
What's New in CAMWorks 2012 SP0

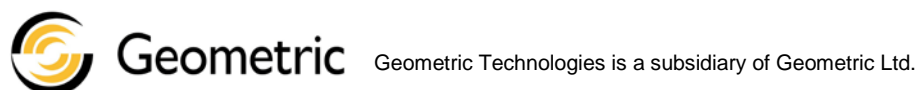
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Preliminary: The features and functions described in this document are subject to change for final release.

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October 2011

General

Supported Platforms

| Supported Platforms for 32-bit | |
|--------------------------------|--|
| Solid Modeler | The 32 bit version of SolidWorks 2011, CAMWorks Solids 2011, SolidWorks 2012 and CAMWorks Solids 2012. |
| Operating System | Windows XP Professional SP2 or higher (32-bit version), Windows Vista Ultimate, Business, and Enterprise editions (32-bit version), Windows 7 Professional, Ultimate and Enterprise editions (32-bit version). |

| Supported Platforms for 64-bit | |
|--------------------------------|--|
| Solid Modeler | The 64 bit version of SolidWorks 2011, CAMWorks Solids 2011, SolidWorks 2012 and CAMWorks Solids 2012. |
| Operating System | Windows XP Professional SP2 or higher (64-bit version), Windows Vista Ultimate, Business, and Enterprise editions (64-bit version), Windows 7 Professional, Ultimate and Enterprise editions (64-bit version). |

New – Pin/Unpin Property Manager Pages

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| Purpose: | CAMWorks dialogs displayed in the Property Manager now support the option to Pin the dialog, to perform multiple interactions, or to Unpin the dialog to perform a single interaction before automatically closing the dialog. For most Property Manager dialogs in previous versions of CAMWorks the dialog remained active until closed by the user. |
| Implementation: | <p>When a CAMWorks Property Manager dialog is opened, a Pin/Unpin icon appears in the upper right corner. When the OK button is pushed for a command, if the Pin is active, the command will be performed and the Property Manager remains open to perform additional similar commands. When the OK button is pushed for a command, if the Pin is not active, the command will be performed and the Property Manager closes. The default condition of the Pin/Unpin state will be based on the last use of the current Property Manager.</p> <p>The following dialogs will have this functionality:</p> <ol style="list-style-type: none"> 1. Insert Multi-surface Feature 2. Insert Wrapped Feature 3. Insert 2.5X EDM Feature 4. Insert 4X Feature 5. Insert Turn Feature 6. Insert Operations (including Mill, Turn and EDM operations) |

Improved – Performance of Saving Files with Large Amount of Tool Paths

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|------------------------|---|
| Purpose: | Reduce the time taken to save or restore part or the assembly files that contain large amounts of toolpath. |
| Implementation: | Done automatically. The time required to save and restore files with large volumes of toolpath, e.g. > 400,000 moves has been significantly reduced. In time studies with files containing more than 1.5 million toolpath moves, the save time has been reduced from several minutes to less than 30 seconds. |

