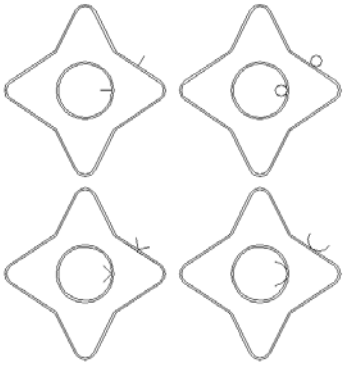
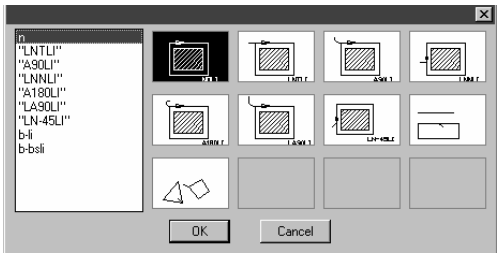
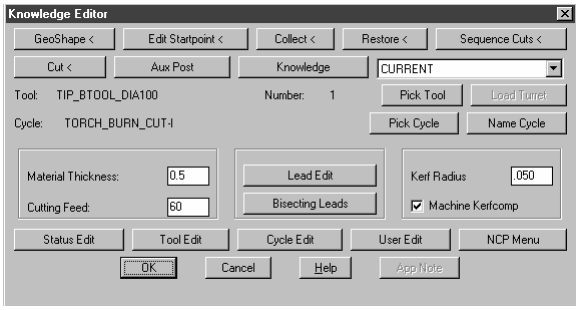
NC Polaris

Quality parts begin with precise graphic representation in AutoCAD® or Autodesk Mechanical Desktop®. Numerically controlled part programs are prepared inside AutoCAD with the integration of NC Polaris. NC Polaris models the manufacturing process for Torch, Plasma, Laser, and WaterJet applications, totally automating toolpath generation for these applications.





Cut your way with any lead-in/out using the graphic lead editor.



APPLICATIONS

NC Polaris employs a knowledge-based method that totally automates the tooling process for profile cutters such as Torch, Plasma, Laser, WaterJet, and 2-1/2-Axis Routers. Many times these profiling machines are equipped with multiple heads for multi-purpose applications. The NC Polaris Knowledge Base controls tool path generation for these multi-purpose machines with multiple heads with ease. The entire process is performed graphically inside AutoCAD. You actually see NC Polaris automatically create tool path in your AutoCAD drawing.

MARKING

Some profile cutting applications utilize marking cycles as an aid in the welding, bending, or joining of part assemblies. NC Polaris fully supports marking with zinc spray, scribing, scoring, or punch marking devices. The Decision Modules in the profiling Knowledge Base are delivered in a fully configured form to meet your requirements. If your requirements change or expand, these Decision Modules are easily altered utilizing a user-friendly icon interface.

NC CODE

The flexible NC Polaris system provides NC code output for G & M codes or ESSI format in incremental or absolute coordinates. For machines not equipped with circular interpolation, NC Polaris automatically converts arcs and circles into line segments with deviation tolerance under your control. Full support of subroutines and machine-specific macros are available options with NC Polaris. This flexibility makes NC Polaris compatible with virtually any CNC profile cutter for any application.

KNOWLEDGE-BASED MANUFACTURING SOLUTIONS

Manufacturing Reality

Application Knowledge

Torch, Plasma, Laser, WaterJet and some router applications have the common requirement of 2-1/2D cutting. This type of cutting is basic to NC Polaris. The knowledge to produce specialized results within NC Polaris for each of these applications is standard to the base system.

Each application has been designed to consider it's special requirements. These application requirements are at the fingertips of the operator. By simply selecting the TORCH application menu selection, all the torch application knowledge is presented to NC Polaris. Decision Modules are already defined for an application. The user can easily make changes or additions to the Decision Modules (tasks).

Torch Application

Industrial standards for cutting with a torch/ flame cutter are totally defined in the system operations. When implementing a cut cycle, the decisions for appropriate leads, kerf compensation, and direction of cut are automatically defined. Simply selecting "Cut" from the menu and selecting the part shape completes the generation of a cutting profile.

NC Polaris supports all types of marking devices including zinc spray, scribe, scoring, and punch marking. Applications requiring multiple marking heads are easily handled by the NC Polaris Torch Knowledge Base.

Nested parts are sorted by marking processes, internal cuts and external cuts. This defines a complete NC program of parts with the appropriate cutting sequence automatically determined.

The system can calculate feeds, speed, and burn-in time based on plate thickness and any other condition defined by the user. Cut time can be calculated and displayed for management information.

Determination of tangent versus perpendicular lead-in's and lead-out's is automatic based on the geometric makeup of the cut contour.

Plasma Application

A plasma cutter, like the torch, is a profiler. Since the centerline of the plasma head leads the actual cutting of material, special considerations are required for lead-in and lead-out methods. NC Polaris offers a host of icon-selectable lead-in/lead-out's. Once you have selected the desired leads, your custom knowledge is updated and stored for your use forever. The size of your leads is automatically scaled by NC Polaris based on material thickness.

Laser and WaterJet Application

Each of these applications is fully supported by NC Polaris. Although these machines are profile cutters, they sometimes require special head motion commands to insure constant kerf results when cutting. There are also times when special commands are required in the NC code to activate auxiliary functions on the machine. NC Polaris automatically produces these motion and auxiliary commands. As a user, you simply select "Cut" from the menu and select the desired shape(s). The system does the rest--automatically. The system automatically outputs appropriate kerf or compensation commands.

Router Applications

The NC Polaris base system is self-configurable to support router applications. You simply select Router from the application menu and enter the name of your postprocessor when prompted at the command line. This configuration is ideally suited for 2-1/2-axis router applications. If your router supports full three-axis motions and canned cycle support for spot drilling, boring, counter boring, etc., we highly recommend that our Mill Extension be included for your configuration.

Combination Machines

Many times a combination of two or more of the previously mentioned applications exists on a single machine. This is not a problem for NC Polaris. Full support of combination machines is standard in the NC Polaris system. Full support of subroutines and machine-specific macros are available options with NC Polaris.

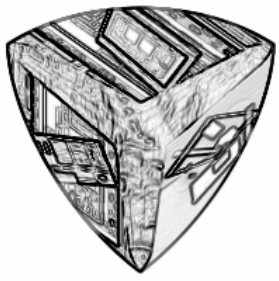
Part Nesting

The integration of NC Polaris and AutoCAD provides you with a variety of methods to solve the problem of sheet optimization (nesting). AutoCAD provides a host of interactive part manipulation methods utilizing Move, Copy, Insert, Array, and rotate functions. For true shape nesting requirements, the NC Polaris Nest Extension is available to automatically nest parts and displays the results in AutoCAD. You simply input part quantities and sheet size(s), and the Nest Extension does the rest--automatically.

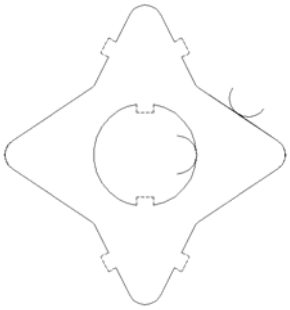
More-More-More

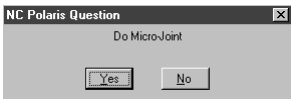
The Torch, Plasma, Laser, and WaterJet applications are a part of the NC Polaris Base Package. Contact your local NC Polaris dealer for a demonstration.

Torch, Plasma, Laser, WaterJet



Application





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