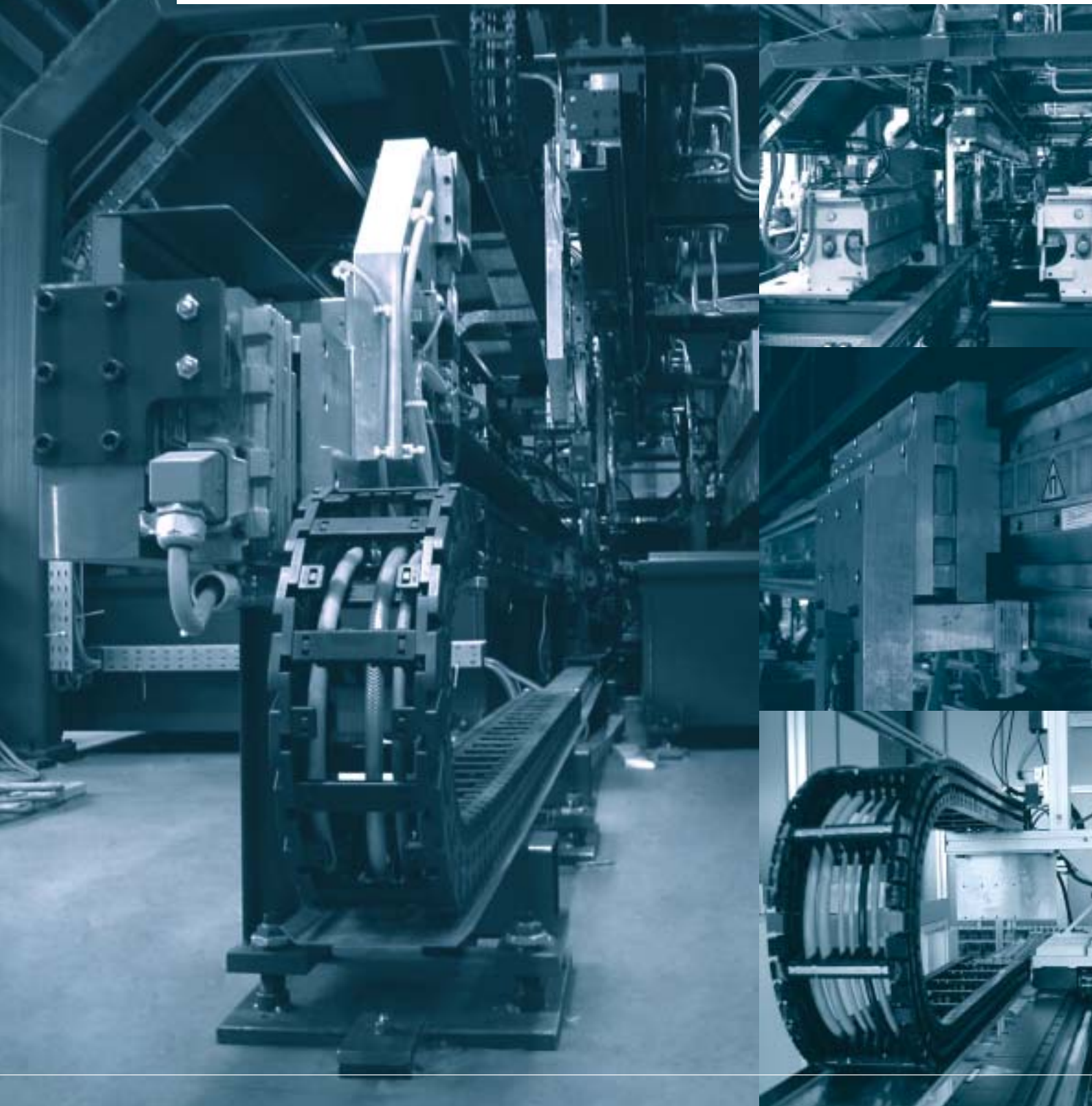


**Application solutions for handling technology:  
Servo drive systems from SEW-EURODRIVE for  
Plate bending machines**



## Sheet metal transported quickly and accurately with synchronous linear motors



Fresh food, chilled drinks, ice or frozen products are taken for granted in households today thanks to refrigerators and freezers. But who thinks about the precision required in the assembly of a sheet-metal case for a fridge or freezer? The metal sheets are transported at 6 m/s from station to station along a 20 meter production line and shaped into the required form. This process is performed with an accuracy of 1/10 mm. Synchronous linear motors are the ideal solution when the highest levels of availability are demanded.

### Application description

In a plate bending production line, a number of steps are performed to cut, bend and weld raw sheet metal into finished cases for refrigerators. The sheets are transported through the plant using eight synchronous linear motors (distance of 24 m).

### Criteria

- Short cycle times
- Sheet metal of any size or strength
- High availability
- Low maintenance costs
- Straightforward system startup
- High level of innovation

### Objective


The process of transporting the sheets should not determine the cycle times. The system must be able to process different sizes of sheet metal. All sizes must be transported without distortion in cycles of up to 240 ms, depending on the processing station. The system must be able to cope with sheets of varying weight.

- Thickness: 0.5 ... 1.5 mm
- Width: 500 ... 1150 mm
- Length: 250 ... 2050 mm
- Weight: Max. 15 kg

### Technological requirements

- Synchronous operation of 2 linear motors respectively without master control
- Travel speed of 6 m/s with an absolute encoder
- Sheets of different sizes must be transported in specified cycle times.



 Synchronous linear motors from SEW-EURODRIVE are always the right choice if you require precision, high dynamic properties, high speed, high level of availability and low maintenance.

## SEW-EURODRIVE solution

The performance is made possible thanks to synchronous linear motors from SEW-EURODRIVE in conjunction with the adapted MCH 41A MOVIDRIVE® drive inverter with the integrated, user-programmable IPOS<sup>plus</sup>® positioning and sequence control system and integrated technology functions.

Two synchronous linear motors in master/slave mode (internal synchronous operation) are used to alter the length when the size of the sheets is changed. A Hiperface, interface is used, which means that an absolute length measuring system can be applied despite the high travel speed of 6 m/s. Communication with a master controller takes place via a PROFIBUS DP fieldbus interface.

The end user is so pleased with the accuracy, availability and low maintenance requirements of this solution, even after years of continuous use, that the company has now equipped a third plate bending machine with this technology.

## Success features

- Synchronous linear motors with high availability and high speeds due to a contactless drive system.
- Internal synchronous operation (I-SYNC) technology function
- Linear Hiperface, synchronous encoder → up to 40 m Absolute encoder for travel speeds of up to 6 m/s



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