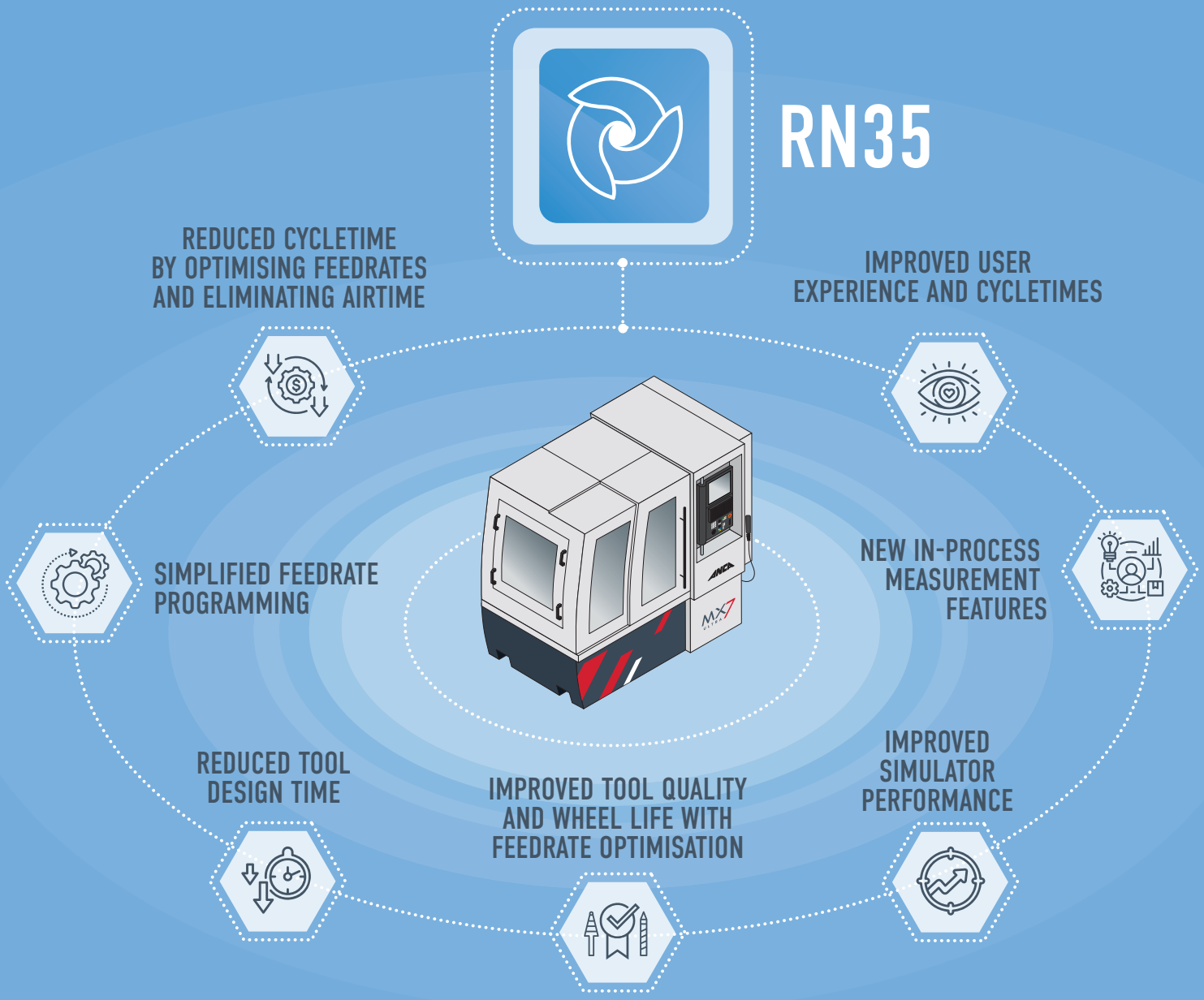
ELEVATING PRODUCTIVITY AND PROFITABILITY

WITH TOOLROOM RN35



TOOLROOM RN35

ANCA CNC MACHINES

TOOLROOM **RN35**

UNLOCK THE FULL POTENTIAL OF YOUR MANUFACTURING OPERATIONS WITH THE LATEST RELEASE OF TOOLROOM RN35. DESIGNED WITH A KEEN FOCUS ON MAXIMIZING PRODUCTIVITY, OPTIMIZING PERFORMANCE, AND ENHANCING THE USER EXPERIENCE, THIS RELEASE PROMISES TO REVOLUTIONIZE YOUR TOOL PRODUCTION PROCESS.

ENHANCED PRODUCTIVITY AND PERFORMANCE

The primary goal of ToolRoom RN35 is to streamline operations and drive efficiency gains across the board. With advanced features tailored to optimizing feedrate, improving cycle time, and extending wheel life, manufacturers can expect a significant boost in productivity without compromising on quality.

OPTIMIZED CYCLE TIMES AND SUPERIOR SURFACE FINISH

By leveraging the capabilities of ToolRoom RN35, manufacturers can achieve shorter cycle times and superior surface finish, resulting in enhanced tool quality and increased throughput. Our innovative approach ensures stable tool quality throughout the production process, empowering manufacturers to meet the demands of today's competitive market landscape.

BOOSTING CUSTOMER PROFITS

At the heart of ToolRoom RN35 lies a commitment to delivering tangible results for our customers. By reducing cycle times and enhancing tool quality, manufacturers can realize substantial cost savings and increase profitability. With every piece produced, ToolRoom RN35 aims to drive down the cost per piece, ultimately contributing to your bottom line.

INTRODUCING THE REVAMPED SPC CHARTS APPLICATION

The new and improved SPC Charts application is part of the ToolRoom RN35 release. Designed to collect tool production data in real time, this powerful tool provides both qualitative and quantitative insights into your manufacturing process. With the ability to view different charts, reports, and historical batches, users can make informed decisions to optimize performance and drive continuous improvement.

