Tebis 4.1 offers automation, user-friendliness and practical implementation

*Tebis presented the most important new developments in CAD and CAM at the EMO in Milan*

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**Martinsried, Germany, October 13, 2021 – Tebis 4.1 is a complete CAD/CAM system that’s designed for the automated manufacturing of individual machine, mold and die parts. It enables CAD/CAM users to perform tasks in design, manufacturing preparation and NC programming in a single system with a high degree of automation. Tebis presented the most important new developments in CAD and CAM at the EMO in Milan (October 4 - 9). The company is consistently moving forward with greater automation, user-friendliness and practical implementation. Tebis has clearly demonstrated the many advantages of rule-based procedures by drawing on its proven internal expertise with both CAD and CAM applications. In particular, manufacturing companies that frequently import complete CAD data sets into their CAM system will benefit tremendously from the methods integrated in Tebis and from our current improvements.**

**Tebis also demonstrated its new milling functions that were developed to target specific machining tasks.**

**Major innovations**

**Faster preparation for manufacturing: Highly automated, flexible preparation of CAM programming with parametric CAD templates**

Every imported data set has to go through a design process to be prepared for CAM programming. This usually takes many individual work steps: Bores for clamping systems must be placed, tilt axis systems defined, fill surfaces designed, blanks created, connection points for setups generated, clamping devices positioned and retract planes defined. These many individual steps can be automated in Tebis using parametric CAD templates. These templates can be extended as needed and modified to meet customer-specific requirements. Users can remain flexible: Changes like the selection of a different clamping system can now be controlled directly and conveniently with the user parameters in the object tree.

Parametric template technology and the proven Tebis CAM template technology for automated NC programming go hand in hand: They both hold the company's own CAD and CAM manufacturing expertise CAD and CAM templates enable faster and more efficient manufacturing, and they ensure standardization and uniform quality. Companies are less dependent on the expertise of individual specialists: New employees can get up to speed more quickly and start contributing productively to the company's success in the shortest possible time.

The parametric CAD functions are contained in the Tebis CAD base module.

**Optimal cutting conditions for roughing rotationally symmetrical parts**

A real plus for combined turning/milling operations: In addition to cylindrical parts, now tapered parts like screw conveyors can also be machined with high efficiency. The tool first roughs the part to the maximum possible depth with a low stepover and large downfeed in a single pass Then it machines the residual stock from bottom to top with a smaller cutting depth – precisely to the stock allowance. This procedure reduces tool wear and ensures a high material removal rate on the machine. The user can easily program the final finishing operation with a special function: Only the strategy is replaced – the system does the rest.

**Improved support for multi-channel machine tools**

This innovation is beneficial for manufacturing companies that rely on combined turning/milling operations, especially if the components to be machined have a high milling fraction: Tebis can now be used to program toolpaths for sequential processing on machines with multiple tool and component holders. The individual steps – like milling with a milling head or turret, stabilizing with a centering tip or clamping with a sub spindle – can be combined in any way. All tool and component holders are stored in the virtual Tebis process libraries, which can be interchanged quickly and flexibly during programming. As always in Tebis, all system components are fully accounted for in collision checking and simulation. Programming is incredibly easy because it follows Tebis's stringent and proven programming logic. Tebis automatically generates NC code for any machine and supports all control-specific program structures, including Gildemeister structure programs.

**Safely manufacture external threads**

External threads can now be quickly manufactured with just one NC program – including dog, tap and chamfer. This gives parts manufacturers even more options for programming toolpaths quickly, completely and safely in a simulation-supported CAM system.

