

Message upon issuing Technical Review Special Edition: Machine Tools

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Welcome to the special edition of MHI Technical Review featuring machine tools.

Japan's machine tool industry has returned to a growth track following a drop in demand after the Lehman collapse, and an early forecast indicates this year's orders will reach a record-breaking 1,550 billion yen. In recent years, machine tool technologies have been undergoing a qualitative change in order to meet more sophisticated user requirements and anticipated needs. In addition to advanced automation technology being in high demand in both developed and emerging markets, the sector is garnering attention for its integration of intelligent technology and additive manufacturing (AM) processes, as well as adapting to the latest industrial revolution based on information and communication technology (ICT) such as Internet of Things (IoT) and the German-led Industry 4.0 initiative.

In light of changing market conditions and technology trends, the Machine Tool Division of Mitsubishi Heavy Industries, Ltd. (MHI) continues its pursuit of business expansion and improved profitability. For example, we now offer comprehensive gear processing systems through the development of machining products and tools that are far superior to those of our competitors. In the large-sized and special-purpose machine businesses, we have transformed ourselves to a total solutions provider that proposes optimal production systems that match the unique manufacturing and production needs of our customers. In addition, our next-generation advanced production system enables a new level of manufacturing by making full use of technologies such as laser processing, high-precision machining, and room temperature wafer bonding.

This special edition will introduce the Machine Tool Division's latest technology development that provides a strong foundation in manufacturing.

Starting with the gear processing system business, we discuss ZE-series technology used in highly precise and efficient gear grinding machines for automotive transmissions; GE10A, which is a new model of our best-selling dry-cut hobbing machines; and SuperDry coating for dry cutting systems.

For the total solutions business, we introduce the M-CM5BG horizontal machining cells designed for mass production lines of large-sized engines on trucks and buses; the MVR-E χ

next-generation double-column, 5-face milling machines and the MAF-C horizontal boring mills designed for aircraft and turbine component processing; the advanced 5-faced M-VB25 cross-rail fixed rail bridge mills, which offer an optimal solution for large and thin materials; and the hole position measuring system that significantly reduces non-processing time for large-sized milling work.

Lastly, for the advanced production system business, we introduce some of the latest work using our popular high-precision micro milling machine, high-precision drilling technology of the ABLASER laser micromachining system, three-dimensional material shape recognition technology for laser machining, and the MP Scale precision position feedback detector for machine tools and other precision machines.

Focusing on providing sophisticated total solutions that assist our clients in improving productivity and machine utilization, MHI continues to engage in the development of highly precise and efficient machine tools with better usability, easier set-up and maintenance, and superior reliability to meet our clients' unique needs. We deeply appreciate your ongoing support and understanding in our quest.