Improved – Contain/Avoid Area Display

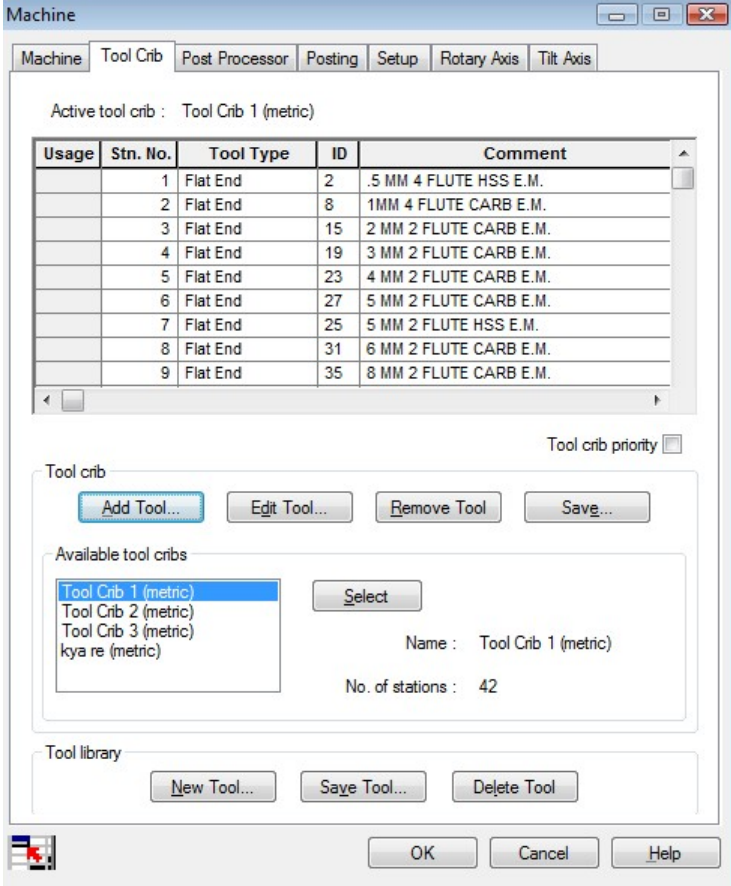
| | |
|------------------------|---|
| Purpose: | To improve the visibility of contain and avoid areas. |
| Implementation: | Done automatically. Contain and Avoid Areas were previously displayed in wireframe only. Now these objects will be displayed as translucent shaded objects. |

Improved – VoluMill Toolpath

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|------------------------|---|
| Purpose: | Update to VoluMill version 4.0. |
| Implementation: | <p>CAMWorks 2012 has been updated to include the latest version of VoluMill. Version 4.0 includes the new Non-Concentric Milling technology, a fundamental change to the VoluMill toolpath engine. With this new technology, arc moves in successive VoluMill passes are no longer concentric, which brings two key benefits:</p> <ol style="list-style-type: none"> 1) Cutting-tool load reduces and chips evacuate more easily, dissipating heat more effectively and increasing tool life. 2) The increase in tool engagement that occurs in any toolpath when moving from a straight-line cut into a CCW arc occurs more gradually, also extending tool life. <p>The change in toolpath is done automatically. No new options are required to enable these changes.</p> |

Mill/ Mill-Turn

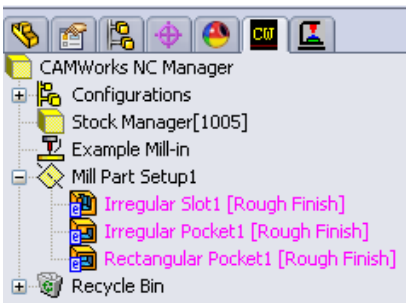
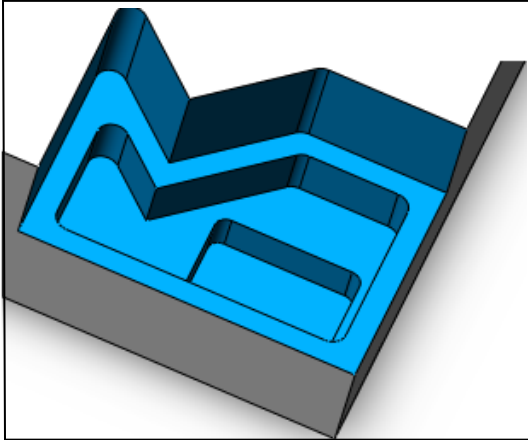
New – Add Tools to TechDB Tool Library from Within CAMWorks

