



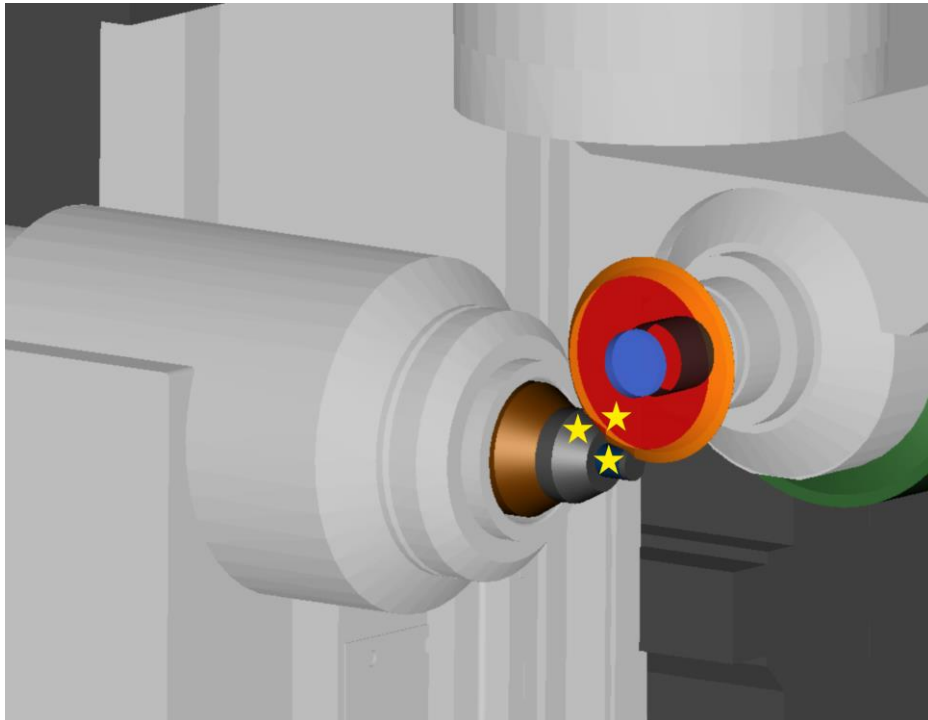
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Mathematisch-Technische-Software

*tool-kit* PROFESSIONAL by MTS AG

# Software-Modul

## Spezifikation „Optionen“

Stand: 10.08.20



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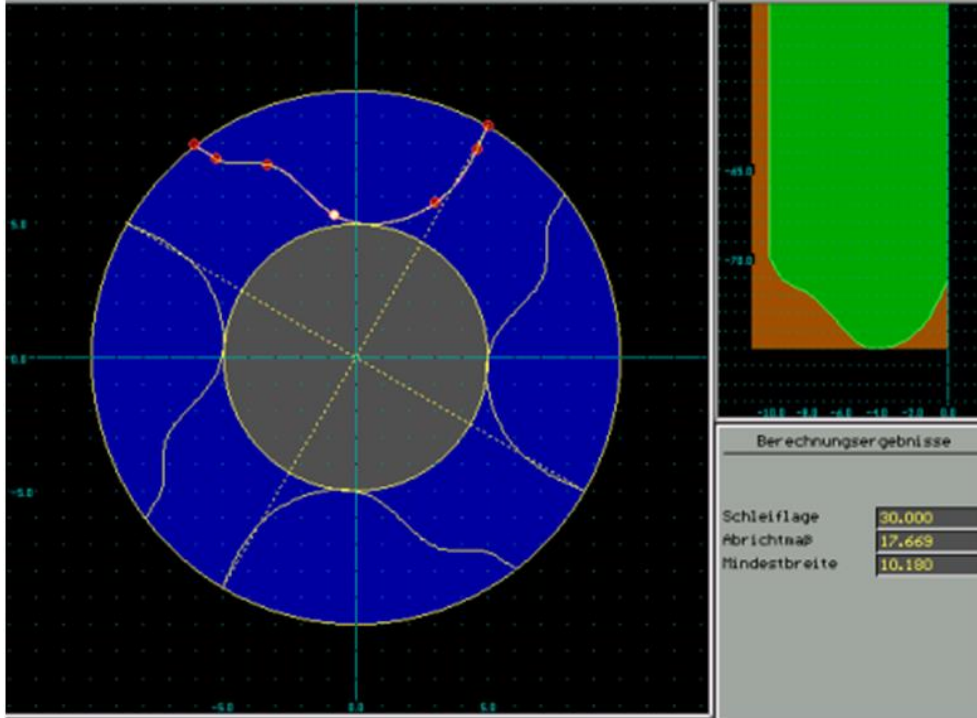


