
<thead>
<tr>
<th>Data</th>
<th>cm</th>
<th>mm</th>
<th>inch</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
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<td>800(D)x1200(F)</td>
<td>1000(D)x1200(F)</td>
</tr>
<tr>
<td>Battery type</td>
<td>Lithium</td>
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<tr>
<td>Battery weight</td>
<td>kg</td>
<td>10</td>
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</tr>
<tr>
<td>Battery dimensions (width, length, height)</td>
<td>mm</td>
<td>175x225x150</td>
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</tr>
<tr>
<td>Battery capacity</td>
<td>Ah</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Battery voltage</td>
<td>V</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Battery lasting from full charge in ambient environment</td>
<td>h</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Battery lasting from full charge in cold store environment</td>
<td>h</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Charging time 100%</td>
<td>h</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Battery charge current</td>
<td>Ah</td>
<td>12</td>
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</tr>
<tr>
<td>Battery life</td>
<td>year</td>
<td>&gt;5</td>
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<tr>
<td>Type of motor control</td>
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<tr>
<td>Noise level to driver</td>
<td>dB(A)</td>
<td>&lt;40</td>
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<tr>
<td>Frequency</td>
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<td>Protection</td>
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<tr>
<td>Display</td>
<td>LED</td>
<td></td>
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<tr>
<td>Temperature range ST / BZ °C</td>
<td>°C</td>
<td>-30 / +45</td>
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<td>Languages</td>
<td>ITALIAN/ENGLISH/SPANISH/FRENCH/GERMAN/CZECH/Polish/Russian/Chinese/Korean/Portuguese/Arabic</td>
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</tbody>
</table>

Other languages upon request.
**TECHNICAL SPECIFICATIONS**

**SAT RACKING SYSTEM DIMENSIONS**

<table>
<thead>
<tr>
<th>AUTOSAT</th>
<th>mm</th>
<th>inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallet dimensions (P=depth/F=forking side)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Clearance between upright</td>
<td>1350</td>
</tr>
<tr>
<td>B</td>
<td>Clearance between the rails</td>
<td>843</td>
</tr>
<tr>
<td>C</td>
<td>Minimum height at first level</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Minimum distance between pallet in height</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Also allowed pallet deflection</td>
<td></td>
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</tbody>
</table>

**SAT RAIL DIMENSIONS**

<table>
<thead>
<tr>
<th>AUTOSAT (ALL MODELS)</th>
<th>mm</th>
<th>inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallet dimensions (P=depth/F=forking side)</td>
<td></td>
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</tr>
<tr>
<td>A</td>
<td>Upper Rail Height</td>
<td>170</td>
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<tr>
<td>B</td>
<td>Lower Rail Height</td>
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<tr>
<td>C</td>
<td>Rail width</td>
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</tr>
<tr>
<td>D</td>
<td>End stopper dimensions (I1 x I2)</td>
<td>70 x 60</td>
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</tbody>
</table>

**SECTORS OF APPLICATION**

- Food
- Beverage
- Dairy
- Controlled temperature
- Refrigerated
- Logistics centres
- ATEX

**EQUIPMENT**

**STANDARD**

- AUTOSAT
- On-board Battery
- Battery charger (220/110 Vdc)
- Multi-lingual radio controller
- Battery charger for radio controller (220/110 Vdc)
- Instruction manual

**OPTIONAL**

- Increased load capacity (2000 kg)
- Spare parts
- Drip protection
- Transportation
- Transport
- Installation & Training
- Marine transportation protection
- Forklift locking system (anchoring between shuttle and forklift truck)
- Rapid AUTOSAT coupling (emergency system for the retrieval of broken-down units)
- Magnetic safety plates (increases the stability of the satellite when on the forklift truck)
- PLS SICK Kit (speed control in the case of obstacles detected in the lane)
- Autoservice (manual security shuttle to recover broken-down machines or for in-lane maintenance)
**ADVANTAGES**

- **System concept**
  - Optimising of storage/depositing/picking phases
  - Optimisation of space
  - Full integration with various warehouse logistics (FIFO-LIFO)
  - Efficient organisation of the storage area
  - Maximum adaptability with pre-existing drive-in structures

- **Safety**
  - Storage/picking of pallets without the danger of collision thanks to laser targeting
  - No risk to racking thanks to warehouse side handling
  - Self-locking in the raised position when loaded
  - Anti-collision system between satellites in the lane

- **Technical advantages**
  - Powered by removable lithium battery. Maximum charging time: 5 hours
  - Average battery run time: 8 hours
  - Anti-tipping guides
  - Laser targeting system for slowing down and positioning at the end of the lane
  - Guide wheels for easy insertion into the lane
  - Can be transported with a standard forklift truck
  - Rapid and silent movement
  - Real-time machine operational data available via the radio controller
  - Suitable for refrigerated areas at temperatures as low as -30°C
  - Significant energy savings with green technology

- **Maintenance**
  - Autoservice platform for the recovery of satellites from the lane
  - Predictive maintenance
  - Guaranteed worldwide 24-hour, 7-days-a-week assistance

---

**EQUIPMENT**

- **ETHERNET**
  - Communication

- **Unit identification number**

- **Anti-dust sensor**

- **Battery**

- **Hoisting profiles**

- **Radio controller**

- **Automatic hoist up between autosat**

- **Safety bumper**

- **Magnetic safety plates**

- **Emergency button**

- **Flashing LED light**

- **Front optical sensors**

- **Machine regulations**

- **Transportation packaging**

- **Autoservice**

---
The fully-automated satellite, usable with AUTOSATMOVER mother vehicles or stacker cranes, for multi-depth intensive storage of pallets in all industrial sectors.

