Advanced CADCAM solutions for multi-axis machining to shorten delivery times, boost productivity and increase profitability without compromising surface quality.

PowerMILL offers a wide range of strategies to make efficient 5-axis programming a reality. The combination of power, flexibility and ease-of-use has enabled PowerMILL to be used successfully in a wide variety of applications, including:-

- Blades and blisks
- Aerostructures
- Port machining
- Composite trimming
- Engraving of bottle moulds

The main advantage of 5-axis machining is the ability to save time by machining complex shapes in a single setup. PowerMILL has several machining strategies using shorter cutters to produce faster, more accurate machining with less vibration:

**Improving Machine Motion, Cycle Times and Surface Finish**

Controlling what happens at the head of the machine as well as the tool contact point is critical if successful 5-axis machining is to be achieved. Poor tool-axis control will produce erratic machine motion, uneven surface finish, premature tool wear or, worst of all, collisions. PowerMILL's unrivalled tool axis control ensures unbeatable results in 5-axis machining.

“We looked at a number of systems and PowerMILL seemed to be the most straightforward for 5-axis programming. The software works in the way that an engineer would work. Also, the cutter path generation is unbelievably quick.”

Paul Sollers, Goodrich Engine Control Systems, UK.

**Automatic Collision Avoidance**

PowerMILL's collision avoidance tools automatically tilt the cutter away from obstacles by a specified clearance. Once clear of the obstacle, the tool returns to the original cutting angle. In addition to avoiding obstacles, this is also useful when machining undercut regions.

**Total Control with Tool Axis Editing**

For optimum control of your 5-axis machine, PowerMILL allows the tool axis settings to be adjusted for individual areas of the toolpath. This fine-tuning of a toolpath can make a huge difference in the overall quality of the part and allows the machine to run as smoothly as possible.
Benefits of Positional 5 Axis Machining

- Ideal for machining deep cores and cavities
- Short cutters give increased accuracy and higher quality surface finish
- Allows the machining of undercuts
- Significant time benefits through use of only one set up

Benefits of Continuous 5 Axis Machining

- Ideal for Profiling parts
- Ideal for machining deep corners and cavities
- Shorter cutters give increased accuracy and higher quality surface finish
- Allows for machining with the flank or bottom of the tool
- Can be used with a full range of tool types
- Full gouge protection
- Can be used with models in STL format

“We can machine the surface in areas that would previously have been impossible to access economically. In addition, difficult surfaces that would have needed long series cutters are now simple. Easier access is allowing us to use shorter tools resulting in improved surface finish and a reduction in the number of post machining operations, including EDM.”

David Gaskin, AF Gaskin Ltd, UK.

Features and Functions

- Surface Finishing
- Swarf Milling
- Profiling
- Trimming
- Pocketing
- Slotting
- Multi axis Drilling
- Integrated 5 Axis Post Processor