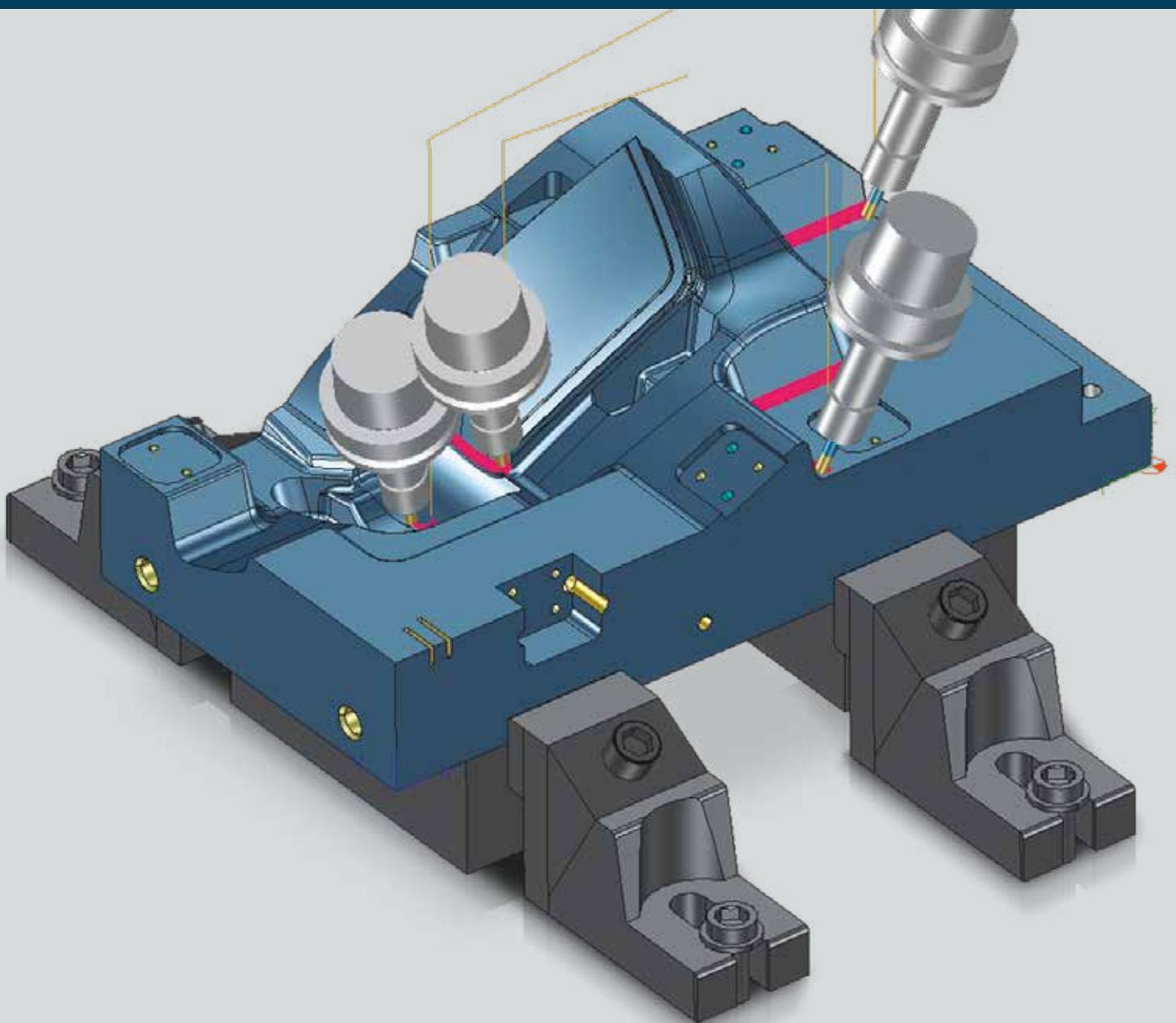


# Tebis Version 4.0 Release 8

More safety, more automation, greater user convenience



## More safety, more automation, greater user convenience

Version 4.0 Release 8 offers many new and improved functions such as indexed collision avoidance, the extended machine unit library, the simplified feature scanner, improved 5-axis simultaneous avoidance milling, convenient machine simulation and much more. There have also been updates in terms of CAD: Reverse engineering is now easier and faster with more automation.

