

Productivity+™ - PC based probing software for machining centres

Productivity+™ version 1.85

Productivity+™, Renishaw's PC based software solution for integrating process control into machining programs, delivers further enhancements and additional capability in the latest, version 1.85 release.

The software now includes a Constructed Line feature. This feature, which provides the ability to construct a line from two points (including the centre point of a circle and points on a line), or from the intersection of two planes is expected to be particularly suited to job set-up applications and complements the existing constructed features (Point, Circle, and Plane).

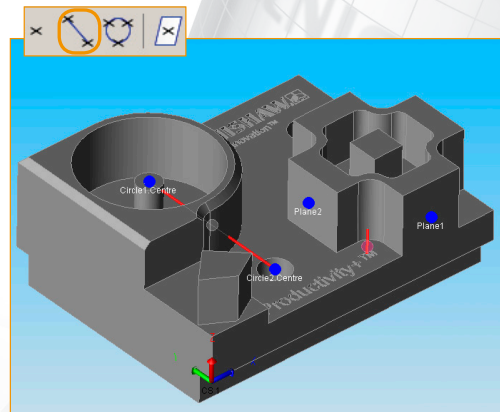
Support for multi-axis machine tools, first introduced in version 1.70 has been extended to cover knuckle-jointed (nutating) table machine configurations and remains available under the 'Technology Evaluation' programme.

Report formats are now consistent across all supported controller types including Heidenhain. New style reports, which include details such as feature type and name, are particularly helpful where data will be exported to and analysed in an external application.

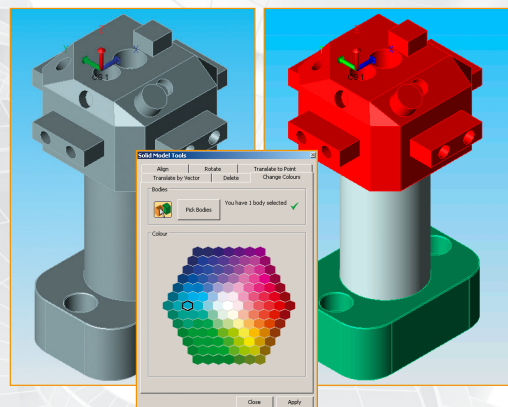
The flexibility provided by custom macros, the functionality which allows the creation and addition of bespoke solutions into Productivity+™ routines, has been extended and their results can now be used to perform positional and rotational machine updates.

Within Productivity+™ Active Editor Pro additional enhancements include the ability to change the colour of solid models (or the various bodies comprising a model), and the ability to adjust visualisation speed.

Version 1.85 also sees the first release of 64-bit versions of Active Editor Pro and the GibbsCAM® plug-in.



Constructed line generation



Changing solid model body colours within Active Editor Pro

Key benefits of Productivity+™

In-process measurement

Productivity+™ lets users combine probing, updates and machining such that processes can be controlled without the need for an external PC.

Integrated workflow

Programming from the solid model means it's faster to program and that no special machine knowledge is needed. Programming can be performed directly on the CAM workbench. (Those programming without solid models can also take advantage of Productivity+™ functionality.)

Automatic machine updates

An integrated logic builder enables measurements to be used as the input to process control decisions, allowing work co-ordinates, tool geometry, machine variables and rotation updates to be set automatically.

Innovations in version 1.85

Constructed line

Building on the existing constructed statements (point, circle and plane) it is now possible to construct lines from existing measured data. This range of constructed features is particularly suited to job set-up tasks.

Extension of multi-axis support

Previous versions of Productivity+™ provided support for 3-axis and multi-axis table/table machines. The latest software release extends this support to multi-axis machine tools with knuckle-jointed (nutating) table configurations.

Custom macro capability

Custom macro functionality has been extended allowing their results to be used within machine update operations.

