

The logo features the text "CIM-TECH" in a bold, sans-serif font. "CIM" is black and "TECH" is red. Below it, "AUTOMATED CAD/CAM SOLUTIONS" is written in a smaller, black, sans-serif font. The text is set against a background of several interlocking gears of various sizes, some in grayscale and one in white. A thick, red, wavy ribbon-like shape curves across the bottom of the gear background.

CIM-TECH
AUTOMATED CAD/CAM SOLUTIONS

ROUTER-CIM AUTOMATION SUITE 2013



by **CIM-Tech.com, Inc.**

We are pleased to announce the release of Router-CIM 2013 Automation Suite. This state-of-the-art programming software combines the latest advances in CNC machine tool programming with the industry-standard CAD features found only in AutoCAD®, the world's premier Computer Aided Design software

Router-CIM Automation

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Router-CIM 2013

Router-CIM Macros

Geoshape and Cut

Expert Nurbs Cutter

Pocketing

Profile cutting

Drilling

Configuration

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Knowledge

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1 System Requirements and Installation

Hardware Requirements

The system requirements for Router-CIM 2013 are as follows:

Minimum Requirements 32 Bit	Minimum Requirements 64 Bit
For Windows 7: Intel® Pentium® 4 or AMD Athlon™ dual-core processor, 3.0 GHz or higher with SSE2 technology For Windows XP: Pentium 4 or AMD Athlon dual-core processor, 1.6 GHz or higher with SSE2 technology	AMD Athlon 64 with SSE2 technology, AMD Opteron® processor with SSE2 technology, Intel® Xeon® processor with Intel EM64T support and SSE2 technology, or Intel Pentium 4 with Intel EM64T support and SSE2 technology
4 GB RAM (no more than 4GB supported)	4 GB of RAM (8GB or more Recommended)
8GB free disk space for installation	8GB free disk space for installation
1,280 x 1,024 true color video display adapter 128 MB or greater, Pixel Shader 3.0 or greater, Microsoft® Direct3D®-capable workstation-class graphics card (1,600 x 1,050 with true color recommended)	1,280 x 1,024 true color video display adapter 128 MB or greater, Pixel Shader 3.0 or greater, Microsoft® Direct3D®-capable workstation-class graphics card (1,600 x 1,050 with true color recommended)
Microsoft® Internet Explorer 8.0 (SP1 or higher)	Microsoft® Internet Explorer 8.0 (SP1 or higher)
Microsoft® Windows® XP Professional (SP2 or higher), Windows Vista 32, or Windows 7 (32 bit).	128 MB or greater, OpenGL®-capable workstation class graphics card
DVD Drive to install Cam Companion	DVD Drive to install Cam Companion

Supported Autocad Versions

Router-CIM 2013 supports the following Autodesk products:

AutoCAD 2011
AutoCAD 2012
AutoCAD 2013

Additionally, we provide an Inventor Link to the following versions of Autodesk Inventor:

Autodesk Inventor 2011
Autodesk Inventor 2012
Autodesk Inventor 2013

You should check your hardware against the Autodesk Certified Hardware List to be sure of compatibility with your version of Autocad.

[Click here to check Autodesk Certified Hardware List](#)

Hardware Locks

In addition to the hardware requirements listed above, it is important to note that Router-CIM and AutoNEST require hardware locks (often called 'dongles') in order to function. These can be either a USB type or a Parallel Port (printer port) type. Since there are two hardware locks required if you are using the nest software, you should have two USB ports available. For the parallel port type, only one port is necessary since these locks can plug into each other.

1.1 Product Overview

The main purpose of Router-CIM Automation is to provide a CAD/CAM solution for both single part machining and also to automate the programming task for quantities of parts. Router-CIM offers both nested based manufacturing technology, used to automatically produce NC Code for parts that are produced or imported into the AutoCAD environment, as well as any other single part that can be parametrically defined, or produced as a drawing or DXF file.

Parametric macros that are defined using Router-CIM's Parametric Macro Builder can be automatically sized and either nested or cut singly, and also from different materials.

With Router-CIM Automation, you can select macros, DXF files, and AutoCAD DWG files, associate a material and specify a quantity of them and Router-CIM will do the rest, automatically.

In Automation, typically, a job file is created that contains all the machining data necessary to perform the programming tasks. Each job contains the macro, drawing, or DXF file name, size, quantity, material, and other variables relevant to your cutting needs. Each part is analyzed, and a layer to knowledge association automatically creates the tooling paths. The part and tool paths are serialized and stored in the database as necessary. Once all parts are cut or cut and/or nested, then sorted NC Code is made. The parts or nests are printed, and external files, like a label file and also a machine schedule file are made.

Each job is stored in an independent folder for easy storage and retrieval. The locations of these folders can be specified either locally on your hard drive, a network drive, or even the machine tools drive if it is able to exist on the same network.

For new users of Router-CIM, there are a few concepts which need to be understood in order to use the product efficiently. These are:

- A basic understanding of the Microsoft Windows environment, and file handling with programs such as My Computer, or Windows Explorer.
- A working knowledge of the AutoCAD environment. How to create and name layers, and assign geometry to those layers.
- Some knowledge of the types of tools, cutting conditions, and materials you are likely to use on your parts.
- Knowing the difference between the file types Router-CIM uses such as DWG, DXF, and SCN.
- Understanding the Layer to Knowledge association feature in Router-CIM.

If you will be using primarily macros for your part definitions, then a solid understanding of Router-CIM's Parametric Macro Builder and how to create a macro is truly necessary. This takes practice and is best done on paper first!

Also solid understanding of the variable types, Global, Dynamic, Tagged, and Local, and how to use them on individual parts or assemblies of parts will be of primary importance in a truly parametric macro. You should know how to incorporate the variables into formulas to define parts or part features.

1.2 Installation Quick Start

Installation Quick Start:

These installation notes assume that AutoCAD 2010 or higher is installed and functioning properly.

Make sure you are logged in with at least Local Administrator privileges on your system.

The Router-CIM 2013 program is installed in the following manner.

- Unplug any USB hardware locks previously installed.
- Insert the Router-CIM Installation CD and it will start automatically.
- If the Installation doesn't start automatically, pick Start, Run, D:\SETUP. EXE (where D: is the CD ROM drive letter).
- The Router-CIM installation serial number will determine the installation options of Router-CIM. The serial number is included on the CD that Router-CIM is installed from. If Nesting was purchased, the Router-CIM installation will automatically install the product.
- The Install will place the Router-CIM files in the default locations.
- The install procedure searches for AutoCAD on your hard disk, and uses this location to build icons to run the Router-CIM program.
- Once the install is finished, reboot the computer, plug in the USB hardware locks and you will be able to run the product.
- If any custom post processors are necessary, install them now. The procedure to install the post processors is to simply run the .exe file that contains the post processor, and answer a few default questions during the install.

1.3 Critical Issues



After Router-CIM is properly installed and configured for use, all pertinent folders should be backed up. A simple method is by copying them and placing them in a new folder. The proper way would be to make a CD, or back up to tape or another easy to restore method.

CIM-Tech will store a backup of your system if you burn it to a CD and mail it to us. We will archive that as an off-site backup in case you lose your own. This is NOT a substitute for your own backup, as you will likely make changes and edits on a more regular basis than the backup that is shipped to us.

CD recorders, DVD Recorders, External Hard Drives, and Tape backups are all valid ways to back these folders up. Floppy disks are not a good choice. It would take a large number of them to get each folder in its entirety. Typically all of the folders can fit on one CD. After using the system for a while, the backups that Router-CIM stores on your system could mean that more than one CD is necessary.

A Note on CD Recorders: Each file that is backed up in this fashion may become read-only. This means you can only look at the documents without altering or editing them. It will be necessary to change the properties of the files back from read-only after the folder is copied. The method of doing this varies depending on your operating system.

The folders to back up are as follows:

```
1.C:\Router-CIM
2.C:\Rcim_work
3.C:\Anest
4.C:\Automation_code
```

(C: is assumed here to be the installation drive.)

CIM-Tech is NOT Responsible for your loss of productivity or data! If you do not back up your system completely and you lose data without a backup, your only option is to re-install the software and start over.

1.4 Installation

Installation Guide

The Router-CIM program is installed in the following manner:

Insert the Router-CIM Installation DVD and it will start automatically. If it does not start automatically, pick Start > Run then pick or type D:\setup.exe (where D: is the DVD ROM drive letter).

The Router-CIM serial number will determine the installation options. If Nesting was purchased, it will be installed automatically.

The install will search for Router-CIM files in the default location. If your version of Router-CIM was installed to a drive other than C, you can re-direct the setup process to locate the folder in the proper drive by clicking on Browse and then selecting the correct drive location.

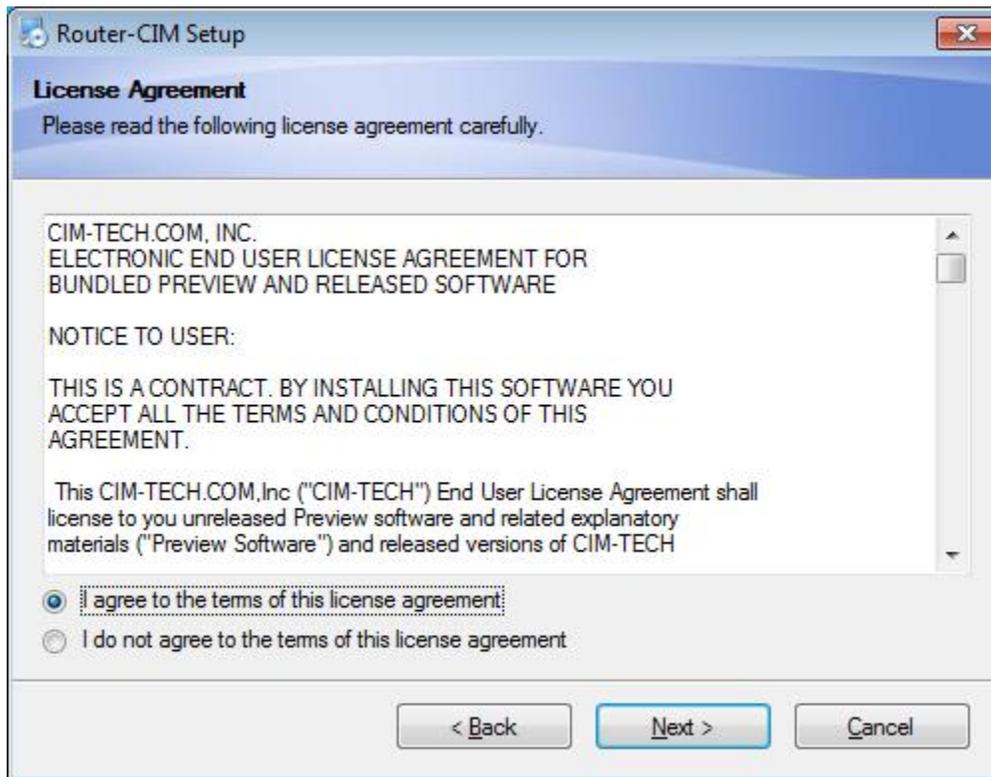
The install procedure searches for AutoCAD on your hard drive, and uses this location to build icons to run the Router-CIM program.

When the installation program starts, the following screen will appear:

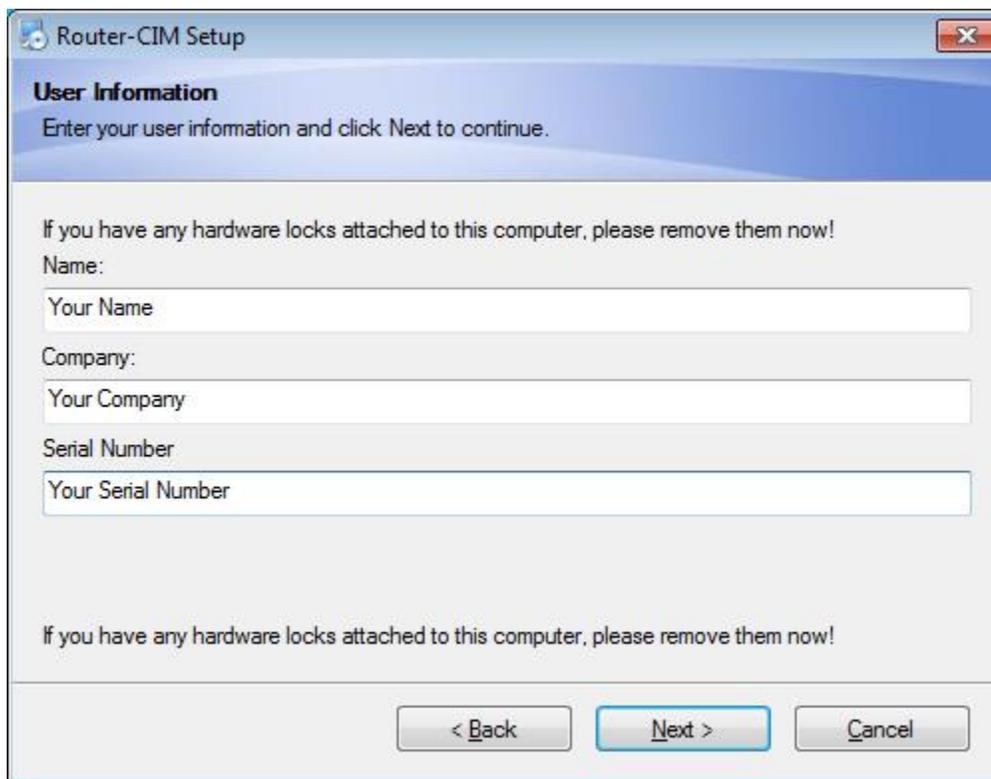


From here, all of the default selections have been made for you. We recommend that you leave the defaults, as it will be simpler for you later if technical support is needed and you need to know the locations of the Router-CIM files.

Select Next to continue.



This is the license agreement for Router-CIM. Be sure you read the agreement. Selecting 'I do not agree' will allow you to exit the program without installing it to your computer. Selecting Back will return you to the previous window. Select 'I agree to the terms' and Next to continue.



Router-CIM Setup

User Information
Enter your user information and click Next to continue.

If you have any hardware locks attached to this computer, please remove them now!

Name:

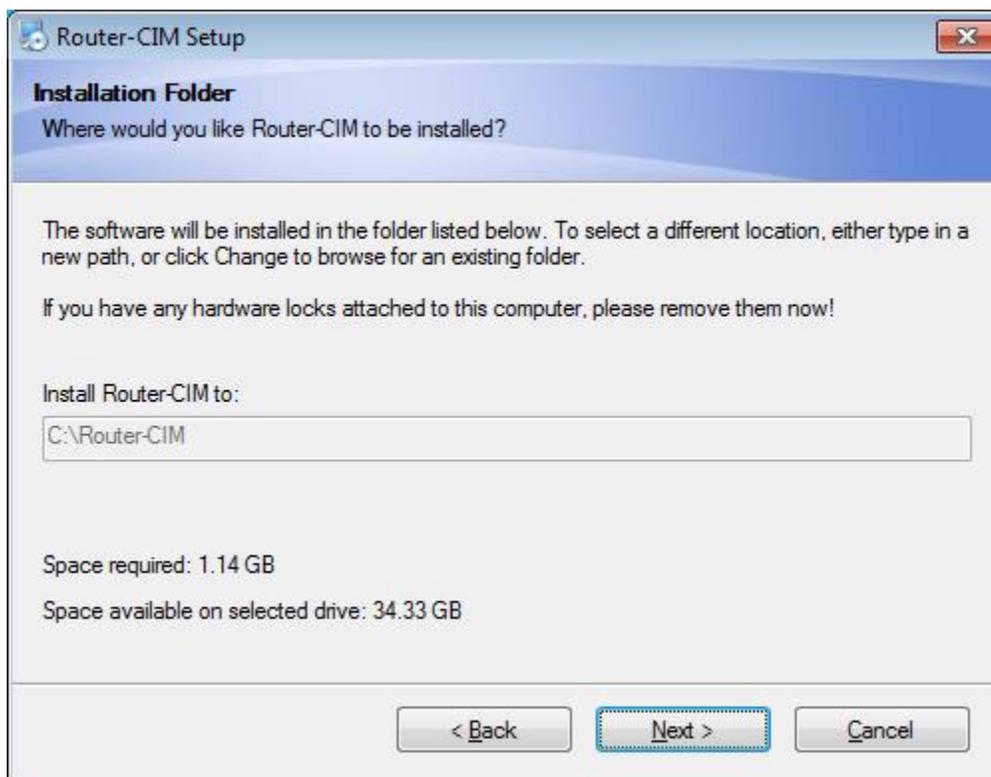
Company:

Serial Number

If you have any hardware locks attached to this computer, please remove them now!

< Back Next > Cancel

Enter your name, your company name, and the serial number that is supplied to you with the software. Select Next to continue.



Router-CIM Setup

Installation Folder
Where would you like Router-CIM to be installed?

The software will be installed in the folder listed below. To select a different location, either type in a new path, or click Change to browse for an existing folder.

If you have any hardware locks attached to this computer, please remove them now!

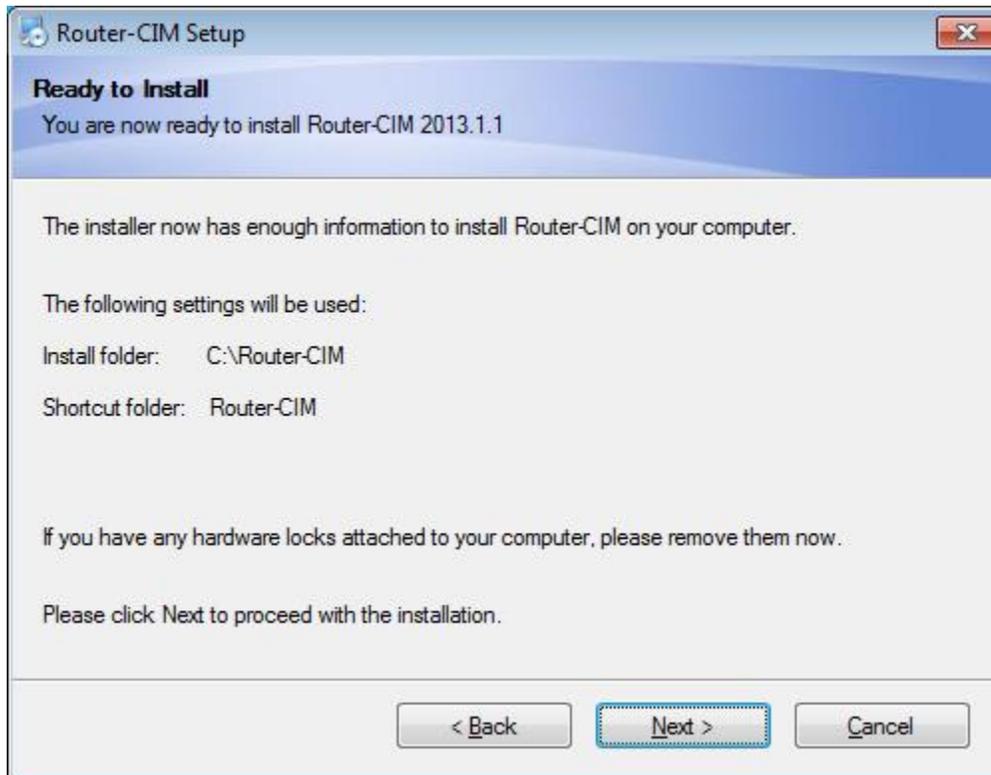
Install Router-CIM to:

Space required: 1.14 GB
Space available on selected drive: 34.33 GB

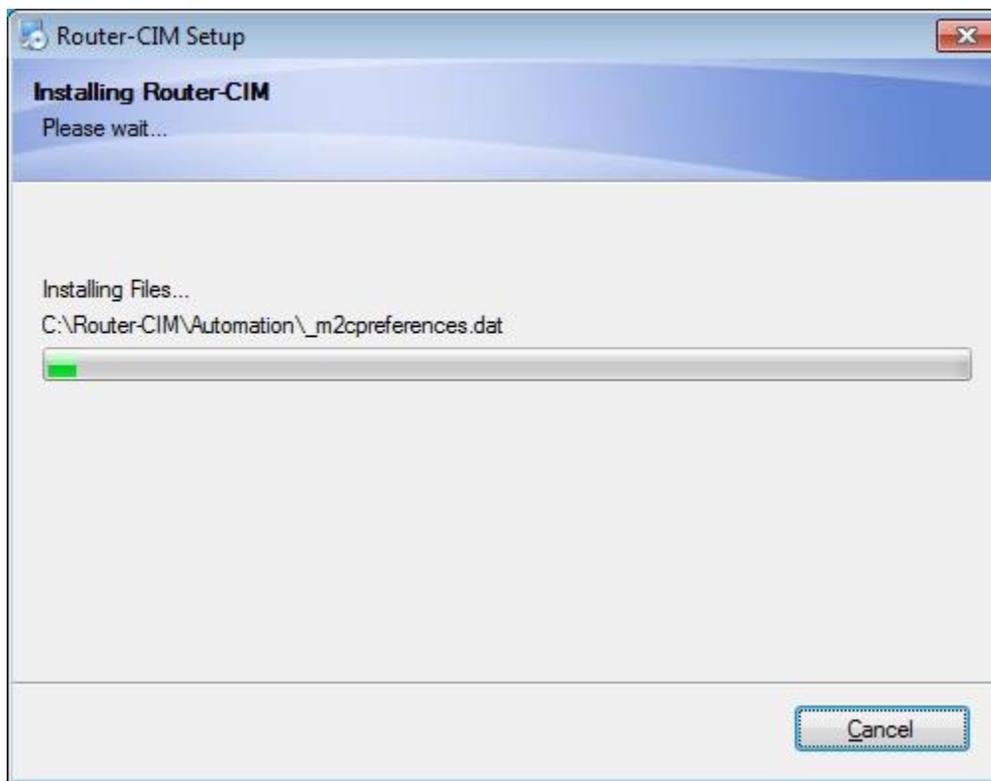
< Back Next > Cancel

Router-CIM will specify the location for installation. You may select Next to continue, or either Back to go to the previous window or Cancel to exit from the install.

You should remove any hardware locks that have been plugged into the computer.



