

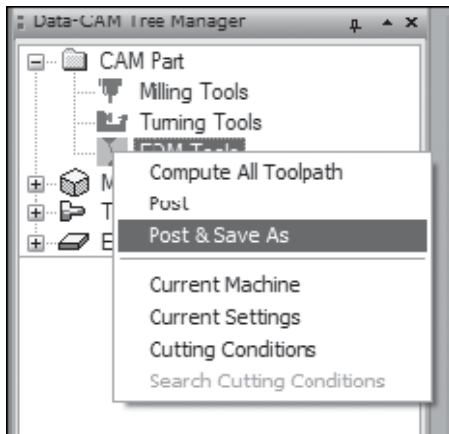
Version 23 Basic Communications Setup Guide

BobCAD-CAM comes equipped with a custom version of Predator™ CNC Editor, widely recognized as the best DNC package available anywhere. When transferring programs to the machine through RS-232 (serial port) links or Ethernet, there simply isn't a better solution.

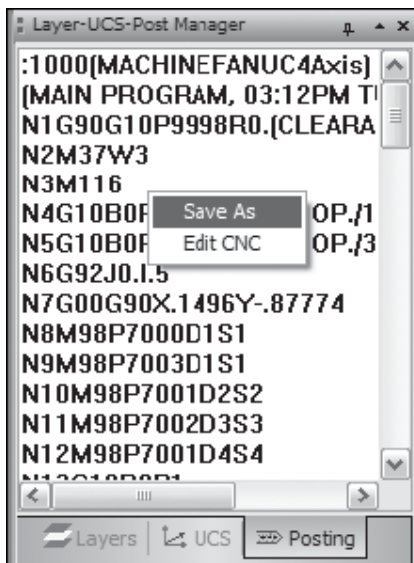
Saving Posted Programs

BobCAD-CAM uses 2 methods to save files to disk.

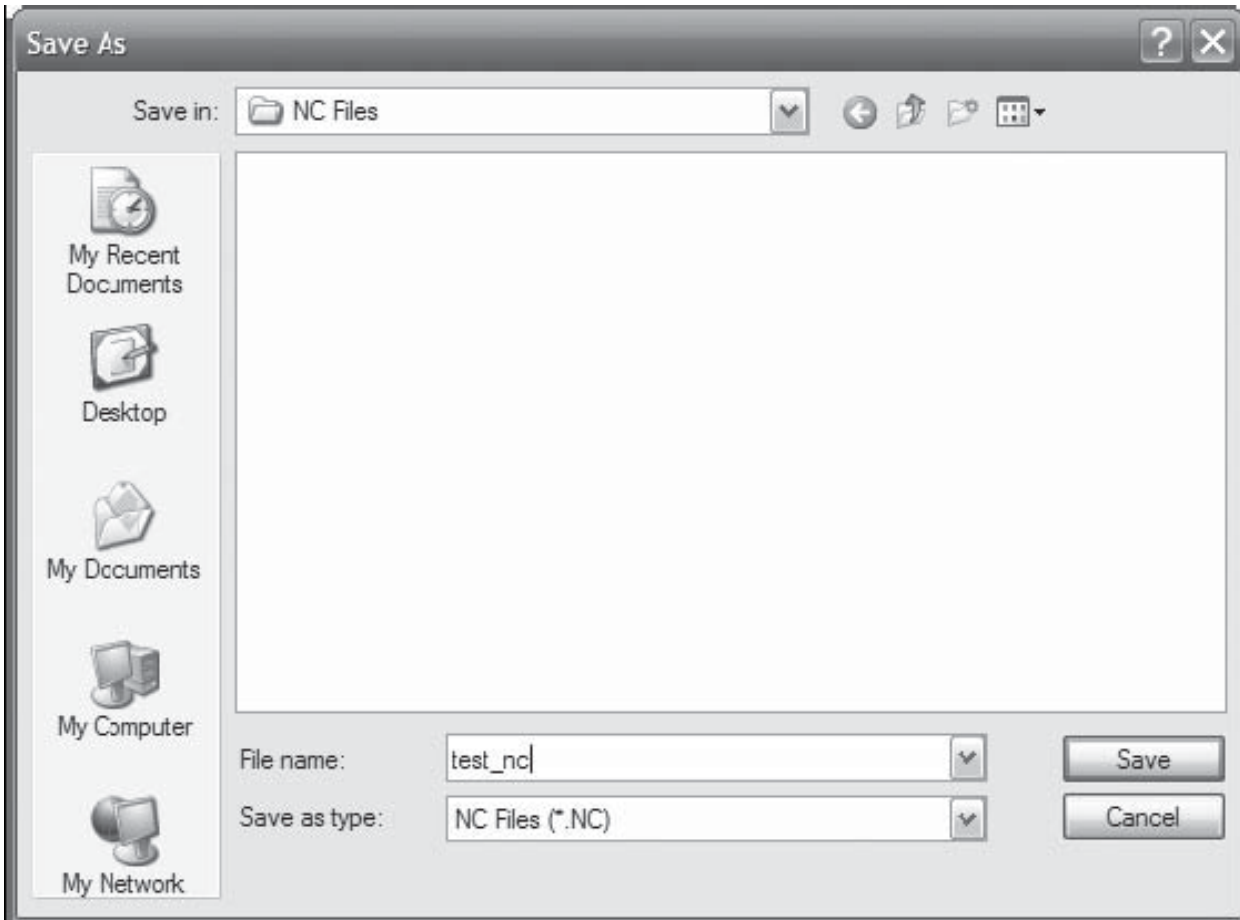
- **Post & Save As:** Right-click on the appropriate machine type under CAM Part (Milling Tools, Turning Tools, or EDM Tools) and choose **Post & Save As**. The software will prompt the user with a **Save As** dialog.



