

HELITRONIC TOOL STUDIO 3 R4

NEW FEATURES



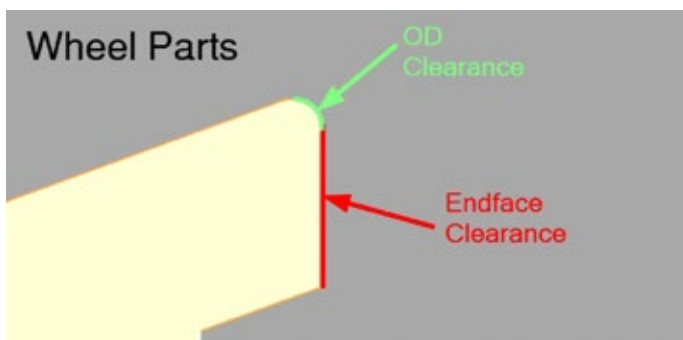
INTRODUCTION TO IMS ADVANCED

Integrated Measuring System IMS

With the integrated IMS measurement system, the outside diameter and core diameter can be measured using the probe ball without having to unclamp the tool. By setting the tolerances, HELITRONIC TOOL STUDIO can compensate for any deviation of the measured values, e.g. by thermal growth or wheel wear and adjust to the nominal measure and thus prevent scrap. The operator no longer needs to make active adjustments. This increases the efficiency, especially when it comes to large-volume production.



Operation	Set	Wheel	Wheel Pack
End Of Tool Probing			
Probing Radial Angle			
Fixtina		1 (1V1)	2 SP2_RR_LL_2-4Teeth
Probing Core IMS Advanced			
Gash		2 (12V9)	1 SP1_RR_LL_2-4Teeth
Notch		2 (12V9)	1 SP1_RR_LL_2-4Teeth
2. Od Clearance		1 (11V9)	1 SP1_RR_LL_2-4Teeth
1. Od Clearance		1 (11V9)	1 SP1_RR_LL_2-4Teeth
Probing OD IMS Advanced			
2. Ef Clearance		1 (11V9)	1 SP1_RR_LL_2-4Teeth
1. Ef Clearance		1 (11V9)	1 SP1_RR_LL_2-4Teeth



IMS ADVANCED

Technical Details

- Correction of probed difference in tool geometry is stored inside grinding wheel as offset of Wheel Diameter and/or Wheel Length in Z
- Compensation affects all grinding operations using the same grinding wheel with same wheel part
- Stand-alone Rake Angle Inspection routine (no compensation)
- Compensation of user defined tools

Benefit

- Wider range of tool types and more flexibility to compensate different tool types in Batch mode

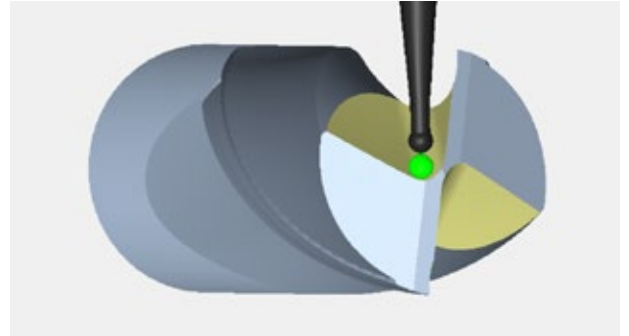
IMS ADVANCED INSPECTION POINT PROBING

Technical Details

- Inspection Point IMS Probing Routine allows probing and compensation of arbitrary surfaces on tool by single probing point
- Compensation based on probed stock
- Correction of probed stock on tool surface is stored inside grinding wheel as offset of Wheel Diameter and/or Wheel Length in Z

Benefit

- Extend IMS functionality to any kind of grinding operations
- Advanced control of grinding process



