IMSpost

Within CATIA® V5 environment

Any CAM System,
Any Machine,
One Solution

IMS
INTELLIGENT MANUFACTURING SOFTWARE, INC.

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About This Guide

This guide covers common tasks associated with the setup and utilization of IMSpost within the Catia® V5 environment.

Contacting IMS

You can contact Intelligent Manufacturing Software for technical support or to provide feedback about this product.

In addition, IMS will develop custom postprocessors for any machine and controller configuration. You can then maintain the posts and make any enhancements you need using IMSpost. Contact IMS for more details.

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Table of Contents

IMSpost™ Setup within Catia®

This document discusses the IMSpost options available in Catia V5 R10 and up. The options from previous versions of Catia may vary.

This section covers the following tasks:

- Obtaining the latest version of IMSpost for Catia®
- Setting up IMSpost as the Catia® post-processing solution
- Installing a custom license
- Installing a custom post-processor

Default IMSpost within Catia®

There are several standalone solutions for creating and running IMSpost. The full standalone version contains all the software required for postprocessor development and execution.

Within the Catia® V5 environment, IMSpost offers a solution to utilize standard library post-processors as well as custom post-processors to generate NC code files (Runtime version) and also offers a tool to allow small (limited) customization of these library post-processors to suit your needs (Formatter).

Setting-up IMSpost

Verify that the system on which you will be installing IMSpost is running one of the following operating systems:

- SGI – IRIX 6.x
- HP – HP-UX 10.x
- IBM – AIX 4
- SUN Solaris – 5.6 or later
- Windows 95/98//ME
- Windows NT version 3.51/4.0
- Windows 2000
- Windows XP

IMSpost is part of the standard Catia® V5 distribution and should not require additional loading of separate software source. This means you can start using IMSpost as soon as you have installed Catia® V5.

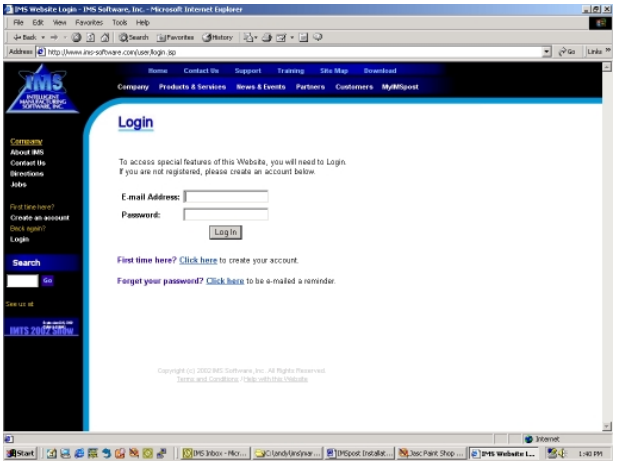
However, IMS occasionally releases software that enhances the standard Catia installation. To make sure you are using the latest version of IMSpost within Catia®, the latest IMSpost software can be downloaded it from the IMS website:

Web address = http://www.ims-software.com/download

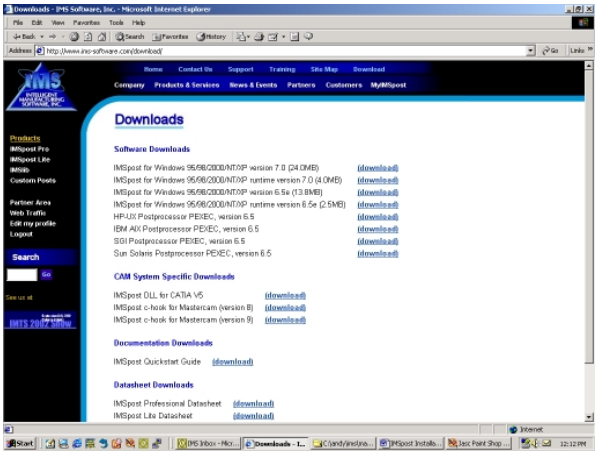
Obtaining the latest software from the IMS Website

Note: access to the download area of the IMS website is controlled. You will be required to log in before downloading. If you do not have an account a link is provided to register; your password will be e-mailed and you can continue as follows.

1. Log into the website = http://www.ims-software.com/download



2. View the download page and select the IMSpost DLL for CATIA V5



Installing the latest IMSpost DLL for Catia®

This installation of the latest IMSpost DLL for Catia® will allow you to run the latest IMSpost applications and only require the following simple steps, once you have downloaded the archive file from the IMS web site.

