STILL iGo pilot

iGo pilot



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STILL iGo pilot
The intelligent pilot for your warehouse

The right system for any customer requirement: STILL iGo pilot can read RFID tags and barcode labels

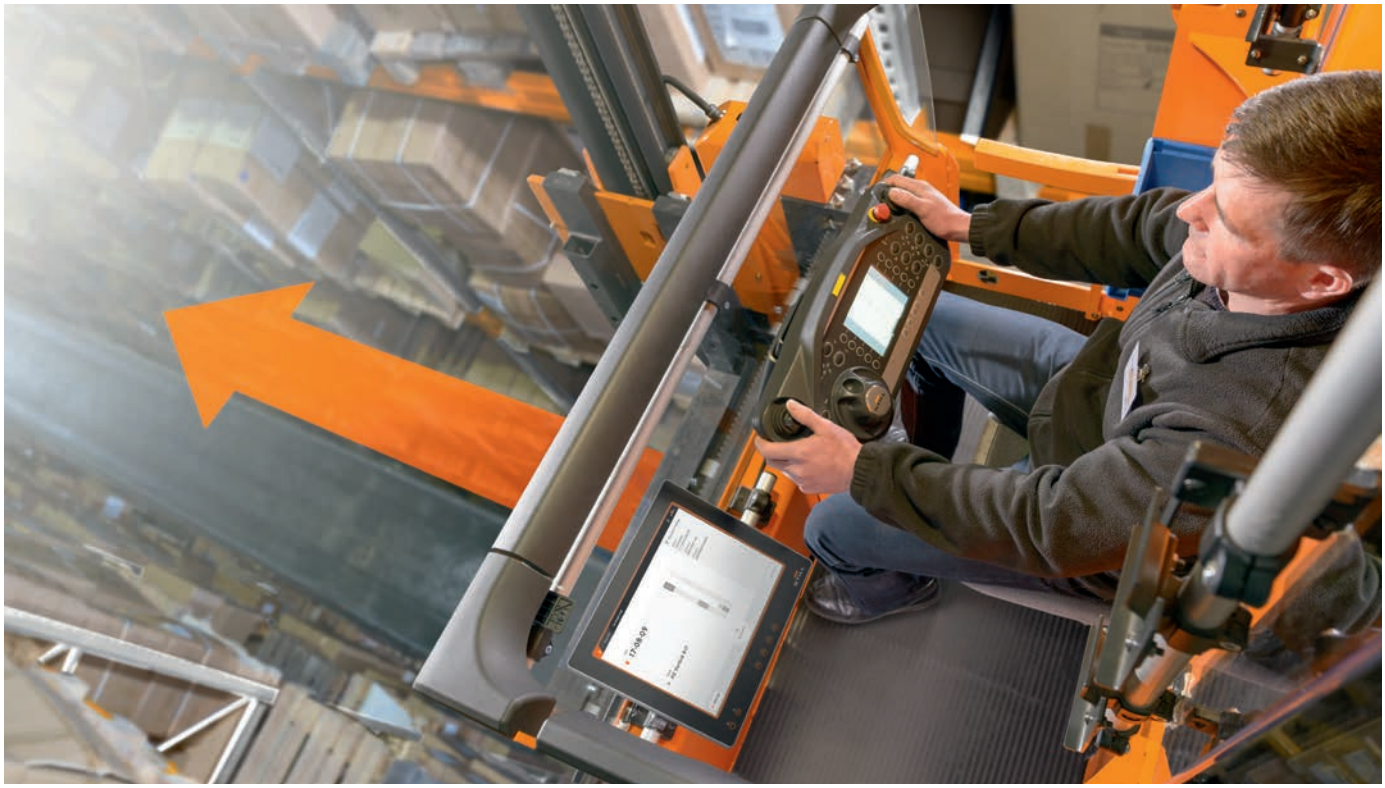
Custom configuration: the system can be individually adapted to any conceivable very narrow-aisle warehouse

