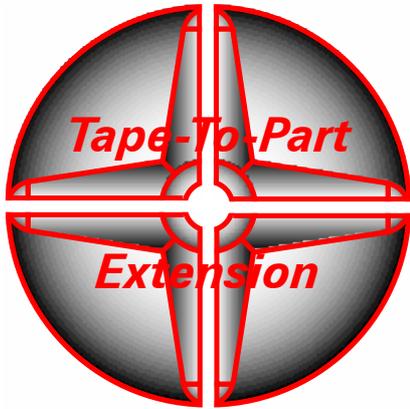
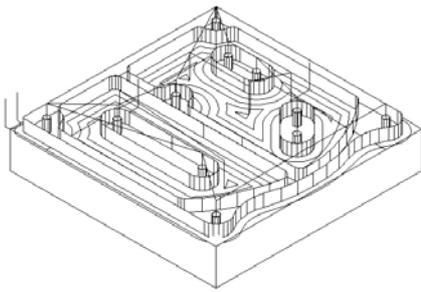


# NC Polaris



*NC code verification on your CNC machine wastes time and money. The NC Polaris Tape-To-Part Extension emulates the machining process at your CAD/CAM workstation. You can actually inspect your part electronically using the powerful features of the Tape-To-Part Extension, fully integrated with NC Polaris and AutoCAD® or Autodesk Mechanical Desktop®.*



## THE INTEGRATION

The goal of NC Microproducts is to provide users with a full range of software tools to produce quality parts utilizing CNC technology effectively. Verification of the actual NC code prepared for your CNC milling machine provides you with a clear picture of the machining process in real time. Proving out your machining strategy is done before loading on to your CNC machine. Recognizing this opportunity for savings, NC Microproducts has integrated a solid rendering verifier package with NC Polaris. This integration is accomplished through the open architecture of the NC Polaris system.

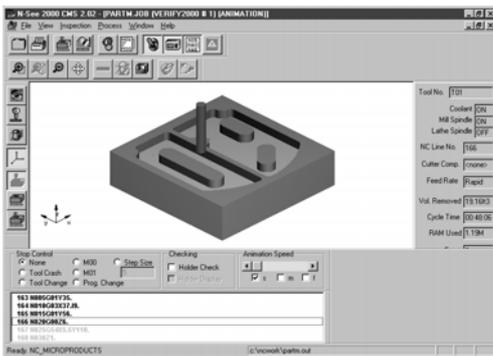
Total integration of the Tape-to-Part Extension provides you with a fast and comprehensive method of verifying your NC part program by simply selecting the Verify command from the NC Polaris dialog interface. The system automatically produces the appropriate

tool description(s) for the solid rendering program to execute.

## THE APPLICATION

The Tape-to-Part Extension actually emulates the milling of a part at your CAD/CAM workstation. In the Animated mode you can observe the tool(s) dynamically removing material. The visual image is the same activity that will occur when actually machining the part. The system displays each block of NC code as material is being removed. You observe the entire machining process graphically. Cycle time and volume of material removed are displayed during the verification process.

You can view your solid rendering from any direction and at any magnification using Rotate and Zoom. In the Inspect mode, you can obtain dimensional information on your part.



# Manufacturing Reality

## Solid Model NC Verification

The NC Polaris Tape-to-Part Extension integrates a solid rendering program with the Mill Extension for solid model NC verification. Solid model rendering is a comprehensive method for verification of a NC part program. Tape-To-Part and the Mill Extension are seamlessly integrated and run as one. This is accomplished through the open architecture of the NC Polaris system.

Tape-to-Part allows you to see and dimensionally verify your workpiece as actually cut both in process and as a final part. The input data used to generate the solid model is the actual NC code produced for your machine using the Mill Extension. The resultant solid model is displayed in a realistic fashion and can be rotated, cross-sectioned or zoomed at any time. Inspection features are available for dimensional verification.

### Standard Features include:

- 3-Axis Support with 4<sup>th</sup> and 5<sup>th</sup> positioning
- Dynamic Tool Display
- Feeds, Volume and Tool Reporting
- Zoom/Rotate/Cross Sections
- Collision Detection
- Dimensional Inspection
- Animate and Turbo
- Emulation Color Control

The Tape-To-Part verifier actually removes the material from the stock as instructed by the block of NC code. As each block of NC code is read the solid model is altered to reflect the effects of the tool removing the material. Single step, multiple step and continuous run modes are available for total control of the solid model development.

### 3-Axis Support with 4<sup>th</sup> and 5<sup>th</sup> positioning

Tape-to-Part is a full 3-axis solid modeling verification system that supports 4<sup>th</sup> and 5<sup>th</sup> axis positioning. Tape-To-Part recognizes NC code that uses 3D plane selections. Verification of NC code with fixture offsets is a standard feature of the Tape-To-Part Extension.

### Dynamic Tool Display

A fast-action image of the part being machined, including a dynamic tool display, is a standard feature. A quick review of a machining cycle can be made in seconds. Simply perform the desired cycle, make NC code and press the verify command for results. The tool will dynamically remove the material from the stock. The visual

image is the same activity that is going to occur at the machine tool. Problems are solved before they become problems.

### Feeds, Volume and Tool Reporting

As the solid model is being developed, a sidebar display gives you status information. Each time a tool change occurs, the current tool number is displayed. The programmed feed is provided for cutting and index moves. As material is removed, the Volume Removed field is updated in real time.

### Zoom/Rotate/Cross Sections

The solid can be viewed from any direction, with any zoom factor, and at any time during the part generation. Upon completion of the part program, cross sections can be made in the XY, XZ or YZ planes at any location.

### Collision Detection

The Tape-To-Part Extension can be used to verify hand written programs. If the program contains errors where the tool cuts into material while in rapid feed, a pause is performed and an error message indicating tool collision is displayed. This tool collision feature provides you with tooling protection. This, in combination with Zoom and Inspect, can solve problems long before there are problems.

### Dimensional Inspection

Dimensions from one feature to another can be displayed along with the NC code that generated the feature.

### Verifying 3D Machining

NC code files of 3D machining toolpath created by the Expert NURBS Cutter Extension can be voluminous, and complex. Many times a core or cavity finishing program can contain over one million lines of NC code. The Tape-To-Part Extension provides a comprehensive method of verifying the NC code file before running the program on your machining center. When using the Expert NURBS Cutter Extension, the scallop effects of tool spacing can be easily verified using the Tape-to-Part Extension.

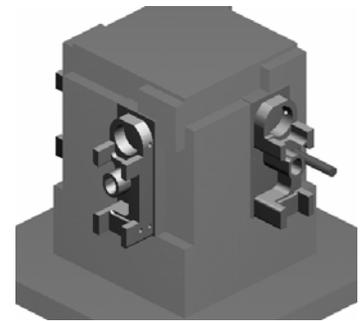
### More-More-More

The Tape-To-Part Extension contains features beyond those mentioned here. Contact your local NC Polaris dealer for a demonstration.

## Tape-To-Part

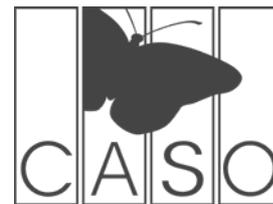


## Extension



*NC Polaris Tape-To-Part Extension verifies NC code prepared for a tombstone fixture.*

For More Information:



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