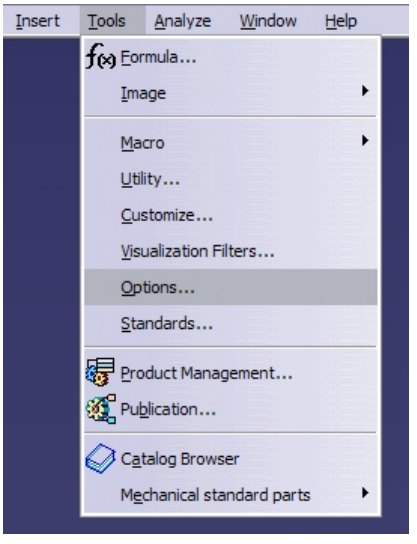
The archive name is typically: **MfgPPIG2Imp.zip**

1. Unzip the file **MfgPPIG2Imp.dll** from the archive.
2. Locate your Catia bin directory: i.e. for a standard Windows installation, this directory is typically:

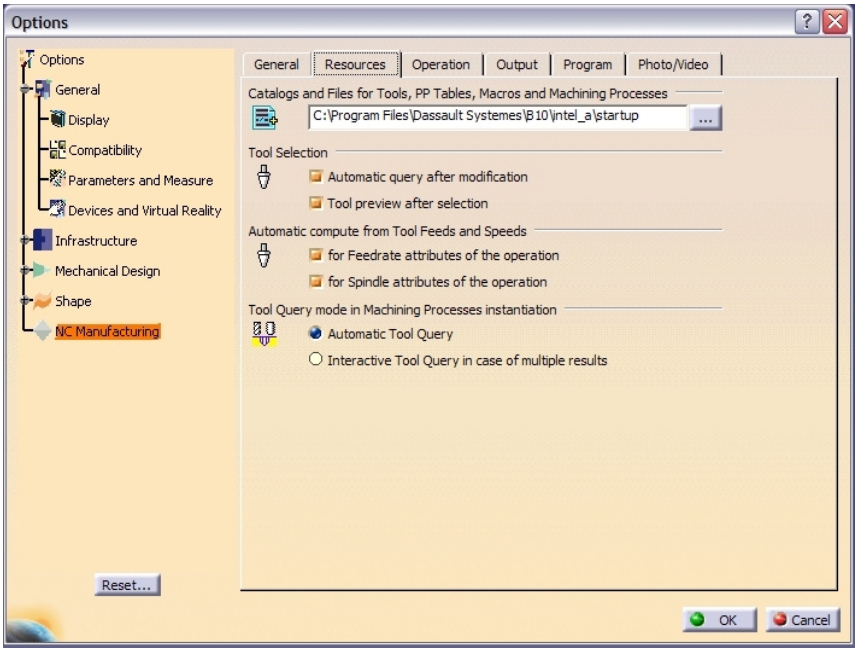
   C:\Program Files\Dassault Systemes\B10\intel_a\code\bin
3. Move the file MfgPPIG2Imp.dll into this directory, replacing the previous version.

Setting-up IMSpost within Catia®

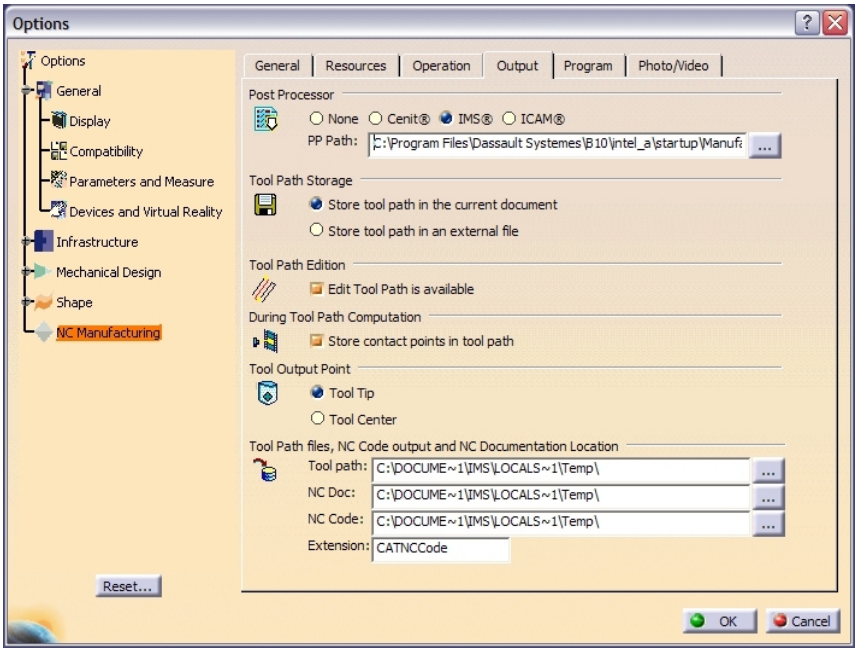
To declare IMSpost as the post-processing solution within Catia®, open the Tools – Options dialog box:



Make sure the correct path is defined in the Resources tab:



Then, select the NC Manufacturing options in the list, then the Output tab:

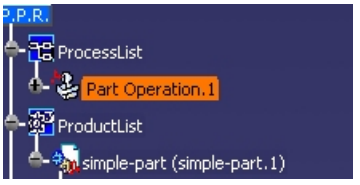


Select the IMS® in the Post Processor section. the PP Path should already be filled and point to the ..\startup\Manufacturing directory.

