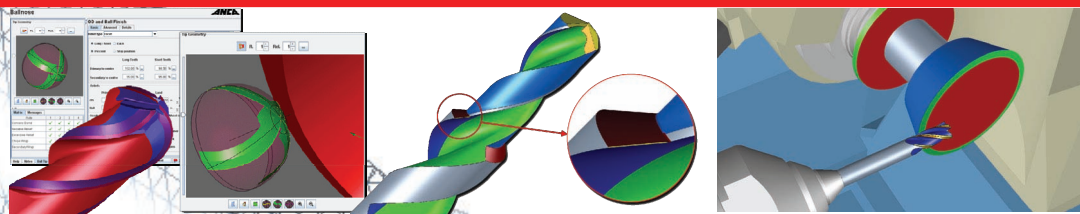


# Software

## Software Catalogue



**ANCA<sup>®</sup>**  
TOTAL PRECISION

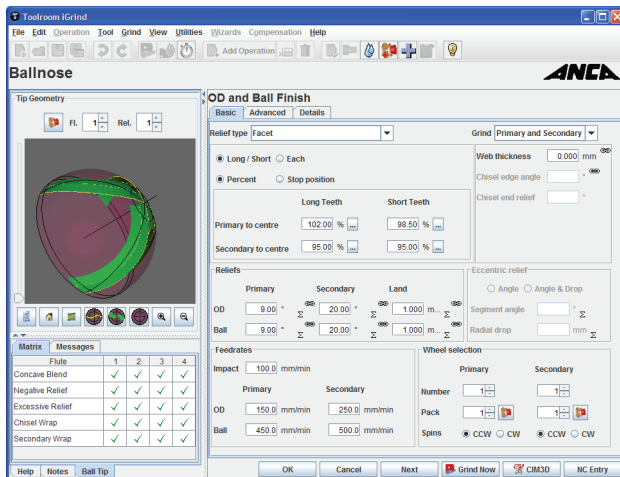
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## Standard Software Packages Provided with Toolroom

The following applications are provided with the Toolroom software at no additional charge.

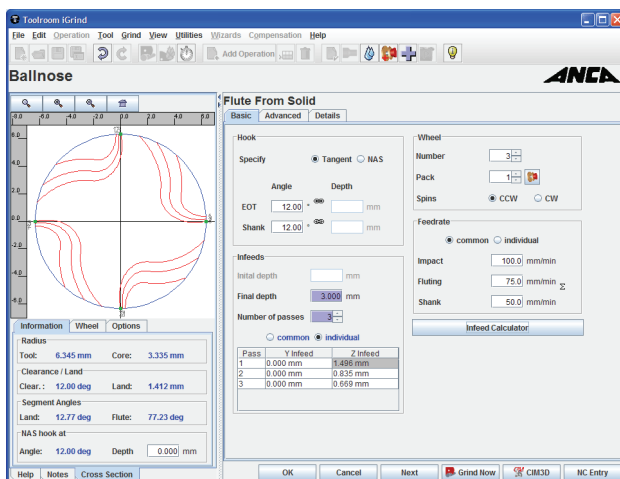
### iGrind



ANCA's primary tool design application for a wide range of tool types including;

- Endmills (square, corner radius, and ballnose)
- Drills
- Step tools
- Profile and special tools
- Taps
- Compression routers
- Side and Face cutters

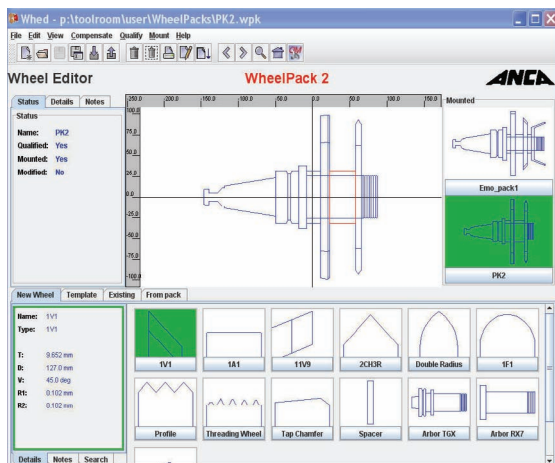
It is designed to deliver flexibility, user friendliness, and operational efficiency to the user. iGrind simplifies the design of standard tools but also has the flexibility to design complex special tools.



Extra NC code entry on every operation allows for inclusion of fully customized cycles or enhancements to standard cycles. Graphical help images are provided for every parameter. Some of the many features available are as follows :

- Dry Run
- Cycle Time Estimator
- Grind First Flute Only
- DIN/Drill Wizards
- Variable Helix Wizard
- Drill Wizard
- Machine accessory interfaces
- Many more...

### Wheel Editor

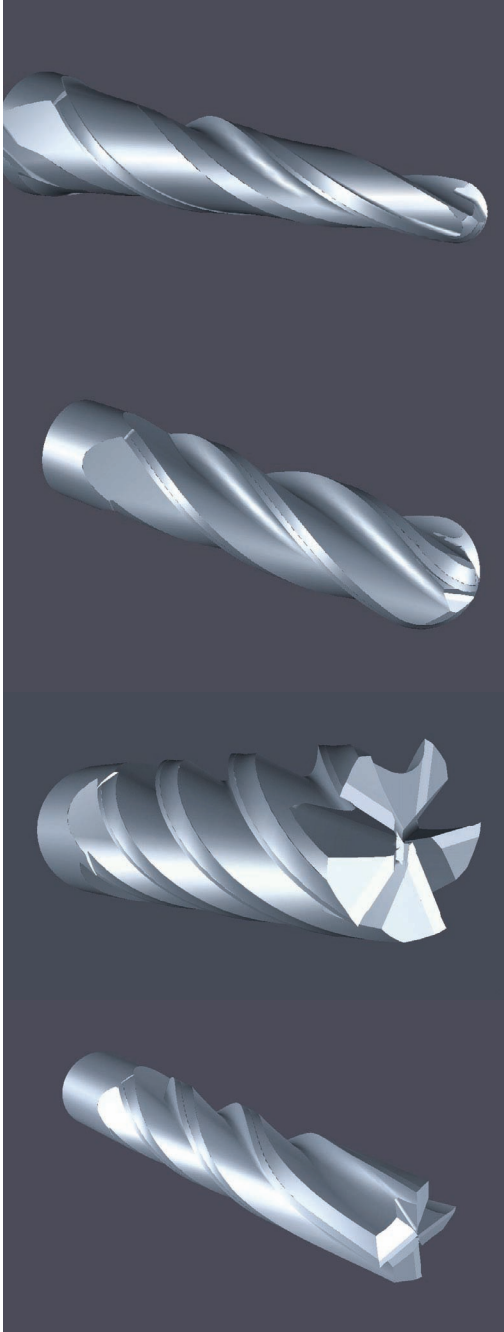


The Wheel Editor application allows design and qualification of wheel packs on the machine. Profile wheels can also be designed and the information used to dress the required shape.

