



for a greener tomorrow



Romtech Technologies Doubles the Efficiency of its New Door CNC Router

Case Study

Solution

- iQ Platform (Q CPU and CNC CPU)
- Q Series I/O modules
- MDS-DH Series Servo Drive Units
- HF Series Servo Motors
- D700 and A700 Series VFDs

Romtech Technologies Benefits

- Less operation hassles
- Reduced machine downtime
- Improved overall equipment effectiveness

Mitsubishi Electric Value-added Advantages

- Improved communication to custom software interface
- Easier to set up and maintain
- Faster axis motion and G-code macro optimizations

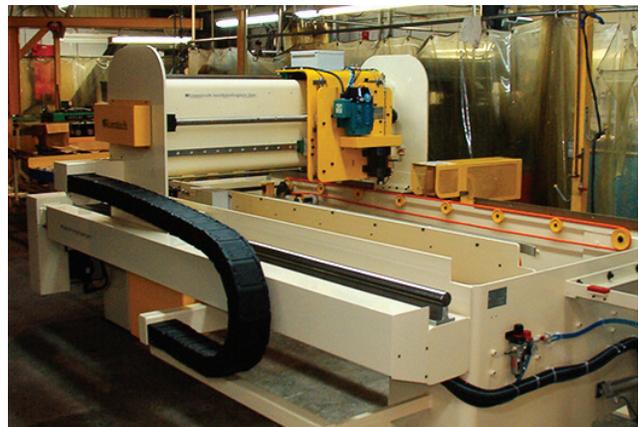
BACKGROUND

Based in Terrebonne, Quebec, Canada, Romtech Technologies, Inc. has developed a reputation in the residential and industrial door and window industry for having superior CNC machine tool equipment and the unique ability to work with all door materials, including steel which is the most difficult material to handle for most CNC routers.

Romtech Technologies, Inc. wanted to upgrade their new CNC router's control system for several reasons. They needed to integrate a multiple station, door slab loader with the new CNC door-lite router. The previous PC-Based control system wasn't fast enough, nor was it compatible with current PC operating systems. They wanted to ready their new CNC routing machine for connectivity with any kind of production planning system, since data interchange is very important in order to optimize production and reduce errors.

CHALLENGE

When it comes to residential doors and windows, homeowners can have demanding and exacting tastes. Thanks to Romtech Technologies, a manufacturer of



"Mitsubishi Electric's integrated iQ Platform and C70 CNC module provides us with the flexibility to incorporate a multi-platform solution, while improving performance and communications to our RT custom software user interface."

– Gabriel Burdeti, Software Programmer, Romtech Technologies, Inc..

Computer Numerical Control (CNC) routing equipment, homeowners can have their doors customized to suit their specific home decor and style. Everything from door shapes and window sizes, to lock types and door handles are made possible with their CNC door routers.

Romtech struggled with the performance and programmability of the PC Based control system they were using for CNC door routers. Among performance and communications connectivity issues, they found it was too slow and limited with programming and parameter selections.

Known for their powerful custom software interface with its comprehensive library of recipes and options, its Romtech Tool (RT) user interface was hindered by another third party software package that complicated programming and operation. Romtech also wanted a new platform capable of handling all their complex programming and performance requirements, while improving communication and connectivity to their RT tool custom user interface.

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SOLUTION

Romtech chose Mitsubishi Electric's iQ Platform for its performance, flexibility and expandability. While they did not require every control discipline, Romtech did utilize its C70 module for CNC control and the Programmable Logic Control (PLC) module for logic control along with a selection of Q series I/O. The iQ Platform is the only control solution in the automation industry capable of incorporating PLC, CNC, Robot and Motion Control in one platform.

The system was a complete Mitsubishi Electric control solution, eliminating the use of any third party software and hardware. The Ethernet port on the iQ Platform PLC module allowed for easy connectivity and faster communication to their custom software user interface. The total package also included MDS-DH series servo drives, HF series servo motors and D700 and A700 series Variable Frequency Drives (VFDs) for conveyor and speed control.

RESULTS

From a performance standpoint, top speed for the former servo solution was only 300 inches per minute, with Mitsubishi Electric's servos the speed is now 900 inches per minute. Without doing anything mechanically, by just replacing the servos, cutting speed of the new router was tripled.

With over 7,000 program and recipe options available, improving the user experience and programming for operators using their RT tool interface was imperative. By directly communicating through the PLC module's Ethernet connection, communication speeds and reliability was significantly improved. It completely eliminated the need for any "hand shaking" between third party drivers and the PLC. According to systems integrator, Paul Breault of Précision Motion & Contrôle Inc., "The iQ Platform gives Romtech the flexibility to now easily make modifications with the use of C++ programming and then send the g-code parameters through macros directly to the PLC."

Factoring in all the improvements for the new system, Romtech estimates it doubled the production efficiency of their CNC door router. Finally, there's no better indicator of success than sales growth. Recently they moved manufacturing operations from their original 3,700 sq. ft. facility, to a new space that is 27,000 sq. ft. to handle and accommodate the increase in demand

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