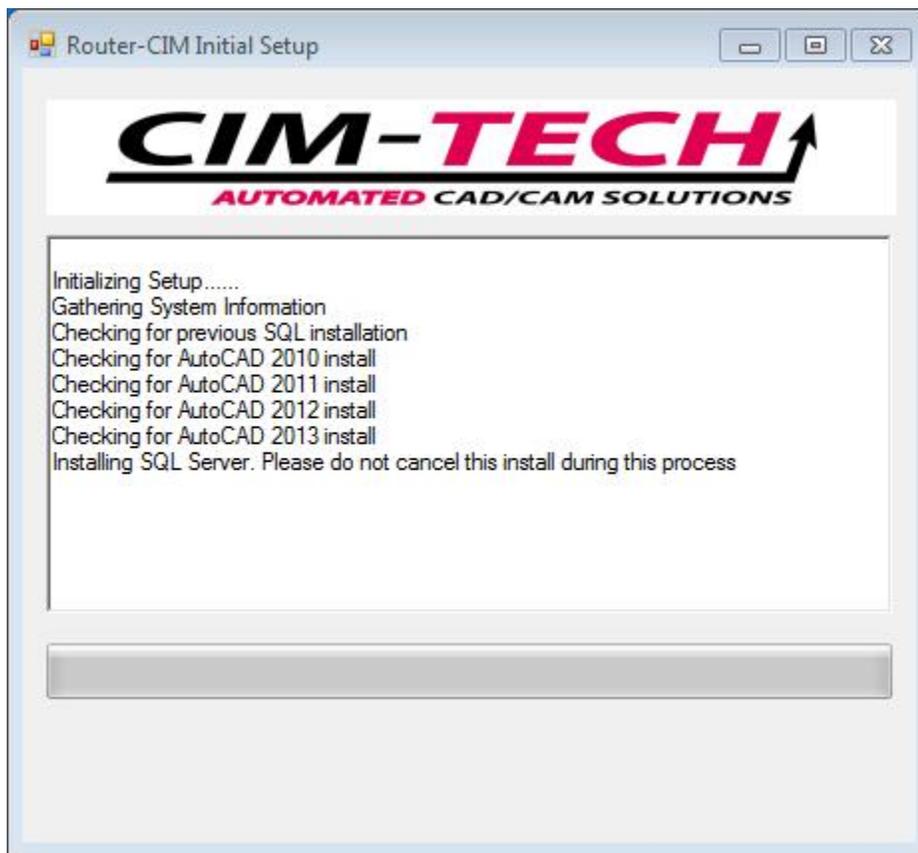
This screen will recap where Router-CIM is going to be installed to.



The installer will start copying files to the necessary locations in this section of the install. As soon as this is finished you will see the following screen:

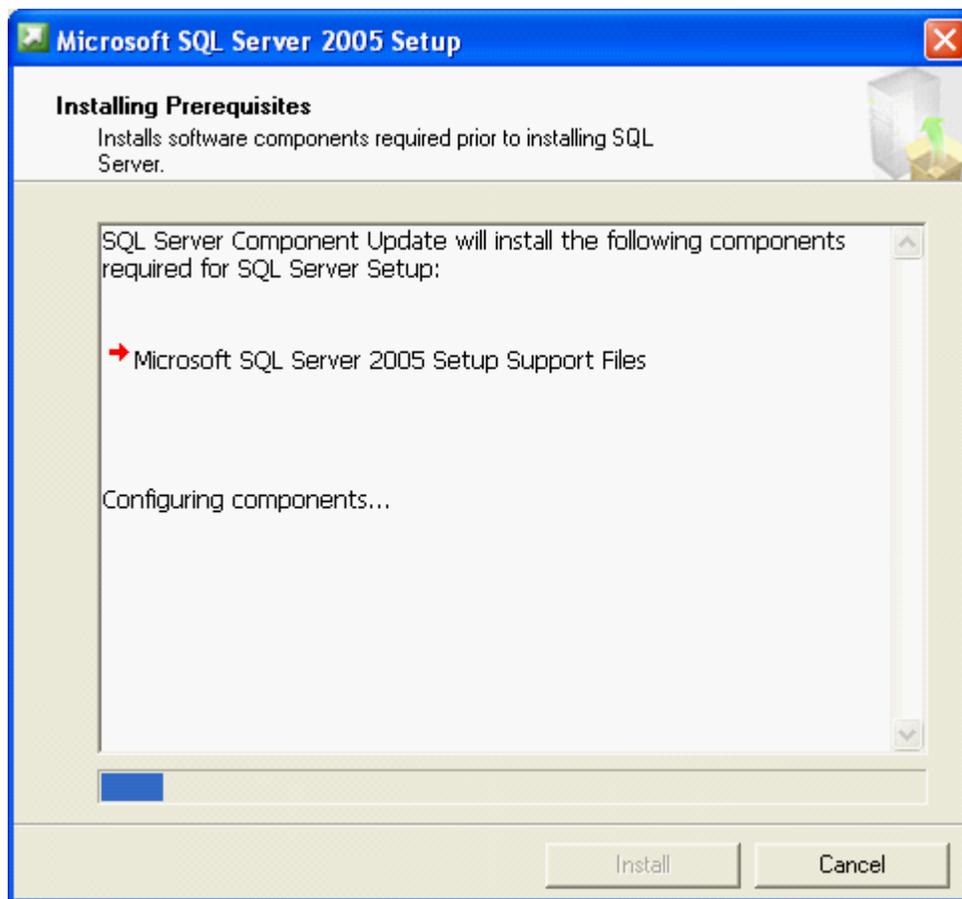


Click on Finish to start the next section of the installation.



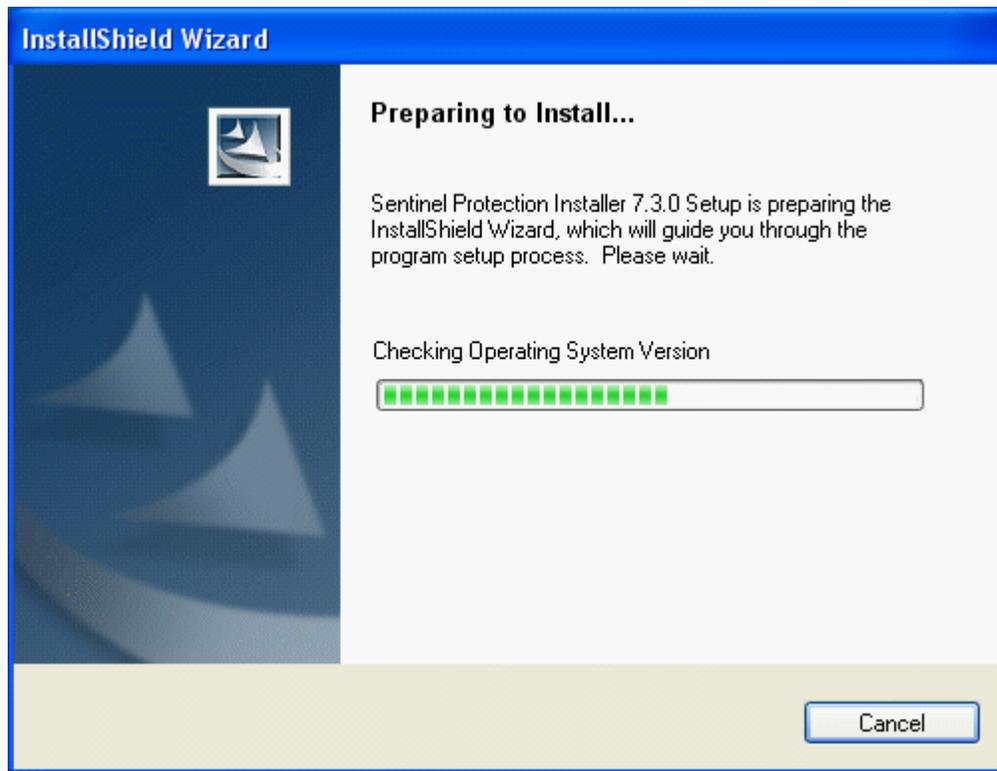
This is the second section of the installation. The install will extract some more files and then check your computer for versions of AutoCAD, SQL Server and Microsoft .NET Framework versions.

This section may take a while, please be patient and allow the installer to finish.

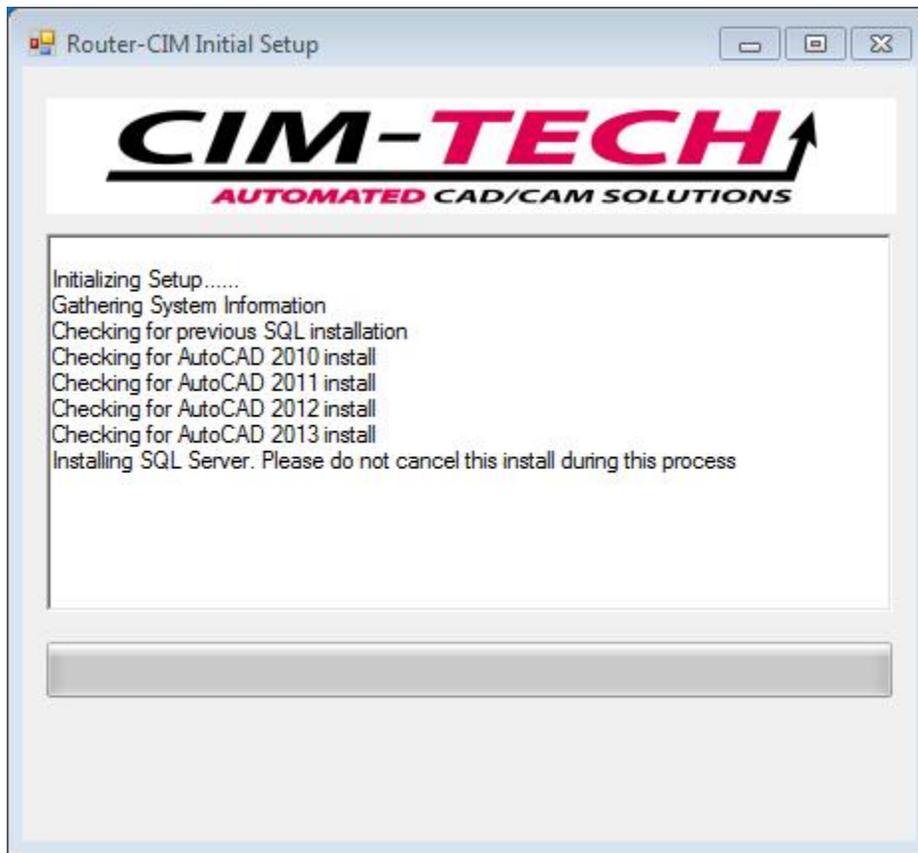


The next screen to appear will be the .NET Framework. If the proper version of the .NET Framework is not detected, then it will install.

There is no visible progress meter during this install, so just leave the window open and do not cancel the installation. The next step will appear when this is finished.



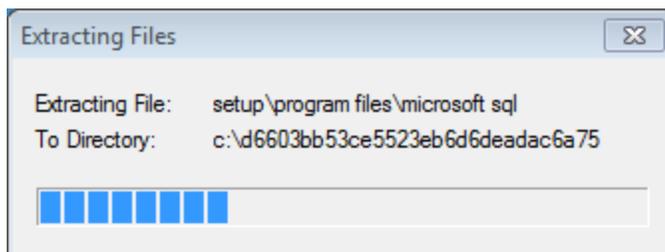
The Sentinel Protection Installer will run next to install the hardware lock drivers. This is usually pretty quick and you may see some windows open with a black background while this is installing.



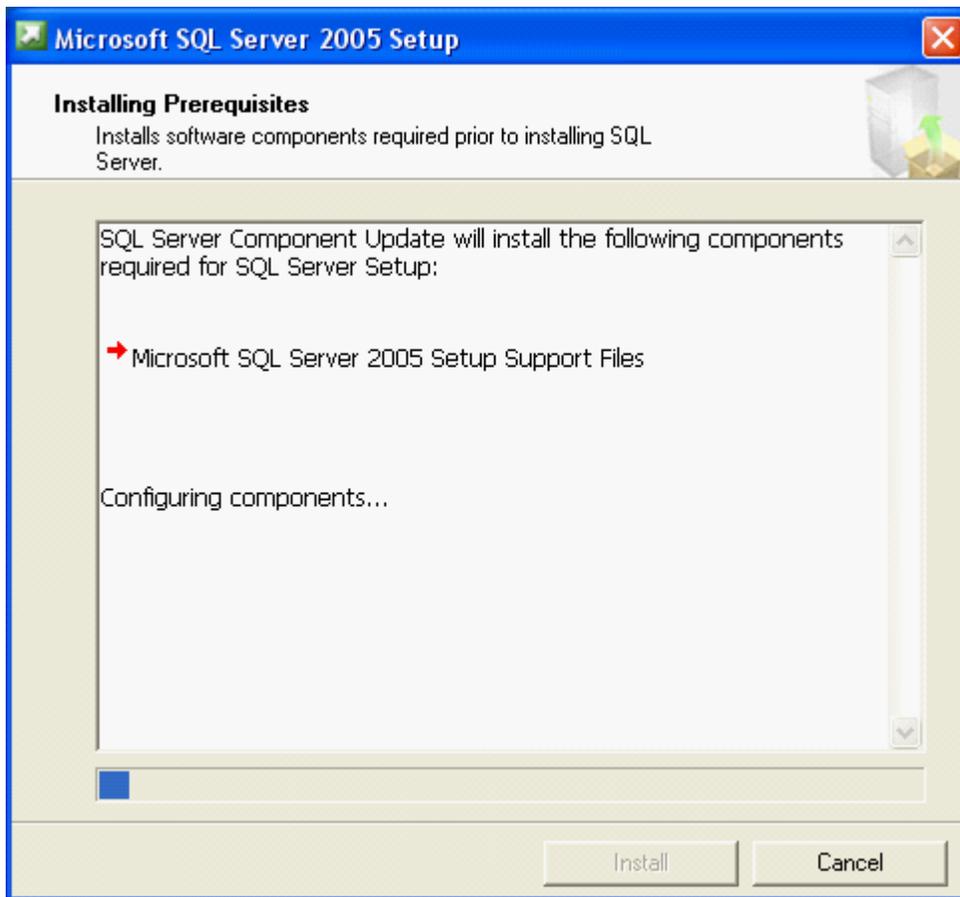
During the Sentinel install, the Router-CIM Progress screen will look like the one above.

After the Sentinel Protection Server is finished installing, the next section of the install is the SQL Server Express install.

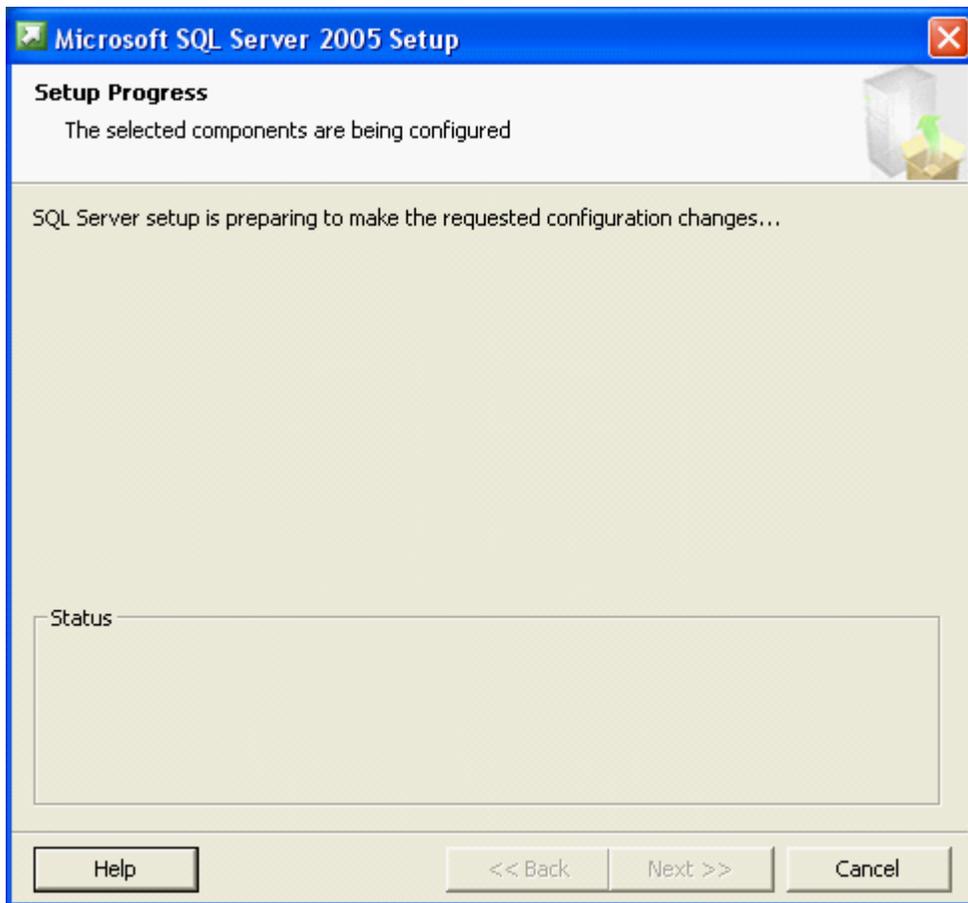
During this install, you will likely see a small progress bar like this:



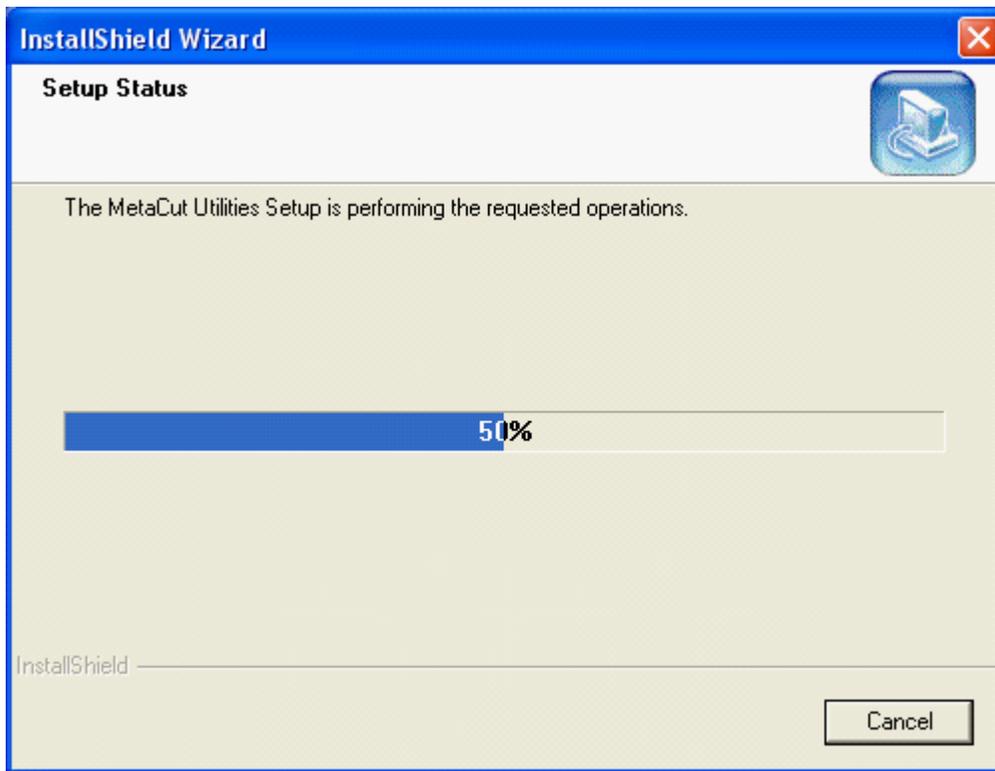
The progress will continue until the SQL Server is installed and configured.



During the configuration of the SQL Server, the window above will appear. Do not hit Cancel, the SQL will continue to install and configure.



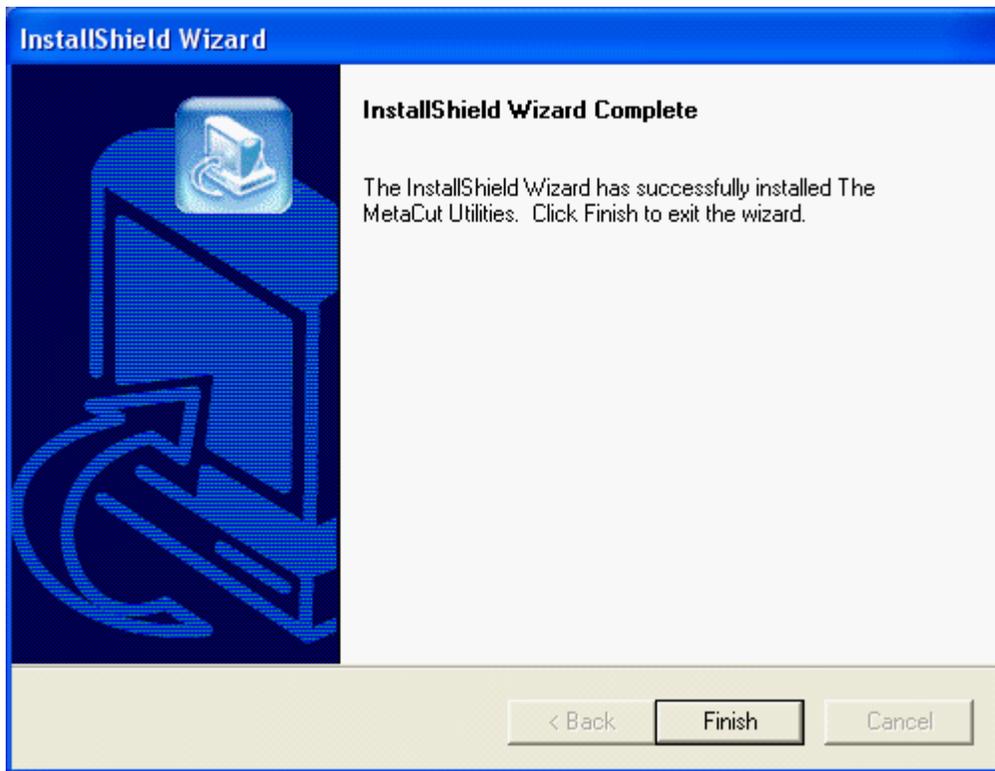
The SQL Server install screen will change slightly as it finishes its configuration.



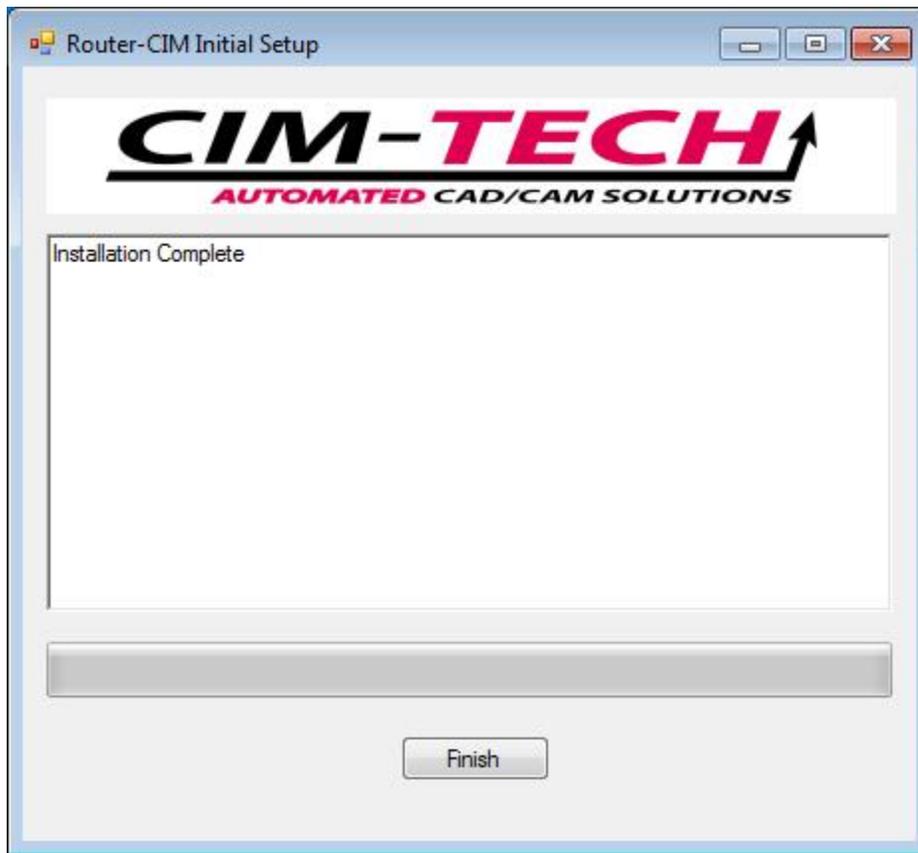
Tool Path Verification Software Install / Re-Install.