External Wheel Measurement allows wheel pack measurement data (which can be measured on a shadow projector or other external gauge) to be imported for easy creation of wheel packs. The measured data can be entered either manually or transferred automatically to the machine and the wheels will be instantly "qualified"

A wide range of standard wheel shapes are available to simplify the process of wheel pack set-up.

## Endmills



The ANCA Endmill package handles the following types of endmills:

- Square End
- Corner Radius
- Ball Nose

All endmills can be either:

- Parallel or
- Tapered

Flute geometry may be specified as one of:

- Lead
- Helix
- Shear or
- Variable Helix

And in the following combinations:

- Right hand cutting; Right hand fluted
- Right hand cutting; Left hand fluted
- Left hand cutting; Right hand fluted
- Left hand cutting; Left hand fluted

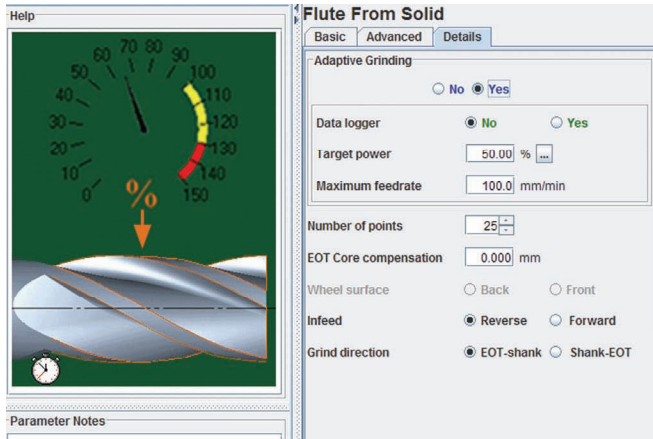
Manufacturing and Resharpener cycles

- Fluting
- Flute from solid
- Flute polishing
- NAS(National Aerospace Standard) hook is available with the above operations
- Raised land fluting
- OD
- Eccentric Relief OD finishing
- Facet OD finishing
- Parallel OD
- Tapered OD positive
- Ripper form relief
- Endface
- Endface
- Heel Clearance (Ballnose only)
- Endface Notching
- Endface Gashing
- Chamfer grinding

Digitizing Cycles

- End of tool
- Lead
- Radial flute index position
- Flute length
- Flute depth
- Lead, Helix angle respectively
- Multiple digitizing along flute with undefined/variable lead or variable helix
- Auto-tool measurement (End of tool, Flute index, End Rake, Hook Angle, Dish Angle, lead and flute length)
- Coolant hole digitizing of drill points, flat ends, and OD

## Adaptive Grinding

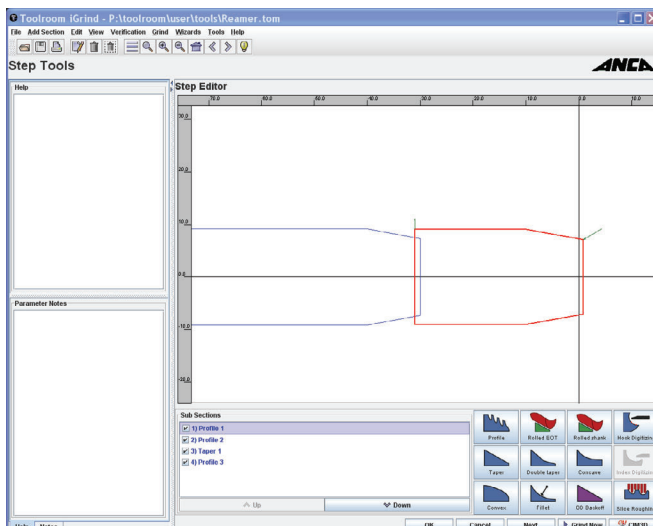


Adaptive Grinding optimizes cycle time by specifying a target spindle power instead of a fixed feedrate. The machine control dynamically adjusts the feedrate (within set limits) to achieve the user specified spindle load. This feature simplifies grinding set-up and optimizes cycle time by allowing the machine to determine optimum grinding feedrates.

Many grinding operations within iGrind may optionally utilize Adaptive Grinding, including all fluting operations. Some of the other cycles include;

- ANcrest Fluting
- Endface Gash
- Flute Polish /Formed Flute Polish
- OD Backoff
- Raised Land Fluting
- Radius Gashing
- Ball Gash /Flute Gash
- Plunge Heel Clearance

## Step Tools



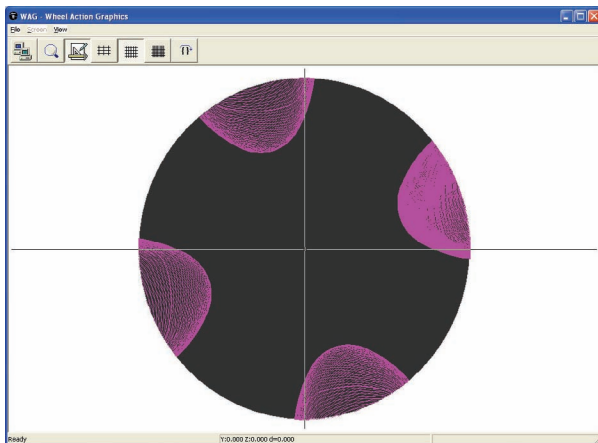
The Step Tool tool type includes various operations and options to facilitate the design of stepped tools. This includes simple step drills as well as complex profile tools. It is possible to define and connect an unlimited number of elements, which may consist of either lines or arcs. The software is also capable of grinding left hand cut tools.

The Step Editor allows steps to be grouped by layers so that grinding attributes may be assigned to each. Slice roughing, hook and index digitizing are some operations available within the Step Editor.

The Step Tool type is also generally used to grind a wide range of drills. Various drill specific operations are found in the Step Tool tooltype. (Note that some options are purchase options).

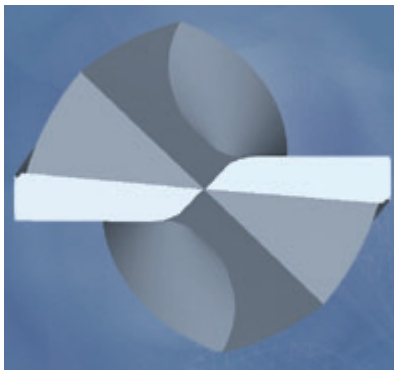


## Projector Fluting



- 2D Projector Fluting software enables the machine user to simulate the grinding on the screen prior to the actual grinding
- Flute shape and end face geometry can be displayed
- Wheel interference can be recognized. Tool cross section in the longitudinal axis can be displayed at defined distance from the end of the tool
- On-screen measurements such as distance and angle, e.g. of the core diameter or flute hook angle can be performed

## Standard Drill Points



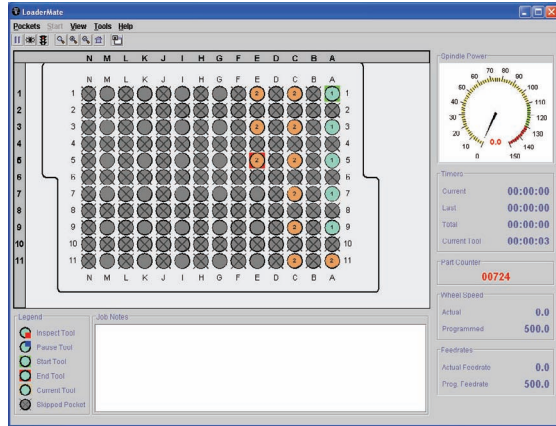
The ANCA Standard software also handles standard drill points.