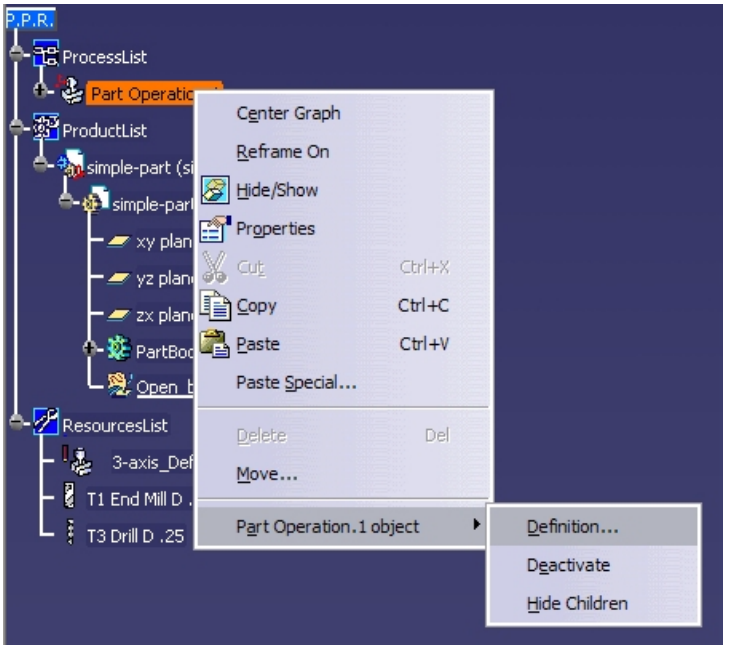
Selecting a post-processor

Two methods exist to select a post-processor within Catia.

