

Merrem Kunststoffen B.V. Rapidly Expands their Business using NCG CAM Simultaneous 5-axis alongside IronCAD

Established in Dinxperlo, Netherlands in 2006, Merrem Kunststoffen B.V. is a supplier of technical plastic semi-finished components for different sectors including automotive and machine builders. Merrem Kunststoffen B.V. is a part of the Merrem Kunststoffen Group who is a leading supplier of plastic components and technical rubber parts.

With their own in-house Machining Department, Merrem Kunststoffen B.V. offers the complete design to manufacture process, continually improving the innovative CNC machinery to retain their position as the most advanced supplier of the market, with each machine tool specialising in a different area.

Merrem decided to invest in a 5-axis CNC machine tool to expand their machining capabilities to their customers, but on purchasing the machine tool, they found it difficult to find a good 5-axis CAM software package, that could also work well with CATIA part files.

Figure 1 - Production Plant in Dinxperlo (NL)



Figure 2 - Belotti 5-axis Machine Tool

NCG CAM was recommended to Merrem by one of their customers, who was using it alongside CATIA and said **NCG CAM** was affordable, easy to use and user friendly; so Merrem decided to evaluate **NCG CAM**.

Having evaluated **NCG CAM**, Merrem was very pleased with the simultaneous 5-axis capabilities, as they previously could only do 3+2 axis. One thing that really impressed them was the way that the 5-axis in **NCG CAM** automatically checks for collisions. If **NCG CAM** detects a potential collision with the head of the machine tool, it will tilt the machine tool head on its side, whilst still keeping the cutter on the part; this is something that Merrem had not seen in many CAM software packages.

Merrem produces many large automotive parts, including for the inside of a wheel which can be up to 1500mm high. This part is machined using a ball-nosed cutter, with very large machining calculations of 2 - 3 million lines of machining code, so calculation times and also surface finish are important. The evaluation proved that calculations that had taken hours before, took just 50 minutes with **NCG CAM**.

Merrem also found that **NCG CAM** worked very well alongside the IronCAD software that they had; they initially purchased IronCAD 2 years ago to repair broken STEP files that they receive from their customers.

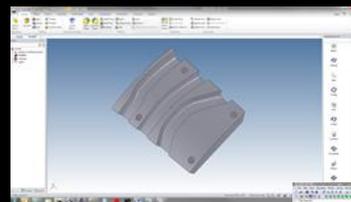


Figure 3 - Production Plant in Dinxperlo (NL)

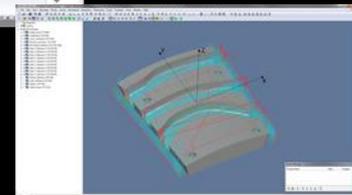


Figure 4 - Programming Part in NCG CAM

IronCAD is able to automatically recover broken files, by simply opening the broken file in IronCAD and selecting to fix the file; Merrem found that it works extremely well with CATIA and STEP files. The repaired file can then be read into the CAD software with no problem at all. It is also possible to take a DXF or a DWG file and create a STEP file. This is a very powerful feature in IronCAD and is something that Merrem had not been able to do with other software that they had previously used or evaluated.

Many of the combined CAD/CAM packages available were good at some things, but were weak in other areas. Having a standalone CAD package that works well alongside a standalone CAM package, gave Merrem a very strong solution, as both products are very focused in their speciality fields.

Figure 5 - Example Automotive Products Produced by Merrem



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Merrem Kunststoffen B.V. Rapidly Expands their Business using NCG CAM Simultaneous 5-axis alongside IronCAD

Examples of products that Merrem now manufacture using IronCAD and **NCG CAM** together:

- Moulds for making
- Wheel house liners
- Engine compartments
- Luggage compartments
- Roof liners
- Poultry farming machinery



Figure 6 – Example Automotive Products

Figure 7 – Example Products – Poultry Farming Machinery - Machining 5-axis



Since installing **NCG CAM** alongside IronCAD, Merrem Kunststoffen B.V. has seen the following results:

- ✓ Can now manufacture larger and more complex products that could not make before, utilising the simultaneous 5-axis capability in **NCG CAM**. Before purchasing **NCG CAM** it was only possible to work in 3+2; since customers have heard that Merrem has these new capabilities, 5-axis machining has increased from once a week, to daily, rapidly expanding their business.
- ✓ Parts can be created and machined much faster utilising IronCAD and the fast tool-path calculation time in **NCG CAM**. Calculations that had taken hours before, now take just 50 minutes with **NCG CAM**.
- ✓ **NCG CAM** has reliable collision checking, where it is possible for the head of the machine to automatically tilt if it sees a potential point of collision, but still keeps the cutting tool on the job. This prevents any potential damage to the machine tool head, which could be very costly. This is also important in very tall 5-axis mould tools, some with a Z axis as large as 1500mm, which can be easily damaged.
- ✓ Merrem now run lights out machining producing 80,000 pieces / year utilising robots and cameras on the CNC machines, which would send out a text should any problems occur. This would not be possible if the collision checking in **NCG CAM** software was not reliable.

✓ Additional work prompted the purchase of an additional CNC machine to manage the increased workload. **NCG CAM** is now running on a Belotti 5-axis CNC machine and also on Finetech and Hedelius machines. Merrem currently has a total of 17 CNC milling machines, 4 CNC turning machines and 1 9-axis mill-turn machine tool, with operators operating 2 – 3 machines each, across 2 daily shifts. There are currently 4 operators for IronCAD and 4 operators using **NCG CAM** for 5-axis.

✓ Merrem has continued their success by expanding their business further into Germany, Estonia and Latvia.

*“For programming some of the CNC machines we use **NCG CAM** in combination with IronCAD. The company uses IronCAD to automatically repair and make adjustments to 3D models, before opening the model in **NCG CAM** to program the tool-paths.*

*We use **NCG CAM** for programming semi-finished products which require 5-axis simultaneous machining. Using these programs together with the Belotti FLA 417 5-axis CNC machine makes the programming of the products a lot easier and faster.*



Figure 8 – Example Automotive Products – Machining 5-axis

***NCG CAM** calculates very fast and is good at indicating visually what the machine will do. It is also possible to put in dimensions of the machine head for auto clash detection. The program will automatically twist the machine head to prevent contact with the material.*

*Merrem Kunststoffen B.V. is very pleased with the use of **NCG CAM** and IronCAD for products that must meet the expectations of our customers from different industries.” Says Ramon Leonhardt – Merrem Kunststoffen B.V.*

IronCAD Partners with NCG CAM

ATLANTA GA, Aug 26 2015 – IronCAD, a leading provider of design productivity solutions, today announced a successful collaboration between IronCAD and **NCG CAM** at Merrem Kunststoffen B.V. in the Netherlands. Offering a complete design through manufacturing program, Merrem is recognized as one of the most advanced supplier of technical plastics components for different sectors in West Europe including molds for automotive.

Cary O'Connor, vice president of IronCAD agreed, "We have many customers around the world using IronCAD in collaboration with CAD, CAM and CAE packages. Merrem have shown that a successful integration of two highly productive software systems can reap enormous benefit."

About IronCAD

Based in Atlanta, GA, IronCAD is a leading provider of 3D Design Productivity Solutions that deliver the highest levels of customer satisfaction and productivity. Individual components of this solution can be used standalone, complementary within an existing design environment, or can be used together to collaborate effectively throughout the enterprise to extend productivity. Its flagship product IronCAD has won many industry awards for its innovative technology and leads the industry in its ease of use and design productivity. IronCAD products are being used successfully by thousands of customers worldwide.



To contact Ironcad – www.ironcad.com

NCG CAM Becomes an Official CAM Software Partner for HURCO Machine Tools

NCG CAM is now listed as an official CAM Software Partner for HURCO Machine Tools.