- Facet drill point
- Multi Facet drill point
- Rolled drill point
- Conical drill point
- Multiple flutes

## Standard Software Packages for Loaders

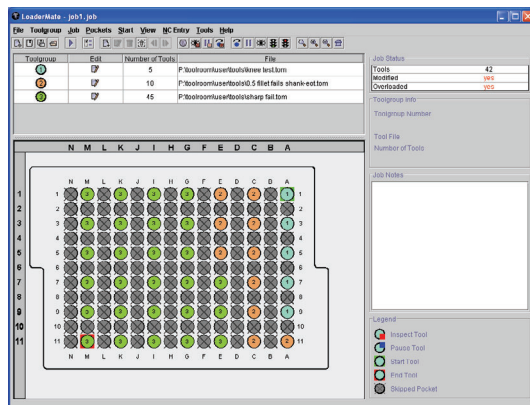
The following applications are provided at no additional charge for machines purchased with loaders.

### LoaderMate



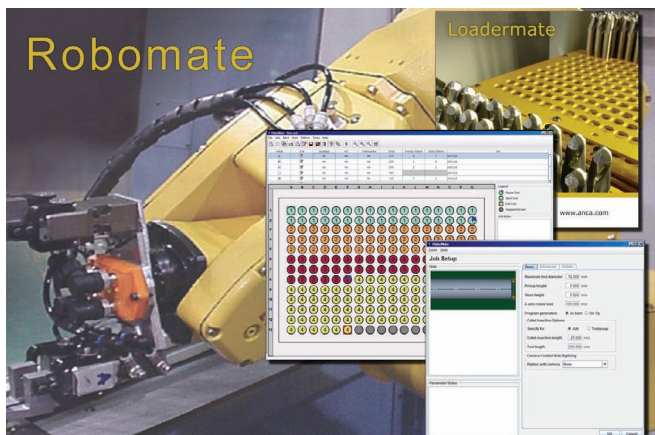
LoaderMate allows for complete flexibility during the loading process. Specific options are dependent on the loader type fitted to the machine.

### OrderMate



This software enables mixing various tool geometries within one pallet. Every carousel position is assigned a dedicated grinding program.

### RoboMate



The RoboMate software is ANCA's software interface for all machines with robot loaders. RoboMate provides a wide range of flexibility options to setup and run the loading process, significantly simplifying the use of robot loaders.

**NOTE:** RoboMate is only supplied with new machines using Robot Loaders, depending on the application. Customers with existing robot loaders will need to contact their ANCA branch to discuss the possibility upgrading.

## Purchase Software Options

The following applications may be optionally purchased from ANCA.

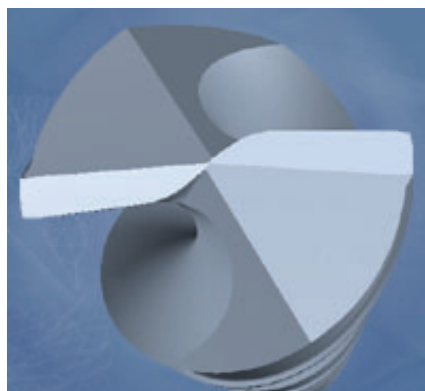
### Delta Drill Point



PO946-0-04-0016

The program may be used for regrinding of drills only. The user may not manufacture or re-tip drills which are covered by patents owned by the manufacturer. ANCA is licensed to sell this software.

### Delta C R840



PO946-0-04-0051

The program may be used for regrinding of drills only. The user may not manufacture or re-tip drills which are covered by patents owned by the manufacturer. ANCA is licensed to sell this software.

Available RN26 Onwards

### Delta C R850



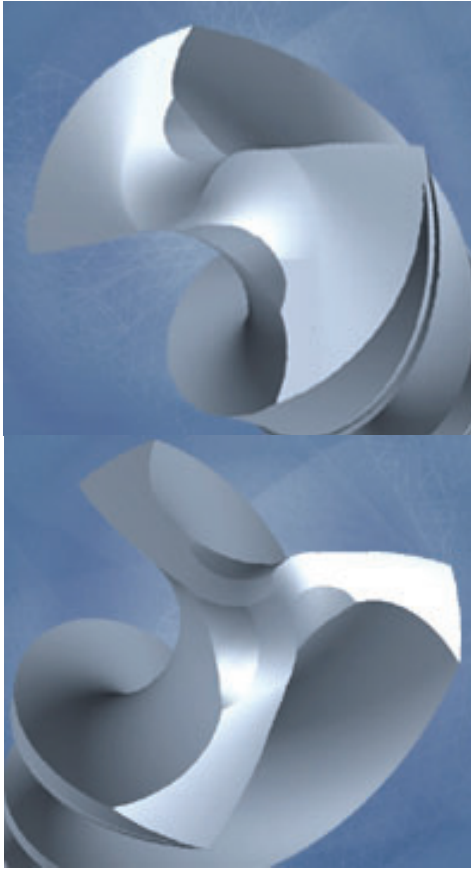
PO946-0-04-0063

The program may be used for regrinding of drills only. The user may not manufacture or re-tip drills which are covered by patents owned by the manufacturer. ANCA is licensed to sell this software.

Available RN27 Onwards



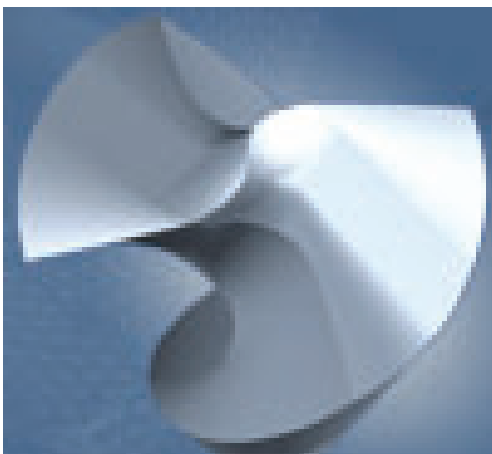
## Hertel Drill Point TF and SE



PO946-0-04-0013/14

The program may be used for regrinding of drills only. The user may not manufacture or re-tip drills which are covered by patents owned by the manufacturer. ANCA is licensed to sell this software.