Battery-free, supercapacitor powered.

Charges from the mother vehicle in just 7 seconds.

The SUPERCAP satellite has been designed by Automha to operate in multi-depth in fully-automated systems. The introduction of supercapacitor technology has allowed for the resolving of typical problems related to systems powered by standard batteries, which require long charging times (in the case of satellites with integrated batteries) or the presence of operators for the substitution of batteries (in the case of machines with removable power sources).

SUPERCAP is suitable for the storage of all types of pallet and loading units and can be used in all industrial sectors; it guarantees excellent performance in extremely low or high temperatures. (-30°C/+55°C). It can be used on stacker cranes or automated vehicles.

SUPERCAP charges its supercapacitor from either the mother vehicle or stacker crane. This technology avoids:
- Lengthy charging times
- Maintenance
- The risk of leakage of chemicals contained in traditional batteries

The mother vehicles are in fact fitted with copper brushes which charge SUPERCAP’s supercapacitors in 7 seconds when it is on board. Once charging is complete, the satellite is ready to carry out storage or picking operations for load units.

SUPERCAP communicates with the mother vehicle via Wi-Fi, sending detailed reports of its charge status and the progress of its missions minute-by-minute.

The most common use of SUPERCAP is on an AUTOSATMOVER mother satellite, but it can also be loaded on a stacker crane, thanks to the CAPTIVE variant (a satellite managed from a stacker crane) or the ROAMING variant (multiple satellites handled from a stacker crane).

Both variants are equipped with an additional lithium battery as well as a supercapacitor, which is useful for powering the unit inside the racking while waiting for the mother vehicle. This also allows for the management of warehouses with FIFO-logic handling.

All of the SUPERCAP variants are capable of operating in frozen and hostile environments.

MODELS

STANDARD
Equipped with a supercapacitor, it automatically recharges every time it is on board the mother vehicle in a maximum of 7 seconds. It is loaded on a mother satellite (AUTOSATMOVER) which transports it to the storage lane for the carrying out of its missions. It is capable of handling any type of pallet, and maintains constant operational levels from -30°C to +55°C.

NEVER DIE
As well as supercapacitor technology, this model is also equipped with an additional 20 Ah lithium battery, which is essential in FIFO logic systems which require operations of compacting and reorganising of storage lanes.

BACKUP CAPTIVE
As well as supercapacitor technology, this model is also equipped with an additional 10 Ah lithium battery, which is useful for powering the unit inside the racking while waiting for the mother vehicle, and it allows for the management of warehouses with FIFO-logic handling. The presence of this battery guarantees the highest levels of safety in the case of breakdowns or maintenance, in fact, SUPERCAP CAPTIVE is available with PL=D safe level functioning. This model allows for a single satellite to be managed by a single stacker crane.

BACKUP ROAMING
As well as supercapacitor technology, this model is also equipped with an additional 10 Ah lithium battery, which is useful for powering the unit inside the racking while waiting for the mother vehicle, and which allows SUPERCAP to manage warehouses with stacker cranes or AUTOSATMOVER. The presence of the battery guarantees the highest levels of safety in the case of breakdowns or maintenance. This model allows for multiple satellites to be managed by a single mother vehicle.

More than 1000 SATELLITES installed
Range of application -30°C/+55°C
The possibility to operate in long storage lines, thanks to the absence of power cables connecting the satellite to the mother vehicle.

Extreme flexibility: SUPERCAP can be used on various types of mother vehicle

The possibility of handling multiple satellites from the mother vehicle

The possibility of accessing the SUPERCAP automatic system from an external location to assess and modify parameters.

Maximum reliability and safety

Imperceivable recharging times

Maintenance not required

Long vehicle life

STANDARD

Integrated supercapacitor
Contact point with conductive brushes on the mother vehicle
Electronic unit for the correct carrying out of controlled cycles
DC DRIVER for running the motors for the transportation and handling of loading units
WiFi communication system for the receiving of commands and the sending of reports to the mother vehicle

