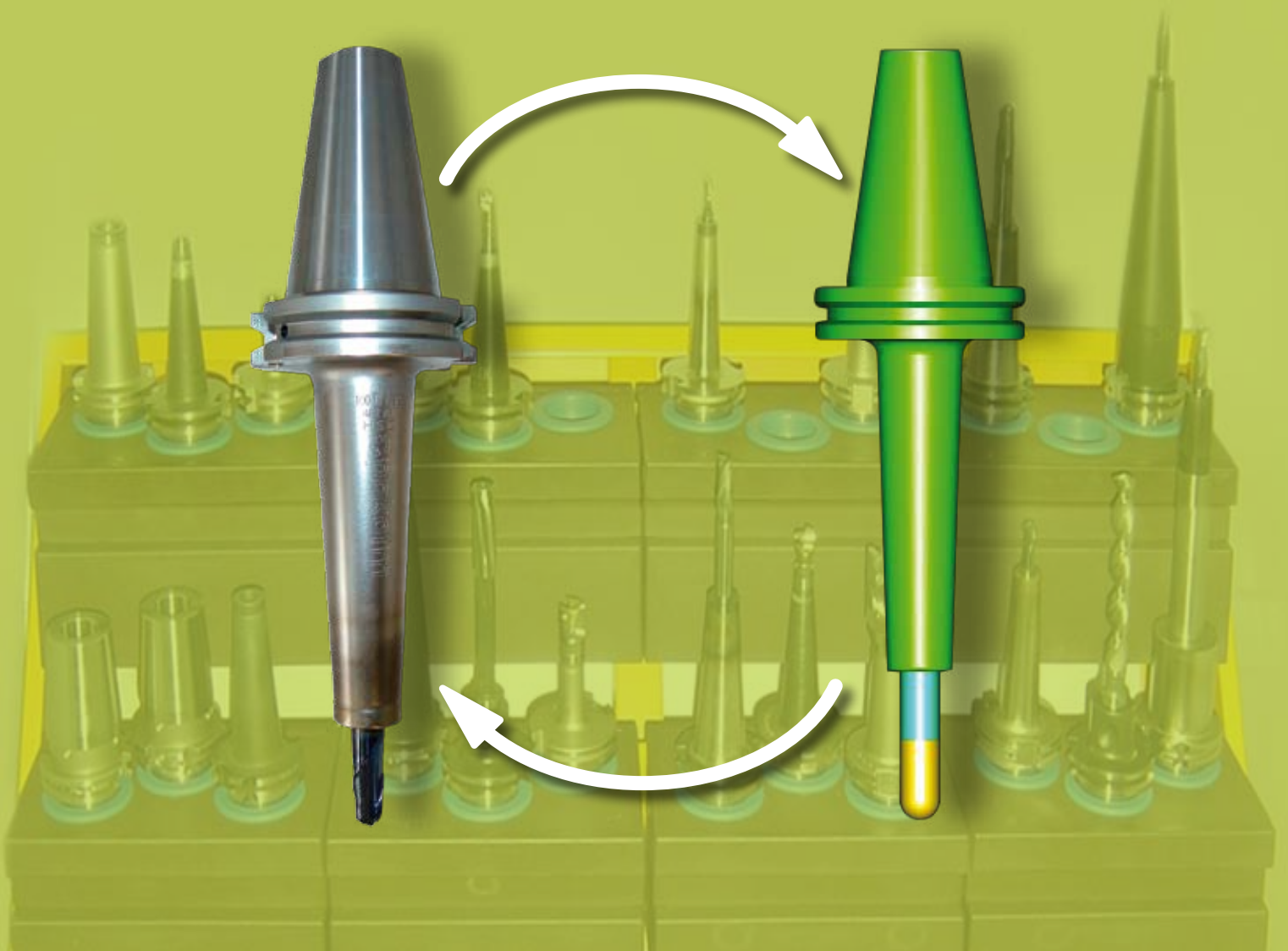


ToolControl

More chips, less efforts

Gapless process safety by synchronizing virtual and real tools at the tool presetting area