1) Using the Tree, select the Part Operation.1 in the Process List

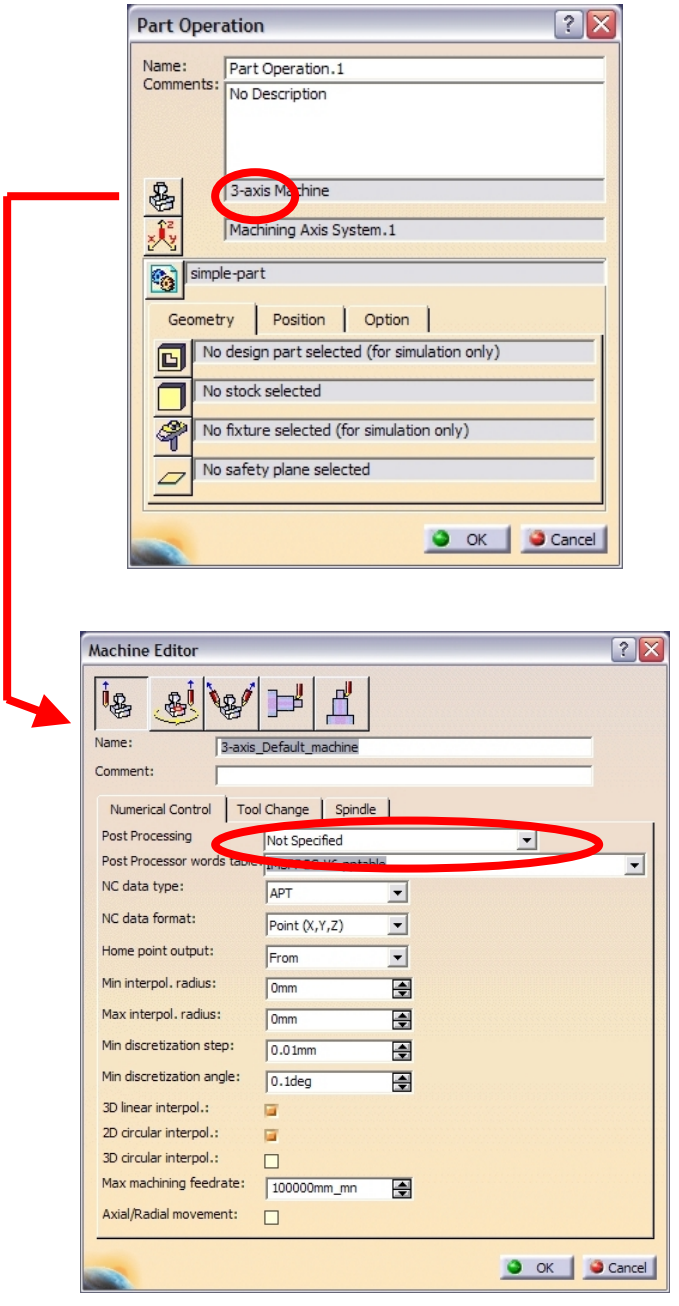


Right-mouse click on Part Operation.1



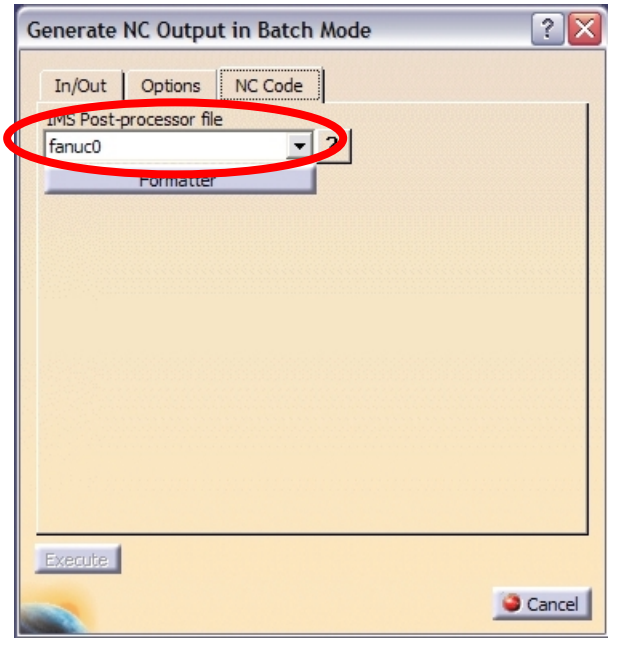
Select Part Operation1 object – Definition...

Alternatively, you may double-click on Part Operation.1 to achieve the same result.



Select a post-processor from the drop-down list.

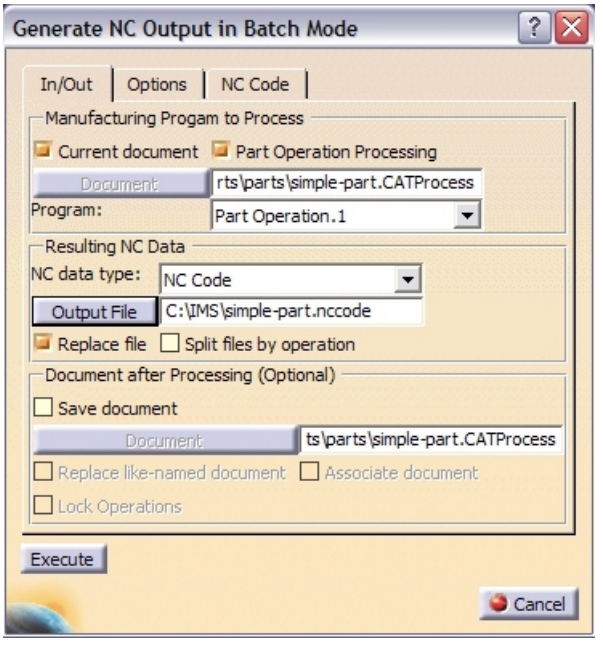
2) Using the icon “Generate NC Code in Batch Mode”



Select a post-processor using the drop-down list, under the NC Code tab.

Converting APT to ISO G-code

Once you have selected a post-processor, use the In/Out tab to start post-processing.



Choose the program you wish to post in the **Program** drop-down list

Under Resulting NC data, select **NC Code** from the drop-down list and enter the name of the ISO file you are creating.

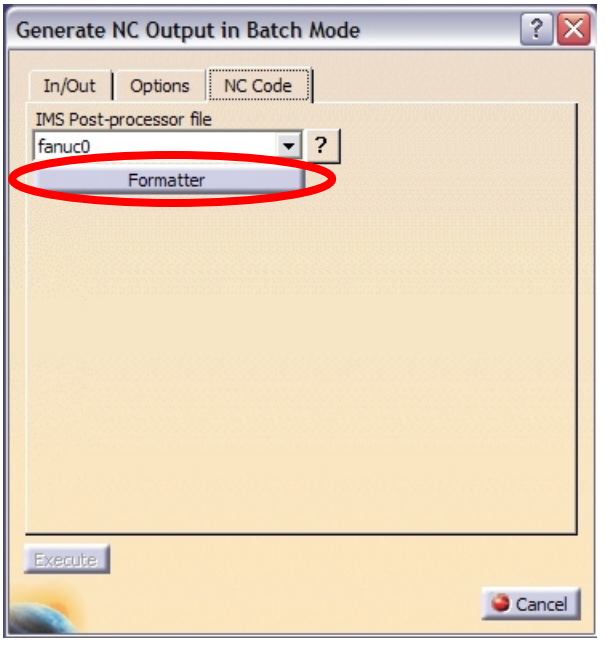
Select the **Execute** button to run the post.

Note: if you did not select any post-processor under the **NC Code** tab, the **Execute** button will not be active.

Formatter: customizing library posts

One tool exists to modify the output generated by the standard library post-processors: the Formatter.