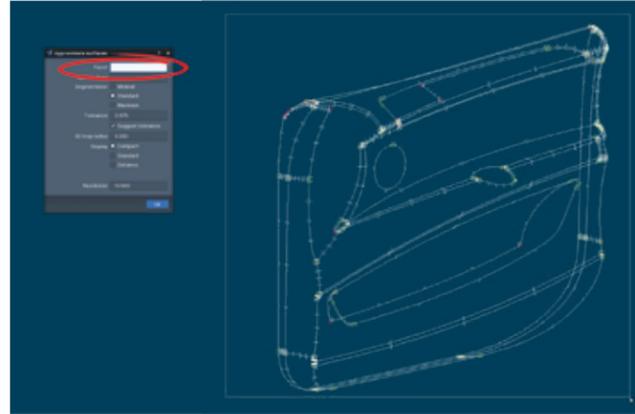


## CAD – Reverse engineering

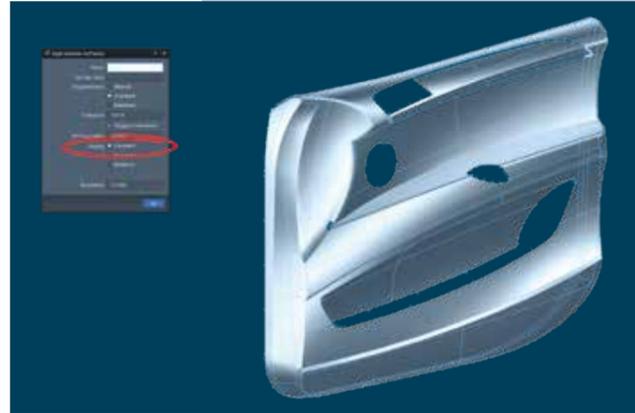
### *More automation and clear presentation of the results*

As the basis for reverse engineering you can create a wire-frame model from scanned data that is used in turn to create a surface model. This surface model can now be generated automatically and conveniently with the new Tebis Version 4.0 Release 8. You can use the new "BRep/Top/Approx" function if the surface model is to reference the original scanned data. If you only want to reference the wire-frame model, you can use the "BRep/Top/Fill" function.

Just select the wire-frame model and the surfaces are automatically calculated in the background.

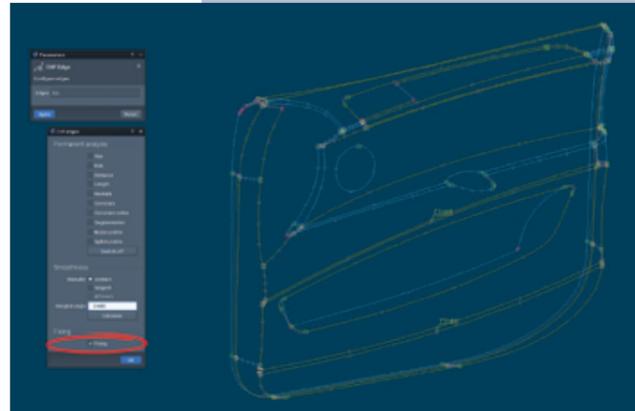


If you select the new "Display/Compact" option, in addition all surfaces are displayed in a single color as a preview. This enables evaluation of the surface quality at a glance. You can specify the desired color in advance.



### *Retain design curves*

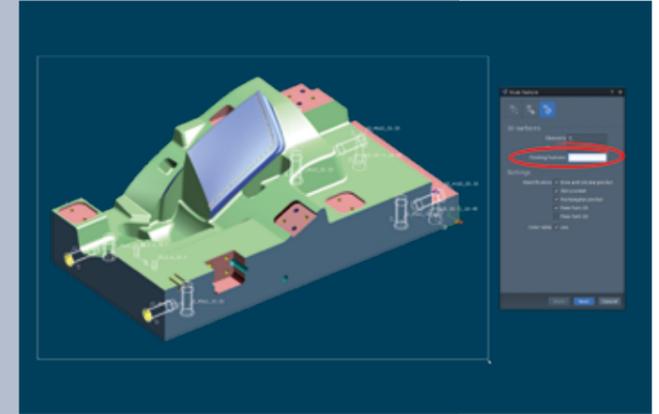
If designed design curves are not to be changed in reverse engineering, you can fix these curves with the "Configure edges" function.



