

NUMroto[®]
Total solution for tool grinding

New features in NUMROTO 4.3.0, 5.0.0 and 5.0.1

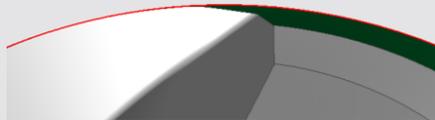
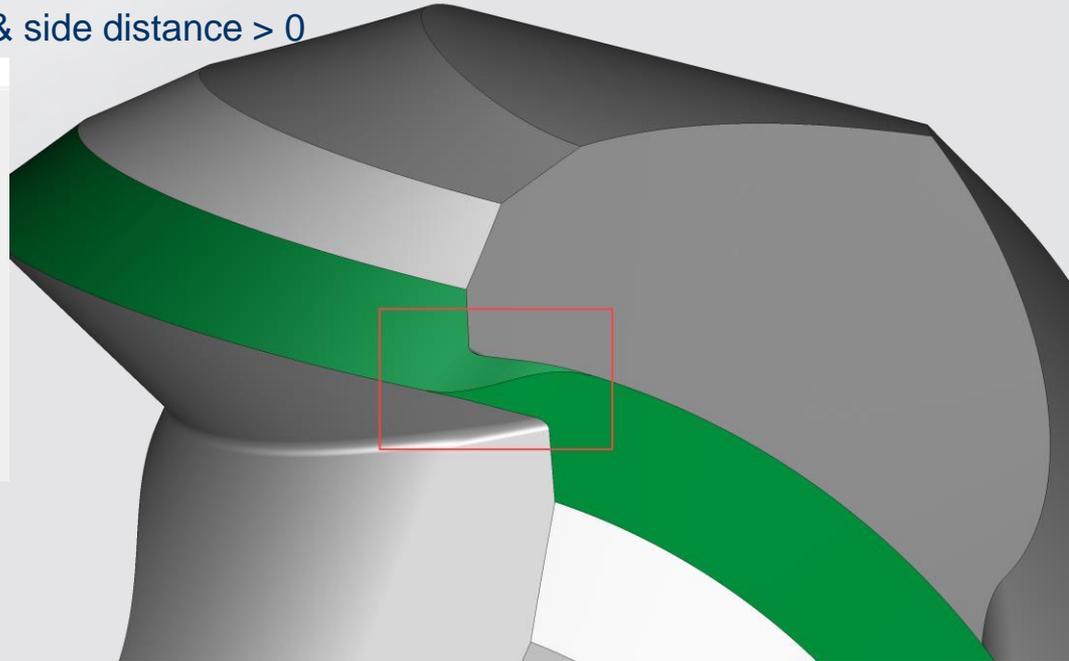
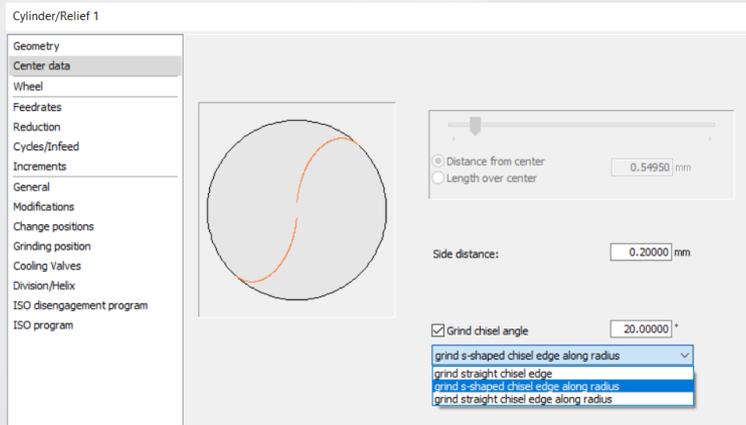
- **End mills**
- Drills / Step drills
- Form cutters
- 3D-Simulation
- NR Draw
- Other topics
- Planned innovations version > 5.0.1



Cutting edge and chisel edge exactly on radius

(Special grinding functions, 4.3.0)

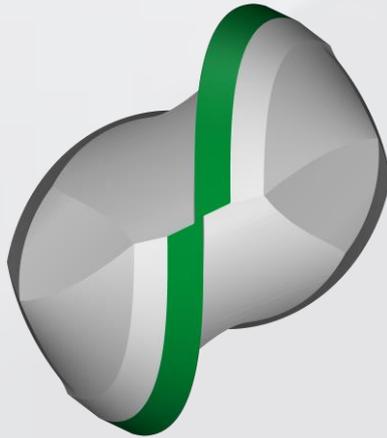
- S-shaped or straight chisel edge which follows the ball nose radius precisely
- Gashout-X and relief are precisely on the ball nose radius cutting edge
- Only for tools with 2 cutting edges to center & side distance > 0



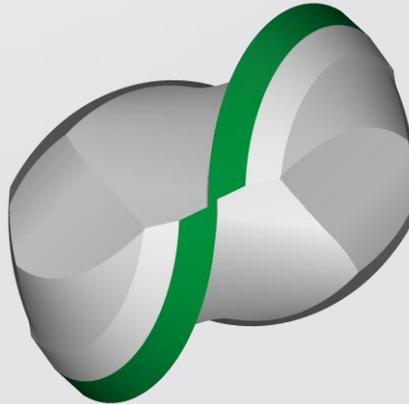
Reduce helix at ball center

(Special grinding functions, 5.0.1)

- For end mill with ball nose, the helix course on radius 'helix angle linear increasing' has proven itself technologically very well. With a new reduction factor, the helix course in the center of the ball can be made more straight. At 0%, everything remains as before. At 100%, the helix angle at the center of the ball is more straight. Intermediate values are also possible. In all cases, the cutting edge is always continuous.



Reduction factor 100%



Reduction factor 0% (same as before)

Geometry	
Cylinder geometry	
Teeth	
Blank	
Info	
Attachment	
Clamping	
Pass over	
Increments	
CNC	
3D	
Park positions	
Probing-General	
Probing-Position	
Probing-Measuring	
Probing-Runout/Lateral runout	
Cutting edges	
Number of teeth:	2 <input type="text"/>
Center cutting teeth:	2 <input type="text"/>
Cutting direction:	Right <input type="text"/>
Helix	
Type:	Constant angle <input type="text"/>
Helix path on radius:	Helix angle linear increasing <input type="text"/>
Helix angle:	30.00000 <input type="text"/>
<input type="checkbox"/> Wave grinding present <input type="checkbox"/> Cutting edge modification on the ball at 45°: <input type="checkbox"/> Rotation at ball center	
<input checked="" type="checkbox"/> Reduce helix in the center of the ball: <input type="text" value="0.00000"/> %	

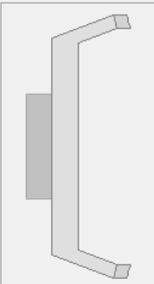
Cup wheel Typ '11V5'

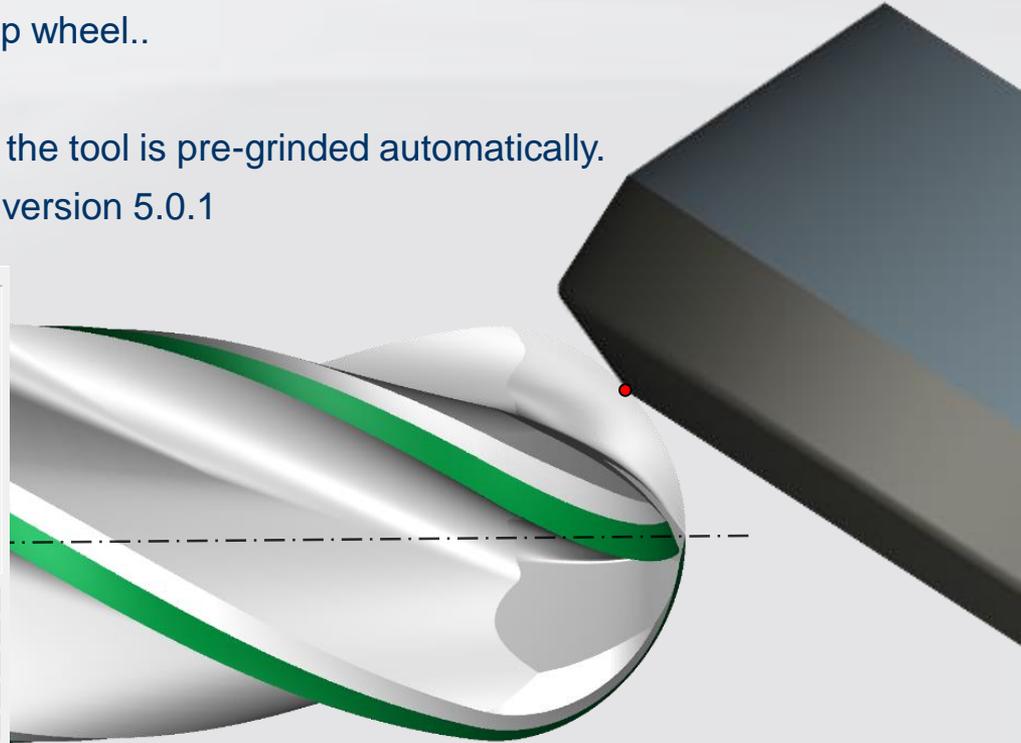
(special grinding functions, 4.3.0)

- The type '11V5' can now be used to define a cup wheel..
- The point of grinding is on the inner wheel rim.
- By using the wheel rim on the face of the wheel the tool is pre-grinded automatically.
- End mills since version 4.3.0 form cutters since version 5.0.1

Type:	11V5 (Wheel grinds on inside corner radius) ▼	
Diameter:	<input type="text" value="100.0000"/>	mm
Outer corner radius:	<input type="text" value="0.1000"/>	mm
Inner corner radius:	<input type="text" value="0.1000"/>	mm
Depth outside:	<input type="text" value="30.0000"/>	mm
Depth inside:	<input type="text" value="20.0000"/>	mm
Rim width:	<input type="text" value="5.0000"/>	mm
External angle:	<input type="text" value="20.0000"/>	°
Internal angle:	<input type="text" value="-15.0000"/>	°
<input checked="" type="checkbox"/> Wheel body		

A Rim height: mm

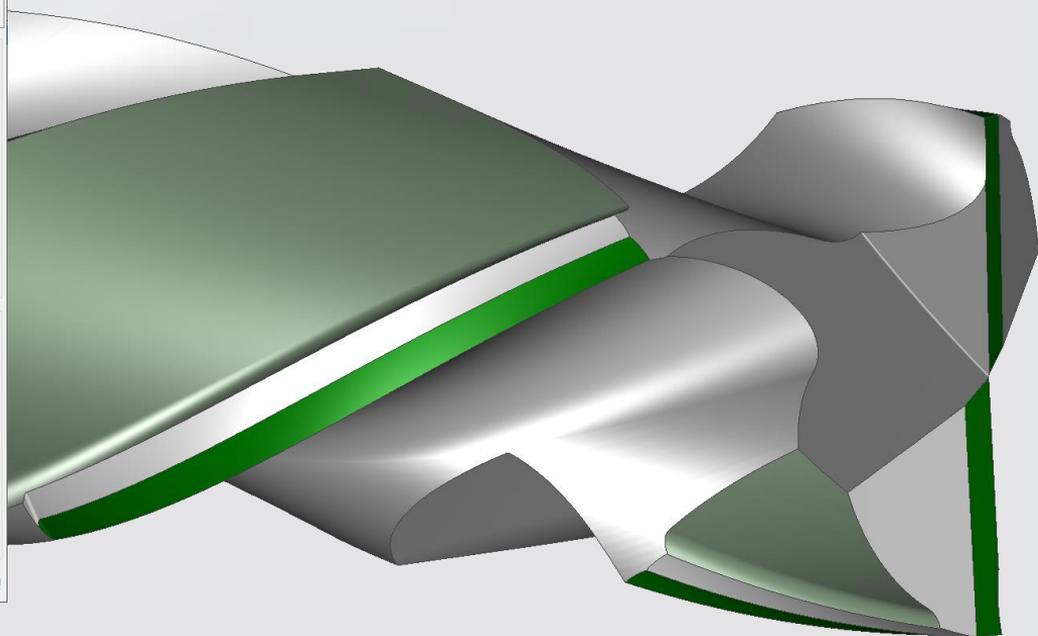
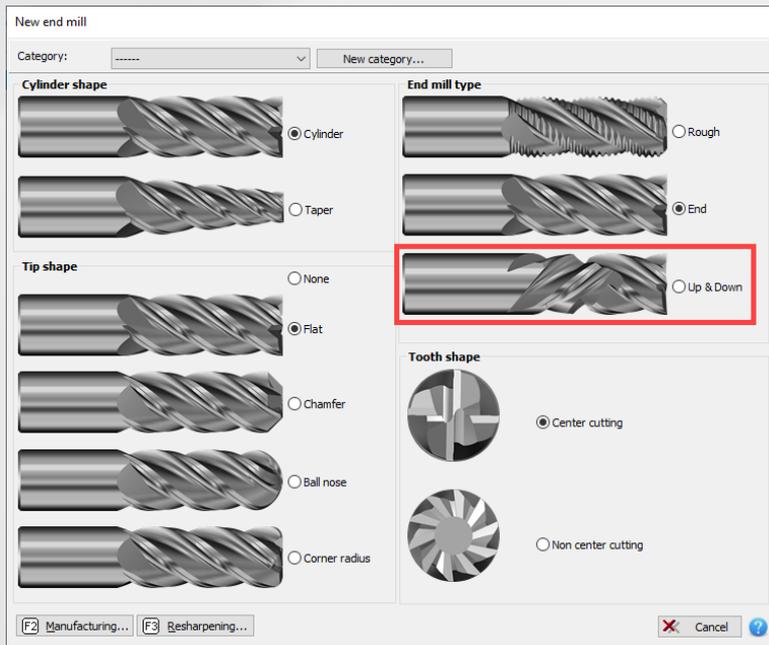




Up & Down Cutters

(new option, 5.0.0)

■ New Cutter type 'Up & Down'



New operation 'Radius at cutting edge end' for end mill

(Complex end mills, 5.0.0)

- At the end of the cutting edge, a radius can be ground.

Cylinder/Radius at cutting edge end 1

Geometry	
Radius geometry	
Division/Disengagement	
Wheel	

Rounding radius:	<input type="text" value="1.20000"/> mm
Axial displacement:	<input type="text" value="0.00000"/> mm
Radial displacement:	<input type="text" value="0.00000"/> mm

New operation 'Radius at cutting edge end' for end mill (Complex end mills, 5.0.0)

- For Radius at cutting edge end, the segment angle 'shaft side' can now be defined with an automatic checkbox. In this case the operation gets shortened automatically, so that the wheel corner radius does not grind into the shaft.

