DMG MORI

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Press Release

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Non-contact on-machine measuring system: A newly-released, ultra high-speed system integrating machine tool and measuring technology

DMG MORI Co., Ltd. (hereinafter called "DMG MORI") released its "Non-contact on-machine measuring system" to automatically measure machined workpieces.

Accurate measurement is key to meet drawing tolerances and ensure quality. Machine tool users, for example, measure dimensional accuracy against tolerances after machining a workpiece. Measurement helps you achieve high machining accuracy and is very important, but it is also time consuming and requires high-level and consistent measurement techniques among operators. If implemented poorly, it could lead to lower productivity or potential complaints from customers.

In order to solve such issues, DMG MORI developed its "Non-contact on-machine measuring system" to automatically measure workpieces in machine tools with its cutting-edge sensing technology. The system uses a non-contact type laser scanner from NIKON CORPORATION (hereinafter called NIKON), who started comprehensive business alliance with DMG MORI in November 2019. The integration of DMG MORI's sensing technology and NIKON's measurement technology has led to high-speed and high-accuracy measurement.

Please see the videoclip below for further information. https://www.dmgmori.co.jp/en/movie_library/movie/id=5485

Main features

- ① Shorter measuring time
- On-machine measurement no transfer to dedicated measuring equipment necessary. Setup time reduced by 90% ^{*1}
- 2 types of laser scanner available: data acquisition of 70,000 points/sec or 200,000 points/sec
- Speedy measurement of large and complex shapes (e.g. large-sized gears, turbine blades)
- 2 Easy measurement method
 - Quick start by simply mounting the laser scanner on the machine tool spindle
 - Installation with only 1/5 of the cost of dedicated measuring equipment *2
 - Point cloud data measured in µm by laser scanner
 - Measurement results shown immediately on PC

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- In addition to 2D size data, 3D profile data is available for comparison and evaluation with CAD data
- ^{*1} Subject to change depending on the layout of the machine tool and measuring equipment or the workpiece size.
- ^{*2} Comparison with a large-sized gear measuring equipment, calculated by DMG MORI.
- ③ Accurate measurement
 - Surface profile collected and digitized as point cloud data in minimum time. High accuracy also guaranteed
 - High measurement accuracy equivalent to dedicated measuring equipment, achieved with DMG MORI's spindle controlling technology and NIKON's knowhow as a measurement equipment manufacturer
 - Special software for automatic evaluation of measurement results

Product name	Non-contact on-machine measuring system
Applicable machines *3	DMU eVo series (with SIEMENS control) DMU duoBLOCK series (with SIEMENS control) DMU monoBLOCK series (with SIEMENS control)
Recommended markets	Aircraft, Construction machinery, Energy, etc.

^{*3} As of Dec 2020. To be extended



Non-contact on-machine measuring system

Concluded.