

# AUTOMATION

## case study

## Servo Control Improves Flexibility of MIMI (Tosa Group) Shrink wrapping Machine Network

One of Italy's leading manufacturers of packaging machinery, MIMI Srl, has incorporated high accuracy servo-drives from Control Techniques for its 'MITO' shrink wrapper.

### The Challenge

The ability to quickly and easily setup various formats while increasing productivity, accuracy and coordination of processes in highly precise repeatable movements across the entire line.

### The Solution

Based in Canelli in northern Italy, Mimi is part of the Tosa Group, famous for making wine bottling machines. Its MITO automatic shrink wrapping machine is designed as an end-of-line machine for the wrapping of different configurations and pack sizes of bottles, cartons, cans or tubs and its key selling point is its flexibility.

The incorporation of highly accurate and synchronized Digitax Servo drives into three critical areas of the machine – speed of throughput, the cutting of the film and control of the wrapping action – have resulted in an increase in throughput and versatility to the process in this new machine.

Control Techniques Italy worked closely with MIMI to produce a machine that can quickly and easily be set-up for different bundle/ pack sizes and different configurations and even different products. For example, it can be changed in seconds from a format for wrapping 6 x 50 ounce (1.5 liter) bottles of mineral water to 24 x 17 ounce (0.5 liter) packs – at a throughput of up to 40 packs per minute.

For the control of the three brushless motors in the MITO shrink wrapper, MIMI engineers selected Digitax servo drives, which not only provide precision control, but also allow fast and straightforward re-configuring of each of the brushless motors, to accommodate different configurations of product. Each drive incorporates an Application module that provides PLC functionality at drive level.

For instance, the CAM-profiles required for different products are all stored in the wrapper drive and changing product configuration is as simple as selecting a different recipe on board the drive. All of the characteristics of each drive – distances, axes, motion control and CAM-profiles are stored on board, reducing the overall level of PLC control and giving the end user maximum versatility of control. This also gives the machine designer flexibility in choosing the communication bus to suit the needs of the client as the drives operate down-stream of the bus.

### The Benefits

The Digitax's industry-leading features, extremely compact in size and full compatibility with Control Techniques' existing range of optional function and communication modules. It is optimized for servo applications requiring high peak torque, exceptional dynamic response, faster installation and start-up as well as ease of integration. Digitax will operate successfully with all makes and types of AC servomotors as well as linear motors and with almost any type of feedback device. However it has perfect partners in the Control Techniques range of servo motors including the Unimotor hd.

Unimotor hd is Control Techniques' high dynamic brushless AC servo motor range, designed for high dynamic applications requiring hard accelerations and decelerations. Unimotor hd is suitable for a wide range of industrial applications, due to its extensive features whilst being exceptionally compact. The MITO's shrink tunnel is available in different sizes to suit the application and the machine can be supplied with an in-feed gating system, a twin-film feed unit, print centering unit, antistick bars and pneumatic discharge of the pack.

### KEY BENEFITS

- Increased throughput
- Greater versatility to the process
- Fast & easy re-configuring of programs
- PLC functionality at drive level
- Highly accurate & synchronized movement

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