Cylinder/Radius at cutting edge end 1

Geometry	Cylinder	Shaft side
Radius geometry		
Division/Disengagement		
Wheel		
Feedrates		
Cycles/Infeed		
Increments		
General		
Modifications		
Change positions		
Grinding position		
Cooling Valves		
Division/Helix		
ISO disengagement program		
ISO program		

Radial relief angle:	8.00000 °	8.00000 °
Axial relief angle:	-4.00000 °	-4.00000 °
Land width:	1.60000 mm	1.60000 mm
Segment angle:	0.00000 °	87.27060 ° <input checked="" type="checkbox"/> A
Approach angle:	110.00000 °	110.00000 °
Tangential extension:	0.00000 mm	0.00000 mm
Cylindrical extension:	0.00000 mm	0.00000 mm
Angle for cylindrical extension:	0.00000 °	0.00000 °

Wheel positioning

Grinding procedure: Peripheral grinding

Angle of swivel axis: 10.00000 ° A

Displacement angle: 0.00000 ° A

Other innovations end mill

- High precision on ball nose and corner radius geometry: Gash out X and reliefs following the cutting edge to the micrometer (4.3.0)
- Separate feedrate on engage / disengage slant (5.0.0) ▶
- Flute-X: Show calculated cutting angle ▶
- New default values for chisel edge on a ball nose ▶
- Calculating cutting edge length on taper end mills (5.0.1) ▶
- Multi-helix end mill - Multiple helix probing ▶

New features in NUMROTO 4.3.0, 5.0.0 und 5.0.1

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News Drills

- Clearance relief with disengage chamfer (5.0.0) 
- Chamfer relief - grinding wheel position inside – outside (5.0.0) 
- Faster calculation of the manual flute for drills (long tools) (5.0.1)

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Shorting form cutter with shear angle

(5.0.0)

- If a form cutter with pre machined flutes and shear angle is shortened, the position an side distance will be changed. In order for the software to track this, the checkbox below must be activated.

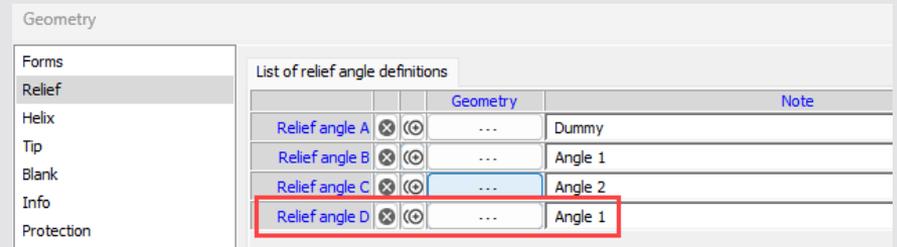
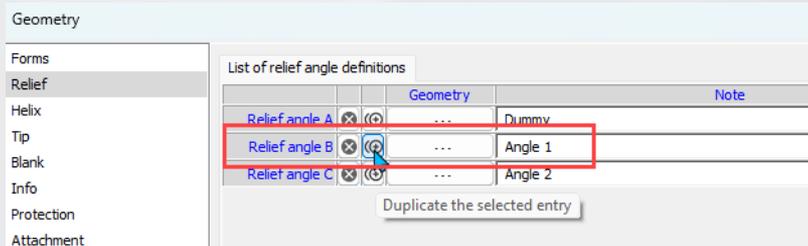
Helix twist - Helix A

Helix	Teeth	
Probing	No. of teeth: <input type="text" value="3"/>	 
	Reference geometry	
	Diameter: <input type="text" value="20.00000"/> mm <input type="checkbox"/> A	
	Length: <input type="text" value="45.00000"/> mm	Form A <input type="text" value="(31.97 x 20.00 mm)"/>
	Helix	
	Type: <input type="text" value="Shear angle"/>	Cutting edge calculation: <input type="text" value="Section of rotary solid with the flute plane"/>
	Cutting direction: <input type="text" value="Right"/>	
	Shear angle: <input type="text" value="5.00000"/> °	<input checked="" type="checkbox"/> Adjust axis angle plane during shortening
	Radial angle: <input type="text" value="0.00000"/> °	Radial angle: <input type="text" value="0.54267"/> °
	Side distance: <input type="text" value="0.00000"/> mm	Side distance: <input type="text" value="-0.09471"/> mm
		Start angle: <input type="text" value="0.54267"/> °

Duplicate selected form and relief angle

(5.0.1)

- Any form / relief angle / helix etc. can now be duplicated and deleted within the list.
- This also works for clamping system transformation and wheel dressing.



Other innovations form cutter

- Form Compensation - Automate Alignment Measuring Profile (5.0.0) 
- Show relief profiles (4.3.0) 
- Form relief - grinding in helix direction, the grinding point offset direction is now selectable (5.0.0) 
- Measure in process for form relief and multi-axis oscillation (5.0.0) 
- Form cutter – determine tooth center position (4.3.0) 

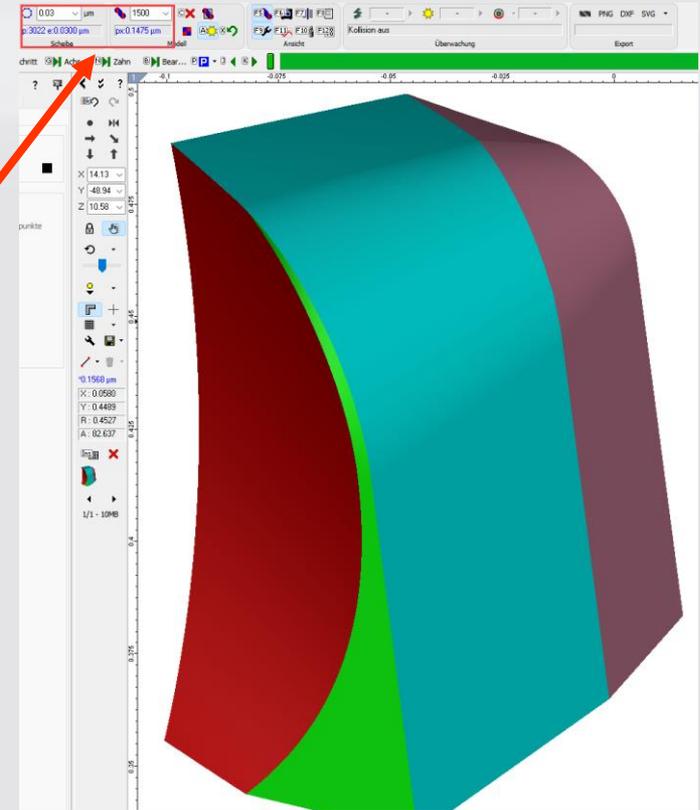
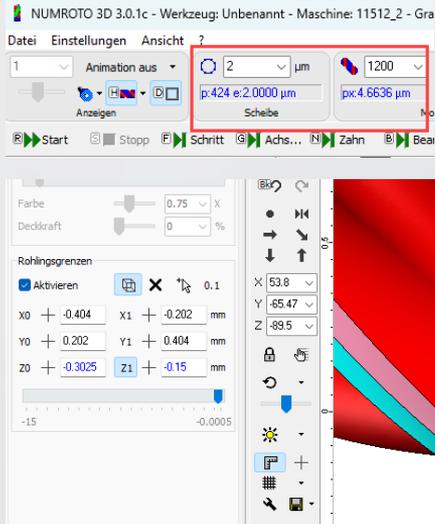
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Reduce the blank to a cuboid

- Possibility to reduce the blank to a defined cuboid to get a highly accurate simulation of small details.

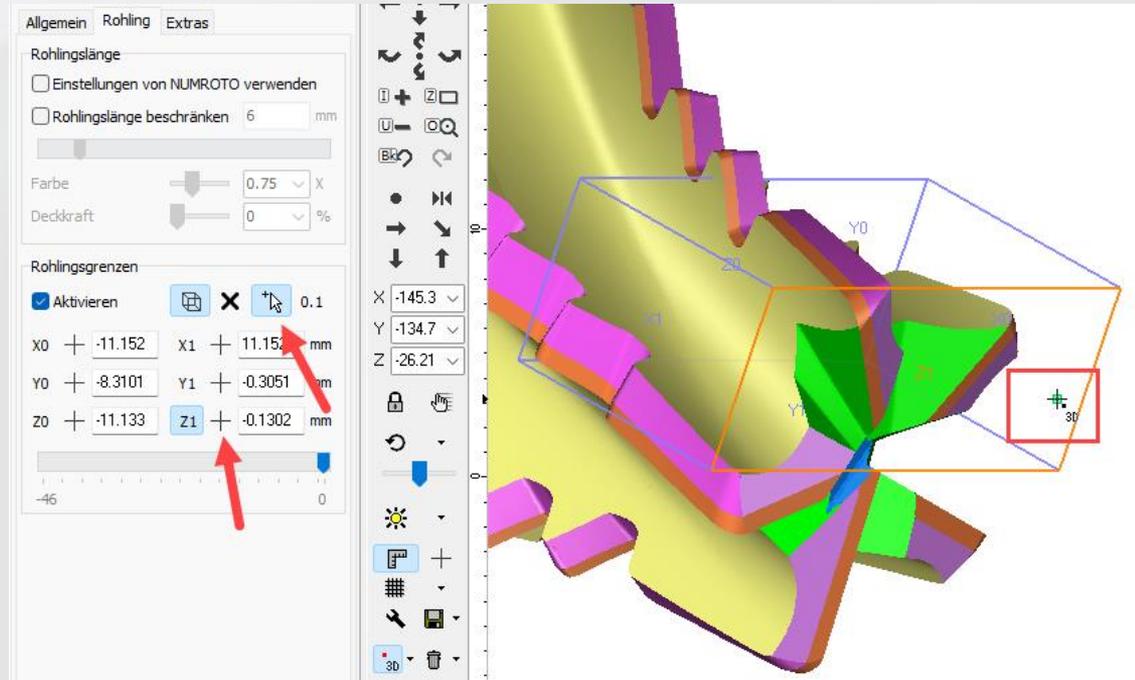


(4.3.0)

Reduce the blank to a cuboid

(5.0.1)

- Possibility to reduce the blank to a defined cuboid with mouse fast and directly.



Other innovations 3D simulation

- Cooling hole correction angle (5.0.1) 
- Up to 15% faster simulation when using a CPU with 6 or more cores (4.3.0)
- The removal rate for small tools is calculated more exactly (5.0.1)
- Display and monitor wheel body (4.2.1 / 4.3.0) 

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User defined drawing headers

(4.2.1)

NUMROTO-Draw 3.0.0beta Build 1705 - [GrindingHub-2022_Gerade-Querschneide-schleifen_V1-Drill-45_OK]

File Ansicht Optionen ?

Überne... Exportie... Drucke... Option... Editieren Seite Hilfe Zoom

Navigation **Zeichnungseinstellungen...** Einstellungen...

Struktur

- Zeichnung
 - Seite 1
 - Geometrien
 - Werkzeug Aufriß
 - Teile
 - Kugelkopf-Radius
 - Zylinder
 - Kern
 - Achse
 - Rohlingsabgrenzung
 - Rohling
 - Schaft-Abgrenzung
 - Schaft
 - Drall 1
 - Drall 2
 - Bemassungen
 - Werkzeuglänge
 - Schaft-Länge
 - Schaft-Durchmesser
 - Kerndurchmesser
 - Länge der Schneide

Eigenschaften

Zeichnung

Einstellungen

Fräser

Standardtabellen

Eingeschaltet
 Standard
 Benutzerdefiniert

Zeichnungskopf

Werkzeug Parameter-Tabelle Untere rechte Ecke Durchsuchen...
 Untere linke Ecke Durchsuchen...

Position des Zeichnungskopfes auf der Seite
 Anordnung der Werkzeugparameter-Tabelle auf der Seite

Parameter	Werte	Einheit	Standardwert	Standardwert
Werkzeug	HM		HM	
Skala	2:1		Skala	Normal
Zeichnungsdatum	04-03-21		Zeichnungsdatum	11
Gezeichnet			Gezeichnet	
Geprüft			Geprüft	
HM-Tastfinger			HM-Tastfinger	

197716

HM-Tastfinger

1:500 04-07-21 11

HM-Abbildung

0,8

Tables can now be rotated

(5.0.1)

- Tables can now be rotated.
- It is possible to rotate them clockwise, counterclockwise or 180 degrees.

Tolleranze generali secondo DIN ISO 2768-1

Classe di tolleranza	Dimensioni limite in mm per la gamma di dimensioni nominali in mm					
	0,3 a 3	>3 a 6	>6 a 30	>30 a 120	>120 a 400	>400 a 1000
f (fine)	±0,018	±0,025	±0,035	±0,050	±0,070	±0,100
m (media)	±0,030	±0,040	±0,055	±0,075	±0,100	±0,150
H (precisione)	±0,012	±0,016	±0,022	±0,030	±0,040	±0,050
V (solo per precisione)	-	±0,005	±0,007	±0,010	±0,015	±0,020

Per le dimensioni nominali inferiori a 0,3 mm, le dimensioni limite deviano essere indicate direttamente sulla dimensione nominale.

Properties - Allgemeintoleranzen

Name: Allgmeintoleranzen

Table: Row Column Cell

Position X: 9.031 mm Position Y: 10.052 mm Locked

Size: Rows: 8 Minimum width: 70.00 mm Columns: 9 Minimum height: 25.00 mm

Parameters: Rotation: 90° clockwise

Borders: Left Bottom Inner

Buttons: OK Cancel ?

Other innovations NR-Draw

(5.0.0)

- Additional tables per tool range ▶
- Simplified alignment of drawing elements ▶
- New dimensioning type for relief on outside diameter ▶
- Optimized dialog for printing ▶
- New element 'Circles' available ▶
- Move elements with keyboard arrow keys ▶

New features in NUMROTO 4.3.0, 5.0.0 und 5.0.1

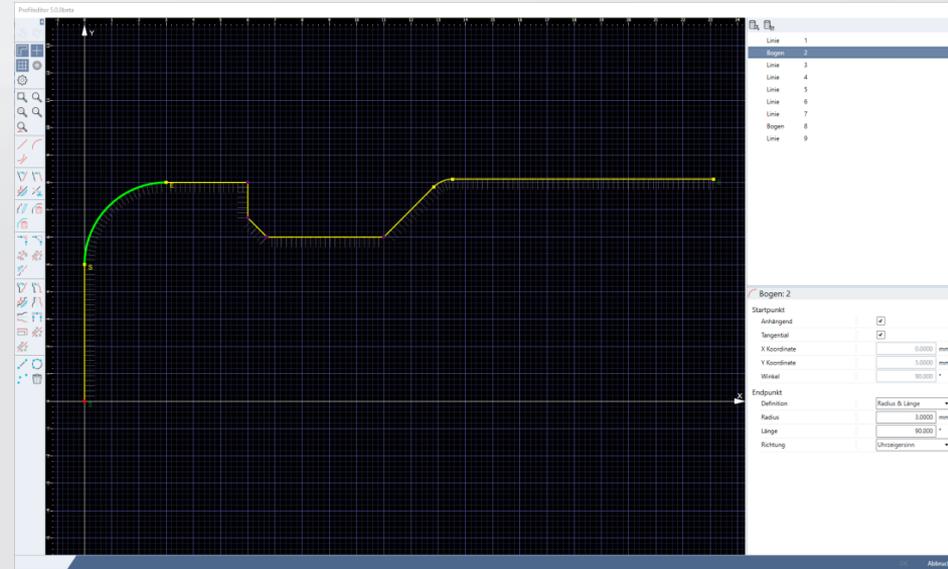
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Profileditor-X

(5.0.0)

- Quick editing of the profile with mouse 
- Easy-to-read table with all elements 
- Multiple Layers 
- Conversion Spline → Polyline 
- Consistent application of attachment and tangency



Dialogue with corrections

(4.3.0, 5.0.0)

- The same corrections can now be used for practically every operation. The list of possible corrections has been greatly expanded. (Related to operation, work piece or wheel).
- Important: These corrections should only be used with small values. With larger values, geometry deviations may occur and collisions cannot be ruled out.

