

Press Release

October 26th, 2020

“AI Chip Removal” Developed for Automatic Removal of Chips Generated during Machining

DMG MORI CO., LTD. (hereinafter called DMG MORI) developed “AI Chip Removal” that automatically removes chips generated during machining on a machine by use of AI.

In recent years, the number of companies installing automation systems at their machine shops have been on the rise for various reasons such as labor-saving, efficient production, quality maintenance and improvement of the working environment. One of the issues of our customers who use automation systems is machine stop and machining failure caused by chips generated during machining. AI Chip Removal analyzes chip accumulation status using AI, and removes chips automatically and efficiently in order to reduce such problems and help maximize the production performance of automation systems.

Please click the URL below for the video of AI Chip Removal on the DMG MORI website.

https://www.dmgmori.co.jp/en/movie_library/movie/id=5336

■ Main Features

AI Chip Removal automatically and efficiently removes chips in four processes.

1. Images inside machining chamber

- Two high-performance cameras to take high-precision images of the entire machining chamber.
- Constant clear images by preventing chips and coolant from adhering to the cameras using water-repellent films and coolant/air blow.

2. Analysis of chip accumulation status

- AI to detect the chip position and amount based on the images taken by the cameras.
- High detection capability by learning various environmental factors inside a machine.

3. Detection of optimal cleaning method

- Automatic detection of the optimal cleaning path according to chip positions and conditions.
- Automatic judgement of necessity of coolant cleaning according to the chip accumulation amount and control for optimal coolant discharging amount.

4. Implementation of chip removal

- Automatic and efficient removal of chips inside a machine using the motor-driven coolant nozzles.
- Automatic nozzle angle adjustment following the table axis travel to respond to different types of workpieces during automatic operation
- Changing the cleaning path and removing chips of a specified area while checking images inside a machine on the CELOS screen*1.

*1 CELOS: Operating system for the DMG MORI machine tools

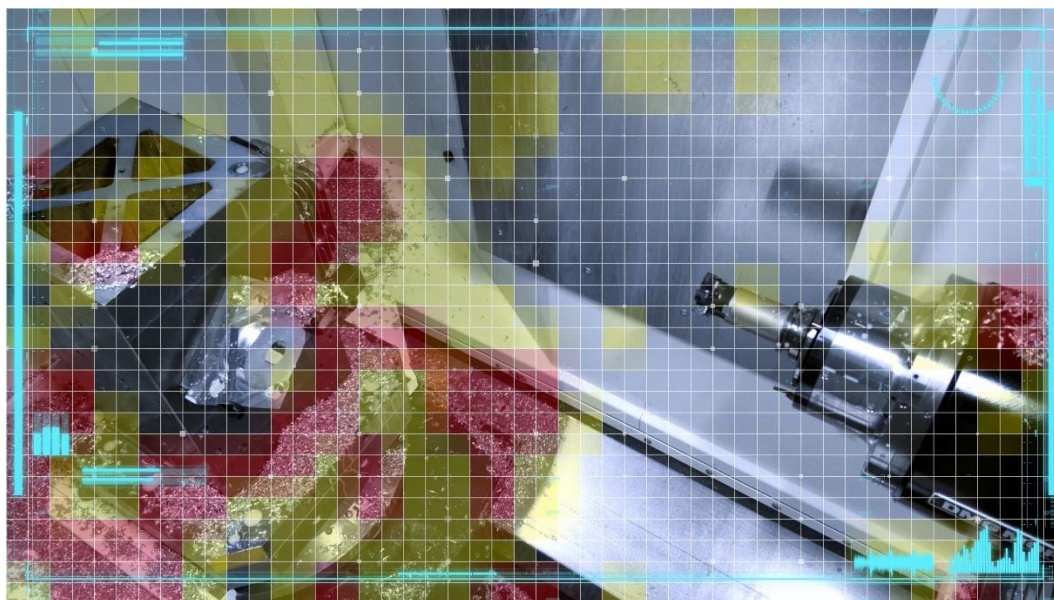
DMG MORI will continue releasing highly functional, reliable and investment-worthy products to the market in an effort to meet diverse customer needs.

Product Name	AI Chip Removal
Applicable Machines*2	Horizontal machining centers NHX 4000 3 rd Generation/NHX 5000 3 rd Generation NHX 5500 2 nd Generation/NHX 6300 2 nd Generation

*2 As of October 2020. Applicable models to be expanded from 2021 on.



AI-enabled chip removal solution - Automatic cleaning



AI-enabled chip removal solution - Image recognition

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