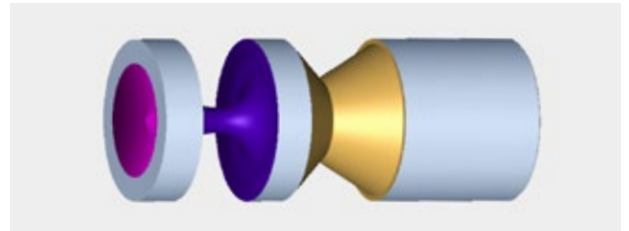
TOOL PROFILING SIMULATION

Technical Details

- Improved simulation quality for profiling of contours with continuous A-axis rotation

Advantage

- Better visible feedback of grinding process



IMPROVEMENTS IN STEP TOOL WIZARD

Technical Details

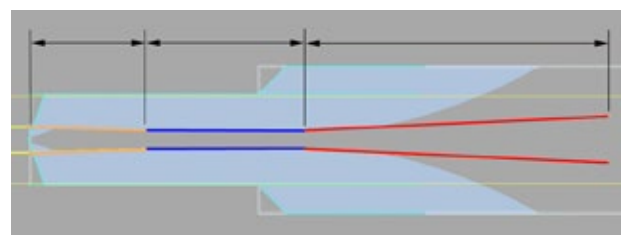
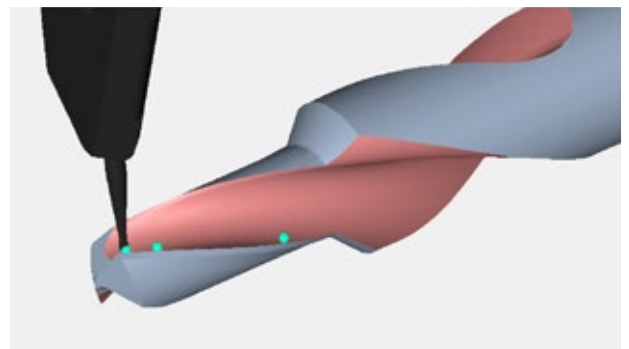
- Regrinding option for tapered and spiral Step Tool Flutes out of Step Tool Wizard
- Selectable user defined Fluting Core in Step Tool Wizard

Advantage

- Add user defined core to step tools keeping Re-apply Wizard functionality

Benefit

- Time saving in probing for regrinding of step tools
- Better visual feedback about real, probed tool



FILLETING OF INNER CORNERS FOR CONTOUR GRINDING

Technical Details

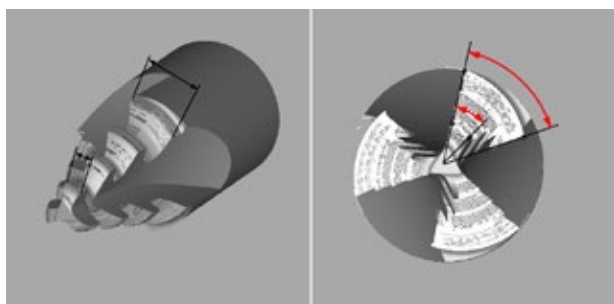
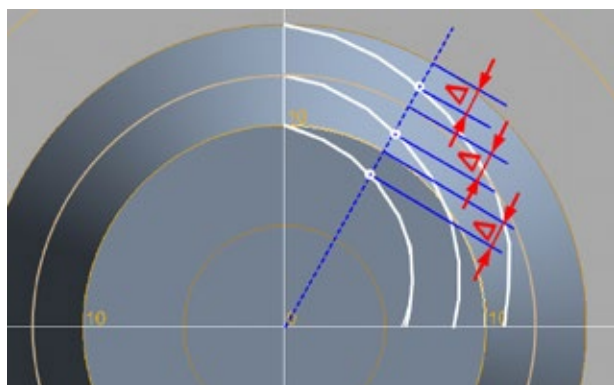
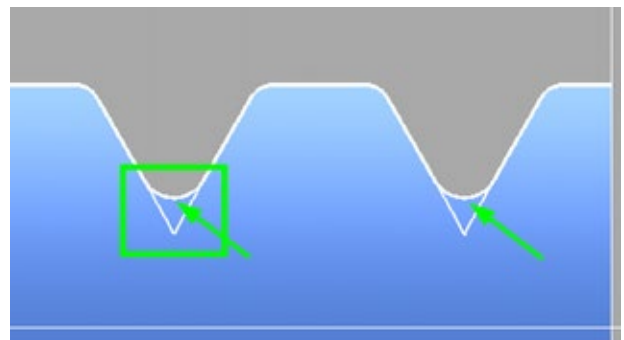
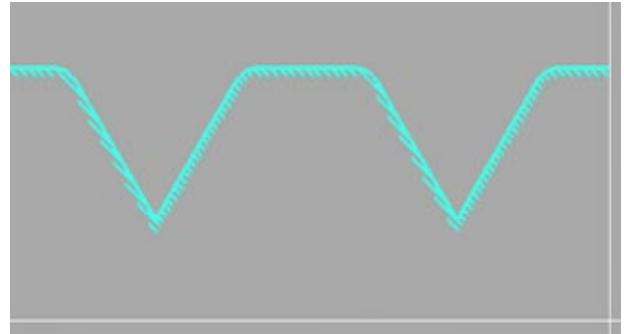
- Automated filleting of inner corners for Clearance Profile and Clearance Profile Endface
- Parameter for fillet radius is defined on input
- Parameter for optional roughing infeed is available