<http://www.hurco.com/en-us/cnc-machine-tools/our-control/Pages/CAD-CAM-Info.aspx>



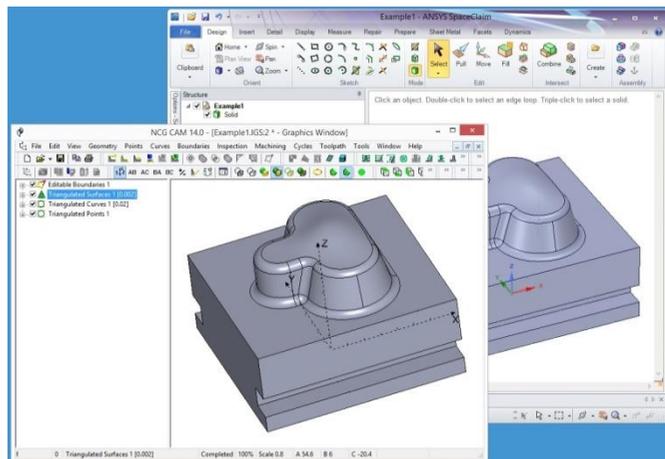
To contact Hurco– www.hurco.com

NCG CAM Software Now Has an Add-In Available for ANSYS SpaceClaim Software

In december 2015, **NCG CAM** became an official **Solution partner** with **ANSYS SpaceClaim** software.

ANSYS® SpaceClaim™ is a 3-D Direct Modeler that is fast and easy to use. SpaceClaim's direct modeling solution speeds up time to analysis by removing the geometry bottleneck, and it shortens the time needed for analysis by allowing engineers to simplify models during pre-processing. SpaceClaim also provides a CAD neutral environment, freeing engineers to focus on the physics and modeling.

The fact that **NCG CAM** specialises in complex 3-D CAM and is also renowned for its speed and ease of use, makes SpaceClaim and **NCG CAM** ideal CAD/CAM partner products.



To contact SpaceClaim – www.spaceclaim.com

See SpaceClaim working with NCG CAM: <https://www.youtube.com/watch?v=0FAXU6sUwhs>

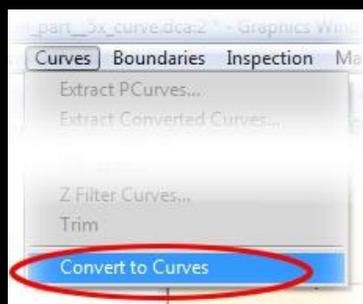
Development Projects Delivered in NCG CAM - Version 14 Point Releases

14.0.01 May 2015

New Features

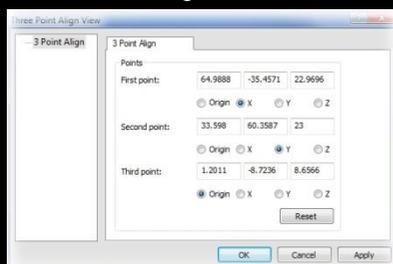
Convert Points to Curves

NCG CAM can now Convert Points to Curves. With a points folder selected, the Curves dropdown menu will offer 'Convert to Curves' as an option; the points in the folder will be joined in the order they are listed. This feature can be used to create tilt-through curves when generating 5-Axis along-curve passes.



Three Point Align

In the View menu, users can now utilise 'Three Point Align'. This will allow the view to be aligned using three points contained in a points folder. This can be useful for 3+2 work, where it is not possible to view normal to a surface and where dynamically rotating the view would not be accurate enough.



Linking

The 'Simple Ordering' linking option is now available for boundary passes. This is generally for engraving, when you would prefer to machine the boundaries in the order they were created.

Curves

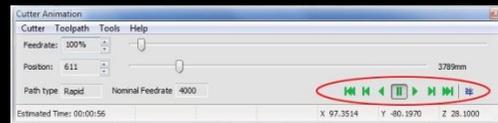
During a Curves modification, supplying a negative value for the 'Extension' now trims back the selected curve.

