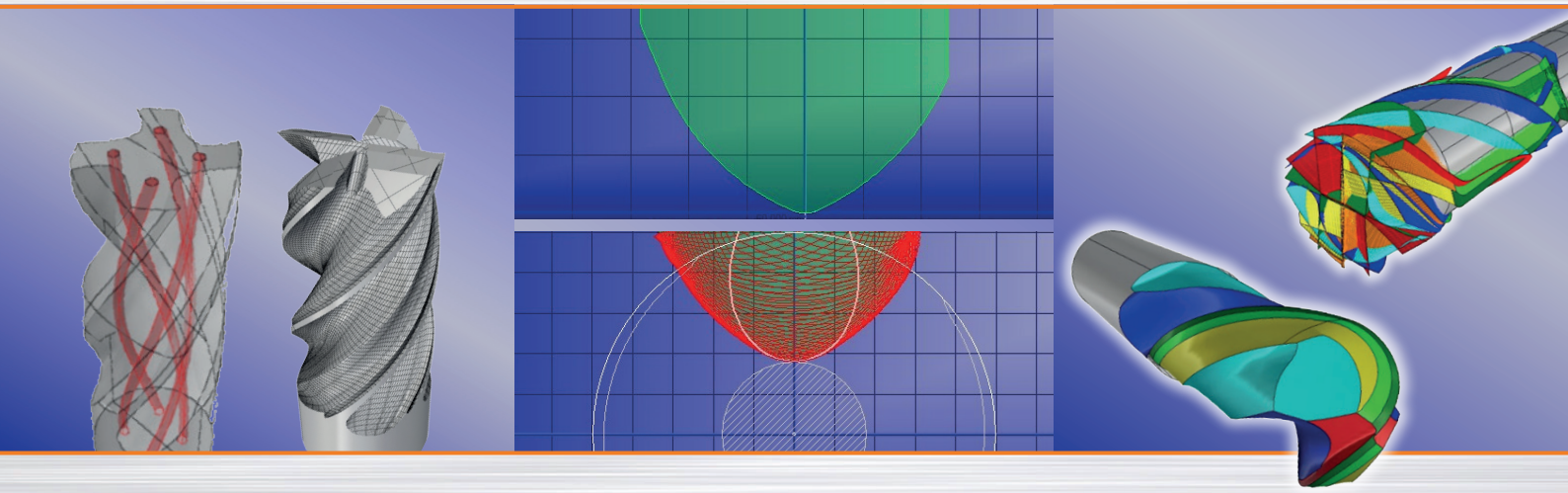
ISBE

Solutions for Cutting Tools

TD WinNut

High End 3D Tool Design



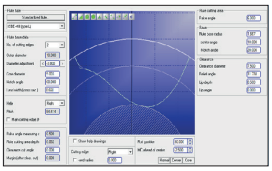
TD WinNut - 3D High End Tool Design

Exact tool- and flute- modeling in just a few steps

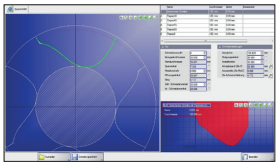
TD WinNut enables you to calculate flute- and tool- geometries including the associated grinding wheels and their adjustment precisely in just a few steps. With **TD** Point, you can model exact tip geometries quickly and easily, and visualize them using 2D views. In the background, the grinding wheel tool paths for the complete tool geometry including flute, peripheral and tip machining are calculated and displayed in a grindable 3D model.

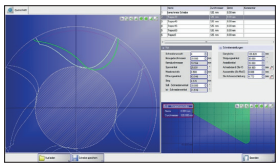
Advantages

- Saves time-consuming and expensive designs with conventional CAD systems
- Connection to all common grinding machines possible
- Calculation and output of the tool paths for the complete tool
- Data consistency, also to external CAD and FEA systems
- 2D and 3D geometry for visual inspection of the tools
- Provision of standardized dressing information for grinding wheels
- Easy and fast modeling of flute, point and tool geometry
- Use as a global or central tool profile and grinding wheel database



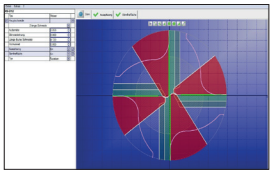
Tool- and Flute creation
with **TD** WinNut