Optimal working conditions: doing away with search processes and wasted trips relieves the burden on the operator and enables quick incorporation of new employees

iGo pilot

STILL iGo pilot – Performance profile at a glance

The iGo pilot navigation and iGo pilot safety functions link the specific warehouse topography to the trucks operating within. The iGo pilot navigation interface communicates with the warehouse management system and combines the warehouse processes into an intelligent whole. As a result, the truck knows which high shelving location to drive to next, thus unburdening the operator. When the operator accepts the next order, the truck finds its own way through the warehouse aisles. Thanks to iGo pilot safety assistance and warning systems, which can be individually preconfigured to any warehouse, the truck proactively adapts to its route as well as to local conditions and potential hazards. Once the truck has arrived at its destination, iGo pilot navigation stops the fork at exactly the right shelf position according to the task at hand. Once the task has been completed, the data is sent back to the warehouse management system in order to prevent order-picking errors and incorrect storage or retrieval of pallets. The result is a significant increase in handling capacity as well as increased safety thanks to networked agility.



The 'Simply Efficient' factors: Performance attributes as a measure of economic efficiency

Simply easy

- Optimal working conditions: doing away with search processes and wasted trips relieves the burden on the operator and enables quick incorporation of new employees
- Efficient work processes: iGo pilot masterfully carries out loading, unloading and order-picking tasks and automatically adjusts the lift height of the forks each time
- Easy to use: with only one movement of the drive lever, the truck starts making its way to its destination
- Keeping you informed: the display on the control unit shows drivers their current position as well as their destination

Simply powerful

- Supreme productivity: regardless of the experience and knowledge of the operator, the truck automatically navigates to its destination along the ideal route
- Always in the right position: the semi-automatic journey to the destination prevents storage and retrieval errors

Simply safe

- Optimum operational safety in the warehouse: a multitude of individually definable usage profiles makes day-to-day work safe and efficient
- Always on the right track: a symbol on the control unit shows the driver if he is driving in the right shelving aisle
- Always under control: fork movements can be prevented when not required in order to protect goods, shelves and the truck from damage

Simply flexible

- Compatible with any data connection: the iGo pilot navigation interface can transmit the destinations via handheld scanner, data terminal or automatically via the warehouse management system or forklift guidance system
- The right system for any customer requirement: iGo pilot can read RFID tags and barcode labels
- Custom configuration: the system can be individually adapted to any conceivable very narrow-aisle warehouse

Simply connected

- Multi-talented: the iGo pilot interface can receive, interpret and process a wide variety of data formats via different communication channels
- Perfectly organised: iGo pilot navigation ensures reliable physical goods tracking in conjunction with the warehouse management system



Thanks to the variety of safety functions, the driver assistant protects goods, shelves, building equipment and the truck from damage

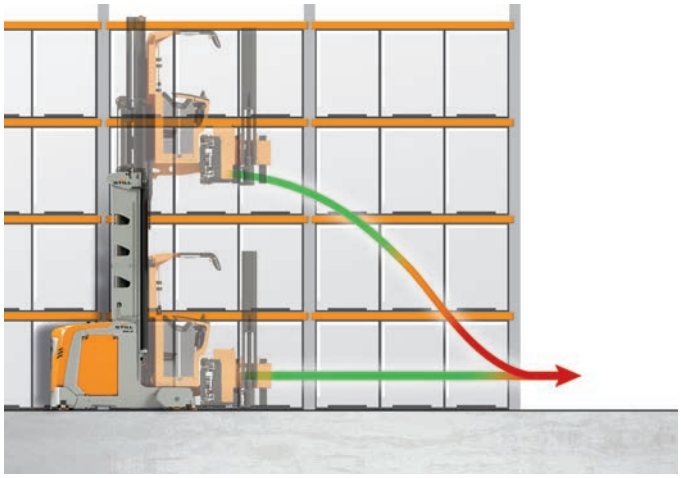
Always ready for action: reduced downtime by avoiding impact damage and the resulting repairs

Through a simplified workflow, the driver can fully concentrate on his core activity storage and retrieval or order-picking

iGo pilot safety

If iGo pilot safety is installed, the operational safety and handling capacity of STILL very narrow aisle trucks are both significantly improved. Moreover, areas in the very narrow aisle warehouse where special safety regulations apply are defined in advance. A three-dimensional map of these areas is stored in the truck. This mapping is provided by STILL. This allows to masterfully handle obstacles in the shelving aisle, required braking distances at the end of aisles and height restrictions during everyday operations. In addition, the truck constantly identifies its current position using the map. During its journey, the truck detects every warehouse aisle and their specific conditions and adapts to these without the operator having to intervene. The system always follows the predefined safety rules.

