

IMSpост

Within CATIA® V5 environment

*Any CAM System,
Any Machine,
One Solution*



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Printed in the USA, March 2003.

About This Guide

This guide covers common tasks associated with the setup and utilization of IMSpot 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 IMSpot. Contact IMS for more details.

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IMSpot™ Setup within Catia®

This document discusses the IMSpot 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 IMSpot for Catia®
- Setting up IMSpot as the Catia® post-processing solution
- Installing a custom license
- Installing a custom post-processor

Default IMSpot within Catia®

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

Within the Catia® V5 environment, IMSpot 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 IMSpot

Verify that the system on which you will be installing IMSpot 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

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

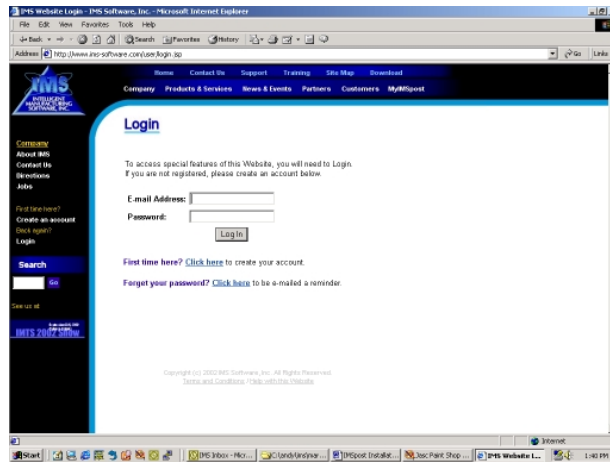
However, IMS occasionally releases software that enhances the standard Catia installation. To make sure you are using the latest version of IMSpot within Catia®, the latest IMSpot software can be downloaded it from the IMS website:

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

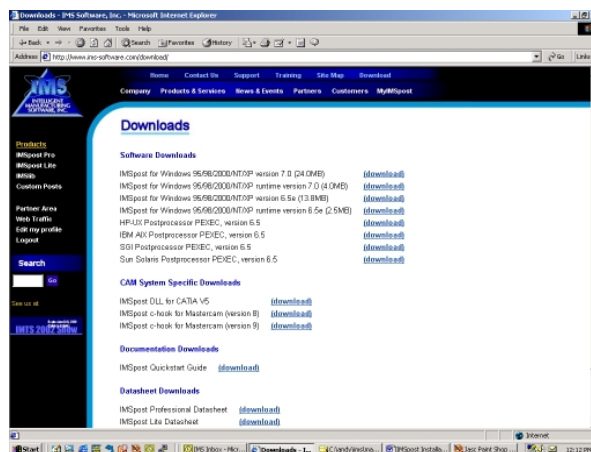
Obtaining the latest software from the IMS Website

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 IMSpot DLL for CATIA V5



Installing the latest IMSpot DLL for Catia®

This installation of the latest IMSpot DLL for Catia® will allow you to run the latest IMSpot 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**

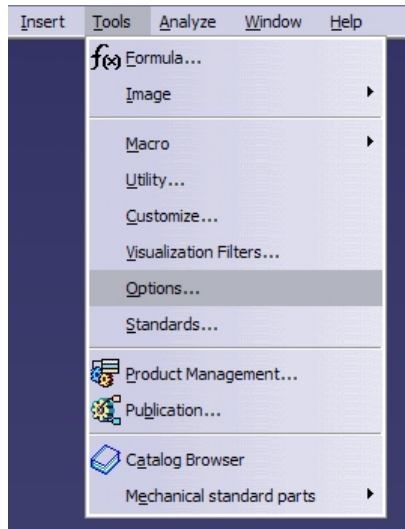
1. Unzip the file **MfgPPIG2Imp.dll** from the archive.
2. Locate your Catia bin directory: i.e. for a standard Windows installation, this directory is typically:

C:\Program Files\Dassault Systemes\B10\intel_a\code\bin

3. Move the file MfgPPIG2Imp.dll into this directory, replacing the previous version.

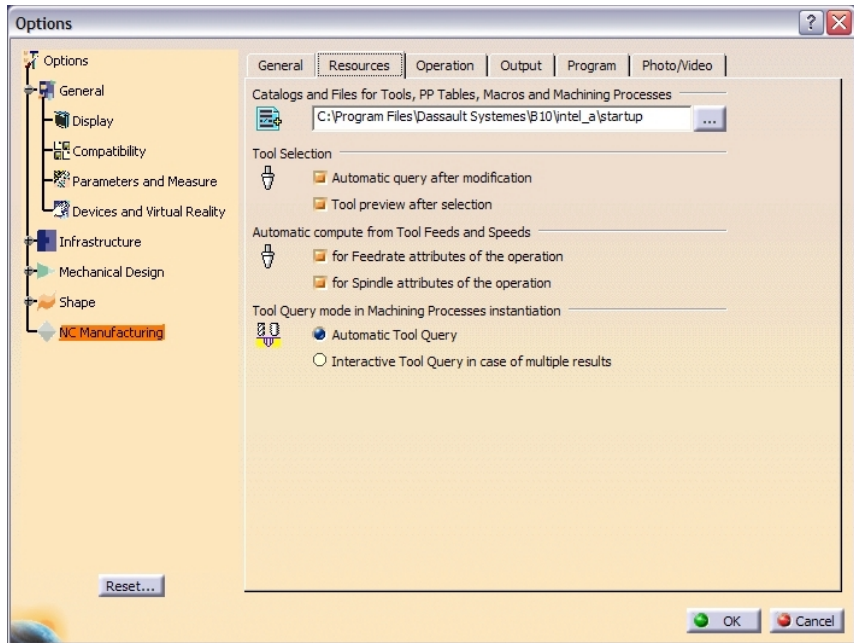
Setting-up IMSpot within Catia®

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



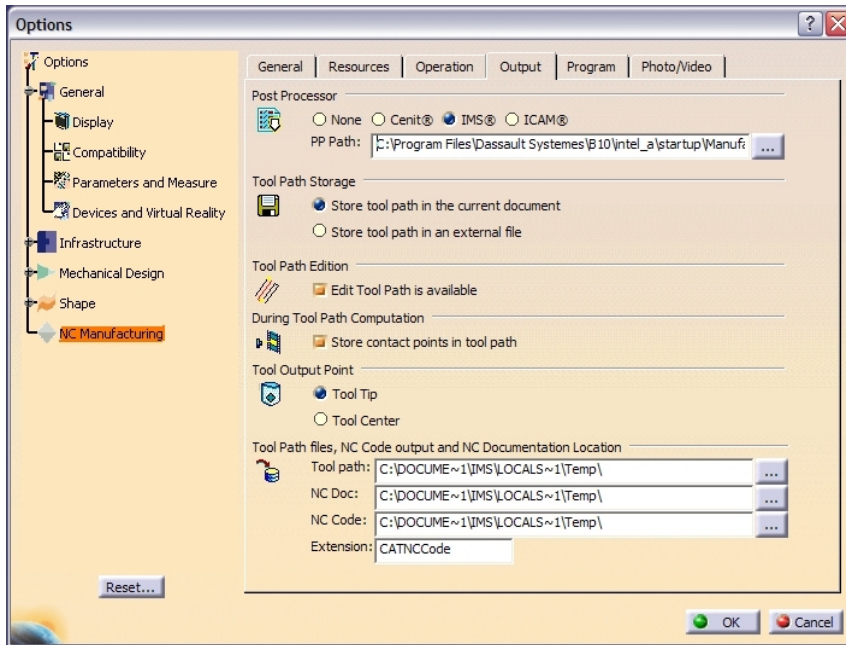
IMSpot™ within Catia® V5 environment

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



IMSpot™ within Catia® V5 environment

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

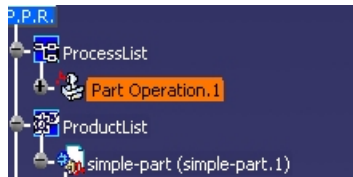


Select the IMS® in the Post Processor section. the PP Path should already be filled and point to the ..\startup\Manufacturing directory.

