

Ease into top gear
with WorkNC[®]



*WorkNC,
5-axis
machining
made easy.*

WorkNC 5-Axis : 5-axis machining made easy



The WorkNC 5-Axis machining solution is the culmination of several years' research and development. Easy to use and fully reliable, it has inherited all the hallmark benefits of WorkNC, the worldwide reference in automatic 3-axis machining software.

WorkNC 5-Axis includes three distinct but complementary components which combine to deliver an unbeatable 5-axis solution :

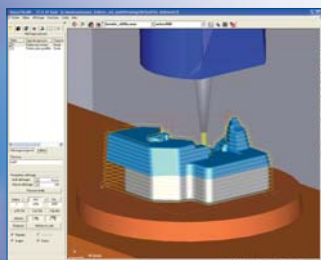
- ▶ **WorkNC Auto 5** : automatic conversion from 3-axis to 5-axis
- ▶ **WorkNC Simultaneous 5-Axis** : simultaneous 5-axis toolpaths
- ▶ **VisuNC 5-Axis** : toolpath visualisation and simulation with collision detection

WorkNC Auto 5 : **automatic intelligence for complex machining !**

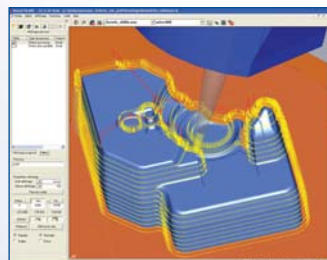
Collisions and complex 5-axis toolpath programming are things of the past ! With WorkNC Auto 5, 3-axis toolpaths are automatically transformed into 5-axis toolpaths.

The conversion automatically takes into account cutting tool and machine tool data to guarantee total reliability.

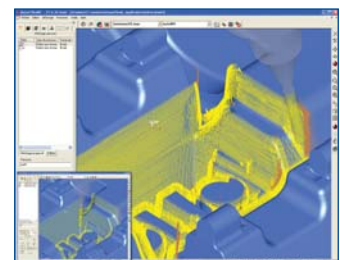
- ▶ **Three into five will go! Create 5-axis toolpaths as easily as in 3-axis. Benefit from the use of shorter, more rigid cutters and higher feed rates!**



3-axis Z-level finishing



Conversion into 5-axis finishing with Auto 5



5-axis finishing with Auto 5

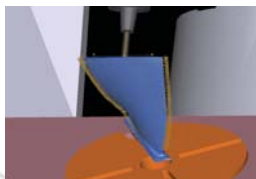
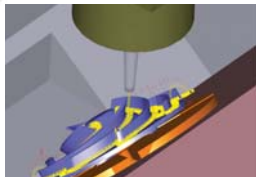
WorkNC Simultaneous 5-Axis machining : **highly efficient, highly reliable.**

Certain applications require toolpaths capable of completing 3-axis, 3+2 axis or WorkNC Auto 5 5-axis toolpaths...

Certain machine tools can help you to greater productivity...

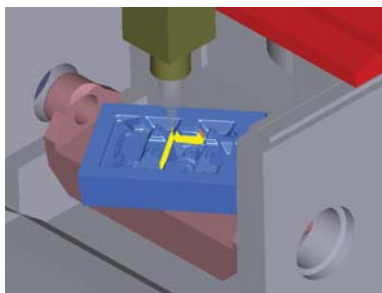
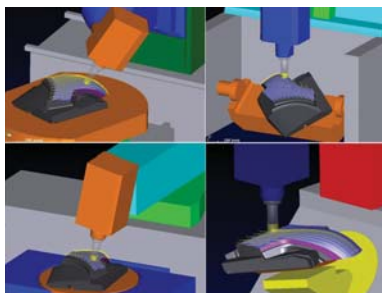
WorkNC Simultaneous 5-Axis toolpaths have been specially developed with this in mind.

These toolpaths improve your productivity and open up new frontiers in deep cavity, turbine blade and complex geometry machining including undercuts.