Integrated safety commands for the management of critical situations or alarms from the warehouse.
### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>SUPERCAP MODELS</th>
<th>DATA U.M.</th>
<th>800(D) X 1200(F)</th>
<th>1000(D) X 1200(F)</th>
<th>1100(D) X 1100(F)</th>
<th>1200(D) X 1200(F)</th>
<th>48(D) X 40(F)</th>
<th>40(D) X 48(F)</th>
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</thead>
<tbody>
<tr>
<td>Model</td>
<td>SC.0812</td>
<td>SC.1012</td>
<td>SC.1111</td>
<td>SC.1165</td>
<td>SC.1112</td>
<td>SC.1210</td>
<td>SC.1212</td>
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<tr>
<td>Pallet dimensions (D=depth/F=forking side) mm</td>
<td>800(D)</td>
<td>1000(D)</td>
<td>1100(D)</td>
<td>1100(D)</td>
<td>1200(D)</td>
<td>1200(D)</td>
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<td>Power supply Type</td>
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<td>Carrying Load kg</td>
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<td>245</td>
<td>265</td>
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<td>Running wheels Type</td>
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<td>Wheel size front/rear mm</td>
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<td>Number of idle wheels</td>
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<tr>
<td>L1 total length (ref. technical drawing) mm</td>
<td>1084</td>
<td>1084</td>
<td>1184</td>
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<td>1304</td>
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<tr>
<td>L2 total width (ref. technical drawing) mm</td>
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<td>947</td>
<td>820</td>
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<td>L3 total height (ref. technical drawing) mm</td>
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<td>Loaded/Unloaded handling speed m/min</td>
<td>40/80</td>
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<tr>
<td>Up speed m/s</td>
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<tr>
<td>Down speed m/s</td>
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<tr>
<td>Swarming starter power W</td>
<td></td>
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<td>Lifting motor power W</td>
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<tr>
<td>Supercap voltage V</td>
<td>48</td>
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<tr>
<td>Charging time 100% s</td>
<td>7</td>
<td></td>
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<td>Supercap life year</td>
<td>&gt;15</td>
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<td></td>
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<tr>
<td>Control type</td>
<td>PLC 1500 Siemens</td>
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<tr>
<td>Type of motor control</td>
<td>Driver</td>
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<tr>
<td>System working time hr/day</td>
<td>24/7</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

### USE

**ON BOARD AUTOSATMOVER**

The most common use of SUPERCAP is on board an AUTOSATMOVER mother satellite. On board the mother vehicle the satellite recharges its supercapacitor in 7 SECONDS and prepares to carry out its missions in the storage lanes. The STANDARD, BACKUP ROAMING and NEVER DIE models can be used for this system.

**ON BOARD STACKER CRANE**

SUPERCAP can, however, also be loaded onto a stacker crane, thus allowing for multi-depth storage. The satellite charges in 7 seconds when loaded onto the cradle. The BACKUP CAPTIVE, BACKUP ROAMING and NEVER DIE models can be used for this system.
SECTORS OF APPLICATION

- Food industry
- Storage refrigeration cells
- Chemical and pharmaceutical industry
- Food distribution centres
- Logistics centres
The fully-automated modular and flexible pallet storage system for all industrial sectors.

AUTOSATMOVER is a versatile and fully-automated new generation modular system for the automated multi-depth storage of pallets.

AUTOSATMOVER is composed of:

MOVER: The mother shuttle which runs on rails perpendicular to the storage lanes, powered by a power bus bar on every storage level.

SUPERCAP: The on-board satellite controlled from the mother shuttle via Wi-Fi and used on operations in the various storage channels for the automatic picking/storage of pallets.

The various system configurations require lifting/lowering systems for pallets for the delivery of the loading units to the different storage lanes, and lifting/lowering systems for the mover carts, used in configurations with AUTOSATMOVERS used on multiple levels (typical in warehouses with low cycles).

The management of the entire AUTOSATMOVER system is handled by AUTOMHA’s WMS software (AWM).

MODELS

STANDARD
Used for all sectors operating at ambient or controlled temperatures. Maintains constant operational levels at temperatures of up to +45°C.

BZ
Specifically for sectors operating at low or very low temperatures. Maintains constant operational levels at temperatures as low as -30°C.

HT
Specifically for sectors operating at very high temperatures of up to +55°C.

Patented by AUTOMHA in 2010
More than 250 machines installed
RANGE OF APPLICATION -30°C/+55°C

AUTOMHA
Increased overall availability of the system
Consumption and costs halved in comparison to normal automated storage systems
Increase in overall performance available from the system
Simple and rapid installation
Predictive maintenance
Availability of the system during assistance and maintenance activities
Complete flexibility and ease in picking
Constant operational levels at temperatures of between -30°C and +55°C
Designed by AUTOMHA
SECTORS OF APPLICATION

- Food industries
- Refrigerated storage cells
- Chemical - pharmaceutical industries
- Food distribution centres
- Large-scale logistic centres
- All industries which require the construction of automated systems, making the most of space and optimising handling costs
- All companies which require elevated levels of warehouse activity

CONFIGURATION

AN AUTOSATMOVER FOR EVERY LEVEL
(number of AUTOSATMOVERS = number of levels)

ONE AUTOSATMOVER FOR ALL LEVELS
(1 AUTOSATMOVER for n° levels)
The fully-automated modular circuit for the transportation of all types of pallet, suitable for all industrial sectors.

RUSHMOVER is the evolution of the Transport Wagon Loop machine. It is capable of connecting distant parts of a logistics system and of following articulated and flexible paths, even over long distances.

It is a circuit powered by a bus bar integrated into a light aluminium rail system on which rapid shuttles run, which are capable of handling pallets of varying weight and dimension; the RUSHMOVER system allows intensive productivity thanks to the exceptionally high speeds reached and perfect integration with pre-existing systems.