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## Options

### 17.1 Construction of Flute Profile / Wheel Profile

### Options for FMENU / BMENU



### 17.1 Basic Modul Construction of Flute Profile / Wheel Profile

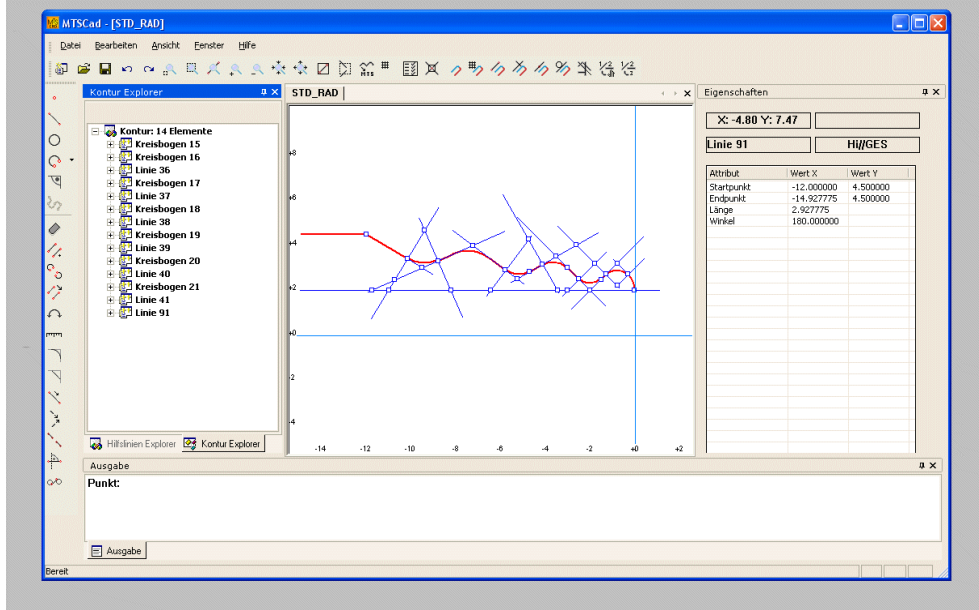
- **Construction of Flute Profile:**
- Construction by integr. CAD
- Calculation of wheel-profile
- Calculation of grinding track
- Intersection simulation
- Output of wheel discription



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## 18.1 CAD Modul

## Option CAD



## 18.1 CAD Modul

- CAD-Program spezicized to the usage of tool-construction including interface to the grinding-modules.



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19.1 Dressing Cycle / Wheel Profile

Option



19.1 Dressing Cycle / Wheel Profile

- **Wheel dressing:**
- Input of dressing parameter within machine world
- Calculation of dressing cycle driven by given wheel profile (Pos. 19)

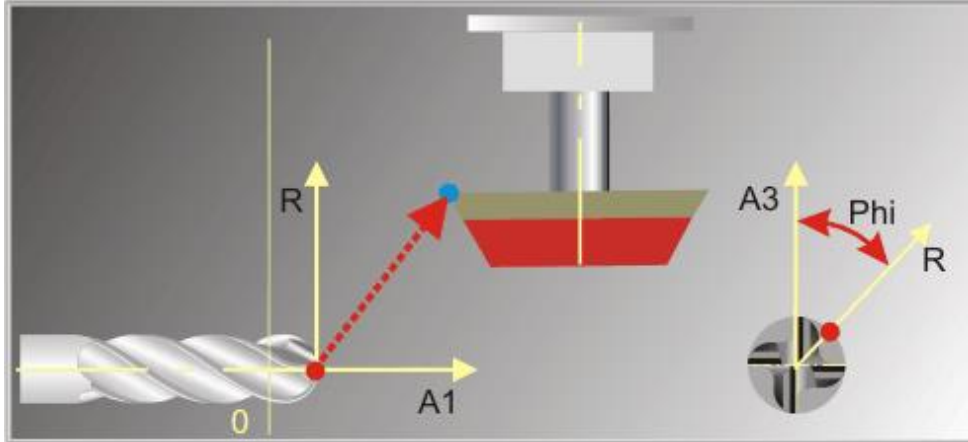


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## 20.1 Open Procedure Generator

Option für alle Module



20.1 Open Procedure Generator  
Construction and generating of selfmade  
additional operations. Integration at any  
operation-position.

