

Mastercam

SHOP TALK

First Quarter 2009

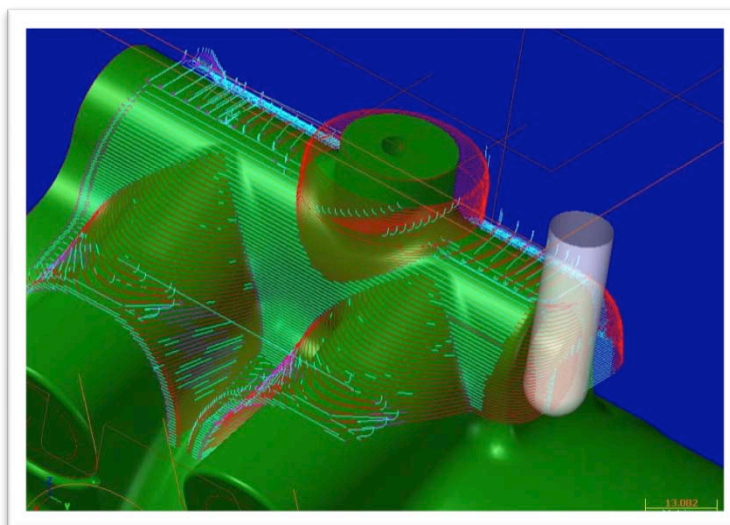


TECH TIPS

Arc Filter Update

For some time now, we have been working to improve the fitting of arcs to our toolpaths in an effort to yield better surface finish quality. This effort started before X3 and continues through X4. In some cases, the toolpaths are shorter, have more arc moves and have more consistently placed arcs across neighboring cutter passes.

Here is an example of a toolpath generated with the old arc fit algorithm:



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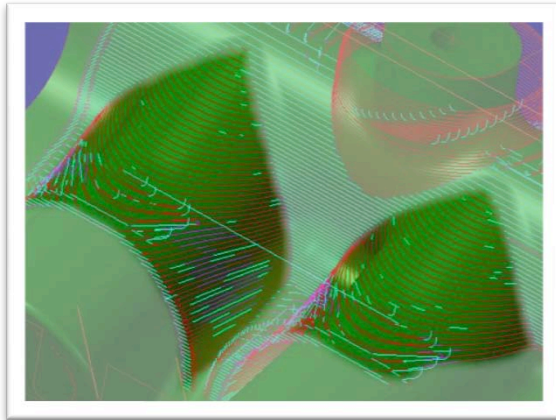
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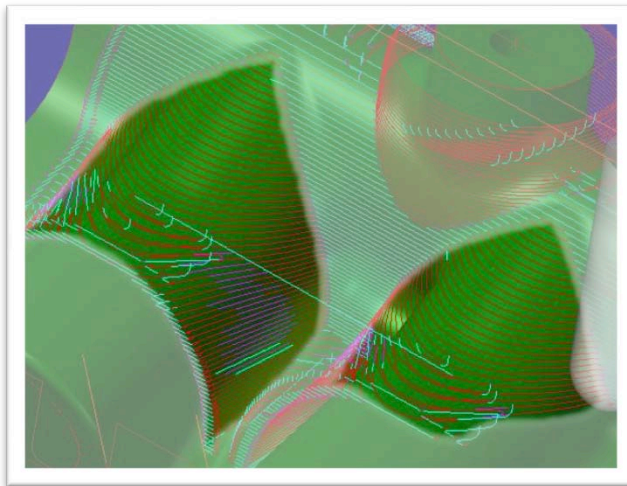


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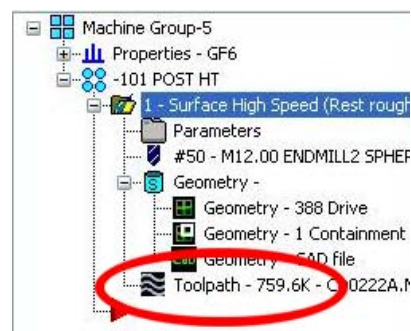
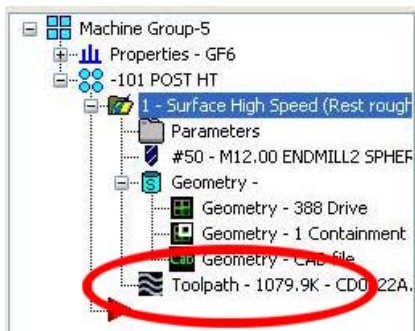
In this detail, the blue toolpath movements indicate linear tool movements where the old algorithm couldn't find an appropriate arc.