What really distinguishes RUSHMOVER from other Wagon Loop systems is its capacity to curve in two directions. This characteristic makes it possible to manage extremely flexible routes set out over long distances, which respect pre-existing structures.

Furthermore, RUSHMOVER is a scalable system. The circuit in fact allows for the integration of additional shuttles into the loop over time, thus respecting the changing requirements of the client.

When necessary, or for maintenance, the RUSHMOVER shuttles can easily be removed from the circuit via a dedicated gantry without the need to completely shut down the system.

Furthermore, the vehicles running in the loop can be moved manually via a simple multi-lingual infrared remote controller.

RUSHMOVER is patented by AUTOMHA in 2017. Range of application: -30°C/+55°C.

MODELS

STANDARD
Used for all sectors operating at ambient or controlled temperatures. Maintains constant operational levels at temperatures of up to +45°C.

BZ
Specifically for sectors operating at low or very low temperatures. Maintains constant operational levels at temperatures as low as -30°C.

HT
Specifically for sectors operating at very high temperatures of up to +55°C.
# TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>TECHNICAL DATA</th>
<th>ROLLER CONVEYOR</th>
<th>CHAIN CONVEYOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallet dimensions (D=depth/ F=forking side) mm</td>
<td>800x1200</td>
<td>1000x1200</td>
</tr>
<tr>
<td>Curing load kg</td>
<td>1200</td>
<td>1200</td>
</tr>
<tr>
<td>Temperature range ST / BZ / HT °C</td>
<td>BZ -30 / 0</td>
<td>ST &gt; 0 /+45</td>
</tr>
<tr>
<td>Machine weight kg</td>
<td>698</td>
<td>710</td>
</tr>
<tr>
<td>Wheel type</td>
<td>Polyurethane</td>
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</tr>
<tr>
<td>Wheel size front / rear mm</td>
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<td></td>
</tr>
<tr>
<td>Number of driving wheels nr</td>
<td>2</td>
<td></td>
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<tr>
<td>Number of idle wheels nr</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Number of side alignment wheels</td>
<td>4 on motor axle / 4 on idle axle</td>
<td></td>
</tr>
<tr>
<td>L1 total length (ref. technical drawing) mm</td>
<td>2040</td>
<td>2040</td>
</tr>
<tr>
<td>L2 total width (ref. technical drawing) mm</td>
<td>1575</td>
<td>1550</td>
</tr>
<tr>
<td>L3 Conveyor width mm</td>
<td>935</td>
<td>1135</td>
</tr>
<tr>
<td>L4 Conveyor travelling height from ground level mm</td>
<td>750 +/-50</td>
<td>800 +/-50</td>
</tr>
<tr>
<td>Max travelling speed in straight path m/min</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Travelling speed in bends m/min</td>
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<td></td>
</tr>
<tr>
<td>Acceleration / Deceleration m/s²</td>
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<td></td>
</tr>
<tr>
<td>Travelling motor power kW</td>
<td>2.2</td>
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<tr>
<td>Max conveyor motor power kW</td>
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<td>1.5</td>
</tr>
<tr>
<td>Rail type</td>
<td>100x60 Aluminium profile</td>
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</tr>
<tr>
<td>Rail gauge mm</td>
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<td></td>
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<tr>
<td>Power supply feeding Type</td>
<td>power bus bar</td>
<td></td>
</tr>
<tr>
<td>Main power Type</td>
<td>AC current 400V - 50/60 Hz. (others on request)</td>
<td></td>
</tr>
<tr>
<td>System working time h/day</td>
<td>24/7</td>
<td></td>
</tr>
<tr>
<td>Colors</td>
<td>Body: White RAL 9003 - Chassis: Black RAL 9005</td>
<td></td>
</tr>
</tbody>
</table>

**TECHNICAL DATA**

- **Dimensions**: Pallet dimensions are provided in millimeters (D=depth/ F=forking side).
- **Curing Load**: The curing load for each model is specified as 1200 kg.
- **Temperature Range**: ST (Standard Temperature) has a range of >0/+45 °C. BZ (Basic Zone) is from -30 / 0 °C. HT (High Temperature) is from >45/ +55 °C.

**Machine Weight**: The weights for each model range from 698 kg to 735 kg.

- **Wheel Type**: Polyurethane wheels are used.

**Performance**

- **Running Wheels**: The number of driving wheels is 2, while the number of idle wheels is also 2.
- **Side Alignment Wheels**: 4 on the motor axle and 4 on the idle axle.

**Technical Dimensions**

- **L1 Total Length**: The total length varies from 2040 mm to 2040 mm.
- **L2 Total Width**: The total width ranges from 1575 mm to 1550 mm.
- **L3 Conveyor Width**: The conveyor width is consistently 935 mm, 1135 mm, and 1335 mm.
- **L4 Conveyor Travelling Height**: The height varies from 750 +/-50 mm to 800 +/-50 mm.