- **Generating of open procedures:**
- Graphical construction of open procedures
- Up to 10 different additional operations per modul
- Import/Export by global database
- Inserting at any position within machining order
- Seperate wheel and technology to each open procedure
- Movement- and intersection-simulations

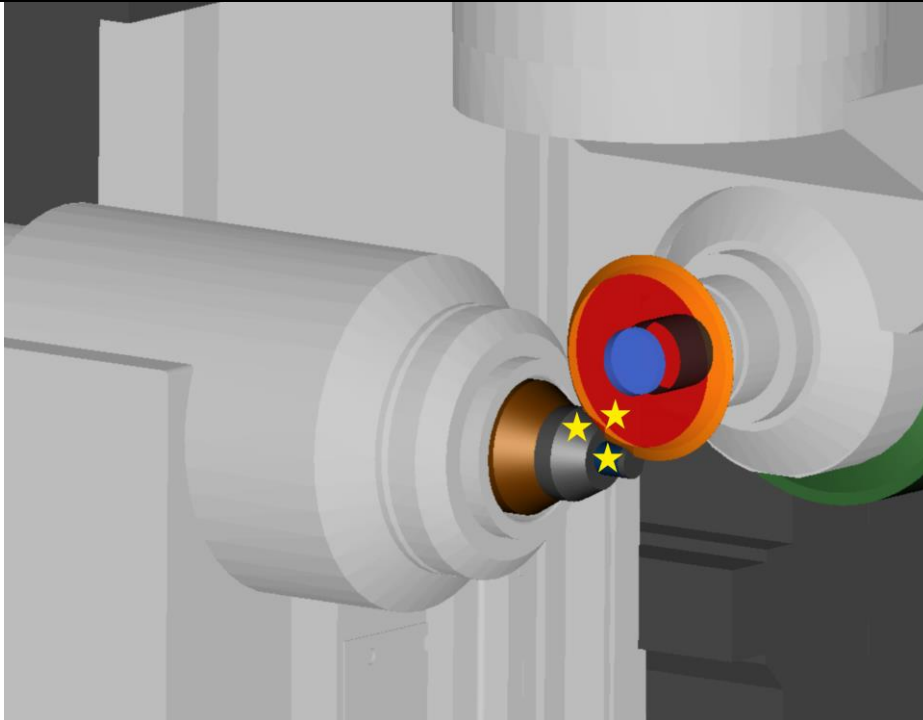


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21.1 Basic Modul CNC-Collision-Control

Option for all Moduls



21.1 Basic Modul CNC-Collision-Control

- **Functions:**  
 NC\_start without collision-control  
 NC\_start with collision-control  
 and auto stop at first collision.  
 NC\_start with collision-control and  
 collision protocoll of all situations  
 NC\_simulation without collision display  
 NC\_simulation with collision display
- **Extended CNC-Generator:**  
 Collision-control: Yes / No  
 Mode-selection:  
 „Stop at first collision“ / “All collisions“
- **Mode „Stop at first collision“:**  
 The modul stops the calculation of the  
 CNC-code by recognition of the 1st  
 collision and shows these graphically on  
 the scope
- **Mode „All collisions“:**  
 First the CNC code will be calculated  
 completely. Subsequently we will have a  
 listing of all collision situations.  
 In the following these can be individually  
 plotted and examined.