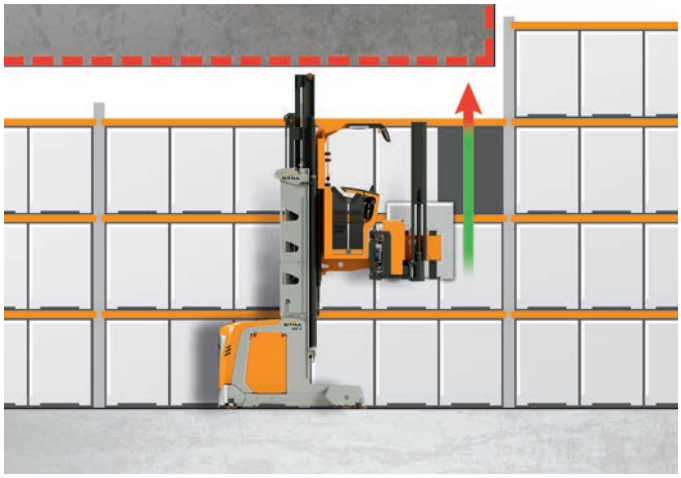
Functions



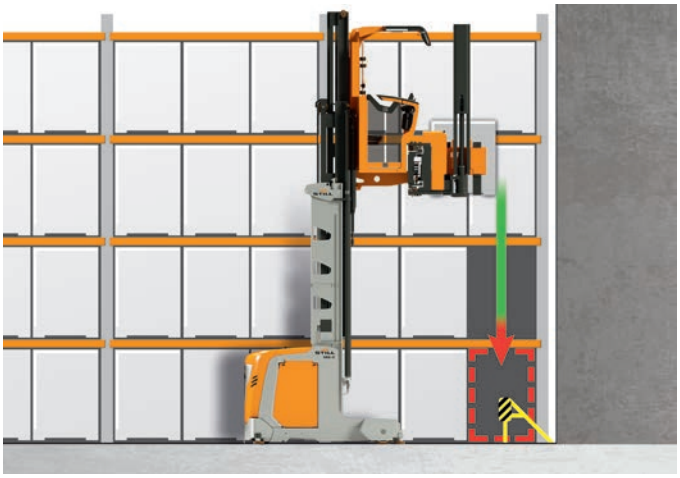
Dynamic brake assistant – the truck brakes at the right time at the end of the aisle based on an individual calculation. During the process, the system takes into account not only the distance to the end of the aisle – as in other systems – but also the actual travel speed. Advantage: greater handling capacity thanks to enhanced efficiency when working at the end of aisles, because the truck can drive faster for longer.



Collision protection – the truck takes into account fixed obstacles such as lamps, sprinkler systems and cross-connections and thus prevents collisions. By continuously monitoring the distance between the truck and surrounding objects, the truck can stop before hitting an obstacle. Advantage: greater utilisation of warehouse space, with areas that were previously hard to reach due to collision hazards now being easily accessible.