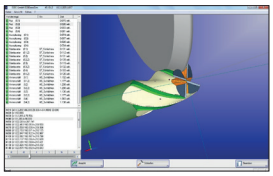


Optional: automated standard
grinding wheel positioning

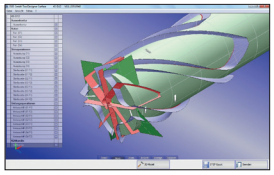
or: similarity search
with profile wheels



Definition
tool geometry



3D Grinding simulation
incl. tool paths with **TD** Sim3D



STEP (SOLID) Model
with **TD** Surface

INFO Highlights at a glance

- Design of the entire tool geometry
- for Drills, Taps, End Mills and Reamers
- Automated standard grinding wheel positioning
- Similarity search for profile grinding wheels
- 3D-Simulation of the entire grinding process
- Calculation and output of all wheel paths
- Output as a 3D model for FEA as a STEP file
- Digital data transfer to the machine
- DXF import and export function
- No later remodeling
- Unequally pitched or spiralized tools
- Integrated into the **ISBE** digital process chain

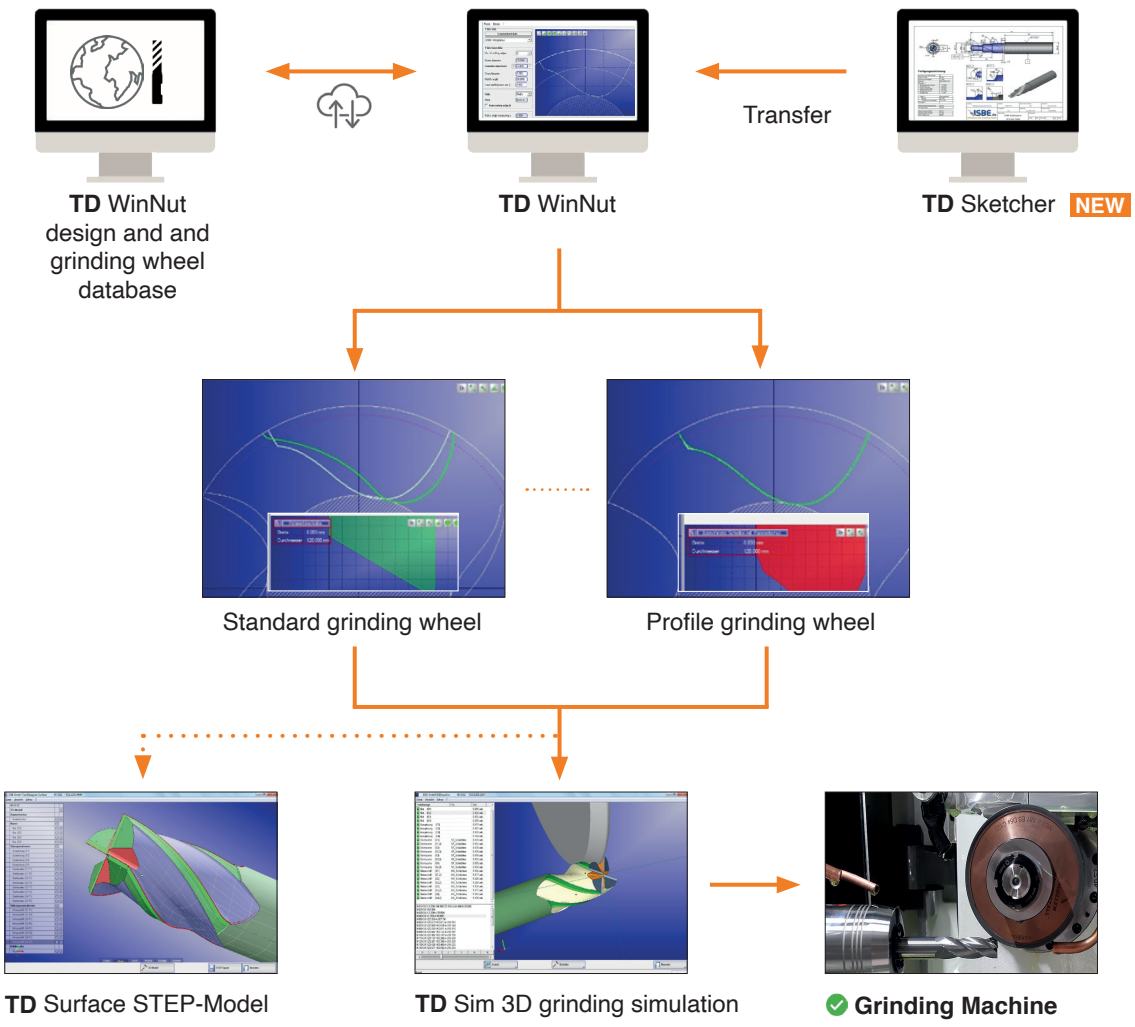
TD WinNut - 3D High End Tool Design

TD WinNut — 3D tool design adapted to your production

On one hand, you can plan and design the tool layout with standard grinding wheels, on the other hand, you can plan, design and then grind your cutting tools using profiled wheels.
After 3D simulation with **TD Sim 3D**, you can transfer the grinding wheel tool paths directly to the machine via post-processor. You can also output the data with **TD Surface** as a STEP file and use it in CAD or FEA. With the new release 2022, all common **TD Sketcher** files can be imported and edited without any problems.

TD WinNut - from 3D modeling to grinding machine

NEW



And this is how it works:

- Import or transfer existing **TD** Sketcher files directly into **TD** WinNut NEW
- 3D tool design with **TD** WinNut optionally: standard or profile wheel (can be switched at any time)
- Alternatively: Creation of a 3D STEP model for FEA or CAD applications with **TD** Surface
- Precise 3D grinding simulation with **TD** Sim 3D and calculation of the grinding wheel tool paths
- ✓ Transfer of tool paths via post-processor (PP) directly into the grinding machine

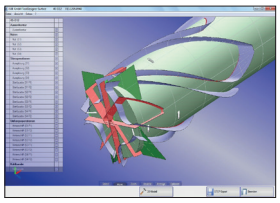
TD WinNut - Option Surface

From the modeled tool to the exact 3D surface model

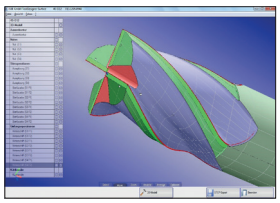
With **TD** Surface you can calculate exact 3D surface data from the tool models. Users who work more and more frequently with FEA simulations benefit from precisely calculated surface data. These are a prerequisite for simulating the use of tools in FEA simulation systems.

Advantages

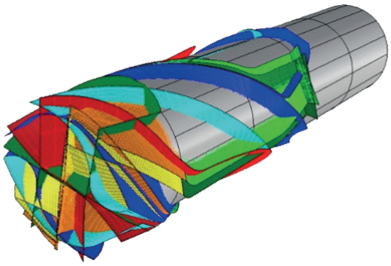
- Significantly reduced development time for new tools
- Exact analyzes for the continuous optimization of the tools
- Data exchange via STEP
- Data consistency with FEA machining simulation systems

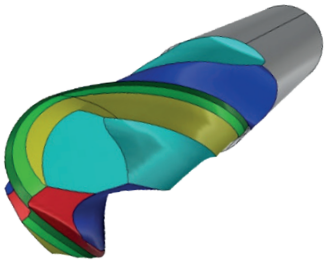


trim surface



Generate **STEP** file





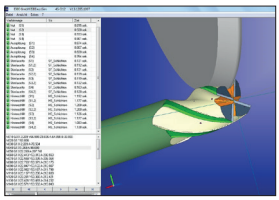
TD WinNut - Option Sim 3D

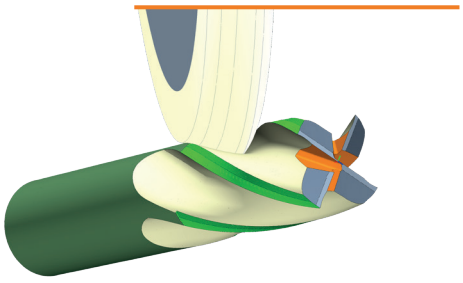
Perfect grinding simulation for precise tools

The **TD** Sim 3D option enables a comprehensive and at the same time fast simulation of a tool in a grinding environment. The tool simulated and visualized there corresponds to the tool to be ground afterwards with breathtaking precision.