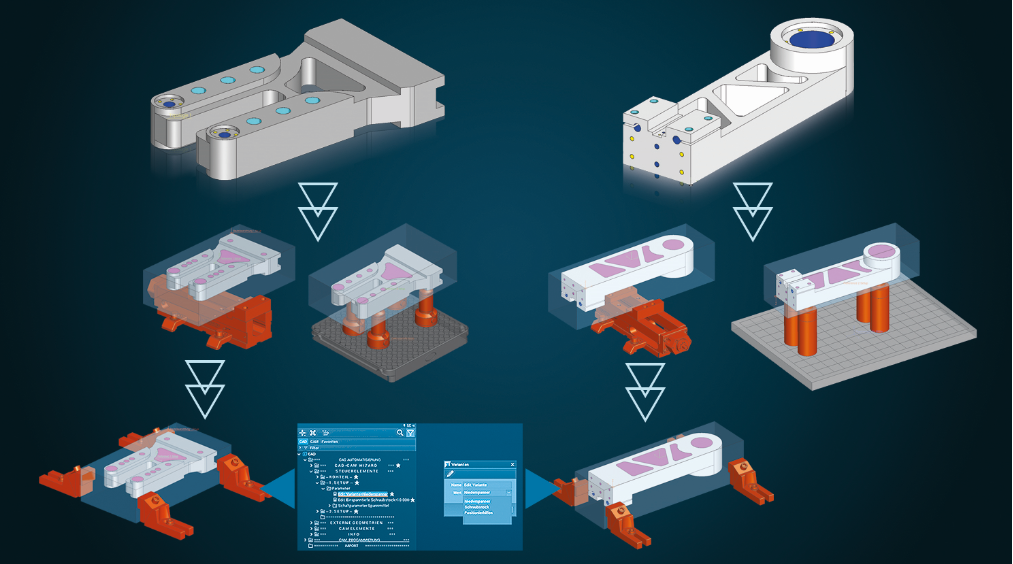
**Efficiently machine planar areas**

It’s usually more cost-effective to machine the planar areas of a part after hardening with a smaller stock allowance than the non-planar areas Special tool types like large insert mills can then be used for this step. Now Tebis is offering a new function that automatically detects purely planar areas on selected part surfaces with no need to further subdivide the part.

**Easily machine surfaces with 5-axis barrel cutters**

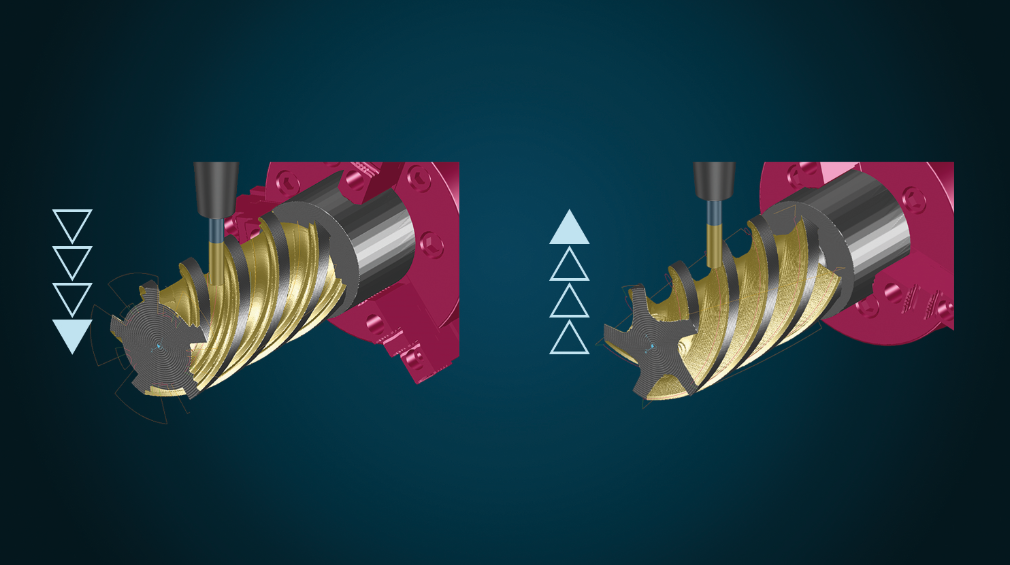
Tebis also introduced a function that simplifies programming of multi-axis toolpaths for pre-finishing and finishing with circle-segment cutters, also known as "barrel cutters." It automatically determines the best setting for manufacturing the machining area totally free of collisions. The function simultaneously calculates the optimal contact point at the surface boundary to ensure material removal over the largest possible area. Machining is indexed or 5-axis simultaneous: The user can independently specify the preferred variant or can leave the decision up to the system.