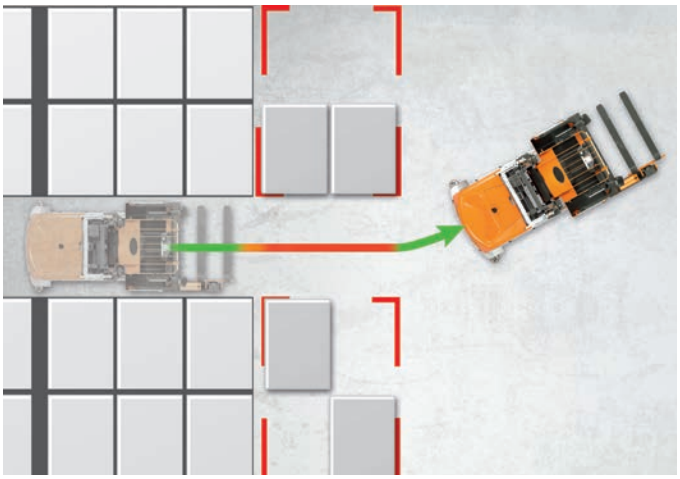
Local height limitation – the maximum possible lift height can be restricted for specific areas in a shelving aisle. Shelving aisles in spaces with differing ceiling heights can therefore be provided for. Advantage: increased safety in areas with different heights.



Location-based lowering restriction – the cab can be prevented from lowering itself to the floor in specific zones. This prevents damage to the truck, load or guide rails. Advantage: increased safety with obstacles at floor level.



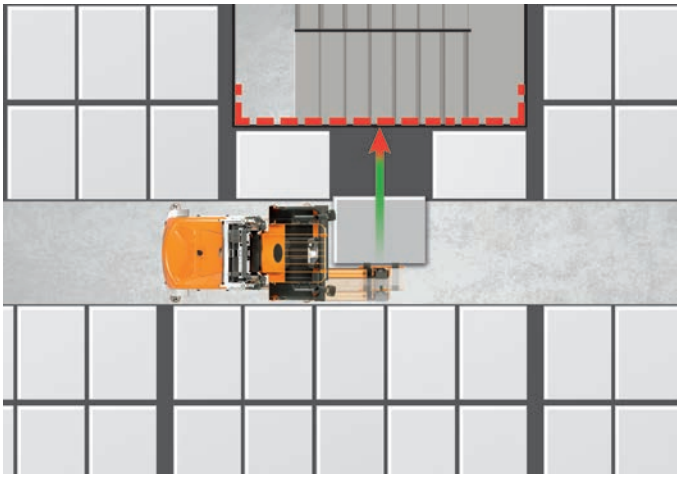
Location-based speed limit – in certain areas, the travel and lifting speed of the truck can be limited. Damage to the truck or shelving units in areas with uneven ground can be prevented, even in the absence of a general speed limit for all shelving aisles. Advantage: greater handling capacity thanks to enhanced efficiency and greater safety in areas with uneven ground.



Steering locking outside of aisle – even after the truck leaves the aisle, the steering can be locked for a defined distance so that pallets can be picked up or put down. This prevents damage to the truck and goods when leaving the aisle. Advantage: greater safety through prevention of damage to truck and goods.



Location-based extension locking – the fork can be prevented from extending into the shelf in defined areas. This prevents collisions with existing obstacles in defined areas. Advantage: greater safety through prevention of damage to truck and goods.



Location-based extension reduction – the extension of the fork can be reduced to a certain extent in defined areas or along the entire side of a shelving aisle. This allows pallets with differing orientations and dimensions to be safely stored. Advantage: greater safety through prevention of damage to truck and goods.



Location-based pivot blocking – the fork can be prevented from pivoting to one side of the aisle in a specific area, over the entire length or in defined areas. This is practical if it is only possible to store goods on one side of the aisle or if pivoting should only be permitted at certain points in narrow aisles. Advantage: greater safety through prevention of damage to truck and goods.



Assistant for handover stations – the positions of handover stations in front of the shelving aisle can be defined with RFID tags and then called up with a push of a button. The truck then stops at the selected handover position.
Advantage: greater handling capacity thanks to enhanced efficiency with direct approach of stations.