- **Save As from the Layer-UCS-Post Manager:** After the program has been posted, right-click in the **Layer-UCS-Post Manager** where the code is displayed and choose **Save As**. The **Save As** dialog will appear.



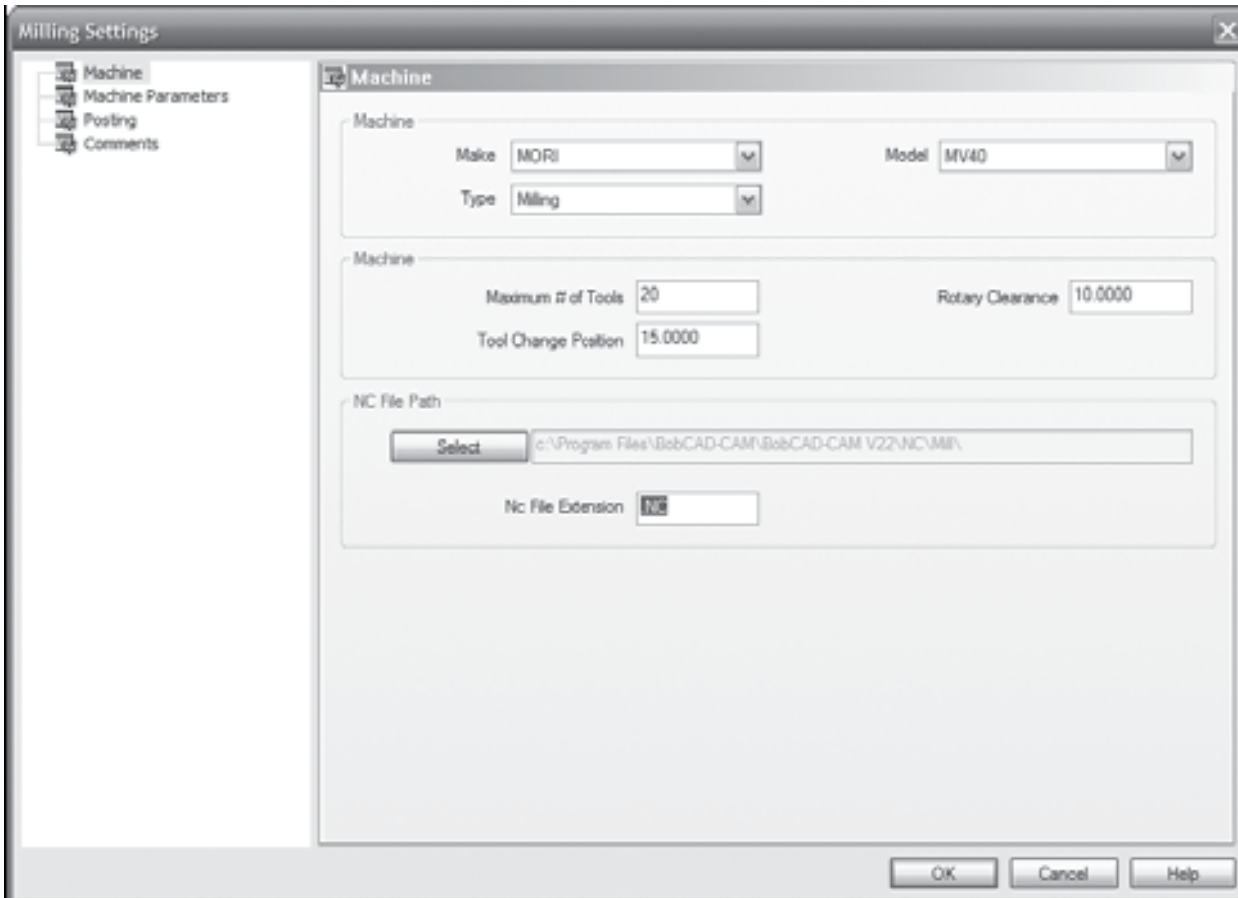
When the **Save As** dialog appears, name the file, choose the appropriate folder to save to, and press **Save**. The file can be saved directly to a floppy if desired.