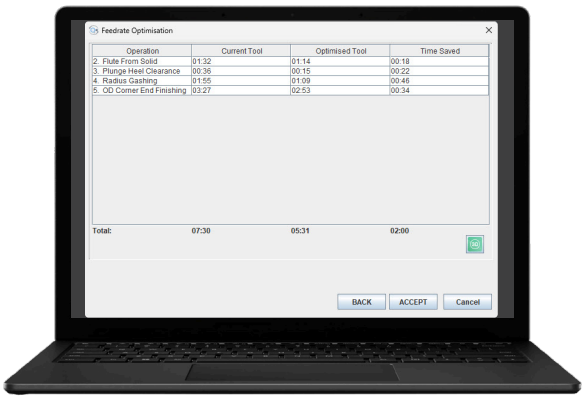
EXPERIENCE THE FUTURE OF TOOL PRODUCTION

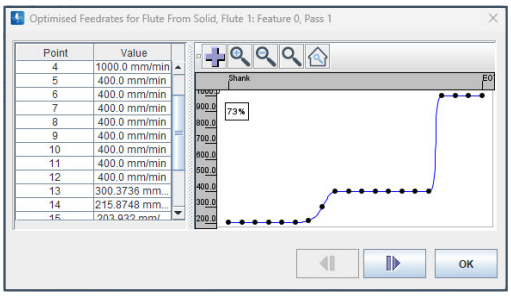
With ToolRoom RN35, you'll gain access to a suite of advanced features designed to elevate your productivity, improve performance, and enhance profitability. Experience the future of tool production today with ToolRoom RN35.

FEEDRATE OPTIMISATION

THIS FEATURE IS THE SEAMLESS INTEGRATION OF THE Q (MATERIAL REMOVAL RATE, OR MRR) AND Q' (SPECIFIC MATERIAL REMOVAL RATE) FEATURE IN CIM3D V9.0 INTO TOOLROOM.

Customers can achieve a constant material removal rate by automatically setting parameters like feedrates with feedrate optimisation feature. This feature is also combined with air-time reduction to eliminate any unwanted air-grinding to achieve improved cycletimes.





BENEFITS:

- Optimised and improved cycletime
- Improved wheel life
- Uniform wheel wear on the surface of the wheel used in grinding
- Increased productivity between wheel reconditioning and replacement
- Stable and improved tool quality

SUPPORTED OPERATIONS FOR FEEDRATE OPTIMIZATIONS

FLUTING

- Flute from Solid
- Formed Flute from Solid
- Flute Polish
- Formed Flute Polish
- Raised Land Fluting

GASHING

- Endface Gash
- Ball Gash
- Radius Gashing
- Point Gashing

OD

- OD Finish
- OD and Ball Finish
- OD Corner End Finishing
- Cross Section Profile
- Step Editor - Profile
- Ball Blank Roughing
- Radius Heel Clearance

ENDFACE

- Endface Finish
- Plunge Heel Clearance

OTHER

- Ripper Formed Relief

NEW AND ENHANCED **SPC SOFTWARE**

STATISTICAL PROCESS CONTROL (SPC) IS STATISTICAL ANALYSIS AND EVALUATION OF MANUFACTURED PART CHARACTERISTICS, ENABLING SYSTEM AND PRODUCTION MONITORING.

This package can be used to collect tool production data in real time. The application is separated into SPC charts basic and SPC service advanced.

BENEFITS:

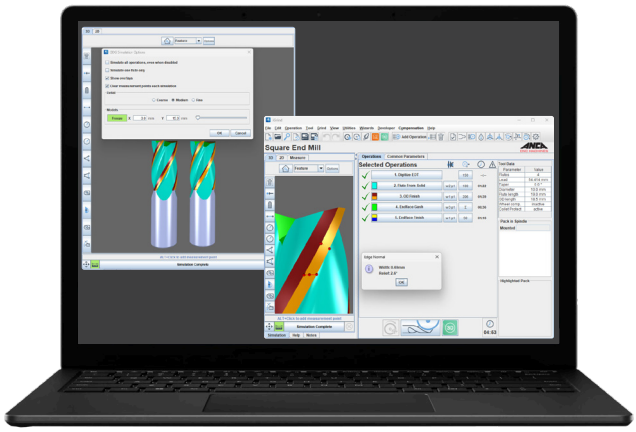
- Gives control of your production process during high volume manufacturing by monitoring the variations due to wheel wear and other process-controlled activities.
- Process capability data can be graphically displayed or stored for future QC purposes or further evaluation.
- Provides wheel wear data from trend chart during batch grinding for end users to do auto compensation after analysing data.
- Ability to access historic data and merge data where required.
- New reporting features like measurement and study report available in pdf and excel formats.
- Can be exported to configure your own reports.

I3DG ENHANCEMENTS

(FREEZE, DIMENSION, OVERLAYS AND POPUP MENUS)

A NEW FUNCTION HAS BEEN ADDED TO THE I3DG OPTIONS DIALOG THAT ALLOWS THE CURRENT 3D MODEL TO BE 'FROZEN', MEANING THAT A DUPLICATE MODEL WILL BE ADDED TO THE SCENE.

This may be useful when making parameter changes to compare the new simulated geometry against a baseline. The frozen duplicate may be offset from the current simulation, and can be made transparent.



New functions have been added to perform measurement in the i3DG simulation. Measurement points can be placed on the 3D model by holding ALT while selecting a point with the mouse or touchscreen.