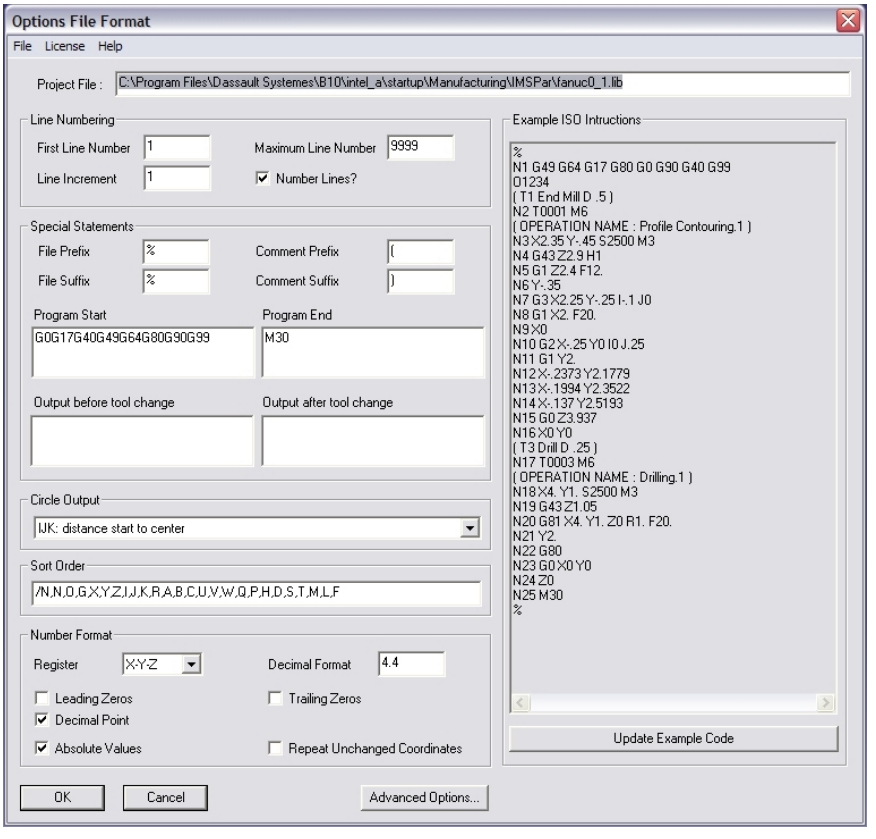
This tool can be accessed using the “Generate NC Code in Batch Mode” icon, as we just discussed.



The Formatter button gives you access to options to customize a post-processor

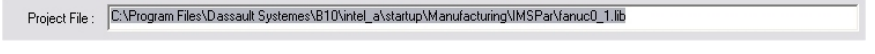
Please note that a post-processor needs to be selected from the drop-down list prior to activate the Formatter.

New project file using the Formatter



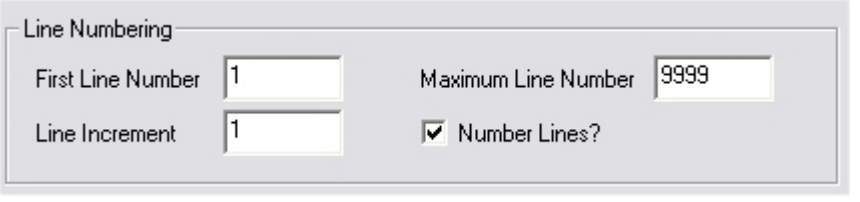
The Formatter dialog box gives you options to change the default output that you obtain from using the standard library post-processors.

The modifications are saved under a new name, as shown in the Project File entry line:



Line Numbering

You can turn on or off the line numbering inside the NC code file by using the following section of the Formatter:

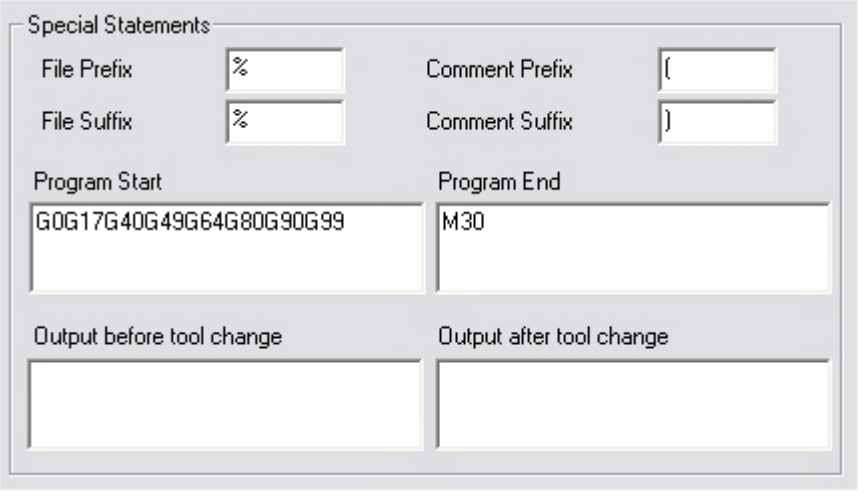


When the number of lines exceeds the “Maximum Line Number”, the post starts again at “First Line Number”.