## Kennametal HP Drill Point



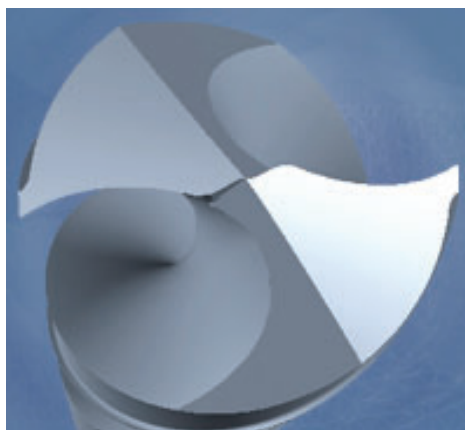
PO946-0-04-0064

The program may be used for regrinding of drills only. The user may not manufacture or re-tip drills which are covered by patents owned by the manufacturer. ANCA is licensed to sell this software.

**NOTE: Customer MUST obtain permission from Kennametal and also a "hardlock" to activate the software! ANCA cannot supply this.**

Available RN28 Onwards

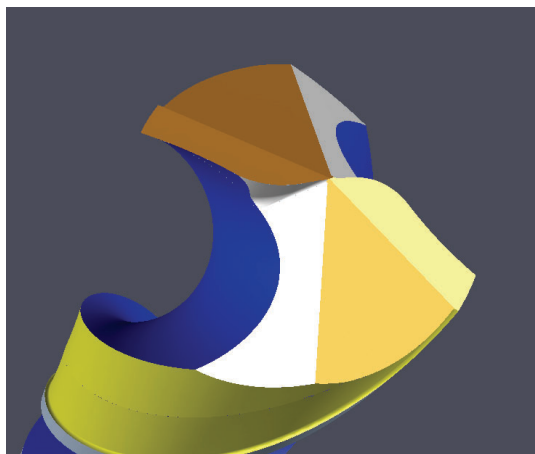
## SECO Drill Point



PO946-0-04-0020

The program may be used for regrinding of drills only. The user may not manufacture or re-tip drills which are covered by patents owned by the manufacturer. ANCA is licensed to sell this software.

## Multi-Drill Gash

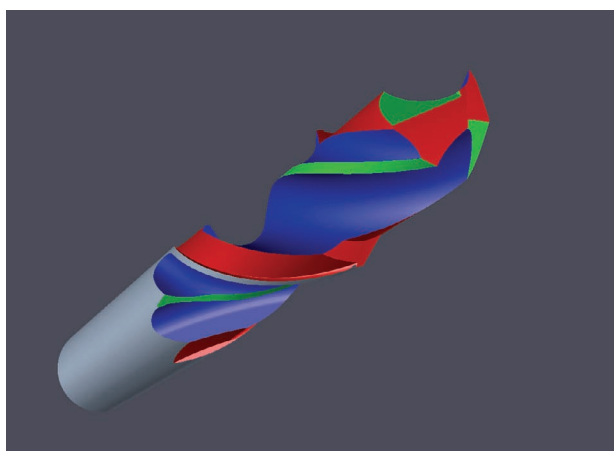


PO946-0-04-0015

Common drill gashing operation consisting of a straight gash and radius towards centre of tool. Includes options for additional walk and bottom radius after walk.

This gash operation can be use to resharpen Sumitomo type / Mitsubishi type / Gühring type Drill Points. However ANCA can not supply required parameters for these patented drill points.

## Subland Drill

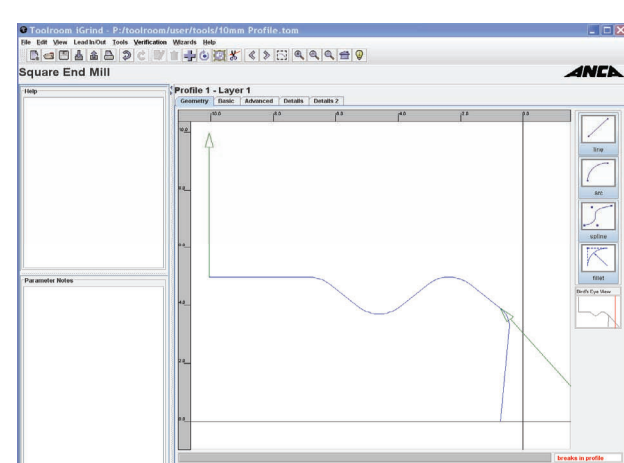


PO946-0-04-0005

This software may be used for the production of Subland Drills, consisting of three cycles.

- Major Fluting from solid
- Minor Fluting from Solid
- Subland OD Grinding

## Profile



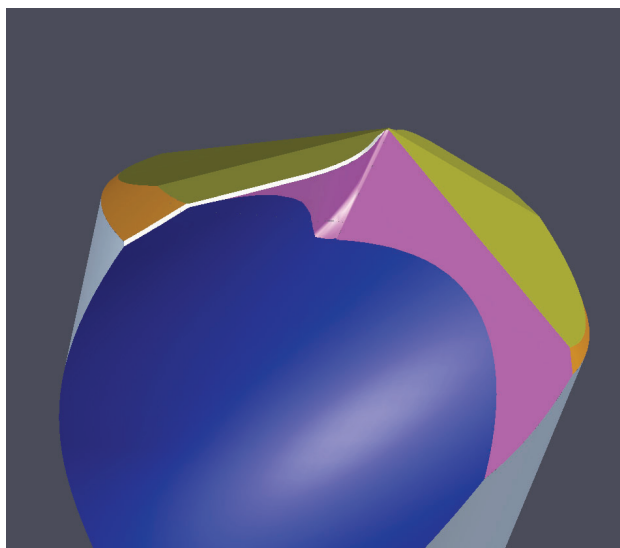
PO946-0-04-0017

Advanced software suite for grinding a wide variety of customer defined profiles tools of any shape containing just lines and arcs.

The user interface provides the possibility to create the tool profile on the screen or by using CAD software. The profile data is then converted using line and arc segments by the ANCA software into grinding path.

DXF import is also available.

## K-Land



PO946-0-04-0052

The K-Land purchase option is commonly used for edge preparation on drill points. A small chamfer is ground along the lip edge to strengthen the edge in order to prevent chipping which leads to reduced tool performance and life.

The option is able to digitize the lip geometry and produce an accurate K-land edge. For some drill types, the lip geometry can be automatically calculated so that digitizing is not required. The K-Land operation includes many features to allow customization and adjustment of the ground K-Land.

This purchase option also enables the option to produce a K-Land on the step section of a step tool as well as on a Rolled Chamfer.