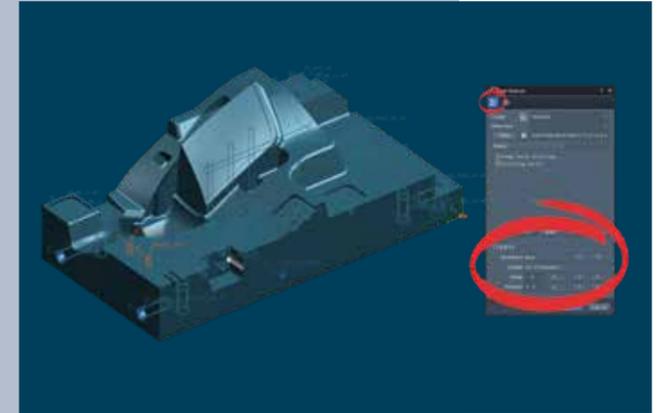
## CAM – Automation

### *Better overview and clear operating structures in the revised feature scanner*

Features that are already connected to the part – because they were imported via interfaces or because the part has already been scanned – are accounted for during scanning and do not have to be inserted again.



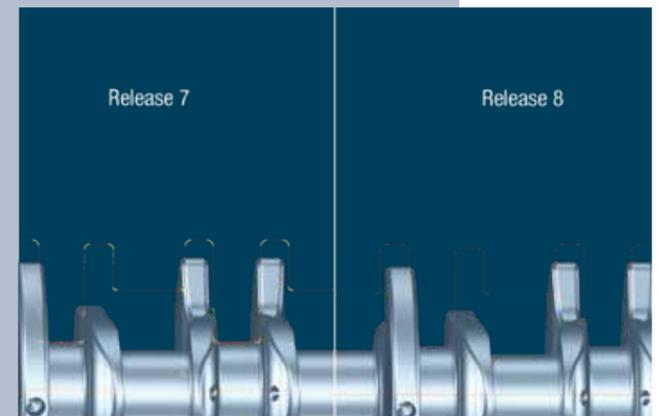
The new "Auto" function is also very convenient: The part is completely scanned with no interruption and clearly evident features are automatically inserted. If several different features are possible for a machining operation, you can select the appropriate areas after scanning and choose the desired feature.



## CAM – Data preparation

### *Save time with precise profile contours*

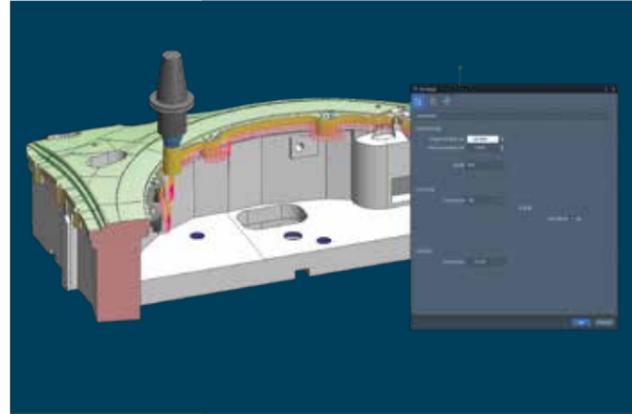
Profile contours for turning can now be derived precisely from the 3D part contour with the revised "Profile" function. Moreover, circles are mapped one-to-one. The subsequent blanks are more precise without the need for design preparation of the profile contour.