To turn off the line numbering, simply un-check the “Number Line?” check box.

Special Statements

This section allows you to define a file prefix and suffix (the first and last characters that will be in the NC code file, for example %)



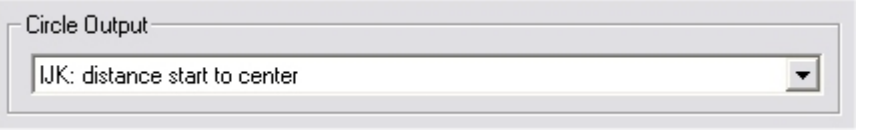
It also allows you to define how the comments from the aptsource file need to appear in the posted file (for example, within (and) characters).

You can also declare a series of codes that will be output at the start of the program. This series of G and/or M codes initializes the controller. They will always appear at the beginning of the NC code file regardless of the aptsource program you are running.

Similarly, the “Program End” statements will be output at the end of the program, after the aptsource file has been completely processed, but before the “File Suffix”.

To specify one or more operations that always need to be performed before and/or after each tool change, the bottom 2 fields can be used to define them.

Circle Output



The Circle Output option lets you specify the format to be used for circle statements.

The options are:

- **IJK: distance start to center**

  This option specifies the signed (+ or -) distance from the starting point to the circle center.

- **IJK: absolute center coordinates**

  This option specifies the absolute coordinate values of the circle center point.

- **IJK: distance center to start**

  This option specifies the signed (+ or -) distance from the circle center point to the starting point.

- **IJK: unsigned center to start**

  This option specifies the unsigned distance from the starting point to the circle center.

- **R: circle radius**

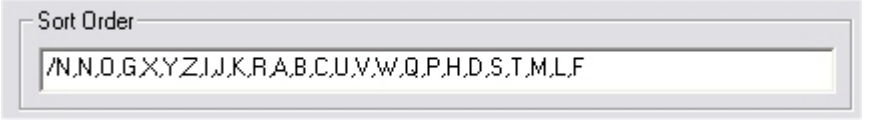
  This option specifies the radius of the circle.

- **Break to linear moves**

  This option forces the system to convert all circle statements to linear moves (simple GOTO points). The tolerance used is determined by the format used for the X, Y and Z motions.

  For example, if the X format is 4.3, the tolerance will be 0.001, which could generate a very large number of small moves to simulate the arc movement.

Sort Order



The sorting order specifies the order in which the codes are to be output in one block.

In our example, the G codes are output before the X,Y,Z coordinates, which themselves are output before the feed rate (F).

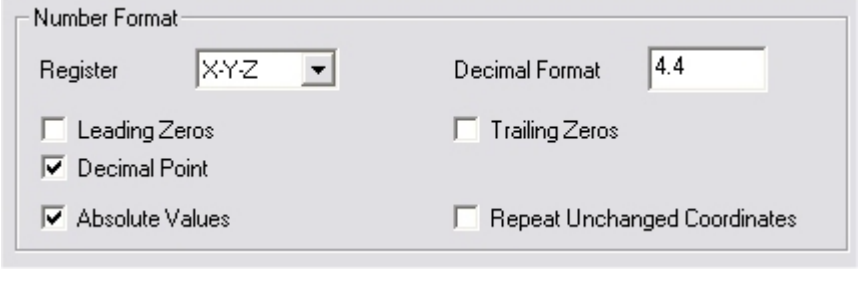
It is also possible to declare a specific G or M code:

for example, in the following case:

/N,N,O,**G17**,G,X,Y,Z,I,J,K,R,A,B,C,U,V,W,Q,P,H,D,S,T,M,L,F

G17 would appear before any other G codes on the same block.

Number Format



The number format option lets you define which format to use for the various letters (registers) used in the post-processor.

In this example, for X-Y-Z values (coordinates), the decimal format is 4.4, meaning 4 digits before the decimal point and 4 digits after the decimal point.

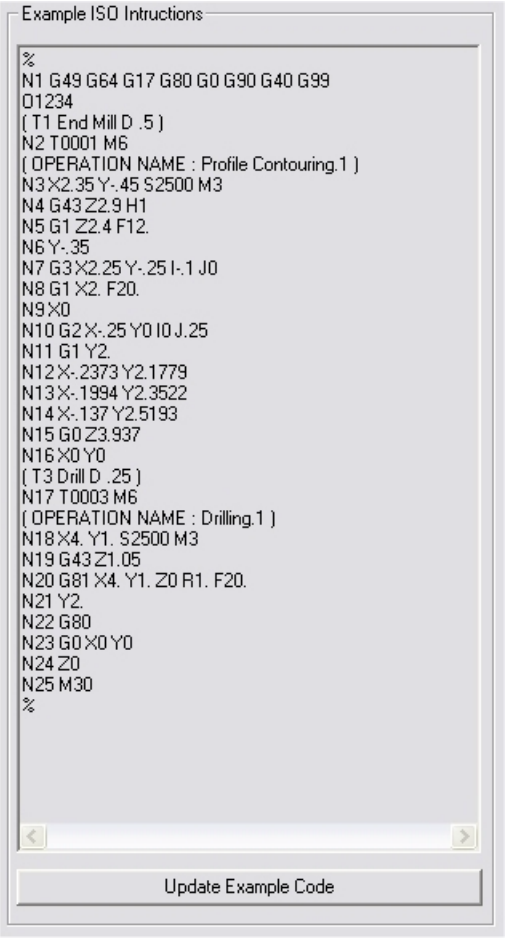
You can opt to add leading and/or trailing zeros, so that all digits are used, i.e. 0001.5000 instead of 1.5 in a 4.4 decimal format.