Enhancements in 14.0.01

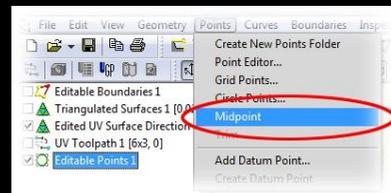
New curve modification functions have been added. "Auto fit plane" is an option that flattens a 3D curve onto a calculated plane. The "Offset" curve function performs a 2D offset of planar closed curves.

Enhancements in 14.0.01

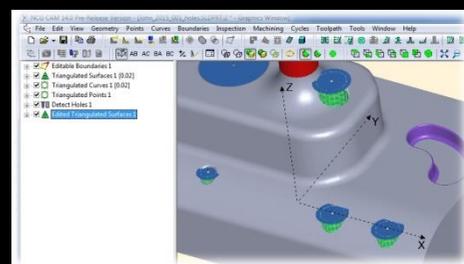
The Cutter Animation dialogue has been improved to include video style buttons to control the toolpath animation.



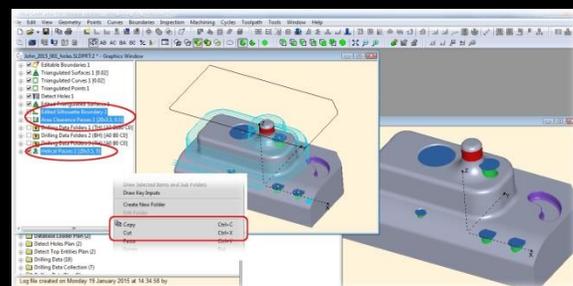
A new option has been added in the Points menu - 'Midpoint'. This will calculate the midpoint of a selected folder which contains 2 points, if the folder contains more than 2 points it will calculate the centroid of all the points.



An option has been added to the Cap Holes function to increase the diameter of the capped surface where the hole may be laying on a curved or angled surface. This will allow extra material to be left around the hole to support any drilling operations after the initial roughing out.



When using the Edit menu or the short cut keys, Cut, Copy, and Paste now allow selected plans to be moved or copied between graphics windows in the same database (dca file).



An option has been added to the user interface to 'Set the View' rather than 'Transform Geometry' when using the measure bar datum setting functionality.



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Development Projects Delivered in NCG CAM - Version 14 Point Releases

14.0.02 July 2015

Ruled Surface

During the creation of a ruled surface a second offset distance has been added to the user interface, that allows the surface to be created either side of a curve.

Linking

It is now possible to set different start and end 'Home Point' locations.

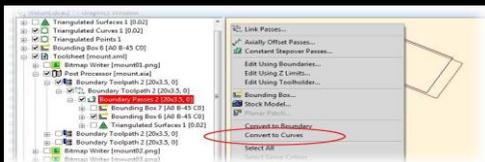


Helical Machining

The 'Adaptive Stepdown' functionality has been added to the passes page for helical machining.

Curves

The contents of a passes folder, or a sub-selection can be converted to curves.



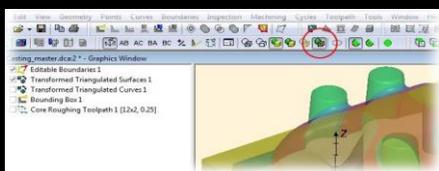
User Interface

When reviewing a plan, for example using the 'Properties', you no longer need to use the Ctrl /Shift keys to get extra options, as they are now on the dialogue itself. However, the Ctrl / Shift keys can still be used to set the default options on the dialogue.



A ruler scale has been added to the machining passes Tool page to help visualise the length of the cutter and holder.

A new option has been added to the graphics toolbar to allow rendering with translucency.



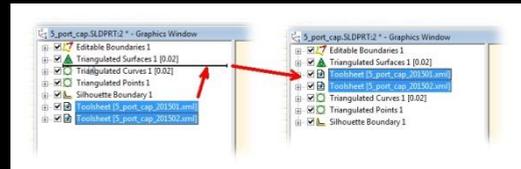
Enhancement

A planar patch can now be created from 'Extracted Curves' that lie on a planar angled face.