If the Tool Path Verification software (MCU) was purchased, the above screen will appear during the install.

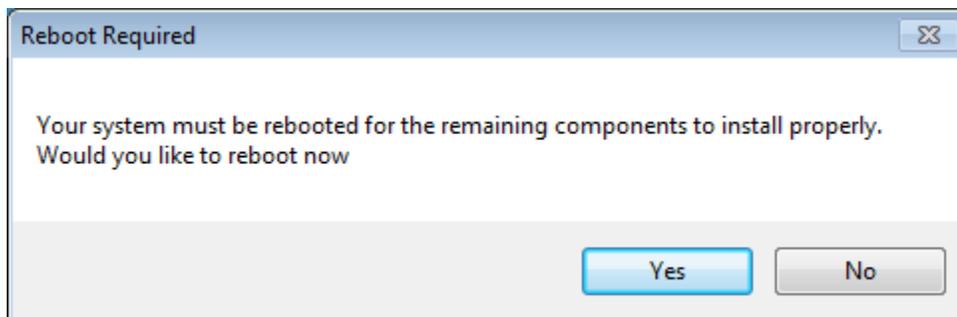
Once MCU is done installing, the following screen will appear.



Select Finish to continue.



Once the rest of the Automation components are installed, the installation is finished. You will see a message requesting you to Reboot your computer. The installation is not finished until you reboot your computer.



After the Reboot is finished, plug the hardware lock into the computer. There is either a parallel port lock (25 pin device) or a USB lock for a USB port.

2 Router-CIM Automation Suite

Router-CIM Automation Suite

The Router-CIM Automation Suite is a comprehensive suite of tools that allow Router-CIM to process any number of parts without user intervention. The capabilities include (but are not limited to):

- Cutting any number of parts
- Nesting
- Sorting
- Automatic NC Code Creation
- Common Line Cutting
- Tool Stay Down Cutting
- Labeling
- Reporting

The basic premise for the entire Automation Suite is Layer to Knowledge processing using the DOIT cycle. This provides for tool paths to be created in a standardized, regulated, and sortable manner for any type of part.

The following sections are broken up into the different areas of the Automation Suite program and are designed to give you as much information about the tools available as possible.

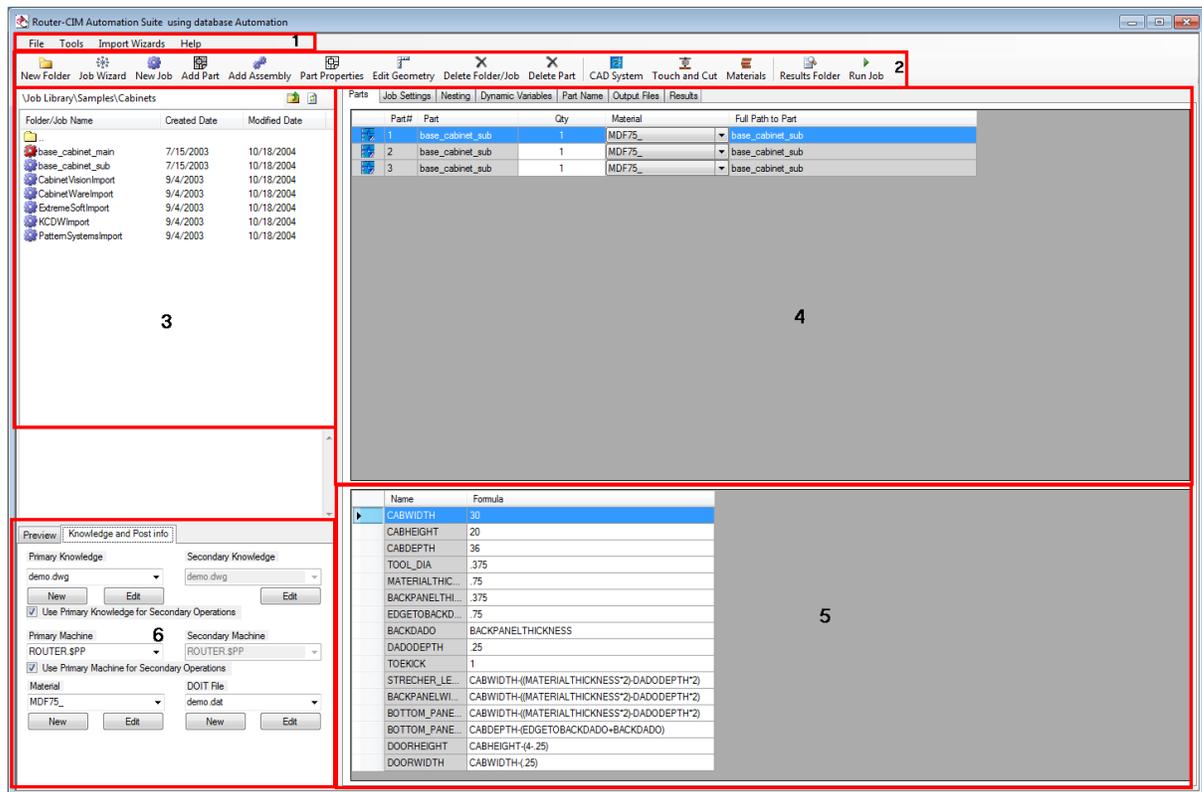
Admittedly, this does not make for enjoyable reading, but this section is meant to be a reference to the Automation Suite, and not a tutorial. Tutorials will be provided in other areas as they are created.

2.1 The Automation Interface

The Automation Interface

The Automation Interface is the link between you and Router-CIM. All the settings within Router-CIM are presented so that jobs can be made in either a completely repetitive manner, or a completely custom manner from job to job.

The interface is broken down into several parts. Each of these parts has a chapter describing its functionality. You can select on the items in the picture below for a link to each chapter.



- 1 - Menu Area
- 2 - Toolbar
- 3 - Folder Tree
- 4 - Part Window
- 5 - Variables Window
- 6 - Knowledge Settings

2.1.1 Menu Area

Menu Area

The Menu Area of Router-CIM Automation Suite contains the following sections:

File

- Database Maintenance
- Settings
- Print Options
- Exit

Tools

- Automatic G-Code Scan
- Pack and Go
- AutoNest System Preferences

- Clear AutoNest Task and Part Folders
- Restore Startup Drawing
- Create New Knowledge Drawing
- Save Current Settings as Job Defaults

Import Wizards

Cabinetware
CabinetVision
Comma Delimited
Excel Spreadsheet
Extreme Software
Pack and Go
Pattern Systems
KCDw

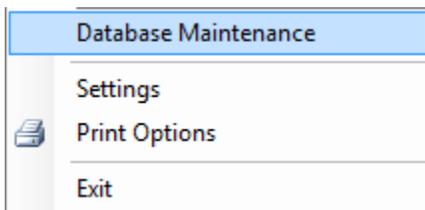
Help
Help
About

2.1.1.1 File

File Menu

There are several options available in the File menu. These options include database management, Automation Suite settings, and options for selecting your default printer for Automation.

Each of the items will be explained in detail in the following sections.



2.1.1.1.1 Database Maintenance

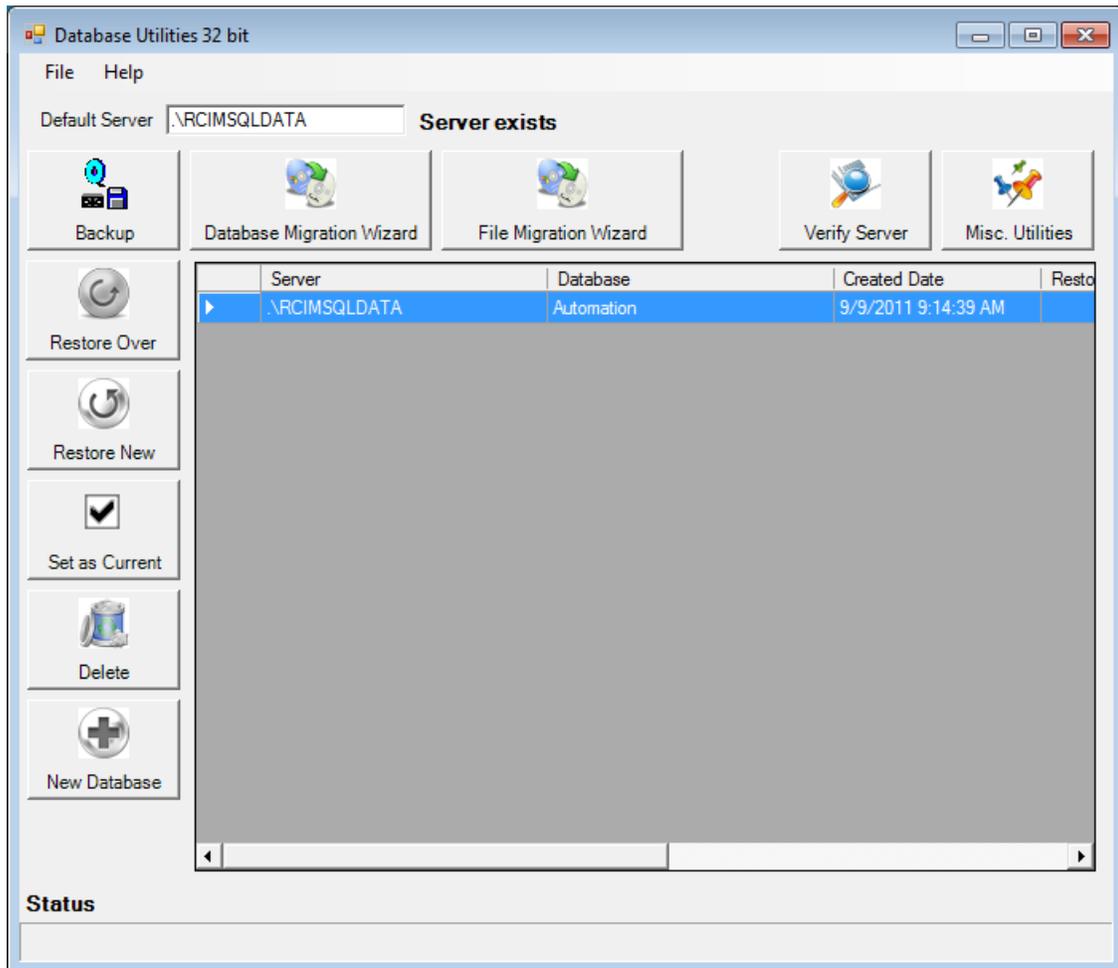
Database Maintenance is a set of utilities for working with the databases in Router-CIM. From these menu choices you can back up, restore or even convert an old database to the new format.

The choices available are

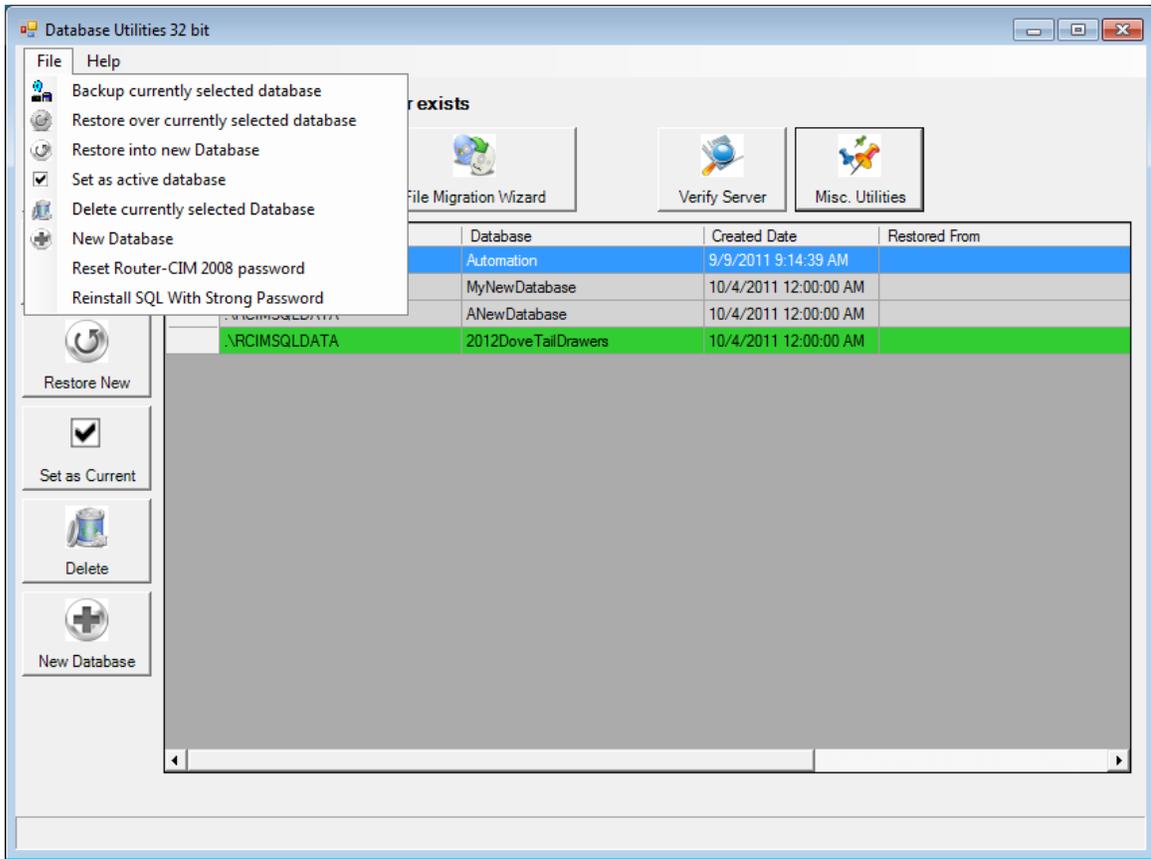
- Backup
- Restore Over
- Restore New
- Set as Current
- Delete
- New Database
- Database Migration Wizard
- File Migration Wizard

- Verify Server
- Misc. Utilities

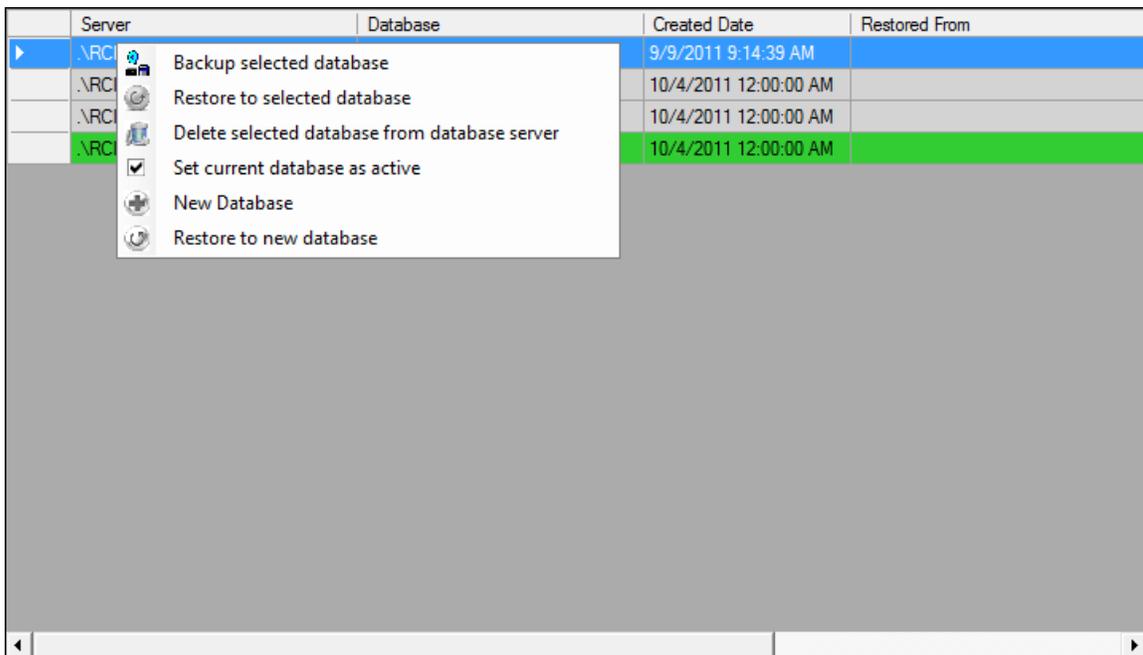
Selecting the Database Maintenance will show the Database Utilities window where all the options for modifying and creating your databases are kept.



You can also select the File menu pick and the database choices are there as well.



Last, Right Clicking on the databases in the list window will show choices available.



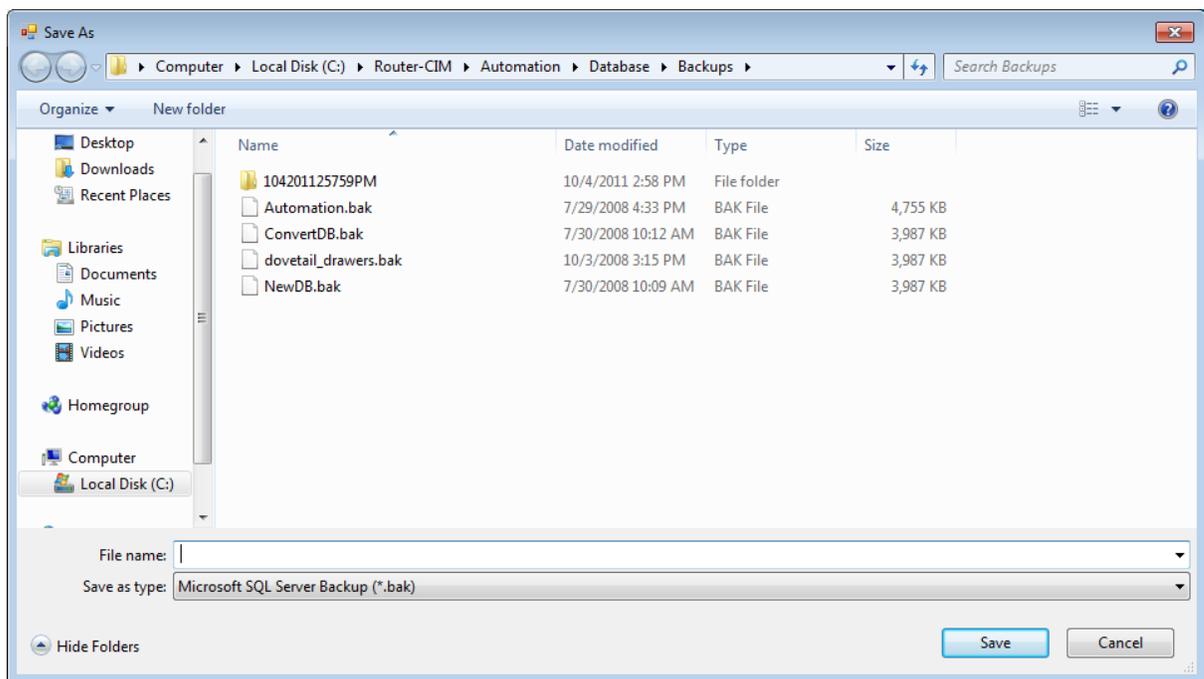
2.1.1.1.1.1 Backup

Backup Database

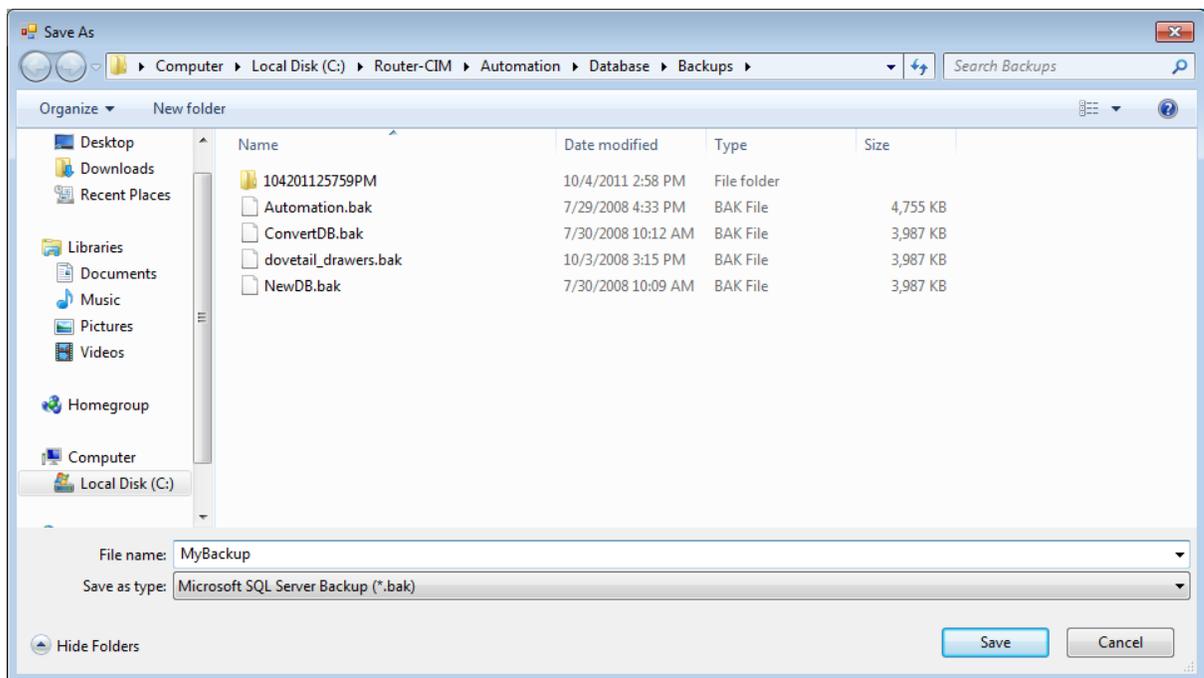


The Backup function will back up the selected database to a backup file format for later re-use with the Restore command.