Tip relief 1 - Right

Geometry	
Center data	
Wheel	
Feedrates	
Cycles/Infeed	
General	
Modifications	
Change positions	
Grinding position	
Cooling Valves	
Division/Helix	
ISO disengagement program	
ISO program	

Corrections (related to operation)

Start angle correction: °

Transversal modification: mm

Corrections (related to tool)

Length modification: mm

Transversal modification: mm

Vertical correction: mm

Corrections (related to wheel)

Wheel radius correction: mm

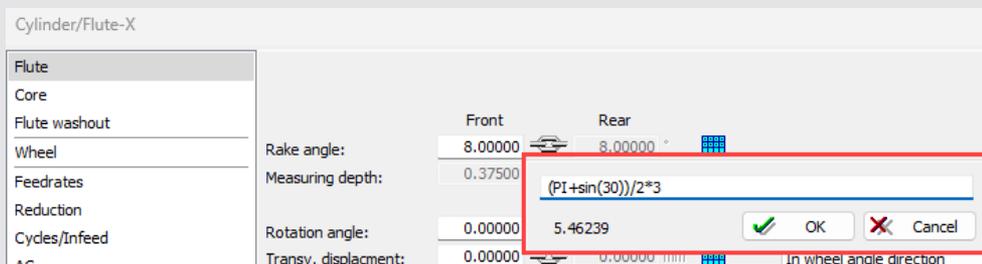
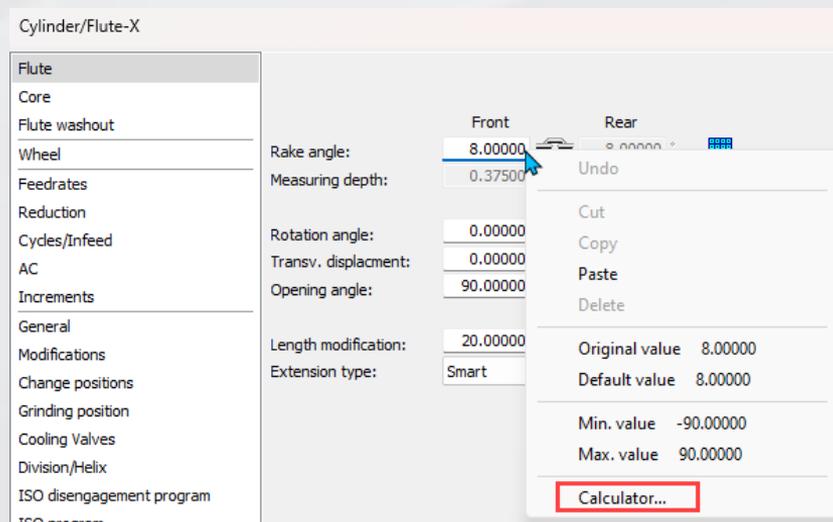
Flange distance correction: mm

Grinding time correction: s

Parameter input with simple calculator

(5.0.1)

- Calculator opens with right click on the parameter.
- Simple calculations but also trigonometry (triangle calculation) possible.



Multiuser-Server: Sybase 17 and new user management

(5.0.0)

- More rights can be defined in the user administration.
- As of Windows Server 2019, Sybase 17 is required.

Benutzer-Rollen verwalten

Verwenden Sie die unten stehende Liste, um Benutzer-Rollen und deren Zugriffsberechtigungen zu definieren.

Benutzer-Rollen:

Name	Berechtigungen
Administrator	Datenbank-Verwalter
Benutzer	Datenbank Einstellungen ändern,Datenbank Quellen verwalten,K...

Rolle hinzufügen... Rolle entfernen **Berechtigungen...**

Schließen ?

Rollenberechtigungen ändern

Welche Berechtigungen sollen dieser Rolle zugewiesen werden ?

		Berechtigung
1	<input type="checkbox"/>	Datenbank-Verwalter
2	<input checked="" type="checkbox"/>	Datenbank Einstellungen ändern
3	<input checked="" type="checkbox"/>	Datenbank Quellen verwalten
4	<input type="checkbox"/>	Benutzer verwalten
5	<input type="checkbox"/>	Rollen verwalten
6	<input checked="" type="checkbox"/>	Eigenes Kennwort ändern
7	<input type="checkbox"/>	Kennwörter ändern
8	<input checked="" type="checkbox"/>	Anmelden ohne Kennwort
9	<input checked="" type="checkbox"/>	Kategorien verwalten
10	<input checked="" type="checkbox"/>	Daten exportieren
11	<input checked="" type="checkbox"/>	Daten importieren
12	<input checked="" type="checkbox"/>	Master Werkzeug Schreibschutz setzen
13	<input checked="" type="checkbox"/>	Master Werkzeug Schreibschutz entfernen
14	<input checked="" type="checkbox"/>	Master Werkzeug Schreibschutz-Kennwort entfernen
15	<input checked="" type="checkbox"/>	Master Werkzeuge lesen
16	<input checked="" type="checkbox"/>	Master Werkzeuge sehen
17	<input checked="" type="checkbox"/>	Einstellungen verändern
18	<input checked="" type="checkbox"/>	Maschinendaten verändern

OK Abbrechen ?

Other general innovations (1)

(5.0.0)

- Thermal growth compensation 
- Copy wheel packages 
- Grinding wheel - show list of tools 
- Separate parking position for program end within NR-Control 
- Automatically use last used machine 
- Numbering teeth 
- Inch / mm value converted in context menu 
- K-land probing with coolant hole needle 
- Tab page 'Blank' available on F10-Resharpener 

Other general innovations (2)

(5.0.1)

- Filter according to operation (Search filter) 
- NCI show more last cycle times 
- Set wheel CNC-compensation to zero after wheel probing 
- Assign collets to multiple machines 
- Insert tool into job list (F10 – resharpener) 
- Save and restore calibration data 

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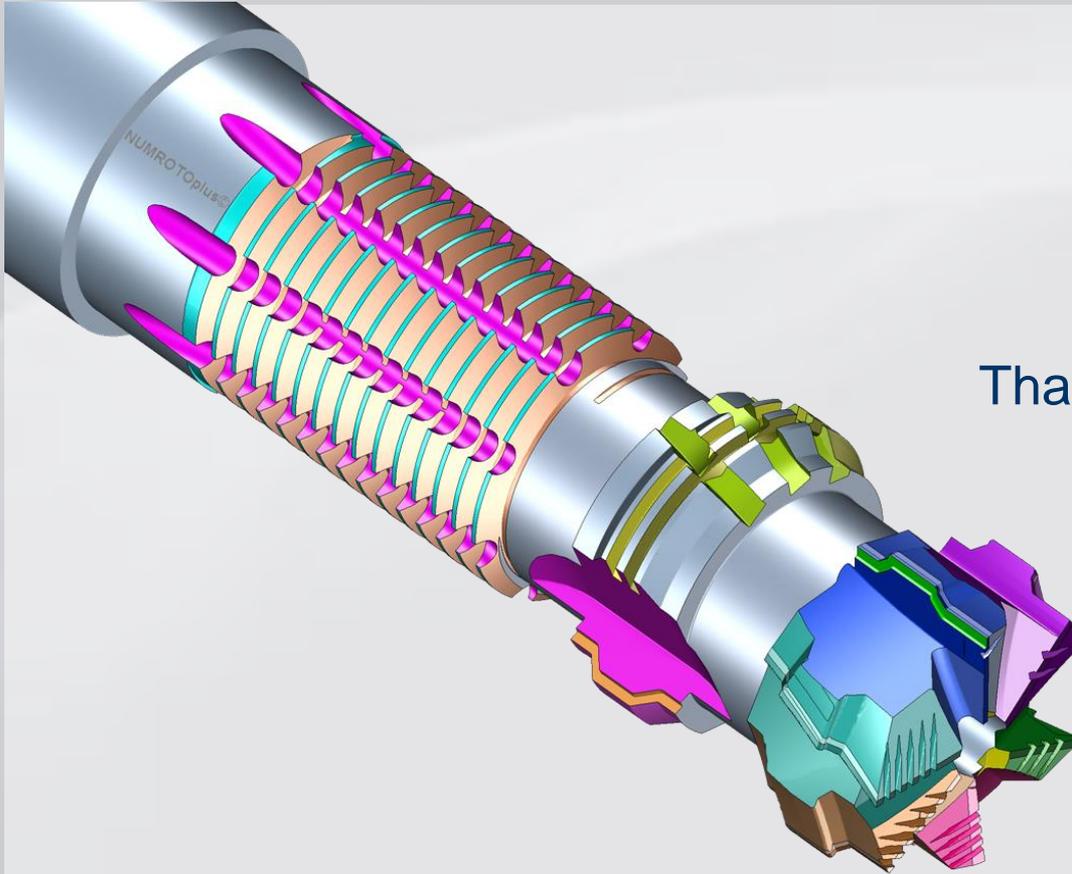


Planned innovations version > 5.0.1

- Definition of tables generally in respect to start-/endpoints of profile elements (similar to range in form reliefs)
- Wheel type 11V5 also suitable for radial reliefs (end mill and form cutters)
- Flute - X also for drills
- Consider form wheel profile for flute X
- Grinding on ball nose or corner radius with the wheel rim. (same as radial relief)
- In-process-measurement core diameter for drill flutes, on different positions, with automatic compensation (long drills)
- Replace wheels (for example master wheels) based on a fix rule (in respect of the wheel name)
- Probing run out as an operation

Further information:

Release Notes in the NUMROTO customer area:
www.numroto.com



Thank you for your interest!



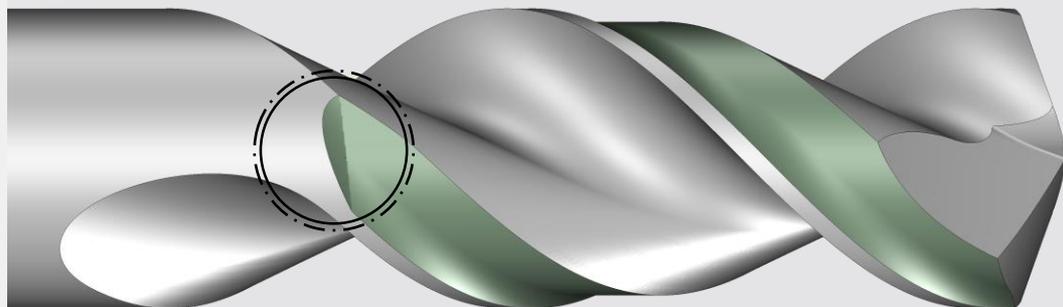
Clearance relief with disengage chamfer

(5.0.0)



- At the end of the clearance relief operation, it is now possible to program a disengage chamfer.

Diameter 1/Clearance	
Geometry	Grinding procedure: <input type="text" value="Peripheral grinding"/>
Wheel	Width of circular land: <input type="text" value="0.8000"/> mm
Spindle	Plunge depth: <input type="text" value="0.2000"/> mm
Feedrates	Clearance width: <input type="text" value="90.0000"/> °
Reduction	Number of cycles: <input type="text" value="1"/>
Cycles/Infeed	Length modification at start: <input type="text" value="1.0000"/> mm
Increments	Length modification at end: <input type="text" value="0.0000"/> mm
General	Cylinder length: <input type="text" value="27.0000"/> mm <input checked="" type="checkbox"/> A
Modifications	Axial relief angle: <input type="text" value="6.0000"/> ° <input checked="" type="checkbox"/> A
Change positions	Radial relief angle: <input type="text" value="6.0000"/> °
Grinding position	Tilt angle modification: <input type="text" value="0.0000"/> °
Cooling Valves	Wheel positioning: <input type="text" value="Upper"/>
Division/Helix	<input type="checkbox"/> Position wheel to helix
ISO disengagement program	Displacement angle offset: <input type="text" value="0.0000"/> °
ISO program	Rotation angle: <input type="text" value="0.0000"/> ° <input type="button" value="Grid"/>
<input checked="" type="checkbox"/> Slant	
	Length: <input type="text" value="1.0000"/> mm
	Angle: <input type="text" value="30.0000"/> °



Chamfer relief - grinding wheel position inside - outside

(5.0.0)

- When using a peripheral wheel, the inside - outside grinding wheel position can now be selected.



Diameter 1/Chamfer relief 1 V2

Geometry
Division/Disengagement
Wheel
Feedrates
Cycles/Infeed
AC
General
Modifications
Change positions
Grinding position
Cooling Valves
Division/Helix
ISO disengagement program
ISO program

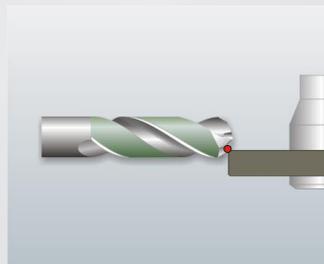
Wheel grinds on inside
 Wheel grinds on outside

Grinding in position 2

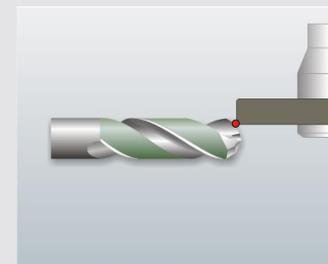
Machining direction

 from outside
 from inside

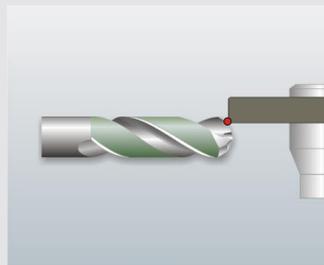
Wheel position inside (Pos-1)



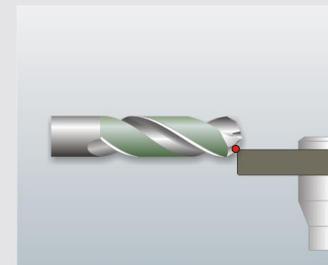
Wheel position outside (Pos-1)



Wheel position inside (Pos-2)



Wheel position outside (Pos-2)



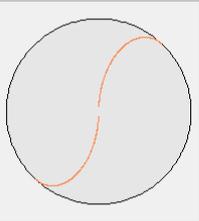
Straight chisel edge (on radius) grinding

(Special grinding functions,4.3.0)



Cylinder/Relief 1

- Geometry
- Center data
- Wheel
- Feedrates
- Reduction
- Cycles/Infeed
- Increments
- General
- Modifications
- Change positions
- Grinding position
- Cooling Valves
- Division/Helix
- ISO disengagement program
- ISO program

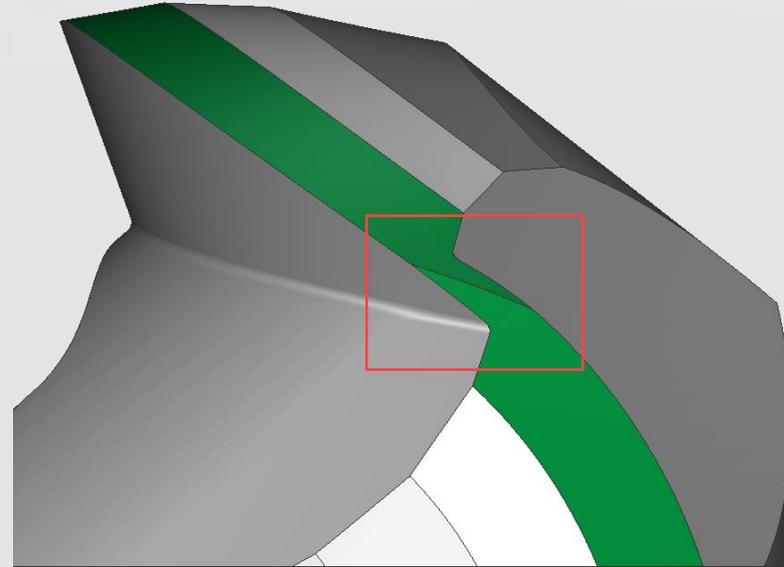
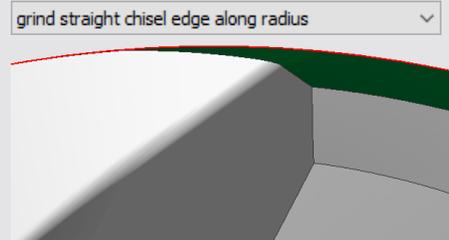
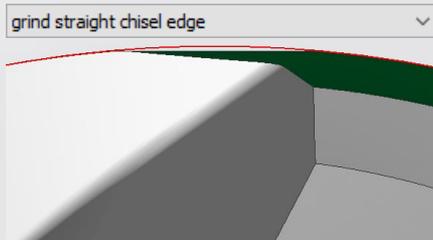