## High Speed Drills



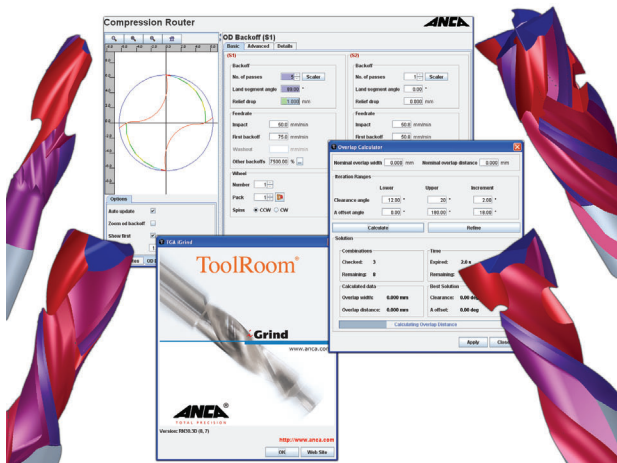
PO946-0-04-0053

High speed drills is a special tool type within iGrind which includes highly optimised cycles for simple drill production.

The following drill points are available

- Facet drill point
- Rolled drill point
- Conical drill point
- Multi Drill Gash

## Compression Router



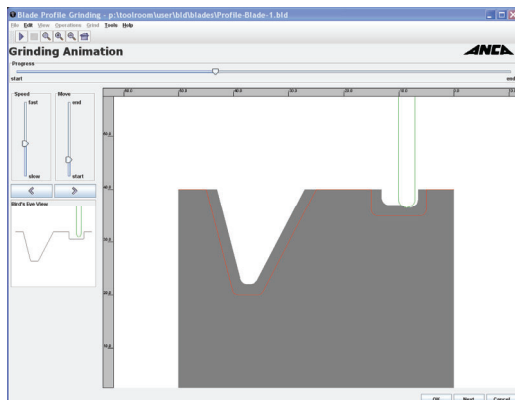
P0946-0-04-0022

Consists of a dedicated tool type within iGrind to grind compression router wood working tools. Compression routers are specialized tools commonly used to mill double sided laminates. They are also often called Compound Shear or Up-Down Cutters. Compression Routers feature two distinct fluting sections with opposite helix orientations. This feature provides the required chip flow when milling double sided laminates.

The iGrind Compression Router software includes calculations and built-in intelligence to greatly simplify the design of these tools. The software includes many 2D visual displays within the operations for instant visual feedback on design parameters.

This purchase option also allows the use of the superseded stand-alone Compression Router software in order to handle older files.

## Blade Software



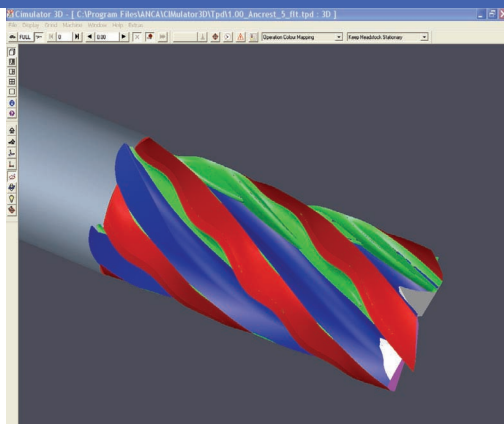
P0946-0-04-0067

This software package is for woodworking applications where the cutter is a profile blade. The software has the facility to deform the profile geometry based on the insert width and Shear angle of the cutter workholding. The software can also cater for the "Crank Angle" (holding the blade at an angle to the centreline).

The simple to use software also has built-in 2D animation. Blade Profiles can be simulated. (CIM3D Version 6 is required.)

Available RN28 Onwards

## ANCCrest Cutter



P0946-0-04-0023

This package features single setup waveform grinding and resharpener (OD only) for carbide and HSS tools, for left and right hand cut tools from a solid blank. Can be used to grind square and corner radius endmills as well as ballnose.

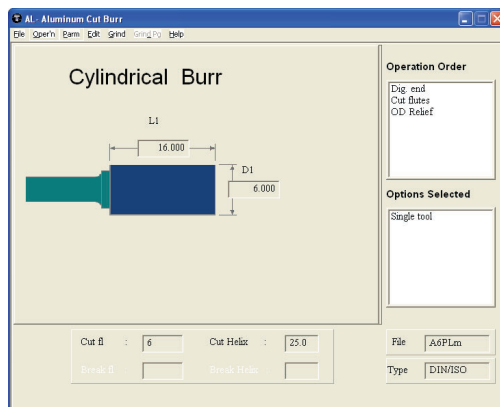
## Standard Burr



P0946-0-04-0018

This package is suited for manufacturing of ISO/DIN Standard burs. It also incorporates two software options, Vanishing Flute which allows two or more flutes to 'merge' into a single flute as approaching the end of tool and general tip sectioning mainly used for medical burs. The user interface offers a wide variety of adjustments and customized tip sectioning.

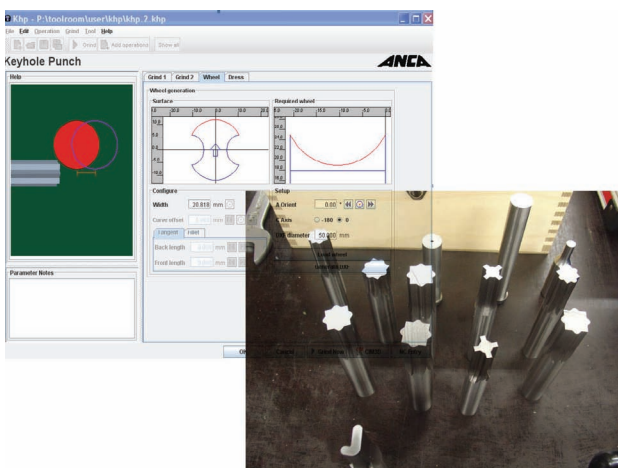
## Alu-Cut Burr



P0946-0-04-0019

This package is designed for manufacturing of aluminium cut burs. Aluminium cut burs differ from standard burs by having fewer flutes that usually feature a small land width. The user interface offers a wide variety of adjustments.

## Keyhole Punch



P0946-0-04-0062

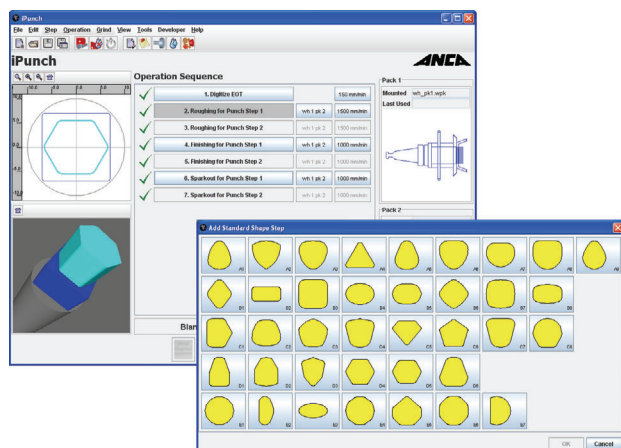
This package is designed for manufacturing of keyhole punches. The user interface offers a wide variety of standard shapes and also custom shapes. The slice roughing operation allows a punch shape to be roughed out using any wheel type.