The following overlays will also now appear in i3DG:

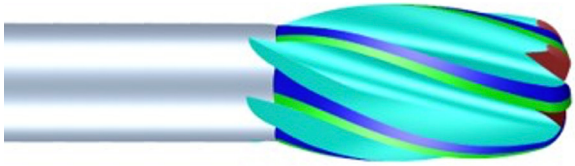
- A line to indicate the lip edge when the Facet Drill Point or Conical Drill Point worksheet is open. The actual lip may be curved due to the intersection with the flute surface, but the land with (for facet) will be referenced from the reference edge, as specified by the lip distance.
- Points to indicate digitizing points on the tool when various digitizing operation worksheets are open.
- Surfaces to indicate the core for fluting operations.
- Lines to indicate the trailing edges of relief operations, which indicate the programmed stop positions.
- A new function is available in the i3DG right-click popup menu to capture an image of the simulation and embed the image in the tool notes.
- The function is also available on the toolbar within the tool notes editor.

PROFILE FLUTING – ENHANCEMENT TO FLUTE FROM SOLID

A NEW FEATURE HAS BEEN ADDED TO THE EXISTING FLUTE FROM SOLID OPERATION TO ALLOW USERS TO HAVE BETTER CONTROL OF THE HOOK/RAKE ANGLE ALONG THE PROFILE OF THE TOOL.

This will give uniform hook angle along the trajectory of the cutting edge and improve tool life.

Some of the user cases include Barrel shaped forms, taper tools, Formed step tools, Christmas tree cutters etc. The core diameter and shape are still maintained as per design.



BENEFITS:

- Gives the ability to control and maintain hook/rake angle along the trajectory of the cutting edge on a given profile.
- Increases cutting performance and life of the tool due to uniform hook/rake angle along the edge

PROFILE SOFTWARE ENHANCEMENTS

A NEW AND EASY WAY TO DEFINE AND MODIFY PROFILES HAS BEEN ADDED TO THE PROFILE EDITOR.

Auto dimension selected element

- By default, the selected element in the profile will now be shown with dimensions indicated.

Toggle definition Mode

- A new button now appears on the toolbar to toggle between element definition modes.

Edit via dimension

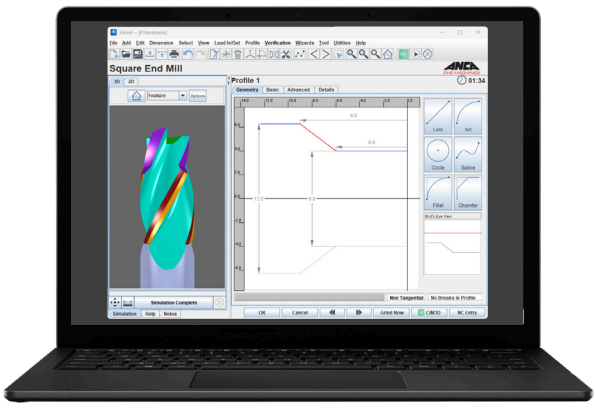
- A new method of modifying profiles has been added to the profile editor.

Fix breaks in profile

- A new function has been added to the Edit menu that can be used to fix gaps or overlaps between elements in the profile.

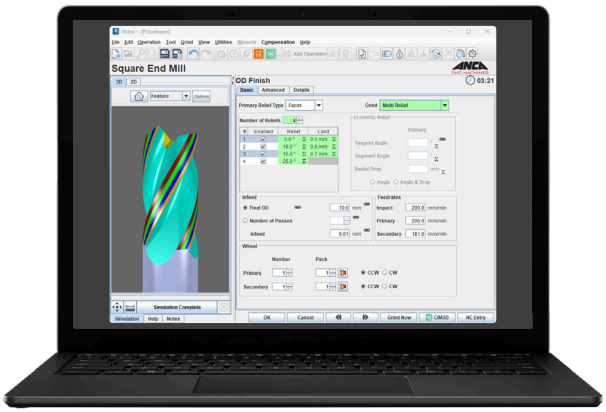
BENEFITS:

- Quick and easy to use the new free form drawing tool to sketch out the rough shape of the profile
- Select an element and dimension markers will automatically appear
- Toggle between definition modes to show different dimensions
- Click the dimension text to modify
- Use Fix breaks in profile to close gaps if required.



OD FINISH – MULTIPLE RELIEFS

MULTI-RELIEF MODE HAS BEEN ADDED TO THE OD FINISH OPERATION. IN THIS MODE RELIEF THE NUMBER OF RELIEFS IS UNLIMITED, AND THE ANGLE AND LAND WIDTH CAN BE DEFINED IN A TABLE.



CORNER RADIUS AND **BALLNOSE ENHANCEMENTS**

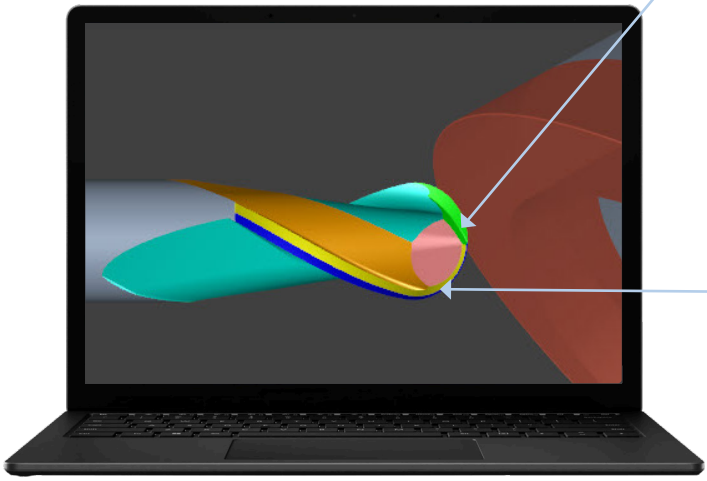
Oscillations on Gash surface

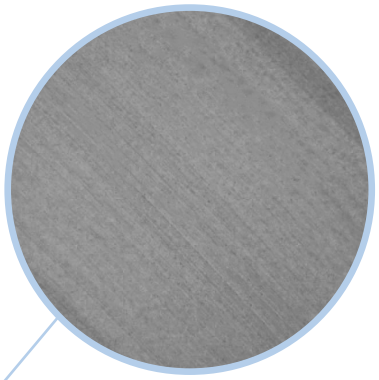
A new function has been added to both Corner radius and ballnose gashing operation. This will give better gash surface finish using standard wheels.

