

# Productivity+™ Software for CNC machine tools



## Powerful

Integrated creation and editing of probing programs with new powerful measuring routines



## Dynamic

Program and simulate inspection routines on screen in a virtual environment



## Quick

Reduce learning, programming and on machine prove-out time



# Simple creation of probing routines and process control



## What is Productivity+™

Productivity+™ is a new simplified approach to producing Renishaw probing routines for machine tools. Running on Windows based platforms, the programs simplify the creation and insertion of probing routines into the manufacturing process.

Productivity+™ uses a graphical user interface (GUI) to provide an extremely user-friendly programming environment. Simply pick features from a CAD model, or choose parameters from dialogue boxes, to define the program. When it is complete, select the required post processor and the output is automatically generated, ready for loading directly into the machine.

For even more peace-of-mind, the probing cycle can be run as a simulation on the PC, picking up on any errors before it even reaches the machine's controller.

## and more?

Productivity+™ is more than just a means of simplifying the programming process, it also allows you to design process control into your programs. The advanced design of Productivity+™ allows it to update the machine on the basis of its results. When an abnormality is identified during probing, the Productivity+™ program on the controller performs a series of logic checks enabling it to identify the problem, update the machining program for correction, thus supporting continuous 'lights-out' machining.

### Traditional methods

Prove-out must be done on the machine

Any input allowed in program

Mistakes could result in machine or part damage

Difficult to define logic in machine code

Programming relies on an experienced operator

Each machine requires a custom written program

Because of complexity, probing is constrained to job set-up

### Productivity+™ software

Prove-out on a PC in the design office

Inputs constrained to valid values only

Mistakes highlighted by software before the program reaches the machine

Logic easily derived using drag-and-drop

Probing cycle design is simplified - less expertise needed

All machines can be programmed from a single source

Make the most of your probe by seamless integration of cutting code and measurement within the machining program

# Productivity+™ options

## A solution for everyone ...

Productivity+™ comes in three options. Each option simply refers to a different user interface or application.

## The Productivity+™ family

### Productivity+™

- Full integration of probing into cutting code
- Renishaw tool setting interface
- Macro logic builder

### GibbsCAM® plug-in

- For GibbsCAM® users

### Active Editor Pro

- Solid model feature selection

### Active Editor

- Dialogue-based feature selection

## Productivity+™ GibbsCAM® plug-in

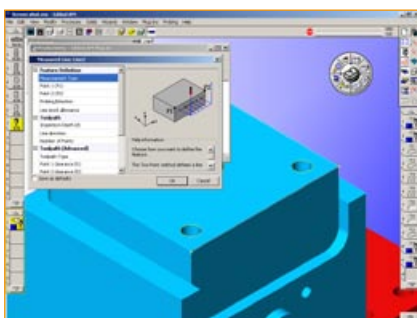
The Productivity+™ GibbsCAM® plug-in merges the creation of probing cycles, with the creation of metal cutting tool paths within the Virtual Gibbs package.

Now under one application, a complete metal cutting process can be defined, probed and simulated prior to machine prove-out.

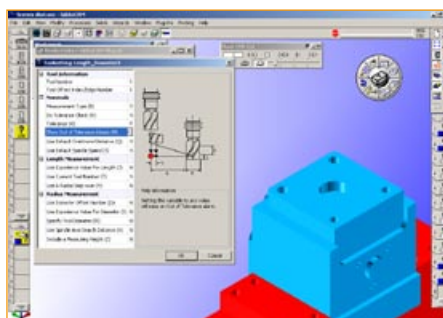
Simulation provides graphical identification of work piece and fixture collision with cutting tools and now with the probe. As a result, confidence in probing is improved, resulting in faster prove-out times.