The **Decimal Point** option lets you specify if you want the output of the decimal point character "." in the numbers or not.

The **Absolute Values** option specifies whether you use absolute or incremental values.

The **Repeat Unchanged Coordinates** option will force the post-processor to write X,Y,Z values even if the X or Y or Z values haven't changed.

Example ISO Instructions



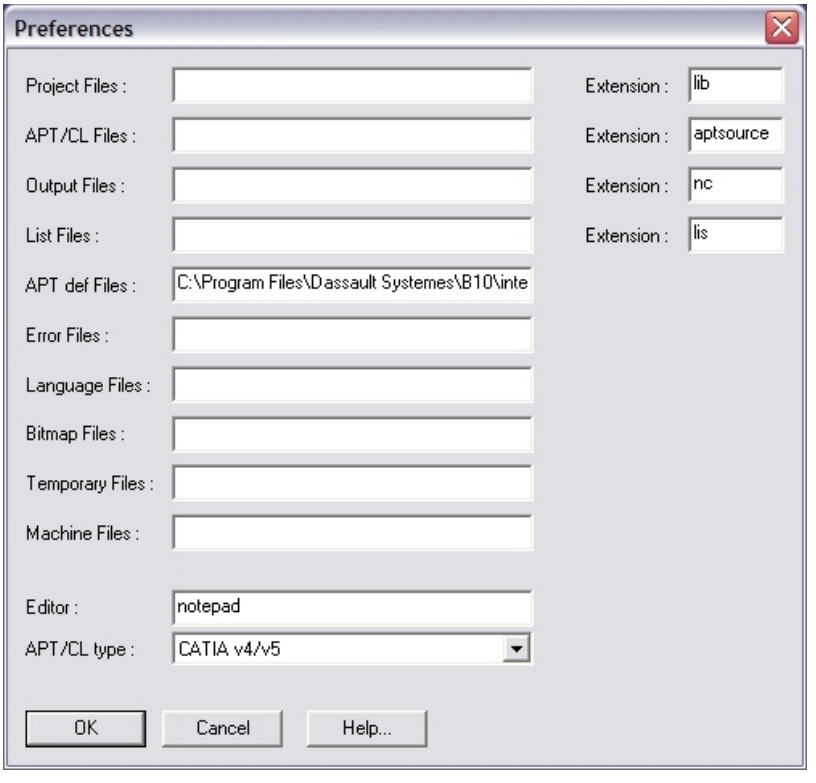
This section displays the output of a small sample aptsource using the options specified previously. After any change made, you need to select “Update Example Code” to refresh the output.

Menu Bar

The menu bar of the Formatter allows you to specify

File:

- Preferences: this dialog allows you to specify the location of the input and output files, the default extensions of the various files, etc... It reads/writes the file imspostw.ini located in the ...\startup\Manufacturing\IMSPar directory.

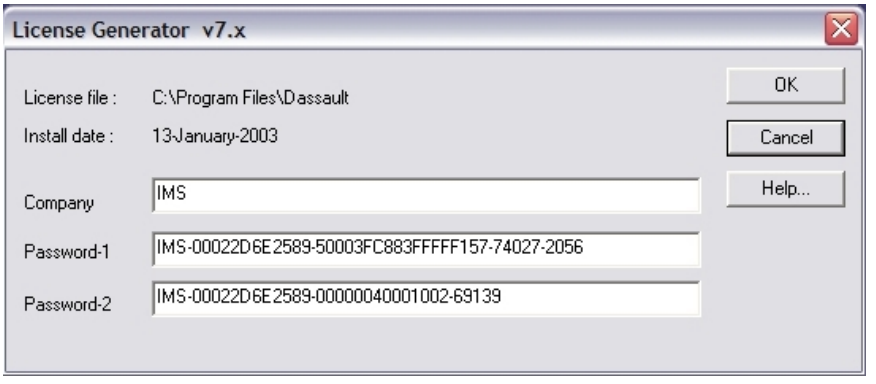


- Save as...: lets you save the modifications under a new post-processor name.

License:

Please note that the following options will be moved for Catia V5 R11, directly in the “Generate NC Code in Batch Mode” dialog box.

