

Press Release

June 27th, 2022

“NTX 500” for space-efficient mill-turn processing of small & complex workpieces on 1 machine

DMG MORI CO., LTD. (hereinafter referred to as “DMG MORI”) has launched its new machine “NTX 500”, the most compact Mill-Turn Center in the NTX series for processing of small-size & complex-shape workpieces integrated on 1 machine.

Ever since its launch in 2010, the NTX series capable of integrated turning and milling on a single machine has been critically acclaimed by customers worldwide in industries such as automotive, aerospace, medical and die & mold. In recent years, the demand for a new type of compact Mill-Turn Center has emerged, a space-saving machine with high productivity per unit area to machine increasingly small-size and complex-shape workpieces, such as medical devices, watches, optical components, tableting dies and injection nozzles.

The newly developed NTX 500 is the most compact machine of the DMG MORI Mill-Turn lineup with minimum floor space (width 3,480 mm × depth 2,060 mm), built to satisfy customers still hesitant to introduce a Mill-Turn Center to their production due to limited factory space.

Equipped with the compactMASTER Turn-Mill Spindle with high performance in a compact body of 250 mm in length (smallest in its class^{*1}) and max. spindle speed of 42,000 min^{-1*2}, the NTX 500 can process even small-diameter holes with high accuracy.

The NTX 500 benefits especially such customers who separate processes by using small-size machining centers and rotary tables, as well as customers struggling with complex-shape machining on small-size turning centers. Such customers will profit the most from the strengths of process integration by Mill-Turn Centers, such as improvements in productivity and accuracy thanks to less setup work.

Even higher productivity can be easily achieved by connecting NTX 500 to an In-Machine Traveling Robot System^{*2}, bar feeder^{*2} and other kinds of automation for automated high-mix low-volume production. The combination of process integration and automation shortens production lead times, while supporting the reduction of CO₂ emissions and power consumption.

For those interested, DMG MORI recommends a visit to its small-scale exhibitions “DMG MORI

Technology Friday” where the actual NTX 500 will be on display from July 2022. ^{*3}

Please take a look at the movie and catalog available on the DMG MORI website. ^{*4}

- Movie : https://www.dmgmori.co.jp/en/movie_library/movie/id=6268
https://www.dmgmori.co.jp/en/movie_library/movie/id=6275
- Catalog : <https://www.dmgmori.co.jp/en/download/catalog/detail/id=6245>

■Main features

① Compact space/wide machining area

- + Smallest floor space in its class^{*1} (width 3,480 mm × depth 2,060 mm)
- + Smallest Turn-Mill Spindle in its class^{*1} of 250 mm length – compactMASTER 40|250
 - Fastest spindle speed in its class^{*1} of 30,000 min⁻¹ (high-speed specification 42,000 min⁻¹), High output of 15 kW
 - Compact structure to avoid interference with Turret 2, even at 90° inclination between the right and left spindle^{*2}, realizing simultaneous machining

② High accuracy

- + Equipped with high-performance Turning Spindle turnMaster 5in.
- + High-accuracy encoder by Magnescale to improve C-axis indexing accuracy
- + Circulation of cooling water around heat sources to reduce thermal displacement

③ Turret 2 with high-performance^{*2}

- + Fastest milling spindle in its class^{*1} with max. spindle speed of 12,000 min⁻¹ mounted as standard
- + Wide Y-axis stroke of ± 30 mm for various milling processes and simultaneous machining with Turn-Mill Spindle and Turret 2 on top & bottom
- + New compact holder BMT 42/64 available
 - 16-station turret for mounting of different tools
 - Holder with repeated mounting accuracy of 2 μ m^{*5}

④ Support of high-mix low-volume production

- + Large-capacity tool magazine
 - Storage of max. 114 tools for less tool setup work

- + Magazine control panel
 - Special control panel on the tool magazine for tool setup operations. All tool setup-related operations quickly possible by touch while wearing gloves to reduce tool setup work
- ⑤ Full-fledged automation
 - Compatible with automation solutions to meet increasingly diverse production challenges
 - + In-Machine Traveling Robot System IMTR*²
 - Robot system for handling of high-mix workpieces, washing, deburring and other processes from material loading to finishing on 1 machine
 - + MATRIS Light*²
 - Freely movable robot system consisting of a collaborative robot mounted on a hand cart
Can be operated without programming skills or other special knowledge
 - + Bar feeder*²
 - Automatic supply of bar material with max. diameter 40 mm
 - Measurement solutions for on-machine measurement and more efficient setup
 - + Automatic in-machine tool presetter*²
 - Automatic tool measurement inside the machine to simplify setup work, including tool breakage detection
 - + On-machine measurement system*²
 - Measurement of the machined workpiece by touch probe mountable on Turn-Mill Spindles
 - + Tool visualizer*²
 - On-machine non-contact tool wear measurement and breakage detection possible by cutting-edge sensing technology
- ⑥ Environment-friendly product for sustainable production
 - Reduction of CO₂ emissions and power consumption by process intergration
 - Equipped with built-in mist collector **zeroFOG** to maintain a clean factory by efficiently removing mist generated during metal processing
 - GREEN MACHINE built in a carbon neutral production scheme

DMG MORI will continue to attend to customer needs and develop highly functional, reliable and investment-worthy products.

Product name	Mill-Turn Center NTX 500
Estimated sales volume	240 machines/year
Target markets	Medical devises, Watches, Optical components, Tableting dies, Aerospace, Small-size workpieces, Robot components, etc.

