

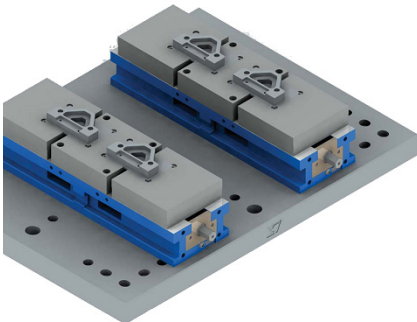
Automatic Feature Recognition

CAMWorks is a feature-based CAM system that provides the ability to automatically recognize many prismatic features including tapers.

- Automatic Feature Recognition (AFR) analyzes part shapes and attempts to define the most common machinable features such as pockets, bosses, holes and slots.
- AFR recognizes features on native SolidWorks part models or on solid models imported via IGES, SAT, etc.
- MfgView, a new generation of AFR, finds additional feature types and allows non-hole features to be edited. MfgView also provides the ability to recognize features from a user-defined direction only.
- Local Feature Recognition is a selective form of AFR based on user-selected faces.

Interactive Feature Recognition

CAMWorks provides a wizard for defining features that are not recognized automatically or features that need to be defined for your facility's machining requirements. Wrapped features can be defined interactively for 4th/5th Axis indexing.



Library Features

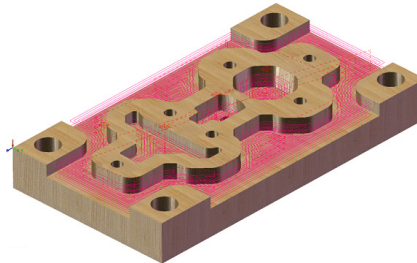
Library features can be created where only select CAM data needs to be reused in other jobs.

2½ Axis Milling

Includes automatic roughing, contouring (finishing), thread milling and single point (drilling, boring, reaming, tapping) cycles.

- Machining algorithms use the latest toolpath and gouge protection methods.
- Cutting cycles provide fast, error-free toolpaths.
- Toolpath optimization based on grid or shortest path method.

- Arc fit splines for Rough, Contour and Face Mill operations.
- Insert Contain and Avoid Areas for Rough and Contour operations.
- Depth processing by area or by level for Rough and Contour operations.
- Option to automatically generate an Entry Drill operation for Rough and Contour operations.
- Option to generate predrilled hole at leadout position of Rough and contour operations.



Drilling Cycles

- Canned cycle support: drill, pecking, high speed pecking, variable pecking, bore, bore w/dwell, back boring, fine boring, counter boring, ream, ream w/dwell, tapping, reverse tapping.
- Specify machining depth to tool tip or full tool diameter (drill, bore, tap, ream, and thread mill operations).
- Countersink and center drill operations: automatic calculation of machining depth based on tool size/shape, countersink diameter.

Roughing

A 2 Axis Rough Mill operation removes material by following the machinable feature shape or by making parallel cuts across the feature.

- Patterns: zigzag, zig, pocket in/out, spiral in/out, plunge rough, offset roughing.
- Methods to determine Z machining depth: exact, equal, distance along, exact – island tops, distance along – island tops.
- Wedge machining.
- Generate additional roughing passes above islands.
- Machine entire feature or calculate toolpath from WIP or from previous leftover.
- Entry types: plunge, entry drill, ramp, entry hole, spiral, ramp on leadin.
- Retract types: hole center, length & angle.
- Generate high-speed toolpaths with no sharp corners.

Face Mill

A Face Mill operation generates toolpaths on a Face feature to square or face off the top of a part.

- Number of passes can be calculated automatically or user defined.
- Option to specify one pass down the middle of the part.

Contour Milling

A Contour Mill operation removes material by following the profile shape of pockets, slots, bosses, etc.

- Spring passes.
- Corner machining controls including high speed options for internal corners.
- Methods to determine Z machining depth: exact, equal, distance along.
- Reverse cut direction from level to level when processing to depth by region.
- Reduce and eliminate unnecessary moves when contour machining features with multiple depths and side passes.
- Generate roughing-style toolpath to machine the bottom of a Pocket, Slot, Corner Slot, Open Pocket or Face Feature.
- Change start location for perimeter or any island within the perimeter.
- Leadin/leadout: arc, perpendicular, parallel, none.
- Entry types: entry drill, entry hole, spiral, none.
- Retract types: XY position of the last tool motion, hole center (hole or circular pockets), user-defined.
- Multiple bottom finish options.
- Toolpath diameter compensation, leadins/leadouts, define side to machine when cutting Curve feature.
- Thread milling.



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