This is the same toolpath, created with the new arc filter algorithm. You can see that there are noticeably fewer blue line segments, indicating that Mastercam did a much better job fitting arcs to the part for a smoother finish.



You can also see that the new toolpath is significantly smaller than the original one:





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Mixing and matching arc filter methods

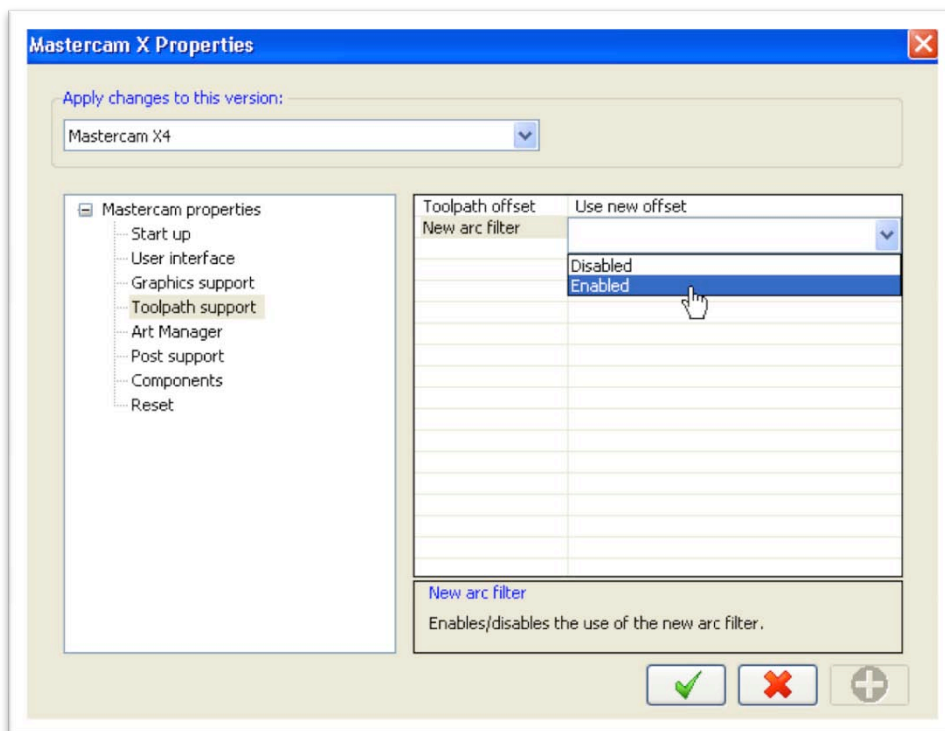
Sometimes, a part file might have some toolpaths that benefit from the new arc filter and some toolpaths that don't. In this case, follow these steps to take advantage of the new filter:

1. Enable the new arc filter.
2. Generate the operations where you would like to use the new arc filter.
3. Lock those operations.
4. Disable the filter.
5. Generate the operations where you would like to use the traditional arc filter.

As always, with either arc filter option, we recommend using **Backplot** and **Verify** (or **Verify > STL Compare**) before posting toolpaths and machining parts. ■ [TT0209](#)

Enabling and disabling the filter

By default, the new arc filter is turned on in X3 MU1. Use the **Mastercam X Control Panel Applet** to switch it on and off. ■ [TT0209](#)