## CAM – Milling

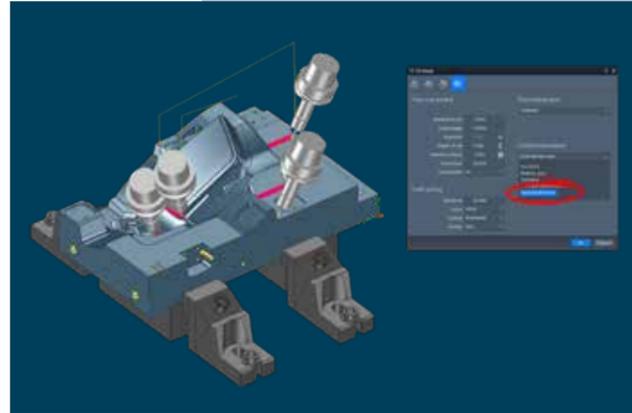
### **Downward machining along curves and contours with high rate of material removal**

A new substrategy in the "NC2ax/MCont" function for downward machining lets you machine highly efficiently along curves and contours. Machining time on the machine is significantly reduced. This method also provides very good protection of your machine tools: The machine spindle is subject to lower loads due to machining in the axial direction. Side milling and downward machining can be easily combined, so you can fully benefit from the advantages of both strategies.



### **Faster machining with indexed collision avoidance**

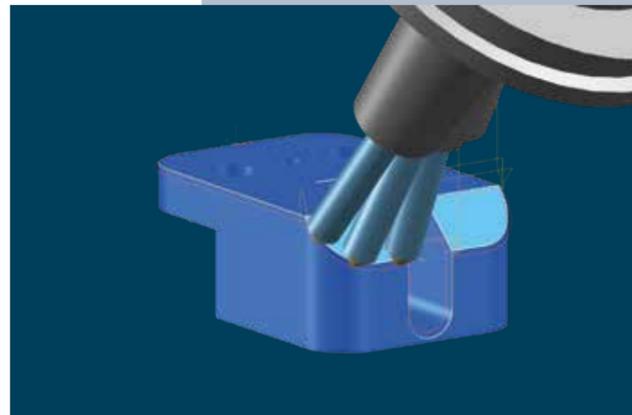
The "NC3ax/RFill" function for residual stock machining provides a new and highly convenient strategy for collision avoidance with indexed tilt determination: This strategy automatically detects and connects milling areas that can be machined collision-free with the same tilt direction. The corresponding tilt direction is also automatically calculated. Areas that cannot be machined without collisions are deactivated and can be selected in the continuation job. Of course you remain completely flexible and can also manually subdivide the milling areas as desired.



Indexed collision avoidance shortens machining times and improves surface quality. It is recommended, for example, for multi-axis machines that are unsuitable for 5-axis simultaneous machining because of their dynamics.

### **5-axis simultaneous deburring, now also with tapered cutters**

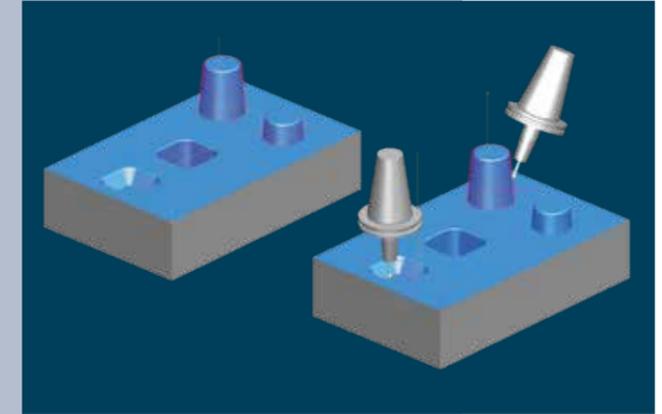
Edges that do not lie on the same plane can now also be processed by automatic multi-axis simultaneous deburring with tapered cutters with the "NC5ax/MBurring" function. You can specifically select whether you want to machine the part in climb cut, conventional cut or lace cut mode. Machining of sharp edges and corners has also been optimized.