Distance from center
 Length over center

Side distance:

Grind chisel angle

- grind straight chisel edge along radius
- grind straight chisel edge
- grind s-shaped chisel edge along radius
- grind straight chisel edge along radius

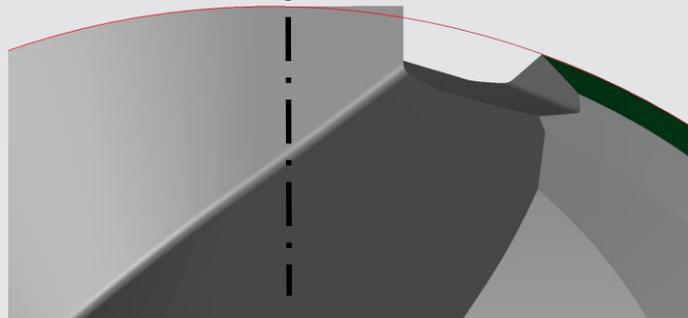
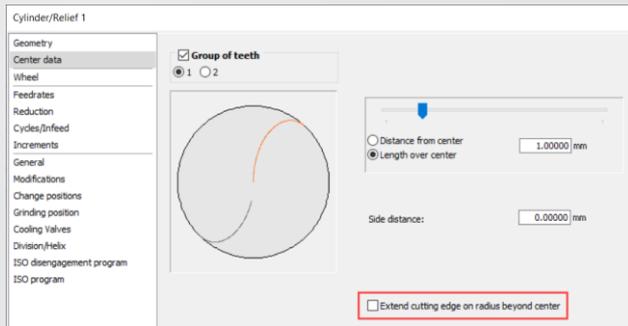
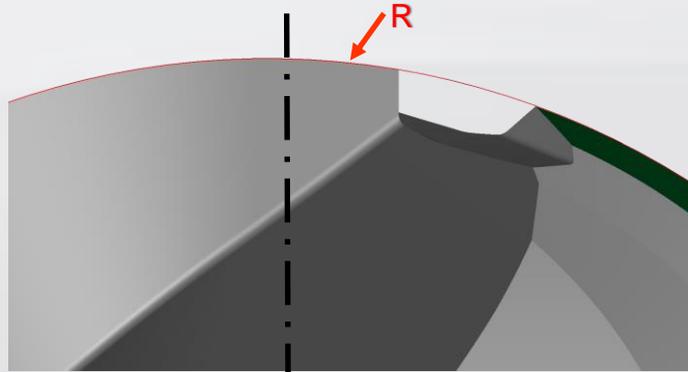
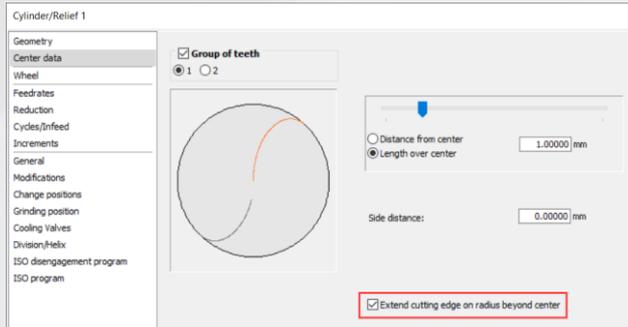


Grind cutting edge along radius past center

(Special grinding functions, 4.3.0)



- Cutting edge always precisely on radius

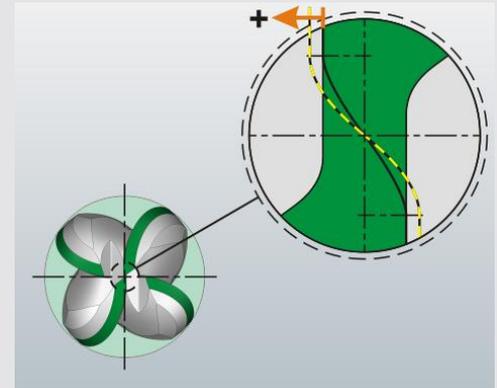
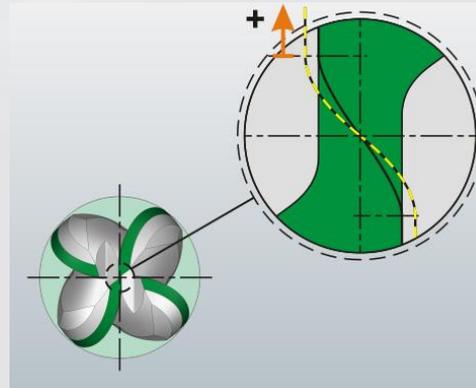
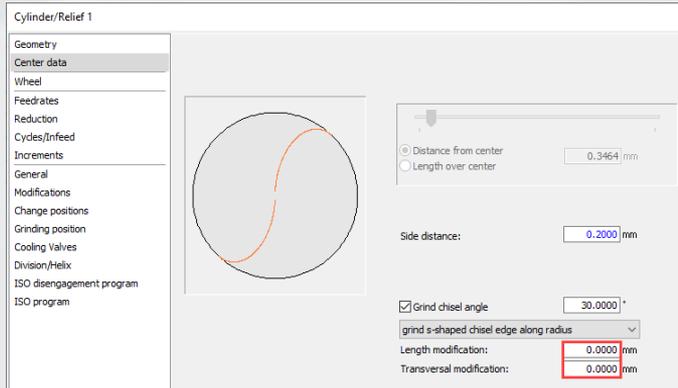


Extension chisel edge

(Special grinding functions, 5.0.0)



- Chisel edge extension - transverse correction.
- For S-shaped and straight chisel edge.



Increment ball relief chisel edge

(5.0.0)

- Separate increments for bal relief chisel edge.



Geometry

Cylinder geometry

Teeth

Blank

Info

Attachment

Clamping

Pass over

Increments

CNC

3D

Park positions

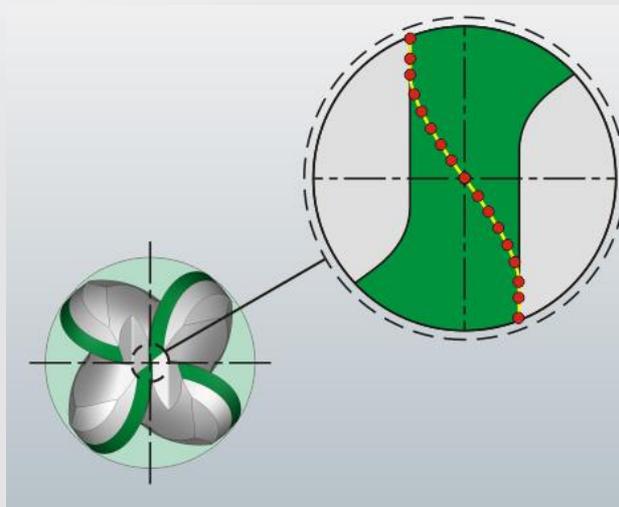
Probing-General

Probing-Position

Probing-Measuring

Probing-Runout/Lateral runout

	2D-Sim	CNC/3D		
Cylinder flute:	0.1200	1.2000	mm	<input checked="" type="checkbox"/> A
Flute washout intermediate points:	5	5	Pts	<input checked="" type="checkbox"/> A
Cylinder relief:	0.8400	1.2000	mm	<input checked="" type="checkbox"/> A
Radial body relief:	0.0480	0.6000	mm	<input checked="" type="checkbox"/> A
Tip gashout:	0.0720	0.6000	mm	<input checked="" type="checkbox"/> A
Tip relief:	0.3000	0.1200	mm	<input checked="" type="checkbox"/> A
Ball/Corner radius gash out:	1.0000	0.4167	°	<input checked="" type="checkbox"/> A
Ball relief:	1.0000	0.4564	°	<input checked="" type="checkbox"/> A
Ball relief chisel edge:			20 Pts	<input checked="" type="checkbox"/> A
Tip clearance:	50	50	Pts	<input checked="" type="checkbox"/> A
Gashout widening:	50	25	Pts	<input checked="" type="checkbox"/> A
Rough profile:	1.0000	2.0000	°	<input checked="" type="checkbox"/> A
Cylindrical grinding:	30	2	Pts	<input checked="" type="checkbox"/> A
Manual grinding path:	50	2	Intermed. poi...	<input checked="" type="checkbox"/> A
Manual step face cam:	1.0000	5.0000	°	<input checked="" type="checkbox"/> A
Round clearance grinding:	2.4000	6.0000	mm	<input checked="" type="checkbox"/> A
Copy form / Independent profile:	100	50	Pts/...	<input checked="" type="checkbox"/> A
Other (linear):	1.0000		mm	<input checked="" type="checkbox"/> A
Other (degree):	5.0000		°	<input checked="" type="checkbox"/> A
Other (points):	20		Pts	<input checked="" type="checkbox"/> A



Separate feedrate for engage and disengagement slant

(5.0.0)

- A separate feedrate can now be programmed for the engage and disengagement slant.



Cylinder/Relief 1

Geometry
Center data
Wheel
Feedrates
Reduction
Cycles/Infeed
Increments
General
Modifications
Change positions
Grinding position
Cooling Valves
Division/Helix
ISO disengagement program
ISO program

Machining type: 4-axis 5-axis

Ball center: 12.0000 °
Land width: 1.0000 mm
Width of circular land:
Cutting angle: 2.0000 °
Displacement angle: 20.0000 °
Grinding point offset: 0.0000 mm
Length modification:
 Adjust center values according to distance from center

Cylinder start: 8.0000 mm
Cylinder end: 8.0000 mm
1.0000 mm
0.0000 mm
2.0000 mm
0.0000 mm
0.0000 mm
1.0000 mm

Direction: Cutting edge tangent

Eng./diseng. slant

Slant Length: 1.2000 mm Angle: 45.0000 °
 Slant Length: 1.2000 mm Angle: 45.0000 °

what should be machined

Face and cylinder
 only cylinder
 only face

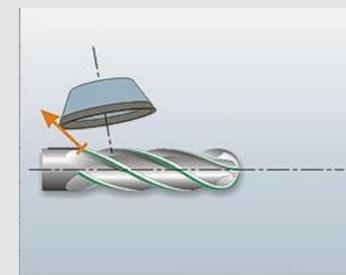
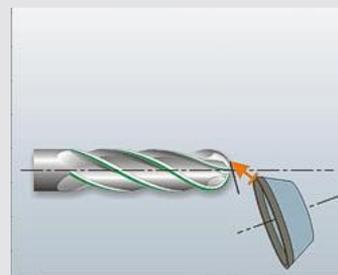
Grinding position: Tangential

Cylinder/Relief 1

Geometry
Center data
Wheel
Feedrates
Reduction
Cycles/Infeed
Increments
General
Modifications

Engagem.: 50.00 mm/min
Ball nose: 15.00 mm/min
Cylinder: 200.00 mm/min

Front slant: 15.00 mm/min A
Rear slant: 200.00 mm/min A



Flute-X: Show calculated cutting angle

(5.0.0)

- The smallest (Min) and largest (Max) calculated cutting angle of all flutes is always displayed as the top value. If you open the drop-down box, the values according to helix 1 up to helix n are displayed.



Cylinder/Flute-X V2

	Front	Rear	
Rake angle:	8.0000	8.0000	<input checked="" type="checkbox"/> A
Measuring depth:	0.2500	0.2500 mm	<input checked="" type="checkbox"/> A
Rotation angle:	0.0000	0.0000	<input type="checkbox"/> A
Transv. displacement:	0.0000	0.0000 mm	<input type="checkbox"/> A
Land width correction:	0.0000	0.0000 mm	<input type="checkbox"/> A
Length modification:	3.0000 mm	0.0000 mm	<input checked="" type="checkbox"/> A
Extension type:	Smart	Smart	
Flute land width reference:	According to land width of reliefs		
Reference relief:	3 Cylinder/Relief 2 <input checked="" type="checkbox"/> A		
Calculation points for flute fitting:	25% of points <input checked="" type="checkbox"/> A		
Consider complete wheel shape:	Yes		
Calculate cutting angle:	Min: 6.26°	Max: 16.57°	Determine cutting angle

Note: In the screenshot, the 'Calculate cutting angle' dropdown menu is open, showing a list of values: 6.26°, 11.03°, 6.26°, 12.03°, and 7.32°. The top value, 6.26°, is highlighted in red.

New default values for chisel edge on ball nose

(5.0.1)

- It is possible to define default values for chisel edge.



These values are only used for a relief, if a side distance is active.

Default values - Ball

	Rel. 1	Rel. 2	Rel. 3	Rel. 4	Rel. 5	Rel. 6
Relief angle:	12.00000	24.00000	40.00000	52.00000	64.00000	75.00000 °
Land width:	8.00000	8.00000	8.00000	8.00000	8.00000	8.00000 %

Cutting angle increase: °

Swivel angle (4-axis): °

Reverse grinding of reliefs
 Use position 2 for relief grinding
 Insert relief 3 automatically (for center cutting end mills with 2, 3 or 4 teeth)
 Special safety distance

Grind chisel edge °

grind s-shaped chisel edge along radius
 grind straight chisel edge
 grind s-shaped chisel edge along radius
 grind straight chisel edge along radius

Calculating cutting edge length on taper end mills

(5.0.1)

- For taper end mills (flat / corner radius) the cutting edge length can be calculated automatically.
- Therefore it is important , that the taper angle is defined first.



Geometry		Geometry	
Cylinder geometry	Cutting edge length: 47.57182 mm <input checked="" type="checkbox"/> A	Cylinder geometry	Cutting edge length: 35.57685 mm <input checked="" type="checkbox"/> A
Teeth		Teeth	
Blank	Front	Blank	Front
Info	Outside diameter: 10.00000 mm	Info	Outside diameter: 10.00000 mm
Attachment	Core diameter: 6.00000 mm	Attachment	Core diameter: 6.00000 mm
Clamping	Taper angle: 6.00000 °	Clamping	Taper angle: 8.00000 °
Pass over	Core taper angle: 5.00000 °	Pass over	Core taper angle: 5.00000 °
Increments	Dish angle: 1.00000 °	Increments	Dish angle: 1.00000 °
CNC	Tip rotation angle: -1.00000 °	CNC	Tip rotation angle: -1.00000 °
3D		3D	

Probing page: Multiple helix probing

(5.0.0)

- Now it is possible to select in the probing dialog which helix must be probed (multi-helix end mill)



4.3.0

Tasten

Werkzeugdaten messen

Steigung Drall 1,2

Durchmesser

Nuttiefe

Schneidenlänge

Spanwinkel

Zahn mit grösstem Öffnungswinkel als Startzahn verwenden

Einspannung tasten

Einspannlänge

Verdrehung

Tasten...

Vorgang noch nicht gestartet

5.0.0

Tasten

Werkzeugdaten messen

Steigung Drall 1 2 3 4

Durchmesser

Nuttiefe

Schneidenlänge

Spanwinkel

Zahn mit grösstem Öffnungswinkel als Startzahn verwenden

Einspannung tasten

Einspannlänge

Verdrehung

Tasten...

Vorgang noch nicht gestartet

Automated Alignment for Measurement Profile

(5.0.0)

- When importing a DXF measurement profile, the start - end point can be swapped and the profile automatically aligned based on the settings.



Data interface

File extension: [Folder...](#)

Use XML data format
 Automatically generate xml file when using external calculations

Always activate modifications for new tools

Show data import warnings

Hint: Warnings will additionally be taken down into file 'temp/messdata.log'.

