![C&G SYSTEMS INC. logo]

To The Press

C&G SYSTEMS INC.

Development of a Cutting Condition Determination Support System by AI

In April, our company (President: Seiichi Shiota) will release "V20.1", the new version of CAM-TOOL.

In this version, we have equipped the "AI Cutting Condition Calculation Function" that supports the determination of cutting conditions using the AI system (AI Cutting Condition Determination Support System) developed through joint research with Okayama University, which conducts data mining research. MOLDINO Tool Engineering, Ltd., which develops and sells tools for molds, and ZENO TECH Co., LTD., which has expertise in high-hardness mold material machining.

When work materials or tools with no machining experience are used on machining centers (MCs), the pursuit of appropriate cutting conditions often relies on the tacit knowledge of skilled operators such as expertise and experience. Intellectual assets such as the know-how of these individuals, has become a management issue for many mold manufacturing and parts machining industries that face the problems related to skill inheritance and labor shortage.

This function uses the AI technology "Data Mining Methods" to learn from numerous tool and cutting conditions provided by tool manufacturers, as well as material property values of work materials that are not registered in their tool catalog data. This enables the automatic calculation of conditions for the work materials and tools selected by the user. Furthermore, it provides feedback to the database (DB) on the user-specific cutting conditions based on machining experience. This allows for the construction of machining information assets that are optimized through machine learning, thereby addressing the challenges faced by user companies.
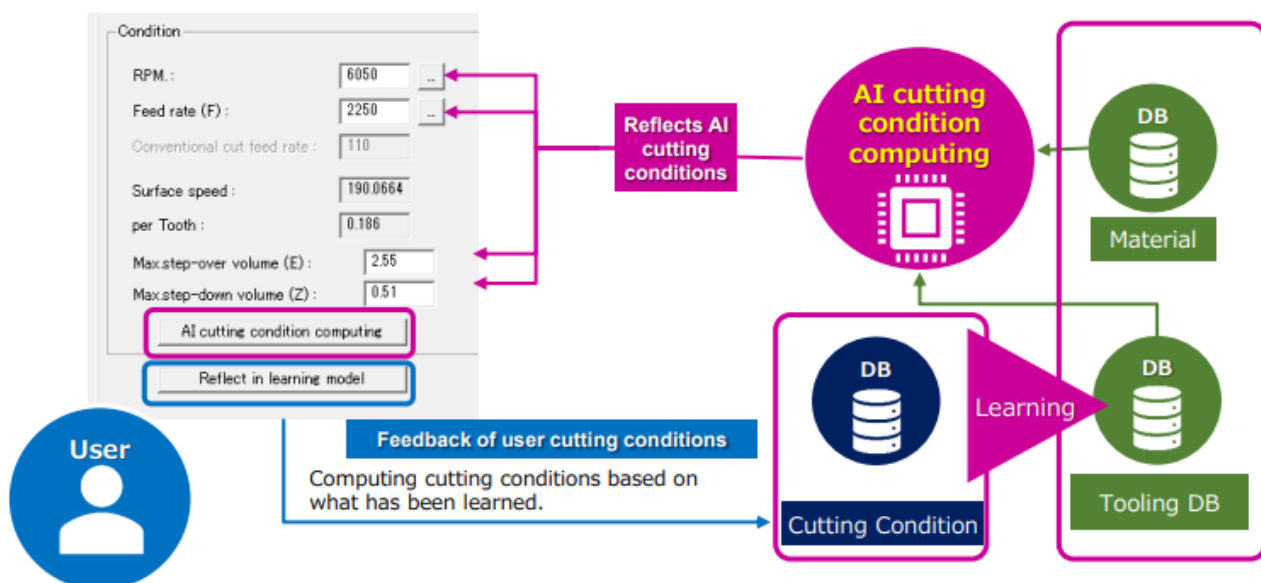

Image of AI Cutting Condition Determination Support System

This research started in 2018, setting "Development of an Optimal Cutting Condition and Machining Path Determination Support System Supported by Data Mining Methods" as the research topic. Aiming to propose a support system that allows even unskilled technicians to easily determine cutting conditions, we have been conducting demonstration experiments to the present day.

We continue our research and development, aiming for a higher-level system including calculating processing conditions that consider external data, as well as data from tools and work materials.

Exhibition at InterMold 2024

In addition to this function, this version has undergone functional development in 45 areas, including the optimization of operations and machining paths, improvement in the accuracy of tooling interference avoidance, and expansion of modeling functions. It will be exhibited at "INTERMOLD 2024", a specialized trade fair for mold and metal press machining technology, to be held at INTEX Osaka from April 17th to 19th.

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[Product Prices] (All prices below are in Japanese Yen.)

- ・　CAM-TOOL 3-axis package　　　 :￥5,200,000 -
- ・　CAM-TOOL 5-axis package　　　 :￥6,400,000

　　*Taxes and the maintenance fees are excluded.

　　*The price depends on the module configuration.

[Company Information]

- ・　Foundation　　　　　　 : July 2, 2007
- ・　Capital　　　　　　　 :¥500,000,000-
- ・　Description of Business : Development/Sales/Support of CAD/CAM System for Mold & Die,
　　　　　　　　　　　　　　and Production Management Systems

Note: All company and product names in this release are trademarks or registered trademarks of their respective companies.

Questions and Inquiries

Mr. Tatsuya Izawa, Public Relations, C&G Systems INC.
Tokyo Headquarters (Shinagawa-ku, Tokyo)
Kitakyushu Headquarters (Kitakyushu-city, Fukuoka)

E-mail: cgs_pr@cgsys.co.jp　https://www.cgsys.co.jp/eng/