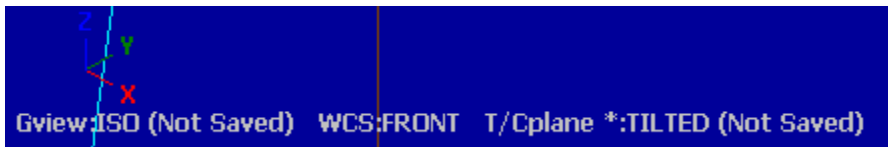




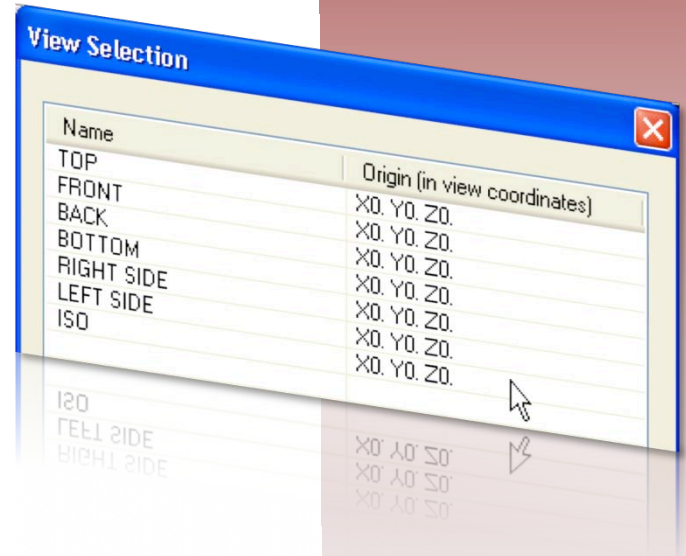
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What Does it Mean When a View is “Not Saved?”

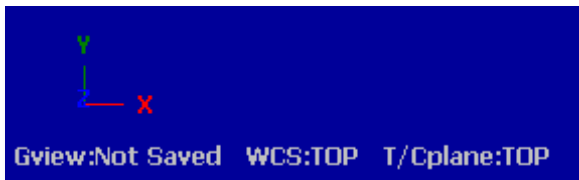
Have you ever wondered what it means when Mastercam displays the **(Not Saved)** message regarding a view, such as in this example?



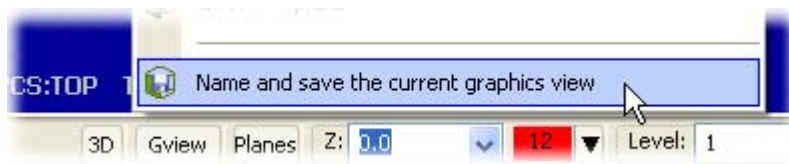
At the simplest level, **Not Saved** means just that—the view has not been named and saved. Views that are named and saved appear in the **View Selection** dialog box when you select **Named views** from the menu:



If you draw some geometry in **Top** and then **Dynamically rotate** the Gview, you will see this immediately:



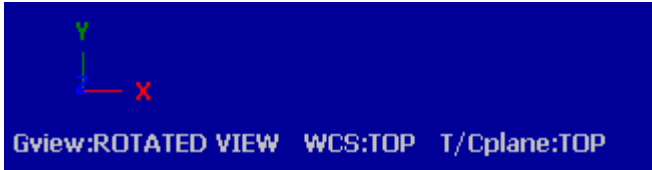
Once you select **Name** and **save the current graphics view**,





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Mastercam displays the new name instead of **Not Saved**.



Now, when you select **Named views** from the menu, the new view is included:

| Name | Origin (in view coordinates) |
|--------------|------------------------------|
| TOP | X0. Y0. Z0. |
| FRONT | X0. Y0. Z0. |
| BACK | X0. Y0. Z0. |
| BOTTOM | X0. Y0. Z0. |
| RIGHT SIDE | X0. Y0. Z0. |
| LEFT SIDE | X0. Y0. Z0. |
| ISO | X0. Y0. Z0. |
| ROTATED VIEW | X0. Y0. Z0. |

However, the situation can get a little more complicated when the WCS is set to something other than **Top**. In this case, Mastercam displays two view names in the status area.

- The first is the name of the view as it appears in the **View Selection** catalog.
- The second, in parentheses, is the relationship between that view and the WCS.

When this relationship corresponds to a standard view or a view that has been saved in the catalog, Mastercam displays that name in parentheses. Otherwise, it displays **Not Saved**.

For example, let's say that we now set our WCS equal to **Rotated View**. Now Mastercam displays the following:

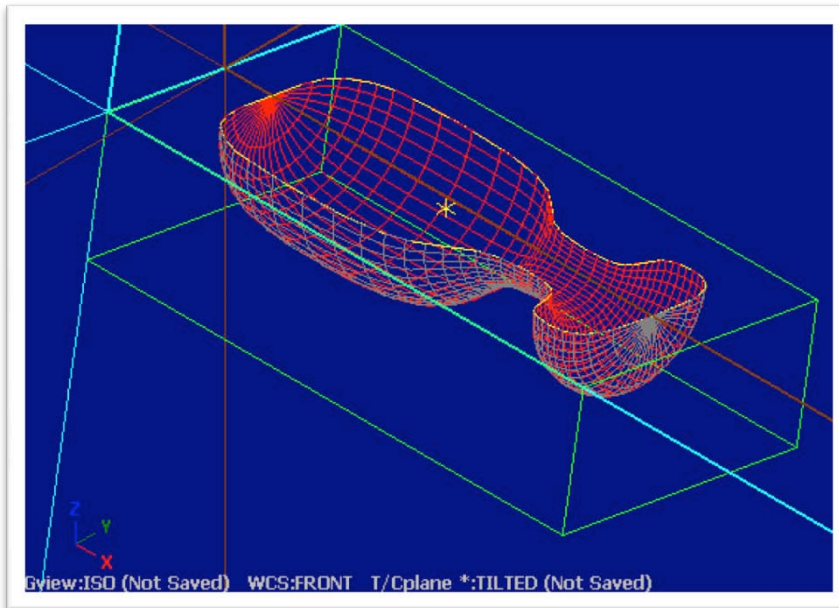




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The Gview is still set to **Rotated View**—the named view from the catalog—but, relative to the new WCS, this is **Top**. The Cplane is still set to the original, absolute **Top** view. But that **Top** doesn't have a standard relationship to the new WCS, so Mastercam displays **Not Saved**. This can be very useful when you are working in a different WCS, because you can always check how your part and views are oriented relative to both the WCS and the original coordinate system.

Now we can return to the original example. Even though this is an unusual example, the information in the views status area lets us clearly figure it out.



- The user has created a new view, **Tilted**, corresponding to the tilted top face of the part. He is using this as the tool plane and construction plane—appropriate if you wanted to machine the cavity.
- The WCS has been set to the system **Front** view. Why, we don't know—but the display tells us everything we need to know to evaluate what we see. Since there is no saved view that captures the relationship between **Tilted** and **Front**, Mastercam displays **Not Saved**.

If we were to create a toolpath right now and post it out, the tool would be properly oriented with its axis normal to the block—setting the Tplane to a specific named view assures us of that. But, because the WCS is different, we would also get an A-axis rotation code that would rotate the tool from the system front plane to the tilted face of the block.



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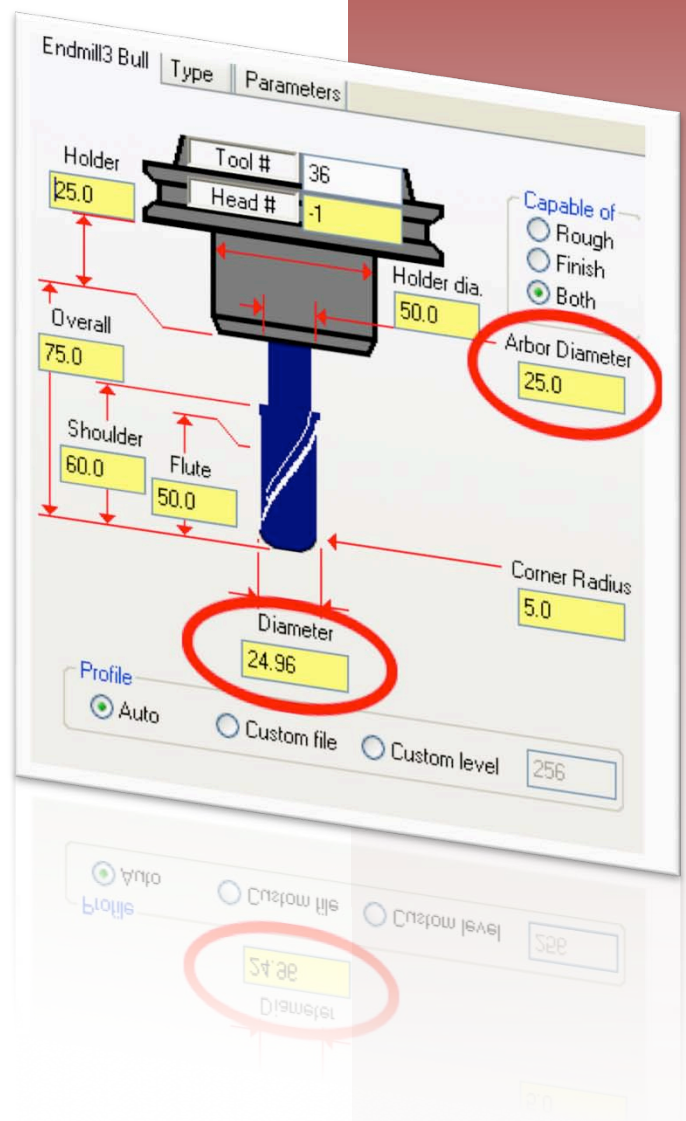
- The Gview is set to the original system **Iso** view. Since there is no saved view that expresses the original system isometric orientation relative to the **Front** plane, Mastercam displays **Not Saved** in this case also.