Adjustment of the measurement profile during import

Rotation angle: °

Mirror: ▾

OK Cancel 



Show relief profiles

(4.3.0)

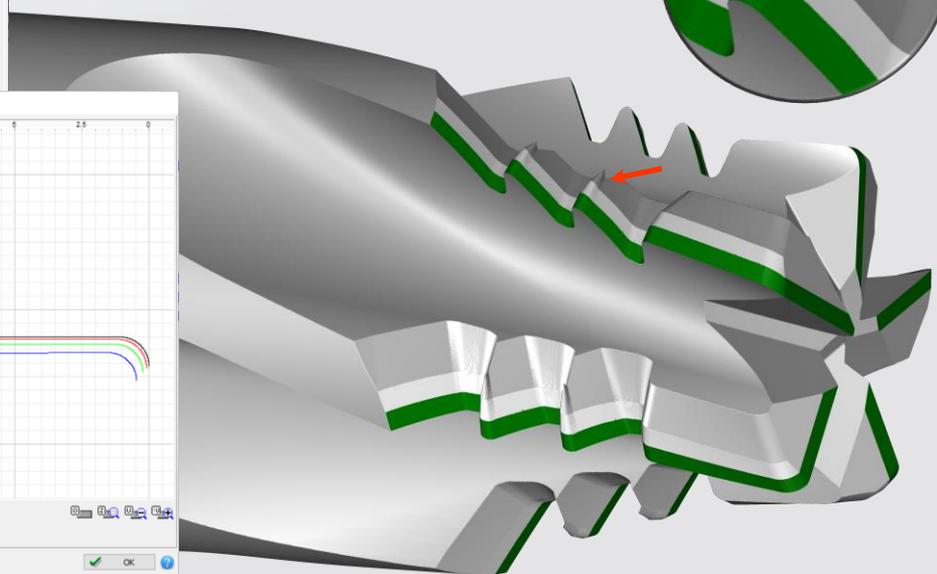
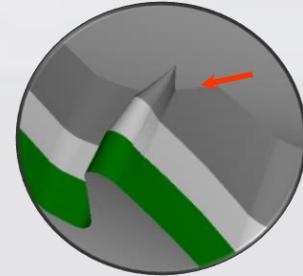
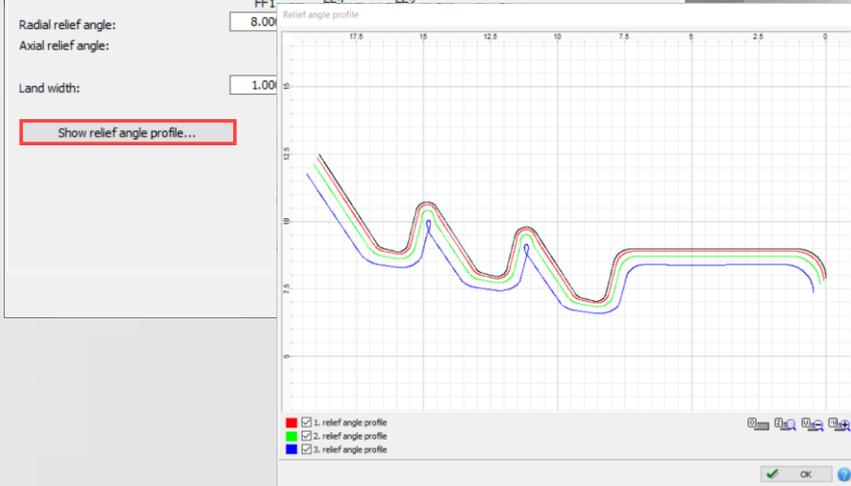
- Show relief profile based on the programmed relief angles and land width.



Relief angle definition - Relief angle A

Shape: Form A

Radial normal, axial automatic, dep. on the profile slope
 Radial normal, axial programmed, independent from the profile slope
 Relief angle always vertical to surface



Form relief - grinding in helix direction

(5.0.0)

- The grinding point off-set can be new selected in the direction of the relief angle or wheel rim.



Form A/Formfreifläche 1

Geometrie

- Bereich
- Oszillieren
- Scheibe
- Vorschübe
- Aufteilung/Zustellung
- AC
- Inkremente
- Allgemeines
- Korrekturen
- Referenz
- Umlenken
- Schleifposition
- Kühlventile
- Teilung/Drall
- ISO-Ausfahrprogramm
- ISO-Programm

Positionierung u. Schleifverfahren

Schleifen mit Vorgabe des Rotationswinkels
 Schleifen mit Vorgabe des Stellwinkels
 Schleifen mit Anstellwinkel relativ zur Form
 Schleifen mit Vorgabe des Rotations-und Stellwinkels
 Schleifen in Drallrichtung

Anstellwinkel: 90.0000 °
 Verdrehwinkel profilabhängig

Verdrehwinkel: 0.0000 °

Schleifpunktverschiebung: -4.0000 mm
 Richtung: **Freifläche** (dropdown menu)

Freiwinkel-Definition: Freiwinkel A

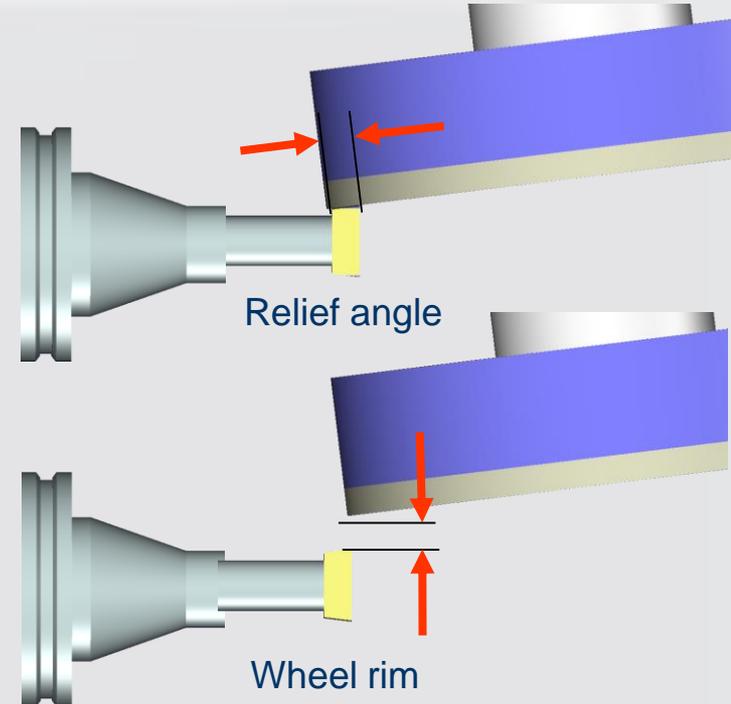
Drallauswahl: Drall A

Eckenverrundung: Scheibeneckradius

Wert für Eckenverrundung: 0.1100 mm

Freiflächenrichtung gemäss aktuellem Formdurchmesser (Flugkreis) berechnen

Profil bearbeiten...



Measure in process for form relief

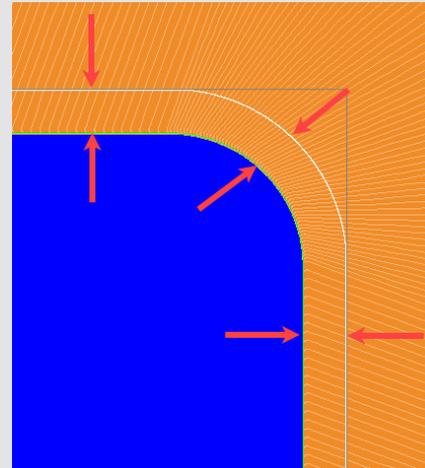
(5.0.0)



- For the form relief operation, the measurement in process can be used with the probe task 'Diameter'. The probed diameter difference can now be compensated not only in the diameter direction ('new culation'), but also as an stock amount (recalculation using 'stock amount'). The result is so far the same as with the compensation 'wheel compensation'. The advantage is that multi-axis oscillation can also be applied at the same time.
- Interesting also for CBN material.

Form B/Formfreifläche 1

Geometrie	Kompensation via:	Neuberechnung Aufmass
Bereich	Kompensationsystem:	Gewichtung
Oszillieren	Gewichtung wenn Messwert zu gross:	100.0000 %
Scheibe	Gewichtung wenn Messwert zu klein:	100.0000 % <input checked="" type="checkbox"/> A
Vorschübe	Maximale Anzahl Wiederholungen:	5 <input type="text"/> <input type="checkbox"/> Zyklen beim Kompensations-Schliff nie verwenden
Aufteilung/Zustellung		
AC		
Inkrement	Durchmesser	
Allgemeines	Nennwert:	12.0000 mm <input checked="" type="checkbox"/> A
Korrekturen	Obere Toleranz:	0.0100 mm
Referenz	Untere Toleranz:	-0.0100 mm
Umlenken	Zielwert:	12.0000 mm <input checked="" type="checkbox"/> A
Schleifposition		
Kühlventile	<input type="checkbox"/> Bei Unterschreiten der unteren Toleranz Schleifvorgang beenden	
Teilung/Drill		
ISO-Ausfahrprogramm		
ISO-Programm	Aktuelle Kompensation (Ø):	0.0000 mm maximal: 1.0000 mm
Tasten		
Kompensieren		



Form cutter – determine tooth center position

(4.3.0)

- As in the drill program, it is now also possible in the form cutter program to determine the tooth center position with the measuring probe.



Geometry

Forms

Relief

Helix

Tip

Blank

Info

Attachment

Clamping

Clamping system transformatio.

Pass over

Increments

CNC

3D

Park positions

Probing-General

Probing-Position

Probing-Measuring

Probing-Runout/Lateral runout

Displacement for probing position in X: mm Y: mm A

Measuring depth in X: mm

Alignment:

Monitor clamping length modification

To the front To the end

Search long tooth

Determine middle position between teeth

Search diameter

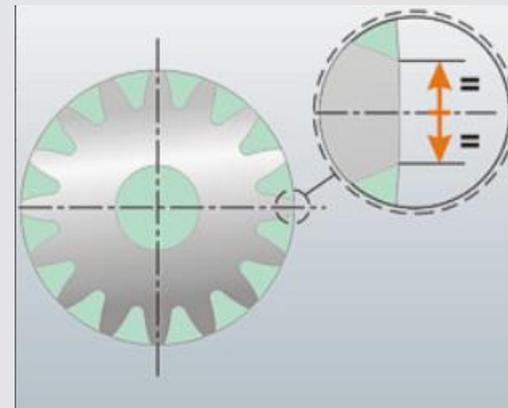
Remeasure clamping length (when resharpening)

Use vertical probe needle to probe rotation

Measure rotation before clamping length

Do not move probe by side distance to probe rotation (Probe is on tool axis position)

Determine adjustment length per tooth (only for helix A, cannot be used in conjunction with already probed values)

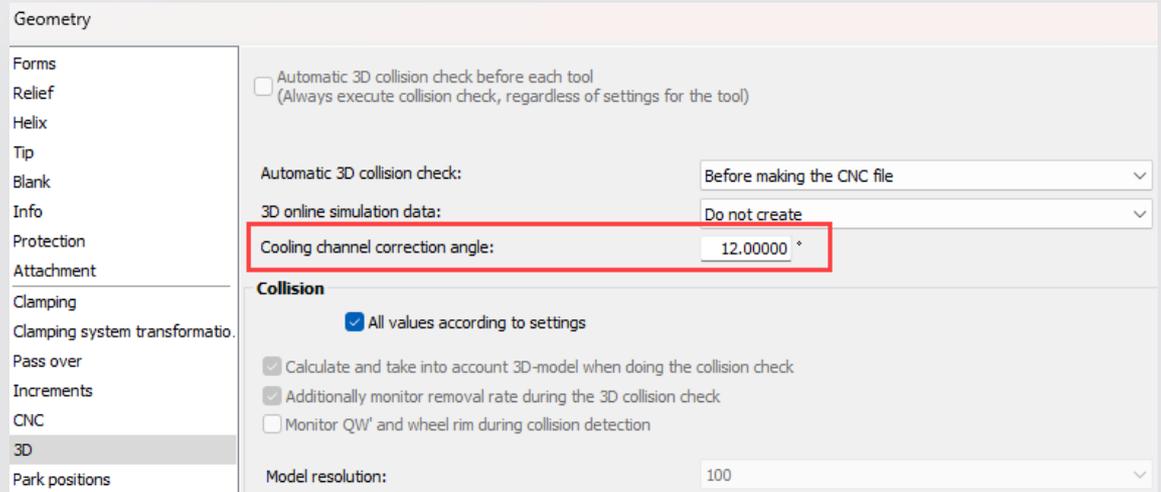


Coolant hole correction angle for 3D simulation

(5.0.1)



- Since version 5.0.1 its possible to program a coolant hole correction angle for 3D simulation.
- This can be used to compensate a possible difference between the actual tool and the simulated 3D model.
- Only has an effect in 3D-simulation.

A screenshot of a software settings window titled 'Geometry'. On the left is a vertical menu with options: Forms, Relief, Helix, Tip, Blank, Info, Protection, Attachment, Clamping, Clamping system transformatio., Pass over, Increments, CNC, 3D (highlighted), and Park positions. The main area contains several settings:

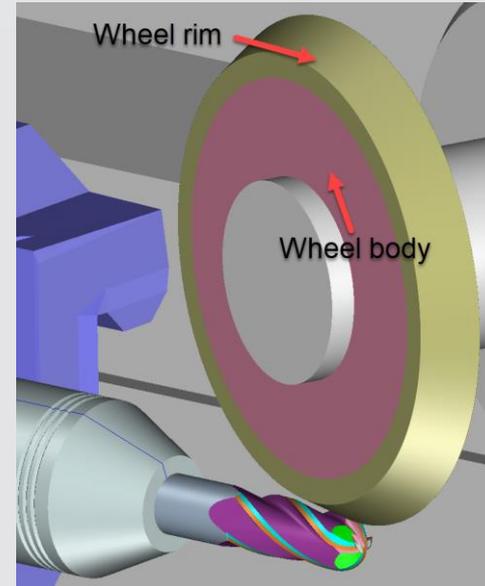
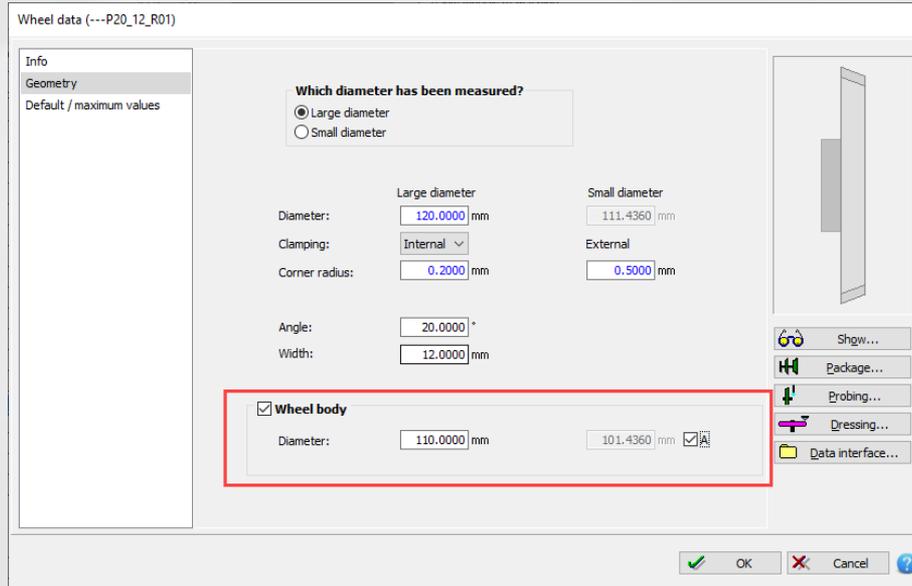
- Automatic 3D collision check before each tool (Always execute collision check, regardless of settings for the tool)
- Automatic 3D collision check: Before making the CNC file (dropdown)
- 3D online simulation data: Do not create (dropdown)
- Cooling channel correction angle: 12.00000 ° (input field, highlighted with a red border)
- Collision**
 - All values according to settings
 - Calculate and take into account 3D-model when doing the collision check
 - Additionally monitor removal rate during the 3D collision check
 - Monitor QW' and wheel rim during collision detection
- Model resolution: 100 (dropdown)

Display wheel body

(4.2.1)



- The size of the wheel body can now be defined. This will also be considered by the 3D collision check and it will be animated in the 3D simulation.



