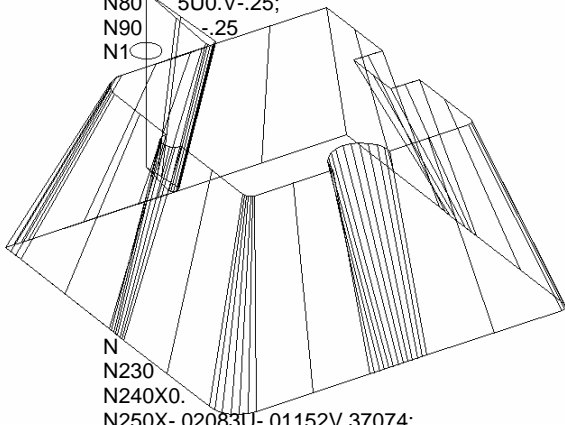


NC Polaris

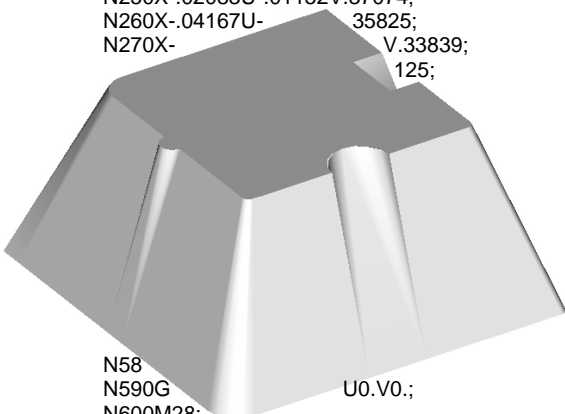


A 4-Axis WireEDM machine requires fully synchronized precise control of X,Y,U,V, positioning. The integration of the NC Polaris 4-Axis WireEDM Extension and AutoCAD® or Autodesk Mechanical Desktop® accommodates this requirement with ease. Angle and travel limits of the target machine are monitored by the system during the programming session.

%;
O1234;
N10(X Y U V PROGRAM);
N20(USE M5 STEEL);
N30G90;
N40G92X0.Y.95472;
N50G41G01X-.02Y.77D1S1U0.V-.25;
N60X-.01732Y.76U0.V-.25;
N70X-.01Y.75268U0.V-.25;
N80 5U0.V-.25;
N90 -.25
N10



N
N230
N240X0.
N250X-.02083U-.01152V.37074;
N260X-.04167U- 35825;
N270X- V.33839;
125;



N58
N590G
N600M28;
N610M29;
N620M02;
%;

TOTAL CONTROL

An independent X,Y,U,V, 4-axis WireEDM machine can produce die shapes without the constraints imposed by using taper macros. In virtually all cases, it is impossible to produce a X,Y,U,V, part program using manual data input (MDI) programming methods.

The NC Polaris 4-Axis WireEDM Extension, combined with AutoCAD or Autodesk Mechanical Desktop, provides a comprehensive solution to programming an independent X,Y,U,V, 4-axis WireEDM. The user simply draws the top and bottom contours and the 4-Axis WireEDM Extension does the rest. The system displays sync locations, checks U,V travel limits and wire inclination angle for the targeted machine, and graphically displays all X,Y,U,V, wire motions. If a U,V travel limit or wire inclination angle violation is

detected, the system clearly indicates in bold color the exact location where the violation begins and ends so that the user can take immediate action. In some instances, the solution can be as easy as making the die block thicker by moving the upper contour. The system will show you immediately if this action has corrected the violation. If the die block requires a design change, AutoCAD provides all the necessary drawing tools to easily and quickly make any changes while the multi-color wire tessellation lines produced by the system are still present to use as a guide.

NC Polaris transforms AutoCAD into a full-featured, knowledge-based numerical control programming system to satisfy the most demanding 4-axis WireEDM requirements.

AutoCAD and NC Polaris--a true CAD/CAM solution!

Manufacturing Reality

Synchronizing

The purpose of independent X,Y,U,V, wire cutting is to produce precisely controlled upper and lower die block shapes while selectively synchronizing the two contours. The NC Polaris 4-Axis WireEDM Extension automatically checks the upper and lower contours for balanced synchronization. Top and bottom contours can be drawn using AutoCAD lines, arcs, or polylines. Each is considered a valid element for synchronizing the contours. If a single complex element (polyline) is drawn for both top and bottom contours, the 4-Axis WireEDM Extension will equally distribute synchronization while monitoring arc tolerance settings.

Application Knowledge

Wire cut cycles that range from simple once-around cycles to complex multiple-pass draft-angle cycles are fully automated in the WireEDM configuration. Each cutting application has been designed to consider its special requirements. These application requirements are at the finger tips of the operator.

4-Axis WireEDM Applications

Industrial standards for cutting with a 4-axis WireEDM are totally defined in the system. When implementing a cut cycle, the decisions for appropriate lead-in, wire compensation, direction of cut, glue stop position, and lead-out are automatically defined for fully synchronized 4-axis WireEDM applications. In the "Cut" mode, you simply select the 3-D part shape, and the system does the rest automatically.

Parametrics

Gone are the days of answering a multitude of prompts to operate a WireEDM programming system. The NC Polaris WireEDM Knowledge Base automatically scans the parametrics of a cutting cycle and outputs cutting motions accordingly. These cutting parameters are contained in user-friendly dialogue boxes. Since these parameters rarely change from part to part for a given cutting cycle, the user is relieved of the tedious, error-prone job of answering repetitious prompts. NC Polaris parametrics include cut cycle control for:

- Wire compensation
- Cut side
- Cut direction
- Number of passes
- Type of lead-in/out
- Cycle description (for reporting)
- Cutting conditions

- Overcut control
- Gap for slug
- Feedrate
- Power settings
- Material thickness
- Dwells

Cutting Cycles

A cutting cycle is controlled by the values placed in the parametric dialogue box. Every cutting cycle supplied in the 4-Axis WireEDM Knowledge Base was developed to perform a specific series of activities by simply placing the appropriate response in the parametrics of a basic cycle. After the desired activities have been entered, the cycle is saved and given an appropriate name. This unique capability provides you with the opportunity to easily add custom cycles to the 4-Axis WireEDM Knowledge Base for your application. You no longer need to purchase additional capabilities. No other numerical control programming system offers such versatility and flexibility.

Flexibility

Producing tool path and the resulting NC code for any part shape, regardless of complexity, is accomplished in seconds--effortlessly. The NC Polaris 4-Axis WireEDM Extension automatically laces X,Y - U,V commands to insure perfect part programs. Tessellation lines showing each lace location for top and bottom contours are displayed in AutoCAD. A final check for U,V travel and wire inclination angle is run by the 4-Axis WireEDM Extension before NC code is ever made. The entire process is displayed in color inside AutoCAD.

The NC Polaris 4-Axis WireEDM Extension lets you mix 2-Axis and 4-Axis cutting cycles in a single program. The NC code contains all commands for wire clipping and threading. The system is designed to meet your production requirements.

More-More-More

The 4-Axis WireEDM Extension contains features beyond those mentioned here. Contact your local NC Polaris dealer for a demonstration.

4-Axis WireEDM



Extension



The NC Polaris 4-Axis WireEDM Extension accommodates any part shape.

For More Information:



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