**Max Travelling Speed**

- **Straight Path**: 120 m/min
- **Bends**: 40 m/min

- **Acceleration/Deceleration**: 0.5 m/s²

**Max Travelling Motor Power**

- **Conveyor Motor**: 2.2 kW
- **Max Motor**: 1.1 kW

**Roll Type**: The rail type is aluminum profile 100x60.

**Rail Gauge**: The rail gauge is 750 mm.

- **Power Supply**: The power supply is a power bus bar.
- **Main Power**: AC current 400V - 50/60 Hz. (Others on request)
- **System Working Time**: 24/7 hours of operation.

**Colors**: The body color is white RAL 9003, and the chassis is black RAL 9005.

---

**ADVANTAGES**

- Modular system
- Possibility to change direction
- Handling of long and complex routes
- Light and easy-to-install rails
- Easy maintenance
- Radio controller for manual commands capable of handling multiple shuttles
- Installation of on-board roller or chain conveyor according to requirements
- Suitable for all types of pallet
- Suitable for all industrial sectors
- Constant operational levels at temperatures of between -30°C and +55°C
- Designed by AUTOMHA

---

**Rails Configured**

- Integrated bus bar and QR code reading strip
- CAN-BUS-based communication system
- On-board anti-collision hardware system fitted to every single vehicle
- Maximum transportable weight 1500 Kg
- Variable loading/unloading weight Shuttle speed m/120’
- Gantry for machine extraction during maintenance
AUTOMHA’s heavy miniload warehouses are completely automated systems for the storage of containers or trays, used in warehouses characterised by elevated picking rates and low-weight loading units.

The warehouse is made up of a central corridor where a stacker crane runs, serving racks on both sides which hold boxes and trays. Via handling areas, conveyors carry loading units to the operator for the customary picking operations and, once picking has been completed, return the loading units to the stacker crane for allocation in the rack. All of Miniload’s operations are extremely fast and handled entirely by computer.

The entire system is managed by AWM software which records the movement and placement of loading units in the warehouse, handling operational movements.

The reliability and acceleration of the miniload stacker cranes, combined with the modular nature of the racks and the functionality of the interface render these systems the most efficient and productive in the sector of storage with automatic picking.

The fully-automated heavy miniload warehouse.

For the handling of any type of box, crate or tray.
TECHNICAL SPECIFICATIONS

General
- Max. capacity 300 kg
- Max. stacking speed 320 m/min.
- Stacker crane acceleration 3 m/s²
- Max. movement and lifting speed 60 m/min.
- Fork picking speed 90 m/min.
- Modular concept
- Automation of input and output
- High levels of productivity
- Permanent inventory
- Elimination of errors
- Optimal usage of available space

Machine body
- Steel column, structured to guide the vertical running cradle
- Innovative lifting with extendible belt
- Stacker crane with wheels in synthetic material
- Independent drive units with motors electronically synchronised for torque control

Metal runners
- Running rails on the ground and upper runners integrated into the racks

Electronics and control
- Communication via infrared or WiFi
- Reading of fork or HSD system position via safety sensors
- Transfer and lifting positions read via precise sensors
- Hydraulic buffers at the end of the lane
- Power supply via bus bar with on-board double brushes
- Compact on-board management unit, complete with PLC and communication and control units
- Sensors on the cradle for verification of the correct centering and height of the loading units
- Safety systems according to regulations

System completion
- Modular storage racks
- System perimeter walls with sound-absorbing panels
- External Picking bays complete with sizing and weighing stations

Software
- AWM software for warehouse management and for interfacing with the automation computer
- Operator interface PC client
- SCADA system for the full monitoring of the system

ADVANTAGES

Cost saving
- The BOOSTER machines provide energy savings. During the deceleration and cradle descent phases, the motors regenerate energy which is then fed back into the factory power network. This leads to considerable economic savings.

Silent operation

Simple machinery
- The machine is composed of simple elements for the simple identification and maintenance of parts.

Transportation of loading units up to 300 kg
- With unaltered cycles in line with classic miniload (for reduced warehouse space).

Handling of differing loading units
- Trays, cardboard boxes, and plastic boxes of varying size and height.
- Personalisation of loading units on request.

Suitable for all sectors of application.

Low-temperature installations possible
SECTORS OF APPLICATION

- Logistics centres
- Food storage
- Low temperature food storage
- Textile production
- Pharmaceutical industries
- Electrics - Electronics
- Mechanics
- Fashion
- Cosmetics
- Production storage
The fully-automated warehouse for the storage of loading units of all weights and sizes suitable for all industrial sectors, equipped with various picking systems (telescopic forks, on-board satellite).

Stacker crane warehouses allow for the automated storage of loader units of all weights and sizes. The SRM stacker cranes are designed for solutions which make the most of available space while respecting the modes of handling requested.

Warehouses with SRM technology can be adapted for pre-existing industrial buildings or be inserted into specially-made or self-supporting structures.