Advantage

- Roughing of contours using grinding wheels with bigger bond radius than inner corner

Benefit

- Time saving by eliminating the need to do manual filleting of contour



IMPROVEMENTS FOR CAM RELIEF GRINDING

Technical Details

- New clearance definition "Constant Drop" for different diameters as an addition to existing clearance definitions
- Tabulated grinding angle for Cam Relief operation to adjust grinding length for different land width of the tool

Advantage

- "Constant Drop" allows regrinding of flute face without compromising profile
- Tabulated grinding angle makes sure that heel is cleared even for different land width situations

Benefit

- Higher flexibility in Cam Relief grinding

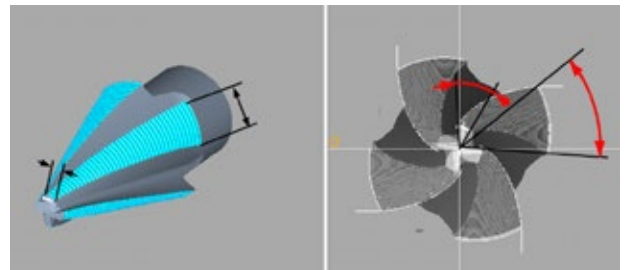
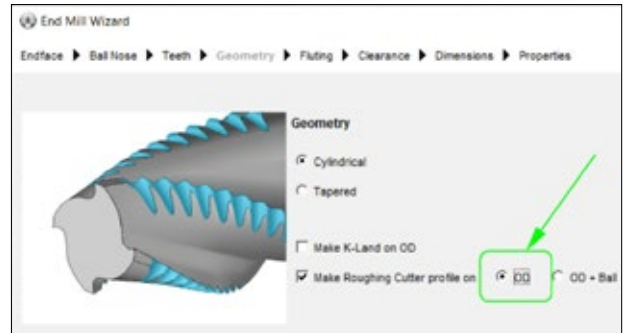
IMPROVEMENTS IN GRINDING OF ROUGHING CUTTER TOOLS

Technical Details

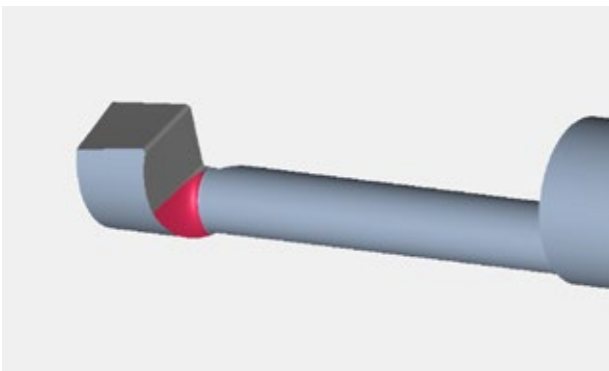
- Selection of Roughing Cutter operation to be applied to OD only for Ballnose Tools from Tool Wizard
- Linear grinding angle between front and back of the tool in operation Roughing Cutter