Key features

Sophisticated part set-ups and operations Integrated logic builder adds intelligence to machining programs with measurement results being used to determine process flow

Point and click programming Simple to use, icon based software
Individual view windows for solid model, probe program, G-Code and probing statement
Program using solid model features, or using Basic Statements where no model exists
Constructed Statements create 'virtual' features from existing measurement data

Multi-axis capability Program for 3-, 4- and 5-axis (3+2 table/ table and knuckle-jointed table) machine configurations, including Siemens CYCLE800 and Fancu G68.2 commands

CAD/CAM compatibility Integrates easily into existing programs and processes
Import a variety of CAD model formats
Import G-Code, then split/re-combine as necessary around the probe routines

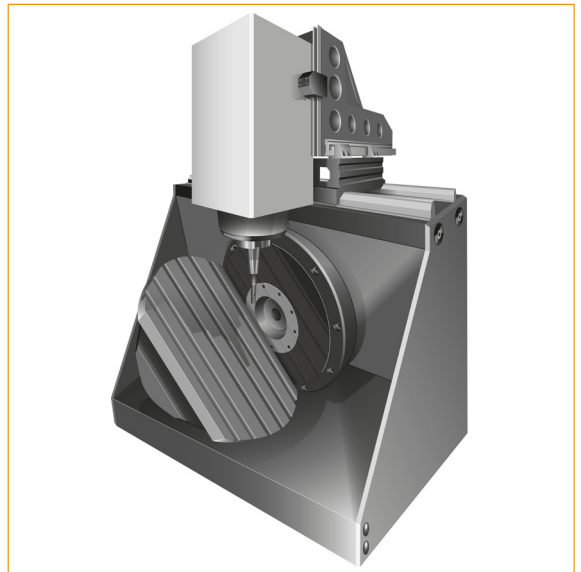
Integrate tool setting and probe routines into existing G-Code Determine and update length, radius and/or diameter of cutting tools mid-program for maximum machining accuracy
Select where to add probing and machine or tool updates to existing machining programs

Integrated dialogs and wizards Dialog boxes provide step-by-step instructions
Extensive on-line Help plus sample tutorials
Post Processor tool transforms probe routines into machine readable G-Code

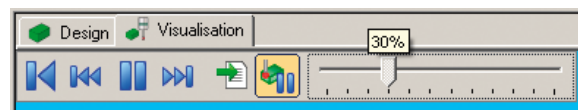
Program simulation Perform program 'prove-out' before loading to the machine controller to eliminate the risk of damage to machine and probe
Visual identification of current program position
Support of multiple probes during simulation

Probe database Record of available probes including full stylus configuration and carousel location
Select standard Renishaw probes or define individual parameters to create 'custom' probes

NC updates WCS (G54, G55 ...)
Rotation
Tool length and diameter
Macro variables



Support for knuckle-jointed (nutating) table machine configurations



New slider tool for adjustment of visualisation speed

PROGRAM STARTS/PGS						
REPORT/RPT						
REPORT1						
	NOM	ACT	DEV	LOWER	UPPER	IN TOL
MEASURED POINT/MPT						
POINT1						
POSITION X	-101.0940	-101.0945	-0.00050	-0.0500	0.0500	YES
POSITION Y	-60.0000	-60.0145	-0.01450	-0.0500	0.0500	YES
POSITION Z	-15.0180	-15.0170	0.00152	-0.0500	0.0500	YES
MEASURED CIRCLE/MCL						
CIRCLE1						
POSITION X	0.0000	-0.0066	-0.0066	-0.1250	0.1250	YES
POSITION Y	0.0000	-0.0021	-0.0021	-0.1250	0.1250	YES
POSITION Z	0.0000	0.0000	0.0000			
DIAMETER	20.0000	20.0072	0.0072	-0.0500	0.0500	YES
CONSTRUCTED CIRCLE/CCL						
CIRCLE2						
POSITION X	0.0000	0.0007	0.0007	-0.1250	0.1250	YES
POSITION Y	0.0000	-0.0167	-0.0167	-0.1250	0.1250	YES
POSITION Z	-11.8786	-11.8786	0.0000			
DIAMETER	40.0000	40.0774	0.0774	-0.0500	0.0500	NO
MEASURED POINT/MPT						
POINT2						
POSITION X	19.0700	19.1208	0.0508	-0.0500	0.0500	NO
POSITION Y	-6.0278	-6.0432	-0.0154	-0.5000	0.0500	YES
POSITION Z	-12.3886	-12.3890	-0.0004	-0.0500	0.0500	YES
MATERIAL CONDITION	0.0531					

Enhanced and clarified reporting structure

More information

Details of Renishaw's software solutions for machine tools and a comprehensive list of supported CAD formats can be found at www.renishaw.com/mtpssoftware

For worldwide contact details please visit our main website at
www.renishaw.com/contact