AUTOMHA stacker cranes run on rails equipped with exclusive anti-vibration plates and receive their power supply for motion from bus bars positioned on the ground and double brushes on the machine. The SRM is not connected to the ground-based switchboards via cable and is managed by precise systems controlling the operational functions: this guarantees an elevated level of safety and precision.
TECHNICAL SPECIFICATIONS

**General**
- Maximum capacity: 3000 kg
- Maximum height: 35 m
- Maximum running speed: m/1' 200
- Running acceleration: m/1.5"
- Lifting acceleration: m/1.5"
- Max speed and lifting: m/60 min
- Average forklift picking speed: m/50 min
- Automation of input and output
- Elevated productivity
- Permanent inventory
- Elimination of errors
- Functioning in temperatures as low as -30°C

**Machine body**
- Steel column, structured to guide the vertical running cradle
- Lifting with steel cables and command hoist
- Independent drive units with motors electronically synchronised for torque control (according to the cycles requested)
- The running system is usually equipped with a single motor, an optional second motor reducer unit is available for increased acceleration

**Metal runners**
- Running rails on the ground with shock absorption and upper runners integrated into the racks

**Electronics and control**
- Communication via infrared or Wi-Fi
- Reading of fork position via encoder
- Transfer and lifting positions read via precise laser sensors
- Hydraulic buffers at the end of the lane
- Power supply via bus bar with onboard double brushes
- Safety systems according to current regulations
- Sensors on the cradle for verification of the correct centering and height of the loading units

**System completion**
- Modular storage racks
- System perimeter walls with sound-absorbing panels and full coverage in the case of self-supporting warehouses
- Complete external handling system for the management of differing loading units

**Software**
- AWM software for warehouse management and for interfacing with the automation computer
- Operator interface PC client
- SCADA system for the full monitoring of the system

**Various gripping systems**
- Telescopic forks for maximum triple-depth storage, satellite with AUTOSAT battery for multi-depth storage, satellite with SUPERCAP supercapacitor for multi-depth storage
ADVANTAGES

- **Cost saving**
  The BOOSTER machines provide energy savings. During the deceleration and cradle descent phases, the motors regenerate energy which is then fed back into the factory power network. This leads to considerable reductions in costs.

- **Silent operation**

- **Handling of any type of loading unit**
  pallets of any size, metal or plastic containers, trays, frames, rolls and reels, long items, vehicles, finished products.

- **Can be adapted to pre-existing structures**

- **Possibility for multi-depth storage with the use of on-board satellites**

- **Suitable for all industrial sectors, particularly recommended for the textile sector**

- **Constant operational levels at temperatures of between -30°C and +55°C**

SECTORS OF APPLICATION

- **Logistics centres**
- **Food storage**
- **Low temperature food storage**
- **Textile production**
- **Pharmaceuticals**
- **Electrics - Electronics**
- **Mechanics**
- **Beverages**
- **Manufacturing industry**
- **Publishing**
AUTOMHA designs, manufactures and installs internal transportation systems which can improve productivity and reduce running and labour costs. These solutions can complete fully-automated storage systems or simply assist manual or semi-automated warehouse management.

The modules that make up AUTOMHA transportation lines consist of motorised roller, chain, or belt conveyor stations, and can integrate orthogonal transfer stations, shuttle carts, lifts or other specially-studied machines.

These are solutions which are capable of operating in any industrial sector, at any temperature and with differing loading units.

The various sections making up transportation systems can be integrated with fully-automated stations capable of:
- Identifying the loading unit via the reading of a bar code or TAG
- Carry out weighing
- Automatically check the size
- Align items in transit

With regards to requested flow and productivity requirements, AUTOMHA systems are capable of:
- Moving loading units from reception areas to successive processes
- Transport goods to manufacturing processes
- Direct merchandise from assembly processes to packing and shipping departments
- Provide real-time supply of merchandise from the warehouse to picking or production stations
- Supply merchandise to refilling stations
- Automatically coordinate shipping orders
- Maintain full merchandise tracking
- Rationalise areas used for material handling
**EXPANDABLE END-OF-LINE ROLLER CONVEYORS**

AUTOMHA is the official reseller of UNI-XU roller conveyors made by Conveyor Units, the most important European producer of expandable conveyors of all types and sizes.

The UNI-XU roller conveyors are available in models:
- With powered rollers
- With gravity rollers
- With gravity skatewheels

The width of these conveyors range from 600 mm to 900 mm, which makes them versatile in adapting to requirements and to the type of unit to be transported.

These internal transportation systems are designed to satisfy all merchandise transportation requirements in a practical and rapid manner.

Their success is confirmed by the many applications installed and by client feedback. These conveyors are portable, expandable and extremely flexible. This allows for a saving of precious space when the conveyor is not in use, and easy adaptation for various purposes.

Thanks to its flexibility, the conveyor can be placed wherever it is required, and the length and direction can be adjusted according to requirements.

The structures are easy to move due to their swivelling castors with brake, and patented steel square tubing leg frames, which - fitted along the length of the conveyor - ensure increased strength, with a maximum load per linear metre of 150 kg.

Thanks to the perpendicular legs, the weight is distributed directly to the floor in a vertical line for increased mobility and resistance.

These products have unlimited applications and are ideal for satisfying varied and changing company requirements.