| <p>Purpose:</p> | <p>Enables the user to add new tools into the TechDB tool library from within CAMWorks.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|--|-----------|----------|------------------------|----|---------|--|---|----------|---|------------------------|--|---|----------|---|-----------------------|--|---|----------|----|------------------------|--|---|----------|----|------------------------|--|---|----------|----|------------------------|--|---|----------|----|------------------------|--|---|----------|----|-----------------------|--|---|----------|----|------------------------|--|---|----------|----|------------------------|
| <p>Implementation:</p> | <p>The machine node Tool Crib tab has been rearranged and supports the ability to create a new tool or to delete a tool into the tool library. This provides an alternative method to performing these functions within the TechDB.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| |  <p>The screenshot shows the 'Machine' dialog box with the 'Tool Crib' tab selected. The 'Active tool crib' is 'Tool Crib 1 (metric)'. The table below shows the following data:</p> <table border="1"> <thead> <tr> <th>Usage</th> <th>Stn. No.</th> <th>Tool Type</th> <th>ID</th> <th>Comment</th> </tr> </thead> <tbody> <tr><td></td><td>1</td><td>Flat End</td><td>2</td><td>.5 MM 4 FLUTE HSS E.M.</td></tr> <tr><td></td><td>2</td><td>Flat End</td><td>8</td><td>1MM 4 FLUTE CARB E.M.</td></tr> <tr><td></td><td>3</td><td>Flat End</td><td>15</td><td>2 MM 2 FLUTE CARB E.M.</td></tr> <tr><td></td><td>4</td><td>Flat End</td><td>19</td><td>3 MM 2 FLUTE CARB E.M.</td></tr> <tr><td></td><td>5</td><td>Flat End</td><td>23</td><td>4 MM 2 FLUTE CARB E.M.</td></tr> <tr><td></td><td>6</td><td>Flat End</td><td>27</td><td>5 MM 2 FLUTE CARB E.M.</td></tr> <tr><td></td><td>7</td><td>Flat End</td><td>25</td><td>5 MM 2 FLUTE HSS E.M.</td></tr> <tr><td></td><td>8</td><td>Flat End</td><td>31</td><td>6 MM 2 FLUTE CARB E.M.</td></tr> <tr><td></td><td>9</td><td>Flat End</td><td>35</td><td>8 MM 2 FLUTE CARB E.M.</td></tr> </tbody> </table> <p>Below the table are buttons: Add Tool..., Edit Tool..., Remove Tool, Save... The 'Available tool cribs' list includes: Tool Crib 1 (metric), Tool Crib 2 (metric), Tool Crib 3 (metric), kya re (metric). The 'Name' field shows 'Tool Crib 1 (metric)' and 'No. of stations' is 42. At the bottom are buttons: New Tool..., Save Tool..., Delete Tool, OK, Cancel, Help.</p> | Usage | Stn. No. | Tool Type | ID | Comment | | 1 | Flat End | 2 | .5 MM 4 FLUTE HSS E.M. | | 2 | Flat End | 8 | 1MM 4 FLUTE CARB E.M. | | 3 | Flat End | 15 | 2 MM 2 FLUTE CARB E.M. | | 4 | Flat End | 19 | 3 MM 2 FLUTE CARB E.M. | | 5 | Flat End | 23 | 4 MM 2 FLUTE CARB E.M. | | 6 | Flat End | 27 | 5 MM 2 FLUTE CARB E.M. | | 7 | Flat End | 25 | 5 MM 2 FLUTE HSS E.M. | | 8 | Flat End | 31 | 6 MM 2 FLUTE CARB E.M. | | 9 | Flat End | 35 | 8 MM 2 FLUTE CARB E.M. |
| Usage | Stn. No. | Tool Type | ID | Comment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1 | Flat End | 2 | .5 MM 4 FLUTE HSS E.M. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | Flat End | 8 | 1MM 4 FLUTE CARB E.M. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3 | Flat End | 15 | 2 MM 2 FLUTE CARB E.M. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | Flat End | 19 | 3 MM 2 FLUTE CARB E.M. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | Flat End | 23 | 4 MM 2 FLUTE CARB E.M. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 6 | Flat End | 27 | 5 MM 2 FLUTE CARB E.M. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 7 | Flat End | 25 | 5 MM 2 FLUTE HSS E.M. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 8 | Flat End | 31 | 6 MM 2 FLUTE CARB E.M. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 9 | Flat End | 35 | 8 MM 2 FLUTE CARB E.M. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Improved – Improved Performance and Recognition in Mfg View

