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Scratch-free glass stacking with high cycle rates

SIMOTION D and SIMOTION Handling Toolbox ensure increased productivity and precision for Bottero

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With stacking cycle times of up to two seconds, Bottero has developed the fastest glass stacker of this type. Simple configuring and commissioning as well as innovative and dependable control and drive technology create the basis in achieving this.

For more than 50 years, the Bottero Group has been developing machines and production systems for flat and container glass. Today, it is one of the most important producers in this sector worldwide. The company portfolio extends from container glass systems for the production and packaging industry, through cold-end systems for float and ornamental glass as well as coating and laminating systems up to processing machines for cutting, grinding and drilling.

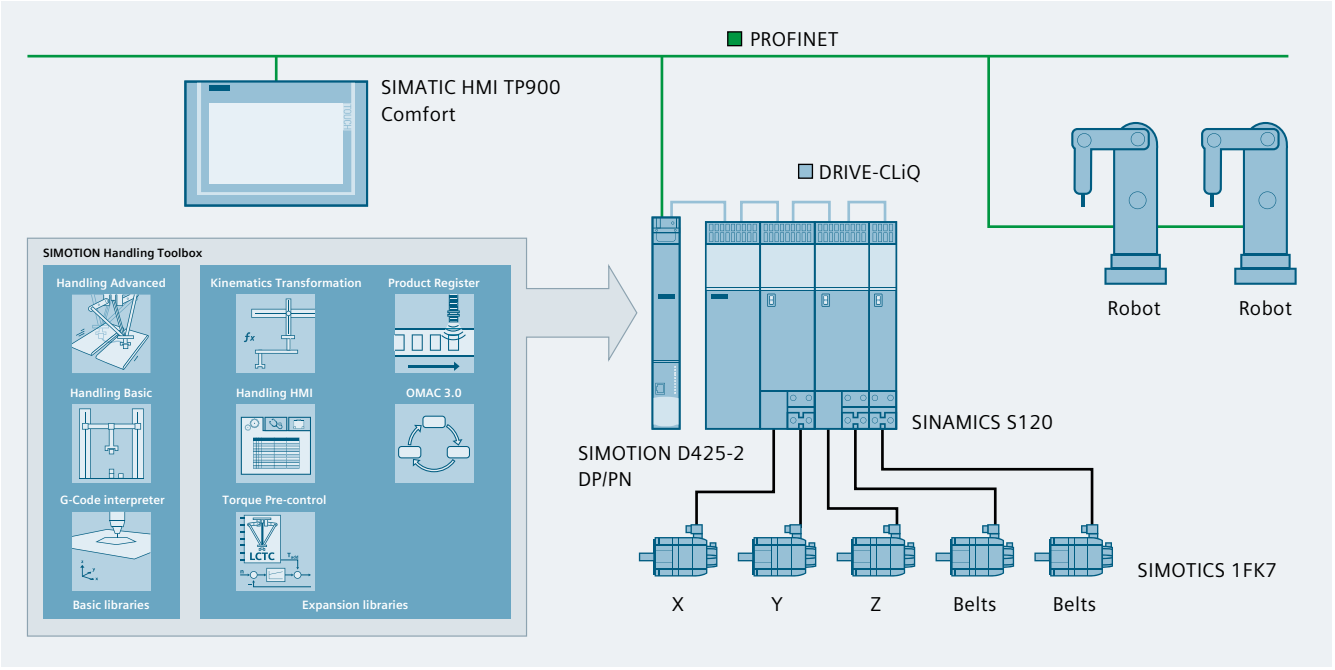
Fast handling

An important step when processing plate glass is stacking the cut glass plates. In this step, glass is taken from the production line and loaded into packing racks or wooden crates. The smaller the glass plates, the faster the cycle times. Bottero, well known for its innovation solutions, developed the FTSS (FasTStackingStock) stacker, for this purpose. This involves a bottom-side stacker, also known as "tin-side" stacker, with cycle times of down to 2 seconds for small plates.

Generally, for bottom-side stackers, the plates must wait before being transitioned into the transfer position until the suction-cup frame has completed its cycle and is completely below the transfer conveyor belt. In turn, the suction-cup frame must wait until the plate has reached its transfer position.
On the other hand, for the Bottero solution, the cantilevered and motorized suction-cup frame does not have to wait for the next plate to be positioned. This is because it "dives" below the next plate, while the previous one is inserted or positioned for transfer.

Precise control for the highest trajectory precision and velocity

The stacking cycle must be precisely controlled in order to ensure that at high velocities, the glass is not scratched when being loaded. The decisive factor is that all of the axes involved in the motion are synchronized, so that the glass is precisely loaded onto the rack. Bottero selected the drive-based SIMOTION D425 motion control system with SINAMICS S120 booksize modules. The control system precisely controls the axes with a high degree of repeatability.



Automation concept for a glass stacker

SIMOTION Handling Toolbox for simplified programming and increased productivity

When it comes to the engineering, Bottero fully utilizes the advantages of the SIMOTION Handling Toolbox, which has already proven itself many times over in handling tasks. Here, the integrated “path” technology object allows three axes to be interpolated, therefore playing an important role in increasing the speed. Based on the standard library, programming is simplified and productivity increased. And last but not least, the engineering software – such as the trace function in SIMOTION SCOUT – simplifies commissioning.

The advantages at a glance

- Increase velocity
- Shorter cycle times
- Increased precision
- Simplified commissioning
- Increase productivity

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