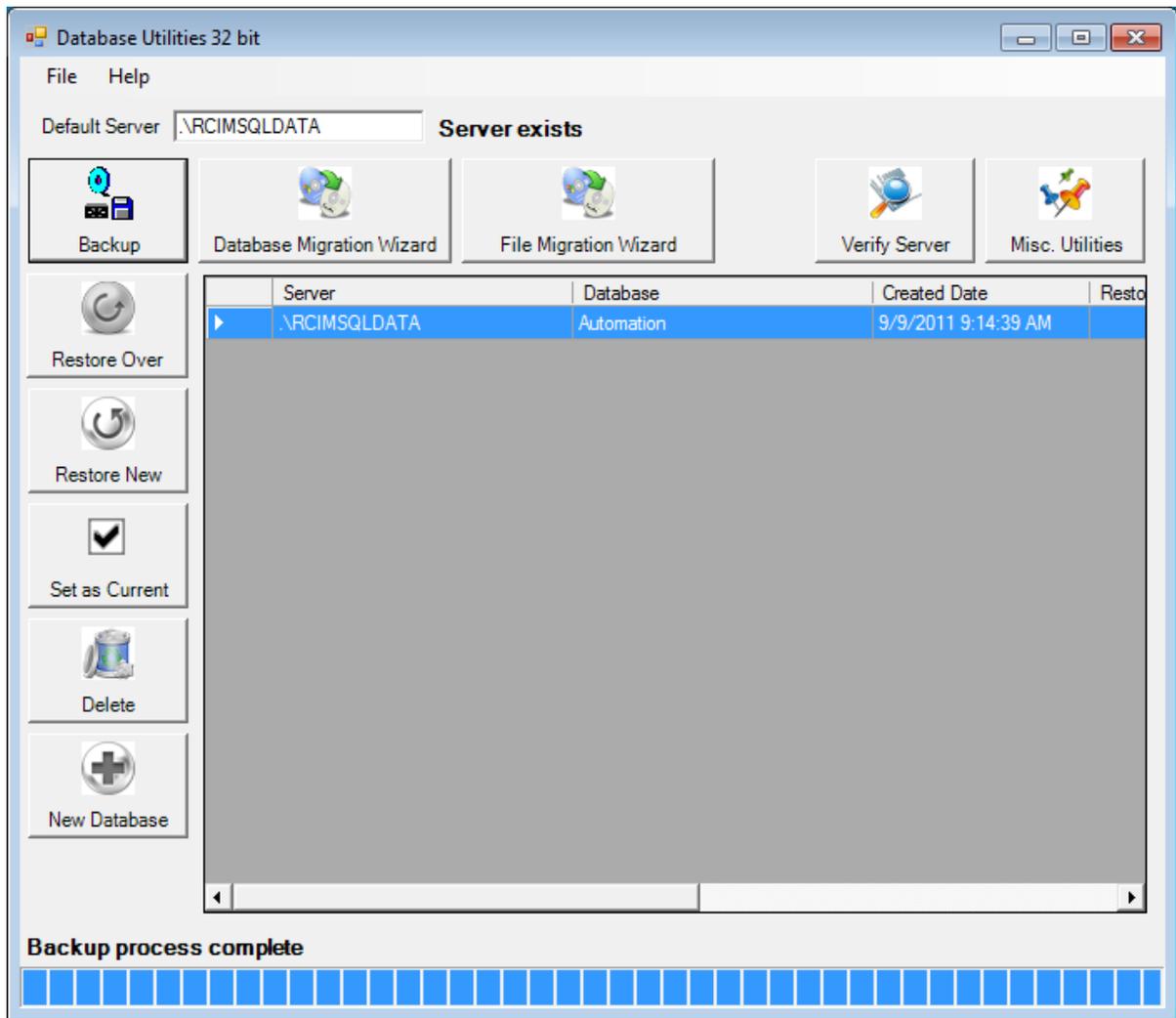
Once you select a database, and select the Backup button (or Right Click on a database and select Backup Selected Database) a window will open looking for a name to back up the database to.



You have to enter a name for the backup file for the database.



Type a name into the File Name field and then select Save.

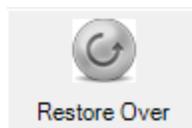


Once you select Save, a backup of the database will occur, and a file with the name of the file and a .BAK extension will be created.

The Default Folder for a database backup is C:\Router-CIM\Automation\Database\Backups.

2.1.1.1.2 Restore Over

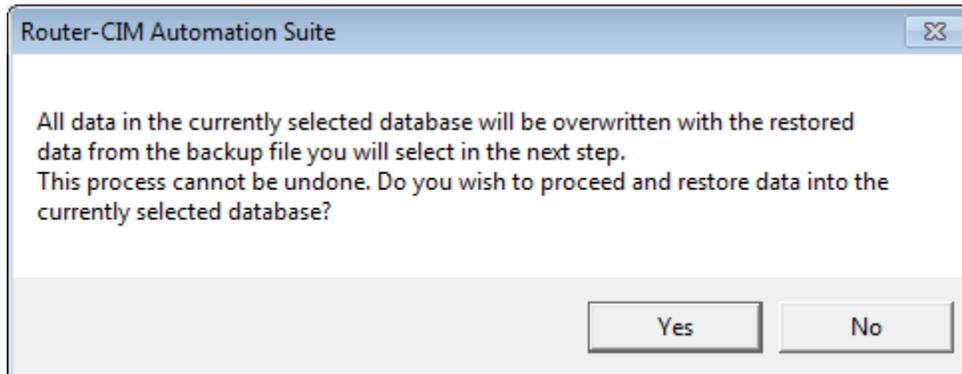
Restore Over Database



Using Restore Over will reconstruct a database that you had used previously and that was stored as a backup in the Router-CIM system, over the top of the currently selected database. This option completely overwrites the current database with the data from the backup file you select.

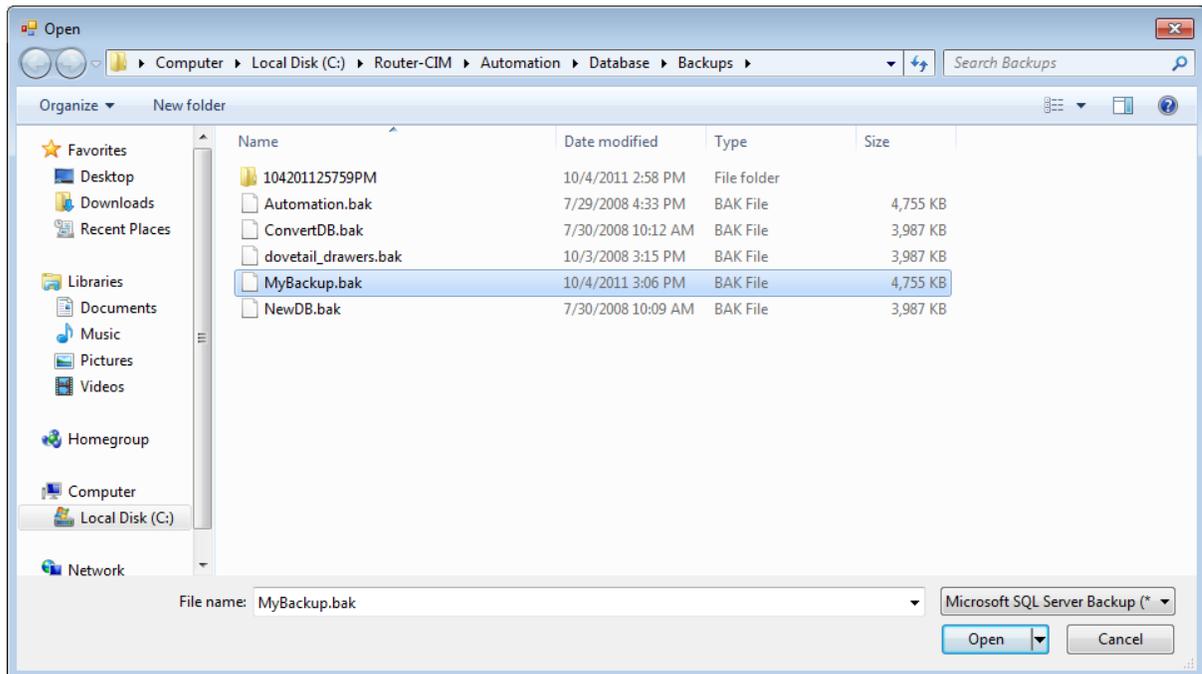
Once you select Restore Over, you will have to confirm that you want to overwrite the currently

selected database with the backup version you select in the next step.

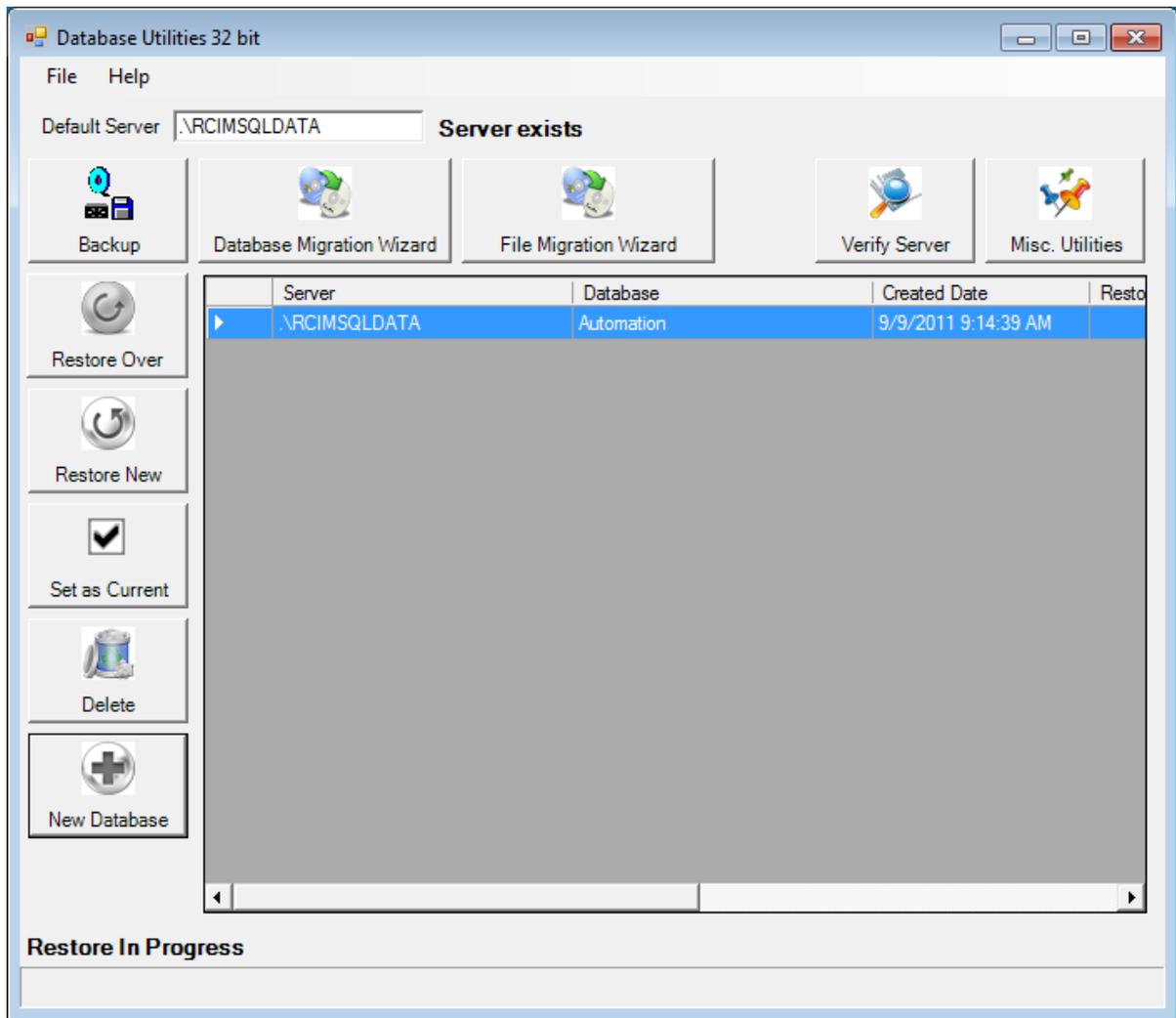


Select Yes to restore over the currently selected database.

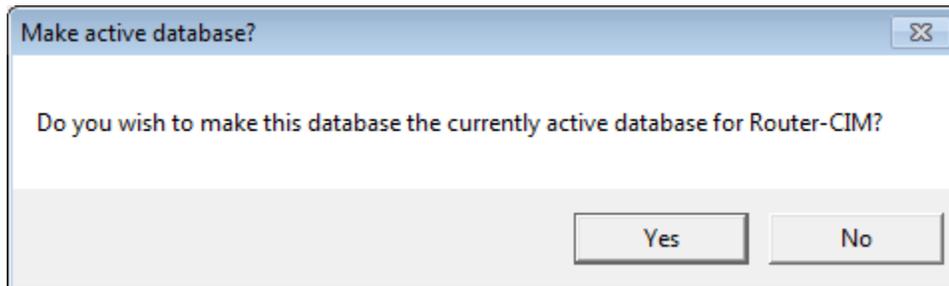
A new dialog box will open for you to select the database you want to restore into the currently selected one.



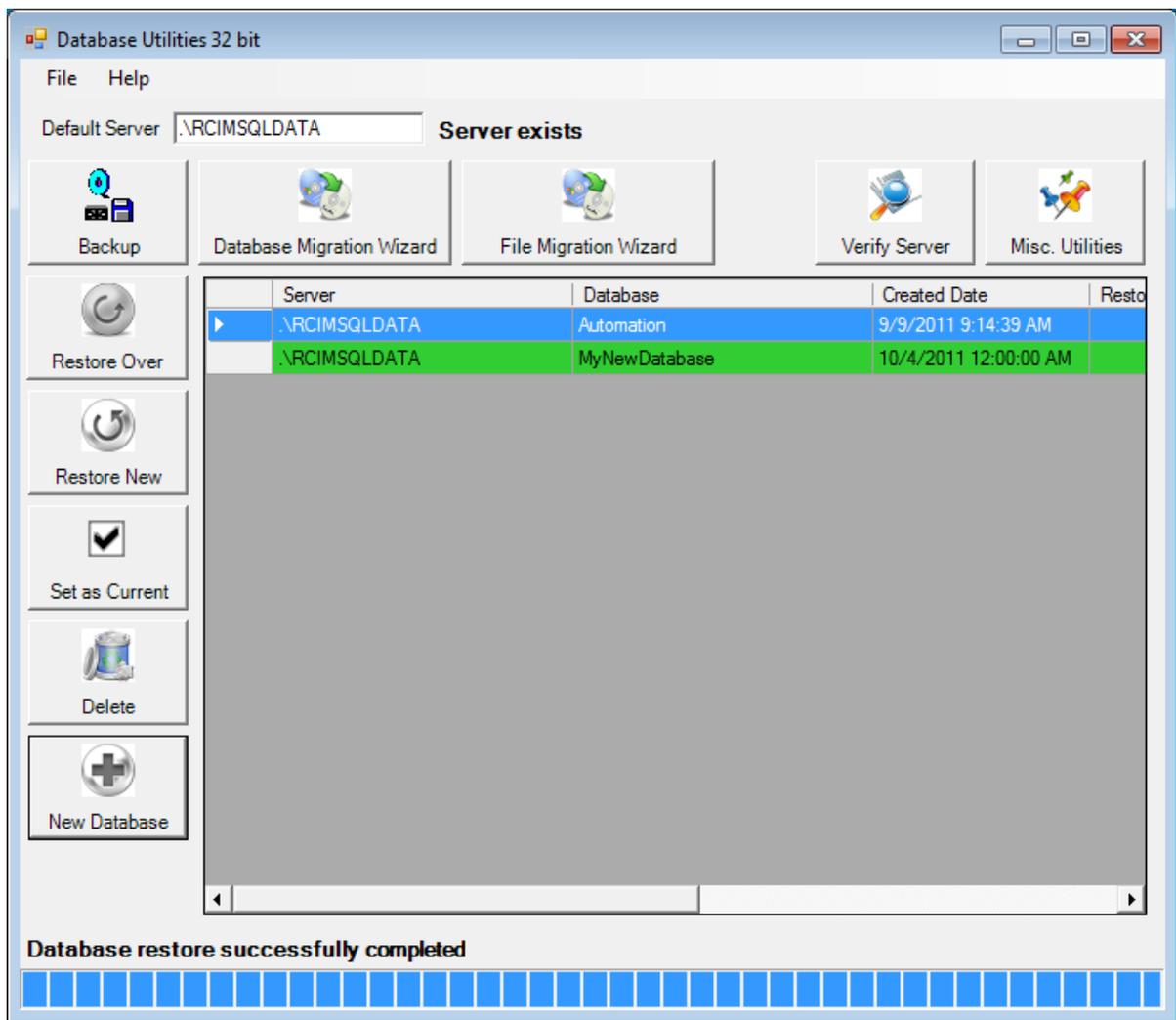
Select the database you want to restore and then select Open.



After selecting OK, you will see the database window, while the restore is in process.



A prompt will appear asking if you want this to be the currently active database for Router-CIM. If you select Yes, then the database created will be the selected database when you resume Router-CIM. If you select No, then the first database in the list will be made current.



Once you select Yes the restore will continue and the new database will be made current and it will be selected.

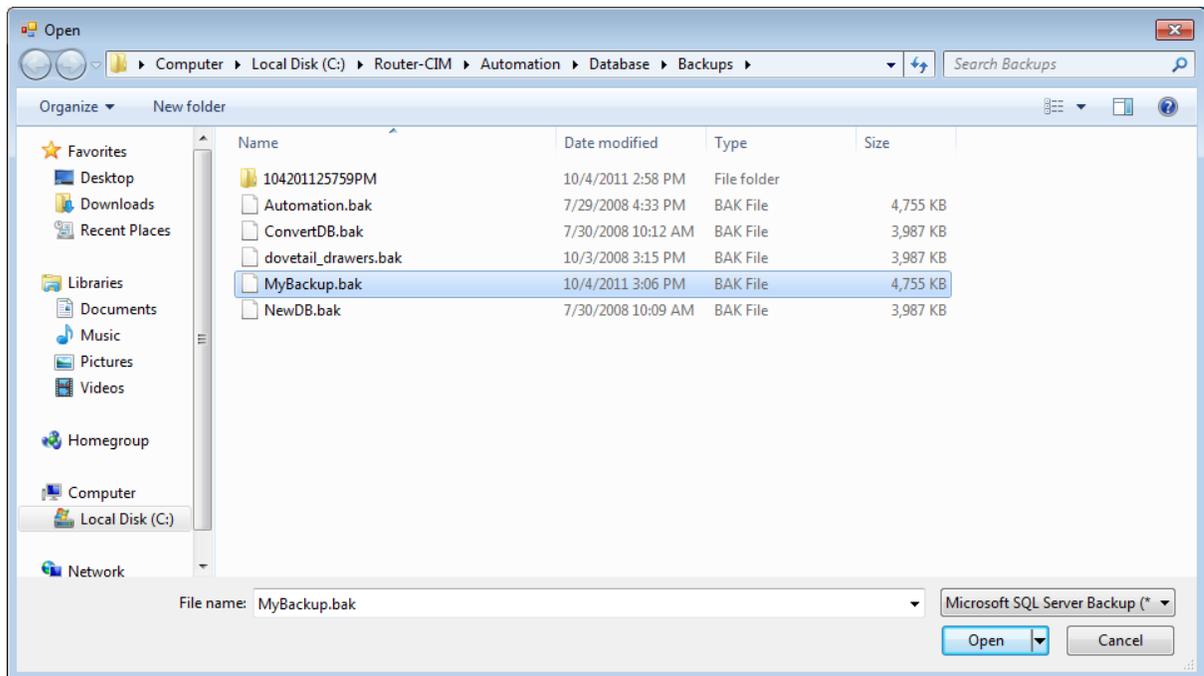
2.1.1.1.1.3 Restore New

Restore New Database

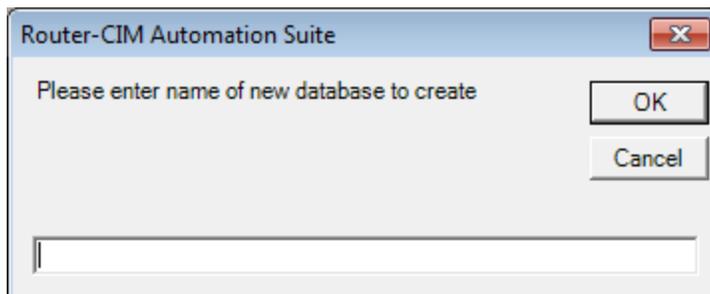


Using Restore New will reconstruct a database that you had used previously and that was stored as a backup in the Router-CIM system, in a new database. This creates a new database with the data from the backup file you select.

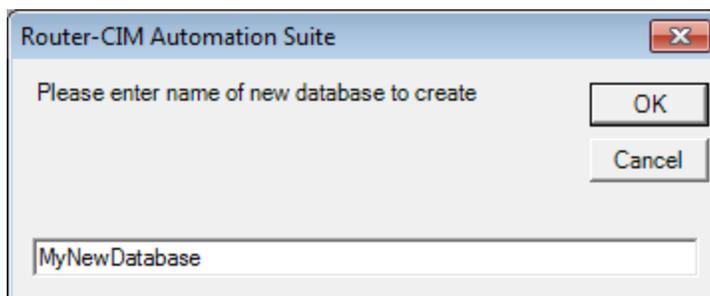
Once you select Restore New, you will have to select the database you want to restore.



