

## PRESS RELEASE

### Nidec Machine Tool Introduces Digital Twin Platform for Machine Tools at JIMTOF2024

*Company Demonstrates Efficient, Labor-Saving Production Solutions*

**Kyoto, Japan, October 21, 2024** – NIDEC Machine Tool Corporation today announced the development of a digital twin platform designed to enhance efficiency and reduce labor requirements in large machine tool machining processes. The platform accurately simulates real-world conditions, allowing for virtual verification and optimization of machining programs.

The company will showcase this innovative technology at the Japan International Machine Tool Fair (JIMTOF2024), Booth E2032, held at Tokyo International Exhibition Center (Tokyo Big Sight) from November 5-10.

The digital twin platform addresses the critical labor shortage facing the metal-processing industry by minimizing the need for physical equipment-based processes. By simulating machining programs in a virtual space, operators can refine program data to achieve optimal levels of completion before starting actual production.

NIDEC Machine Tool's MVR-Hx, a high-precision double-column five-face machining center, will be featured at the exhibition. This machine is capable of accurately reproducing the simulated data, enabling efficient and high-quality workpiece production.

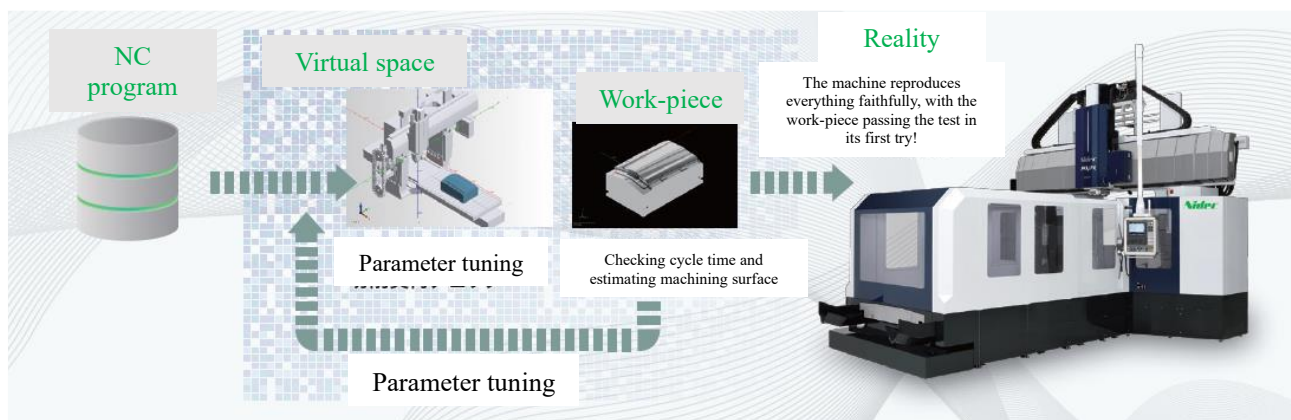
The platform analyzes time-consuming processes and factors that limit machine utilization in metal component machining. The newly developed application software leverages digital technology and AI to address these challenges. By creating a virtual simulation of the machining program, operators can fine-tune the program for optimal performance without the need for extensive physical testing.

Traditional machining processes often involve manual checks and adjustments, which can be time-consuming and reduce machine efficiency. NIDEC Machine Tool's software streamlines this process by allowing operators to visualize and verify machining conditions, including movement interference, cutting load, and cycle time, in a virtual environment.

The company's highly reproducible double-column five-face machining centers further enhance efficiency by enabling remote and multi-location production. These machines can produce workpieces at a consistent quality level without relying on human intervention.

At JIMTOF2024, NIDEC Machine Tool will demonstrate the digital twin platform in conjunction with FANUC Corporation's technology, offering potential solutions to industry challenges.

#### Illustration of digital twin technology



**NIDEC Machine Tool’s demonstration at JIMTOF2024 will include:**

No	Issues facing users	NIDEC Machine Tool’s solutions
1	It’s hard to foresee movements and interference of a five-face machining program with an attachment (inside a work-piece and a machine).	Use a virtual space to visually check the movements and interference of the machine, including its attachment.
2	The mechanical utilization does not improve after an actual machine-based debugging to check a machining program and a cycle time.	Run the program in a virtual space, and perform high-speed processing to shorten the time for the check.
3	When checking a processed surface’s quality level, one has to use an actual machine to test-cut a work-piece every time a change is made to the program or the machine’s parameters.	Perform a trial-and-error process by simulating various cases in a virtual space until the surface is machined to the required level.
4	Commercially available CAD/CAM or simulation software cannot check the information in Sections 1 – 3 above at once.	The Company offers its original platform that can check the information in Sections 1 – 3 in a series of cycles.
5	How do you raise the quality level of a mold’s machined surface easily?	The Company uses the newly developed “FMII*3” to offer a high-quality machined surface.

\*1. “NC” stands for “numerical control.”

\*2. “Debugging” means to search for and specify the reasons for, and the source-code location of, any malfunction or defect discovered in a test after a programming glitch or mistake, to fix the malfunction/defect so that the program runs as intended.

\*3. “FMII” stands for “fine mold,” which is the second generation of NIDEC Machine Tool’s original mold-machining control functions.

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**About NIDEC Machine Tool Corporation**

NIDEC Machine Tool Corporation is a global leader in innovative machine tool solutions. The company, along with NIDEC OKK, PAMA, and TAKISAWA, works collaboratively to deliver high-quality, high-efficiency machine tools that support various industries worldwide.

**Website:** <https://www.nidec.com/en/machine-tool/>