Benefit

- Higher flexibility in Roughing Cutter operation
- Easy generation of additional tool types



ECCENTRIC NECK GRINDING EXTENSION IN CLEARANCE PROFILE ENDFACE



Technical Details

- Extension of functionality for Clearance Profile End face
- Lift-Off Move clears the back by automatically following existing eccentric necking operation

Advantage

- No need to add extra operation to clear the back
- Smooth transition between Clearance and Neck

Benefit

- Easier and faster creation of Boring Bar tools

TOOTH GROUP PROBING OPERATION FOR SIDE AND FACE CUTTERS

Technical Details

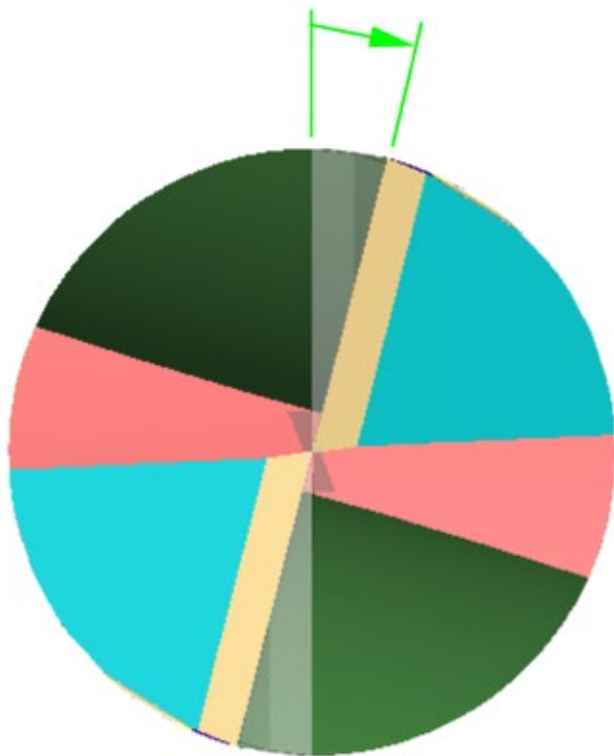
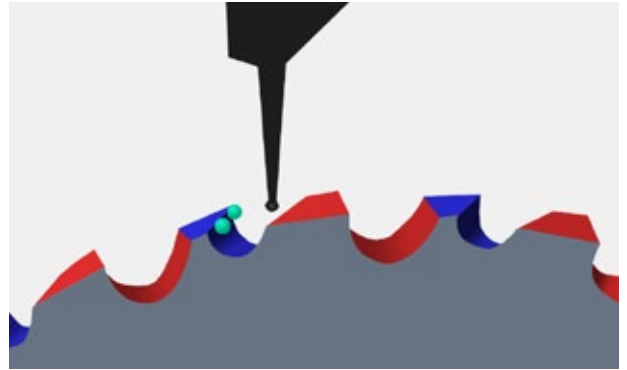
- New probing operation to find and align grouped teeth matching given helix or axial angle
- Can be applied to spiral, axial and straight flutes

Advantage

- No pre-alignment of tools in loader required

Benefit

- Easier regrind of staggered side and face cutters
- Time saving in setup of side and face regrinding process



INFEEED DIRECTION IN A-AXIS FOR AXIAL FLUTE REGRINDING

Technical Details

- Additional infeed strategy for axial flute regrinding (in addition to infeed in Z)
- Infeed is applied in radial direction (A-axis)

Advantage

- Regrinding of flute face preserving rake angle
- For contour tools ground using clearance with constant drop relief, the outside contour is not compromised