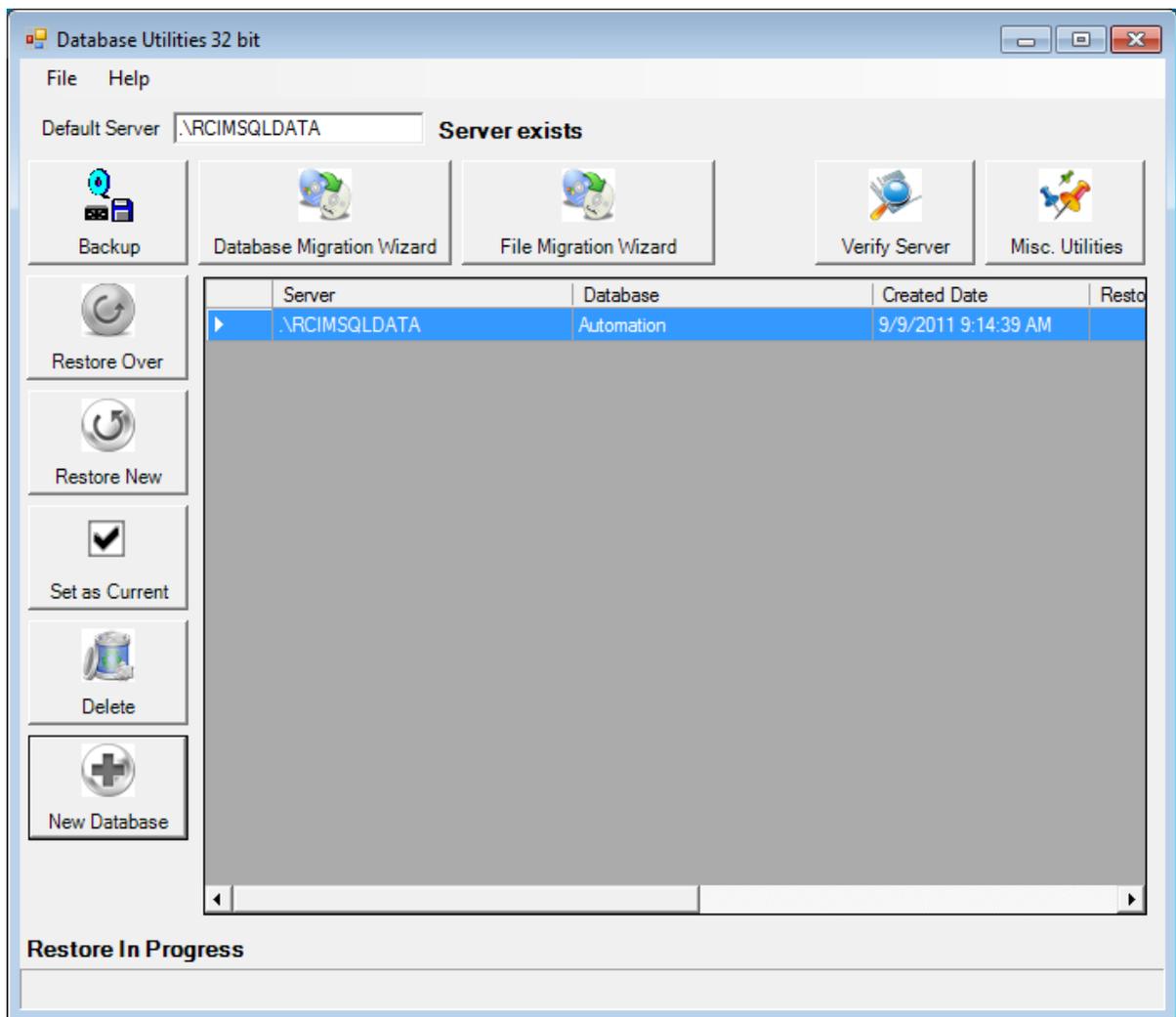
Then you will enter a name for the database you want created from the new process.



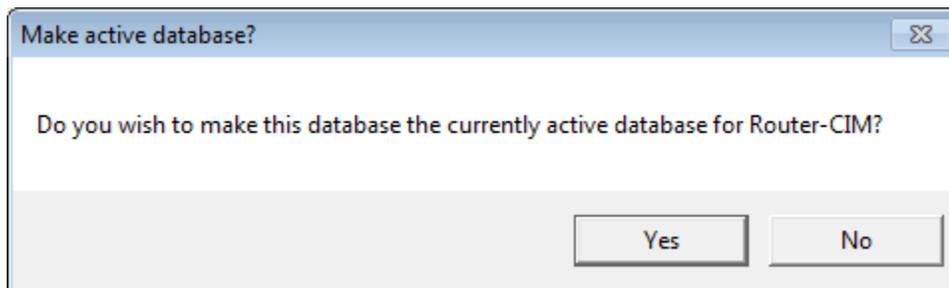
Type in a name for the new database.



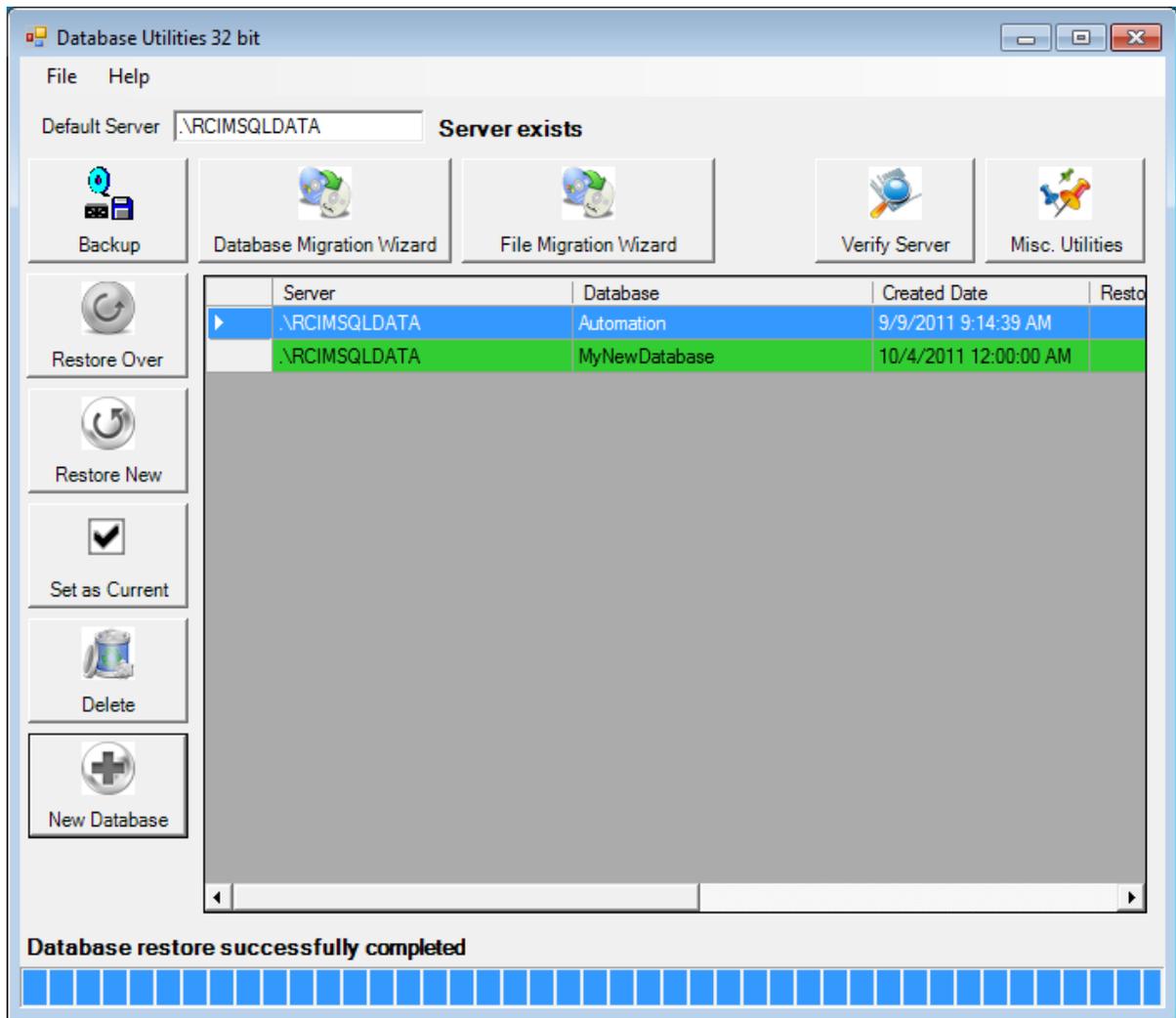
Then select OK.



After selecting OK, you will see the database window, while the restore is in process.



A prompt will appear asking if you want this to be the currently active database for Router-CIM. If you select Yes, then the database created will be the selected database when you resume Router-CIM. If you select No, then the first database in the list will be made current.



Once you select Yes the restore will continue and the new database will be made current and it will be selected.

2.1.1.1.1.4 Set as Current

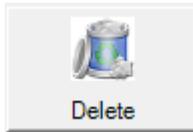
Set as Current



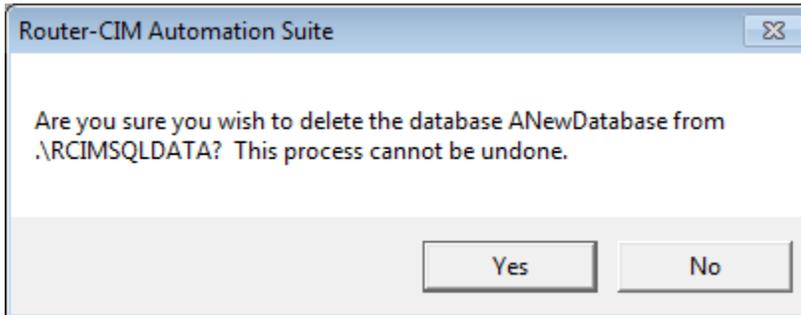
Using Set as Current will change the database Router-CIM is currently using to the database selected and make that database current.

2.1.1.1.1.5 Delete

Delete Database



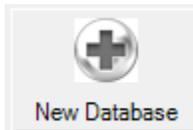
Delete a database from the current list of available Databases.



You will be prompted to be sure you want the database deleted. Once deleted, the database cannot be restored (except from a backup file).

2.1.1.1.1.6 New (Database)

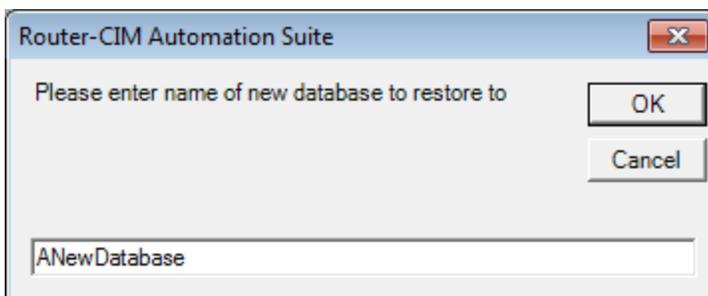
New database



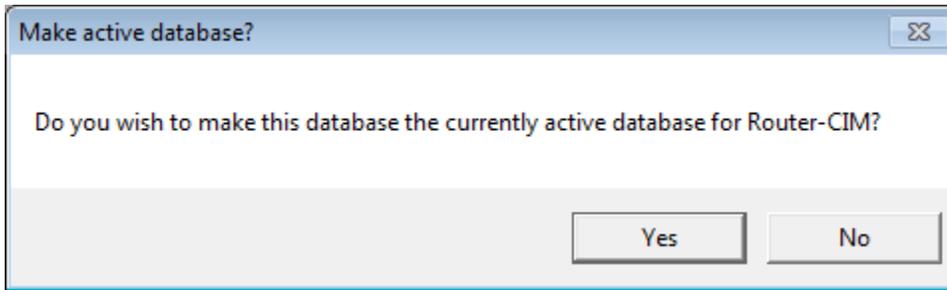
Selecting New from Database Maintenance will allow you to create a new database entry in the database list and will allow you to make that database current.

This selection is used when you wish to create a new, blank database to work from.

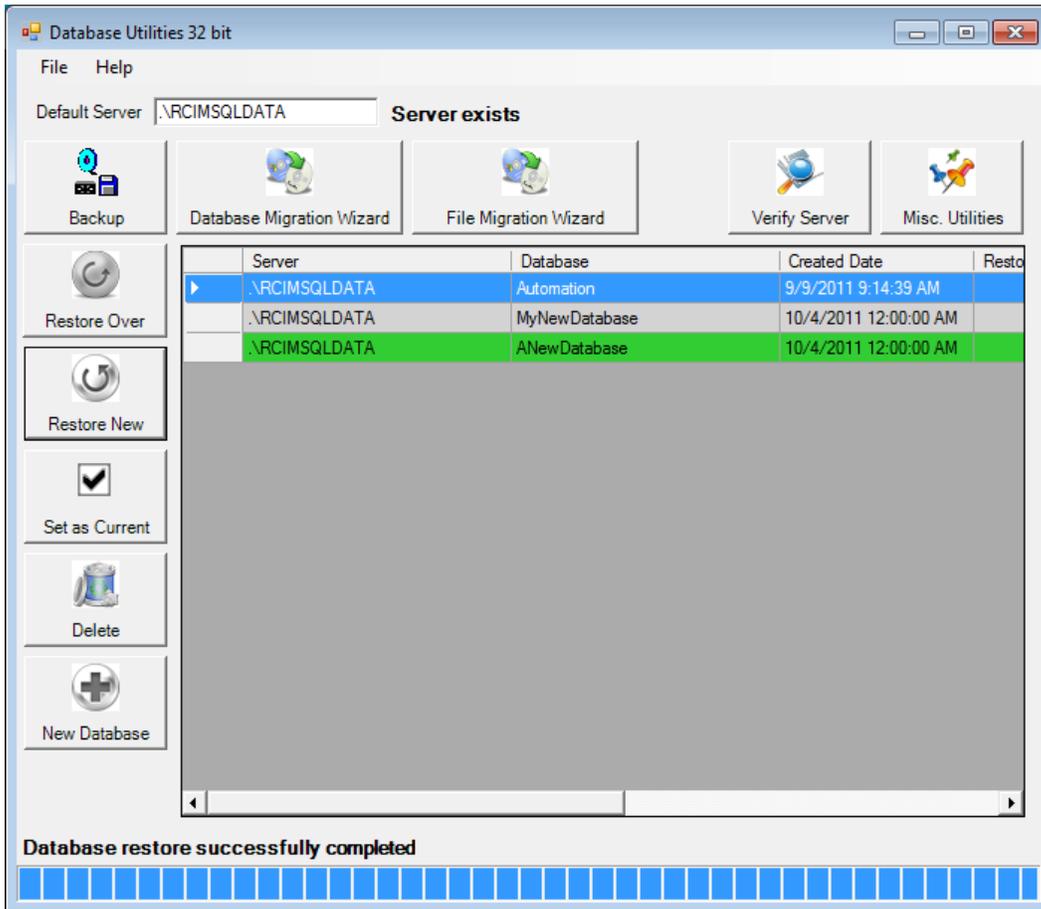
The first window will prompt you for the name of your new database.



Type in a name and select OK.

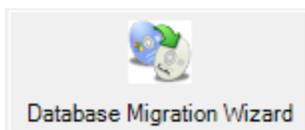


If you select Yes, then the database you named will be created.



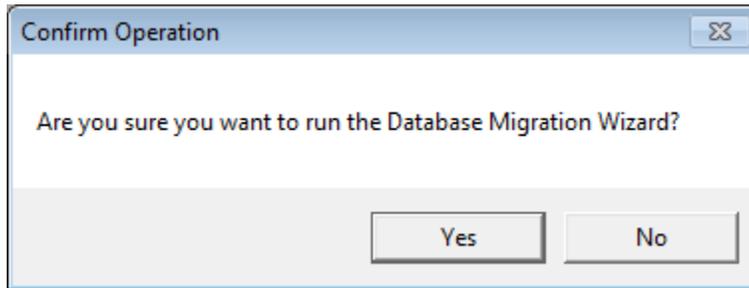
2.1.1.1.1.7 Database Migration Wizard

Database Migration Wizard



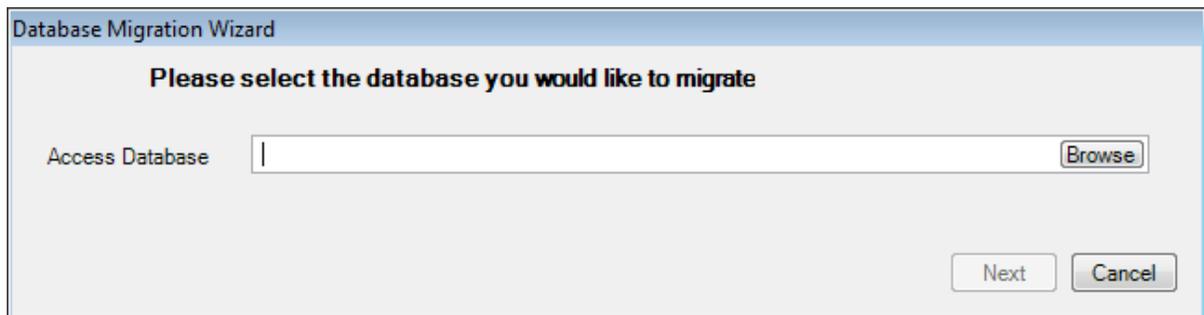
The Database Migration Wizard will import an older Router-CIM Automation Suite database (Version 2004 - 2008) made from Microsoft Access.

Once you select the Migration Wizard, you will get the following prompt.

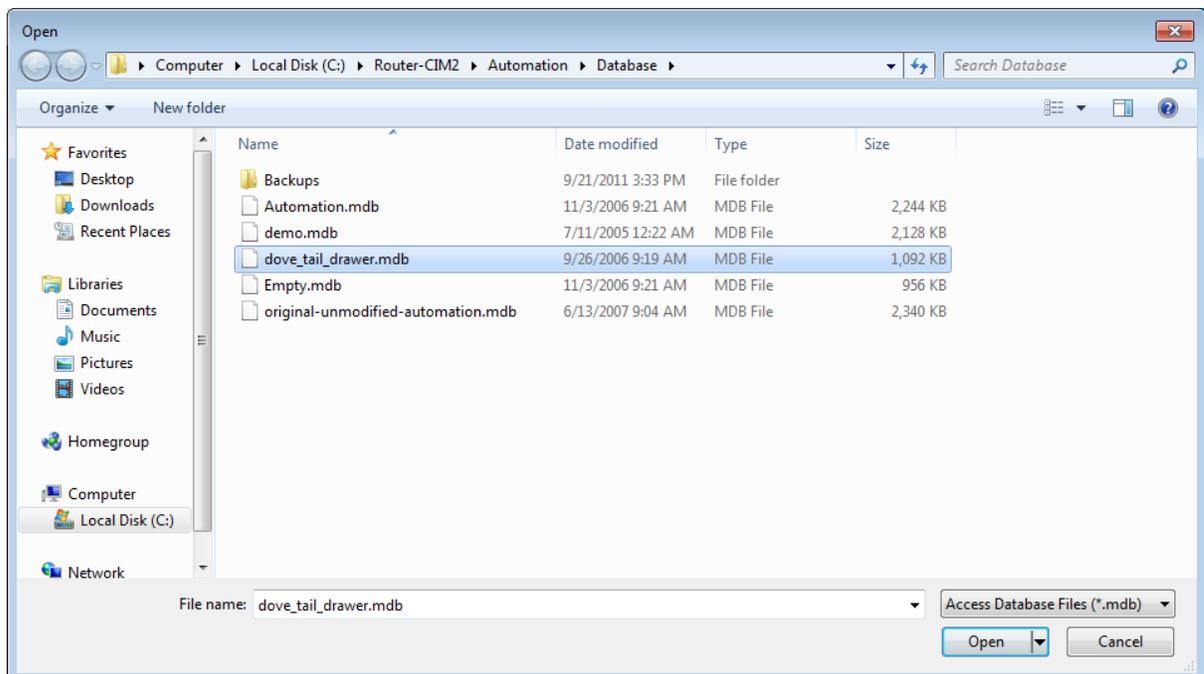


Select Yes to continue, or No to cancel the operation.

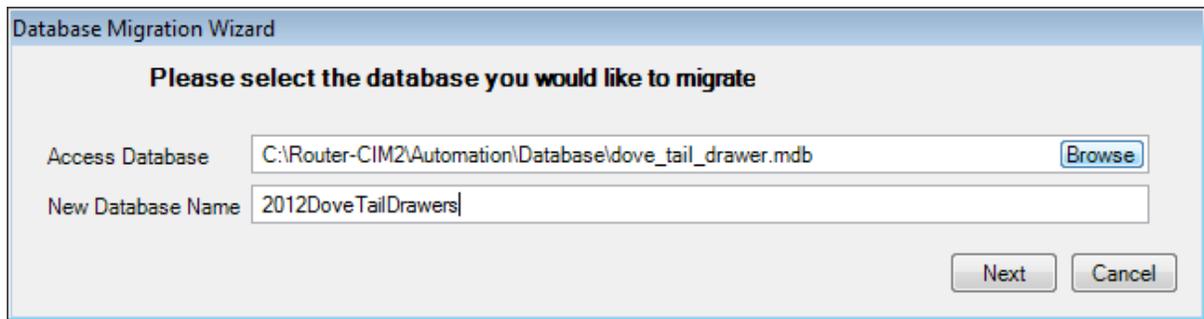
If you select Yes, a window will appear where you can Browse to select a database.



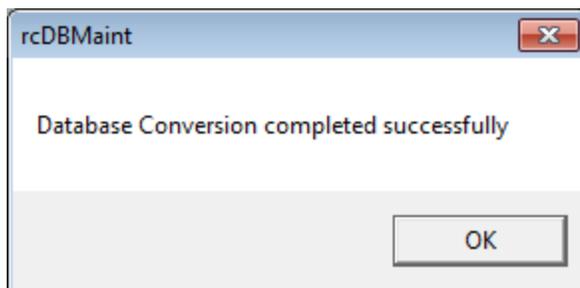
Selecting Browse, will open a window where you can pick your Access database.



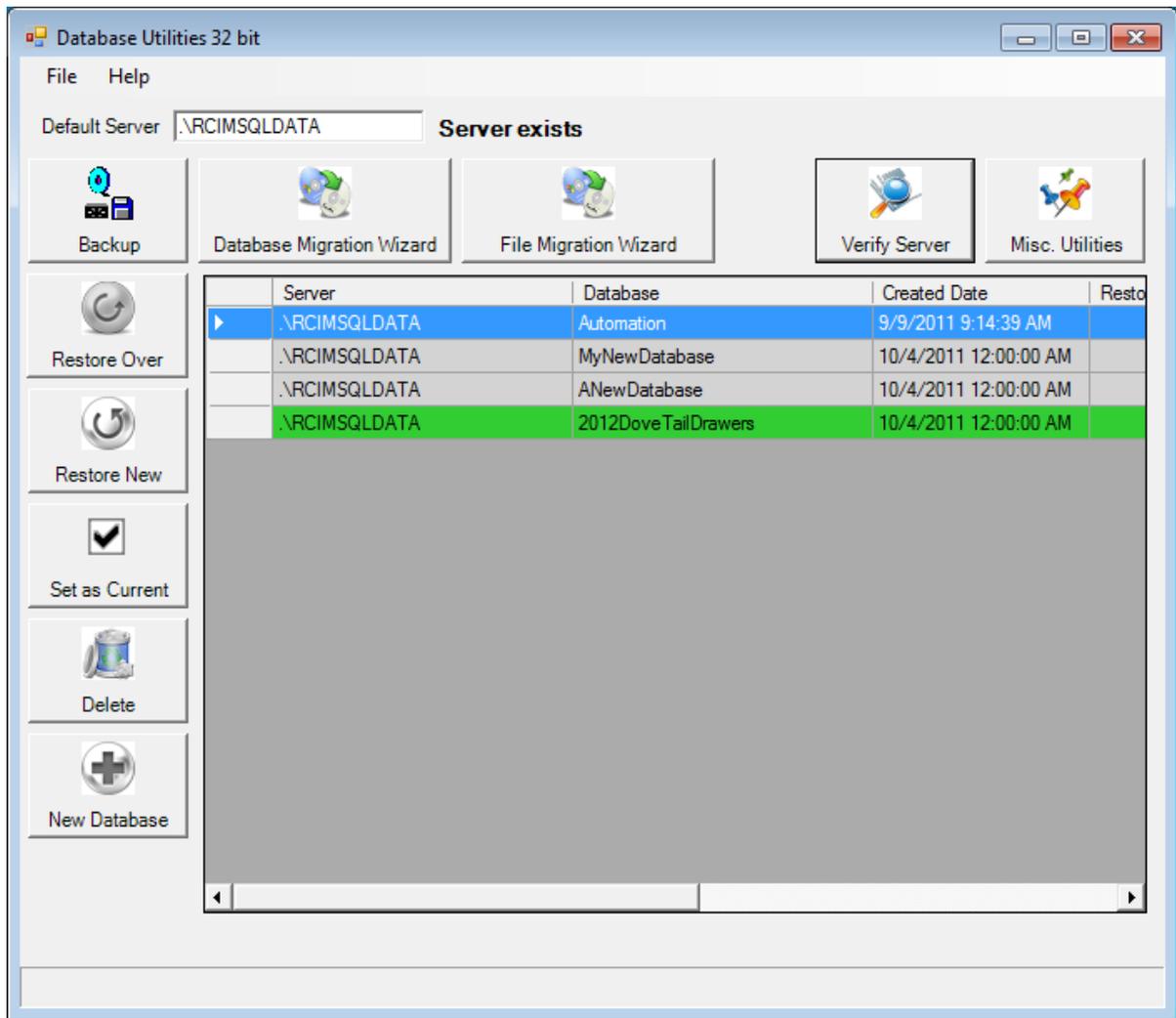
Once you select the database, you must select Open to allow the database to be selected.