### Requirements:

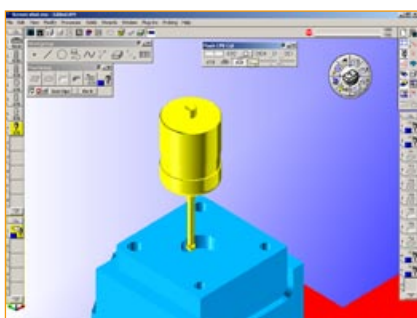
- GibbsCAM V7 (2004)
- GibbsCAM Post Processor upgrade



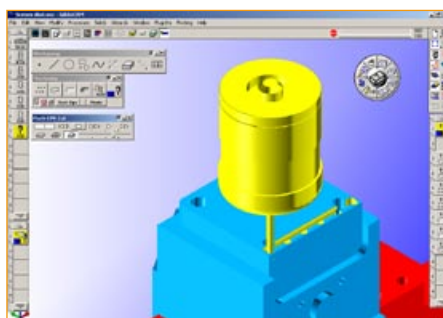
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## GibbsCAM® and Renishaw

Gibbs and associates, a leading developer of CAM/CNC programming software and Renishaw, one of the world's leading metrology companies, have combined their expertise to produce a powerful new probing plug-in for GibbsCAM® software.

Renishaw's new Productivity+™ GibbsCAM® plug-in introduces a new simplified approach to producing touch probing routines on machine tools, allowing process control and inspection to be programmed at the same time as tool-path generation.

GibbsCAM® screen images:

- 1 Generation of milling and turning programs - probe path and feature selection
- 2 Tool length checking
- 3 Running on-screen simulation
- 4 Collision identification

**NEW**

## Productivity+™ Active Editor Pro

Renishaw's Active Editor Pro is the all-in-one, independent solution for producing probing cycles remotely from the machine, via a CAD interface.

Use Renishaw probing routines for tool setting, tool breakage detection, part set-up, or part inspection, all of which are vital to maintain manufacturing process control.

Existing machine programs can be read and probing added, removing the need for cutting and pasting into text editors or on machine editing.

Features can be selected directly from the imported CAD model, making the generation of probing cycles even easier.

In addition to the solid model interface, Active Editor Pro contains all the process control functionality of Active Editor.

## Productivity+™ Active Editor

No CAD? - no problem! Productivity+™ Active Editor allows you to design probing cycles by using **dialogue based** feature selection.

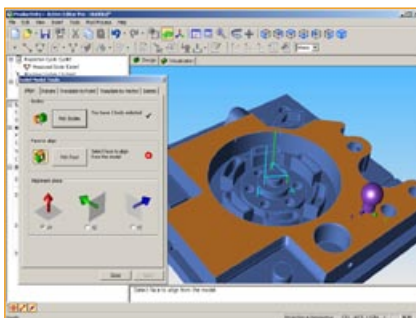
Easy-to-use dialogues with integrated help make writing probing programmes easy.

### Active Editor Pro and Active Editor Features

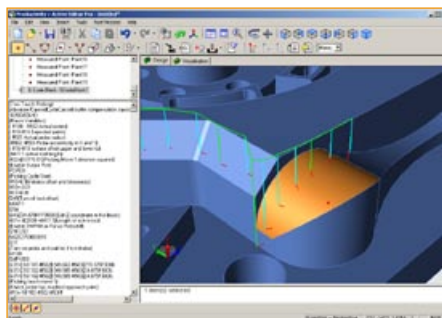
- Easy to use PC software for generating probing routines integrated with NC cutting code.
- Full integration of tool setting, probe qualification and job setup.
- Graphical screens and interactive dialogues, with on line help for all features.
- Logic builder allows lights out operation with your machine tool, making decisions based on the data it collects.

### Active Editor Pro Unique features

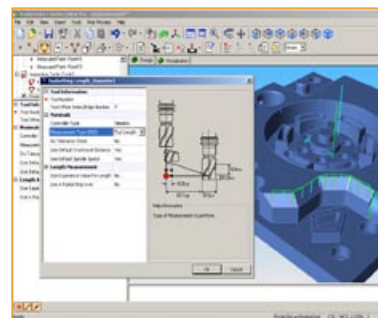
- Import of Parasolid® CAD models\*
- Programming directly from solid model
- Full simulation of probe paths including crash detection
- 'New Session' wizard
- Solid model tools - for alignment of multiple parts
- Datum picking from CAD features



