DMG MORI

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Contact Technical Press:
Eva Manzenreiter
DMG MORI Global Marketing GmbH
eva.manzenreiter@dmgmori.com
dmgmori.com

DMG MORI at the AMB 2024

Experience Machining Transformation (MX) live

Munich. At AMB in Stuttgart from September 10 to 14, 2024, DMG MORI will be showcasing the potential of Machining Transformation (MX), which the machine tool manufacturer already presented at the last EMO. It will now be brought to life once again in Hall 10 at AMB. The “X” in “MX” is the centerpiece of this vision and of DMG MORI's exhibition. It stands for progress, innovation and endless possibilities to revolutionize manufacturing processes. Each pillar of the Machining Transformation – Process Integration, Automation, Digital Transformation (DX) and Green Transformation (GX) – has its own part to play. “At AMB we will be demonstrating that interlinking the four pillars as closely as possible has an even greater impact on efficiency and productivity in manufacturing,” says Dr. Harald Neun, Executive Officer at DMG MORI, giving an outlook on the trade fair. DMG MORI is presenting a variety of machines, automation solutions and digital products that pave the way to the future of manufacturing, including world premieres in turn & mill machining, universal turning, 3-axis and 5-axis milling, as well as flexible automation solutions. In addition, CELOS X with SIEMENS or MAPPS is available for several new machine series. It demonstrates the latest developments in the digitization of machine tool manufacturing. DMQP partners (DMG MORI Qualified Products) complete the exhibition with attractive offers for the entire production environment in machining. This wide-ranging portfolio enables DMG MORI to develop holistic and future-proof manufacturing solutions at any time that meet the needs of the customer.

Machining Transformation (MX): The Future of Manufacturing

The challenge of remaining competitive on the global market is constantly increasing, as demands on quality, productivity and delivery reliability continue to rise. “With the Machining Transformation (MX) concept, we enable our customers to face this development in a more relaxed manner,” explains Irene Bader, Member of the Executive Board at DMG MORI. “The intelligent combination of integrated manufacturing processes, flexible automation solutions, end-to-end digitization and a consistent focus on energy-efficient production sets the course for sustainable and successful long-term economic development.” The pillar of process integration is reflected in the working space of the NTX 500, for example. 6-sided turn & mill machining, gear hobbing and in-process measuring enable efficient and quality-oriented complete machining of demanding workpieces. In the field of automated production, DMG MORI will be presenting solutions such as the PH-AMR 750 for autonomous pallet handling with autonomous robots on various machining centers. They create additional production capacities by creating a flexible and autonomous 24/7 production. The Digital Transformation (DX) will be illustrated using the new DMU monoBLOCK models. The digital portfolio here includes CELOS X with SIEMENS, the complete networking of automated production, tool management and TULIP as a no-code platform for the intuitive creation of apps. As these three examples contribute to resource-saving production, they also contribute to the Green Transformation (GX). DMG MORI supports this fourth pillar with the GREENMODE, which uses the CTX 450 TC as an example to show how up to twelve innovative hardware and software components ensure greater efficiency in every operating state.

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World Premiere: NLX 2500|700 2nd Generation – Turning Center of the Latest Generation

At the AMB in Stuttgart, DMG MORI is presenting the NLX 2500|700 2nd Generation, a successor model to the successful turning center. The world premiere includes far-reaching optimizations in machine structure, control and various functionalities. The innovation leader has taken into account the requirements of today's markets and embedded the new model in the Machining Transformation (MX) concept. Process integration, Automation, Digital Transformation (DX) and Green Transformation (GX) are the main pillars of this concept with which DMG MORI is shaping the future of manufacturing. The NLX 2500|700 2nd Generation offers users with different requirements maximum flexibility and reliability in universal turning – now also with SIEMENS control. In addition to CELOS X on MAPPS, CELOS X is also available on a SINUMERIK ONE. The core characteristics of the high-performance NLX series – its stability and the associated precision – have been further improved. The aim is to reduce cycle times and increase machining quality. With these measures and the adaptation of high-torque turnMASTER spindles on the left and right, the NLX 2500|700 2nd Generation will continue to set standards in the productive heavy-duty machining of demanding workpieces. With a maximum turning diameter of ø 366 mm and a turning length of up to 705 mm, the NLX 2500|700 2nd Generation offers capacity for a very wide range of workpieces. The maximum bar capacity has been increased to ø 105 mm on both spindles, compared to ø 80 mm on the previous generation. The travel distances are 260 mm in the X-axis and 795 mm in the Z-axis. A travel distance of 120 mm (± 60 mm) in the Y-axis for off-center milling, drilling and other process steps with driven tools offers maximum flexibility.