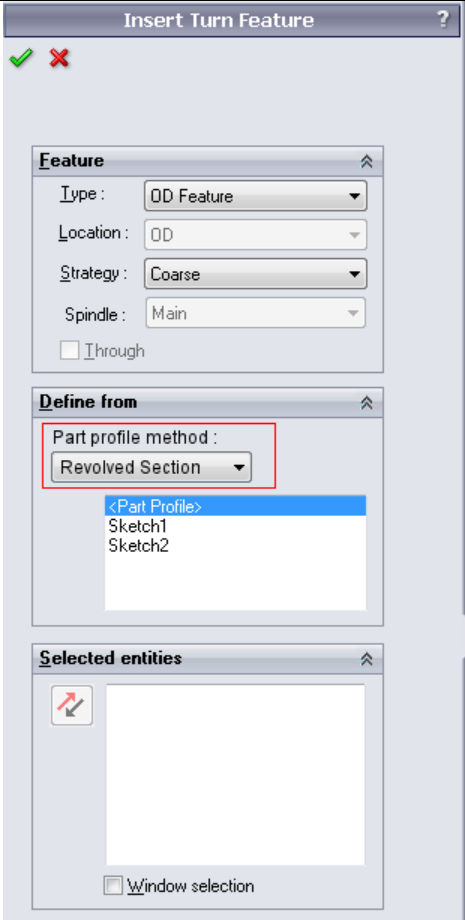
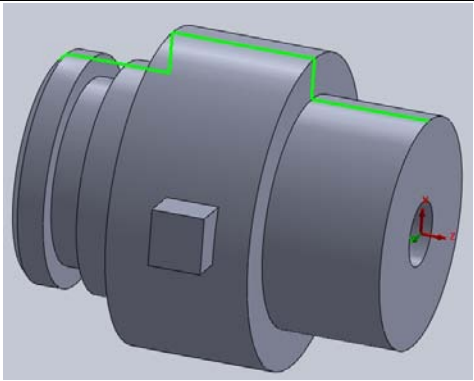
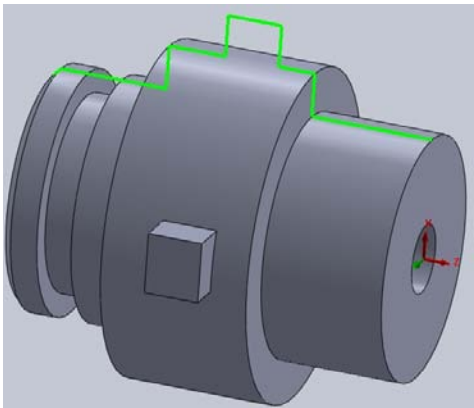
| | |
|-------------------------------|--|
| <p>Purpose:</p> | <p>Improves overall performance and feature recognition ability of MfgView method of Feature Recognition.</p> |
| <p>Implementation:</p> | <p>MfgView has been enhanced to recognize slot features in a more accurate manner. This will help to automatically detect slot features having complex shapes and/or more number of edges.</p> |

Improved – Z-level sorting of Recognized Features

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| <p>Purpose:</p> | <p>Sorts out the recognized features in a Mill Part Setup based on their location from highest to lowest Z face of each feature.</p> |
| <p>Implementation:</p> | <p>All features recognized by MfgView will now be sorted and listed in their respective Mill Part Setup based on their location with respect to the Z axis. The features are sorted depending upon their locations in the part from highest Z to lowest Z. If new features are added interactively to the existing Mill Part Setup, then all the features will be sorted based on their Z depths when Rebuild is executed; however, the order of the operations in the Operation tree will not change.</p> |
| | <div style="display: flex; justify-content: space-around; align-items: center;">   </div> |