Bonus!! Does anyone know what the * in front of **Tilted** means? See the last page of this issue for the answer... ■ **TT0209**

Tool Settings Increase Verify Time

Processing time in **Verify** will increase dramatically if the tool diameter does not match the arbor diameter.

We discovered this on a surface rough pocket toolpath using a bullnose tool which had a 25mm arbor diameter and a 24.96mm tool diameter. That little difference is big to Verify: now it is working with a custom tool which entails far more processing. In this example, verifying with the 24.96mm diameter tool took 11 minutes. Verifying with a 25mm diameter tool took only 2.5 minutes. ■ **TT0209**



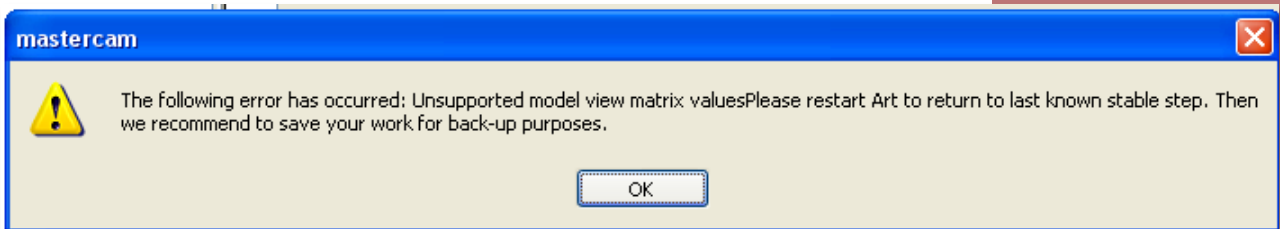


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HELP DESK

“Unsupported Model View” Error

Problem: Mastercam X3 MU1 with Art enabled and graphics set to GDI will display this error repeatedly:



Solution: Disable Art or turn on OpenGL[®] graphics.

To disable Art, follow these steps:

1. In Windows[®] Explorer, open the C-Hooks folder (for example, **C:\Mcamx3\Chooks**).
2. Rename **Art.ft** to **Art.ft-bak**.

To use OpenGL graphics:

1. Select **Configuration** from the **Settings** menu.
2. On the **Screen** page, select the **OpenGL** option.



This has been fixed for Mastercam X4. ■ [TT0109](#)



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Verify > Measure Crashes with MoldPlus Installed

Problem: Mastercam X3 MU1 will crash when using the Measure function in **Verify** if MoldPlus® is installed on the system.

Solution: Download MoldPlus version 10.0.4.28, dated December 21, 2008, from <http://www.moldplus.com/download.htm>. This is corrected in Mastercam X4. Thanks to the folks at MoldPlus for their help with this interim solution! ■ **TT0109**

HOT TOPICS

Opening Mastercam for SolidWorks Files in Mastercam

Mastercam for SolidWorks files can be saved from SolidWorks and opened in Mastercam, with the toolpaths intact. However, the file cannot be open in SolidWorks when opening it in Mastercam. ■ **TT0209**

Using the Event Log to Time Toolpath Generation

Trying to time toolpath generation and regeneration usually means digging out a stop watch and trying to not get distracted in order to get an accurate measurement. However, with the **Event Log**, you can easily see exactly how long it takes for a regen to occur—without using a stop watch.

1. Create or regenerate an operation.
2. Once Mastercam finishes processing it, open the **Event Log** in your system tray:



The **Event Log** lists all actions that have occurred in the current Mastercam session. The most recent event(s) are at the bottom. Scroll to the bottom of the list to see the operation you just created or regenerated.



