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A New Era in Industry with Mitsubishi Electric CNC Systems

Hakan Aydın, Mechatronics CNC Department Manager at Mitsubishi Electric Türkiye Factory Automation Systems, shared insights into innovative solutions in CNC technologies and the advantages the M8V series offers to the industry.

1. **As Mitsubishi Electric, you manufacture controllers, motors and drives for CNC machines. Could you share your perspective on the importance of the supporting products you develop for CNC machines?**

As Mitsubishi Electric, we are positioned not only as one of the world's largest CNC manufacturers, but also as a strong solution partner serving many of the world's leading machine tool builders. With our innovative control technologies, we bring high product quality to industry worldwide through CNC solutions built on high quality, usability and advanced network communication capabilities. In the field of industrial automation, we offer our customers a wide range of solutions, from robotics and PLCs to complete EDM systems. Our CNC products and solutions, which are supplied to leading machine manufacturers around the world, clearly differentiate us within the industry.

CNC machines play a critical role in manufacturing, enabling materials such as metal and plastic to be shaped with high precision and speed. From aerospace and defense to automotive, consumer goods and furniture, CNC machines are fundamental to the production of almost every product we encounter in daily life. Mitsubishi Electric CNC stands out as one of the most reputable manufacturers of key components such as controllers, motors and drives that deliver the precision and speed required by the industry. Our products enhance manufacturing efficiency through standard features such as optical communication, high-speed and high-precision machining, high look-ahead capability, and an integrated data server function. In this way, we support CNC users in achieving more economical, faster and more precise production, while also helping them build Industry 4.0–ready factories.

2. **Could you share more details about Mitsubishi Electric's new M8V series, which is described as being as easy to use as a smartphone? You have also shared content about this product on your**

social media channels. What are the key advantages and disadvantages of the M8V series compared to previous models?

With the new M8V series, where we combine flexibility with functionality, it would not be an exaggeration to say that we are redefining the rules in the CNC field. Developed to support manufacturers' digital transformation strategies, the M8V series plays a key role in enabling advanced Industrial Internet of Things (IIoT) applications for data-driven smart manufacturing. Designed to simplify the work of professionals across different industrial segments, the series offers exceptional flexibility to users through its distinctive design. Introduced with the aim of making production processes more efficient, precise, error-free, and sustainable, the M8V series is built entirely around ease of use. Its four-point multi-touch, gesture-enabled, interactive and user-friendly panel interface delivers a user experience very similar to that of a smartphone. Users can securely monitor their CNC machine tools anytime and anywhere using tablet-like devices. The new interface allows flexible customization of NC screens and applications, enabling manufacturers to easily design their own customized screens.

The M8V series significantly shortens machining times through technologies such as a dedicated CPU developed specifically for CNC, the innovative OMR-CC control technology, and automatic acceleration and servo behavior adjustments based on cutting load. Shorter machining times also elevate surface precision to a higher level. These functions, which support high-quality production, reduce cycle times by at least 11% and tool path errors by up to 15% compared to previous models.

The series' intuitive design also enables key machining parameters to be monitored and controlled with ease. The Job Lathe wizard, which guides users during setup, provides fast and simple programming capabilities. Thanks to this feature, the control unit stands out by allowing even personnel without G-code expertise to perform programming easily.

With its ability to control a large number of axes for machining centers and lathes, and its machining capacity of up to 540K blocks per minute in machining centers, the M8V series offers significant advantages for metalworking applications. The new interface dramatically reduces workpiece setup and program creation times. Features such as interactive cycles that enable programming without G-code, defining and selecting machining conditions, built-in wireless networking, and communication with production monitoring software make the M8V series truly unique in manufacturing. Bringing speed and performance together, the series helps manufacturers increase productivity while also enabling the adoption of smart manufacturing practices.

Developed to support digital transformation strategies, the new M8V plays a critical role in implementing advanced IIoT for data-driven smart manufacturing. Equipped with built-in Wi-Fi and internal wireless LAN, the series can easily connect to software tools on a PC to exchange data via wireless communication.