Benefit

- Higher flexibility in regrinding of axial fluted tools

TECHNOLOGY SETTINGS FOR EROSION OPERATIONS

Erosion Technology Settings					
Operation Type	Pre Roughin...	Pre Roughin...	Pre Roughin...	Roughing Pt...	Roughing Sfr...
Clearance	100.0	9.0	100.0	100.0	9.0
Clearance Axial-Radial Operation Wiz...	100.0	9.0	100.0	100.0	9.0
Cam Relief	100.0	9.0	100.0	100.0	9.0
Clearance Profile	100.0	9.0	100.0	100.0	9.0
Clearance Profile Faceted	100.0	9.0	100.0	100.0	9.0
Clearing End Face	100.0	9.0	100.0	100.0	9.0

Technical Details

- Erosion Technology Settings table allows definition of default values for erosion operations for new IDNs
- Possibility to set Plunge, sfm and Feedrate for erosion sub-operations in new IDNs
- Allows Import and Export of technology setting from and to other systems

Advantage

- Independent technology settings for erosion and grinding defined by operator

Benefit

- Time saving when creating new erosion IDNs

NEW KENNAMETAL DRILL TYPES

Technical Details

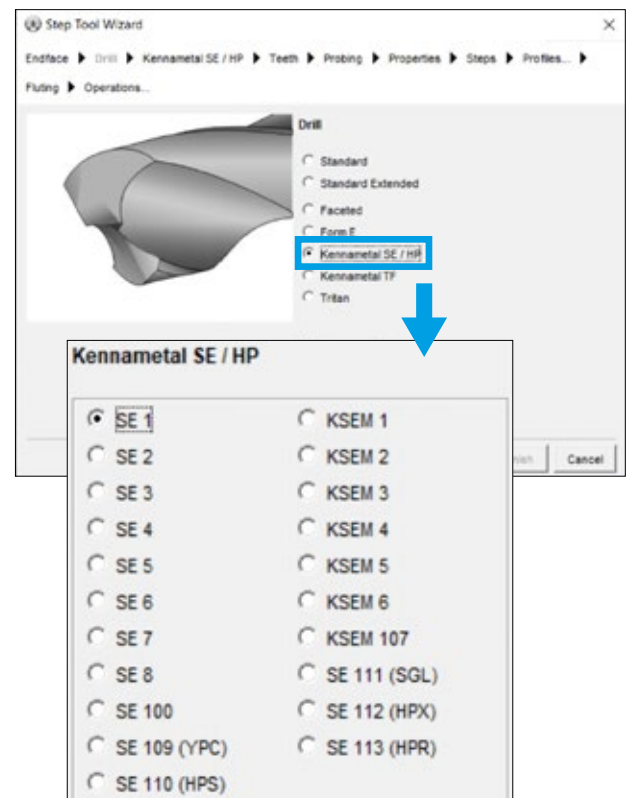
- New drill types SGL, HPX and HPR were added
- This includes full integration of Kennametal calculations for existing HP and SE types and all new drill types including default values into HELITRONIC TOOL STUDIO
- Kennametal dongle is now replaced by license key. This license key has to be granted by company Kennametal