If it needs to go to the machine on a CD-ROM, it will be easier to save it to another location and then burn the CD from there instead of attempting to save the file directly to the device.

File Formats & Extensions

BobCAD-CAM saves all NC files as ASCII text files. These files may have any extension the user wishes. To change the default NC extension BobCAD uses (when saving for any particular machine), right-click on **CAM Part** and choose **Current Settings**. The **Milling Settings** dialog box will appear. Click on **Machine** in the list to the left.



In the center of the box, there is a field named **NC File Extension**. Change the extension listed to the one recognized by the machine and click **OK**. Make sure to type the dot (".") before the extension letters.

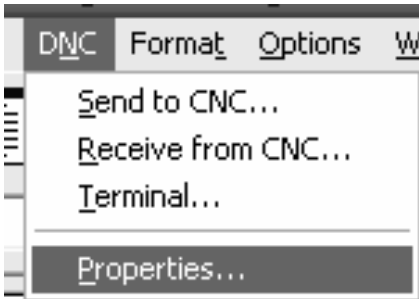
NOTE: ASCII text is the actual file format supported by probably 99% of all CNC machines ever manufactured, regardless of what file extension is required. If there is any doubt whether the machine accepts this format, post a program and try it. It is only in rare exceptions that this will not be the correct file format. If your machine takes another format by default, check with your machine OEM to see if the controller can accept ASCII text.

Establishing Communications

The Predator™ CNC Editor DNC included with BobCAD-CAM can communicate with a very wide variety of machines. It has quite a few parameters that can be set on a per-machine basis. Check your controller's manual for the settings preferred by your machine, as the settings must match between both the controller and Predator™.

Communication Settings

To set the Predator CNC Editor DNC communication settings, click on **DNC** and then **Properties** in the CNC Editor's main menu.