Face grinding for ballnose tooltype

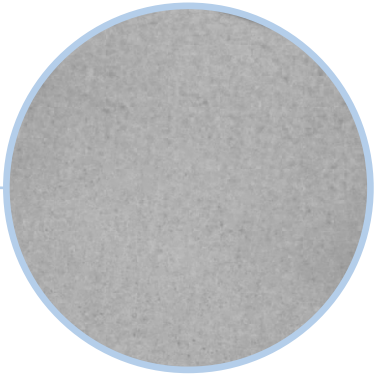
Option has been added to support face grinding for Ballnose tooltype.

- The supported wheel Include 1A1, 11M2 and 1V1 wheels
- Chisel angle can be maintained with this method of grinding





Ballnose Gash Surface



Ball Surface

FORMULA IN FIELDS

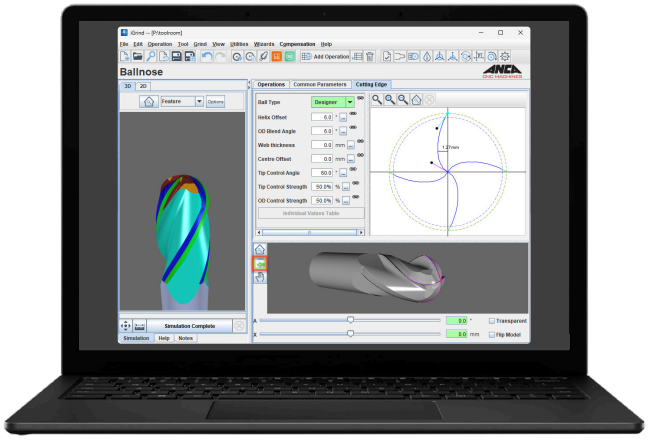
IT IS NOW POSSIBLE TO ENTER MATHEMATICAL FORMULA IN NUMERIC FIELDS.

- Press the equals key (=) to enter formula mode and then enter the required formula or calculation.
- When the ENTER key is pressed the formula will be replaced by the result of the calculation.
- An example if you wanted to specify the diameter from a radius '=4.998*2'.
- Trigonometric functions such as '=5*sin(45)' can also be used.
- All trig functions operate on degrees.
- This function is also available in other ToolRoom applications.

VRML IMPORT

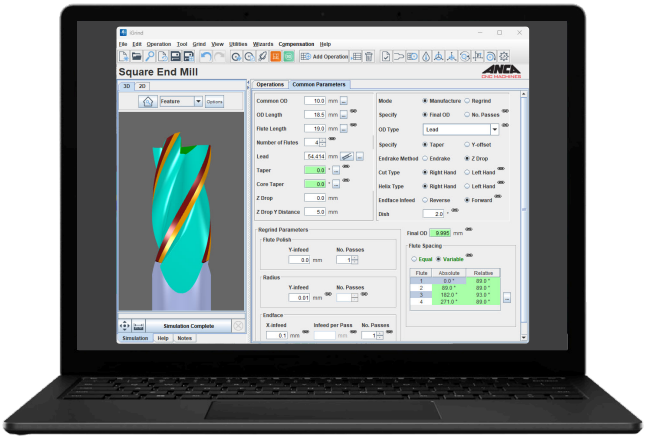
THE BALLNOSE, CORNER RADIUS, DOUBLE CORNER RADIUS, AND BARREL SHAPED BALLNOSE TOOLTYPES FEATURE A TAB "CUTTING EDGES" ON THEIR MAIN WORKSHEET.

On this tab is a 3D view to visualize the cutting edges, defined by the parameters on that page. A button has been added to the 3D view to allow import of a 3D model from a VRML file. The model can then be used as a guide when setting parameter values. An option is available to fine tune the position to match models where required.



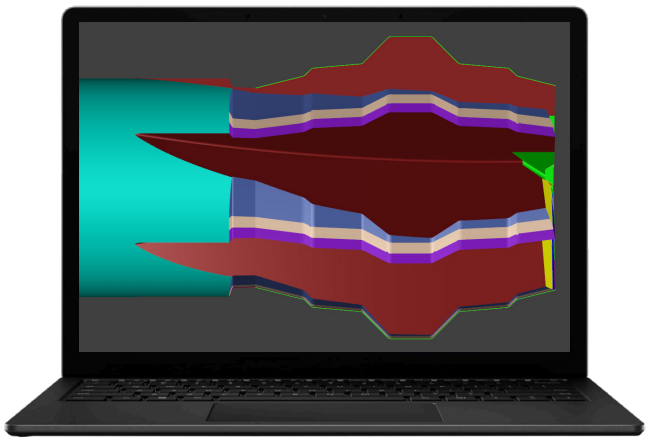
NEW LOOK AND FEEL

THE VISUAL APPEARANCE OF IGRIND AND OTHER TOOLROOM APPLICATIONS HAS BEEN REFRESHED WITH NEW DESIGNS FOR ALL BUTTON AND MENU ICONS.

