4-Axis Component

State-of-the-art CAM technology boosts the efficiency of complex 5-axis machining centers. In many cases it makes sense to use only 4 axes of a machine tool, and some machine tools only offer 4-axis capabilities. This is why ModuleWorks constantly develops new and optimized 4-axis features.

4-axis rotary machining is commonly used to manufacture oil field and automotive components such as crankshafts, camshafts and drill heads. ModuleWorks provides a set of customized roughing and finishing toolpaths tailored to meet the needs of these applications.

Key Benefits

- State-of-the-art technology
- Verified in practical tests
- Higher efficiency on workpiece geometries allows 4-axis machining
- Optimized components expand the possibilities of conventional programming solutions and use the full potential of the machine tool
- The stiffness of 4-axis tools offers greater robustness, especially for roughing processes

General Features

- The 4-axis modules enable continuous machining with different roughing and finishing strategies. The 4-axis package includes automated applications and generic cycles that are specially optimized for 4-axis machining
- The latest toolpath generation technology has great potential to optimize the efficiency of multitasking machines
- Parallel computation for fast calculation times

Machining Highlights

- Can be used on horizontal machining centers
- Users of conventional mill-turn machines could be converted to CAM system users
- Toolpath on arbitrary meshes
- 4-axis SWARP operations
Surface

The toolpath cycles are easy-to-use applications with minimum user input, automatic tool axis control and collision avoidance.

With the additional possibility to limit machining to 4 axes, parts that have been especially designed for 4-axis machining can be machined without having to make complicated settings to control the tool axis.

Rotary Machining

Thanks to a new slicing technology and the combination with 3-axis cycles, we have succeeded in developing a mesh-based roughing and finishing cycle that enables full-fledged rotary machining in just a few steps.

- Support for patterns that pass through 360° enables rotary machining to be used for extruders and screw type parts.
- Manufacture of oil field and automotive components such as crankshafts, camshafts and drill heads.
- Tool types - ballmill, endmill, bullnose.
- Input - mesh geometry.

Port 4-Axis

Port machining can also be performed on 4-axis machines, for example on a horizontal machining center. Even for full 5-axis machines, the 4-axis output can increase performance by reducing the amount of tilting.

- Auto spine detection.
- Adaptive pattern.
- Auto collision avoidance.
- Output of top, bottom or both toolpaths.

For information on other CAD/CAM components, including 3-axis- and 5-axis toolpaths, visit:
www.moduleworks.com