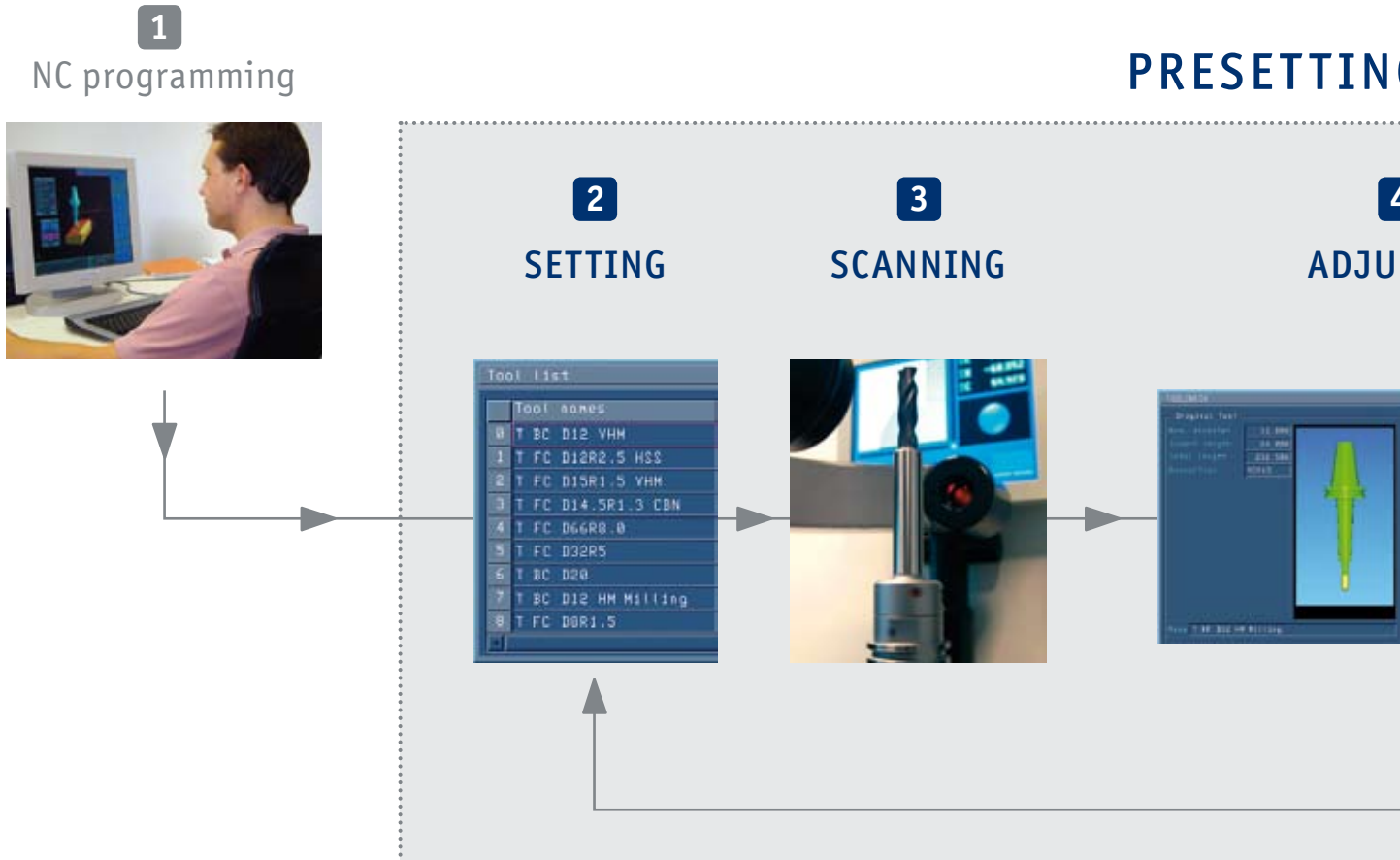
A shared process solution of

tebicon
Tebis Consulting GmbH

ZOLLER
faszination messen®

tebis

Manage the large variety of combinations of your tools easily and in practice, while additionally eliminating collisions.



In order to achieve a high degree of process safety and minimum lead times in manufacturing, the NC programs in Tebis are calculated with exact consideration of the tool geometry. For this, not only cutter dimensions, but all holder components are taken into account. That lets you reliably avoid holder collisions and define optimum tool lengths and setups.

When presetting tools, the exact tool assembly called for is frequently not available. In these cases, an alternative tool will be selected, with holder components not exactly corresponding with the defined tool geometry. Sometimes this results in loss of process reliability, reduction in milling speed and the risk of a possible collision.

Tebicon has recognized this problem and developed the ToolControl process solution. By coupling the measuring station by E. Zoller GmbH & Co.KG with the Tebis CAD/CAM technologies, the reality is aligned quickly and easily with the virtual requirements.

You gain more safety, enormous simplification and leaner processes in the tool flow. Moreover, you gain a high degree of flexibility in your manufacturing processes.

1. Independent NC programming

The NC programming uses solely standard tools or tool templates when generating the machining programs, independently of the real situation on the workshop.