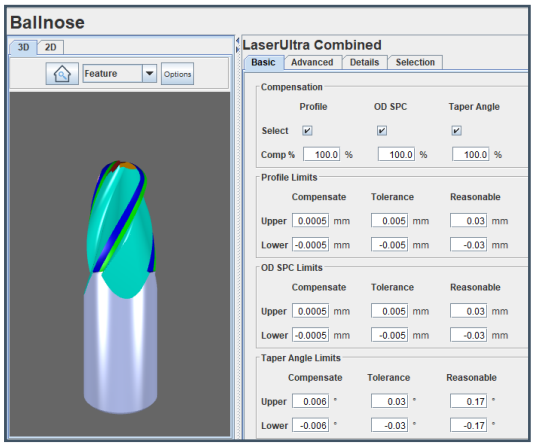


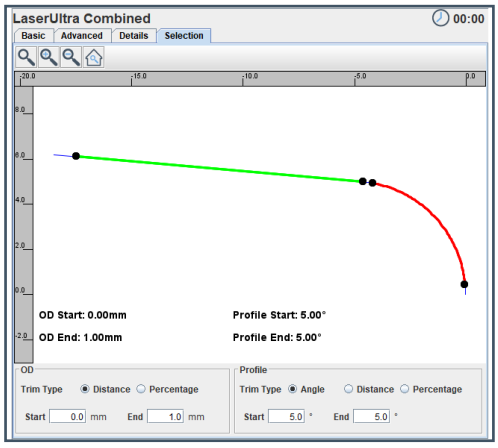
LASERULTRA **ENHANCEMENTS**

NEW SEGMENT COMPENSATION METHOD IS AVAILABLE IN LASERULTRA PROFILE TO COMPENSATE LINES AND ARCS, IN WHICH THE PROFILE GEOMETRY IS COMPENSATED RETAINING THE SEGMENT GEOMETRY TYPE WITH FOLLOWING LIMITATIONS:



1. Only applied on profile with lines and arcs
2. The profile shall start and end with line segments
3. All the arcs in the profile shall be fillet arcs, i.e., tangentially connected to the neighbouring line segments
4. Ability to do oscillations during analog measurements. This will be useful to capture the highpoint on cutting edge. This could have been caused due to wheel wear or spindle growth etc.
5. Continuous scan of OD and ball, OD corner etc to improve cycletime on these tooltypes
6. Measurement of OD primary relief, secondary relief, OD land width etc with LaserUltra (Update for RN35.2)



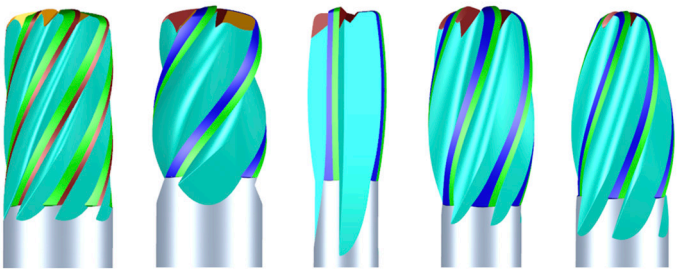


LASERULTRA CONTINUOUS SCAN OF OD TAPER AND BALL, OD TAPER AND CORNER, OD PROFILE IN DCREM ETC TO IMPROVE CYCLETIME

Tool ID	Cycletime – OD SPC	Cycletime – Taper Angle	Cycletime – Profile	Total Cycletime	Cycletime LaserUltra Combined
BNEM D6xZ2x15FL	33 sec	1 min 10 sec	1 min 05 sec	2 min 48 sec	1 min 24 sec
CREM D8xZ2xR2.0x20FL	31 sec	1 min 09 sec	1 min 20 sec	3 min	1 min 39 sec
DCREM D8xZ4x20FL	34 sec	N/A	1 min 09 sec	1 min 43 sec	1 min 23 sec

DCREM **ENHANCEMENTS**

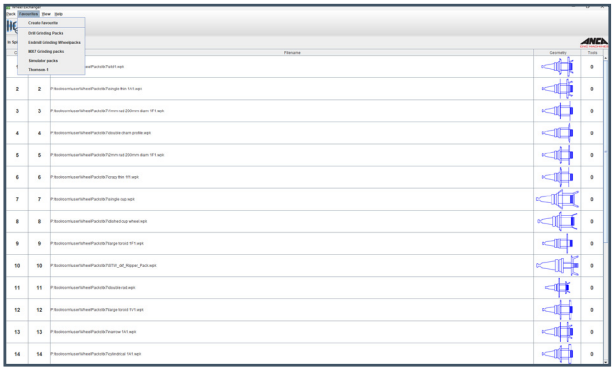
A MAJOR ENHANCEMENT HAS BEEN ADDED FOR DCREM TOOLTYPES WITH A WIZARD STYLE TO SUPPORT DIFFERENT ENDFACE STYLES. THE ENDFACE STYLES INCLUDE DISHED, LENS AND DISHED LENS ENDFACE.



- Ability to offset the centre of the lens radius from the centreline of the tool
- Addition of dish angle to the centre instead of the radius all the way to centre
- Dish has an option to be tangential to the lens arc with and without radius
- Parameter to specify start of dish section from end of lens radius
- Supports dished, lens and dished lens Endface types
- Body has support for Barrel, straight and taper
- Barrel definition includes Neck diameter, form diameter and form taper
- Four radii options including fillet

WHEEL EXCHANGER FAVOURITE

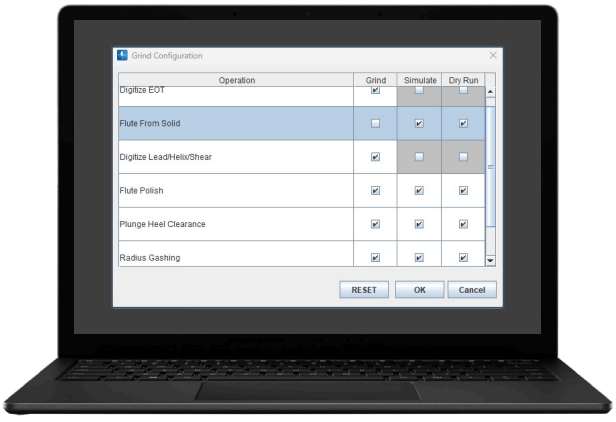
WHEN RUNNING ON A SIMULATOR THE WHEEL EXCHANGER SOFTWARE WILL INCLUDE A MENU LABELLED FAVOURITES. WHEEL PACK CONFIGURATIONS CAN BE STORED IN THIS MENU AND EASILY RESTORED.