3. **We know that Taiwan has a strong presence in the CNC machine market in Türkiye. Could you please share details on the spare parts support you provide in Türkiye for Taiwanese machines when needed?**

Mitsubishi Electric CNC products are supplied from our European headquarters within a short lead time. In addition, we provide professional service and spare parts support for machines equipped with Mitsubishi Electric CNC products. We are able to meet approximately 95% of spare parts requirements within 24 hours from our Istanbul warehouse, and when necessary, we also offer on-site service through our experienced and highly qualified technical team.

4. **Where do you see the industry heading over the next 5–10 years from Mitsubishi Electric's perspective?**

CNC machines will continue to maintain their critical role in manufacturing over the next 5–10 years and will become even more indispensable as they are further enhanced with advanced technologies. I believe that within this timeframe, our country's valued machine tool manufacturers will expand their production capacities by integrating new technologies and will be able to meet a significant portion of domestic market demand, at least at the local level.

5. **What kind of initiatives do you undertake to enhance the quality and durability of CNC machine controllers?**

We continuously carry out our R&D activities by closely incorporating feedback received from our existing customers. The insights we gain through this feedback directly inspire the development of our products and shape the next generation of solutions. As Mitsubishi Electric Factory Automation Systems, with our innovative technology approach and high-quality products designed to meet contemporary requirements, we strive to deliver more efficient solutions to our customers worldwide.

6. **Mitsubishi Electric CNC systems offer optimal automation solutions for all machine design needs, including custom-built production, contract manufacturing, and high-volume mass production. How do you manage custom-built production, and what advantages do you offer compared to your competitors?**

For CNC machine tools manufactured by machine builders operating in Türkiye, we provide all essential hardware components such as controllers, motors, and drives. Based on these components, we develop project-specific solutions and commission them following thorough testing and validation processes. Thanks to our integrated service approach, we place strong emphasis on delivering meticulous and comprehensive support not only before and during the sales process, but also throughout after-sales services. Our objective is to ensure a seamless and high-quality service experience for our customers through our experienced and highly qualified teams. Mitsubishi Electric CNC operates with a large, multidisciplinary organization across Europe, where all functions remain in close and continuous coordination. All customer requirements are carefully evaluated under the support and supervision of our European headquarters and the newly established Innovation and Technology Center (ITC) in Düsseldorf.

7. **Would you like to add anything?**

As the Mechatronics CNC Department of Mitsubishi Electric Türkiye Factory Automation Systems, we structure our activities in Türkiye under two main pillars. The first focuses on providing service and spare parts support for CNC machine tools equipped with Mitsubishi Electric CNC products imported from abroad. The second covers supplying Mitsubishi Electric hardware for CNC machine tools manufactured by machine builders operating in Türkiye, carrying out project engineering activities, and commissioning these systems.

Within the scope of our integrated service approach, we carry out meticulous and comprehensive work not only before and during the sales process, but also throughout after-sales services. In line with this approach, we aim to deliver a seamless service experience to our customers through our experienced and highly qualified teams, and we continue to advance our operations accordingly.

Our products and services are designed to help our partners and end users achieve maximum efficiency in their production processes. Leveraging our extensive industrial application expertise and advanced engineering capabilities, we implement solutions that simplify manufacturing processes across the industrial ecosystem. Looking ahead, we will continue to develop innovative and patented technologies in order to offer our customers best-in-class products and services.

As Mitsubishi Electric, strengthening our capabilities and expanding our collaborations in line with the accelerating pace of global digitalization remains a key priority. In this context, we engage in various partnerships centered around our CNC systems and maintain collaborations with companies across different regions worldwide. We also have plans in place for new product development and for further enhancing the technical performance of our existing solutions. In parallel, we continue our engagement efforts in target markets to accelerate growth through new and global investment partnerships.