The Keyhole Punch software simplifies the process of creating these types of tools. The user interface provides a high level of flexibility but remains easy to use.

Available RN27 Onwards



## iPunch

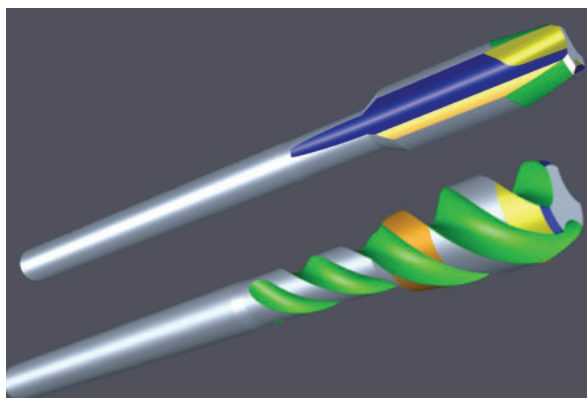


PO946-0-04-0070

iPunch is used to design and manufacture a wide range of punch tools. The application includes a comprehensive range of standard shape templates so that geometry specification is made easy. 2D and 3D visual representations dynamically update to provide instant visual feedback.

The software supports tapered punch forms as well as punches with multiple steps. Various roughing and finish grinding options are available to achieve accurately ground punches. Punches may also be ground using an oscillating method to further improve surface finish. In-cycle wheel dressing options are also available to ensure the wheel is properly conditioned during the grinding operation.

## Tap Preparation Software

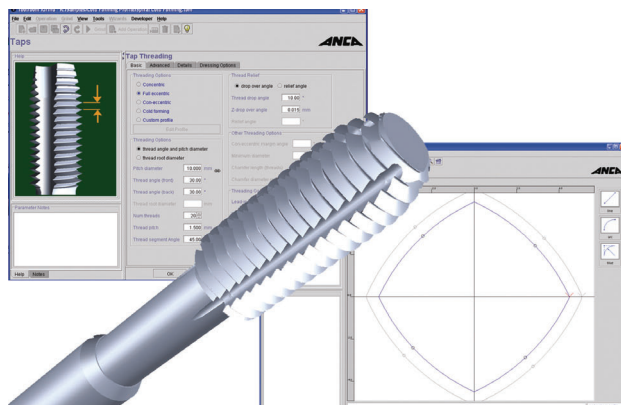


PO946-0-04-0056

Tap Preparation software enables the Tap tool type within iGrind. This tool type includes all grinding operations specially designed to grind a wide range of tap tools, excluding tap threading. (Tap threading is a separate purchase option only available for TapX machines).

The Tap Preparation software can be enabled on any machine variant and includes tap specific operations for fluting, spiral point (gun nose), and chamfering. Comprehensive dressing options are also available within the software as well as a range of other standard iGrind operations.

## Tap Threading Software



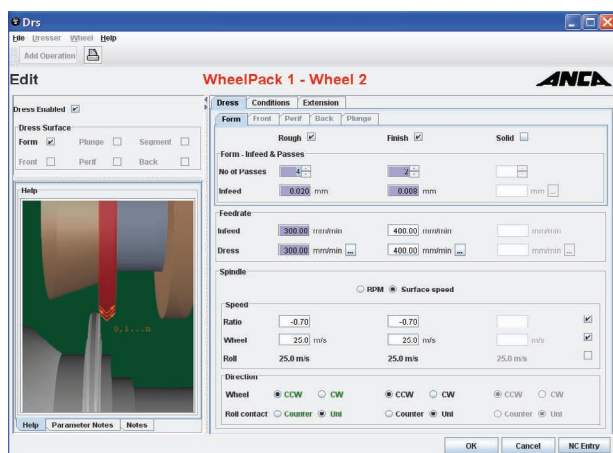
**NOTE: Tap Threading is only available, and provided with, TapX machines.**

The Tap Threading Software enables the use of Tap Threading operations within the Tap tool type within iGrind. Tap threading includes operations for threading and thread cresting operations.

A wide range of thread types are available, including concentric, eccentric, con-eccentric, double relief, and custom profiles (for forming taps). A forming tap template is provided as well as the ability to define custom forming tap shapes. All grinding parameters can be controlled on a per-pass basis, including dressing.

Multiple thread taps can also be created as well as interrupted threads. Multiple taper sections is also supported.

## Dressing Software



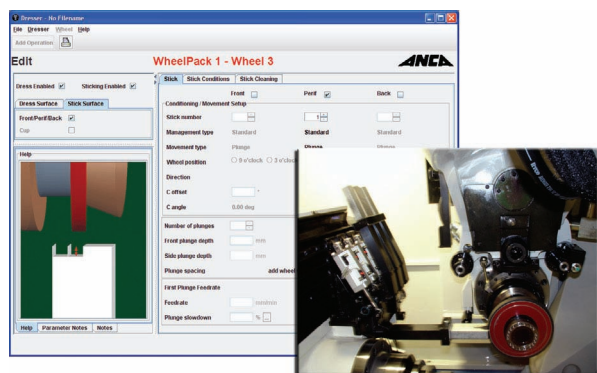
P0946-0-04-0007

The dressing software allows in-process dressing of standard and profile wheels via a dresser mounted inside the machine. The software supports up to two dresser units built into the machine. Dressing of standard or complex profile forms is greatly simplified using the intuitive user interface. Various options exist to customize the dressing process, including the ability to specify dressing segments on the wheel.

Plunge dressing using special formed rolls is also supported. Calculators are provided to simplify parameter input.

The dressing software allows dressing of any possible wheel shape provided the process is physically possible.

## White-Sticking Software (for Dresser Software)



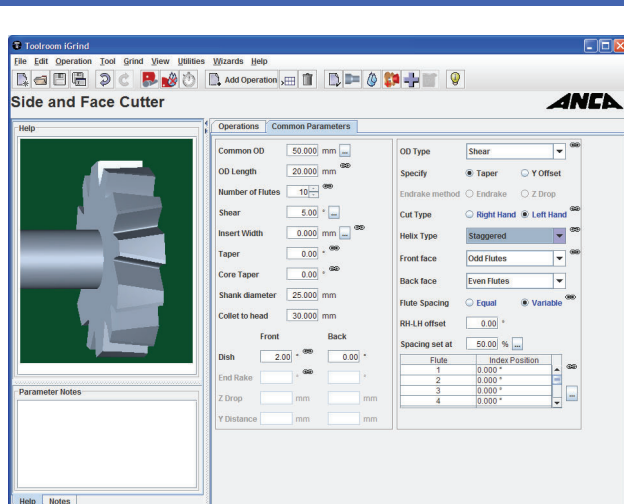
P0946-0-04-0071

This software enables the automatic white-sticking option within the dresser software. This allows automatic sticking of super-abrasive grinding wheels.