14.0.03 August 2015

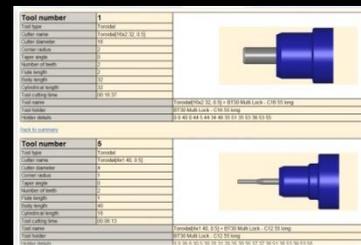
User Interface

Multiple selected plans can now be moved by drag and drop within the tree view.



Toolsheet

A new section has been added to the toolsheet giving an image and details of each tool used.

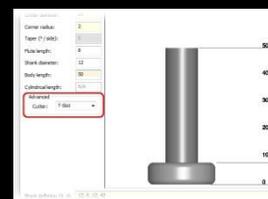


14.0.04 December 2015

5-Axis

It is now possible to select tilt curves when creating 5-Axis Swarf Passes. This will allow the tool axis to be aligned with the curve to give better control of access to some areas.

It is now possible to use T-Slot cutters in 5-Axis machining plans.



New Features

A new option has been added to the Thread Milling cycle to allow the selection of Climb or Conventional milling.

In the cutter animation dialogue, a 3+2 axis toolpath now automatically displays the ABC rotations as defined by the toolpath boundary. With 5-Axis toolpaths the user can select the rotations displayed from a toolbar.

New functionality has been added to the cutter animations. When the toolpath animation dialogue is visible, double clicking on toolpath will reposition the cutter. Alternatively use the new jump to XYZ option in the Cutter animation dialogue to position the cutter along the toolpath.

Premium Surface Finish Produced by NCG CAM Allows Motivating Graphics Kft. to Save on Labour Costs

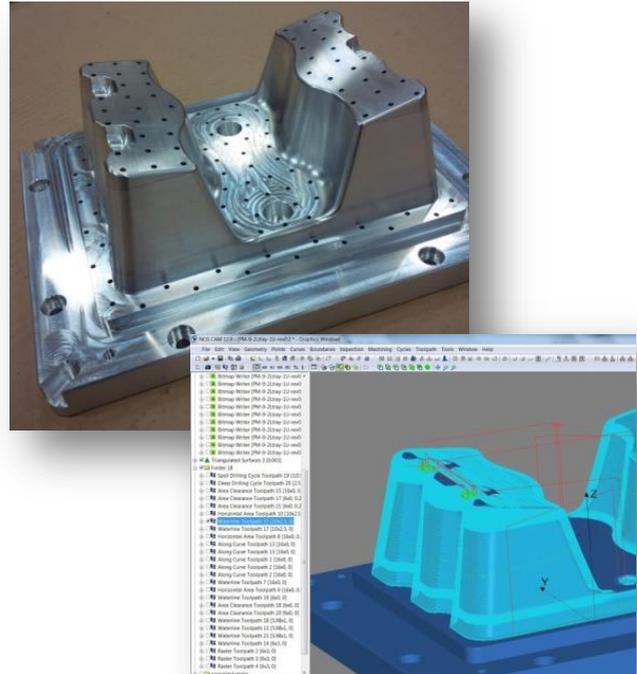
Based in Fort Worth, Texas, with plants in Mexico, Brazil, Hungary and the United States, Motivating Graphics has been in the printing industry for over 39 years, servicing the high-tech telecommunications and consumer electronics industries. Their capabilities include design, prototyping, testing, manufacturing, and kitting premium products & packaging solutions from start to finish.

Motivating Graphics were looking for a solution that was suitable to efficiently manufacture aluminium tools for paper pulp and plastic. One of the most important requirements, was to have the ability to quickly and easily create reliable macros, as many parts that they needed to manufacture were similar to each other.

Purchasing **NCG CAM** software enabled Motivating Graphics to manufacture complex tools quickly and efficiently. They also benefited from the excellent macros in **NCG CAM**, the reliable and accurate toolpaths and the perfect surface quality of the finished part.