CONFIGURATION MENU

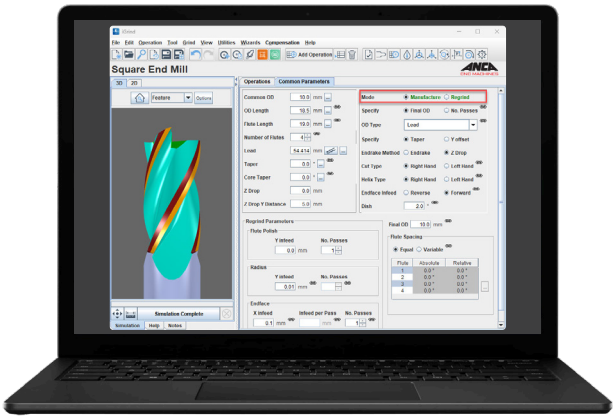
A NEW FUNCTION HAS BEEN ADDED TO THE GRIND MENU TO ALLOW MORE FINE-GRAINED CONTROL OF WHETHER AN OPERATION WILL TAKE PART IN GRINDING OR SIMULATION OR DRY RUN.

For example, it may be desirable to include a fluting operation for the sake of a better-looking simulation even if it will not be performed during regrinding.



MANUFACTURE VERSUS **REGRIND**

THERE IS CLEAR DISTINCTION BETWEEN MANUFACTURE AND REGRIND EITHER FROM WIZARD OR COMMON PARAMETER PAGE. THIS WILL BE A VERY USEFUL FOR CUSTOMERS ENGAGED IN BOTH MANUFACTURING AND RE-GRINDING OF CUTTING TOOLS OF ALL TYPES.

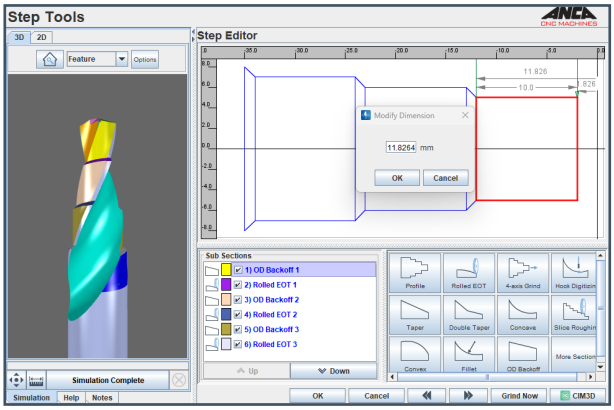


The following parameters are supported and have clear distinction from manufacturing and re-grinding.

- Flute length
- OD length
- Insert width
- Core diameter with taper
- Variable helix/index

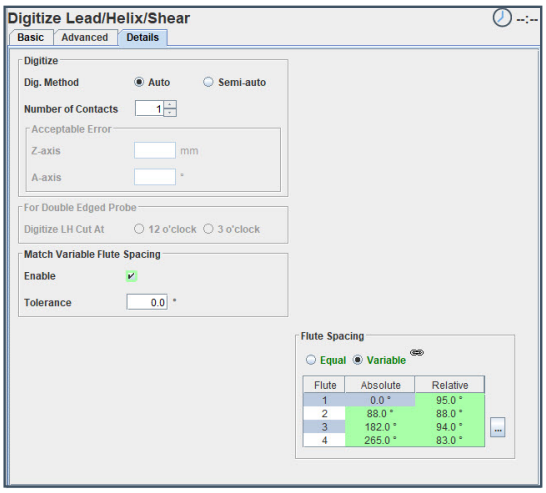
STEP EDITOR LENGTH ADJUSTMENTS

STEP SECTION LENGTHS CAN BE DIRECTLY ADJUSTED FROM THE STEP EDITOR DIALOGUE. IT CAN ALSO BE ACCESSED AND CORRECTED INDIVIDUALLY FROM THE STEP SECTIONS.



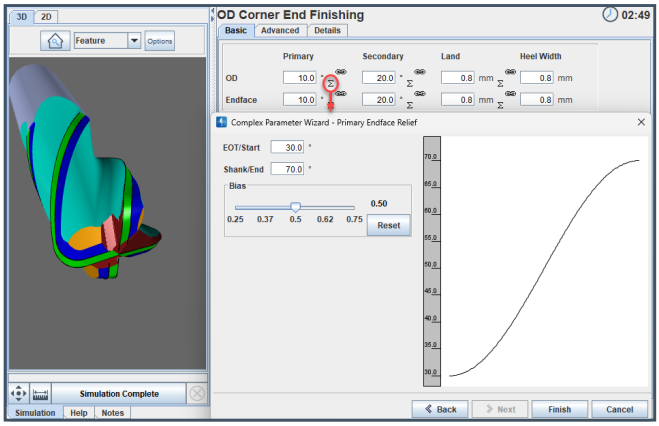
VARIABLE **SPACING**

ADDED THE VARIABLE FLUTE MATCHING FROM DIGITIZE LEAD/HELIX/SHEAR OPERATION AND TO THE DIGITIZE COOLANT HOLES OPERATION. THIS ALLOWS THE FLUTE SPACING FROM THE COMMON PARAMETERS PAGE TO BE MATCHED TO THE DIGITIZED ORIENTATIONS SO THAT THE SAME FIRST FLUTE IS GROUND.