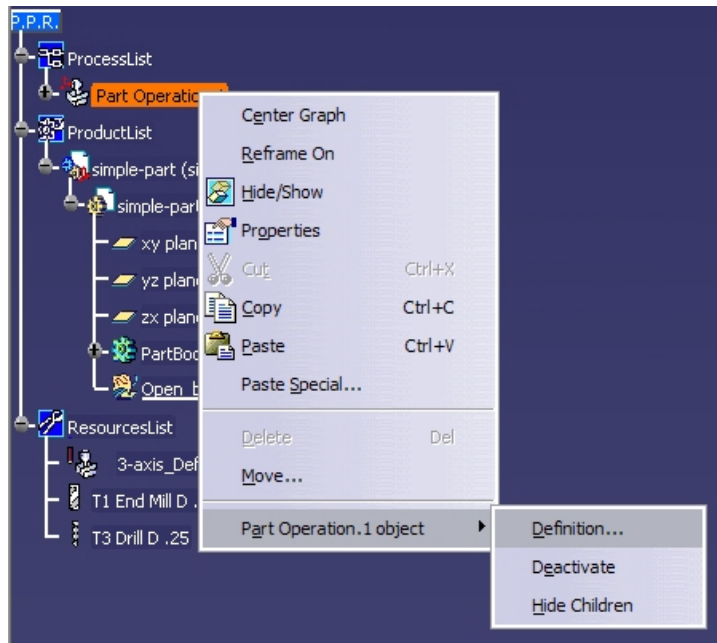
Selecting a post-processor

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

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



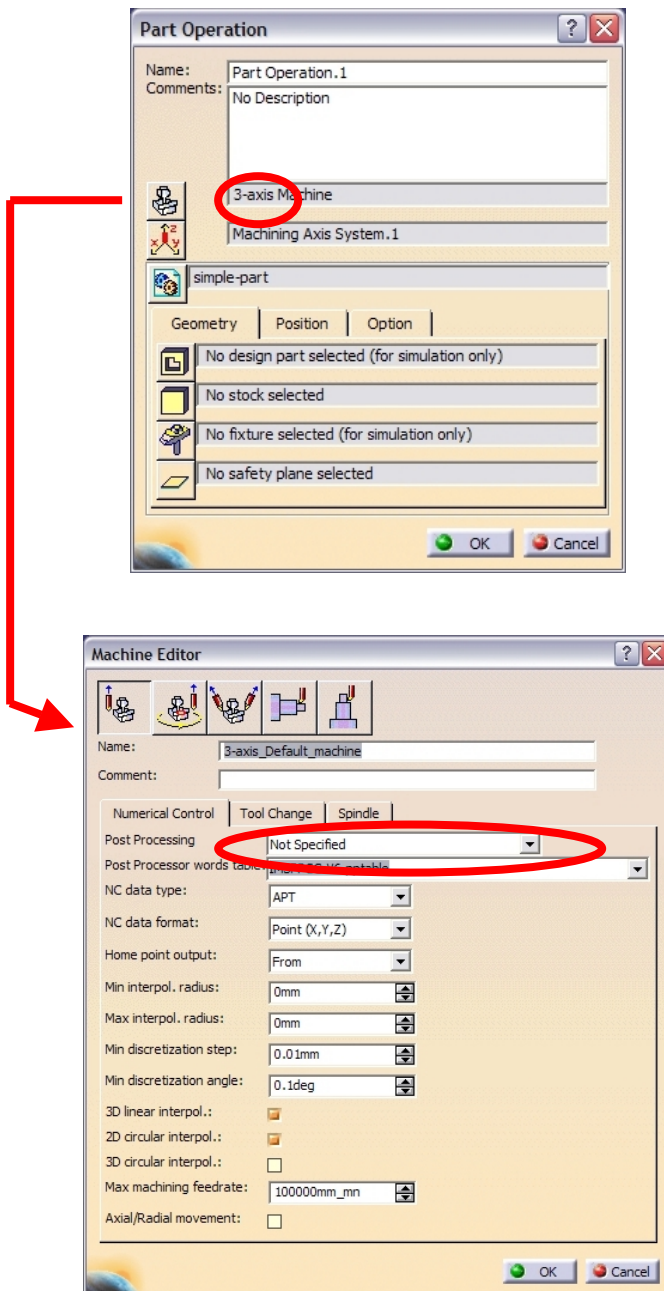
Right-mouse click on Part Operation.1



Select Part Operation1 object – Definition...