Advantages

- Realistic simulation and visualization of your cutting tool
- Inspection of the tool before the grinding process
- Checking for sources of error and results
- Possibility of machine-free work preparation
- Subsequent output of the grinding paths directly into the grinding machine





TD WinNut - TD Sketcher Import

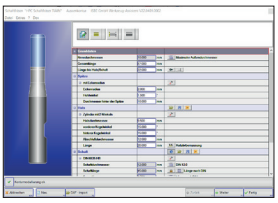
Consistent process chain from the offer to the finished tool

With the new import function in **TD** WinNut, almost all solid carbide tools created in **TD** Sketcher can be imported and further processed. This saves time and prevents data loss through repeated, manual recording of the tool data, since all the basic geometries of the tools are already loaded.

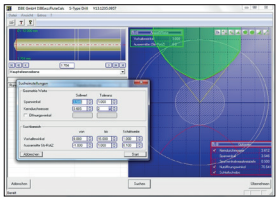
NEW

Advantages

- Easy further processing of your existing **TD Sketcher** data
- Precise transfer of data in **TD WinNut** NEW
- All data from the initial design process is adopted 1:1
- Only final flute-definition and fine tuning necessary
- Cost savings through separate **TD Sketcher** quotation process
- No data loss due to manual entry or Excel data transfer
- Closed process chain within your digital production
- Connectable with **TD ReCAD** for additional Re-Engineering



TD Sketcher drawing



TD Winnut design

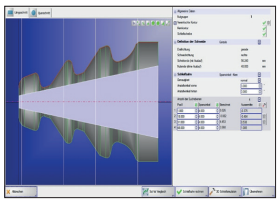
TD WinNut - Option Contour Cutter

Simple definition of complex cutting edges

With **TD** ContourCutter you can quickly and easily define contour and end mills and other profile cutting tools.
Suitable for step end mills, profile cutters, profile cutters, as well as contour tools and so called „christmas tree“ cutters.

Advantages

- Simple and quick modeling of complex cutting edges
- Automatic generation of optimal grinding wheel paths
- Free definition of core course and helix pitch (multi/differential helix)
- Additional requirements, such as the constant land width, are considered
- Calculations based on standard or profile grinding wheels



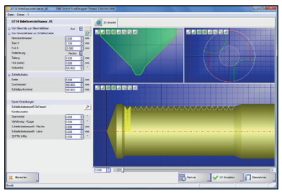
TD WinNut - Option Thread

Exact modeling of profiles for threading tools and roughing profiles

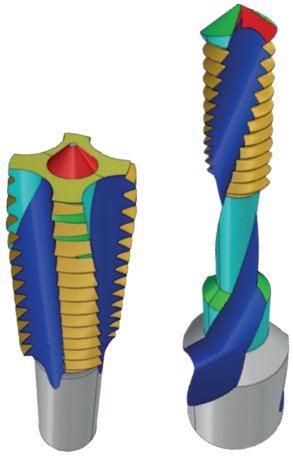
TD Thread calculates the tool geometries including grinding wheel profiles and grinding wheel tool paths for thread milling cutters, taps and also for chip-breakers and roughing profles. The calculated shapes and designs can be generated as a 3D surface model and used for production.

Advantages

- Exact calculation of the appropriate grinding wheel profile
- High thread quality; Compensation of all geometric distortions
- 2D and 3D visualization of the threads
- Special thread geometry can be used through DXF import
- Precise roughing profile for every pitch size thanks to the exact wheel profile
- Interfaces for a direct machine connection
- Export as 3D surface model in STEP format



New:
TD Roll Tap
for thread forming



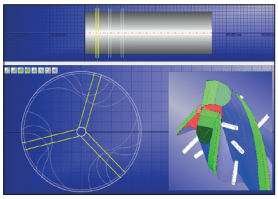
TD WinNut - Option Coolant

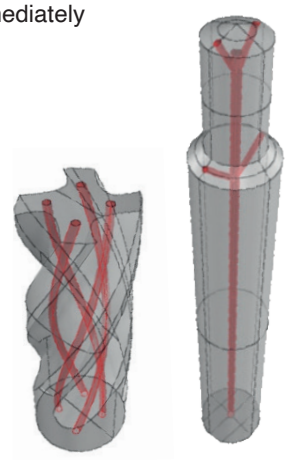
Easy definition of complex cooling channels and holes

TD Coolant enables you to define multiple junction, lateral and spiral cooling channels and to position them precisely by showing front geometry and step transitions.

