

**Application solutions for handling technology:  
Servo drive systems from SEW-EURODRIVE for  
Two/three axis gateways**



## A quantum leap in handling technology



Two or three axis gateways are used in almost all areas of industrial production, from the assembly of small components to unloading sheet metal in press automation or feeding chipboards in the wood processing industry.

The gateways can be implemented flexibly for a wide range of applications thanks to their inexpensive mechanical design. Until now, they have been used predominantly in rotary drives.

The company Bär in Gemmingen found the perfect drive components in the new generation of convection-cooled SL2 synchronous linear motors from SEW-EURODRIVE. The quiet whirring noise made when the axes fly across the workroom convinces even the most skeptic observer.

### Application description

The 2-axis gateway is used to position small components for motor block assembly.

In a previous production step, a collection point holding a magazine is loaded with small components. The gripper arm of the gateway picks up the small components in a predefined order and positions them to be installed in the motor block.

The movement profile ensures an optimum distance/time ratio as the small components are inserted.

### Criteria

- Positioning and installing
- Reduced mass due to direct drive technology
- Scalable solutions, from inexpensive PLC-controller single-axis positioning through to multi-axis path control with higher-level NC

### Objective

A gateway system module was to be developed to halve the lead time of an order up to the time of delivery. The mechanical design was to be optimized so that the gateway could be built from standard aluminum extrusions. The fact that the resulting development also set new standards in speed, accuracy, zero maintenance and smooth running was a welcome side effect that pleased the end customer.

### Technological requirements

- Air-cooled linear motors
- Travel speeds of up to 6 m/s with an absolute encoder
- Overload behavior of factor 2 optimally adapted to the travel cycles
- Fast startup and diagnostics thanks to a standard application module
- Internal drive control for the hoist brake



The natural convection of SL2 synchronous linear motors from SEW-EURODRIVE provides the same performance as competitors' water-cooled products. The motors can be run up to speeds of 6 m/s along distances of 40 m with an absolute encoder.

## SEW-EURODRIVE solution

The linear motors of the hoist and travel axes are controlled by MOVIDRIVE®. Hiperface® absolute encoders are used as linear encoders. A PLC can be used for low cost applications. The PLC specifies the target positions via the terminals or fieldbus. The MLC200 also has an additional continuous-path control function that handles both axes in an interpolated mode.

## Components

- Faster cycle times due to reduced mass
- Faster startup procedure: The machine is assembled on site and is immediately ready for operation (toothed belt does not have to be tightened/changed, encoder does not have to be set).
- Reduced downtimes and less maintenance as there are no mechanical transmission elements.
- Quieter running noise
- Increased accuracy

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