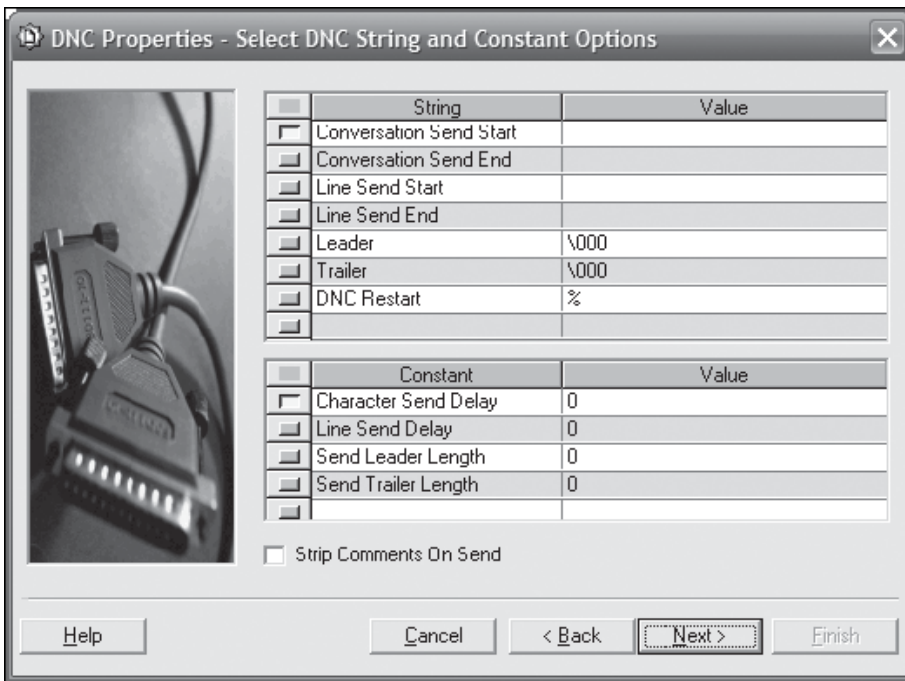


The system will display a series of 5 dialog boxes:

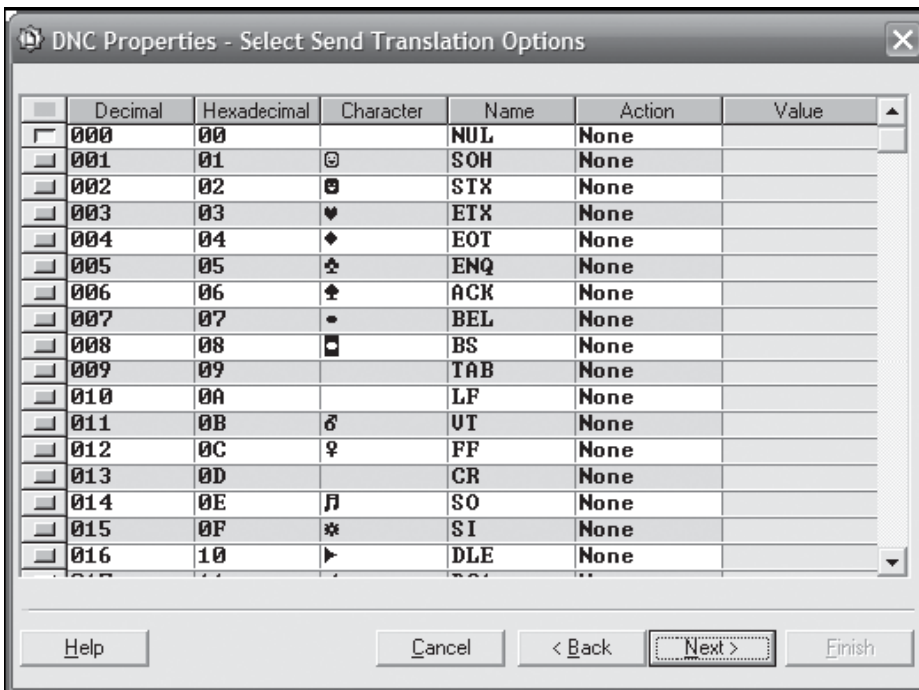
Select RS-232 Properties: Set the COM port options from here. Most controllers will require that these options be set to match the settings on the machine, but a few rare controls will actually require mismatched settings. See the controller's documentation to ensure the settings are correct.