Once the database is selected, you can then type in a New Database Name. Then select Next to perform the migration.



Once the database is converted, you will see the database in the Database list.



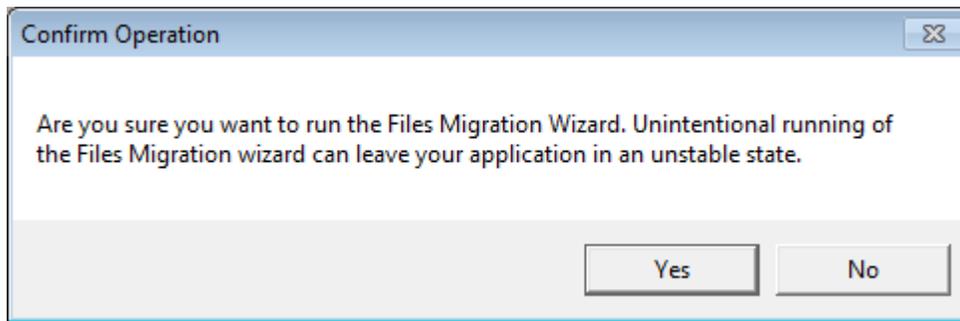
2.1.1.1.1.8 File Migration Wizard

File Migration Wizard



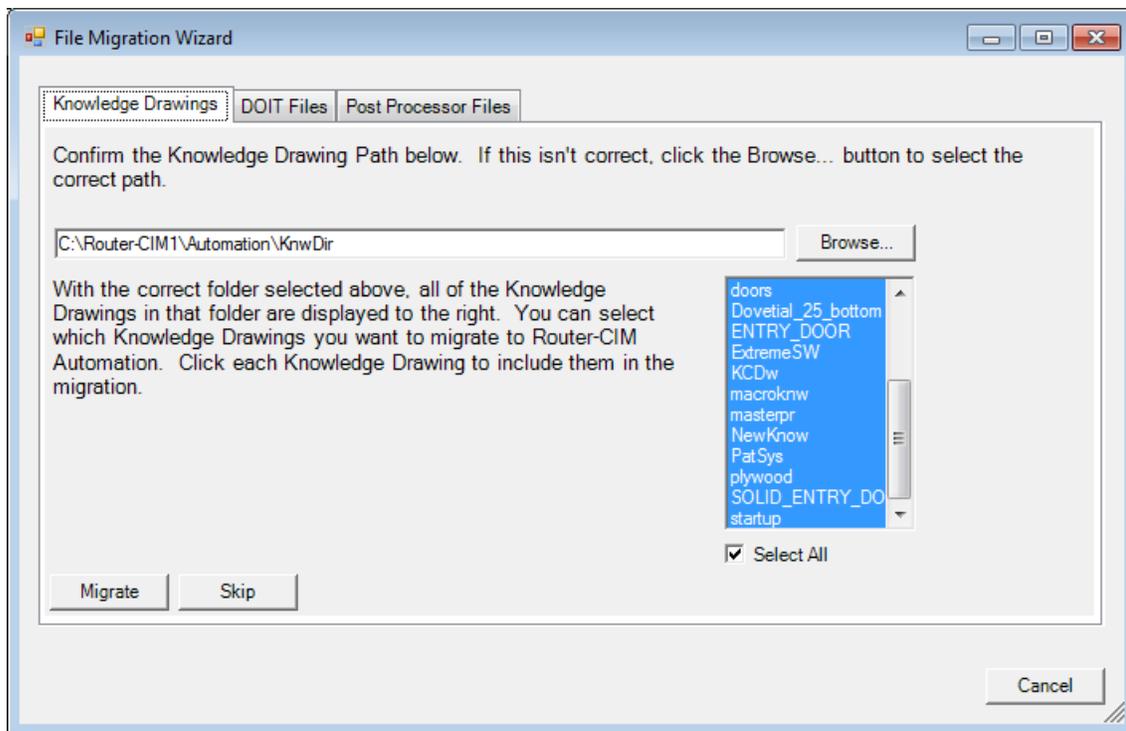
The File Migration Wizard will allow you to copy over the knowledge drawings, doit files, and post processor files from an older version of Router-CIM to the new version. By default, the Migration Wizard will look in the default backup folder Router-CIM creates when you install 2013 over the top of an older version of Router-CIM.

Selecting the File Migration Wizard, you are prompted to make sure you want to overwrite the files with older versions.

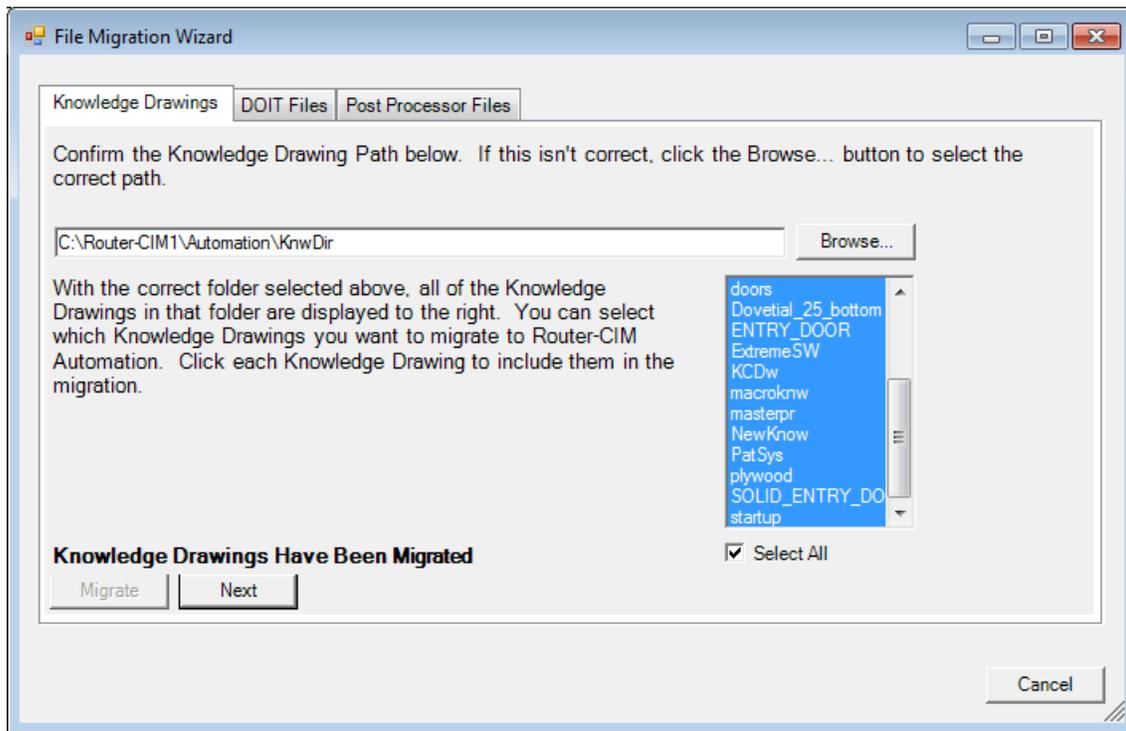


Selecting Yes, you are then shown a Wizard screen where you can select which elements you want to migrate.

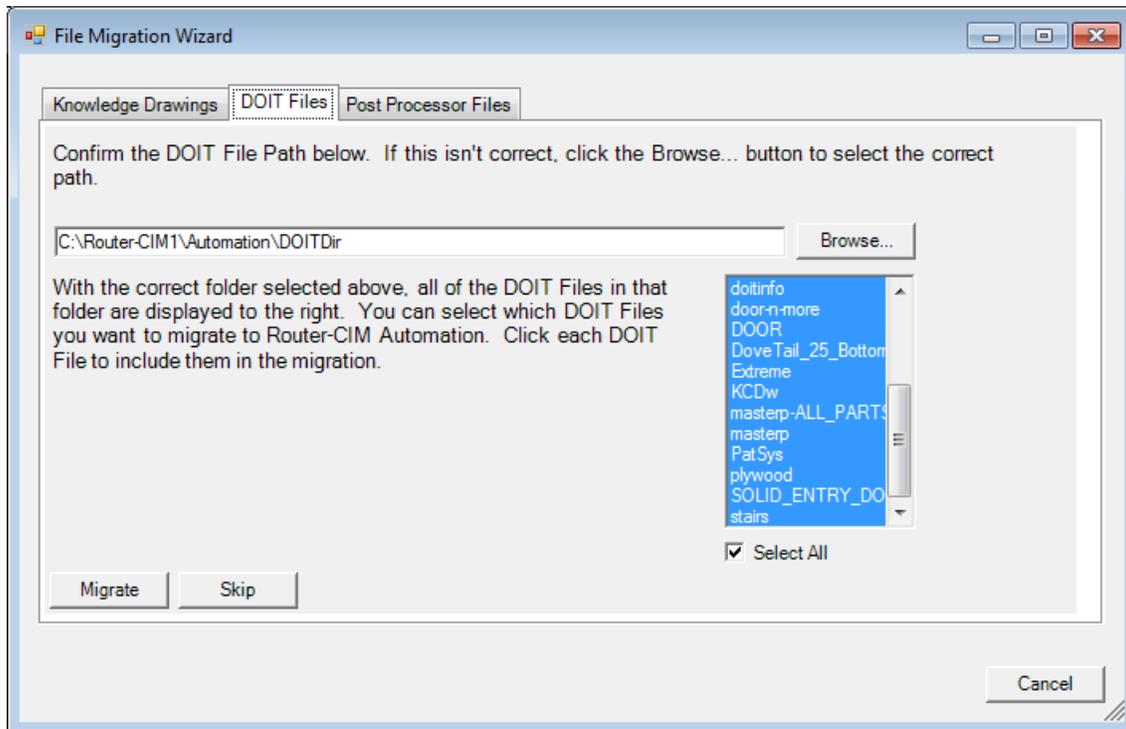
Knowledge drawings are first. You can browse to another folder if the one selected is not correct. You can select Migrate or Skip. Skip will bring you to the next item (doit files).



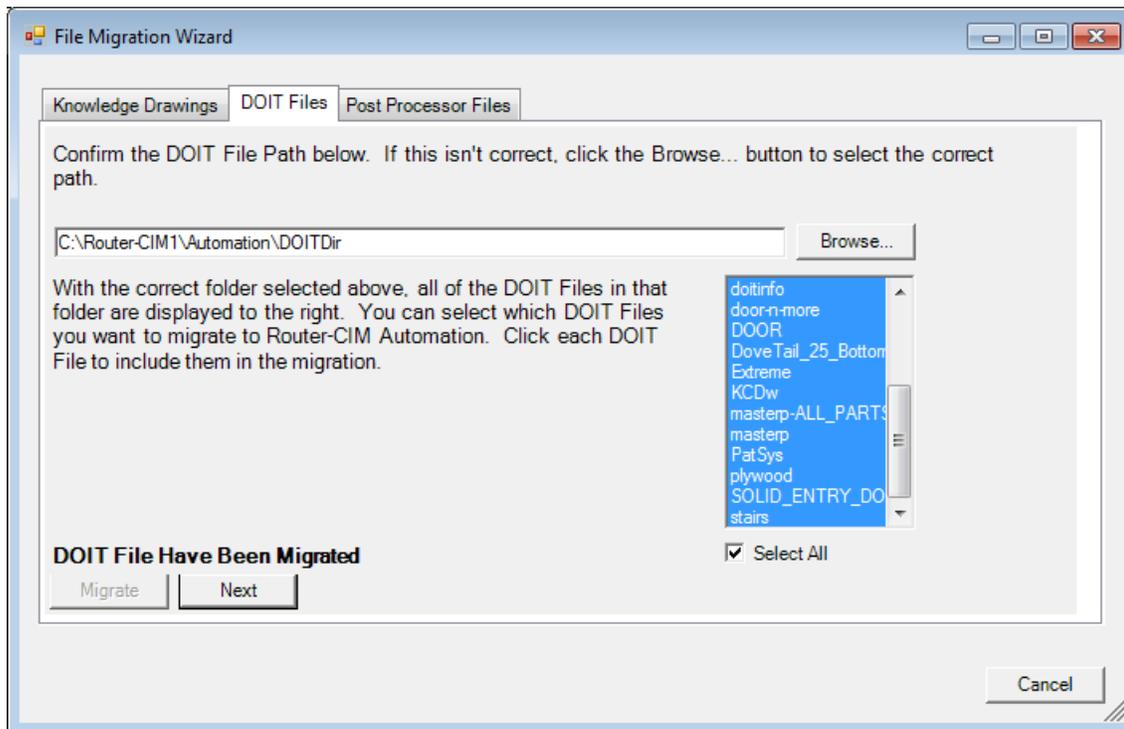
Selecting Migrate, the files will be copied to the new location and the status will show Knowledge Drawings Have Been Migrated.



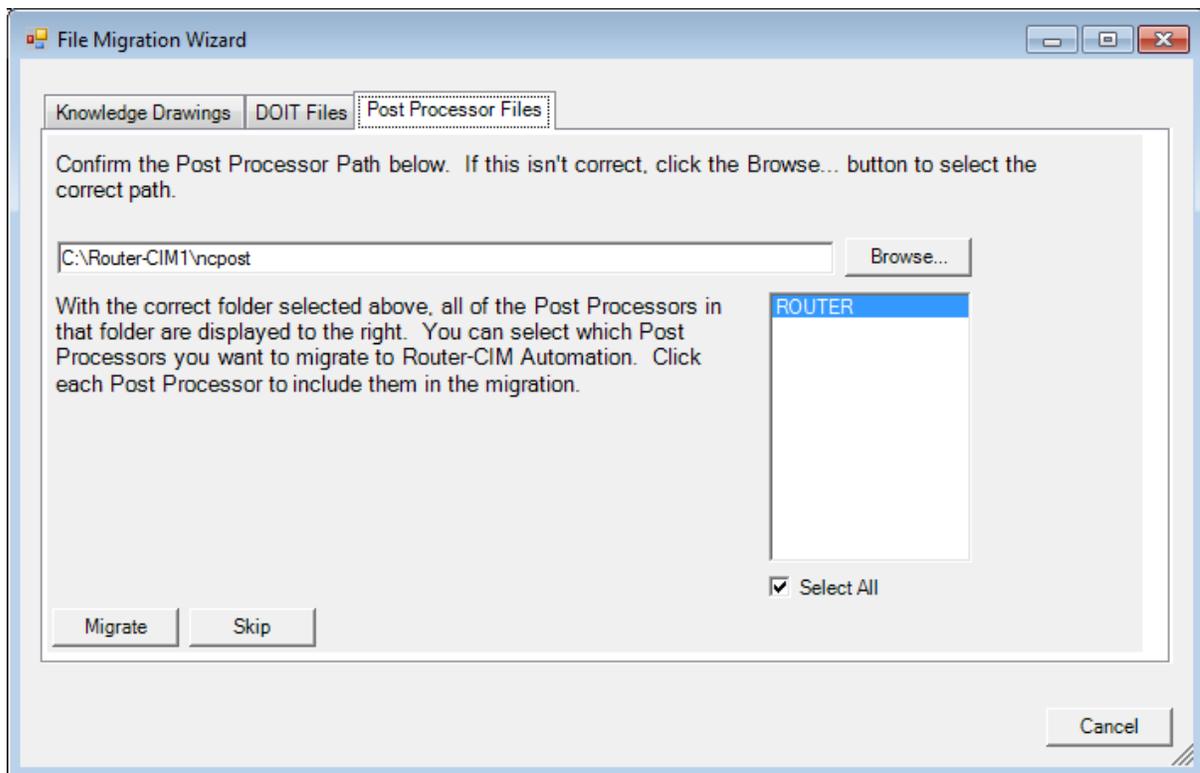
Select Next and you will move to the DOIT Files.



Similar to the Knowledge Drawings, you can browse to another folder or select the default. Then select Migrate or Skip.



If you select Migrate, you will get a status message showing DOIT File Have Been Migrated.



The last item is the Post files, where you can Browse to another folder or select the default. Then select Migrate.

Once all the files have been migrated, you will return to the database tool.

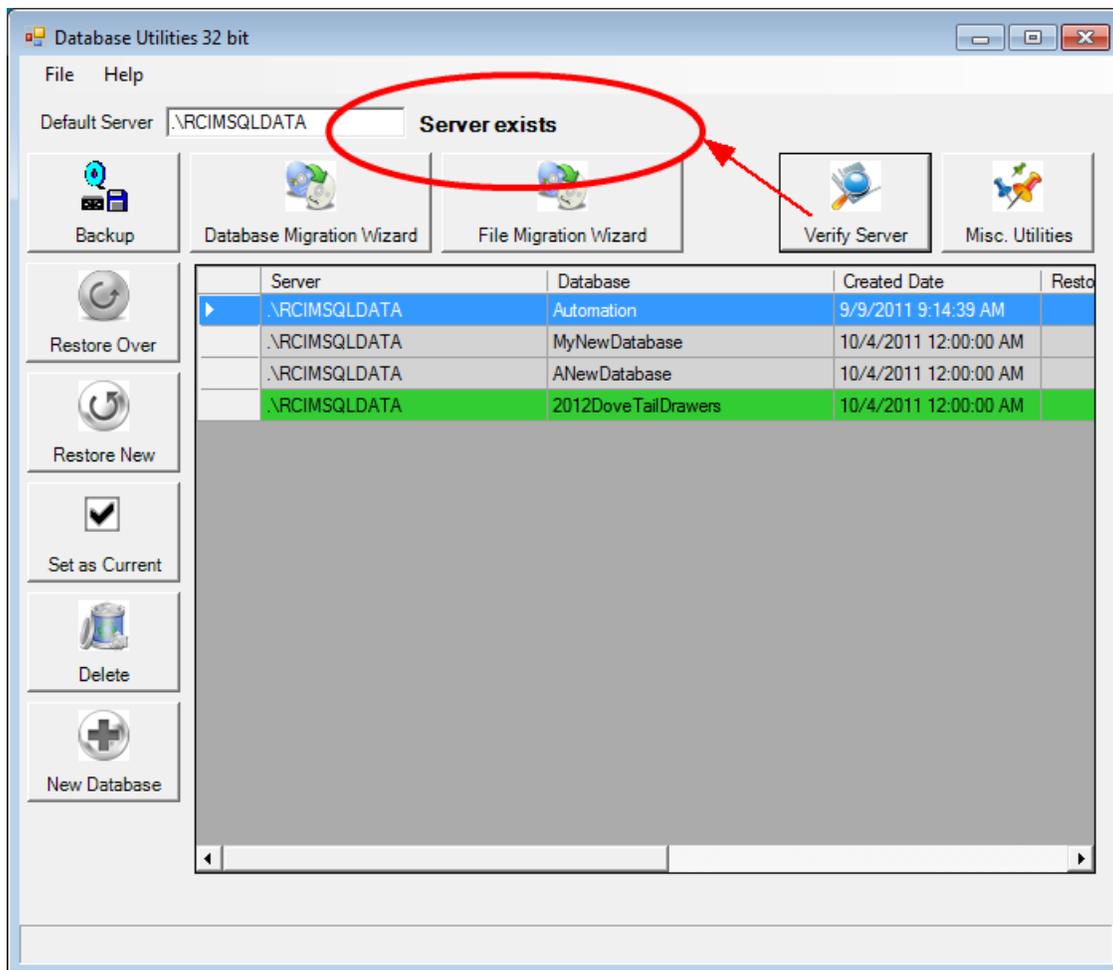
2.1.1.1.1.9 Verify Server

Verify Server



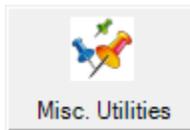
Selecting Verify Server will allow Router-CIM to check and see whether or not the database server (service) is running on your computer.

A notice next to the Default Server window will show Server exists.



2.1.1.1.1.10 Misc. Utilities

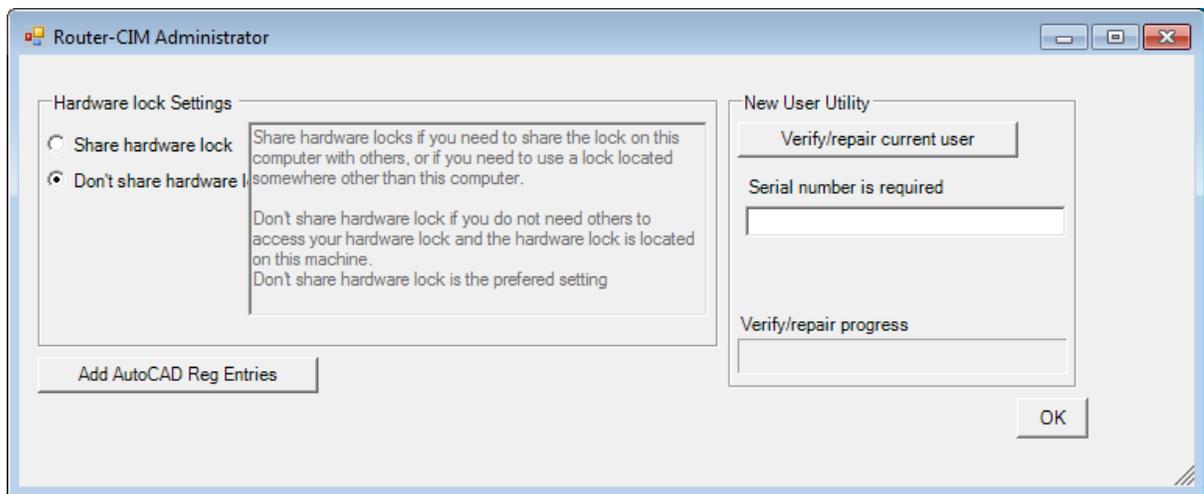
Misc. Utilities



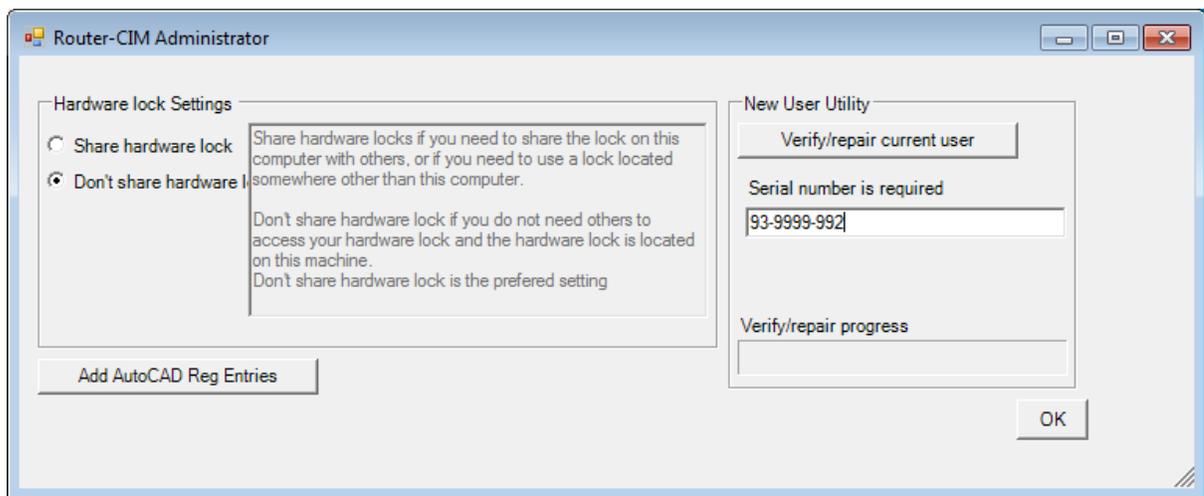
The Misc. Utilities Function will allow you to fix the following issues:
Allow a new user to have all the Router-CIM registry entries created.
Allow Local or Shared Hardware Locks.
Allow AutoCAD registry entries to be added when a new AutoCAD is installed.