**Images**



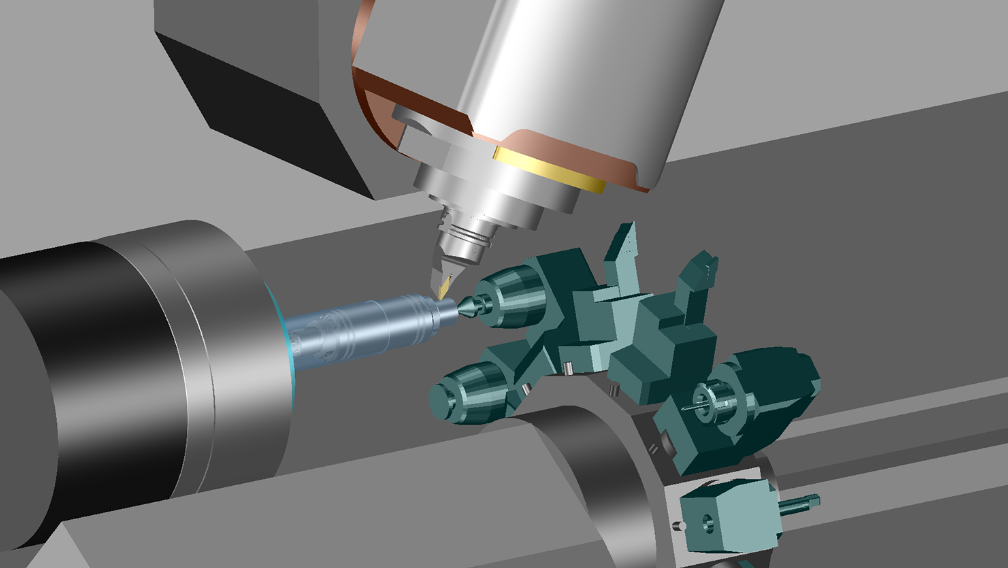
**Image:1** Parametric CAD templates can be used to fully automatically position clamping devices or generate auxiliary geometries and blanks and to then exchange individual components conveniently and flexibly.

(Image: Tebis AG)



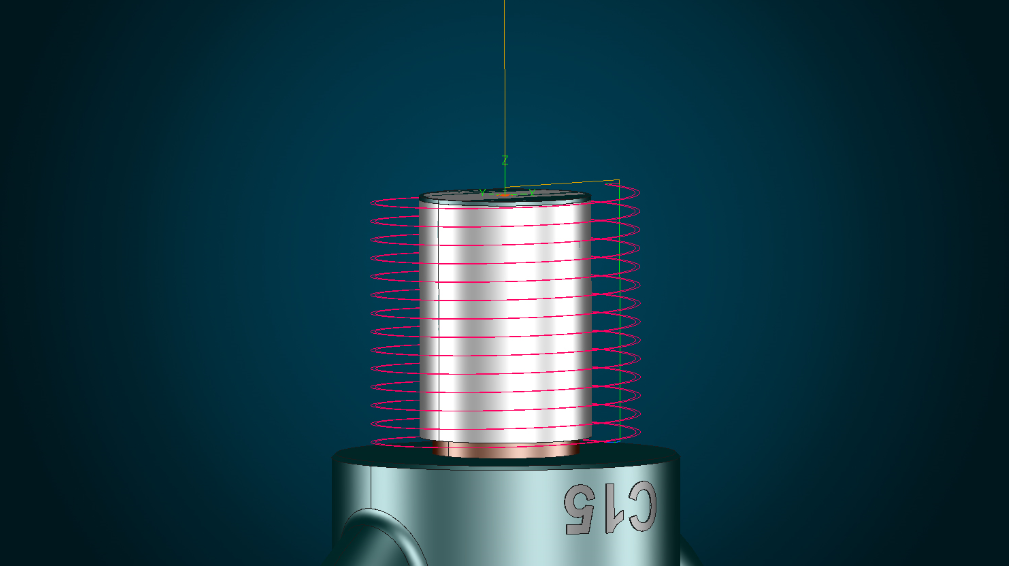
**Image 2:** Roughing rotationally symmetrical components in a single operation with high stepover and finishing with low stepover.

(Image: Tebis AG)



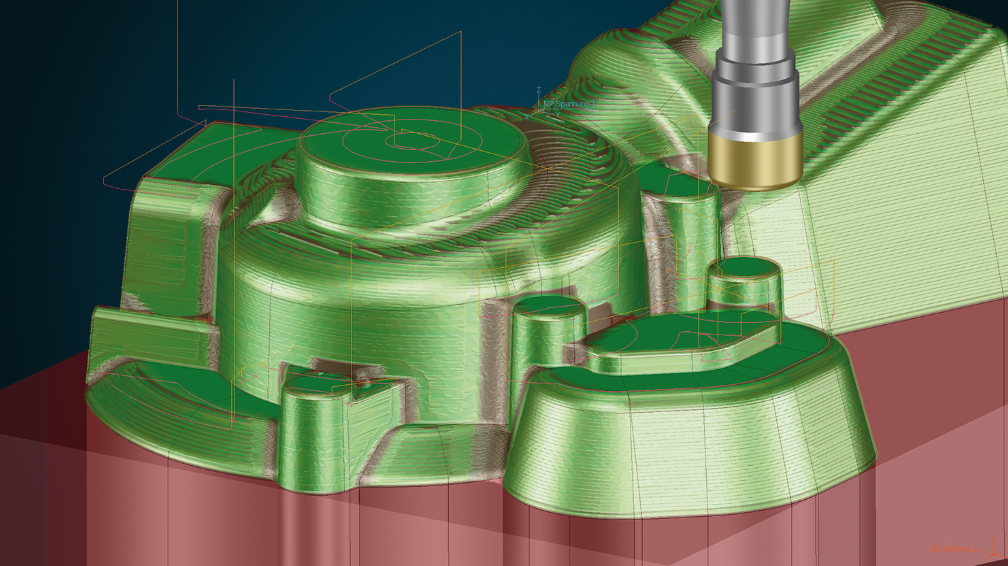
**Image 3:** Optimal utilization of multi-channel machine centers.