A complete range of simultaneous 5-axis toolpaths are available :

- ▶ *Rolling,*
- ▶ *Planar Finishing,*
- ▶ *Pocket Machining,*
- ▶ *Blade Machining,*
- ▶ *Curve Machining (Normal, Profile, etc.),*
- ▶ *Groove Machining,*
- ▶ *Drilling*



VisuNC 5-Axis : Easy user-friendly display, editing and simulation of your 5-axis toolpaths...

VisuNC 5-Axis enables easy, fast display, checking and editing of your 5-axis toolpaths within the machine environment.

The virtual 3D representations of the active parts of the 5-axis machine, used for tool and toolholder collision checking, provide accurate and smooth toolpath simulations. 5-axis machines can be created directly in WorkNC-CAD or imported from various CAD software.

- ▶ ***VisuNC 5-Axis simplifies the complex 5-axis machining environment***



Collision free 5-axis toolpaths

"Several companies have simultaneous 5-axis machines which are not fully exploited. The new WorkNC Auto 5 module allows us to exploit all the advantages of our two 5-axis machines to carry out complex part machining with shorter tools and with the assurance that WorkNC gives us that all collisions will be automatically avoided".

Oscar Silvestre, CAM Manager at Matribages (design and production of tooling equipment, moulds, dies and specialised machines for the automobile and aeronautic industries).

Auto 5 is a real groundbreaker

"WorkNC Auto 5 is a real groundbreaker as far as 5-axis machining is concerned. This module has arrived just at the right time for us as it offers the solutions we were looking for in the field of complex prototype production with 5-axis machining facilities".

Philippe Lecourt, co-founder of Lecourt Prototypes (design and production of finished models and prototypes for the automobile, household electrical goods, hi-fi and telephone industries).

5-axis strategies in the familiar environment of 3-axis machining

"The advent of 5-axis machining in WorkNC has been a great step forward for us because we now have all the functionality enabling us to create high performance 5-axis machining programs within the already familiar WorkNC environment."

Louis Ristic, Managing Director of Cerpi SA (specialised in the machining of complex parts, moulds, dies and tooling equipment for the automobile and aeronautic industries).

WorkNC 5-Axis: 5-axis machining made easy !

- ▶ Unrivalled ease of use
- ▶ 5-axis toolpaths every bit as reliable as WorkNC 3-axis toolpaths.
- ▶ Automatic collision management via systematic re-initialisation of machine head angle limits.
- ▶ Smoothed toolpaths ensuring fluid trajectories, eliminating excessive cutter movements and abrupt directional changes.

A small training requirement for big productivity gains !

WorkNC's renowned ease-of-use, appreciated by thousands of users around the world, can naturally be found in the 5-axis solution. Only a few hours training is required before generating 5-axis toolpaths.

With WorkNC 5-Axis, simplicity and reliability go hand in hand with improved productivity !

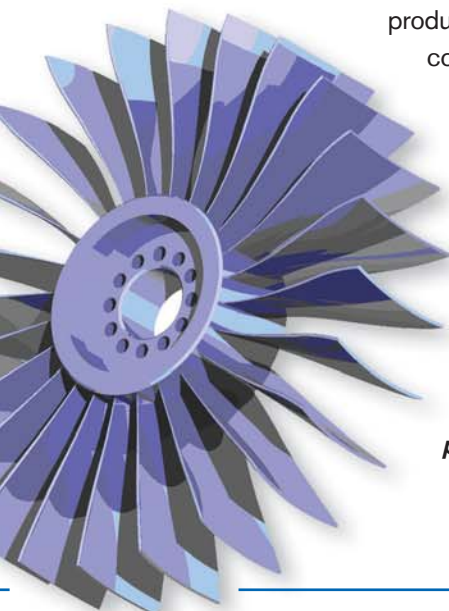
A multitude of applications for WorkNC 5-Axis machining

The easy to use, automatic and innovative functions within the WorkNC 5-Axis solution have already won over many customers in WorkNC stronghold markets such as mould, die and toolmaking, automobile, and, increasingly, in aerospace.