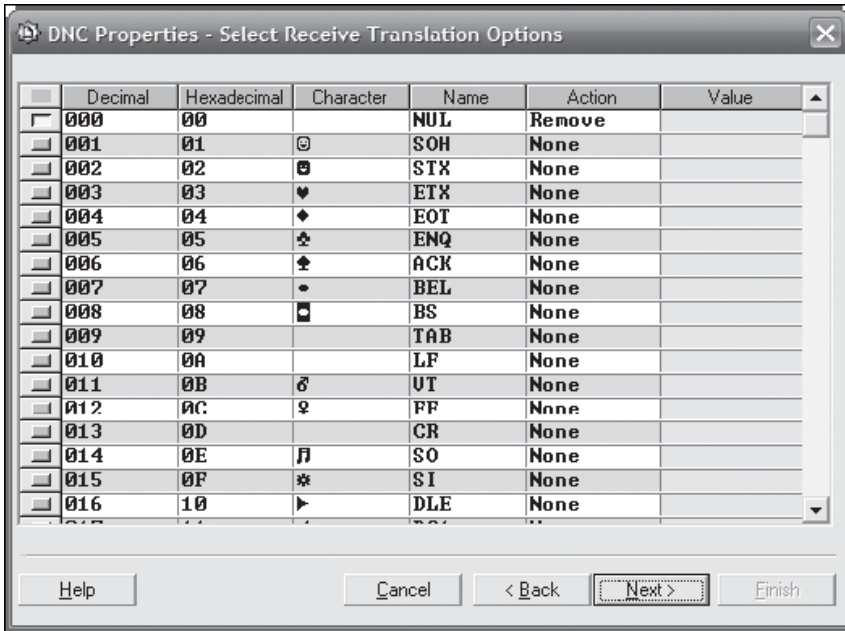
DNC String and Constant Options: Use this dialog box to set up any special leader or trailer characters the control may require.



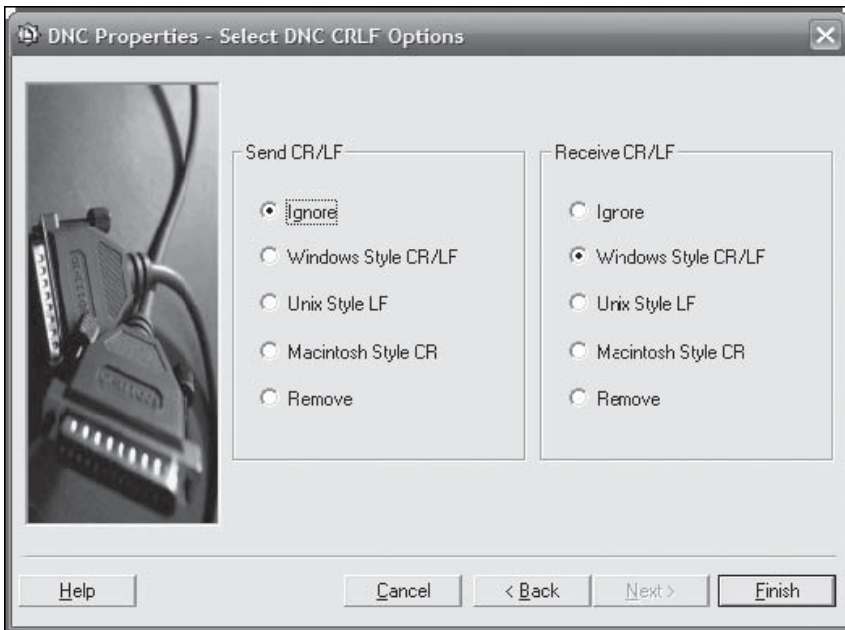
Send Translation Options: Occasionally a rare control will need a character normally output to be changed into something else entirely in order to read the transferred program. Normally no changes will be required; check the controller’s documentation to be sure.



Receive Translation Options: Some controllers will send undesired characters back to the computer. This dialog box can be used to either remove those characters or change them into something else.