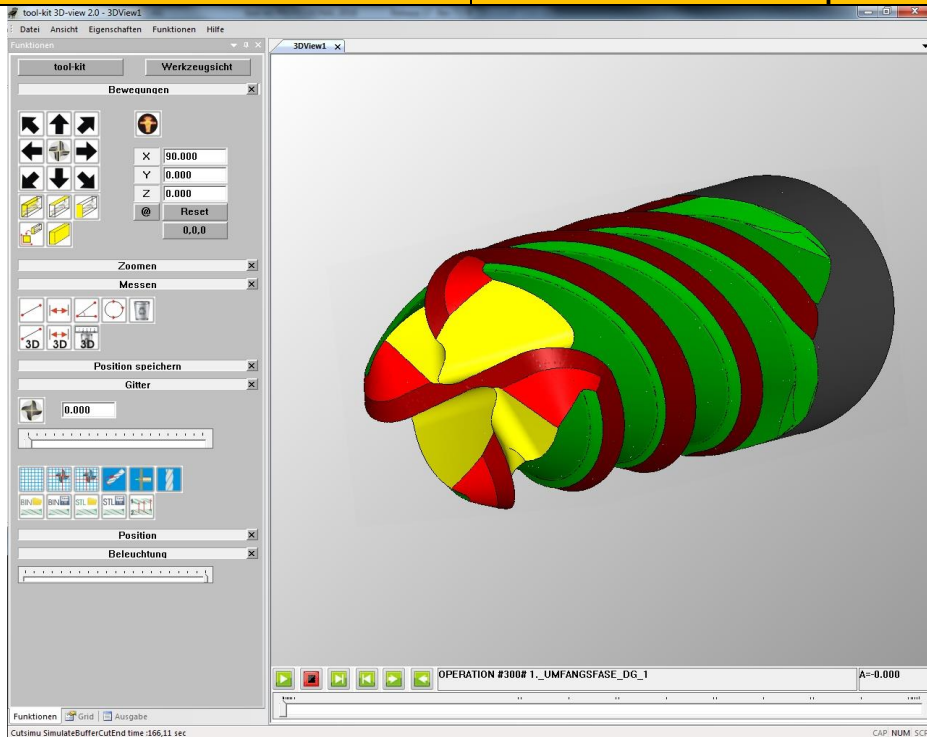
- **Administration of the collision objects (Setup):**  
 4 object lists:  
 Basical objects, tool-objects, clamping-  
 and spindle-objects.  
 The list administration takes place in  
 each case by inserting, copying,  
 renaming or deleting. The selection of  
 the objects which can be considered  
 concerning the collision takes place via  
 activating in the object lists.
- **Collision calculation:**  
 Examining the penetration of all  
 activated objects, as well as the active  
 grinding wheel outside of the workpiece.  
 Generating the collision protocol.



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## 22.1 tool-kit 3D-view 2.0

Option for all Moduls



### 22.1 Basic Modul *tool-kit 3D-view 2.0*

- **Tool-simulation in 3D**
  - Integrated call of 3D-simulation from all moduls including 3D simulation view
  - Positioning of the workpiece in three Rotary axes (3D view).
  - Save 3D views.
  - 2D grid and 2D measurement (distance, angle, radius).
  - 3D measurement (points, distance).
  - Section plane display
  - Snap2Point feature.
  - Refining function for cutouts.
  - Transparency view
  - Adding operations (not everything new count).
  - Loading STL blanks.
  - Save as STL file. Display of STEP files



## 23.1 Measurement-Cycles

Option for all Moduls

**Messzaster Kontur**

Auswahl Messzaster: [Dropdown]

Anzahl Objekte: 1  
Ausrichtung: von rechts

Auswahl Editieren: 1/1

Bezeichnung: [Dropdown]  
Typ: Trapez oben  
Bezugspunkt: Ursprung

Durchm. hinten: 5,000 mm  
Durchm. vorne: [Input] mm  
Länge: 50,000 mm

Startposition: X: 0,000 Y: 0,000 Z: 0,000 mm

Endposition: X: 0,000 Y: 0,000 Z: 50,000 mm

Lage:  
Horizontallage: 0,000  
Vertikallage: 0,000  
Rotation: 0,000

Navigation buttons: F1 Hilfe, F2 Modus, F3 Einlagern, F4 Kopieren, F5 Umlisten, F6 Löschen, F7 Position Aus, F8 Farben, F9 Ansicht, F10 Imp. Export, F11 Init, F12 Speichern

### 23.1 Basic Modul Measurement-Cycles

- **Measurement-Cycles for 3D-probing-system**
  - Length
  - Tooth-positioning
  - Helix lead (zylindrical, conical)
  - Diameter (zylindrical, conical)
  - Teeth-indexing





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## 24.1 MTS-interface to an external Measurement-Machine



### 24.1 MTS-interface to an external Measurement-Machine

- Interface within tool-kit PROFESSIONAL to a measurement-maschine (Exp. Zoller genius 3).
- Exchange of geometry data between MTS software and a measuring machine.
- Measurement of workpiece data and wheel geometry
- Reading back the measured datas
- Decision for further processing.

- Measurement-data will be read and analysed by the error-handling-procedure.
- The generated correction-data will be used in order to come to correct must values at next grinding step.
- Correction Options:
- **Correction on the wheel data:**  
Reasonable corrections f.e. at diameter, rake-angle and wheel-distance.
- **Using the operation-specifical correction table:**  
Corrections at machine-data or wheel-data.
- **Correction of tool parameter:**  
Correction in inverse direction to the actual value and setpoint.