Turn

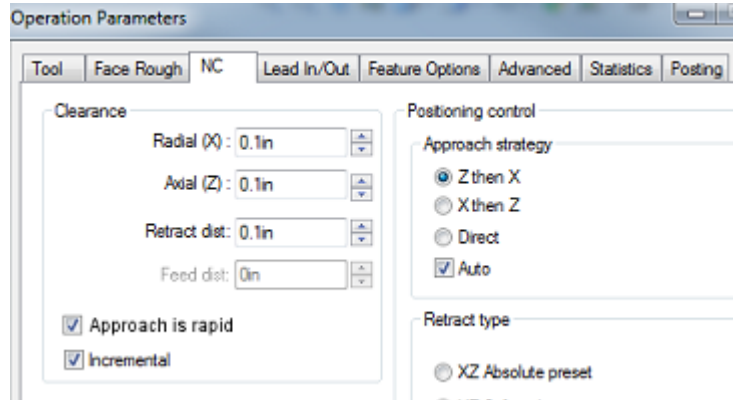
Improved – Turn Feature Definition

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|-------------------------------|--|
| <p>Purpose:</p> | <p>Improves the automatically generated Part Profile shape for interactively defined turn features.</p> |
| <p>Implementation:</p> | <p>In CAMWorks 2012, while interactively defining turn features, an option is provided to define the part profile geometry using either the plane section view of the part (i.e. AFR Method Gen 1) or the revolved section (AFR Method Gen 2). The 'Revolved Section' view is ideally for turn parts containing non-revolved faces through the section plane.</p> <p>For more complex mill/turn models the revolved model method may initially require a few more seconds to compute but the resulting shape considers non-revolved features found on mill/turn parts.</p> |
| | <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;">  </div> <div style="flex: 1;">  <p style="text-align: center;">(Plane Section)</p>  <p style="text-align: center;">(Revolved Section)</p> </div> </div> |

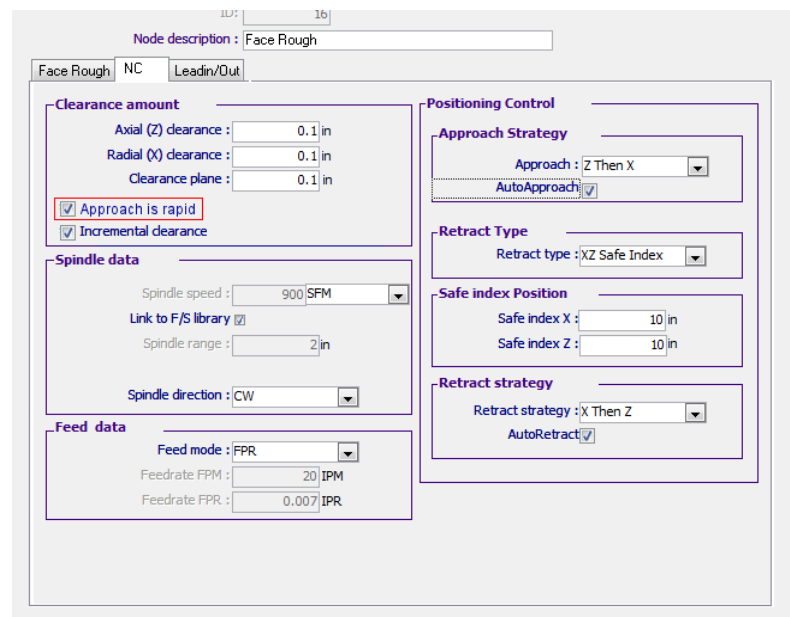
Improved – Turn Approach Move Control

Purpose: Provides the ability to define the turn approach moves as either rapid or feed motion.