Add a New User

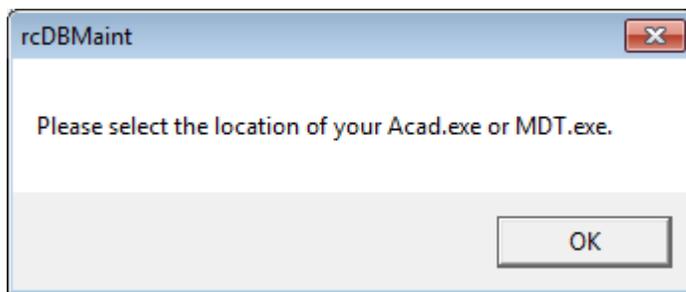
When a new user is added to the computer, you need to have many registry entries created that allow Router-CIM to function with the new user.



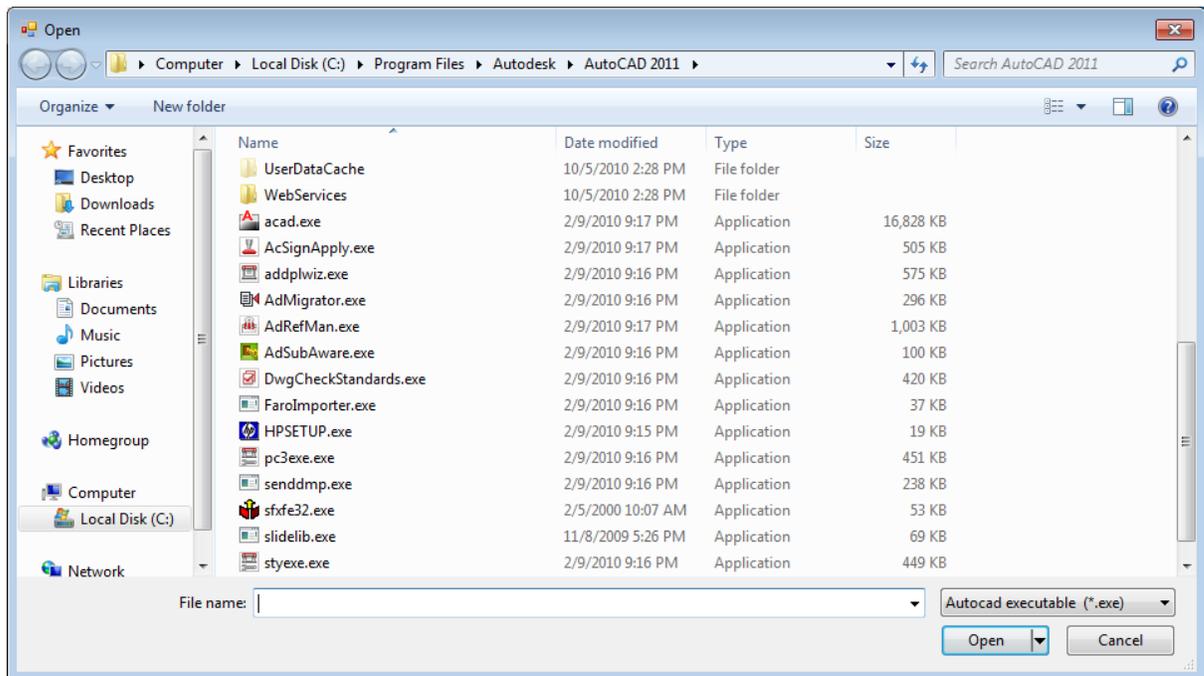
To create these entries, enter your serial number:



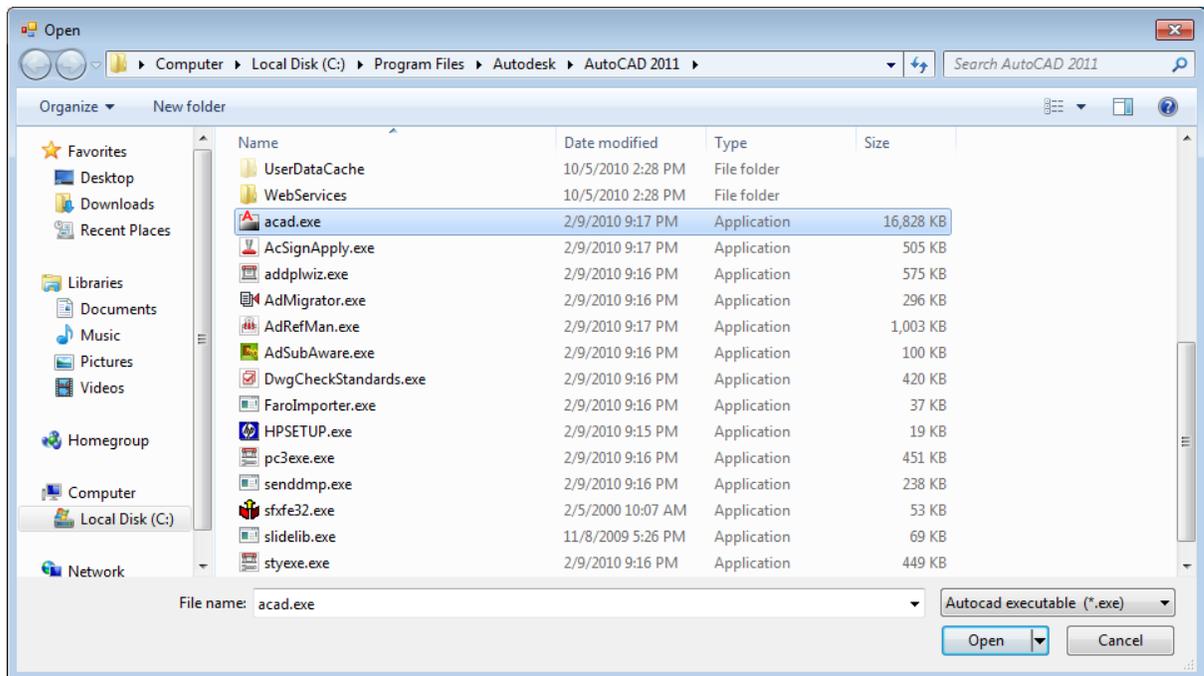
Then pick Verify/repair current user:



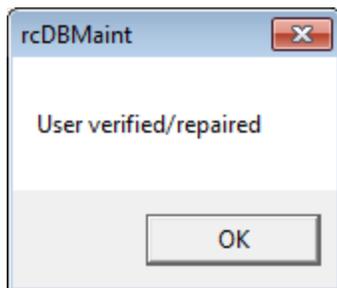
Then you will be prompted to pick the location of your AutoCAD exe file:



By default, the location of the current AutoCAD is picked by default.



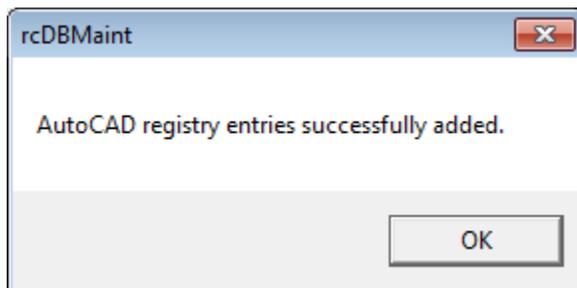
Then pick Acad.exe, then pick Open.



A status window will appear showing that the new user will be verified.

Add a New AutoCAD

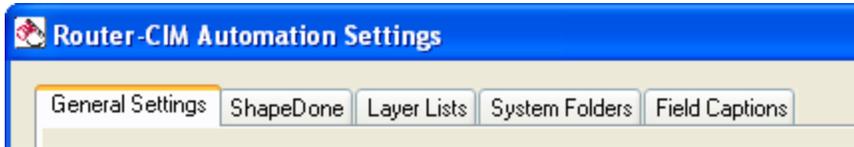
If a new AutoCAD is installed, then pick on the button labeled Add AutoCAD Reg Entries



A window will appear when the entries are added.

2.1.1.1.2 Settings

System Settings



There are several settings that affect the entire system. These settings are broken down into the following categories:

General Settings

ShapeDone Settings

Layer List Settings

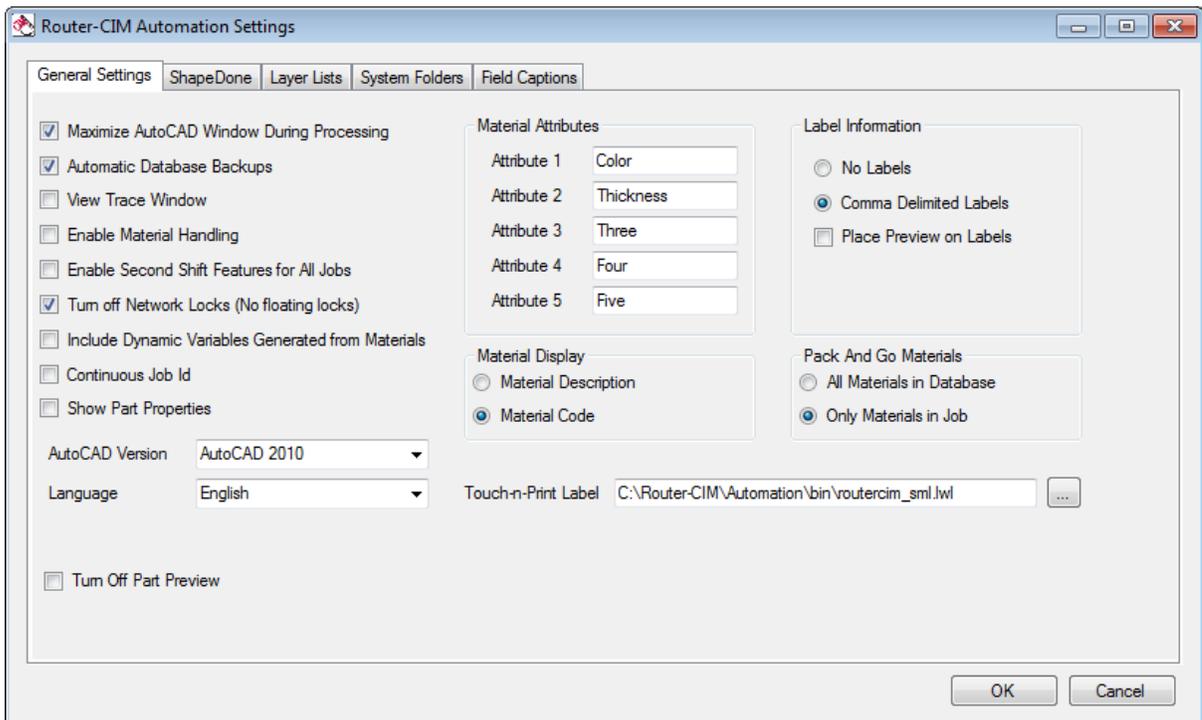
System Folder Settings

Field Caption Settings

2.1.1.1.2.1 General Settings

General Settings

The general settings are miscellaneous settings that affect how Router-CIM runs and looks, and do not fit into the other categories of settings. Each one will be documented, and you can click on the area of the picture to be taken to that sections' description.



Maximize AutoCAD Window During Processing

Checking this box will force Autocad to be maximized (take up the whole screen) while Router-CIM Automation is processing a job.

Removing the check from this box will allow Autocad to run at whatever the last saved size of the Autocad window was when last run.

Automatic Database Backups

Checking this box will force Router-CIM to back up the databases when Router-CIM is loaded for the first time each day. The databases will be stored in a folder on your C: drive for later restoration. The folder is C:\Router-CIM\Automation\Database\Backups. Inside that folder will be a other folders with the date and time stamp as a name. These contain the databases for your system that were present on that date..

This back up happens once each day, on the first start of Router-CIM, so the database is backed up in the state it was in when last used.

These back up files can be large and if you do not clean out the Backups folder, you can have many, many large files in there. This could take considerable drive space. These files could be copied onto a CD or some other permanent storage frequently and this folder cleaned of old, out of date files.

Removing the check from this box will force Router-CIM to ignore the back up procedure. This is dangerous because if you make a mistake in your settings or jobs, there is no backup copy and no way to retrieve lost data or settings. CIM-Tech cannot get data back from the database once it is changed. The backup is your best solution to retrieving lost settings or materials, etc.

View Trace Window

Checking this option will turn on an additional section to the status window that runs when processing a job. This option is only for debugging procedures and will only be used when directed by CIM-Tech.

Enable Material Handling

Turning this option on will allow the creation of code to handle the Komo Material Handling Systems if your machine is equipped with one. See you post processor application notes for more information regarding the specific code for your material handling system.

Enable Second Shift Features for all jobs

This is an advanced option available when you have a special program enabled called Second Shift. This option will turn on those special features for any job created or run. For more information contact CIM-Tech.

Turn Off Network Locks (No Floating Locks)

If this option is checked, the Router-CIM hardware lock will need to be located on the computer that is running Router-CIM. If this option is not checked, the hardware lock could possibly be located on another computer, and if it is on the same TCP/IP network then Router-CIM should find it and use it, provided it is not in use by another computer running Router-CIM. Installing the lock on the computer running Router-CIM is by far the most reliable means of insuring that no hardware lock issues occur.

Include Dynamic Variables Generated from Materials

Checking this option will force a dynamic variable to be created for each material with the material thickness as the value in the dynamic variable.

Continuous Job ID

This option will set the job id in the nc code files to be continuous from job to job. The numbers start at 1 and run to 9999 and then will start over. You can force them to restart by un-checking this box and then running a job. Checking this box will force a continuous count to occur on each nc program until it reaches the top number (9999). Otherwise each job run starts with the first sheet as 001 and the

second sheet as 002, etc.

Show Part Properties

Checking this box will make Router-CIM show the part properties window whenever you add a new part to a job (this was the version 2007 and older behavior). The default behavior is to add the part without showing the properties window.

AutoCAD Version

This setting will have an option to change the Autocad version for Automation if you have more than one version of Autocad installed on the computer that Router-CIM is running on. Currently the only supported versions are 2007, 2008, 2009.

Automation will set this for you if only 1 version is installed on your system, and no other choices will be available.

Language

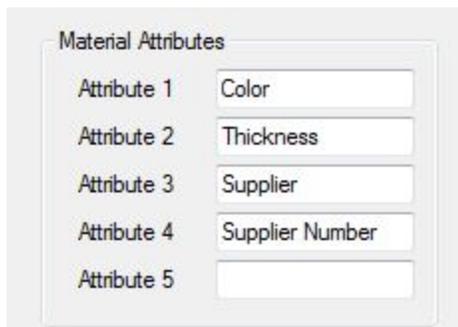
Selecting this pull down list will change the Router-CIM Automation interface to one of the supported languages. Currently that is English and Simplified Chinese. You must have the Chinese Language set installed in Windows to see the Chinese language screens. Other languages are pending and will be installed in later updates.

Turn off Part Preview

Turning on this option will disable the part preview window in Router-CIM so no parts will be shown when a part is selected. This could allow some slower systems or systems with unsupported graphics cards to move through parts faster.

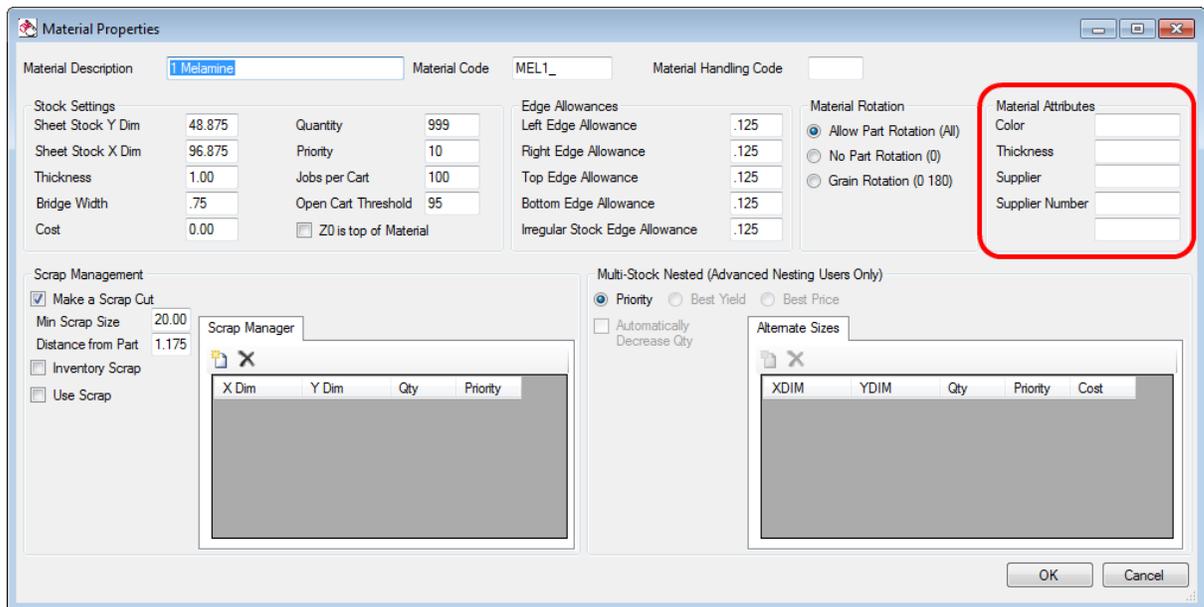
Material Attributes

Changing the fields for the 5 material attributes listed will cause these attributes to be listed in the material database as they are listed in this window. For instance if you were to change these options to:



Material Attributes	
Attribute 1	Color
Attribute 2	Thickness
Attribute 3	Supplier
Attribute 4	Supplier Number
Attribute 5	

Then click on OK and open up any material in the material database, you would see the material attributes listed the same.



Material Display

The material display options of Material Code or Material Description relate to the way the materials are shown in the part window of a job.

Setting the option to Material Description will show the material as the text description listed for the material:

The screenshot shows the 'Parts' list window with the following table:

Part#	Part	Qty	Material	Full Path to Part
1	Boat1.dwg	4	1/2 Birch Ply	C:\Router-CIM\A
2	Boat2.dwg	1	1/2 Birch Ply	C:\Router-CIM\A
3	Boat3.dwg	2	1/2 Birch Ply	C:\Router-CIM\A
4	Boat4.dwg	2	1/2 Birch Ply	C:\Router-CIM\A
5	Boat5.dwg	4	1/2 Birch Ply	C:\Router-CIM\A
6	Boat6.dwg	1	1/2 Birch Ply	C:\Router-CIM\A
7	Boat7.dwg	3	1/2 Birch Ply	C:\Router-CIM\A
8	Boat8.dwg	3	1/2 Birch Ply	C:\Router-CIM\A
9	Boat9.dwg	3	1/2 Birch Ply	C:\Router-CIM\A
10	Boat10.dwg	3	1/2 Birch Ply	C:\Router-CIM\A
11	Boat11.dwg	3	1/2 Birch Ply	C:\Router-CIM\A
12	Boat12.dwg	3	1/2 Birch Ply	C:\Router-CIM\A
13	boat18.dwg	1	1/2 Birch Ply	C:\Router-CIM\A

Where setting the option to Material Code will show that same material listed by the material code which is a max of 8 characters:

Part#	Part	Qty	Material	Full Path to Part
1	Boat1.dwg	4	BPL50_	C:\Router-CIM\Au
2	Boat2.dwg	1	BPL50_	C:\Router-CIM\Au
3	Boat3.dwg	2	BPL50_	C:\Router-CIM\Au
4	Boat4.dwg	2	BPL50_	C:\Router-CIM\Au
5	Boat5.dwg	4	BPL50_	C:\Router-CIM\Au
6	Boat6.dwg	1	BPL50_	C:\Router-CIM\Au
7	Boat7.dwg	3	BPL50_	C:\Router-CIM\Au
8	Boat8.dwg	3	BPL50_	C:\Router-CIM\Au
9	Boat9.dwg	3	BPL50_	C:\Router-CIM\Au
10	Boat10.dwg	3	BPL50_	C:\Router-CIM\Au
11	Boat11.dwg	3	BPL50_	C:\Router-CIM\Au
12	Boat12.dwg	3	BPL50_	C:\Router-CIM\Au
13	boat18.dwg	1	BPL50_	C:\Router-CIM\Au

Label Information

These options are available as system settings and will affect each job. Setting this option to No Labels will suppress the generation of any label files by Router-CIM for any job run from that point. Setting the option to comma delimited labels will generate label files for each job in several formats. Selecting the option Place Preview on Labels will generate a small thumbnail image of the part and place it on the label.

