

Mold Making Using Autodesk PowerMill

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Class summary

See how PowerMill's Advanced toolpath control can enable you to achieve better finished results in mold making.

Key learning objectives

During this class you will learn about:

- Collision-free, reliable, cutter path generation
- Stock management throughout the machining process
- Flexible Lead and Link control for not-cutting segments of toolpath
- PowerMill's powerful toolpath editing capabilities



About Me

- Technical Consulting Manager – Post Sales North America
 - Products that were previously Delcam
- Delcam for 4 years
- Previously was an Instructor of Manufacturing Technology at Colorado Mesa University
- In the shop for 10 years
 - Machinist, programmer, setup, etc.
 - 3, 4 and 5-axis mills, Lathes, Turn/Mill machines, CNC grinders

PowerMill user interface and general overview

- General programming overview with PowerMill
 - Setting up for Machining
 - Viewing options
 - Toolpath Strategy selector
- Roughing
- Rest Roughing
- Finishing

Safety of Toolpaths

- PowerMill is always checking for gouges
- Safety status of toolpaths
- Collision checking toolpaths
- Verifying programs with Machine Model simulation

Collision-free, Reliable toolpath



Stock Model Management

- Creating stock models
- Using Stock Models for accurate rest roughing
- Viewing options for Stock Models

Stock model Example

Having Leads and Links separate from toolpath

- Allows the programmer to change leads and links without the need to re-calculate the toolpath
- Allows for more individualized control of leads and links



Leads and Links Example

Toolpath Editing

- Second to none – in my opinion
- Select and delete unwanted segments
- Limit toolpaths post calculation, without having to re-calculate the toolpath
 - Use planes, Boundaries, and Polygons
- Limit Toolpaths pre-calculation
 - Boundaries
 - Z limits

Toolpath editing example



Tool Axis Editing

- Easily switch from 3 to 5 axis
- Positional 5-axis (3+2) with Dynamic Machine Control
- Modify tool axis for individual areas of toolpath
- Using tool axis to avoid collisions

Dynamic machine control and Advanced tool axis editing



What controls surface finish?

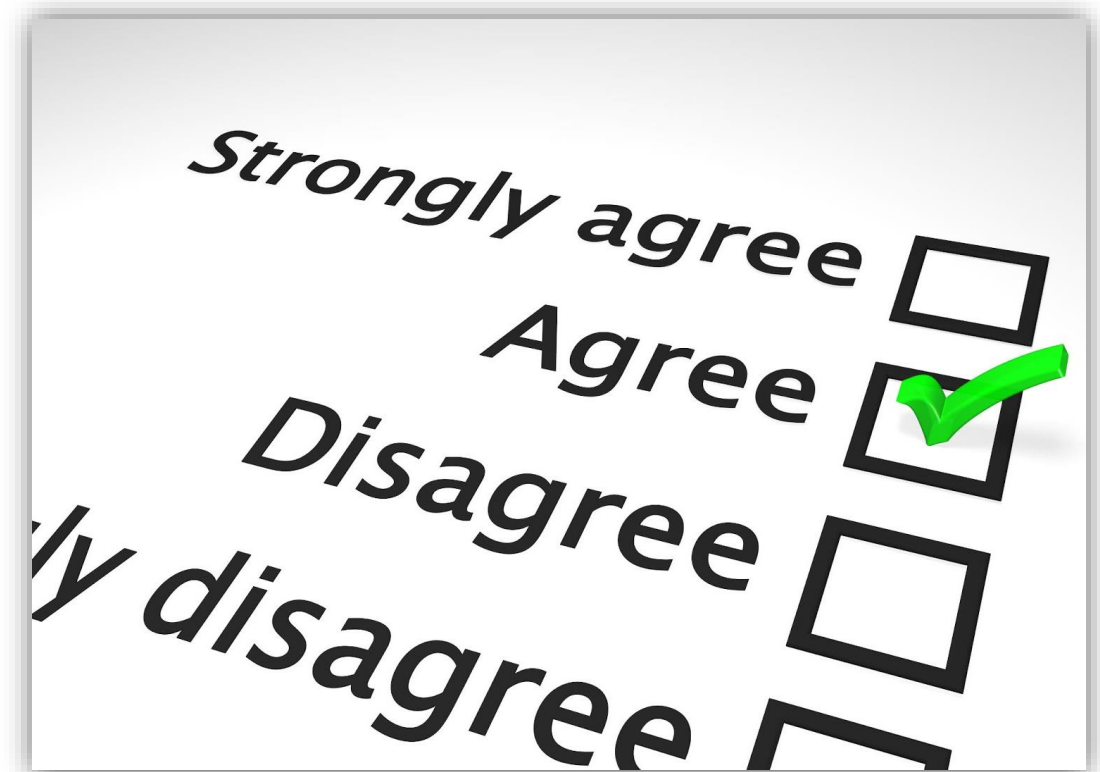
- Step-over
- Ball end tool diameter
- Triangulation of surfaces for the toolpath
 - Number of toolpath points
 - Distribution of toolpath points

Toolpath points example



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- Located outside **Hall C, Level 2**.
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