Don’t just think, know for sure: MPC tracks real tool conditions at the machine

Machine Process Control (MPC) from TDM Systems

Tübingen, Germany – December 7, 2016 – The new TDM Global Line 2017 Machine Process Control (MPC) module from TDM Systems provides accurate, up-to-date information about every tool and its status at the machine tool. The module from the Tübingen-based Tool Lifecycle Management specialist links tool data to real-time data from the machine control. Contract manufacturers and large-scale manufacturers will benefit from reduced setup times and increased process reliability. The module will be available in the first quarter of 2017, and new features will be added over time.

MPC uses real tool data from the machine tool in real time — for the first time. Volker Schwegler, Senior Consultant and Product Manager at TDM Systems GmbH: “Tool data used to be deleted from the control unit as soon as the tool was removed; now MPC stores this information so histories can be tracked, tools can be reused, and processes can be optimized.” The machine tool thus becomes an integral part of the digitized Industrie 4.0 landscape. TDM transfers actual tool data, offset data, etc.; the machine returns information indicating which tools are currently in the tool store, what their current status is, and how they are being used.

Less setup time

This dramatically reduces setup times on the shop floor. If a tool wears out today, the machine operator orders a new one. Tooling retrieves the required items from the tool store and assembles them into a tool assembly. Then comes presetting, tailored to each machine. Duration: approximately 15 minutes, plus five minutes to change the tool.

MPC knows the remaining life of a tool and signals when the prewarning stage has been reached. An order can then be initiated manually or automatically, early enough that the replacement tool is ready to go when the wear limit is reached.

Until now, the remaining tool life was usually estimated based on feeds & speeds from tool manufacturers. But if a tool lasts only 50 minutes instead of the anticipated 100 minutes, for example, the replacement won’t be available when needed and will have to be ordered on the spur of the moment, with express delivery. But MPC captures the real feeds & speeds used to operate the tool and links this information to other relevant data such as the NC program, the machining technology, and the machining operation. Volker Schwegler: “The control loop becomes a self-optimizing closed loop system.”

This is accompanied by gains in flexibility when it comes to tool offset data, for instance. Today, offset data are valid only for the actual order on a specific machine. A change requires another offset file and another tool calibration. MPC identifies the individual tool when it’s loaded, requests the data, and transfers the data to the machine control. This information remains available even after the tool is unloaded. The tool can be used in another machine without a recalibration.

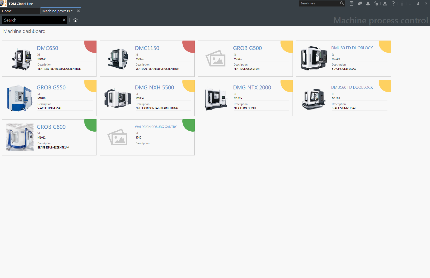
Everything at a glance in Global Line

MPC will be part of TDM Global Line 2017. The home screen provides an overview of every machine connected to MPC. Green, yellow, and red coding provides an up-front indication of the tool status in the tool magazine. Listing by individual machines tells which tool is at which tool magazine location, what its status is, and how much remaining tool life is left. In a future stage of development, the magazine’s current stock level will be compared with the NC program for the following order. Schwegler: “A list of stock discrepancies shows which tools need to be added and which are no longer needed and can therefore be unloaded.”

MPC is an open solution allowing users to manage their entire machine fleet, regardless of whether the machines are long-serving or newly acquired.

Images

Image 1:



Caption: The home screen gives users an overview of every machine connected to MPC and indicates the current status of each tool in the machine magazine. Image: TDM Systems

Image 2:



Caption: Volker Schwegler, Senior Consultant and Product Manager at TDM Systems GmbH. Image: TDM Systems

Print-quality images are available at:

<http://archiv.storyletter.de/download/TDM_PI_MPC_Images.zip>

About TDM Systems

Tübingen-based TDM Systems GmbH has been the leading provider for Tool Data Management for the metal cutting industry for over 25 years. With the tool lifecycle management strategy, TDM Systems is focusing specifically on process optimization through optimal tool planning and provisioning. Creating and editing tool data and graphics, integrating tool expertise and 3D graphics into the CAM engineering and organizing the complete tool cycle at the shop floor level are the three core competencies of TDM Systems and the pillars of the TLM strategy. As a center of expertise within the Sandvik Group, TDM Systems draws on the experience of various tool manufacturers when developing its software products.

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