Advantage

- All actual Kennametal drill types are now selectable on one single page

Benefit

- No need for additional Kennametal dongle



USER DEFINED INPUT RANGES FOR INPUT VALUES

Technical Details

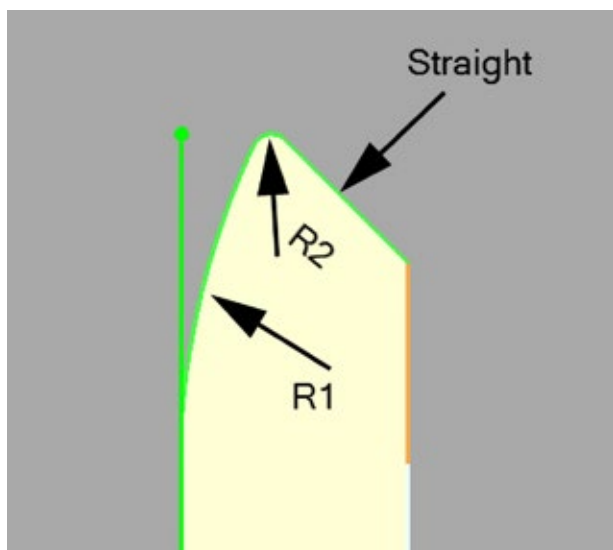
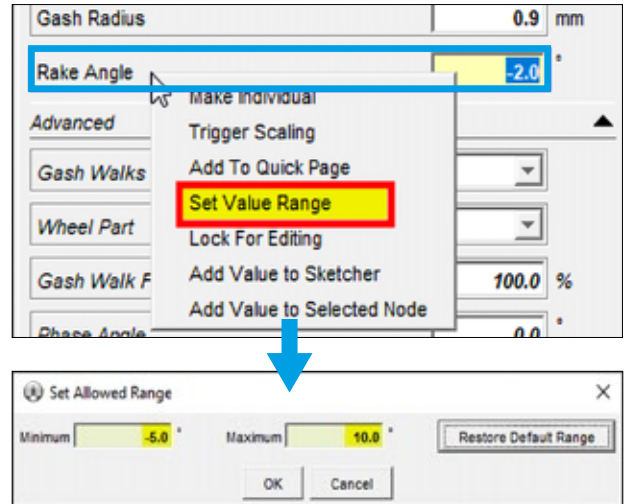
- Allow user defined definition of minimum and maximum values (range) individual per tool parameter
- Ranges are stored inside the IDN
- Default range can be restored via mouse click

Advantage

- Easy and fast setting of ranges via mouse click

Benefit

- Eliminate scrap tools by avoiding typos in parameter input



NEW WHEEL TYPE 1QV1

Technical Details

- New standard wheel type 1QV1 available in Wheel Editor
- Definition similar to Helidrill wheel but with straight bond at the back

Advantage

- Easy creation of typical wheel for drill flutes

Benefit

- Time saving in tool creation process

LASER MARKING OF TOOLS IN ROBOT CELL

Technical Details

- Laser Marking of tools inside Robot Cell of Measuring or Grinding Machine using Trumpf Laser
- Dynamic QCM measuring data (Measuring machine), Tool Number and Graphical information (e.g. company logo) can be added

Advantage

- Production data can be included to laser marking (e.g. date, time, batch information, diameter, tool type, ...)

Benefit

- No further laser machine required
- Time and cost saving due to integrated process



NEW CHUCK TYPES GDS



Technical Details

- New GDS Viper Chucks L 3718E, M 3409E, S 3148E, XL 3851E added to HELITRONIC TOOL STUDIO into list of standard chucks
- Full collision detection included