The sticking process is easily configured using the dressing software so that sticking can be performed as part of, or separately from a dressing operation.

This software requires a white stick fixture to be present within the machine. The fixture (for TX7 machines) is able to store four sticks which are automatically lowered during the process.

## Side and Face Cutter



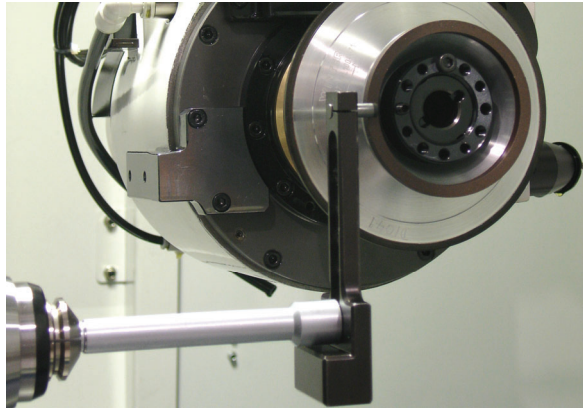
P0946-0-04-0004

Side and Face Cutter software from RN29 is now integrated into iGrind with the capability of grinding three different Helix types.

- Right Hand Helix/Lead
- Left Hand Helix/Lead
- Staggered

The software can grind the back face of cutters with odd/even flutes and has the options of equal or variable flute spacing.

## AutoQ – Automatic Wheel Qualification (5DX Only)

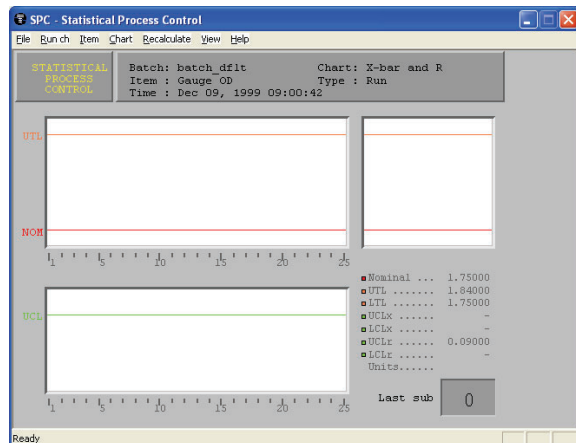


P0946-0-04-0068

The AutoQ software allows wheel packs to be qualified automatically using a special fixture mounted within a collet. Existing machine hardware is then used to accurately qualify all relevant wheel surfaces automatically.

This process ensures accurate, repeatable, and consistent wheel qualification.

## SPC



P0946-0-04-0003

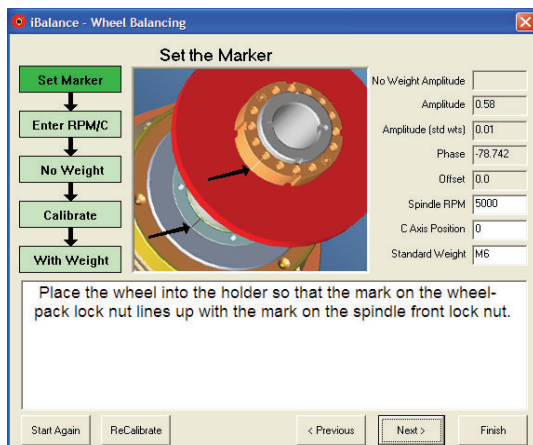
Statistical process control for high volume manufacturing can be used where process capability measurement is required.

ANCA SPC complies with the norms of the automotive industry.

Key tool parameters such as outer diameter or flute depth can be measured and automatically adjusted for wheel wear compensation during extended unmanned tool production.

Data can be graphically displayed and stored for future evaluation.

## iBalance



P0946-0-04-0058

Balanced wheel packs is important to achieve superior surface finish and wheel life. iBalance will semi-automatically balance the wheel pack inside the machine using a software assistant.

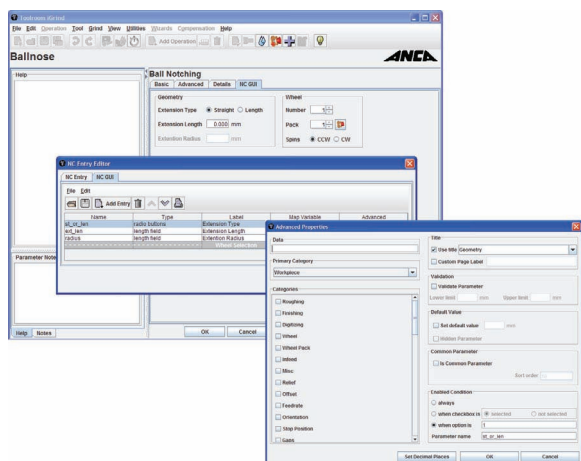
iBalance determines the position of weights mounted on the wheel pack locknut. The operator simply inserts or removes weights as recommended by iBalance.

Available RN27 Onwards

ONLY available on 5DX machines



## NC GUI



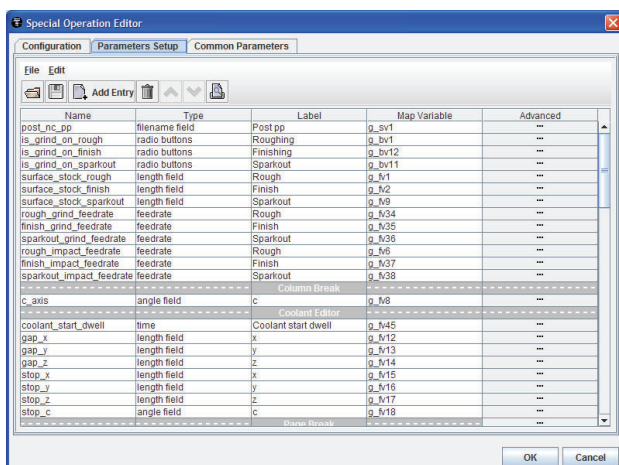
P0946-0-04-0048

NC GUI is an advanced feature for ANCA applications to enable users to create special user interfaces for their NC Entry. (I.e. special NC Code used to modify or extend existing operations).

Typically NC Entry is a text based entry that users need to modify to change parameter values. NC GUI provides the ability to easily create a standard user interface for NC Entry so that the parameters appear on the operation page like any other standard parameter. NC GUI can be easily saved and reloaded into other operations.

Note that this purchase option is only required to create NC GUI pages. NC GUI can be loaded without this purchase options.

## Special Operations Manager



P0946-0-04-0049

The Special Operations Manager is an advanced feature of the iGrind software that enables users to create their own grinding operations and have them appear within the software as a standard operation. Special operations can then be used as per any other operation.

