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# Hardinge Selects Mitsubishi Electric Control System for CHNC Turning Centers to Provide Customers with High Performance, Lower Cost Alternative

## Case Study

### Solution

- M70V CNC system
- MDS-DM multi-hybrid amplifier

### Hardinge Product Benefits

- 10 percent in savings to Hardinge customers
- Compatibility with existing systems

### Mitsubishi Electric Value-added Advantages

- Complete control system, with no upgrades to purchase
- 64-bit processor
- Easy-to-use HMI



*“The Mitsubishi Electric control system offers our customers leading edge technology and top performance capability second to none, all in one package. Hardinge is now able to offer a state-of-the-art control system to its customers at more competitive pricing than in the past.”*

*– Andy McNamara, Director, North American Turning/Milling Sales & Technical Services, Hardinge, Inc.*



## BACKGROUND

Hardinge manufactures Quest Series CHNC turning centers. Designed for quick changeover with patented interchangeable top plates that can be pre-tooled for a particular job or range of jobs, the turning centers set the industry standard for part roundness, profile tolerance, surface finish, dimensional accuracy and statistical process control. There are thousands of Quest Series CHNC machine installations worldwide producing high quality parts in medical, aerospace, bearing, mold and die, optics, automotive and other industries.

Hardinge wanted to offer customers a choice of control systems with the CHNC machines. The company’s objective was to provide customers with another viable solution from a well-known CNC control vendor that could match its existing vendor’s control system in performance, capabilities and features at a more competitive price.

## CHALLENGE

Hardinge was seeking a state-of-the-art control system compatible with existing systems -- one that was loaded with features and capable of super precision performance -- all at a lower cost to its customers.

Hardinge was very specific in its criteria. “The new control system had to be reliable and top quality,” said Andy McNamara, Director of Sales and Marketing North America, Hardinge Inc. “It also had to be a complete system with a high performance servo and spindle system. However, most importantly, it had to give us SUPER-PRECISION® capability for our product, because that is what differentiates us.”

Because the company’s machine systems are known for their precision, Hardinge required that the new control system meet the following precision benchmarks: 1) pass strict guidelines for accuracy and repeatability, 2) provide .0001mm control, 3) longevity in cutting metal parts with precision and 4) achieve strict profile tolerances.

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The system would also have to be as fast as or faster than other control offerings, provide full G-code compatibility with legacy machines, and pass ease-of-use standards set forth by Hardinge application engineers. Moreover, it had to be a well-packaged, feature rich system. “Our customers are value conscious, so we wanted a control system with everything in it, not one with a la carte features,” stated McNamara.

### SOLUTION

Mitsubishi Electric met the initial criteria for a well-known CNC vendor. “Mitsubishi Electric is a well-positioned, well-accepted brand,” commented McNamara, so he was confident that his customers would trust the company’s reputation for quality and reliability. However, beyond its brand name, McNamara said that Hardinge was also impressed with Mitsubishi Electric’s sales support and service.

Hardinge approached Mitsubishi Electric Automation with its requirements for a control system. After being selected as a control system vendor for Hardinge CHNC machines, Mitsubishi Electric identified its M70V CNC system with an MDSDM multi-hybrid amplifier as offering similar performance to the existing control system in the Hardinge machines. Mitsubishi Electric then put together a commercial and technical team for build and modifications.

Having launched its newest CHNC machines with the Mitsubishi Electric M70V CNC system, Hardinge now provides customers with a choice of two control system options in its Quest Series CHNC 27 and CHNC 42 turning centers.

### RESULTS

Hardinge chose the Mitsubishi Electric M70V, in part, because it provides program resolution and tool offset adjustment of .0001mm or .000010” which is a requirement for SUPER PRECISION® turning. In addition, the Mitsubishi Electric M70V will save Hardinge customers 10 percent or more when they choose it as their control system in a CHNC 27 or CHNC 42 turning center.

The ease-of-use criteria were also exceeded by the M70V control system, impressing the Hardinge application engineers who said that the operating panel is easy to navigate, with fewer keystrokes and fewer, yet better organized screens than many other controls on the market. These features facilitate shorter setup and cycle times, and shorten learning curves. The engineers also like the list feature that allows them to find any screen with just one stroke. Other popular features of the M70V among the Hardinge application engineers are the full keyboard, improved operator panel, excellent documentation, program tree function and interchangeability with existing programs. The M70V also offers multiple connectivity options for easy integrations.

“The Mitsubishi Electric M70V is leading edge from a technology standpoint, and competitive with respect to performance and value that it offers our customers. With a loaded feature set and no options to purchase, Hardinge can offer a fully packaged, state-of-the-art control system to our customers at more competitive pricing than in the past,” concluded McNamara.

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