World Premiere: CLX 550 TC – Proven Concept in a New Size

Increasing part diversity and variance as well as decreasing batch sizes increase the risk of unproductive set-up times. This also changes the requirements for production solutions in universal turning. The CLX TC series from DMG MORI meets these challenges. With the new CLX 550 TC, the machine tool manufacturer has once again succeeded in redefining universal turning. A B-axis with the 90 Nm compactMASTER turn & mill spindle replaces the tool turret. The tool magazine offers space for up to 60 tools. The main and counter spindles have a torque of 700 Nm, while the tailstock and a steady rest complete the equipment. This allows users from all industries to efficiently produce complex workpieces in one work area. The maximum workpiece size in the work area is ø 550 x 1,600 mm, while the Y-axis with 270 mm enables eccentric machining as standard. CELOS X in conjunction with the SINUMERIK ONE also enables app-based workflows with OP Workbench and 3D shopfloor programming, making it easy to use both in work preparation and in workshop-oriented programming.

World Premiere: CTX 350 4A – Highly Productive Universal Turning with Two Turrets

With more power, precision, flexibility and efficiency, the sixth generation of the CTX series paves the way for Machining Transformation (MX), with which DMG MORI is shaping the future of manufacturing. The latest generation of CTX line turning centers impresses with a compact design and a larger working area with the smaller footprint. In the case of the new CTX 350 4A, this is just

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7 m². The CTX 350 4A has two VDI30 turrets with a total of up to 28 tool positions. The driven tools achieve speeds of up to 12,000 rpm and a torque of up to 14 Nm. It is equipped with a left-hand spindle (ISM 65), which operates at up to 5,500 rpm and 171 Nm, and a right-hand spindle (ISM 50). This one offers a speed of 6,000 rpm and a torque of 93 Nm. Both turrets can be used separately on both spindles as well as simultaneously on one spindle. The versatile CTX 350 4A therefore enables highly productive 6-sided complete machining of workpieces up to ø 230 x 100 mm with a Y-axis travel of +/- 50 mm. The bar capacity is ø 65 mm and the connection for bar loading is in the standard configuration of the machine. Efficient chip removal and state-of-the-art components for fast, precise and reliable performance make the CTX 350 4A a valuable helper in any future-oriented production facility. The 24" CELOS X control panel is available with either SIEMENS or MAPPS controls and gives the CTX 350 4A a high degree of connectivity for digitized production.

World Premiere: DMU 85 monoBLOCK 2nd Generation – Highest Precision for the Future of Production

The world premiere of the DMU 85 monoBLOCK 2nd Generation combines the proven machine concept of the previous series with numerous optimizations that have been incorporated directly from the practical experience of users. The versatile 5-axis simultaneous machining center has always been the perfect entry for a future-proof production. In the latest generation, DMG MORI has significantly increased the precision – as with the smaller models already introduced at the Open House Pfronten 2023. Improved cooling measures and direct-driven ball screws ensure a positioning accuracy of 5 µm. This means that the DMU 85 monoBLOCK 2nd Generation also meets the highest quality requirements in the production of demanding workpieces. The working space is designed for workpiece sizes up to ø 1040 x 590 mm and a maximum component weight of 1500 kg. The integration of additional machining processes, for example through the optional mill & turn table and grinding functionality, a wide range of automation options and CELOS X as the basis for digitized production continue to make the new generation of the successful series an ideal manufacturing solution for companies in the die & mold, aerospace, semiconductor and other demanding industries – especially in times of Machining Transformation (MX). To cover these wide-ranging requirements, the DMU 85 monoBLOCK 2nd generation modular system includes the widest range of spindles on the market: speedMASTER spindles with speeds of 30,000 rpm for machining perfect surfaces or high-torque powerMASTER spindles with up to 430 Nm for heavy-duty machining of titanium components. With the DMU 95 monoBLOCK 2nd Generation, DMG MORI is once again offering a pre-configured and powerful complete package.