SINUSOIDAL **COMPLEX**

A NEW OPTION HAS BEEN ADDED TO THE COMPLEX VALUE WIZARD TO DEFINE A SINUSOIDAL FUNCTION THAT WILL TRANSITION BETWEEN A SPECIFIED START AND END VALUE.



DIGITISING PERFORMANCE IMPROVEMENTS ON MACHINES

Average 35% cycletime reduction on the following digitising operations:

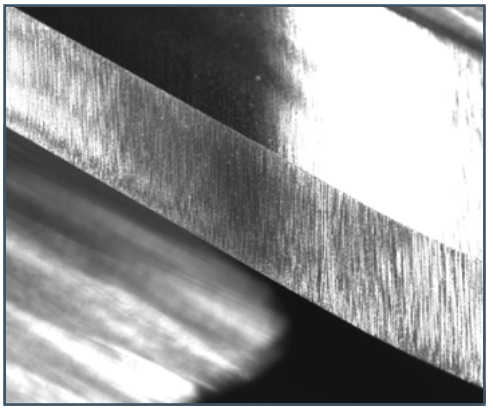
- ATM (Auto tool Measurements)
- Multi digitising operation

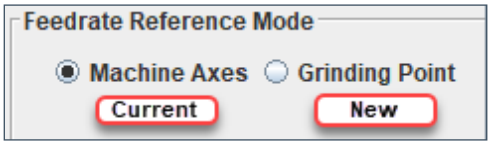
Cycletime in seconds			Delta	
Description	RN35.1	RN35.2	Seconds	%
ATM_Tool_01	175	123	52	30
ATM_Tool_02	89	59	30	34
ATM_Tool_03	181	122	59	33
Multi_Digitizing_Tool_01	149	83	66	44
Multi_Digitizing_Tool_02	198	106	92	46
Multi_Digitizing_Tool_03	52	30	22	42

GRIND POINT VELOCITY

A NEW PARAMETER, FEEDRATE REFERENCE MODE, HAS BEEN INTRODUCED TO DISTINGUISH BETWEEN MACHINE AXES AND GRIND POINT FEEDRATE.

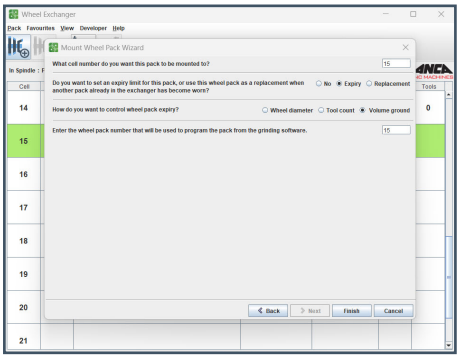
- Software tracks where the grinding point meets the workpiece and maintains a constant feedrate by dynamically adjusting the velocities of each machine axis.
- This constant feedrate at the grinding point enhances surface finish, potentially reduces cycle time, and simplifies the programming of feedrates.
- In summary, the ability to specify actual grind point feedrates will streamline the process of feedrate specification.
- The ToolTypes impacted by this changes are mainly Corner radius, Ballnose, Barrel shaped cutters and double corner radius endmills, Lollipop cutters, Step Tools(Profile) , etc.

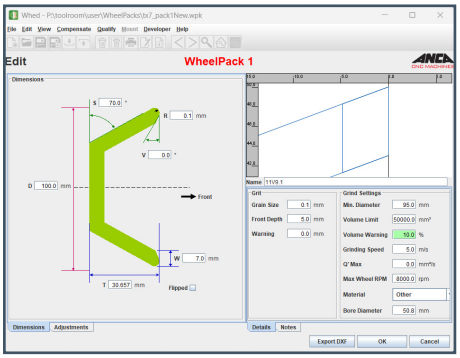


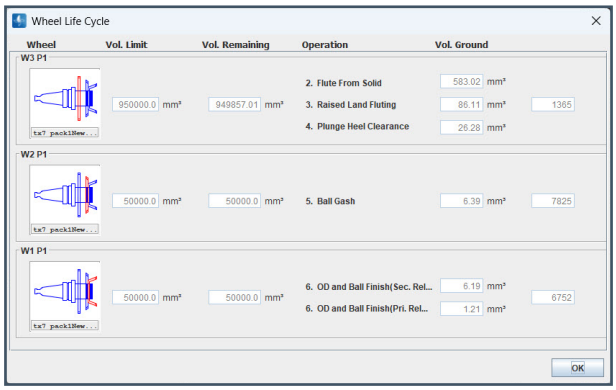


WHEEL LIFE CYCLE MANAGEMENT

- Ability to manage wheels individually based on volumetric material removal.
- Currently wheels are made redundant based on tool numbers
- This option is applicable to non-exchanger machines as well through the wheel editor

