



## Extrusion machine manufacturer cuts costs while maintaining performance by replacing control equipment from another vendor with Omron technologies

A major manufacturer of extrusion equipment was seeking to lower costs for competitive reasons while maintaining – or possibly increasing – machine performance. The company had already designed, but not built, a version of the extrusion machine in question using controls from an Omron competitor, but increasing competitive pressures created a need for significant cost-cutting and action.

After reviewing the bill of materials that went into the machine build, the manufacturer saw a potential for major cost savings on the control system with an Omron-based solution. The competitor's controllers and I/O can be up to two times more expensive than equivalent or

better versions from Omron, and fees are associated with upgrades to the PLC programming software. Omron has never charged for an upgrade of Sysmac Studio programming software.

The competitor also has recurring subscription charges for technical support, while Omron's technical support by phone and email are included in the product purchase price. On the technical side, the other company's controllers were first released in 2003, whereas the Omron NJ/NX Series controllers were introduced in 2011 with the newer design bringing increased speed and performance. Adding all these benefits together, it was clear that Omron had the ability to help the extrusion manufacturer meet its goals.

### Business need

A major manufacturer of extrusion equipment was seeking to lower the cost of building its machines while increasing performance due to pricing and performance pressures from its competitors.

### Unique solution

The new machine solution employs three Omron NJ3 controllers, two NA5 HMIs for each controller, NX-I/O, and Sysmac Studio to bring the functionality of all these controls together.

### Customer benefits

The Omron-integrated machine was a success, and it allowed the manufacturer to sell a better machine with more features while lowering its prices for customers and reaping a greater profit.

# The solution

## Cost-effective, streamlined technology



### The need

The purpose of extrusion machines is to fabricate multiple objects that have an identical cross-sectional shape. The machinery pushes material through a die that cuts it into the required cross-sectional profile. Examples of products made via extrusion are pastas, cereals, pet foods, pharmaceutical carriers, fuel briquettes and plastic tubing.

Due to intense competition within the industry, the extrusion machine manufacturer needed to find ways to cut the costs of building its products without lowering their overall performance. If possible, performance improvements in combination with cost reductions were the ideal.

Omron was able to demonstrate that its technologies could help the manufacturer save money while maintaining the performance levels that its customers relied on. In particular, Omron's advantage was demonstrated by its inclusion of tech support in the product purchase price and the fact that it had never charged for an upgrade to its Sysmac Studio software.



### The technology

The solution employs three Omron NJ3 controllers with 5MB of program memory and eight axes of motion with built-in Safety over EtherCAT. The motion aspect of the machine is handled using the eight axes of the NJ3 controller and the Omron R88 model G5 servo with an integrated positioner as standard.

The I/O for the machine is handled by Omron's NX Series I/O System with over 130 discrete slice/card types. For visualization, two NA5 Series HMIs with touchscreens are included with each controller. The NA5 features a high-resolution screen with sizes up to 15 inches.

Sysmac Studio provides a single software package that brings the functionality of all these controls together. This is a major differentiator from the original solution, in which each piece of automation hardware requires a separate software package. Sysmac Studio makes the system much simpler.

Safety has also been integrated into the solution using Sysmac Studio with safety gates on the extruder.



### The outcome

The version of the machine that incorporated Omron technologies was a major success. The manufacturer was able to sell a better extrusion machine with more features while lowering its prices for customers and reaping more profit relative to the original solution using the competitor's technologies. The extrusion equipment manufacturer also met or improved upon its competitors' prices for similar extrusion machines.

Commercially, the manufacturer was able to increase the margin it had available in the sale of this machine to the end user. It can use this available margin to increase its own profits, or in a competitive situation, it will be able to discount the machine and win the order.

Across the company's range of machine solutions, there exists an Omron-integrated solution with servos, safety PLCs and HMIs at a better price and performance than the same machine using the Omron competitor's controls.