World Premiere: DMV 60 | DMV 110 – 3-axis Machining Redefined

In the new DMV series, DMG MORI combines the strengths of earlier 3-axis machining centers with pioneering innovations that meet the increasing requirements in manufacturing. The development of the DMV 60 and DMV 110 has thus been closely aligned with the Machining Transformation (MX). Based on the four pillars of Process Integration, Automation, Digital Transformation (DX) and Green Transformation (GX), DMG MORI is shaping the future of manufacturing with this concept. As 3-axis machines, the two DMV models occupy an important position in numerous industries – wherever economical and flexible high-performance machining of precise workpieces with simple

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geometries is required. In this way, they prove to be a valuable building block in a competitive production environment, including the die & mold, general angineering, automotive and aerospace sectors, where productive machining of the most common materials from aluminum to stainless steel and titanium alloys is crucial. As a vertical machining center, the machine's X-axis travel is an important factor. In case of DMV 60 it is 600 mm (Y = 600, Z = 510 mm), for the bigger model DMV 110 it's 1,100 mm (Y = 600, Z = 510 mm). The DMV machines are based on a monolithic bed and massive castings which secure outstanding rigidity and thermal stability. Thanks to the fixed machine table with a size of 1,400 x 600 mm parts of up to 1,700 kg can be produced with highest quality standards (DMV 60: 900 x 600 mm; 1,000 kg). The machine is available with a full range of spindles, starting from a 12.000 rpm spindle, through a 15.000 rpm and 200 Nm high-torque version, ending with a speedMASTER spindle with 20.000 rpm – all of them with BIG PLUS interface. With the combination of a powerful spindle with high dynamics and a rapid traverse speed of 42 m/min, the DMV models achieve high cutting performance.

World Premiere: PH-AMR 750 – Autonomous Moving, Compact Pallet Handling

As driverless transport systems for automated pallet handling, the PH-AMR models from DMG MORI are a central component in the Machining Transformation (MX). With a free layout design, the autonomous mobile robots move independently on the store floor in collaboration with people. Their task is to bridge the distance between the pallet storage system and the machine. The machines are also loaded and unloaded autonomously. Following the success of the PH-AMR 5000, DMG MORI is expanding its range in this area with the new PH-AMR 750. The smaller version of the self-propelled pallet handling system was developed as part of a customer project and navigates through production just as reliably and safely as its big sister model with the help of laser scanning. The PH-AMR 750 is integrated into the CELL CONTROLLER LPS IV for simple production planning and control. The PH-AMR 750 can be loaded with 750 kg and is designed for 630 x 630 mm or ø 800 x 630 mm pallets. The maximum component size is 800 x 800 mm. The PH-AMR 750 transports conventional machine pallets as well as zero-point clamping systems. Thanks to a vertical axis, the mobile pallet handler has two levels, eliminating the need for double travel paths. Its lifting height is 1,300 mm. The PH-AMR 1500 is suitable for heavier components. It transports up to 1,500 kg at a lifting height of 2,010 mm. The larger model requires 5.2 m² of space.

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Pictures

The **NLX 2500 2nd Generation** provides users with various needs with maximum flexibility and running autonomy in universal turning.

DMU 85 monoBLOCK 2nd Generation – Highest Precision for the Future of Production

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The free layout design of the **PH-AMR 750** allows subsequent integration into existing production environments.

Company Profile // DMG MORI

DMG MORI is a leading global manufacturer of high-precision machine tools and is represented in 43 countries – with 116 sales and service locations, including 17 production plants. In the “Global One Company”, more than 13,000 employees are driving the development of holistic solutions in the manufacturing industry. Under the guiding principle of Machining Transformation (MX), DMG MORI combines four pillars for the efficient, sustainable production of the future: Process Integration, Automation, Digital Transformation (DX) and Green Transformation (GX).

DMG MORI stands for innovation, quality and precision. Our portfolio covers sustainable manufacturing solutions based on the technologies Turning, Milling, Grinding, Boring as well as Ultrasonic, Lasertec and Additive Manufacturing. With technology integration, end-to-end automation and digitization solutions we make it possible to increase productivity and resource efficiency at the same time.

At our production sites worldwide, we realize holistic turnkey solutions for the main sectors of aerospace, automotive, die & mold, medical and semiconductor. With the DMG MORI Qualified Products (DMQP) partner program, we offer perfectly matched peripheral products from a single source. Our customer-oriented services cover the entire life cycle of a machine tool – including training, repair, maintenance and spare parts service.

DMG MORI Global Marketing GmbH | Walter-Gropius-Str. 7 | 80807 Munich
Managing Director: Irene Bader
Commercial register no.: HRB 213234, Local Court Stuttgart