<table>
<thead>
<tr>
<th>Model Number*</th>
<th>Standard length compacted</th>
<th>Support Legs per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>UFG/RDS/O/0-03.75</td>
<td>1.33 - 3.75 mt</td>
<td>4</td>
</tr>
<tr>
<td>UFG/RDS/O/0-05.00</td>
<td>1.76 - 5.00 mt</td>
<td>5</td>
</tr>
<tr>
<td>UFG/RDS/O/0-06.25</td>
<td>2.19 - 6.25 mt</td>
<td>6</td>
</tr>
<tr>
<td>UFG/RDS/O/0-07.50</td>
<td>2.62 - 7.50 mt</td>
<td>7</td>
</tr>
<tr>
<td>UFG/RDS/O/0-08.75</td>
<td>3.05 - 8.75 mt</td>
<td>8</td>
</tr>
<tr>
<td>UFG/RDS/O/0-10.00</td>
<td>3.48 - 10.00 mt</td>
<td>9</td>
</tr>
<tr>
<td>UFG/RDS/O/0-11.25</td>
<td>3.91 - 11.25 mt</td>
<td>10</td>
</tr>
<tr>
<td>UFG/RDS/O/0-12.50</td>
<td>4.34 - 12.50 mt</td>
<td>11</td>
</tr>
<tr>
<td>UFG/RDS/O/0-13.75</td>
<td>4.77 - 13.75 mt</td>
<td>12</td>
</tr>
<tr>
<td>UFG/RDS/O/0-15.00</td>
<td>5.20 - 15.00 mt</td>
<td>13</td>
</tr>
<tr>
<td>UFG/RDS/O/0-16.25</td>
<td>5.63 - 16.25 mt</td>
<td>14</td>
</tr>
<tr>
<td>UFG/RDS/O/0-17.50</td>
<td>6.06 - 17.50 mt</td>
<td>15</td>
</tr>
<tr>
<td>UFG/RDS/O/0-18.75</td>
<td>6.49 - 18.75 mt</td>
<td>16</td>
</tr>
<tr>
<td>UFG/RDS/O/0-20.00</td>
<td>6.92 - 20.00 mt</td>
<td>17</td>
</tr>
<tr>
<td>UFG/RDS/O/0-21.25</td>
<td>7.35 - 21.25 mt</td>
<td>18</td>
</tr>
<tr>
<td>UFG/RDS/O/0-22.50</td>
<td>7.78 - 22.50 mt</td>
<td>19</td>
</tr>
<tr>
<td>UFG/RDS/O/0-23.75</td>
<td>8.21 - 23.75 mt</td>
<td>20</td>
</tr>
<tr>
<td>UFG/RDS/O/0-25.00</td>
<td>8.64 - 25.00 mt</td>
<td>21</td>
</tr>
</tbody>
</table>

*To complete the model number replace the tree dashes with the standard conveyor width required 450, 600, 750 or 900 mm.
How long does it take to store information?

And to recall a memory?

You do it automatically.

Warehouse is your brain
MANAGEMENT SOFTWARE FOR AUTOSAT SEMI-AUTOMATED WAREHOUSES

LOG as in logging, the registration software which renders warehouses with AUTOSAT technology as traceable and automated as a fully-automated system.

LOG, thanks to a simple and attractive interface, serves as a powerful and complete instrument for the processing of data concerning the manual and semi-automated inbound and outbound handling of loading units in the warehouse.

LOG processes all information regarding the merchandise stored and memorises characteristics and movements during the various stages of handling:

- **RECEPTION**
  - LOG acquires data regarding the existence of loading units and warehouse movement planning from the company ERP, it processes it and sends it back to the ERP once operations have terminated.

- **STORAGE**
  - LOG handles the management and assignment of loading unit locations according to company strategy (by product, client, production batch, etc.)

- **PICKING**
  - LOG handles the management of movements that make up shipping or picking orders according to the chosen company strategy. This allows for the mapping of all of the merchandise in motion in the warehouse, with information regarding characteristics, movements, and localisation.

HOW IT WORKS

The registration software is structured in a hierarchical and modular manner, it allows for the details and position of various articles to be memorised and mapped:

- **Plant area**
  - Warehouses - Information on physical or logical warehouses in the plant

- **Warehouse area**
  - It is possible to subdivide each warehouse into various subareas

- **Channels**
  - Each warehouse can be subdivided into various channels

- **Positions**
  - Each channel or position is defined in terms of coordinates, size and load capacity (also with multiple item types)

- **Operators, forklift trucks, clients**
  - and suppliers can be registered in order to be able to register information (mission time and number, number of pallets per client...)

- **The loading units are registered with coding systems which can be associated with various customisable attributes. The attributes are essential characteristics (color, quantity, batch...) for future classification and analysis of warehouse movement.**

DATA MANAGEMENT - ERP CLIENT

- **Reception**
  - Log can interface with the company ERP or online tables, and handle heavy data exchange by either sending the existence of loading units, warehouse movement programming...

- **Storage**
  - Log handles the management of movements that make up shipping or picking orders, according to the chosen company strategy.

- **Picking**
  - Log handles the management of movements that make up picking orders, according to the chosen company strategy.
ADVANTAGES

- **Mapping**
  Allows for constant and immediate information regarding the merchandise present in the warehouse, movements made, positions available and cycles completed.

- **Re-organisation**
  The warehouse and the warehouse areas can be re-organised and compacted according to company logic at any time.

- **Pre-fitting**
  LOG allows for the possibility of suggesting the preparation of Cargo Manifests which can be programmed in available warehouse areas.