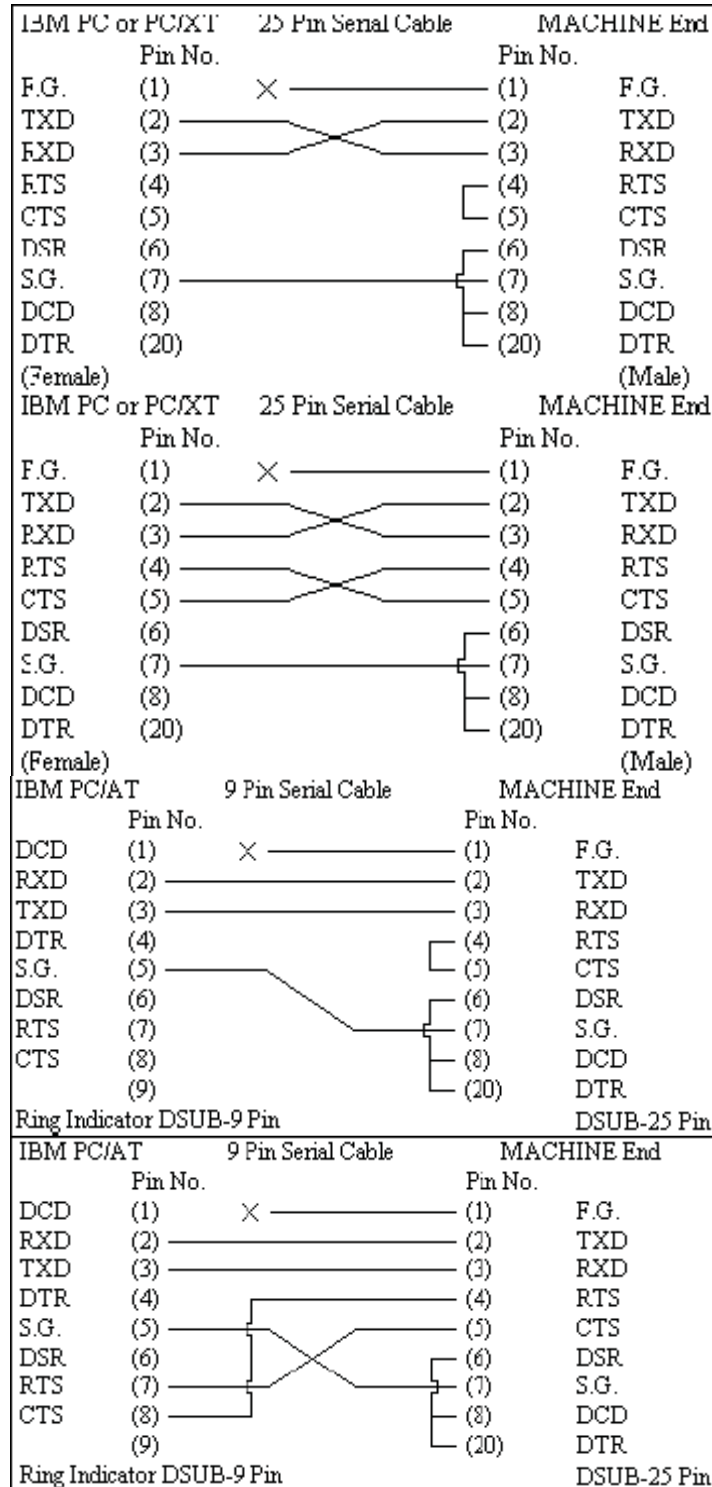
DNC CRLF Options: Some controllers require unusual Carriage Return / Line Feed (CRLF) character combinations. The options for both send and receive are listed in this dialog.



Click **Finish** when the settings are correct. The system will remember them for the next time a program is transferred.

Communication Hardware

To send a file over an RS-232 (or RS-422) link, a properly wired cable is absolutely required. See the following diagram for the most common wiring specifications. These are the common pinouts for nearly all CNC controls.