Implementation: From the NC tab, an option is provided in the Clearance group that allows you to define the turn approach moves as either rapid or feed move.

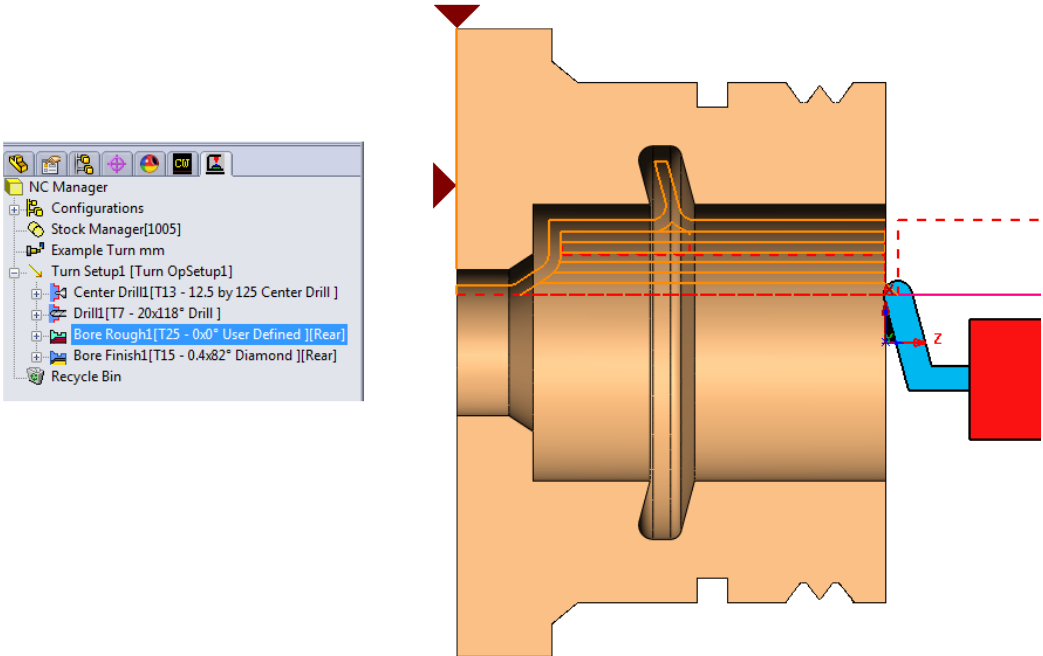


Option provided in NC tab



Setting default value in TechDB

Improved – User Defined Turn Inserts

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|-------------------------------|---|
| <p>Purpose:</p> | <p>Provides the ability to generate a roughing toolpath with a User Defined Turn Insert.</p> |
| <p>Implementation:</p> | <p>User Defined Turn inserts can now also be used in Turn Rough, Groove Rough, Bore Rough and Face Rough operations in addition to the existing finish operations. Inserts model have to be saved as a cwt file through User defined Tool/Holder command. The cwt file has to be referenced in the TechDB tool library.</p> |
| |  <p>The image shows a screenshot of the CAMWorks software interface on the left and a 3D model of a lathe operation on the right. The software interface displays a tree view with the following items: NC Manager, Configurations, Stock Manager[1005], Example Turn mm, Turn Setup1 [Turn OpSetup1], Center Drill1[T13 - 12.5 by 125 Center Drill], Drill1[T7 - 20x118° Drill], Bore Rough1[T25 - 0x0° User Defined][Rear] (highlighted), Bore Finish1[T15 - 0.4x82° Diamond][Rear], and Recycle Bin. The 3D model shows a lathe tool (blue) cutting a bore in a workpiece (orange). The tool is positioned at the end of the bore, and the cutting path is indicated by orange lines. A red dashed line indicates the Z-axis direction.</p> |