Advantage

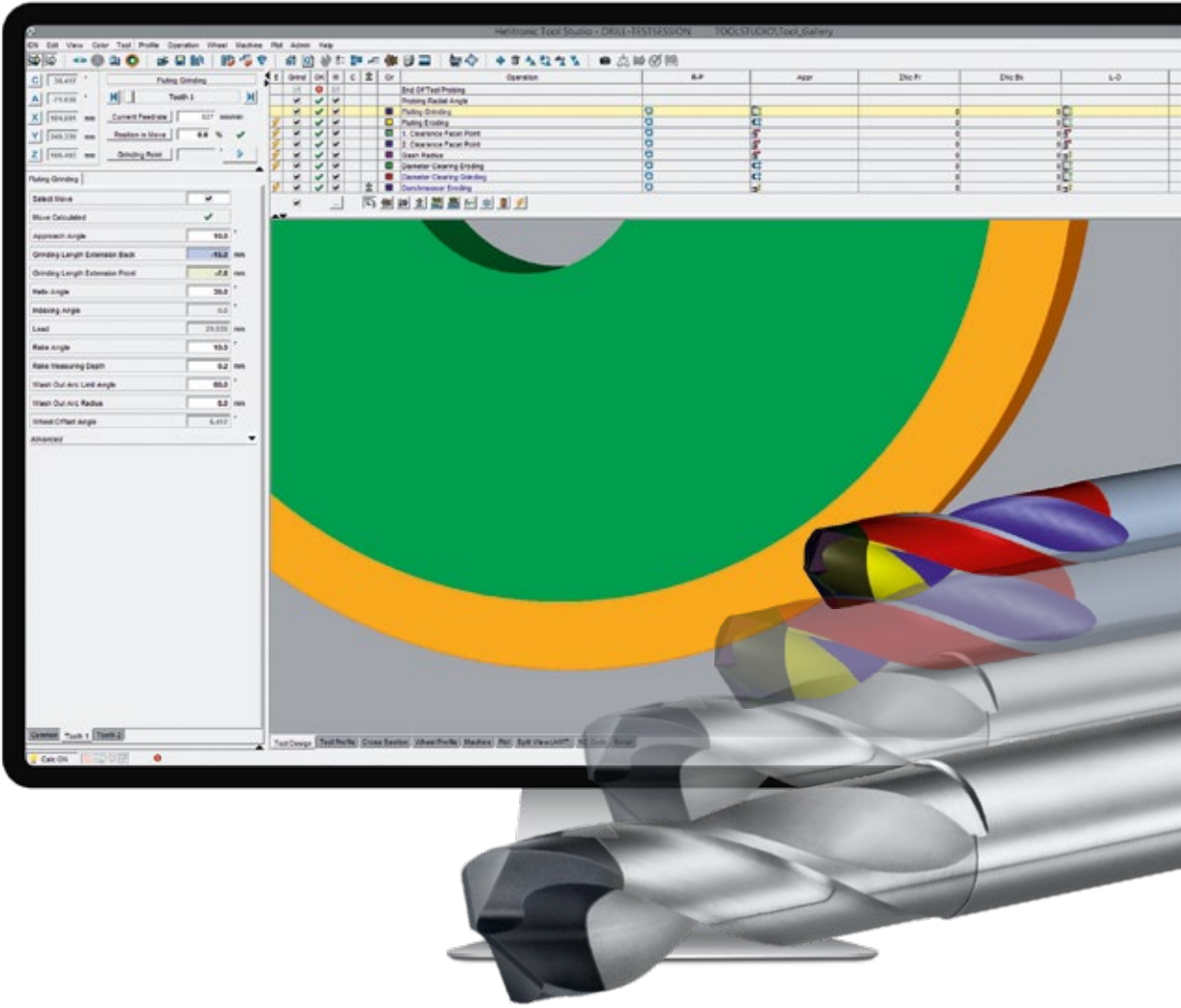
- No need to define this chuck as a user defined chuck anymore

Benefit

- Time saving in tool creation process

FURTHER NEW FEATURES IN HELITRONIC TOOL STUDIO 3.4

- New Option to define Weldon position
- Stop Loader when tool is out of plausibility
- Introduce Wheel Opening Stick Interference option
- Steptools and Drill wizard: Definition of diameter reduction in ° (degree)
- Step Tool: Additional Length Definition: from Step Start - to Step Start
- Profile Pre-Forming and Probing: 'Profile Taper Angle' in mm
- Convert Cylindrical Margin to Start/End value in Clearance Profile
- Virtual Keyboard for TS-Server
- Grinding Time in TS-Server incl. Reposition Time
- Allow separated clearance for "3. CR Clearance" for clearance in separate passes
- Allow more than 2 base operations for clearance profile through operation wizard
- Roughing of Thread Mill operation
- Introduce Grinding Length Extension Front for Square Gash
- IMS: Measure next part after compensation
- Allow Probing Profile as Base Operation for Clearance Profile EF
- Measure tilt of C-Axis (Advanced e-Referencing)
- Capability to support Tool Vision System





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