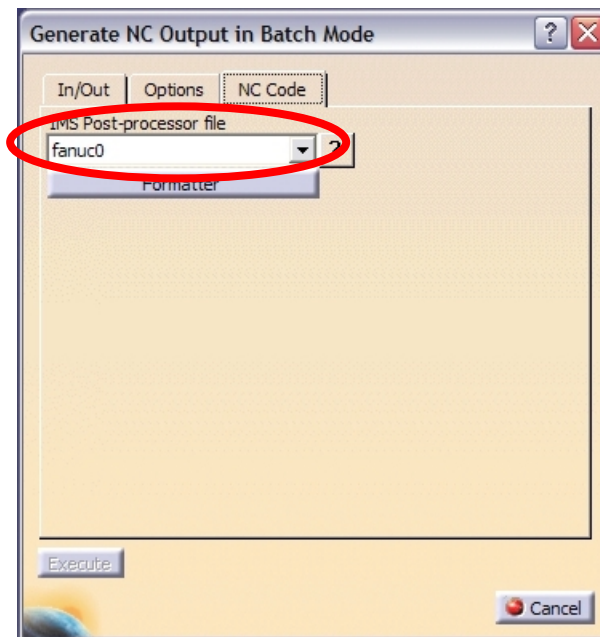
Alternatively, you may double-click on Part Operation.1 to achieve the same result.

IMSpot™ within Catia® V5 environment



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

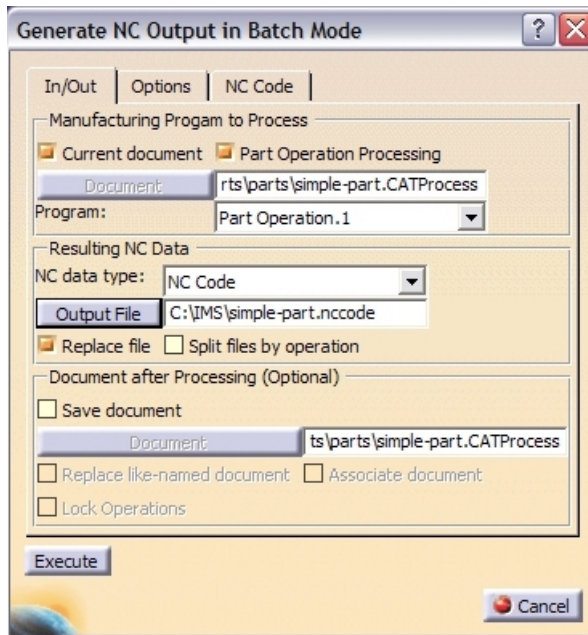
2) Using the icon “Generate NC Code in Batch Mode”



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.

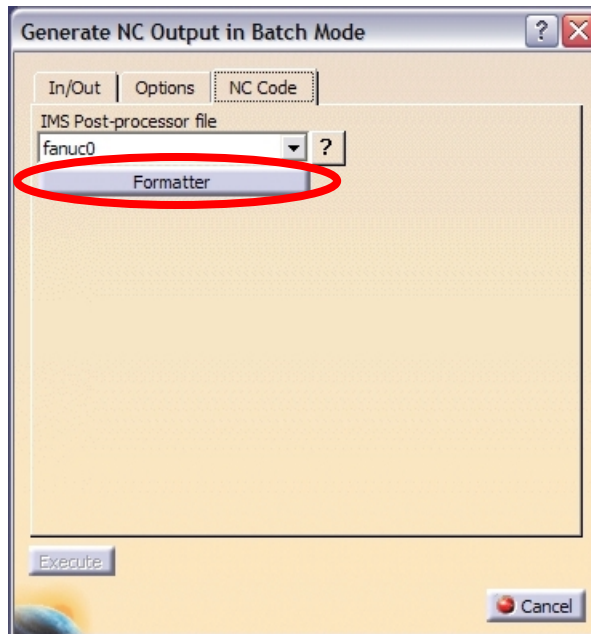
Select the **Execute** button to run the post.