Monitor wheel body

(NUMROTO-3D special functions, 4.2.1)

- In the 3D simulation the wheel body will be monitored for collision (only if QW'-calculation is active)



Geometry

- Cylinder geometry
- Teeth
- Helices
- Blank
- Info
- Protection
- Attachment
- Clamping
- Pass over
- Increments
- CNC
- 3D**
- Park positions
- Probing-General
- Probing-Position
- Probing-Measuring
- Probing-Runout/Lateral runout

Automatic 3D collision check before each tool
(Always execute collision check, regardless of settings for the tool)

Automatic 3D collision check:

3D online simulation data:

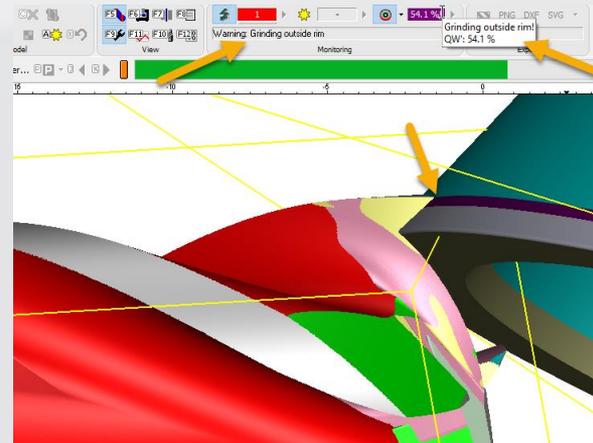
Collision

All values according to settings

- Calculate and take into account 3D-model when doing the collision check
- Additionally monitor removal rate during the 3D collision check
- Monitor QW' and wheel rim during collision detection**

Model resolution:

Monitoring of the active wheel:



		3D	Color	Operation	Wheel	Rotation speed	ID	Feedrate	Collision state	Removal rate	QW'
1	Cylinder	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Flute-X	---P00_15 (3)	6684 / 35.00	3	80.0		882.77	4.34
2	Tip	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Tip clearance	---P00_15	6684 / 35.00	3	30.0		15.33	0.64
3	Tip	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Tip gash out X	---P45_08	6685 / 35.00	1	50.0		0.94	1.52
4	Tip	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Tip gashout	---P45_08 (2)	6684 / 35.00	1	25.0		8.00	1.02
5	Tip	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Tip Notch	---P45_08 (2)	6684 / 35.00	1	30.0		37.52	1.26
6	Cylinder	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Relief 2	---T01 (2)	6684 / 35.00	4	5.0		47.70	4.09
7	Cylinder	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Relief 1	---T01	6684 / 35.00	4	15.0		0.31	0.31

Grinding outside rim

Additional tables per tool range

(5.0.0)

- Any number of tables can be added as defaults for each tool range (end mills, drills, form cutters and burrs).



Standardtabellen

Einschaltet

Vorlagen

Standard

Benutzerdefiniert

Zeichnungskopf

Werkzeug Parameter-Tabelle

Position des Zeichnungskopfes auf der Seite

Anordnung der Werkzeugparameter-Tabelle auf der Seite

	<input checked="" type="checkbox"/> Name	Position	Automatically included	
1	<input checked="" type="checkbox"/> Zusattabelle_01	Obere linke Ecke	First page	<input type="button" value=""/>
2	<input checked="" type="checkbox"/> Zusattabelle_02	Untere linke Ecke	Nein	<input type="button" value=""/>

Name Auto

Vorlage

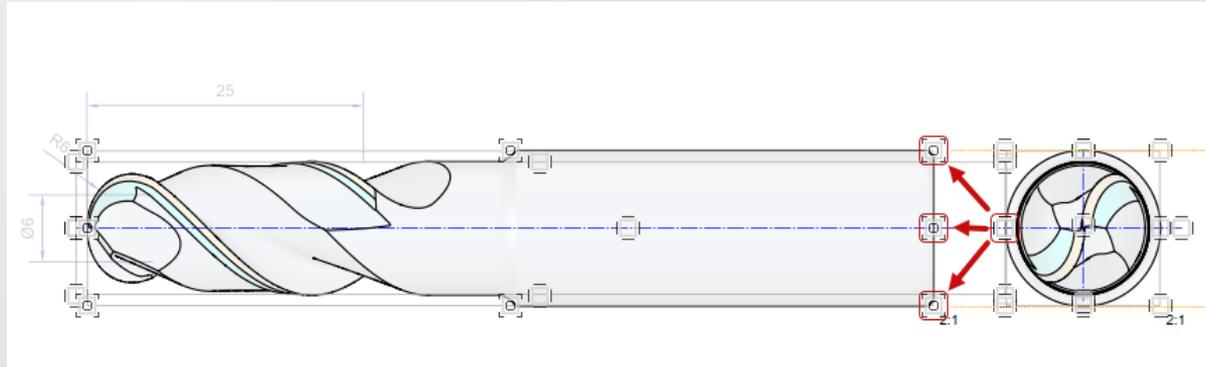
Positionierung

Automatically included

Simplified alignment of drawing elements

(5.0.0)

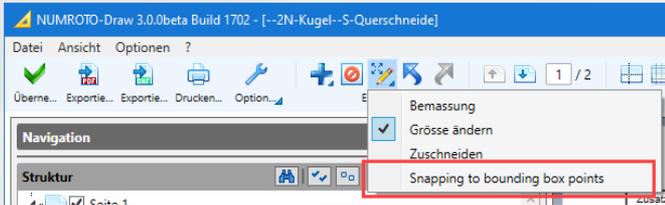
- Drawing elements can now be easily aligned with other drawing elements.
- When approaching, the snap function boxes of the individual drawing elements, snap into each other.
- After snapping in place, the element can be moved in horizontal or vertical direction using the arrow keyboard keys.



Simplified alignment of drawing elements

(5.0.0)

- The snap function is activated either via the 'Edit mode' key.

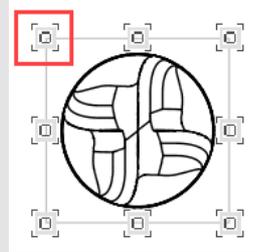
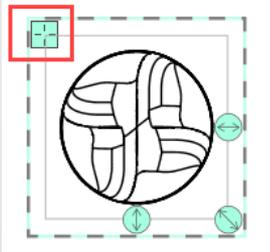


Or by 2x clicking the move and crop border box.

Displacement box

Crop Box

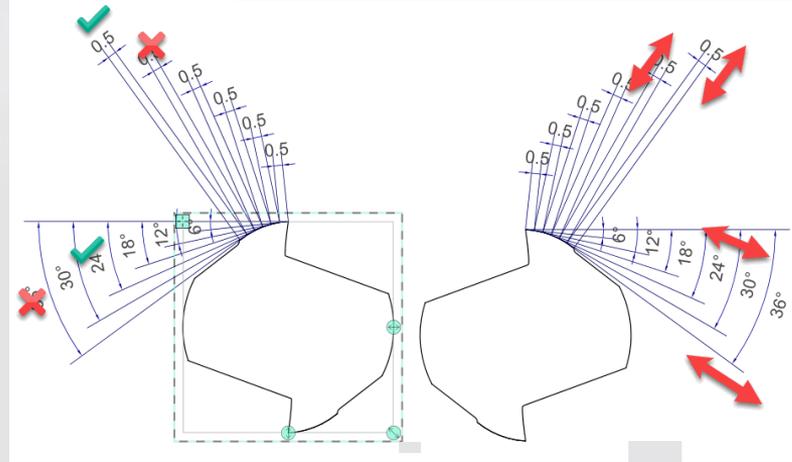
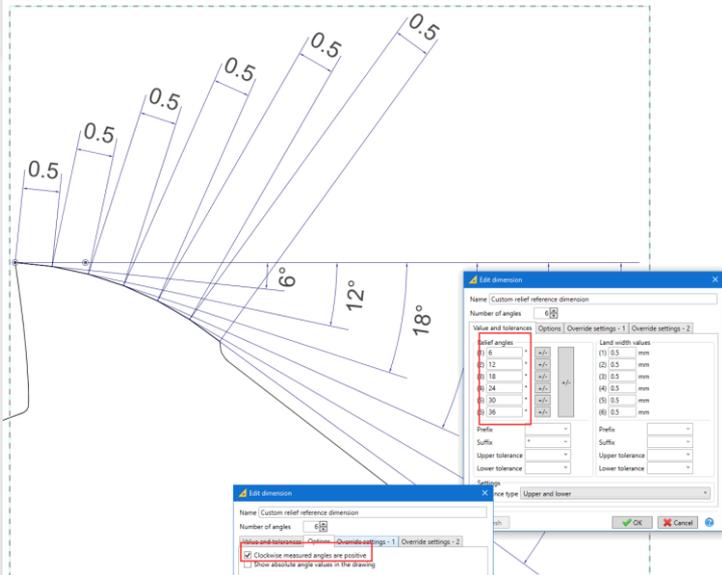
Snap function box



New dimensioning type for relief on outside diameter

(5.0.0)

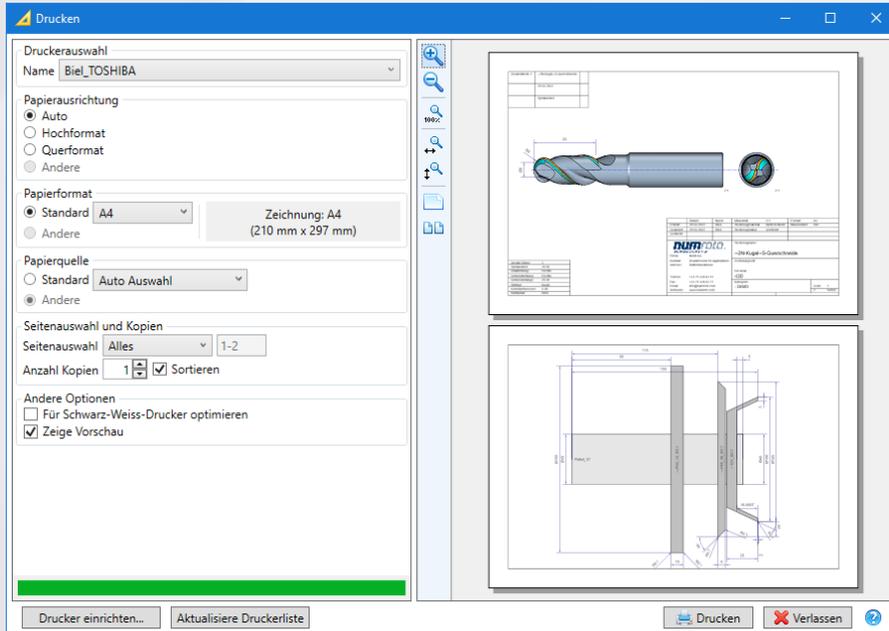
- Relief on outside diameter can now be easily dimensioned.
- The dimensions can be displayed or moved individually.



Optimized dialog for printing

(5.0.0)

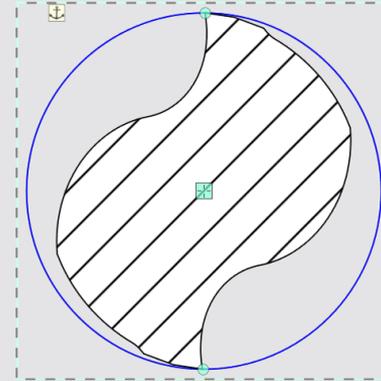
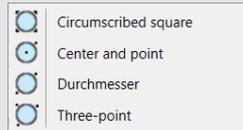
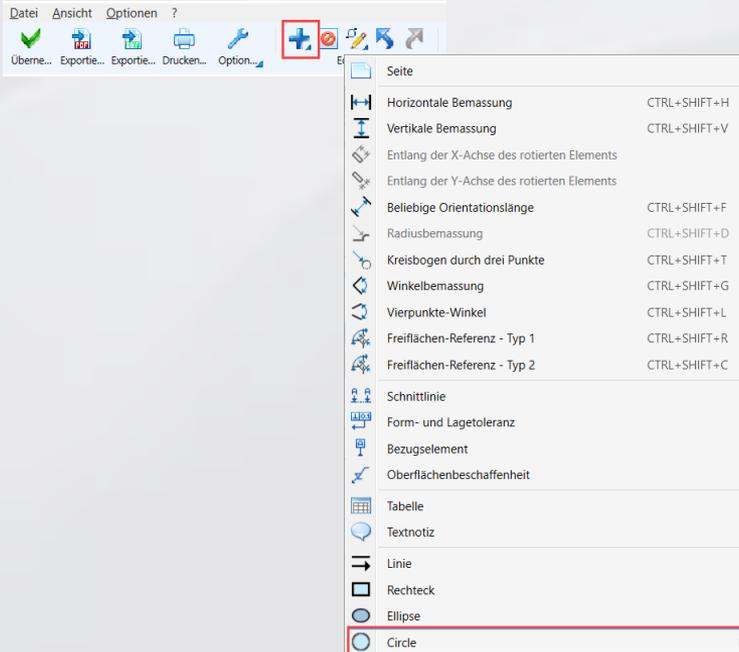
- Print quickly and easily with the new buttons and selections.



New element 'Circles' available

(5.0.0)

- Simplified way to draw a circle.



Move elements

(5.0.0)

- Move elements with keyboard arrow keys.
- Step size adjustable in the settings.



Einstellungen

- Allgemein
- ▾ Zeichnungseinstellungen
 - Allgemein
 - ▾ Werkzeugspezifisch
 - Fräser
 - Bohrer/Stufenbohrer
 - Formfräser
 - Frässtifte
 - Zeichnungsinteraktionen
 - Drucken
 - Wasserzeichen

Zeichnungsinteraktionen

Allgemein

Masstabs-Anzeige automatisch aktivieren, wenn die Grösse von einem Objekt manull verändert wird

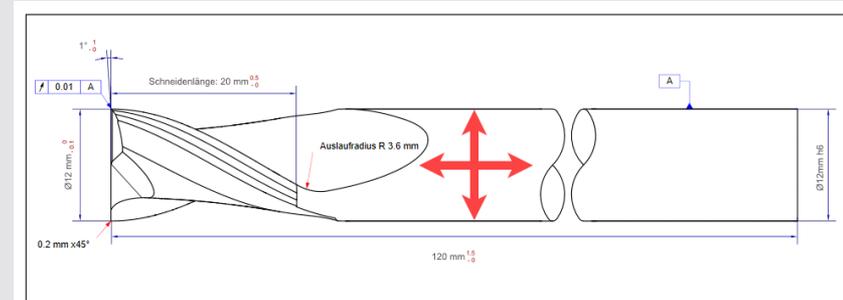
Überstreich- und Auswahlbereich px

Richtungswinkel für Fangbereich px

Farbe für Auswahl

Positioning step size mm ← **Schrittgrösse Pfeiltaste**

Alternative positioning step size mm ← **Schrittgrösse Ctrl+Pfeiltaste**



Profile editor-X: easy-to-read table with all elements

(5.0.0)

- In the upper right corner the tables of individual elements and type are displayed.
- When you click on an element, the size of the element is displayed in the lower right corner.