- **Traceability**
  The operator can immediately trace the merchandise stowed in the warehouse lanes.

- **Reports**
  LOG produces precise reports regarding the situation of the warehouse, on the cycles completed or on the activities carried out by the personnel, forklift trucks or clients.

- **License free**
  LOG does not require the purchasing of licences either annually or following purchase.

- **Dimensioning**
  LOG allows clients to dimension their logical or physical warehouses at any time through a two-dimensional matrix, customising images, levels, lanes and relative properties.
MANAGEMENT SOFTWARE FOR ALL OF AUTOMHA’S AUTOMATED WAREHOUSES

AWM - automatic warehouse manager - is the warehouse management software through which the operator interfaces with the system through a series of screens in order to manage and carry out operations for loading, storage, refilling and picking.

AWM allows for the control and verification of the system status: the operator can intervene in the handling of movements, with specific screens protected by a login system, which guarantees the correct management of the system even in critical situations.

The AWM software contains the following modules:

- **WMS**
  This is an integrated solution for the management of all kinds of logistics operations.

- **PCM**
  PCM is the module for communication with PLCs. It translates the transfer commands and processes to the devices in messages which can be sent on the TCP/IP network. All processes to and from the PLCs are implemented on the SQL server and are highly configurable and customisable according to the client’s requirements.

- **SCADA - HMI**
  AWM software allows for the real-time observation of all the activities under way via the user-friendly and immediately-understandable HMI (Human Machine Interface) module. S.C.A.D.A. (Supervisory Control and Data Acquisition) also registers the status of all components and sub-components in the automated warehouse, placing the data in easy-to-consult archives, which is useful for carrying out all forms of improvement.

HOW IT WORKS

AWM is capable of interfacing with any client ERP through OWB SERVICE exchange tables. During the preliminary stages of a warehouse project, AUTOMHA’s team of experts assesses and studies the client’s specific storage logic, in order to be able to physically use the warehouse in the best possible way, and to begin the detailed task of parameterization of AWM; this involves the defining and activating of the most suitable physical routes according to the relative conditions of use of the individual items which make up the system. The software is responsible for:

- Assigning the location of loading units according to the customised logic shown in the client’s executive flow chart.
- Handling movements within the warehouse and the handling conveyor systems according to storage, picking and re-organisation logic.
- Planning movement according to the methods shown in the executive flow chart and acquired from the client’s ERP.
- Assigning precise logic addresses to every single lane and every single storage position in the warehouse.
- Monitoring warehouse activity.
- Keeping track of all of the incoming, outgoing and stowed loading units in the warehouse.
- Carry out reporting activities.
- Communicate any malfunctions, obstacles or problems encountered in the warehouse.
ADVANTAGES

- Designed to interface with all ERP platforms
- Potential for expansion
- Easy, fast and intuitive operator interface
- Complete and customisable reports
- Integrated with SCADA and HMI

EXAMPLES
THE USER INTERFACE for all AUTOMHA AUTOMATED WAREHOUSES

AUTOMHA’s SCADA - Supervisory control and data acquisition - is the interactive diagnosis tool for the system. It uses top-quality touchscreen or PC panels located in strategic areas of the automation, transportation and storage systems.

The monitor shows all the machines or systems present in the application and their specific equipment (photocells, sensors, motors etc.). The application layouts integrated into the SCADA system can be many. Machine status and any current anomalies detected are reported with detailed descriptive information.

The SCADA (Supervisory Control and Data Acquisition) module allows for the automatic registration and consequent monitoring of operational data (missions, alerts, alarms...). This data is rendered available in relative archives and is useful for the carrying out of efficiency analysis on the entire system. Once appropriately cross-referenced, this data is presented via dedicated graphic interfaces in order to represent the system’s KPI (Key Performance Indicators).

Thanks to SCADA, the operator can furthermore monitor the movements and positions of the loading units present in the warehouse in real time.

The HMI module allows for the viewing of machine status (active, alert, error...) and the interactive management of the system. The HMI module allows for obtaining of an instant image of the systems functions, indicating the change in status of any element or component in the system via a change in colour (green, white, red).

All the data and information is recorded in SCADA and can be consulted in order to analyse the efficiency of the production chain on various levels. The HMI module is supplied with a ZOOM module which allows to zoom in on the area of interest. By clicking on a specific element (for example a switch), a dedicated “Article” window which allows for further characterising of the components and association with the relative summary table.

SAFETY SYSTEM for the ENTIRE SYSTEM

SOFTWARE

CLIENT NETWORK

management system

HUB/SWITCH

SERVER

CLIENT’S COMPUTER

SCADA

AUTOMHA NETWORK

Firewall SWITCH

HMI Human Machine Interface

Save PLC D1

Save PLC N

PROFINET

OPTICAL data transmission

AS/RS or MINILOAD

AS/RS + SAT

AUTOSATMOVED

AS/RS

High Frequency communication at limited field

4.4 GHZ 5GHZ

Mobile panel

Remote safety unit

Temperature measuring

BARCODE reader

Merchandise weighing system

Merchandise system

SAFETY SYSTEM

STOP

EMERGENCY STOP

SAFETY BARRIER

SECURITY ACCESS