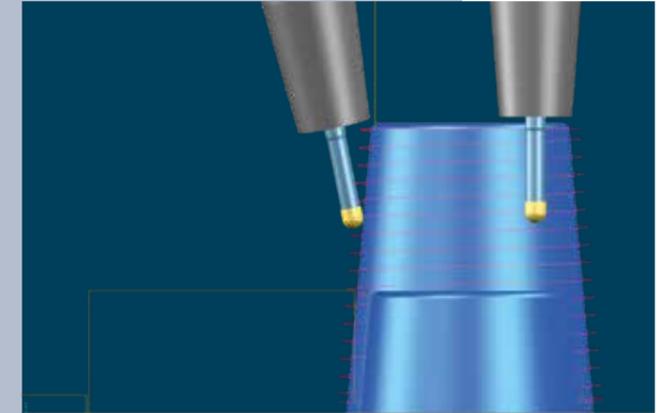
### **Shorter run times and fewer machine movements in 5-axis simultaneous avoidance milling**

The function for 5-axis simultaneous avoidance milling has been improved comprehensively. Specific milling areas are automatically deactivated if they cannot be machined collision-free in an NCJob calculated with the "3to5-axis" collision avoidance strategy.

To left in image: All areas are calculated and checked for collisions. To right in image: Areas that can be manufactured collision-free with 3-axis or 5-axis simultaneous avoidance milling are machined. Areas that cannot be manufactured collision-free can be processed in the continuation job.



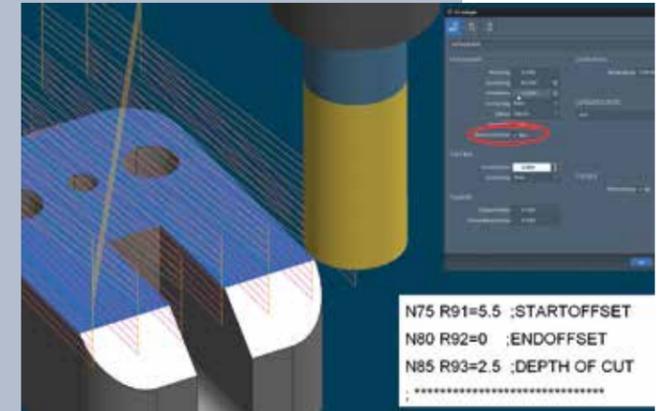
The pivoting behavior of the tool has also been optimized. The tool does not perform 5-axis simultaneous avoidance unless a collision would actually occur in 3-axis machining.



### **Greater flexibility for machine operators with variable NC output**

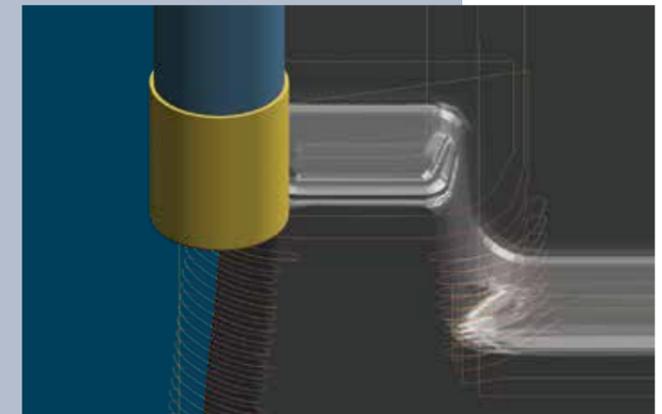
A real highlight for the machine operator is the extended NC output. If the "Planes uniform" selection box is activated in the "NC2AX/Mill/MPlan" function, the machine operator can manually edit the depth of cut, total depth or the reference point after NC output directly on the control, thereby matching them to the depth of cut and position of the tool. Of course, this function is only available to a limited extent for reasons of collision prevention.

The ability to edit the NC program is especially useful in part manufacturing when the stock allowance and material properties of the blanks are not precisely known.



### **High-performance roughing with optimized connecting paths**

In the "NC3ax/RPlan" function, you can now select the desired feed rate for helical stepover between the machining planes. This "re-roughing mode" accelerates roughing and ensures longer tool life. If desired, it can be specified which connection length is not to be exceeded for this special roughing operation.

