

WATT system drives cut film between panels during live production.

The company "KBM Maschinenbau und Elektrotechnik GmbH" in Allendorf/Eder - Germany, has developed a special machine for this task (see figure 1) where the original plan was to use synchronous servo drive units due to the high dynamic response. As the highly cost-effective asynchronous technology from Watt Drive offers the same performance, the decision was made to utilise this application instead.



Task definition:

Finished or brushed metal panels must be fitted with protective film immediately after the finishing process. This is to be carried out in a continuous production process.

Functional principle (see figure 2):

The metal sheets first need to be moved together to a distance of just a few millimetres apart. The sheets positioned in this way are then forwarded in sync underneath a roller which simultaneously applies the protective film onto the panels.

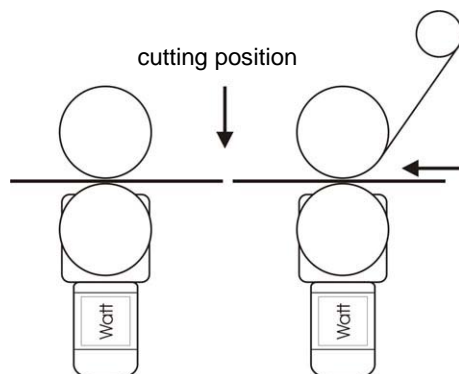


Figure 2: Schematic functional principle

The film is wound off a roller as a continuous material feed (see figure 3), thus also covering the gap; and it is at this point that it needs to be cut. To do this, the panels with the film are transported onwards in precise synchronous motion, and the joint gap is positioned underneath a cutter blade. The film is cut at this point.

The panels are moved on until the rear sheet is at the front sheet position and the cycle can begin again.



Figure 3: Film in-feed

The WATT drive system comprises:

- 2 x SUA 506A 91S4 S helical worm gear motors with asynchronous servo design for transport and pressure rollers (see figure 4)
- 2 x PROFI-line P6000 frequency converters each with one expansion card for digital inputs and outputs and a small VT050 operator panel which communicates with the P6000 via CAN Bus.

Cost benefits of this solution: The P6000 units are fitted with a CAN Bus interface as standard.



Figure 4: WATT helical worm geared motor

The two frequency inverters position the drive units, with one drive unit switching in cycles between synchronous operation and independent positioning control. This complex sequence is controlled by the frequency inverters themselves. This is implemented using the custom programming features of the P6000.

The prototype for this machine has been successfully tried and tested in practice and other machines are already on order.

For more information on the Watt product range, please visit our website at www.wattdrive.com.