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 'Options File Format' dialog box is shown with the following settings:

- Project File:** C:\Program Files\Dassault Systemes\B10\intel_a\startup\Manufacturing\IMSPa\Manuc0_1.lib
- Line Numbering:**
 - First Line Number: 1
 - Maximum Line Number: 9999
 - Line Increment: 1
 - ☒ Number Lines?
- Special Statements:**
 - File Prefix: %
 - Comment Prefix: (
 - File Suffix: %
 - Comment Suffix:)
 - Program Start: G0G17G40G49G64G80G90G99
 - Program End: M30
 - Output before tool change: (empty)
 - Output after tool change: (empty)
- Circle Output:**
 - UK: distance start to center
- Sort Order:**
 - /N,N,D,G,X,Y,Z,I,J,K,R,A,B,C,U,V,W,Q,P,H,D,S,T,M,L,F
- Number Format:**
 - Register: X-Y-Z
 - Decimal Format: 4.4
 - ☐ Leading Zeros
 - ☐ Trailing Zeros
 - ☒ Decimal Point
 - ☒ Absolute Values
 - ☐ Repeat Unchanged Coordinates
- Example ISO Instructions:**

```
%
N1 G49 G64 G17 G80 G0 G90 G40 G99
OT234
(T1 End Mill D. 5)
N2 T0001 M6
( OPERATION NAME : Profile Contouring.1 )
N3 X2.35 Y-.45 S2500 M3
N4 G43 Z2.9 H1
N5 G1 Z2.4 F12.
N6 Y-.35
N7 G3 X2.25 Y-.25 I-.1 J0
N8 G1 X2. F20.
N9 X0
N10 G2 X-.25 Y0 I0 J.25
N11 G1 Y2.
N12 X-.2373 Y2.1779
N13 X-.1994 Y2.3522
N14 X-.137 Y2.5193
N15 G0 Z3.937
N16 X0 Y0
(T3 Drill D. .25)
N17 T0003 M6
( OPERATION NAME : Drilling.1 )
N18 X4. Y1. S2500 M3
N19 G43 Z1.05
N20 G81 X4. Y1. Z0 R1. F20.
N21 Y2.
N22 G80
N23 G0 X0 Y0
N24 Z0
N25 M30
%
```
- Buttons:** OK, Cancel, Advanced Options..., Update Example Code

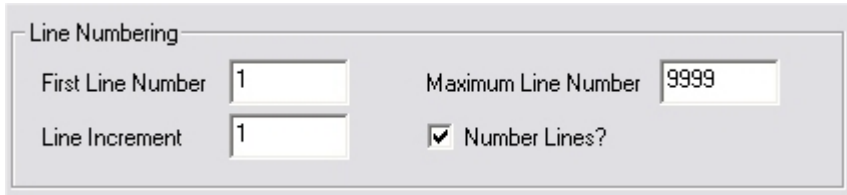
The Formatter dialog box gives you options to change the default output that you obtain from using the standard library post-processors.

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

Project File : C:\Program Files\Dassault Systemes\B10\intel_a\startup\Manufacturing\IMSPa\Manuc0_1.lib

Line Numbering

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



The screenshot shows a dialog box titled "Line Numbering". It contains four input fields and one checkbox. The "First Line Number" field is set to "1". The "Maximum Line Number" field is set to "9999". The "Line Increment" field is set to "1". The "Number Lines?" checkbox is checked.

Field	Value
First Line Number	1
Maximum Line Number	9999
Line Increment	1
Number Lines?	<input checked="" type="checkbox"/>

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 %)

Special Statements	
File Prefix	%
File Suffix	%
Comment Prefix	(
Comment Suffix)
Program Start	Program End
G0G17G40G49G64G80G90G99	M30
Output before tool change	Output after tool change

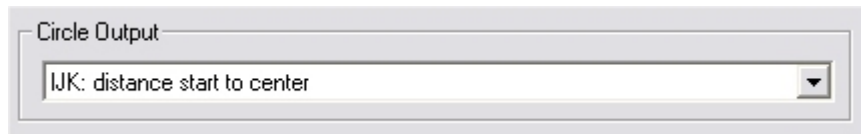
It also allows you to define how the comments from the aptsource file need to appear in the posted file (for example, within (and) characters).

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



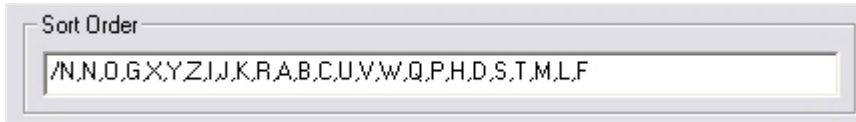
The Circle Output option lets you specify the format to be used for circle statements.

