

## Motion Momentum: Case Study

# Label it a Success!

## Omron Saves Label Manufacturer Nearly \$2 Million!

» Our solution reduced setup time by 66% and delivered ROI within 2 days.

### Summary

#### Client Profile

Industry-leading labeling company manufactures labeling materials, builds label printing and handling machines for in-house use and prints labels for end users.

#### Situation

The customer wanted to automate their mechanical operations to shorten setup times and increase accuracy and repeatability on two different pieces of printing equipment: a paper folder that can be added to the end of a printing system to uniformly fold paper along perforations and a Zimco sheeter, a self-contained machine used to cut a variety of label shapes and then cut label sheets.

#### Solution

The solution for the paper folder machine involved replacing an 'open loop' DC motor with a closed loop R7 servo. Omron also added an encoder to the 'in-feed' conveyor. In a creative use of the 'Pulse' inputs of the R7 Servo Drive, an encoder was used to directly command

the motion of the R7 servo. This solution negated the need for a motion controller, resulting in significant cost savings and reduced programming and system complexity.

The solution for the Zimco Sheeter required Omron to replace gears and cams with Trajexia and Servos. A Virtual Axis functions as the 'Drive Shaft' and the 4 servos provide high speed gearing/camming.

#### Results

Omron's machine automation solution has helped the labeling company successfully shorten setup times, allowing them to complete a greater number of jobs faster than ever before. Since implementation, the customer saw a return on their investment in just 3 weeks. They also anticipate an estimated yearly cost savings of more than \$600,000 on the Zimco Sheeter and almost \$2 Million on the Paper Folder.

A leading U.S.-based labeling company had been planning to automate their mechanical operations in an effort to shorten set up times and increase the accuracy and repeatability of their processes, so the timing couldn't have been better when an Omron Sales Manager mentioned our line of micro PLCs and Motion/ Servos during a meeting about power supplies.

The conversation quickly transformed into a discussion about how an Omron Machine Automation Solution can deliver significant cost savings by reducing machine setup/change-over time, increasing throughput and minimizing scrap.

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The labeling company needed to automate two different pieces of printing equipment: a paper folder that can be added to the end of a printing system to uniformly fold paper along perforations and a Zimco sheeter, a self-contained machine used to cut a variety of label shapes and then cut label sheets.

Automating the paper folder required Omron to replace an ‘open loop’ DC motor with a closed loop R7 servo and add an encoder to the ‘in-feed’ conveyor. In a creative use of the ‘Pulse’ inputs of the R7 Servo Drive, Omron used the encoder to directly command the motion of the R7 servo. This solution negated the need for a motion controller, resulting in significant cost savings and reduced programming and system complexity.

Omron presented the automation solution for the Zimco Sheeter to the customer in two phases: Phase One kicked off with a machine design review meeting with the customer, an Omron Machine Solutions Engineer, and the Omron Sales Manager.

The group addressed modes of operation and discussed Trajexia's features and capabilities. During the review meeting, Omron gave the customer a complete documentation package to encourage familiarity with the system.

Phase Two included an onsite demo of a 3-axis Trajexia system which provided a comprehensive overview of the hardware, connections, software installation, set up and programming.

Omron also explained the benefits associated with the Trajexia system:

- » Easy to use
- » Minimal wiring with “Plug & Play” connectability
- » Quick system setup with Trajexia Studio
- » Simple programming of complex events with MotionBasic

Finally, Omron replaced gears and cams with Trajexia and Servos and a Virtual Axis functions as the ‘Drive Shaft’. Four Servos provide high-speed gearing/camming. The machine was completed in just two months and shipped to the customer's Elgin, Illinois facility where it's used everyday.

Brian Zimmerman, a Manufacturing Engineer at the labeling company says, “It only took Omron two months--from concept and design to implement an actual servo-driven production machine that stands to save us thousands of dollars every day it runs.”

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Zimmerman adds, “The system was as easy as 1-2-3 to program and cut our development time by at least 2/3, probably more. Nothing came close to the system's simplicity and price - not to mention the support is unmatched in industry.”

For more information on how we can deliver outstanding results for you, please visit [www.omron247.com](http://www.omron247.com).

**Estimated Yearly Cost Savings:**

Zimco Sheeter	\$666,000
Paper Folder	\$1,895,000

**Return on Investment Yield**

Zimco Sheeter	
System Cost	Rate of ROI
\$30,000	3 Weeks
Paper Folder	
\$3,000	2 Days

Zimco Sheeter	
Scrap – 93% reduction	Setup Time: 66% reduction
Paper Folder	
Setup Time: 82% Reduction	

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