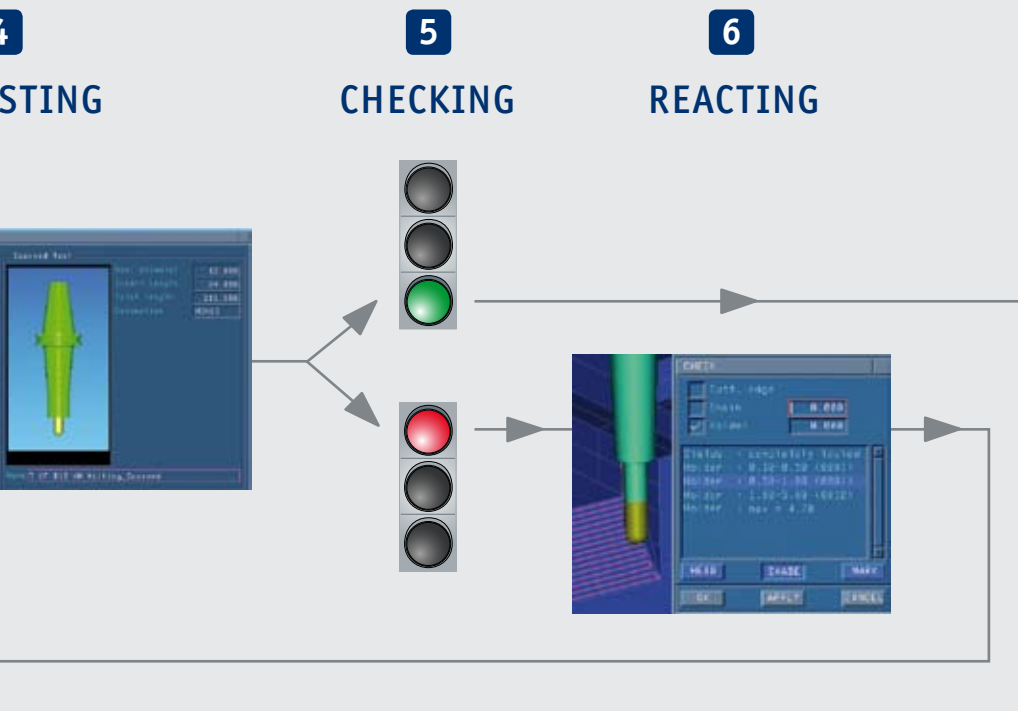
2. Recommendation instead of rigid default alignments of the tool to be used

The tool presetting receives the data for the tools to be set up for machining in electronic format. Because the NC programming demands only the cutter geometry, there is much practical flexibility in selection of the tool assembly.

3. Fast and accurate scanning of alternative tools

If the preselected tool is not available, an alternative tool will be prepared. To assure collision-free utilization of this tool, its exact geometry must be captured. This is done in the shortest time possible, using the setting and measuring device provided by Zoller Co.

4. ADJUSTING THE TOOL



7. Machining center



4. Adjustment of the predefined tool with the alternative tool actually available

Within the Tebis CAD/CAM software, the contour of the virtual tool is replaced completely with the geometry data of the scanned tool (alternative tool).

5. Complete elimination of uncertainty through exact verification of the new tool geometries

All NC programs will be checked for collision with the scanned tool geometry.

6. Reacting, supported by determined facts

In the case of a collision-free program, the NC programs will be processed at the milling machine. Otherwise, collisions occurring during the application of the alternative tool will be graphically displayed with respect to their position and scope. Subsequently, a corresponding tool assembly can be arranged and secured to avoid potential collisions by using process steps 2 through 5.

7. Guaranteed collision-free manufacturing

The NC programs will now be processed collision-free at 100% feed rate and stepover speed. This saves you time and money. You not only avoid damage to the parts and expensive repairs and downtime of the machines, but you also considerably increase unmanned running time and machine run times.

The ToolControl process has another positive side effect:

The infinite possible combinations of individual tool components no longer require an exact mapping in the virtual tool database. This enormously reduces administration and maintenance efforts. The tool database is lean, clearly understandable, and perfectly meets your needs.

Synchronizing tools with ToolControl

Process components



Tebis

Workshop front-end with individual Tebis software technologies and ToolControl functionality. Direct interface to Zoller for fast data exchange of the captured tool geometries.



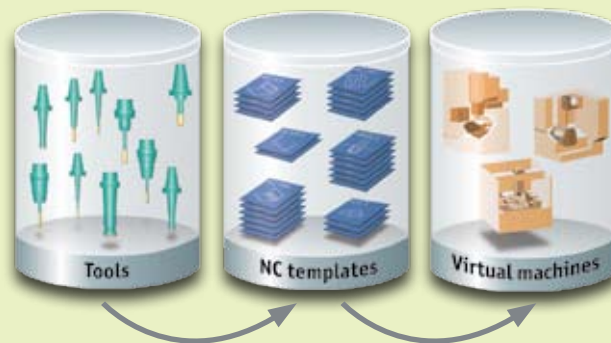
Zoller

"Venturion" setup and measuring device, with 3-axis CNC controller and "pilot 3.0" image processing technology. Direct interface to Tebis for the fast data transfer of the captured tool geometries.

Process design

Tebicon

Process organization for an automated manufacturing run. System introduction and training in the Tebis software technologies.



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