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| Type | Date | Time | Part file | Message | Total time | Process |
|-----------|----------|----------|-----------|--|------------|---------|
| Inform... | 3/2/2009 | 08:06:02 | | Mastercam Event logging initiated. | | |
| Inform... | 3/2/2009 | 08:06:10 | T | App= Mastercam Entry= OnOpenMruFile | 3140 | 1292 |
| Inform... | 3/2/2009 | 08:06:14 | T | Exiting App= Mastercam Entry= OnOpenMruFile | | 1292 |
| Inform... | 3/2/2009 | 08:06:25 | T | App= Mastercam Entry= OnOpenMruFile | | 1292 |
| Inform... | 3/2/2009 | 08:06:53 | T | Exiting App= Mastercam Entry= OnOpenMruFile | | 1292 |
| Inform... | 3/2/2009 | 08:07:53 | T | App= Mastercam Entry= OnFileOpen | | 1292 |
| Inform... | 3/2/2009 | 08:08:47 | C:\MCA... | The mastercam event logging setting has been cha... | | 1292 |
| Inform... | 3/2/2009 | 08:09:08 | C:\MCA... | Entering Inline function: App= Mastercam Entry= O... | | 1292 |
| Inform... | 3/2/2009 | 08:09:08 | C:\MCA... | Exiting Inline function. | | 1292 |
| Inform... | 3/2/2009 | 08:09:11 | C:\MCA... | App= Mastercam Entry= OMregenSelectedOperati... | | 1292 |
| Inform... | 3/2/2009 | 08:09:14 | C:\MCA... | Regen of operation #1. | 1.032s | 1292 |
| Inform... | 3/2/2009 | 08:09:16 | C:\MCA... | Regen of operation #2. | 1.812s | 1292 |
| Inform... | 3/2/2009 | 08:09:16 | C:\MCA... | Regen of operation #3. | 0.422s | 1292 |
| Inform... | 3/2/2009 | 08:09:17 | C:\MCA... | Regen of operation #4. | 0.828s | 1292 |
| Inform... | 3/2/2009 | 08:09:17 | C:\MCA... | Regen of operation #5. | 0.485s | 1292 |
| Inform... | 3/2/2009 | 08:09:18 | C:\MCA... | Regen of operation #6. | 0.453s | 1292 |
| Inform... | 3/2/2009 | 08:09:18 | C:\MCA... | Completed regeneration of selected operations. | 7.344s | 1292 |
| Inform... | 3/2/2009 | 08:09:18 | C:\MCA... | Exiting App= Mastercam Entry= OMregenSelected... | | 1292 |
| Inform... | 3/2/2009 | 08:09:24 | C:\MCA... | App= Mastercam Entry= OMregenSelectedOperati... | | 1292 |
| Inform... | 3/2/2009 | 08:09:25 | C:\MCA... | Regen of operation #1. | 1s | 1292 |
| Inform... | 3/2/2009 | 08:09:27 | C:\MCA... | Regen of operation #2. | 1.86s | 1292 |
| Inform... | 3/2/2009 | 08:09:28 | C:\MCA... | Regen of operation #3. | 0.406s | 1292 |
| Inform... | 3/2/2009 | 08:09:29 | C:\MCA... | Regen of operation #4. | 0.828s | 1292 |
| Inform... | 3/2/2009 | 08:09:29 | C:\MCA... | Regen of operation #5. | 0.484s | 1292 |
| Inform... | 3/2/2009 | 08:09:29 | C:\MCA... | Regen of operation #6. | 0.453s | 1292 |
| Inform... | 3/2/2009 | 08:09:30 | C:\MCA... | Completed regeneration of selected operations. | 5.047s | 1292 |
| Inform... | 3/2/2009 | 08:09:30 | C:\MCA... | Exiting App= Mastercam Entry= OMregenSelected... | | 1292 |

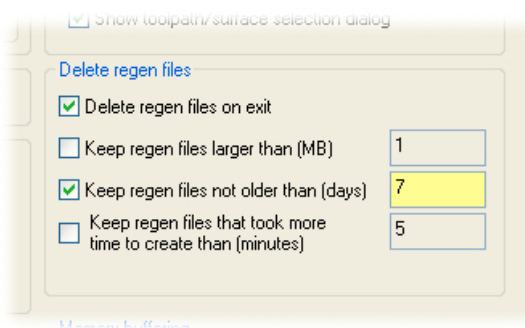
The following line indicates the start of a regen:

App=Mastercam Entry= OMregenSelectedOperations

The regen section ends with this line:

Exiting App=Mastercam Entry=OMregenSelectedOperations

Remember that if you're timing the same regeneration several times, clear out the regen files to get a clean, accurate time. Use the **System Configuration** dialog box (**Settings > Configuration > Toolpaths** page) to configure how regen files are handled:

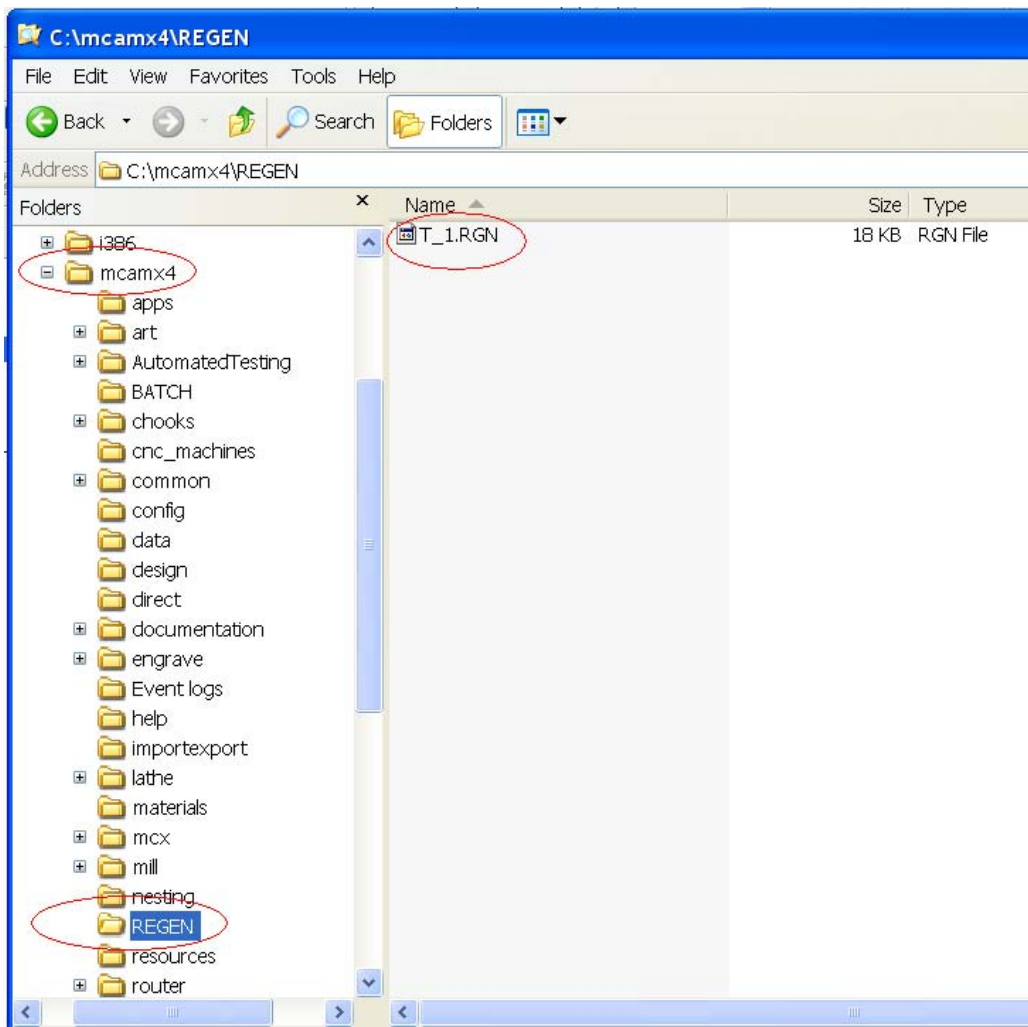




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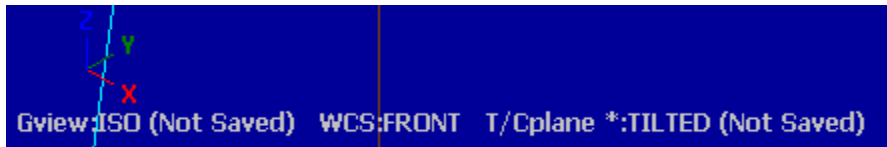
You can also manually remove them from the **REGEN** folder in your Mastercam installation:

■ (TT0309)





Oh yes—what **does** the * mean in the view information screen??



It means that the origin of that view is different from the original system origin. ■ TT0209

**Thanks for being on Mastercam Maintenance.
We will see you again next quarter!**

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