Above and Below - Mould for mobile phone cardboard packaging



- ✓ Corrections and modifications can be made very quickly.
- ✓ Perfect user interface to create macros for similar parts.
- ✓ Very stable toolpath generation and post-processing - with 0% faults.
- ✓ Excellent cooperation with their Haas VF3 SS CNC machine.
- ✓ Premium surface quality of the final machined parts, requiring no hand finishing, saving on labour costs.

*"As we started to use **NCG CAM**, it was clear that the software absolutely accelerated our manufacturing system. We could make modifications very quickly, without any faults. The macro functions are indispensable!"* Says József Sótér - Pulp & Plastic Supervisor, Motivating Graphics Kft.

Demonstration Version Available to Download

A demonstration version of **NCG CAM** software, is available to download.

The demonstration version of **NCG CAM** has unlimited usage and while there are restrictions to the machining output, it can also be used in its basic form as a **FREE** .iges viewer.

<http://www.ncgcam.com/demorequest.html>



Also see **NCG CAM** in action on You Tube

<http://www.youtube.com/user/NCGCAMsolutionsLtd>

About NCG CAM Standalone 3D HSM CAM Software

NCG CAM is a stand-alone CAM system offering an easy to use HSM CAM solution that integrates with existing CAD and CAM systems, including SmartForm Design, SpaceClaim, Pro/ENGINEER and SolidWorks.

NCG CAM boasts many innovative features. It is suitable for all types of forms, creating an optimised, smooth cutter motion for HSM, while helping to extend tool life, minimising wear on the machine tool and producing parts with excellent surface finish.



NCG CAM has a very user-friendly interface, with a typical learning curve of just 1 day required to machine a live job. It is perfect for the high-speed machining of moulds, dies, prototypes and precision surface machining.

SOFTWARE FEATURES:

- ✓ Very user friendly interface – making it suitable for even occasional users
- ✓ **NCG CAM** offers many advanced 3D machining routines, rest roughing & 3 + 2 capabilities for all toolpaths, simultaneous 5-axis add-on module available
- ✓ Fast and efficient roughing strategies, including core roughing
- ✓ Advanced drilling routines – includes automatic hole detection and / or user defined holes
- ✓ All machining routines are fully gouge protected for both the cutter and the tool holder

KEY BENEFITS:

- ✓ Stand alone CAM software that is compatible with **ANY** other CAD package
- ✓ Extremely easy to use with just 1 day training required to machine a live job Ideal for shop-floor programming
- ✓ All post-processors are written in-house
- ✓ Powerful 3D machining
- ✓ Toolpaths are optimised for HSM
 - Increased efficiency
 - Reduced wear on machine
 - Extended tooling life

Saves time and money !!

About NCG CAM Solutions Ltd

Established in Cambridge, UK, **NCG CAM Solutions Ltd** provides CAM software solutions, offering all the tools needed to manufacture prototypes, models, moulds, dies, patterns and finished products. Our specialist area is 3D HSM CAM with our product **NCG CAM**.

All of our staff have a wealth of CAM experience, having worked in the CAD/CAM and engineering industry for many, many years. This includes our support team, who have actually worked on the shop-floor using CAM software on live jobs, so are able to provide an excellent back up and support service.

Since establishing in June 2009, NCG CAM Solutions Ltd has a rapidly growing global reseller base, with resellers for NCG CAM in UK, Germany, Norway, Netherlands, Slovenia, Slovakia, Hungary, Romania, Bulgaria, Serbia, Croatia, Turkey, India, Ukraine, Russia, China, Taiwan, Hong Kong, Japan, South Korea, Thailand, Australia, UAE, Brazil, South Africa, Canada and across USA.



To contact a reseller, for more product information, or to download a demonstration version of **NCG CAM** visit the company's website www.ncgcam.com .

Alternatively contact Estelle Dunsmuir for more information – estelle@ncgcam.com or call +44 (0)1223 236408 / +44 (0)1353 699840.