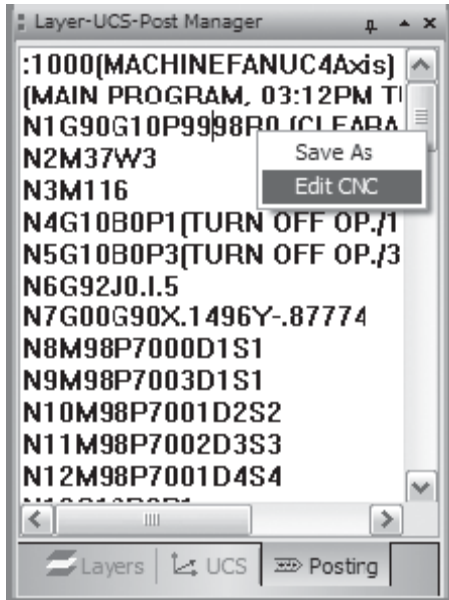
Cables typically need be shorter than 50' and will need to be shielded to help protect against electromagnetic interference. Take care not to coil a long cable or run any cable around any fluorescent lighting or near any electrical transformers or power supplies as these will significantly reduce the strength of the signal through the cable, possibly causing communication to fail entirely. If a good cable is difficult to find or to build, or if the machine is more than 50' from the computer, it is now possible to purchase Predator Grizzly™ cables directly from BobCAD-CAM, Inc. Grizzly™ cables are viable to lengths of up to 400' in a variety of environments.

Transferring Files via RS 232 (Serial) Link

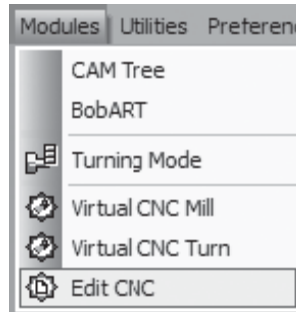
The Predator CNC Editor DNC can transfer a program to and from the CNC controller.

Here is the procedure:

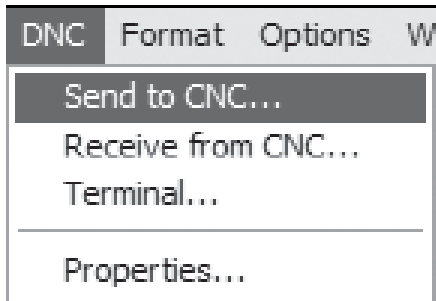
1. Open the CNC Editor by either right-click in the **Layer-UCS-Post Manager** and choose **Edit CNC**, or click on **Modules** in the main menu and choose **Edit CNC** from there.



or



2. Choose **Send to CNC...** from the menu.



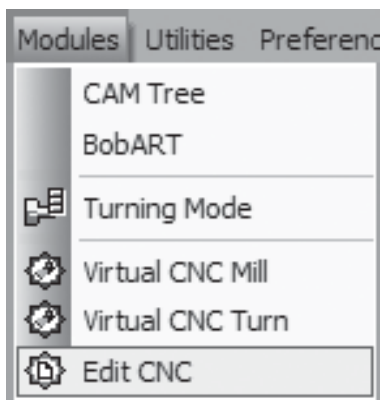
3. The CNC Editor will automatically begin the transfer. The progress bar near the bottom of the dialog will count off the percentage of the file transferred. The progress bar will display 100% when it is complete.



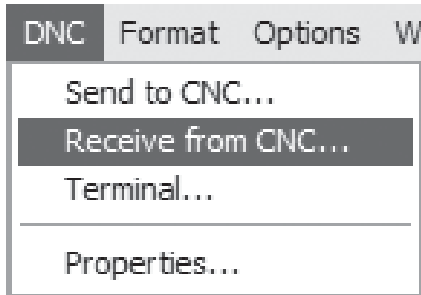
Receiving a Program from the CNC Control

Once again, the Predator CNC Editor DNC can transfer a program to and from the CNC controller. Here is how it is done:

1. To open the CNC Editor, click on **Modules** in the main menu and choose **Edit CNC** from there:



2. Choose **Receive from CNC...** from the **DNC** menu in the CNC Editor.



3. The CNC Editor will automatically begin the transfer. The large box near the top of the dialog will display the code as it is received. The dialog will disappear when the transfer is complete.