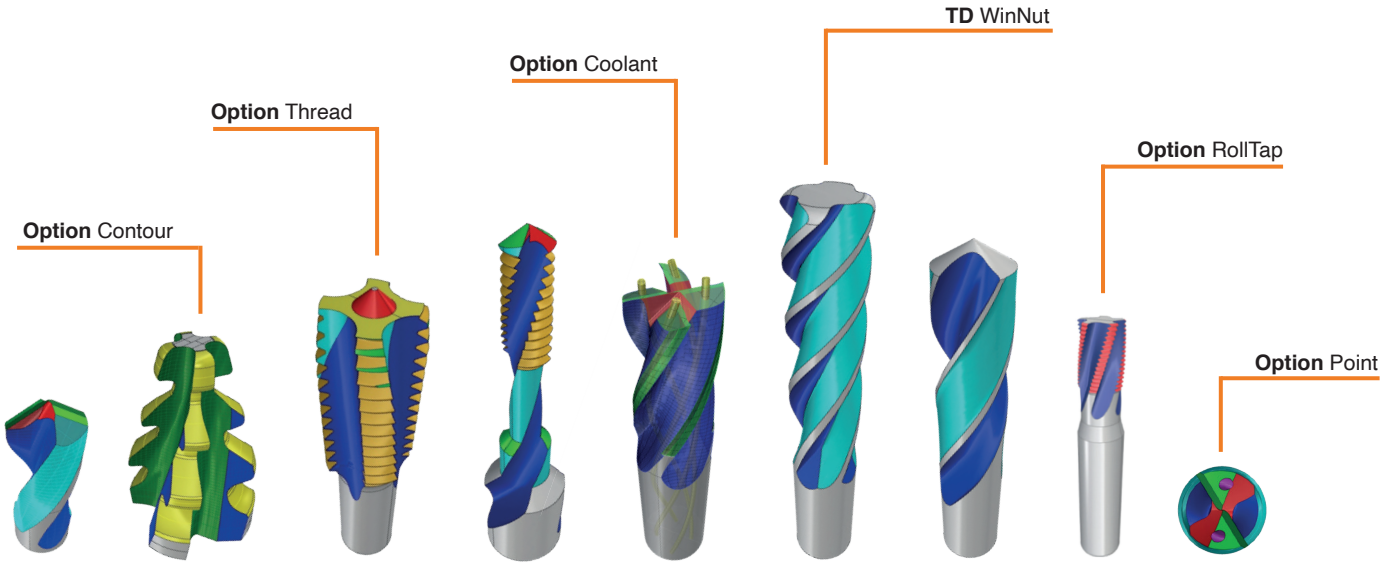
Advantages

- Detect breakthroughs and „near breakthroughs“ of cooling channels and correct them immediately
- 2D and 3D visualization of the cooling channels
- Export as 3D surface model in STEP format





TD WinNut - Tool examples



TD EdgePrep

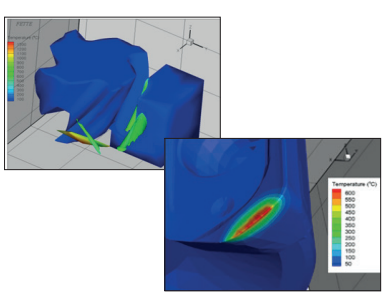
Optimized cutting processes through virtual cutting edge preparation

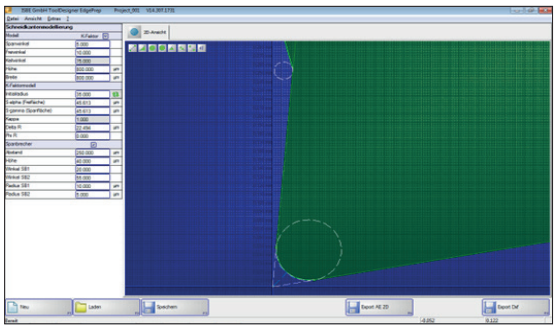
TD EdgePrep supports you with the virtual cutting edge preparation. In conjunction with FEA simulation software, you can analyze the cutting edge geometries defined with **TD** EdgePrep depending on the materials to be machined and the process parameters.