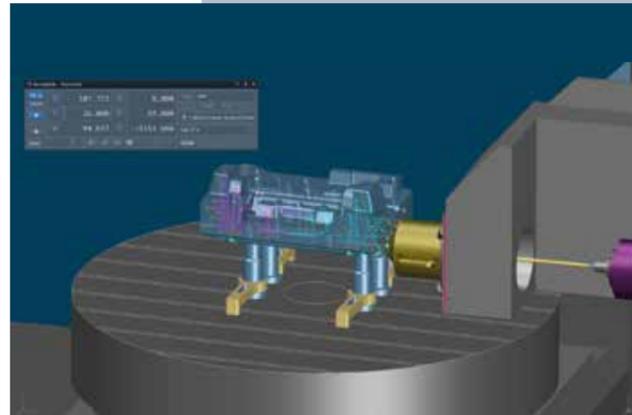
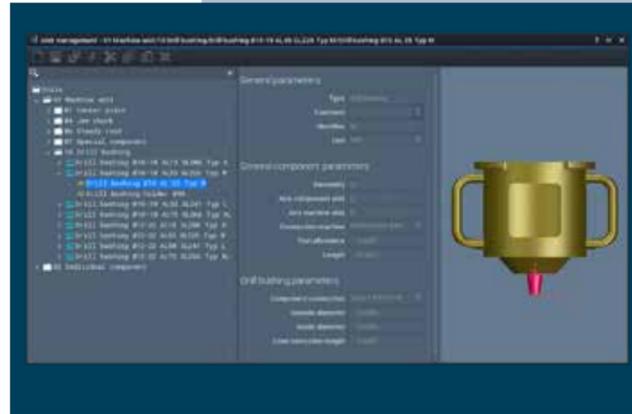


## CAM – Drilling

### *Extended unit library enables complete automation of deep-hole drilling*

The new release provides variable drill bushes and drill bush holders as machine components in the unit library. All components of state-of-the-art deep drilling machines can now be stored as digital twins in the system. This enables the highly automated generation of NC programs for 5-sided deep-hole drilling with the "MDeep2" NCJob function with no restrictions.

Integrated simulation ensures collision detection before NC output. Travel behavior and switching of drill bushes and drill bush holders are simulated precisely in the virtual CAM environment.



## CAM – Machine technology

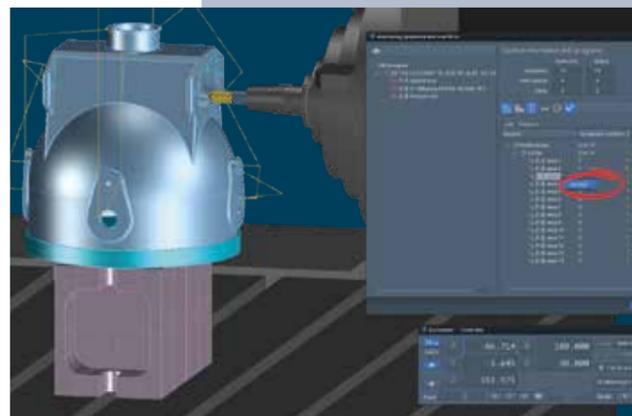
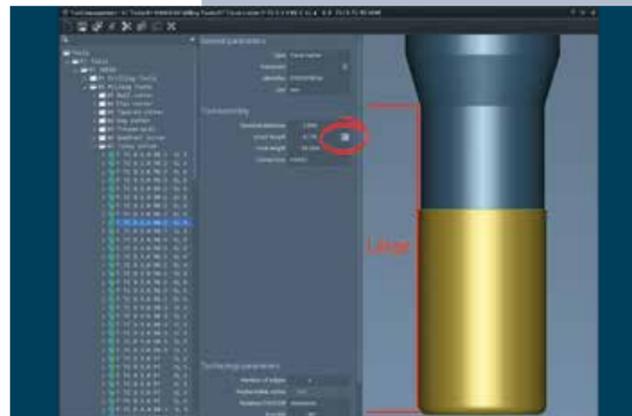
### *Quickly and easily create tool assemblies*

You can now easily determine the insert length for tool assemblies at the click of a button. A line at the diameter of the cutter is drawn parallel to the tool axis. The intersection point between this line and the shank contour yields the insert length.