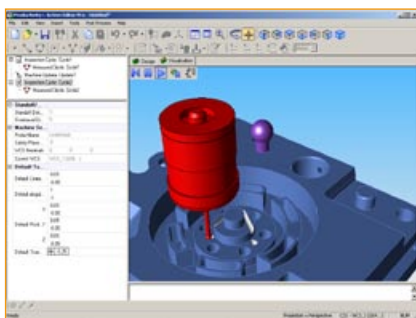
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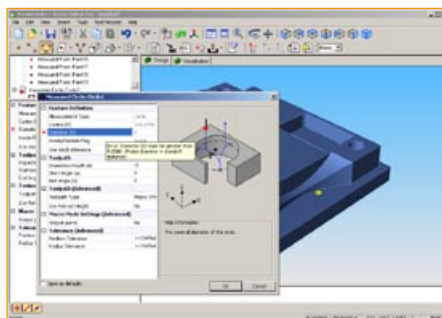
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Active Editor Pro screen images:

- 1 Setting the work co-ordinate system
- 2 3D points - close-up of probe path over selected feature
- 3 Tool setting
- 4 Simulation showing probe collision
- 5 On-line support showing program error

# Productivity+™ application

## Which controllers are supported?

The following controllers are supported by Productivity+™:

- Fanuc (Macro B)
- Haas
- Hitachi Seicos
- Makino (Pro 3)
- Mazatrol (ISO only)
- Mitsubishi Meldas
- Heidenhain i530
- Siemens 840D
- Yasnac
- Mori Seiki

If you have specific controller requirements that are not listed above, please contact your local Renishaw office for further information. You can find your local office by visiting [www.renishaw.com](http://www.renishaw.com)

## Productivity+ features:

- 3D point
- 2D line
- Circle 3 or 4 point
- 2D corner
- 3D corner
- PCD (Active Editor only)
- Web/pocket
- Logic
- Work/tool offset/variable update
- Reporting
- Tool setting

## Productivity+™ application

Productivity+™ helps you improve your process control using advanced probing techniques and logic. Easy-to-use interfaces combined with integrated help makes probing routine generation easy. On screen simulation (GibbsCAM® plugin and Active Editor Pro) provide high levels of confidence that run for 'right first time' programming.

**For successful and controlled manufacturing, Productivity+™ and probing should be used for:**

### Tool setting

#### Speed-up tool change and avoid damaged tools

Programming of automated tool setting and tool breakage detection routines are easily performed through clear dialogues. At the machine tool, cutting tools are rapidly and accurately measured, reducing set-up time and operator errors.

### Part set-up and inspection

#### Auto-correct machining cycles

Productivity+™ supports many canned cycles for:

- determining the position of components/features and automatically updating the machine's work co-ordinate system
- identification of 'stock' conditions and automatically updating tool diameter offsets (closed loop process control)
- verifying the actual size of finished components. The data can be formatted and sent to an off-line device.

### On machine verification

#### Reduce production time

By probing your part during the machining process and updating tooling parameters, valuable production time is saved – it eliminates wasted set-up time for rework or costly scrap.



### In-office programming

#### Reduce machine down-time

Renishaw Active Editor Pro and GibbsCAM® probing cycles can be produced and simulated in the design office, saving you costly time on the shop floor.

### In-office simulation

#### Increase confidence

Full simulation provides high levels of confidence as collisions are clearly displayed. Intuitive dialogues import your metal cutting programme and the probing routines are seamlessly merged.

### No direct PC connection

#### Machine controller auto-updates

No direct PC connection is required to run the generated program on the machine tool; the points collected are **processed by the machine controller** allowing lights out automatic decisions to be made.

### Immediate feedback

#### Spot checks

Productivity+™ can also be used to give immediate printed feedback on the object tolerance.



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## Renishaw applies innovation to provide solutions to your problems

Renishaw is an established world leader in metrology, providing high performance, cost-effective solutions for measurement and increased productivity. A worldwide network of subsidiary companies and distributors provides exceptional service and support for its customers.

Renishaw designs, develops and manufactures products which conform to ISO 9001 standards.

Renishaw provides innovative solutions using the following products:

- **Probe systems for inspection on CMMs (co-ordinate measuring machines).**
- **Systems for job set-up, tool setting and inspection on machine tools.**
- **Scanning and digitising systems.**
- **Laser and automated ballbar systems for performance measurement and calibration of machines.**
- **Encoder systems for high accuracy position feedback.**
- **Spectroscopy systems for non-destructive material analysis in laboratory and process environments.**
- **Styli for inspection and tool setting probes.**
- **Customised solutions for your applications.**

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