



Tolerance Based Machining

Modern Toolpath Generation for your SOLIDWORKS Designs

Feature	Default Strategy	Tol based conditions
Hole	Drill	3
Countersink Hole	Drill	2
Counterbore Hole	Drill	2
Rectangular Pocket	Rough-Rough(Finish)- Finish	3
Circular Pocket	Rough-Rough(Finish)- Finish	2
Irregular Pocket	Rough-Rough(Finish)- Finish	2
Rectangular Slot	Rough-Rough(Finish)- Finish	2
Irregular Slot	Rough-Rough(Finish)- Finish	2
Rectangular Corner Slot	Rough-Rough(Finish)- Finish	2
Irregular Corner Slot	Rough-Rough(Finish)- Finish	2
Circular Boss	Finish	3
Irregular Boss	Finish	3
Rectangular Boss	Finish	3
Obround Pocket	Rough-Finish	2
Obround Boss	Finish	3
Multi Surface Feature	Area Clear	2

Tolerance R...	Strategy
0 - 0.05 mm	Ream
0.05 - 0.25 mm	Drill
0.25 - 0.5 mm	Drill Only

Sort Operation
 Generate Toolpath
 Machine to Mean

Build version : 2016.05.17 [17-May-2016]
 Required SOLIDWORKS version : 2015, 2016
 Required CAMWorks version : CW2016 SP2 or higher

With the introduction of Tolerance Based Machining by CAMWorks, the manual tasks associated to preparing parts with close tolerances, asymmetric tolerances, surface finishes, and other drawing annotations for toolpath generation will now be a part of the past.

Not only does CAMWorks automatically identify manufacturing features and automatically create toolpaths, CAMWorks will now recognize the tolerances and surface finishes associated with a feature to select the appropriate tools, speeds, feeds, etc... to generate the best toolpath. In addition, the new Tolerance Based Machining automatically adjusts the toolpaths to machine parts to the mean of dimensions with asymmetric tolerances.

Tolerance Based Machining coupled with CAMWorks creates a manufacturing environment that will save 70% to 90% of the time typically required to program parts with traditional CAM software. On the machining side, CAMWorks VoluMill also reduces cycle time by up to 50% over other high speed machining applications and up to 80% over traditional CNC milling routines.

For more information, visit www.camworks.com

The next major innovation in CAM software will be the ability to leverage the MBD information in 3D digital models to automatically generate CNC programs that will meet the specified quality requirements.

- AI Stimac, President of the Manufacturing Association of Florida

Tolerance Based Machining at a Glance

- Reads SOLIDWORKS MBD/Dim Expert Dimensions
- Automatically Selects Machining Strategies based on Tolerance Range
- Machines to the Mean of Asymmetric Tolerances
- Reads Surface Finish Annotations and Automatically Selects Machining Strategies
- Selects Tools, Feeds and Speeds based on MBD Information



CAMWorks is the most advanced CAM solution available and is fully integrated to operate within SOLIDWORKS. This close integration means CAMWorks uses the same SOLIDWORKS geometry to generate tool paths to ensure that the part you've modeled is the same part you machine. CAMWorks is easy to use and easy to learn!

Some of the other benefits of CAMWorks include:

- Fully associative toolpaths, if the design changes, toolpaths will update automatically
- Multiple variations of the same part are a button push away with CAMWorks
- No messy file propagation; all toolpath information is stored in the SOLIDWORKS part or assembly

Only in CAMWorks

- Tolerance Based Machining
- Automatic Feature Recognition
- Knowledge Based Machining

CAMWorks Solutions

- 2.5 Axis milling with 4 and 5 axis positioning/indexing
- 3 Axis simultaneous milling for molds and other complex 3D machining
- 4 & 5 Axis simultaneous milling
- 3, 4, and 5 Axis Mill Turn including support for C, B, and Y axis
- 2 and 4 Axis Wire EDM
- CAMWorks VoluMill for High Speed machining
- True G-Code Machine Simulation with collision detection

About Geometric

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Listed on the Bombay and National stock exchanges in India, the company recorded consolidated revenues of Rupees 12.33 billion (US Dollars 188.49 million) for the year ended March 2016. It employs over 4700 people across 14 global delivery locations in the US, France, Germany, Romania, India, and China. Geometric has been assessed at Maturity Level 3 for CMMI 1.3-Development and CMMI 1.3-Services for its Software and Engineering Services business units and is ISO 9001:2008 certified for engineering operations. The company's operations are also ISO 27001:2005 certified.

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