Companies adopting WorkNC 5-Axis machining have a common requirement to

produce parts of increasing complexity whilst keeping costs down. Suppliers within the aerospace industry, with the additional quality and safety constraints placed upon them, are turning to WorkNC 5-Axis machining for the production of certain types of parts such as turbine and motor blades as well as structural parts.

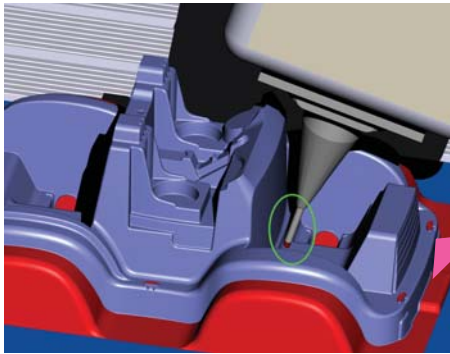
- ▶ **Undercut machining, no part repositioning, improved surface finish quality and longer tool life. WorkNC 5-Axis – an unbeatable combination of performance, quality and productivity.**



5-axis machining : An innovation driver

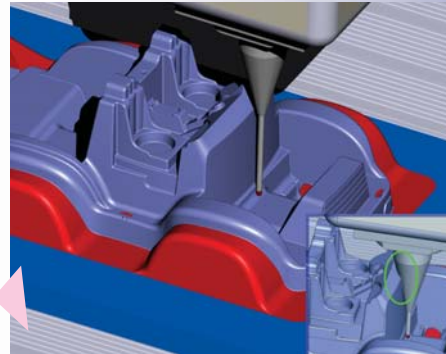
Today 5-axis machining is a major technological innovation which cannot be ignored. Synonymous with new technical capabilities and improved profitability, it offers solutions to problems which were previously impossible to resolve.

However complex machining demands simple solutions – only very capable CAM/CAD software can handle and reduce the complexity associated with 5-axis programming.



5-axis machining : A wealth of new advantages

- ▶ *Complex part geometry machining with undercuts,*
- ▶ *Reduced number of operations,*
- ▶ *Reduced machining times,*
- ▶ *Fewer spark machining operations,*
- ▶ *Reduced machining costs due to increased tool life,*
- ▶ *Improved surface finishing due to the use of shorter tools,*
- ▶ *Enables the machining of parts with deep cavities ...*



3-axis machining : The limits of an advanced technology

- ▶ *Use of long tools : high risk of tool breakage,*
- ▶ *Long machining times : too many retracts,*
- ▶ *Risk of marking the part where lead-ins are used,*
- ▶ *Toolpaths more difficult to implement than in 5-axis machining,*
- ▶ *Restrictions in machining strategies.*

To ensure profitability and machining job quality, 5-axis machine tools are becoming a necessity.

But the real challenge lies in finding the right CAM/CAD solution for the job !

WorkNC[®]

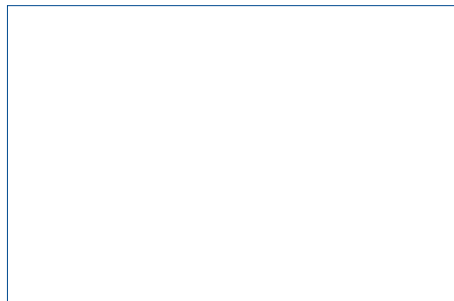
5 axis

WorkNC and SESCOI

Launched by Sescoi in 1987, WorkNC is today the worldwide reference for automatic 3-axis machining. Working closely with customers from a number of industries, Sescoi has now evolved WorkNC into the leading automatic CAM/CAD solution for 2 through to 5-axis machining.

Sescoi, internationally present via its network of subsidiaries and distributors, develops, markets and provides technical support for WorkNC CAM/CAD, WorkNC-CAD as well as WorkPLAN, its integrated management solution for custom manufacturing. Sescoi assists over 4000 customers in keeping their business ahead in the worldwide marketplace.

For full technical information on WorkNC and the WorkNC 5-Axis machining solution, please contact your nearest Sescoi office and ask for a Sescoi engineer. Further information can also be found on our website.



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