NEW

Advantages

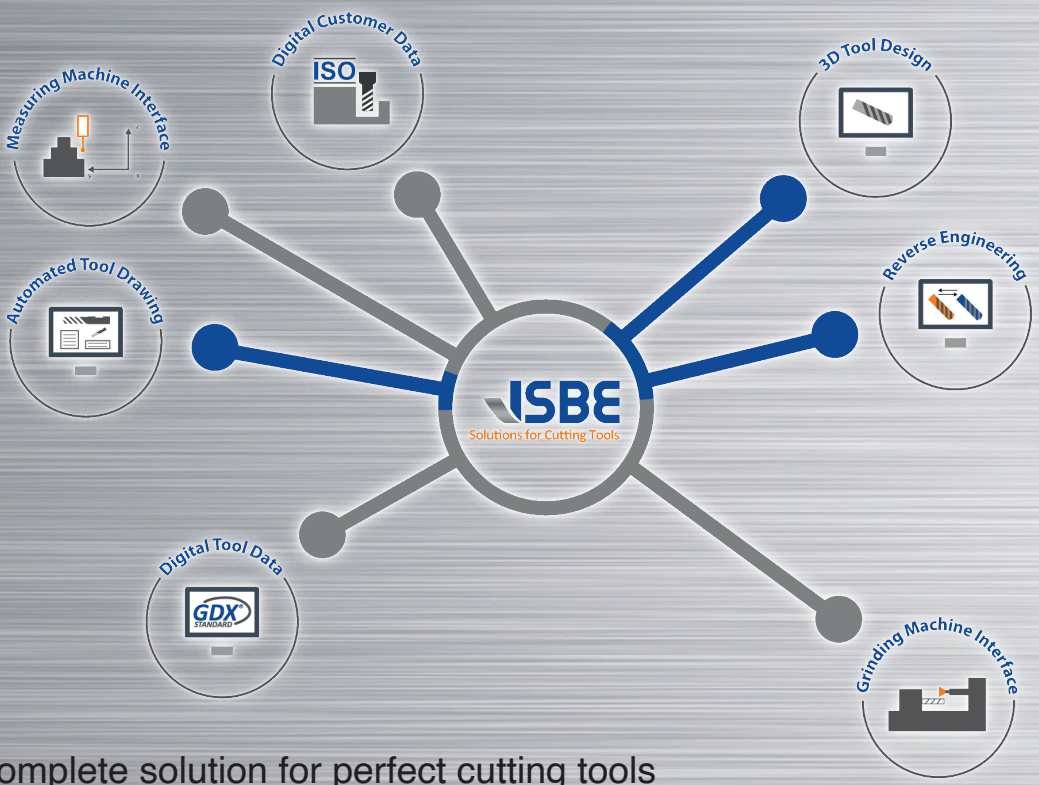
- Parametric definition of any cutting edge micro facets, chamfers or chip breaker geometries
- Optimized metal removal rates and increased tool life
- Simple and user-friendly handling on a 2D basis
- Virtual, quickly available analyzes instead of complex real tests on the machine





ISBE
Solutions for Cutting Tools

ISBE Digital tool data for your production



ISBE Complete solution for perfect cutting tools

TD Sketcher

- Automated, parameterized 2D or 3D tool design
- Connection of grinding- and measuring-machines
- Consistent digital cutting tool data

TD WinNut

- 3D cutting tool design and 3D grinding simulation
- Distortion-free flute and geometry calculation
- Grinding wheel calculation and central management

TD ReCAD

- Reverse engineering of cutting tools
- Creation of accurate and realistic 3D models
- Conversion of STL data into STEP models

CS Customized

- Customized software solutions
- Interface programming for grinding-machines
- Post processors and machine interfaces

CS Service

- Data conversion and completion
- Data exchange between NC environments
- User-oriented training and consulting

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