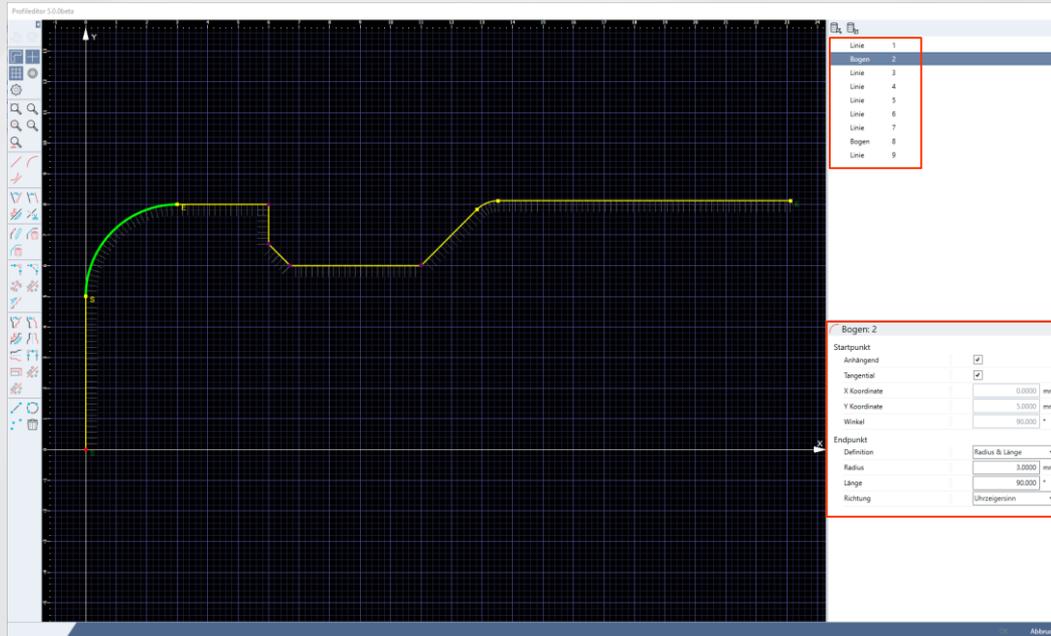


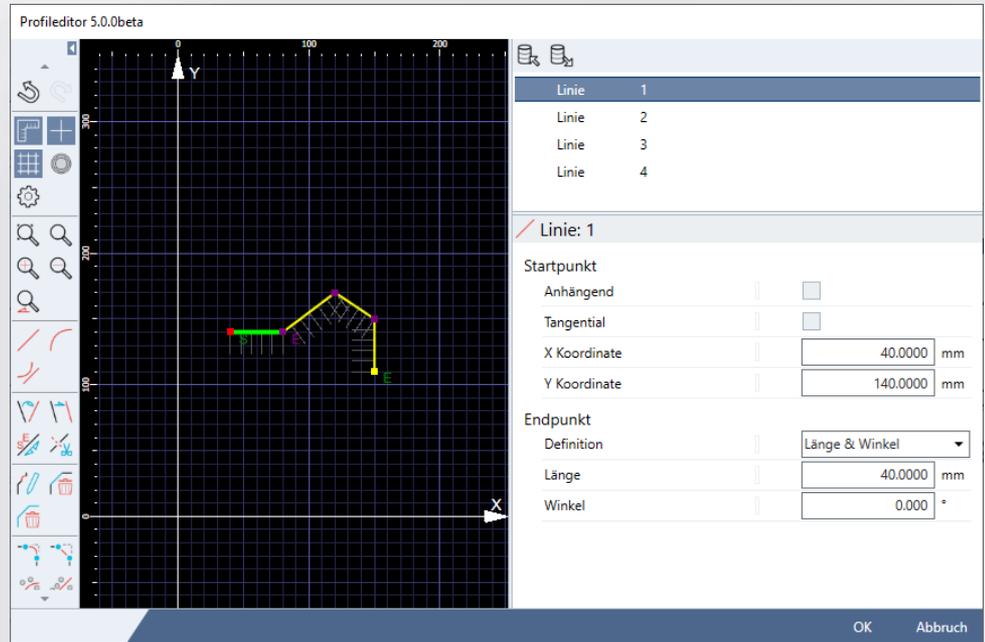
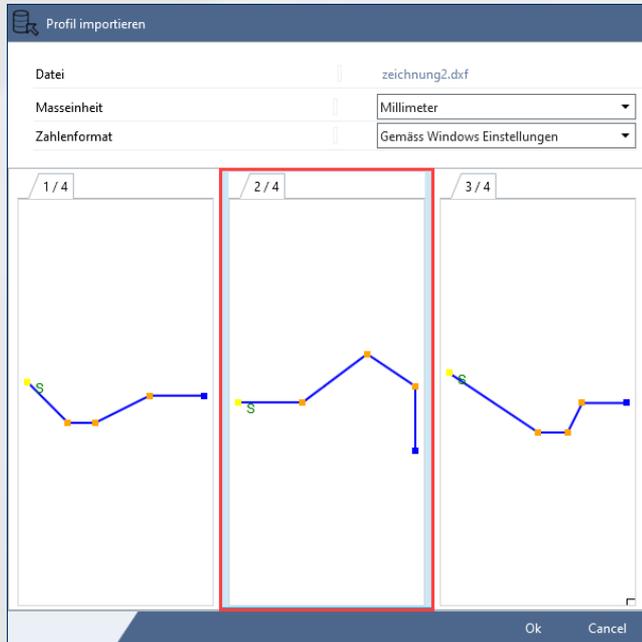
Table of all elements

Size of the element

Profile Editor-X: Multiple Layers

(5.0.0)

- During DXF import, all existing layers are displayed in a preview.



Profile Editor-X: Conversion Spline – Polyline

(5.0.0)

- Splines can now also be read in and segmented into lines with a maximum tolerance.

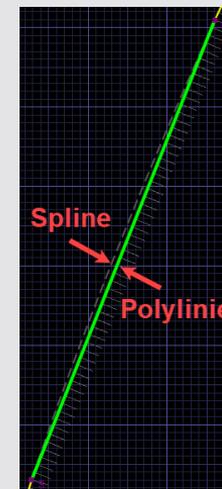
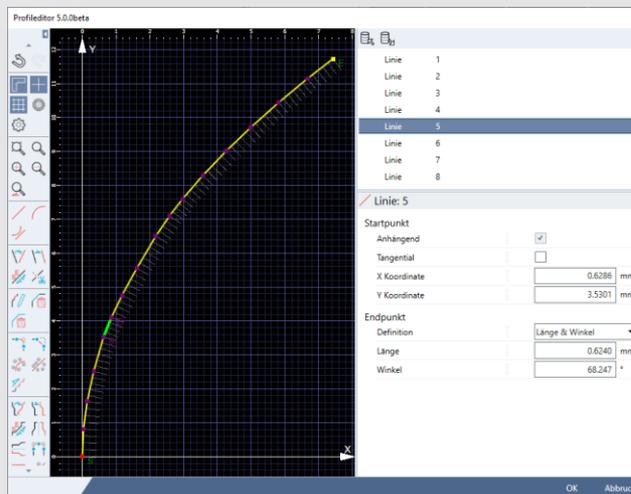
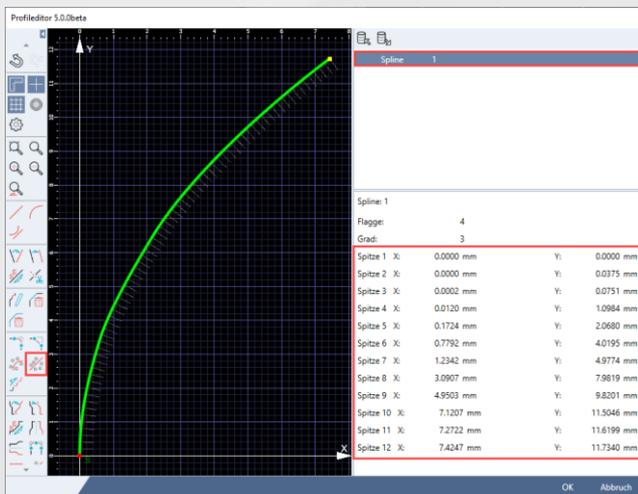


Spline



Polyline

<0.002mm



Thermal growth compensation, new option

(new option 4.3.0)

- Automatic thermal growth compensation using the work piece or wheel probe
- This function must be adapted once for each machine kinematic



Settings

Cycles
Feedrates
Distances
Helix
Probe data
Needle
Displacement
Perimeter
Calibration
Thermal growth calibration
Wheel probing
Calibration wheel probing

Thermal growth - tool probe

	Z-axis	X-axis	Y-axis	B-axis
Offsets:	X 0.00000	0.00000	0.00000 mm	
	Y 0.00000	0.00000	0.00000 mm	
	Z 0.00000	0.00000	0.00000 mm	
Activate axis for measuring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Calibration position	0.00000	0.00000	0.00000 mm	0.00000

Thermal growth - wheel probe

	Z-axis	X-axis	Y-axis	B-axis
Offsets:	X 0.00000	0.00000	0.00000 mm	
	Y 0.00000	0.00000	0.00000 mm	
	Z 0.00000	0.00000	0.00000 mm	
Activate axis for measuring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Calibration position	0.00000	0.00000	0.00000 mm	0.00000

Calibration

Last calibration on - / version -

Default val... OK Cancel ?

New grinding operation

Group

- Grinding
- Cylindrical grinding
- In-process-measurement (measurement with co...
- Inspection measurement
- Probing
- Wheel
- ISO
- Fixed equipment
- Machine parts
- External calculations

Operation

possible types

- Core diameter
- Diameter
- Inside surface distance
- Thermal growth compensation

Thermal growth compensation

General
Modifications

Number of tools till execution: 10 (only for loader operation)

	X	Y	Z
Measurement with tool probe:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Measurement with wheel probe:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Maximum difference for one axis when using both probes: 0.10000 mm

Calculation of the values when using both probes for one axis: Average value

Retract support before probing

Unload wheel before probing

Origin point offset... Probe now...

Position

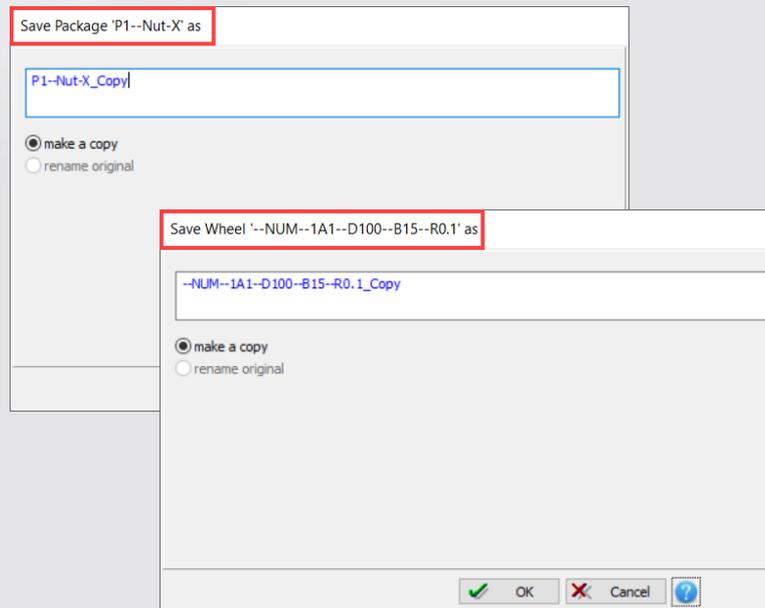
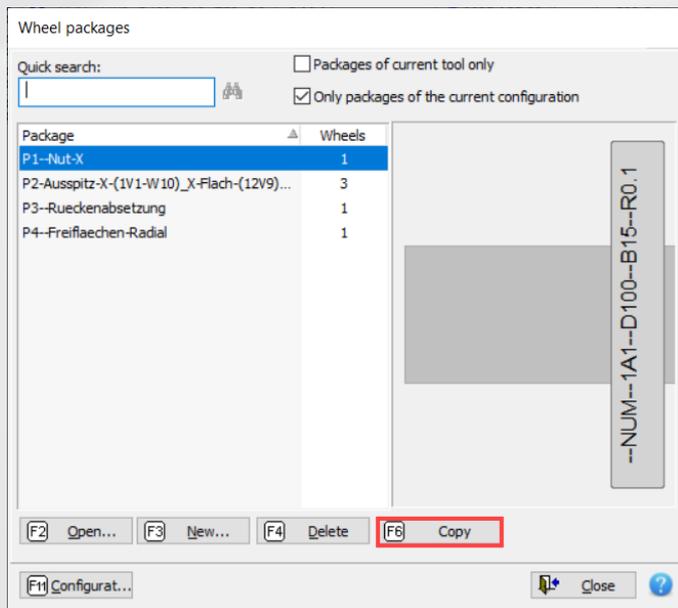
before after Operation 1 insert

OK Cancel ?

Copy wheel packages

(4.3.0)

- Existing wheel packages can now be copied. The package and the wheels are automatically duplicated during this process. The names for the new package and the copied wheels can be selected individually.



Grinding wheel - show list of tools

(5.0.0)

- On the info page of a grinding wheel, a list of all tools in which the corresponding wheel is used can be displayed.



Scheibendaten (---P00_10_R01)

Info

Name: ---P00_10_R0.1
 Kategorie: --DEMO_Scheiben Für Maschinen der Kategorie: (keine)
 Form: Peripherie
 Paket: Paket_01
 Material: undefiniert

Historie

	Aktion	Datum	Benutzer	Version	Maschine/Keyfile
1	Erstellt	16.02.2012 9:48	DBA	3.6.0f	11432999
2	Exportiert	02.03.2018 18:16	OEM	4.0.ob	11512999
3	Importiert	14.09.2018 13:45		4.0.0h	11432999
4	Zuletzt geändert	23.03.2022 9:36	DBA	5.0.0beta	11432888/11432...
5	Zuletzt verwendet	02.05.2022 8:06	DBA	5.0.0beta	13802888/13802...

Anzahl Verwendungen: 81 Werkzeuge ...

Kommentar:

Scheibe auswählen für Mantel/Nut-X

OK Abbrechen

Werkzeugliste

	Name
Bohrer	SGL-SE111-D8.5
Bohrer	S-Gashout-Convex-Radius
Bohrer	HPX-SE112-D8.5
Bohrer	HPR-SE113-D8.5
Bohrer	028--SPITZE-Schutzfase_NGS_D22--
Bohrer	--S6-KuelkanalSimulation
Bohrer	--Prospekt_2012_Formbohrer
Bohrer	--NR-Draw_Flash-Stufenbohrer
Bohrer	--Formstufe-mit-Winkel-Knickspitze
Formfräser	SCHEIBENFRAESER_Multidrall
Formfräser	Fraeser_fuer_Innengewinde
Formfräser	Demo-Wendeplatte_Rundspannung_Sc
Formfräser	065--Prospekt_2012_Formfraeser_NGS_F
Formfräser	036--FLACHFORMBOHRER_NGS_F55--
Formfräser	--Stirnschneider--
Fräser	Stirn_Hohlschliff-Externe-Berechnung
Fräser	Nut_X_ganze_Scheibenform
Fräser	Kugel-mit-Ausspitzung-X-Flach-Kombi
Fräser	DXF-Rohlingsprofil

Schliessen

Separate parking position for NR-Control

(5.0.0)

- For NR-Control at the end of the programm a separate parking position can be defined.