### *Convenient and clearly structured machine simulation*

Do you want to simulate your entire machining operation without the simulation stopping at every possible conflict? Then simply accept these conflicts in advance in the conflict list for the completely tested NC program. Accepted conflicts are no longer accounted for during the simulation.

Of course you can also easily go back to the conflict list during the simulation and accept conflicts that are found. This means you always have an overview.



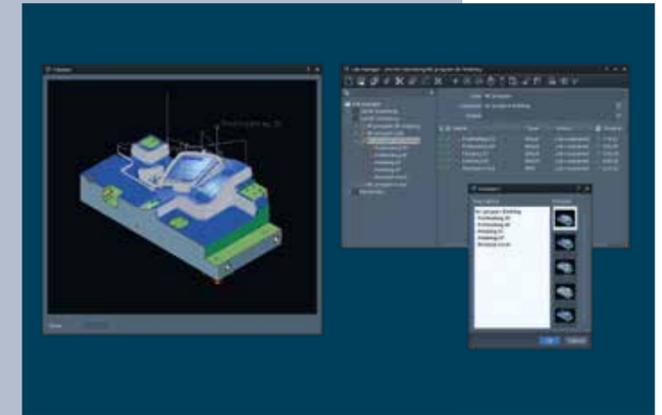
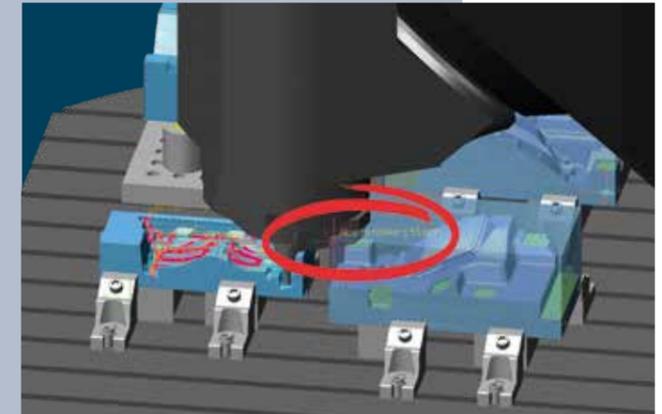
## CAM – Job planning

### *More reliability in multiple setups*

For parts in multiple setups, the blanks of adjacent parts are now also fully accounted for when collision checking with the CNC simulator.

### *User-friendly comment function*

Images from comments in the Job Manager can now be conveniently resorted by drag and drop. The sequence is transferred to the NC documentation.

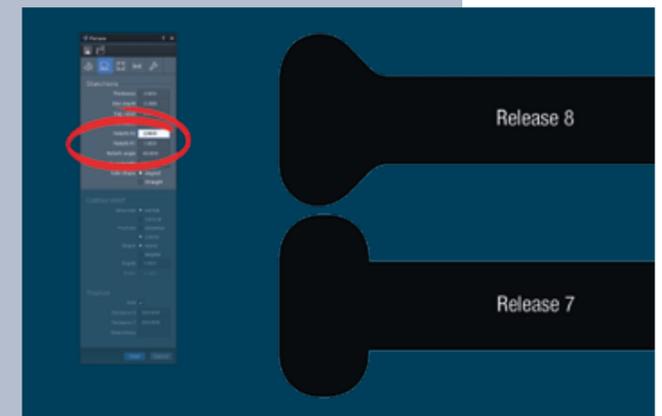


## CAM – Laser cutting and trimming

### *Run-time optimized NC programs for reliefs*

You can now specify radii and angles for reliefs directly in the stanchion design. This ensures that sharp corners on relieved stanchions, base plates and ribs are avoided. This has two significant advantages: On the one hand, the entire device can be manufactured more quickly due to the more homogeneous travel. And on the other hand, the machine operator can remove cut pieces with no risk of injury.

The parameters can be individually optimized depending on the requirements. For example, the best results can be achieved using small radii and flat angles for laser cutting. In contrast, the cutter requires sufficient space for trimming plastics: The better choice may be large radii and a steeper angle.





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