*1 Calculation by DMG MORI

*2 Option

*3 The NTX 500 is only on display at Iga Campus. "DMG MORI Technology Friday" is held at Iga Campus and Tokyo Global Headquarters while implementing adequate measures against COVID-19.

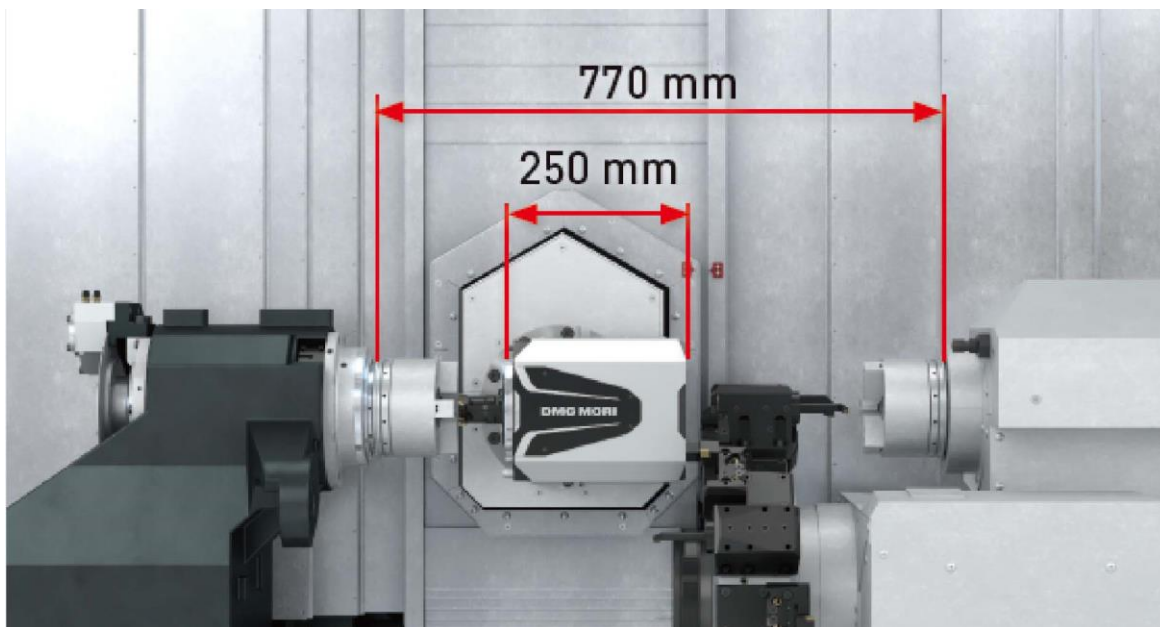
*4 Only registered members can access the catalog. Register for free to get access to exclusive contents.

*5 Achieved with BMT42/64 (16-station turret) and tool loading/unloading as instructed by DMG MORI

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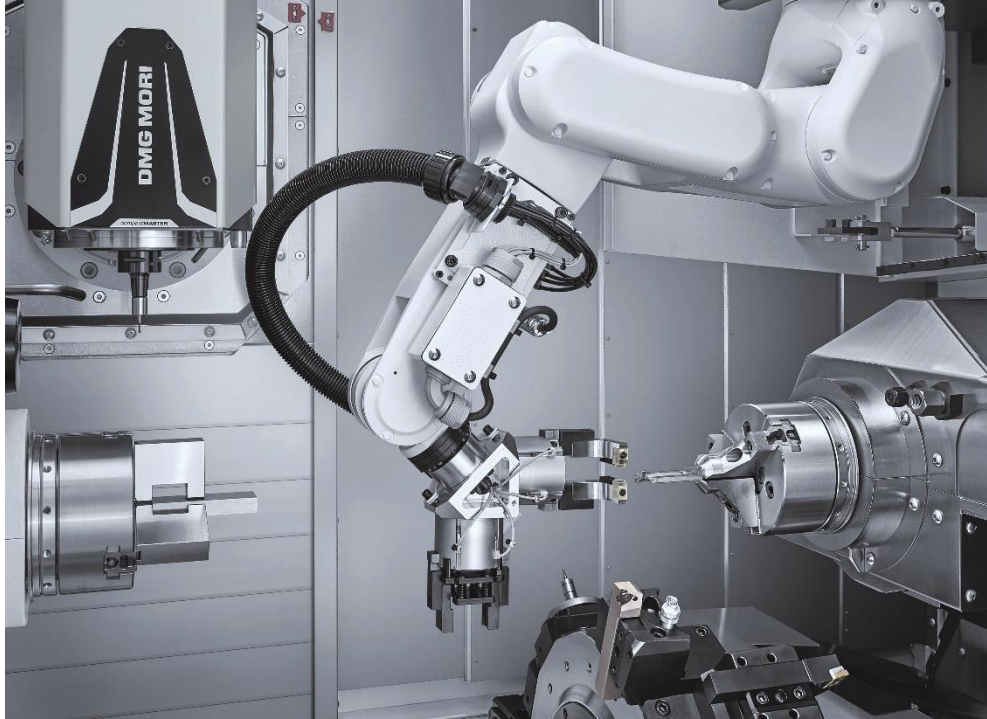
NTX 500 + In-Machine Traveling Robot System (IMTR)



Compact Turn-Mill Spindle — no interference with Turret 2,
even at 90° inclination between the right and left spindle



Bone plate processing



Automated workpiece loading/unloading by IMTR