Easy to use: destinations can be entered via scanner, terminal or online from the warehouse management system, and the process is started with just one movement of the drive lever

Supreme productivity: the truck automatically navigates to its destination along the ideal route, regardless of the experience and knowledge of the operator

Smart precision: the truck moves to exactly the right pallet position, with the possibility of preventing fork movements when not required in order to prevent storage and retrieval errors

iGo pilot navigation

iGo pilot navigation leads the operator in their very narrow aisle truck along the ideal route to the desired pallet position. This is possible thanks to a three-dimensional shelving plan that maps the specific topography of the warehouse. By comparing against this map stored in the system, the truck detects its current location in the aisle as well as its position. iGo pilot navigation adjusts to the activities of storage, retrieval and order-picking. As soon as an order comes in, the system determines the optimal horizontal and vertical route to the desired shelf location. By means of an optical display, the operator can see his current position in relation to the destination. He can only move his truck in the direction indicated. If he is in the wrong aisle, the display will flag this up to them.

Comprehensive orientation within the warehouse: RFID or barcode

During its journey through the shelving aisles, the very narrow aisle truck continuously detects its current position. It also measures the distance it has travelled and determines its current position in the shelving aisle using orientation points. Two technologies can be used for the orientation points in STILL iGo pilot: RFID or barcode.



RFID technology:
RFID transponders (8 mm in diameter, 23 mm in length) are placed at regular intervals in the floor and serve as orientation points. They are resistant to moisture. After being inserted into the floor, the openings are sealed. An RFID antenna at the base of the truck reads the transponders during the journey. These signals show the truck its current location. The truck detects its exact position using these signals combined with the data from its height measurement system.



Barcode technology:
Robust, scratchproof barcode labels with printed codes indicating both the area of the warehouse and the row and relevant shelving frame are attached to one or both sides of the shelving frames at a height of 500 mm from the ground depending on the warehouse use. Using its optical reader, the truck detects these barcodes even at maximum speed. It then calculates its exact position within the shelving aisle from the data gathered and using its height measurement system. Barcode technology is used in situations where a high degree of precision is required.

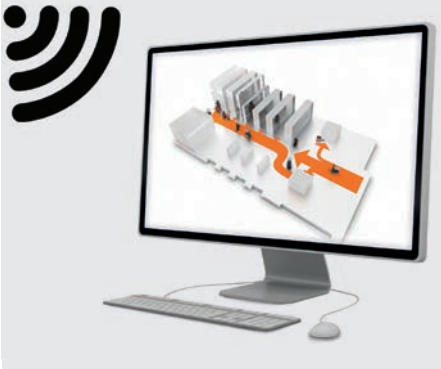
The truck uses the precise coordinates of storage locations when storing and retrieving items. Depending on the level of sophistication of the EDP system (alternatively: ERP system) and the desired level of convenience, the following communication options are available for iGo pilot navigation:



1. Manual input:
The operator enters the individual storage location data as coordinates on the terminal in his driver's cab. The iGo pilot navigation interface converts these coordinates for the truck and sets the ideal route at a push of a button. No connection to an ERP system is required for this.



2. Input via handheld barcode scanner:
If the destination coordinates of the stored goods are in the form of a barcode (e. g. on the accompanying document or on the good itself), they can be read by a handheld barcode scanner. These coordinates are then converted for the truck by the iGo pilot navigation interface and used as the basis for the route at a push of a button. In this case, no connection to the ERP system is required.



3. Transfer of target data by warehouse management system (WMS):
Depending on the level of sophistication and design of the EDP system and on the desired level of convenience, the system provides various solutions. For example, the driver can select the next order from a pool of orders themselves, but a more advanced solution makes it possible to transmit the optimum order sequence in consideration of the corresponding warehouse strategy and in conjunction with a forklift guidance system.
The following communication channels are available as standard:
a. Web service – using a RESTful web service, status information and order data is exchanged between the warehouse management system and the truck.
b. File transfer – text files are exchanged between the warehouse management system and the iGo pilot navigation interface. SMB, WebDAV and SFTP are available as file transfer protocols.

In all cases the data is exchanged between the relevant warehouse management system and the truck via a WiFi connection.



4. The customer-specific solution:
Tailored solutions and ideas can be implemented based on the individual requirements of a warehouse and the transport operations needed.

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STILL is certified in the following areas: Quality management, occupational safety, environmental protection and energy management.

iGo pilot EN 01/25 Subject to technical modifications.

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