The feature supports construction of a standard iGrind user interface including help images. Special operations can be saved and distributed to other machines or simulators easily.

Note that this is an advanced feature. Special operations require part programs written in ANCA's EPPL language.

## NX Post Processor

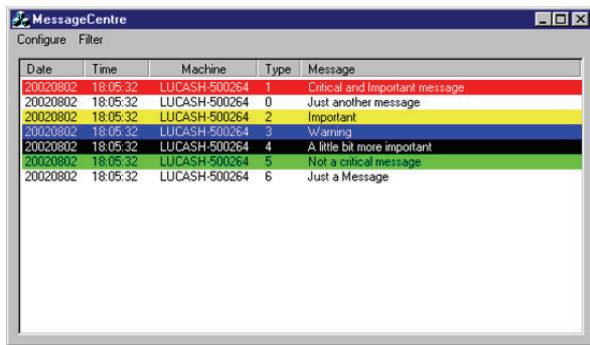


TBA

ANCA have developed a post processor for NX CAM. This post processor allows customers using the NX CAD/CAM environment to create ANCA machine compatible programs to enable parts to be ground directly from a NX model which would otherwise not be possible using standard software. A special iGrind user interface allows configuration of the grinding operation. Examples include medical parts (e.g. bone rasps or knee joints), turbine blades, and special tools.

**NOTE:** This option requires evaluation into the feasibility of the process. Please contact product support at ANCA head office.

## iContact



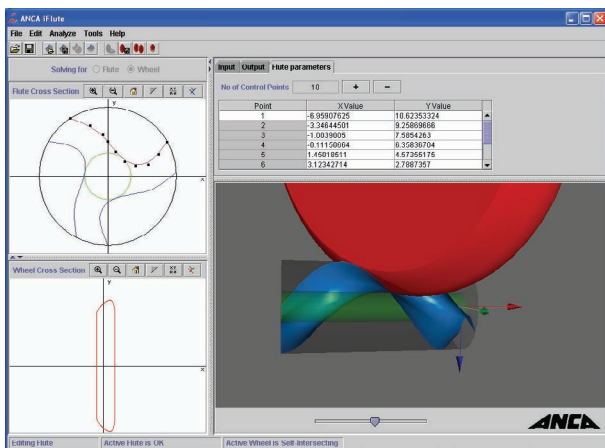
P0946-0-04-0043

iContact is the perfect tool for an automated production environment or for monitoring several networked machines from a single point.

Remote machine monitoring and notification of events and errors by text message to mobile phones, email, or network messages.

Any number of machines can be monitored from a central computer.

## iFlute



P0946-0-04-0060

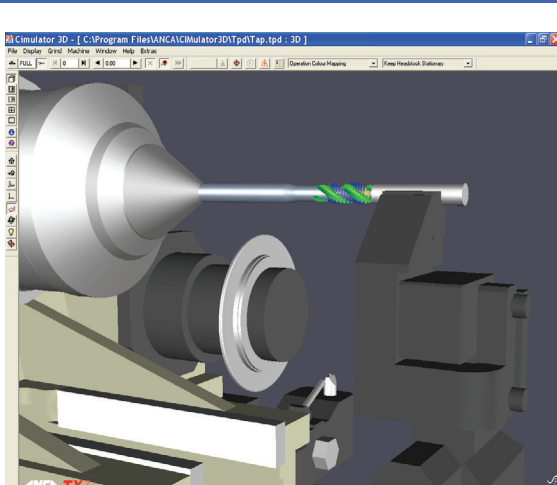
iFlute is a standalone 2D and 3D interactive modeling software tool for flute and wheel shape design.

The flute shape can be designed and iFlute will solve the wheel shape needed to create the flute. The wheel shape can also be designed and iFlute will solve the flute shape that will result from fluting with that wheel. The results obtained from iFlute can be imported into the Toolroom software. The grinding parameters are easily imported into the fluting operation, and the wheel imported into the Wheel Editor. The wheel can then be easily dressed using the ANCA Dresser Software.

iFlute has the capability to control the hook angle independent of the OD, is able to achieve constant hook flute forms, and able to achieve straight lip flute shapes for drills with point angles.

Being a standalone product, iFlute may be purchased separately without requiring the ToolRoom software.

## CIMulator3D



P0929-0-01-1028

This powerful and indispensable software package is based on ANCA invention patented in Australia and in the USA. CIMulator3D is used for full and true 3D simulation of the grinding process. The user can view the grinding process and the resulting model. On-screen tool model measurements are possible. Identification of possible collision or process feasibility can be recognized prior to the actual grinding. Cycle time estimator is also available. Various machine models and accessories can also be modelled within Cim3D.

Part number shown is for CIM3D Version 6.



## Auto Commissioning Software



P0946-0-04-0100

The Auto Commissioning Software is designed as a quick and easy way for customers to commission ANCA tool and cutter grinders in the field. Both metric and imperial modes are supported.

The program will calculate the following parameters:

- Spindle\_centreline\_offset
- X, Y, Z home presets
- i, j, k probe effector offsets
- X, Y, Z soft limits (based on previous soft limits)
- Focal point parameters
- Spindle two offsets (for twin spindle machines)

## Software Compatibility Matrix

	FastGrind	GX7	RX7	MX7	TX7	TapX	SBG
iGrind	✓	✓	✓	✓	✓	✓	
Endmills	✓	✓	✓	✓	✓	○	
ANCCrest	✓	✓	✓	✓	✓	○	
Drill Points and Drill Operations	✓	✓	✓	✓	✓	○	
Profile	✓	✓	✓	✓	✓	○	
iPunch	✓	✓	✓	✓	✓	○	
Compression Router	✓	✓	✓	✓	✓	○	
Burr Software	✓	✓	✓	✓	✓	○	
Keyhole Punch	□	□	□	✓	✓	○	
Dresser				✓	✓	○	✓
White Sticking				□ ●	✓	□ ●	●
Blade Software	✓	✓	✓	✓	✓	○	
iBalance	✓	✓	✓	✓	✓	✓	✓
Side and Face Cutter	✓	✓	✓	✓	✓	○	
Tap Preparation	○	○	○	○	○	✓	
Tap Threading						✓	
Stick Blade							✓
NC GUI	✓	✓	✓	✓	✓	✓	
Special Operations Manager	✓	✓	✓	✓	✓	✓	
Auto Commissioning	✓	✓	✓	✓	✓	✓	✓
CIM3D	✓	✓	✓	✓	✓	✓	✓
iContact	✓	✓	✓	✓	✓	✓	✓
iView	✓	✓	✓	✓	✓	✓	✓
AutoQ	✓	✓	✓		✓	○	
NX Post Processor	●	●	●	●	●	●	

✓ Available

○ Available, but special consideration required for tool holding.

□ Available, but limited by machine hardware or lack of accessories.

● Requires further engineering. Contact Product Support at ANCA head office.