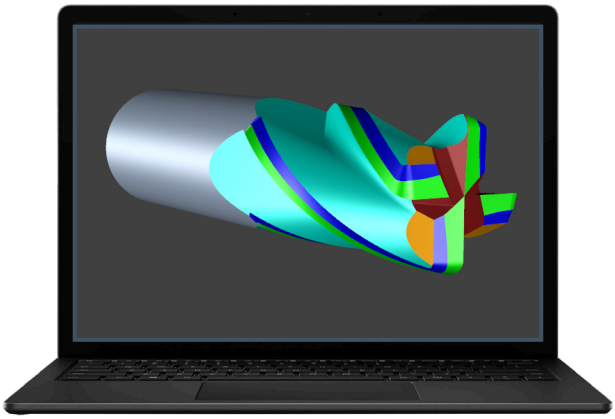


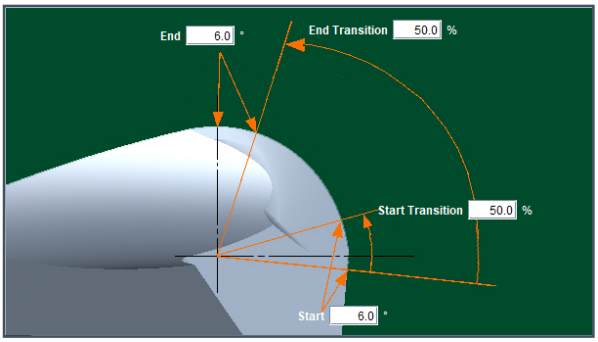


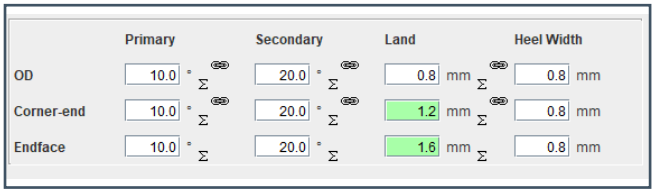


COMPLEX PARAMETERS IN CORNER RADIUS ENDMILL

- Added complex parameters to OD corner and Endface in Multi relief
- Separation of the above three parameters and individual control of the same

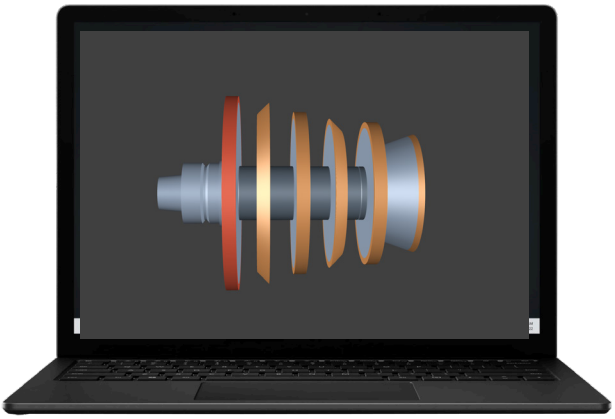






SUPPORT FOR **4+ WHEELS**

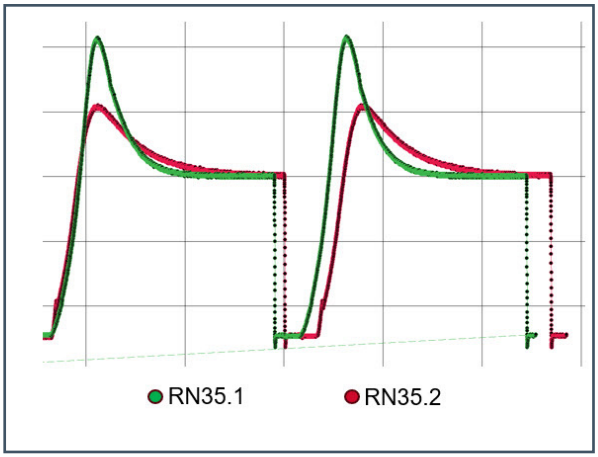
- Support for 4+ wheels on a single wheelpack
- SQEM and CREM ToolTypes and operations will be supported
- There will be support for external qualifications (both Zoller and manual input)
- No support for Automatic white stick and dressing in stage 1
- No support for internal qualifications (Q-Bar and Wheel probe)



SQEM	CREM
Flute from solid	Flute from solid
Flute Polish	Flute Polish
Raised land fluting	Raised land fluting
OD finish	OD finish
Endface gash	Endface gash
Endface finish	Radius gashing OD Corner Endface finish Plunge heel clearance

ADAPTIVE GRINDING

- Improvement to adaptive grinding by eliminating threshold for adaptive to execute.
- This will make grinding smoother and have better life on wheels & surface finish
- Average 5% reduction in spindle load spikes



Spindle Load

OTHER **ENHANCEMENTS**

- It is now possible to launch the Variable Helix Wizard via a new button that appears next to the helix or lead fields on the common parameters panel.
- The OD Backoff step sections in the Step Editor operation now supports constant helix OD type.
- The EOT and Shank Rolled Relief step sections in the Step Editor operation now supports constant helix OD type.
- The display of tool-offset and wheel-offset is now in a worksheet, rather than the previous dialog window, to allow interaction with the i3DG simulation while edits are made.
- Addition of Internal Turning Wizard purchase option. The wizard can be used to create internal boring, chamfering, grooving, and threading tools. Each internal turning tool includes an associated tool type. This feature also introduced several new grinding operations for internal turning tools including Cross Section Necking, Cross Section Chamfer, Coolant Groove, and OD Corner End Periphery.
- Four new tool types have been added for insert grinding within iGrind: Ballnose Insert, Corner Radius Insert, Spade Drill Insert, and Profile Insert.
- A new option has been added to the Complex Value Wizard to define a sinusoidal function that will transition between a specified start and end value.
- Added support for variable flute spacing to the Rolled EOT operation. Also added option to specify the relief as a drop over a segment angle.
- A function has been added to the Step Editor to visualize the hook compensation that has been applied to a profile step section. This can be used to help identify issues such incorrect probing in the hook digitizing operation.
- Added Single-U and Double-U endface geometries to iPunch software. These geometries can be ground on any punch shape but can only be ground using a 1A1 wheel. The radius of the 1A1 wheel must be smaller than the U radius.
- Enhancements are added to the existing Size Control operation in iPunch to eliminate probing errors caused by thermal instability. This includes multiple probe touches, top and bottom probing and top then rotate to bottom probing.
- Added functionality to skip arbour orientation on a per-wheelpack basis for FX7 machines. This allows Spindle Speeder arbours to be used alongside the arbour orientation feature. Note that this feature is hidden by default and must be manually enabled on a per-machine basis if required.

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