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).

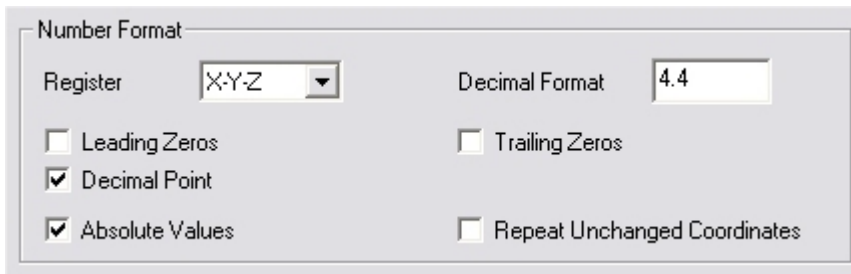
It is also possible to declare a specific G or M code:

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.

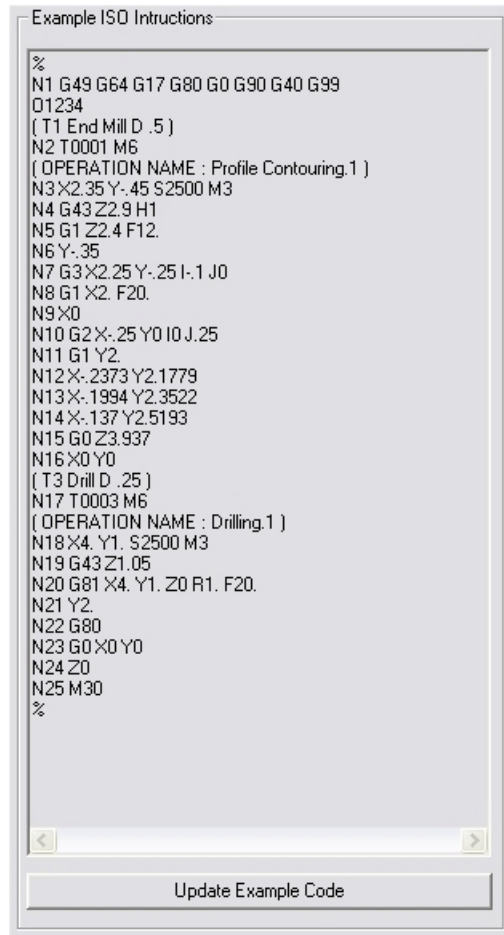
You can opt to add leading and/or trailing zeros, so that all digits are used, i.e. 0001.5000 instead of 1.5 in a 4.4 decimal format.

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



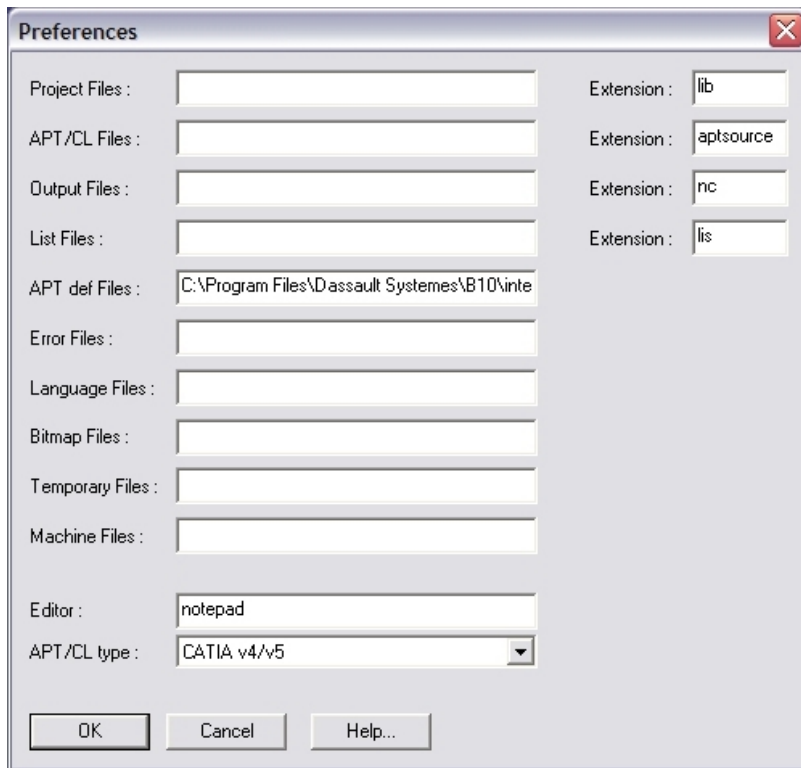
This section displays the output of a small sample aptsources using the options specified previously. After any change made, you need to select "Update Example Code" to refresh the output.