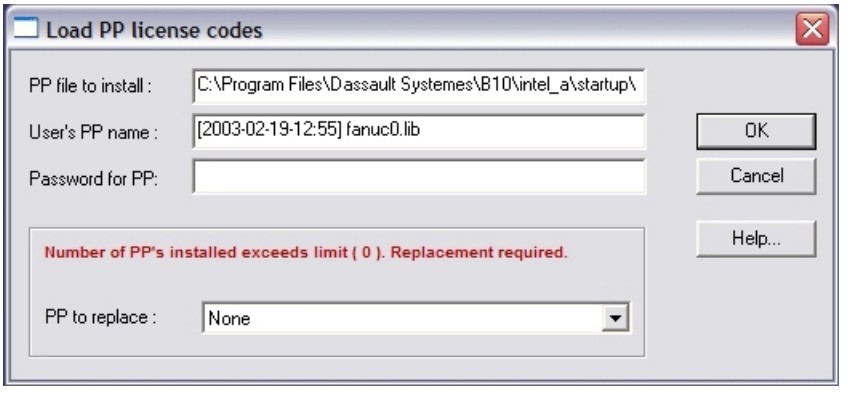
- **License Upgrade...**: This option lets you enter the new passwords that will generate a new license file for you



New license codes are only necessary if you develop your own post-processors using the IMSpost suite (IMSpost Professional, IMSpost Lite, etc...), or if you purchased a custom post-processor developed by your IMSpost reseller or by IMS Software, Inc.

Note: you do not need to use this option if your reseller gives you your new file license.ims. this is because your reseller chose to prepare the file for you.

- **Install PP Codes...**: This option lets you add a custom post password to your license.



This option can only be used if you already use a custom license that allows you to run 1 or more custom posts.

It is only used to declare a custom postprocessor developed by IMS Software, Inc. or by your IMSpost reseller specifically for you.

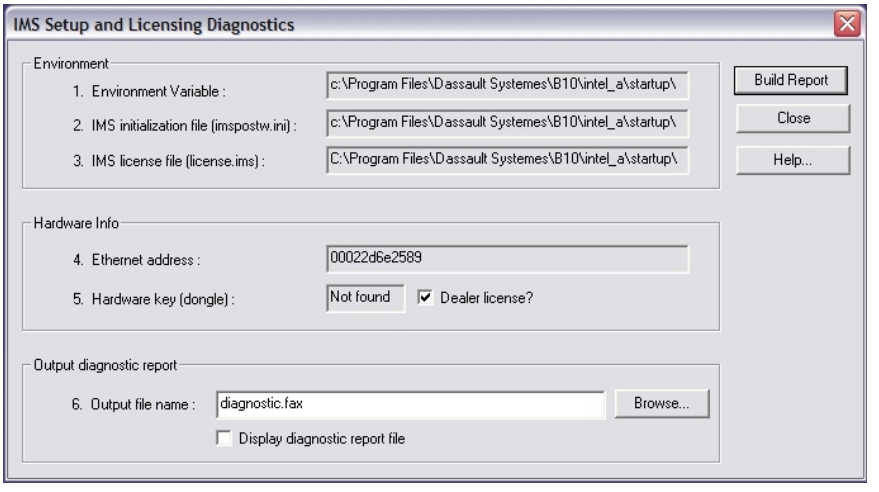
If your limit is at 0 (as shown here), or if you developed the custom post yourself, you do not need to use this option.

Note:

When installing a custom post developed by your reseller or by IMS Software, Inc., you need to make sure that the file has a **.lib** extension

As of this writing, Catia® only lists post-processor files with a **.lib** extension. If your post-processor file has a **.prj** extension, it will **not** be seen.

- **Diagnostics...**: this option lets you view your IMS environment and detect potential license problems



In our example, the environment variable **IMSDIR_POST_INI** is declared and points to the IMSPar directory located in the ...\startup\Manufacturing\ directory.

To declare an environment variable,

1. Open Control Panel
2. Double-click on System
3. Select Advanced tab
4. Click on Environment Variables...
5. Add new user variable:

Name: **IMSDIR_POST_INI**

Value:

C:\Program Files\Dassault Systemes\B10\intel_a\startup\Manufacturing\IMSPar

You might need to adjust the value to reflect your installation.

This variable tells the system where to find the IMS initialization file (**imspostw.ini**), which in turn tells the system where to find the license.

Edit (with Notepad or Wordpad) the file **...\startup\Manufacturing\IMSPar\imspostw.ini** to make sure the **DIR** variable points to the correct location for the license file (**license.ims**).

Usually, this variable **DIR** has the same value as the environment variable **IMSDIR_POST_INI**

The **Ethernet Address** is the hardware ID number that is used by IMS to create a custom license. This number is taken off of any Ethernet Card (Network card) installed on your system.

In case you are using a **hardware key (dongle)**, the number will appear on line 5 of the Diagnostics dialog box.

The Check mark for **Dealer license** will only be on for the sites where a Reseller license is installed.

For further information on installing and licensing IMSpost, please refer to the **IMSpost Windows Installation Guide** or **IMSpost Unix Installation Guide**.