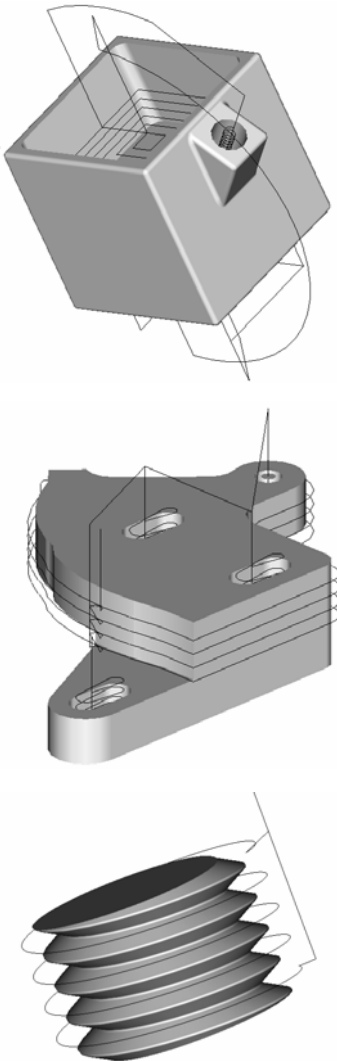


NC Polaris



The manufacturing process for Milling is modeled inside AutoCAD® or Autodesk Mechanical Desktop® by the NC Polaris Mill Knowledge Base. The Mill Extension produces toolpath on 2D or 3D entities including Solid Models. 5-Axis positioning is included to support production Milling. Associative toolpath on a Solid Model is standard.



CONTOURING

The NC Polaris Mill Extension provides comprehensive Cutting Cycles for production milling that include profiling, pocketing, drilling, direct cutting of Extruded Solid Models, and full 5-Axis positioning. 5-Axis positioning automatically rotates the part on the active axis to position the selected face of the Solid Model normal to the tool.

Cutting Cycles of the Mill Extension are associative to the Solid Model. Change the Model and the associated toolpath can be automatically updated on command.

Profiling Cycles provide Lead-In/Out's that are automatically scaled based on the radius of the current tool. These Leads include straight plunge, ramp entry, or helix entry.

The open architecture design of NC Polaris provides users with the opportunity to alter existing cycles or create new cycles to suit their needs by

combining functions from several different cycles.

POCKETING

Pocketing with unlimited islands is incorporated in the Mill Extension Knowledge Base. Spiral pocketing includes options to plunge the tool only in a pre-selected hole and stay down, or to use ramp entry. Multi level islands are automatically pocketed by level.

DRILLING

Hole finding by specific size or a range of sizes is provided. Sorting routines optimize machine motions. Full support of machine canned cycles is a standard feature. Multiple operations can be accomplished with a single selection. Hole operations can be combined in any order. Automatic reversal of drilling order after a tool change minimizes wasted machine travel.

Manufacturing Reality

Mill Application Knowledge

The Mill Extension contains a knowledge base for production milling and drilling. Toolpath is displayed in AutoCAD or Autodesk Mechanical Desktop (AMD) along with the drawing geometry. The NC Polaris Mill Extension recognizes any AutoCAD or AMD entity that applies to part machining. Features for production machining can be extracted directly from the solid model or serviced by a 2D drawing. Machining from a solid model enables associative NC. 5-Axis positioning provides full support of A, B, or C axis positioning. Graphic display of rotation positioning from a solid model is done automatically. Work Coordinate support for Fixture Offsets, Tombstones, or Pallet Changers is standard.

Tool handling supports tool parameters, turret loading, and tool configuration management. The Mill Extension Knowledge Base develops machining processes that can be recalled. A complete database to store and recall knowledge-based machining methods is provided.

Feed and Speed Calculator

NC Polaris includes a complete Feed and Speed Calculator using a material table. The material table contains all standard materials and grades. Users can input additional materials into the table for use with the Feed and Speed Calculator.

Contour Profiling

A wide variety of contour profiling cycles are supplied with the Mill Extension. These cycles include Straight Plunge Entry, Ramp Entry, On-Geometry Ramping, Incline Profiling, Helical or Thread Milling, Multiple Pass Milling, and Engraving. This host of machining cycles satisfy virtually all milling requirements.

Pocketing

Pocketing algorithms monitor areas left by large tool diameters. When a tool can not fit in a necked-down area, a new pocket is created. This feature allows cutting with large tools and follow-up on small remaining areas with a smaller tool. Pocketing cycles include Spiral and Linear pocketing that support using pre-drilled entry points with stay down logic. There is no limit to the number of islands. Islands at multi Z levels are automatically recognized.

Hole Operations

The Mill Extension provides automatic hole finding by size or by a range of sizes. These holes can then be geometrically sorted to optimize machine motions. Automatic reversal of the drilling order after a tool change further minimizes

machine travel. All machine canned cycles (G81 to G89), including rigid cycle variations, are supported. The Drill Motions feature can be used to create toolpath development that emulates canned cycles for lower level machines.

Work Coordinates

Fixture Offsets, Tombstones, Complex Prismatic Part Positioners, and Pallet Changers are supported utilizing 2D drawings or 3D Solids.

5-Axis Positioning

A, B, or C Axis Positioning are fully supported by the Mill Extension. The active axis of rotation is graphically displayed and the selected face is automatically rotated normal to the tool. Machining and positioning are performed directly on the solid model.

NC Code

NC code for any NC or CNC machine controller is supported by the NC Polaris Postprocessor, without the need for intermediate CL files. NC code is generated directly from the graphic toolpath representation. The system is delivered with a custom postprocessor of your choice along with a variety of standard configurations. These standard configurations can be altered using the NC Polaris user configurable postprocessor. Our rich library of over 1000 Postprocessor configurations ensures compatibility with your CNC equipment.

Toolpath Verification

The Tool Check feature allows you to emulate the tool inside AutoCAD or AMD. The Back Plot feature reads NC code and creates an AutoCAD representation of tool motions. The optional Tape-To-Part solid model NC code verifier emulates the machining process and displays the tool removing material in real time.

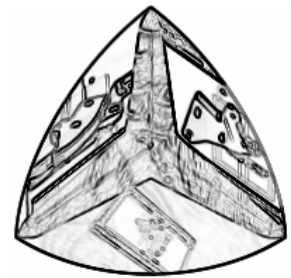
Configuration Wizard

The NC Polaris Configuration Wizard provides you with a comprehensive tool to manage your method of machining. The Configuration Wizard lets you share knowledge base solutions from one drawing to another as you encounter and accommodate new methods.

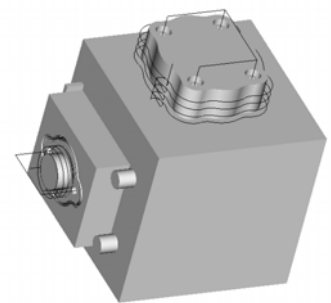
More-More-More

The NC Polaris Mill Extension contains features beyond those mentioned here. Contact your local NC Polaris dealer for a demonstration.

Mill

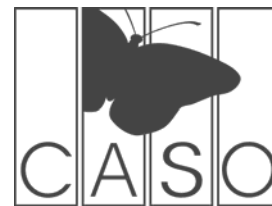


Extension



Tombstones, Fixture Offsets, Complex Prismatic Part Positioning, and Pallet Changers are supported.

For More Information:



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