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 imspotw.ini located in the ...\\startupt\\Manufacturing\\IMSPar directory.

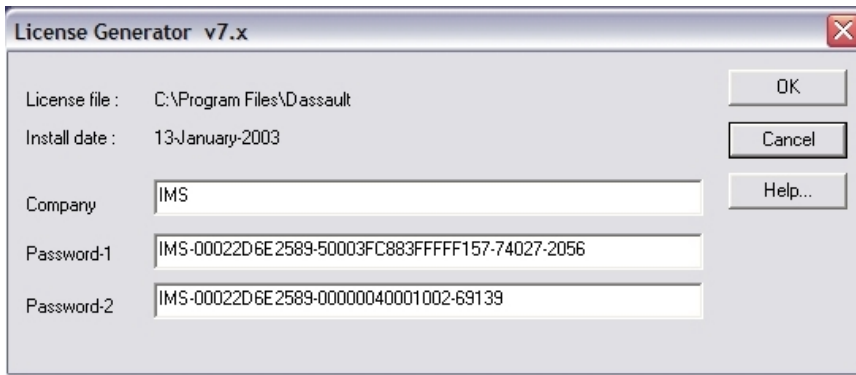


- Save as...: lets you save the modifications under a new post-processor name.

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



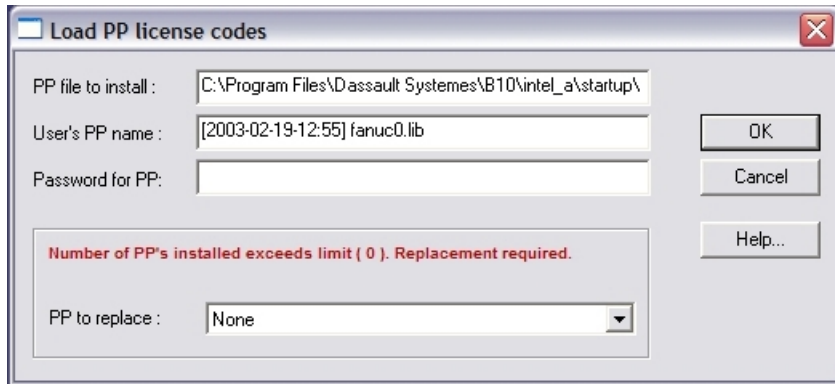
The screenshot shows a dialog box titled "License Generator v7.x". It contains the following fields and buttons:

- License file :** C:\Program Files\Dassault
- Install date :** 13-January-2003
- Company :** IMS
- Password-1 :** IMS-00022D6E2589-50003FC883FFFFF157-74027-2056
- Password-2 :** IMS-00022D6E2589-00000040001002-69139
- Buttons:** OK, Cancel, Help...

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

IMS Setup and Licensing Diagnostics

Environment

1. Environment Variable : c:\Program Files\Dassault Systemes\B10\intel_a\startup\
2. IMS initialization file (imspostw.ini) : c:\Program Files\Dassault Systemes\B10\intel_a\startup\
3. IMS license file (license.ims) : C:\Program Files\Dassault Systemes\B10\intel_a\startup\

Hardware Info

4. Ethernet address : 00022d6e2589
5. Hardware key (dongle) : Not found ☒ Dealer license?

Output diagnostic report

6. Output file name : diagnostic.fax Browse...
☐ Display diagnostic report file

Build Report
Close
Help...

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\\imspotw.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 IMSpot, please refer to the **IMSpot Windows Installation Guide** or **IMSpot Unix Installation Guide**.