Geometry

Cylinder geometry

Teeth

Division

Blank

Info

Attachment

Clamping

Pass over

Increments

CNC

3D

Park positions

Probing-General

Probing-Position

Probing-Measuring

Probing-Runout/Lateral runout

Position for:

- Change of operation 1
- Change of operation 2
- Change of operation 3
- End of program
- Program end with NR-Control**
- Probing the tool

Use values from the entry 'Change of operation 1'

Automatic
(Use values from the settings)

Axis	Position	Sequence
X	500.0000 mm	3
Y	200.0000 mm	1
Z	650.0000 mm	2
B	0.0000 °	4
C	0.0000 °	4

Y
Z
X
B C

Sequence is used to move from the tool to the park position. When approaching the tool starting from the park position the sequence is inverted automatically.

Tip

Cylinder

Probing...

Data interface...

OK

Cancel

?

Automatically use last used machine

(5.0.0)

- It is now possible to automatically activate the last machine used, according to the workpiece info, when opening a tool.



Settings

Options

Window

Export/Import

2D

NUMROTO-3D

Unit

mm

Inch

Add switch in status bar

Number of decimal places

Number:

Confirm exit program

Select text in edit fields

Save filter setups

Background download of CNC program

Use different set of hot keys in resharpener dialog

Stock removal as default page in the sharpening dialog

Flag column in machining operation sequence

No preview in the tool table

Direct machine selection in the status bar

Language selection in status bar

Keep tool category selection active after it has been chosen

Keep a wheel category active after one has been chosen

Only show custom operation name in grinding operations (if available)

Using the Enter key will immediately adopt the selected entry from tool and wheel list

Use profile editor X

Automatically select the last machine used when opening a tool

Link NCI with function key F12

Pitch: Numbering of teeth

(5.0.0)

- Teeth are new numbered



Geometrie

- Spitze
- Durchmesser
- Geometrie
- Teilung**
- Rohling
- Aufspannung

Startwinkel der Zähne [°]	
	[°]
1	0.0000
2	30.0000
3	60.0000
4	90.0000
5	120.0000
6	150.0000
7	180.0000
8	210.0000
9	240.0000
10	270.0000
11	300.0000
12	330.0000

Startwinkel sind

Absolut
 Relativ

Durchmesser 1/Nut

- Nut
- Kern
- Nutauslauf
- Scheibe
- Vorschübe
- Reduktion
- Aufteilung/Zustellung
- AC
- Inkremente
- Allgemeines
- Korrekturen
- Umlenken
- Schleifposition
- Kühlventile
- Teilung/Drahl
- ISO-Ausfahrprogramm
- ISO-Programm

Eigene Teilung / Zahnauswahl
Eigene Zahnauswahl: Zahnauswahl:

Eigener Drahlverlauf
Drahltyp: Steigung konstant
Drahlrichtung: Rechts
Steigung: 103.5775 /mm

Eigene Schneidrichtung
Schneidrichtung: Rechts

Eigene Zahnauswahl

Startwinkel der Zähne [°]	
A	[°]
1	<input checked="" type="checkbox"/> 0.0000
2	<input checked="" type="checkbox"/> 30.0000
3	<input type="checkbox"/> 60.0000
4	<input checked="" type="checkbox"/> 90.0000
5	<input checked="" type="checkbox"/> 120.0000
6	<input type="checkbox"/> 150.0000
7	<input checked="" type="checkbox"/> 180.0000
8	<input checked="" type="checkbox"/> 210.0000
9	<input type="checkbox"/> 240.0000
10	<input checked="" type="checkbox"/> 270.0000
11	<input checked="" type="checkbox"/> 300.0000
12	<input type="checkbox"/> 330.0000

Startwinkel sind

Absolut
 Relativ

Inch / mm value converted in context menu

(4.3.0)

- The input value can be displayed in the context menu in the other measure system.



Cylinder/Relief 1

Geometry	Cylinder start	Cylinder end
Wheel	8.00000	8.00000
Feedrates	0.048031	0.048031 inch
Cycles/Infeed	0.000000	
Increments	0.000000	
General	Cutting angle: 2.00000	
Modifications	Displacement angle: 0.00000	
Change positions	Grinding point offset: 0.000000	
Grinding position	Length modification: 0.177165	
Cooling Valves	Eng./diseng. slant	
Division/Helix	<input type="checkbox"/> Slant	
ISO disengagement program	Length: 0.059055	
ISO program	Angle: 45.00000	
	Grinding position: Tangential	

Context menu for Land width: 0.048031

- Undo
- Cut
- Copy
- Paste
- Delete
- Original value 0.048031
- Default value 0.047244
- Min. value 0.000039
- Max. value 393.700748
- Value in [mm] 1.21999**

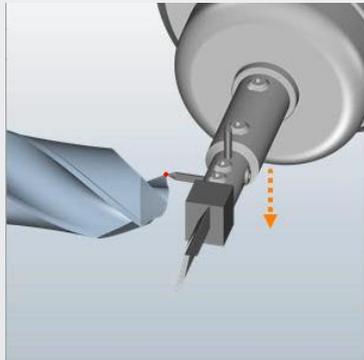
K-land probing

(4.3.0)

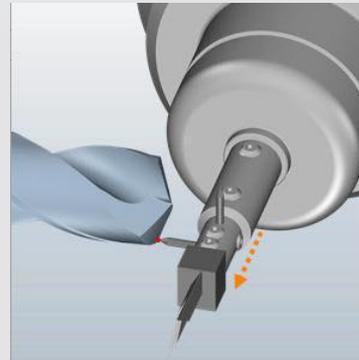
- K-land probing with coolant hole needle, additional probing method selectable



Coolant hole needle vertical (new)



Coolant hole needle transverse



Tab page 'Blank'

(5.0.0)

- The 'Blank' dialog is now available on the F10 Resharpener page. This makes it again possible to define the length of the blank directly within the resharpener page.



Nachschärfen

Geometrie
Aufspannung
Rohling
Abträge
Operationen
Tastlauftrag
Tasten-Allgemein
Tasten-Position
Tasten-Ausmessen
Tasten-Rundlauf/Planlauf

Werkzeugmaterial: Hartmetall

Kühlkanal

Rohling

Länge:	Rohling	Schaft
	77.0000 mm	45.0000 mm <input checked="" type="checkbox"/> A
Durchmesser:	11.8500 mm <input checked="" type="checkbox"/> A	12.0000 mm
Spitzenwinkel:	180.0000° <input type="checkbox"/> A	<input type="checkbox"/> Fase am Schaft

Stern

Mantel

Datenschnittstelle... [F4] Tasten [F5] Schleifen [F6] Tasten und Schleifen

[F3] Neu... [F7] Speichern als... Normale Eingabe Abbrechen ?

Filter according to grinding operation

(5.0.1)

- Tools can now be filtered according to grinding operations.



Filter

Filter name:

At least one of the following conditions must be compiled
 All of the following conditions must be compiled

Filter conditions

Grinding operation

Value selection

- Flute
- Supplementary flute
- Body clearance
- Manual flute
- Rough profile
- Rough profile on ball nose
- Rake surface along radius
- Independent flute
- Independent manual flute
- Flute-X
- Relief 1
- Relief 2
- Relief 3
- Relief 4
- Relief 5
- Relief 6
- Radius at cutting edge end 1
- Radius at cutting edge end 2
- Radius at cutting edge end 3
- Radial relief
- Tip gashout
- Tip relief 1
- Tip relief 2
- Tip Notch
- Tip clearance
- Chamfer 1
- Chamfer 2
- Manual tip relief 1
- Manual tip relief 2
- Tip gash out X
- Rake surface along radius X

Manage filters...

Tool list

Category: All

Quick search:

All tool types
 Only tools of current machine

Name	N	Ø	No. ...	Helix...	Helix...	Num...	Used on
KLB_12_40_num	✓	40.00	12	Rj/Ri	Cons...	44	22.01.2022
Kugel_5_Grad_Sprung	◦	12.00	4	Rj/Ri	Cons...	0	
Kugel-mit-Ausspitzung-X-Flach-Kombination	◦	12.00	4	Rj/Ri	Cons...	0	
Nut_X_ganze_Scheibenform	◦	20.00	3	Rj/Ri	Cons...	33	24.02.2017
Nut-Test	◦	5.90	2	Le/Ri	Cons...	0	
Probleme-Freiflaeche-bei-hochgenauer-Aufoesung	+	1.00	2	Rj/Ri	Cons...	0	
Probleme-Freiflaeche-bei-hochgenauer-Aufoesung_autosave	◦	1.00	2	Rj/Ri	Cons...	0	

NCI – Show more cycle times

(5.0.1)

- Via drop-down menu it is possible to show the last 10 cycle times.
- It shows the start- and endtime, but also the duration time of the last cycles.



NUMROTO Control Interface 5.0.1b - loglevel=debug

File Functions Display Options Help

3D Calib not activated

Gr1	Pos. OP (mm)	To go	Lag	Remaining dist.
X	135.1853	0.0000	0.0001	
Y	6.1668	0.0000	0.0001	
Z	331.1611	0.0000	-0.0001	
B	34.1022	0.0000	-0.0001	
C	359.9999	0.0000	0.0000	

Linear interpolation programmed feed rate 1000.0 mm/min x 0% = 0.0 mm/min

Spindle1 stopped Spindel-Drehzahl = 0 %

0 x 50% = 0 r.p.m

Tool number 0

Tool counter: 873

Cycle time: 02:11 last measurement: 03:20

Grinding time: 00:54 Remaining time: 00:00

Clamping: -0.1127mm 0.0000°

Runout: 0.0000mm 0.0000°

inter: 873

me: 02:11 last me

y time: 00:54 Rem

ig: -0.1127mm 0.0

0.0000mm 0.000

390	G17	
394	G97	
	M48	M9
66:1	M62-1	

CYHLD 0 M2

ime Page M01 Reset NRplus

missing packages auton

12.09.2023 17:10:52 - 12.09.2023 17:10:56 - 02:35

12.09.2023 17:11:01 - 12.09.2023 17:11:04 - 02:35

13.09.2023 08:55:02 - 13.09.2023 08:56:18 - 01:16

13.09.2023 09:49:14 - 13.09.2023 09:50:53 - 01:39

13.09.2023 09:54:25 - 13.09.2023 09:56:04 - 01:39

13.09.2023 10:46:11 - 13.09.2023 10:46:12 - 00:01

13.09.2023 10:48:47 - 13.09.2023 10:48:55 - 00:08

13.09.2023 10:49:18 - 13.09.2023 10:51:18 - 01:59

13.09.2023 10:54:44 - 13.09.2023 10:56:32 - 01:48

13.09.2023 10:58:57 - 13.09.2023 11:05:06 - 06:09

Set CNC wheel compensation to 0 after wheel probing

(5.0.1)

- After running a manual wheel probing, it is possible to delete the CNC – compensation amount.
- The dialogue where you can delete the CNC – compensation amount appears after the probing is finished.



Probing wheels

Package name: ---T01



	Wheel	Probing	Diameter	Flange ...	Width	Angle	Probing data
▶ 1	--T01_R0.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			1.05000 / 1.05000, 5 ...

CNC correction 2

CNC compensation amount: 2.3450 mm

Calculate correction value with the wheel and/or reset on the CNC ?

Do not calculate and do not set 0

Do not calculate but set 0

Calculate and set 0

Assign collets to multiple machines

- In the settings it is possible to assign collets to multiple machines.

Manage collets

Category: All

Quick search:

List only collets corresponding to the current machine

Name	Machine	Type	Ø	DXF	STL	D	Category
SCHUNK_12-110_SDF	---	Fixed	12.00 - 12.00	Yes	*	*	*
SCHUNK_12-110_SDF_11432999	---	Fixed	1.00 - 100.00		*	*	*
SCHUNK_14-110_SDF	---	Fixed	14.00 - 14.00	Yes	*	*	*
SCHUNK_14-110_SDF_11432999	WZS 70 (11432999)	Fixed	14.00 - 14.00	Yes	*	*	*
SCHUNK_16-110_SDF	---	Fixed	16.00 - 16.00	Yes	*	*	*
SCHUNK_18-110_SDF	---	Fixed	18.00 - 18.00	Yes	*	*	*
SCHUNK_20-110_SDF	---	Fixed	20.00 - 20.00	Yes	*	*	*
SCHUNK_20-110_SDF_11432999	WZS 70 (11432999)	Fixed	20.00 - 20.00	Yes	*	*	*

Only allow collets to be selected for a tool which meet the following criteria

- Applicable for the current machine
- Shank diameter range matches tool shank diameter

Collet - Machine

Use for all machines

Applicable for:

- 215 (12521999)
- 325 Linear (13502999)
- ATG (12042999)
- CA5 (13802999)
- Complet 2S (12202999)
- EVO (12511999)
- Ewamatic (10511999)
- Ewamatic Linear (10531992)
- Ewamatic Linear (10531999)
- Ewamatic line (10521991)
- Ewamatic line (10521999)
- Ewamatic line (10531991)
- FLEXIMAT 91 (10003999)
- Fleximat (11498300)
- Fleximat (12229300)
- Hawemat 3000 (11512999)
- Hawemat 3000 (12312999)
- Mini-F (12502999)
- NT05 (12501999)
- NTG (12022999)
- NUG 250 (13302999)
- Nagoya (13702999)
- PTG 4 (12012999)
- PTG-6L (12032997)

(5.0.1)



Insert tool into job list (F10 – Resharpener)

(5.0.1)

- In resharpener mode it is now possible to add the active tool in the job list using 'save as' (F7).
- Important notice: it only works if a joblist is already existing.

The screenshot shows the 'Resharpener' software interface. On the left is a sidebar with a tree view containing categories like 'Geometry', 'Clamping', 'Blank', 'Stock removal', 'Operations', 'Probing command', 'Probing-General', 'Probing-Position', 'Probing-Measuring', and 'Probing-Runout/Lateral runout'. The main area displays tool parameters: 'Number of teeth: 2', 'Center cutting teeth: 2', 'Lead: 5.44140 mm', 'Tool material: Carbide', 'Number of helices: 1', and 'Helix type: Constant lead'. A 'Save End mill' dialog box is open, showing the tool name 'Probleme-Freifaechte-bei-hochgenauer-Aufloesung' and a 'Name' field with the value 'Probleme-Freifaechte-bei-hochgenauer-Aufloesung_Copy'. Below this are radio button options: 'make a copy' (selected), 'rename original', 'change only category', and 'copy as tool template'. At the bottom of the dialog, the 'Insert tool into job list' checkbox is checked and highlighted with a red box. A red arrow points from the 'Save as...' button in the bottom toolbar to this checkbox. The bottom toolbar includes buttons for 'Data interface...', 'F2 Probing', 'F5 Grinding', 'F8 Probing and Grinding', 'F3 New...', 'F7 Save as...', 'Normal Entry', and 'Cancel'.

Save and restore probe calibration data

(5.0.1)

- Calibration data can now be saved in a file and also restored if necessary.

Settings

Port

Grinding program

Properties

Properties 2

Cycles

Feedrates

Distances

Helix

Probe data

Needle

Displacement

Perimeter

Calibration

Wheel probing

Calibration wheel probing

Calibration bar

B-axis — Y-axis — X-axis — Z-axis

Diameter: 12.00000 mm

Measured position from the origin point: 155.00000 mm

Calibration

Standard calibration position: 90.00000 * 250.00000 350.00000 150.00000 mm

Probe trigger distance: 0.02700 mm

Calibration position for left cutting edge: 250.00000 350.00000 140.00000 mm

Last calibration on 16.12.2022 07:47:51 / version 5.0.0

Buttons: Calibration, Logfile...

Use the calibration cube

Swivel to 90° to measure the trigger distance

A

A

Note

Let confirm during calibration

Test - Text: 123456789 10

Buttons: Default val..., Sichern Kalibrier..., Rückstellen Kal..., OK, Cancel, ?