(Image: Tebis AG)



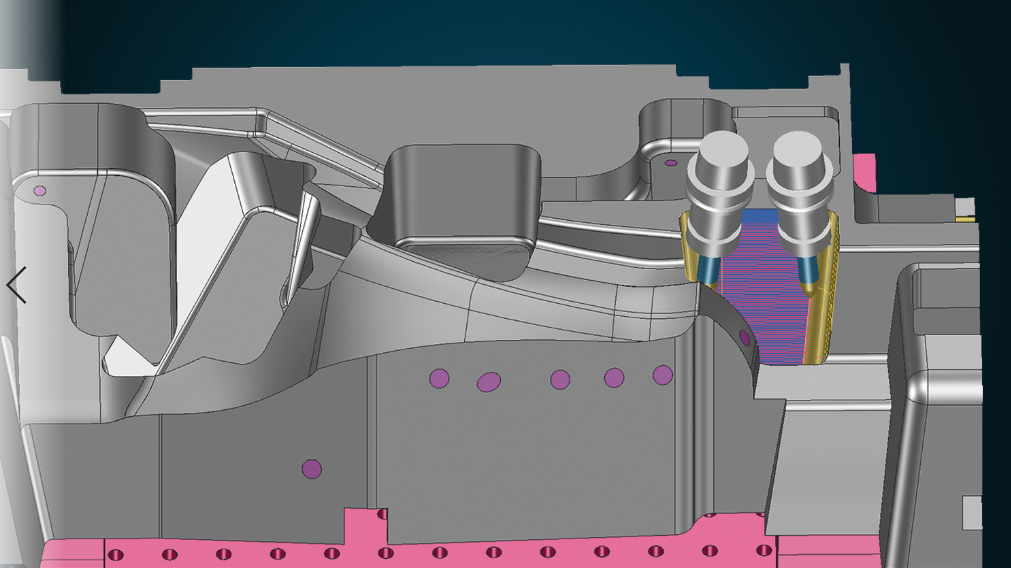
**Image 4:** Safely manufacture external threads.

(Image: Tebis AG)



**Image 5:** Efficiently machine planar areas.

(Image: Tebis AG)



**Image 6:** Automatically determine the optimal tilt direction for finishing with circle-segment cutters.

(Image: Tebis AG)

Tebis 4.1

The new Tebis 4.1 complete system is designed for enterprise customers of all sizes in the die, mold and model manufacturing and production machining industries. Tebis 4.1 is a platform for the full automation of all process flows in modern manufacturing companies.

Enterprise customers have full access to Tebis' expertise for installing their system and their ongoing work with Version 4.1. A modular training concept and training courses for special manufacturing processes allow Tebis users to fully utilize the software and improve their business processes – to maintain future viability. A dedicated support team is available for user questions – along with the expertise of the Tebis service team and numerous application games and interactive opportunities for exchanging ideas in the online community.

**About Tebis**

Tebis is a global market and technology leader in the CAD/CAM and MES sector. Customers use Tebis to efficiently and safely design, plan and manufacture models, molding dies and components at the highest quality. Teams of consulting and implementation specialists with practical experience develop strategies for efficient and safe CAD/CAM processes and implement them in the customer’s infrastructure to ensure a viable technological and competitive advantage.

Tebis software has an intuitive user interface that ensures high quality and safety in manufacturing, even for highly complex parts. Thanks to the Tebis service offerings, customers can easily introduce new technologies and fully leverage the power of the Tebis process solutions.

The company is headquartered in Martinsried near Munich, Germany, and has nine branch offices around the world as well as distributors in eight additional countries. 350 employees worldwide support Tebis' customers, most of whom are in the automotive, aerospace and machine manufacturing sectors.

Automation has been a key factor in the Tebis formula for success for over 30 years. Tebis views itself as an innovator for customers on their journey to Industry 4.0.

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