Pack and Go Materials

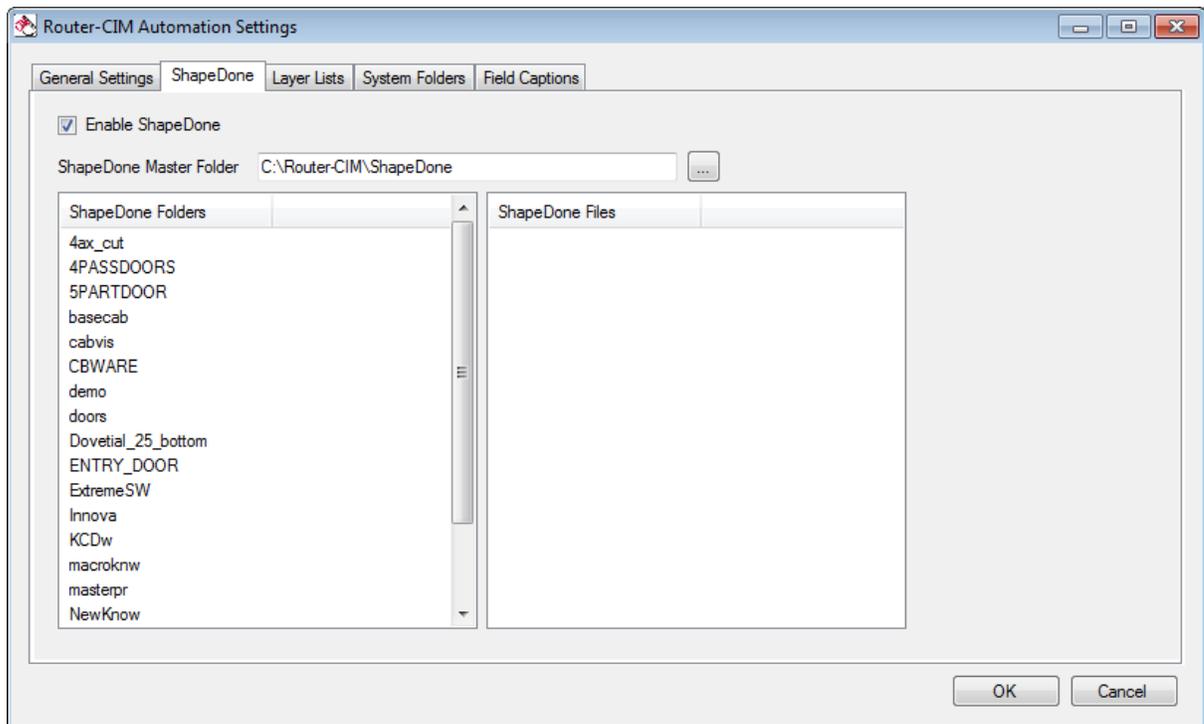
When making a Pack and Go file, you can have either ALL the materials in the whole database packaged into the Pack and Go file, or just the materials that relate to the job you are packing.

Touch and Print Label

This field shows the path and name of the Touch and Print Label file.

2.1.1.1.2.2 ShapeDone Settings

ShapeDone Settings



Enabling Shape Done will allow any parts that are used in a job, and have not been altered since they were last run to pass straight to nesting without having to be re-cut during the job run. This saves considerable time if you have jobs that re-use parts.

Enable ShapeDone

Checking this box turns on the Shape Done feature in the Router-CIM system.

ShapeDone Master Folder

Display and setting of the ShapeDone folder path and name.

ShapeDone Folders

This side of the window displays the ShapeDone folders. One folder is created automatically for each knowledge drawing in the Router-CIM knowledge drawing folder.

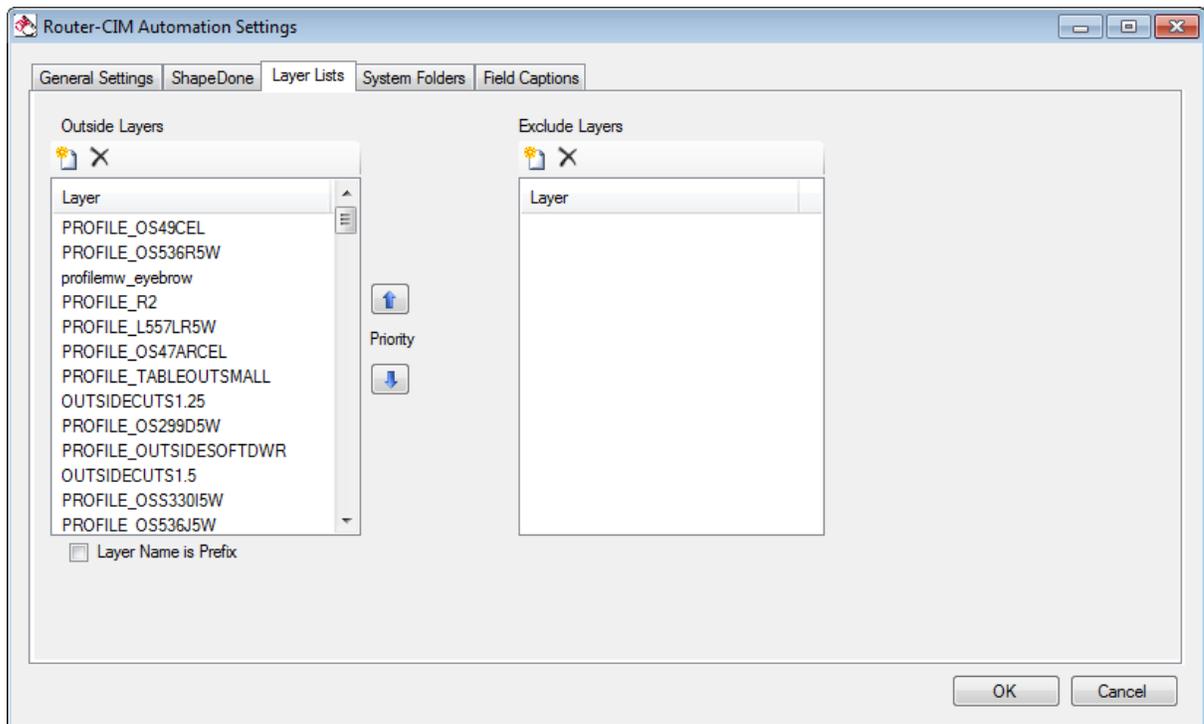
ShapeDone Files

This side of the window displays the ShapeDone files in each of the folders. If you select a folder on the left, the files in that folder will show on the right.

2.1.1.1.2.3 Layer List Settings

Layer List Settings

The Outside Layer lists are used by Router-CIM to associate which layers will contain the outside geometry used for nesting and which layers to exclude from a drawing when considering a part for nesting.



Outside Layers

In this list you should include any layer that will contain geometry that will be the outside of the part when the part will be nested. Router-CIM will check each part and when the geometry of the outside of the part is found, it is checked against this list and then the part is passed to the nest program.

A common cause of parts not showing up in a nest is that the parts outside layer was not included in this list. Another common mistake is to have an inside cut be on a layer that is in this list also, that can cause parts nesting on the top of other parts.

An important note is that Router-CIM looks at this list in order until it finds a match, and so moving a layer higher in the priority in the list will cause Router-CIM to find one layer before another.

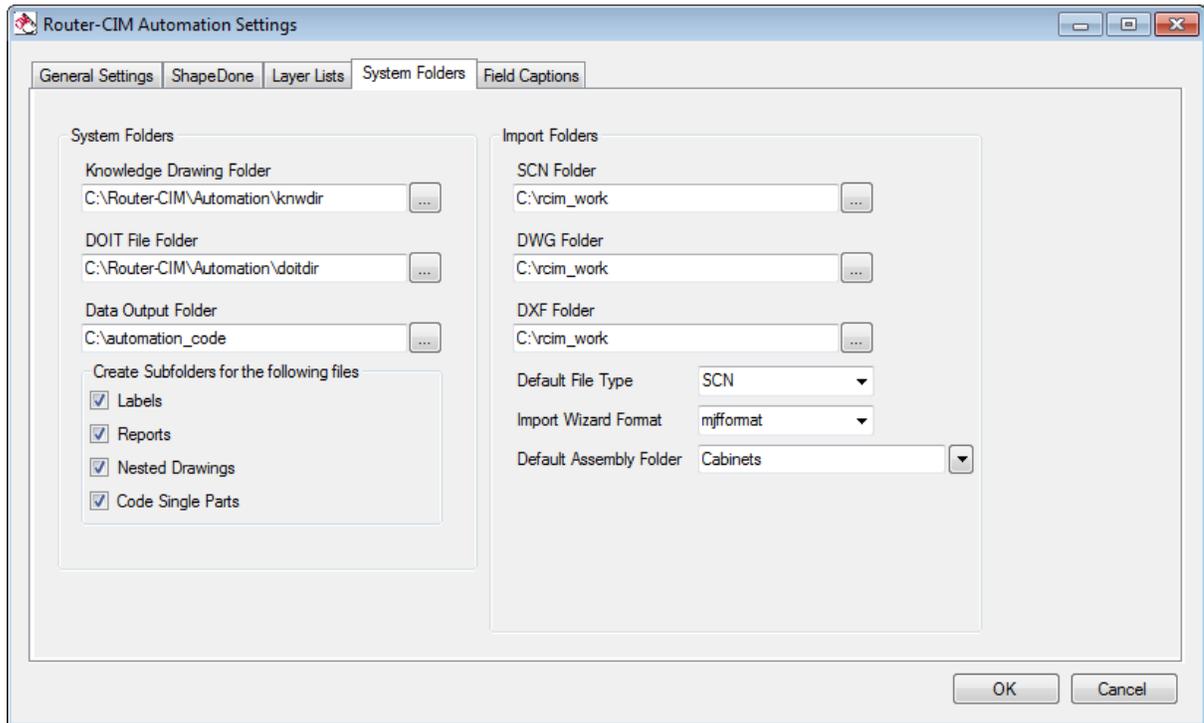
Using the Layer Name is Prefix option will cause Router-CIM to look at the name given here as just the prefix of the whole layers name. For instance if you had geometry on both layer OutsideDoorBigTool and OutsideDoorSmallTool and put the layer name OutsideDoor in the list and checked Layer Name is prefix...than both those layers would be considered as outside geometry.

Exclude Layers

Any layers listed in this window will be ignored by Router-CIM for the purpose of cutting and nesting. You can include dimension layers here for example as you might have them in a drawing but do not want to cut or nest them.

System Folder Settings

The system folders settings are where you can change the path and folder locations for Router-CIM to find certain files for Automation.



System Folders

Knowledge Drawing Folder:

This is the path to the folder where you store your knowledge drawings. By default it is C:\Router-CIM\Automation\knwdir.

DOIT File Folder:

This is the path to the folder where you store your DOIT files. By default it is C:\Router-CIM\Automation\doitdir.

Data Output Folder:

This is the path to the folder where all the job files and nc code will be saved when a job has run. By default this is C:\automation_code.

Import Folders

Scn Folder:

This is the path to the folder where Router-CIM will look for macros when importing them into a job if the path is not specified. By default the path is set to C:\rcim_work

DWG Folder:

This is the path to the folder where Router-CIM will look for DWG files when importing them into a job if the path is not specified.

By default the path is set to C:\rcim_work

DXF Folder:

This is the path to the folder where Router-CIM will look for DXF files when importing them into a job if the path is not specified.

By default the path is set to C:\rcim_work

Create Folders for the following files

Labels:

Checking this box will create a separate folder in the result folder for all the label related files.

Reports:

Checking this box will create a separate folder in the result folder for all the report data related files.

Nested Drawings:

Checking this box will create a separate folder in the result folder for all the nested drawings.

Code Single Drawings:

Checking this box will create a separate folder in the result folder for the drawings of each part that was checked as code single part.

Default File Type

This will allow you to set SCN, DWG, or DXF files as the default file type for the import wizard to import if the files extensions are not provided in the import file.

Import Wizard Format

If you saved a wizard format it would show in this drop down. For example, If you import door_import.xls, then assign the columns, save the format and call it 'doors', it will show in this list. Then you can select 'doors' as the default wizard format. Also, if that is saved, then if you right-click an Excel file, and select cut with Router-CIM, 'doors' will be used to format the columns on import.

Default Assembly Folder

The default assembly folder specifies where the main assemblies of jobs will be located if an assembly is imported via a spreadsheet. Since an assembly is a part record in an import, and it contains other jobs, Router-CIM must know where to go looking for those jobs when it imports the assembly.

2.1.1.1.2.5 Field Caption Settings

Field Caption Settings

The Field Captions window displays the label captions that are shown in the Part Properties window. For instance these settings:

Router-CIM Automation Settings

General Settings | ShapeDone | Layer Lists | System Folders | **Field Captions**

Specify the label captions that you would like to use on the Part Properties Window

Record Entry	<input type="text" value="Part Name"/>	Record Description	<input type="text" value="Record Desc"/>
Record Material	<input type="text" value="Material"/>	Label Field 1	<input type="text" value="Customer Info 1"/>
Record Qty	<input type="text" value="Quantity"/>	Label Field 2	<input type="text" value="Customer Info 2"/>
Record X-Dim	<input type="text" value="Length"/>	Label Field 3	<input type="text" value="Customer Info 3"/>
Record Y-Dim	<input type="text" value="Width"/>	Label Field 4	<input type="text" value="Customer Info 4"/>
Record Z-Dim	<input type="text" value="Depth"/>	Label Field 5	<input type="text" value="Customer Info 5"/>
		Label Field 6	<input type="text" value="Customer Info 6"/>
		Label Field 7	<input type="text" value="Customer Info 7"/>
		Label Field 8	<input type="text" value="Customer Info 8"/>

OK Cancel

These settings will display like this on the Part Properties window of any part in a job once they are set. Select a part and then either double click on it or select Part Properties to see the changes.

For instance, changing the Label Fields 1-8 shown above from 'Customer Info 1-8' to more specific data like this:

Router-CIM Automation Settings

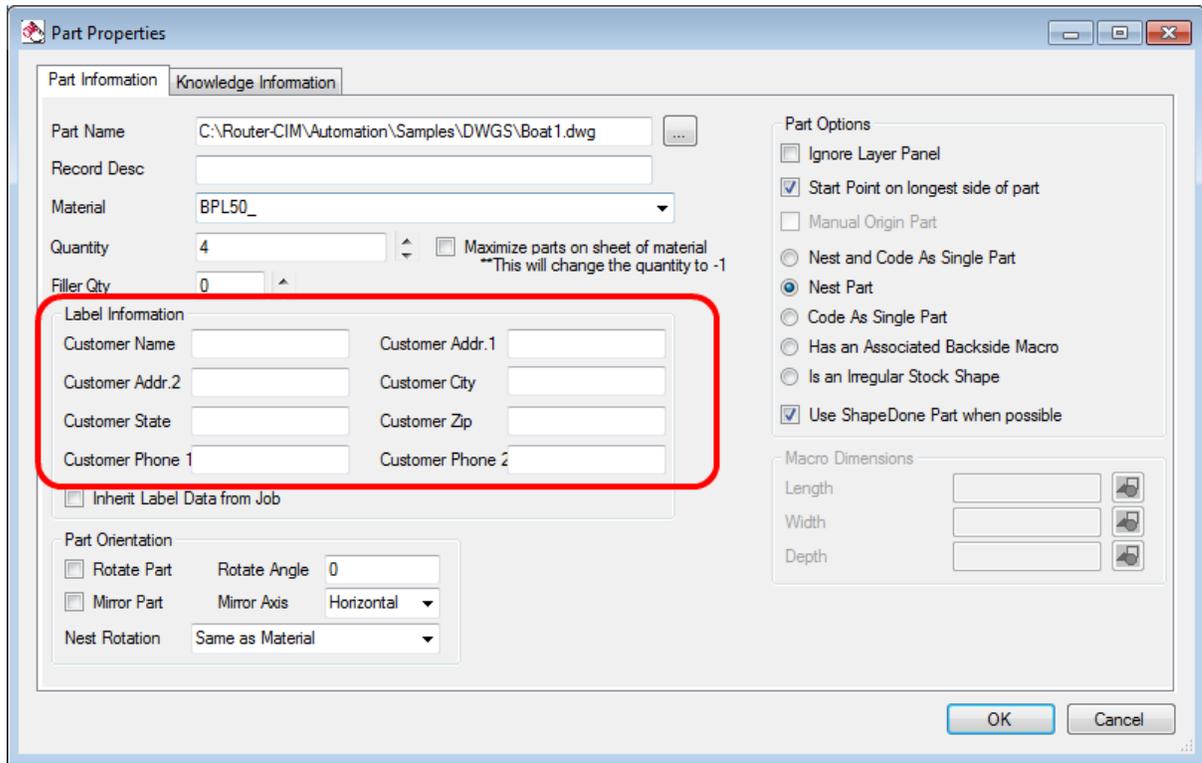
General Settings | ShapeDone | Layer Lists | System Folders | **Field Captions**

Specify the label captions that you would like to use on the Part Properties Window

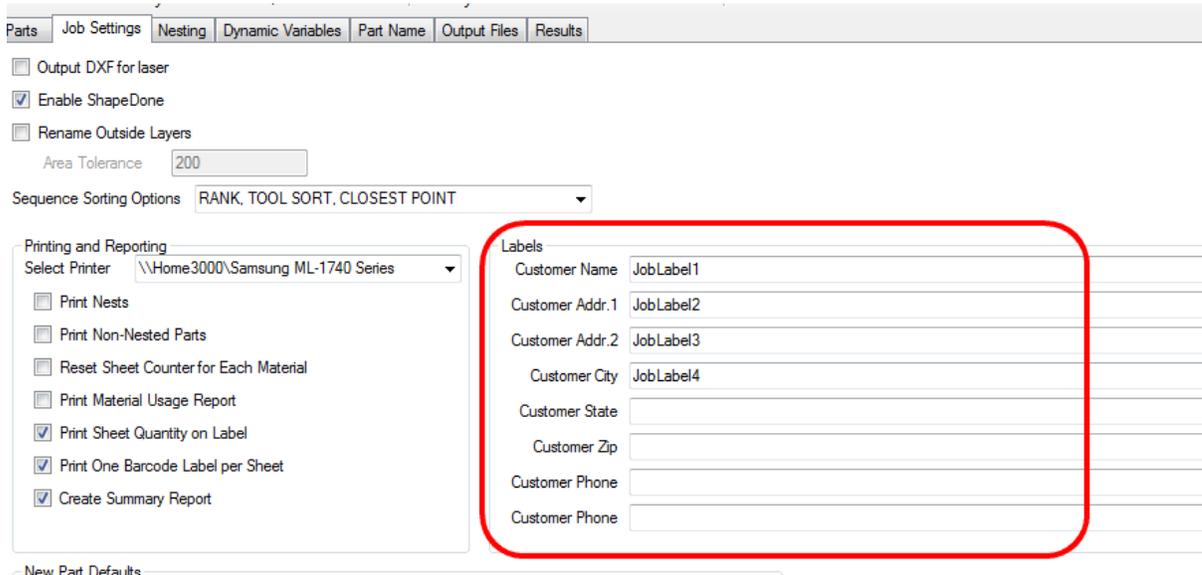
Record Entry	<input type="text" value="Part Name"/>	Record Description	<input type="text" value="Record Desc"/>
Record Material	<input type="text" value="Material"/>	Label Field 1	<input type="text" value="Customer Name"/>
Record Qty	<input type="text" value="Quantity"/>	Label Field 2	<input type="text" value="Customer Addr.1"/>
Record X-Dim	<input type="text" value="Length"/>	Label Field 3	<input type="text" value="Customer Addr.2"/>
Record Y-Dim	<input type="text" value="Width"/>	Label Field 4	<input type="text" value="Customer City"/>
Record Z-Dim	<input type="text" value="Depth"/>	Label Field 5	<input type="text" value="Customer State"/>
		Label Field 6	<input type="text" value="Customer Zip"/>
		Label Field 7	<input type="text" value="Customer Phone 1"/>
		Label Field 8	<input type="text" value="Customer Phone 2"/>

OK Cancel

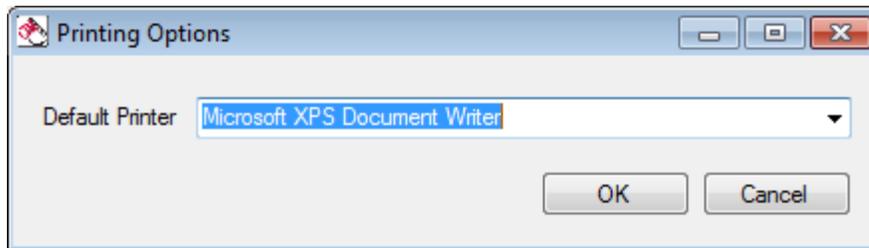
Would show up in the Part Properties like this:



And in the Job Settings like this:



2.1.1.1.3 Print Options

Print Options

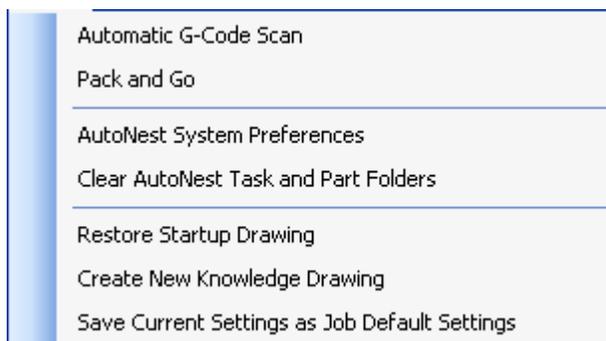
Print Options will allow you to select the default printer for Router-CIM to print the nested sheets or single part prints during a job run. Any printer available to Windows in the Print Manager will be available in the list of printers selected here.

2.1.1.1.4 Exit

Exit

Choosing Exit, or using the 'X' in the upper right corner of the window will close the Router-CIM program, but before doing that a few internal functions are performed, such as saving all jobs and job related information, saving the screen size and position data, part preview window information, and saving the system defaults for use the next time Router-CIM is started.

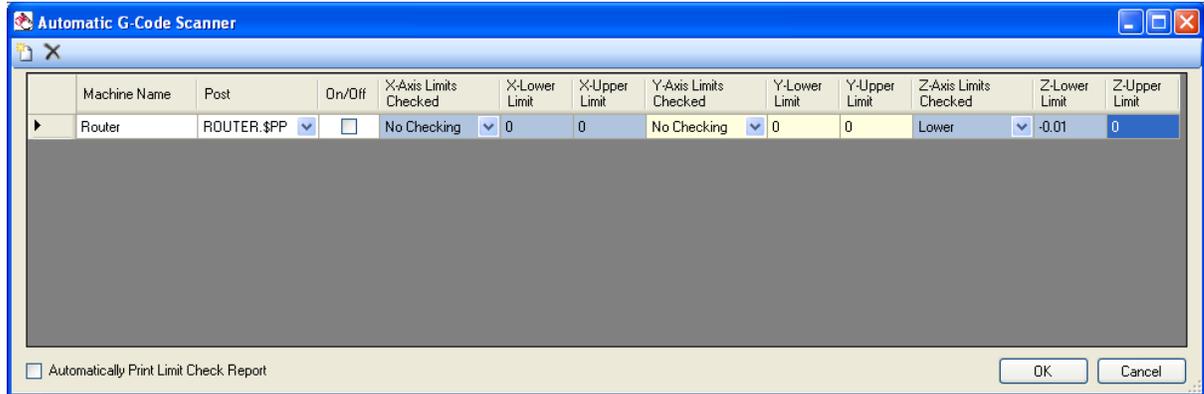
2.1.1.2 Tools

Tools Menu

2.1.1.2.1 Automatic G-Code Scan

Automatic G-Code Scan

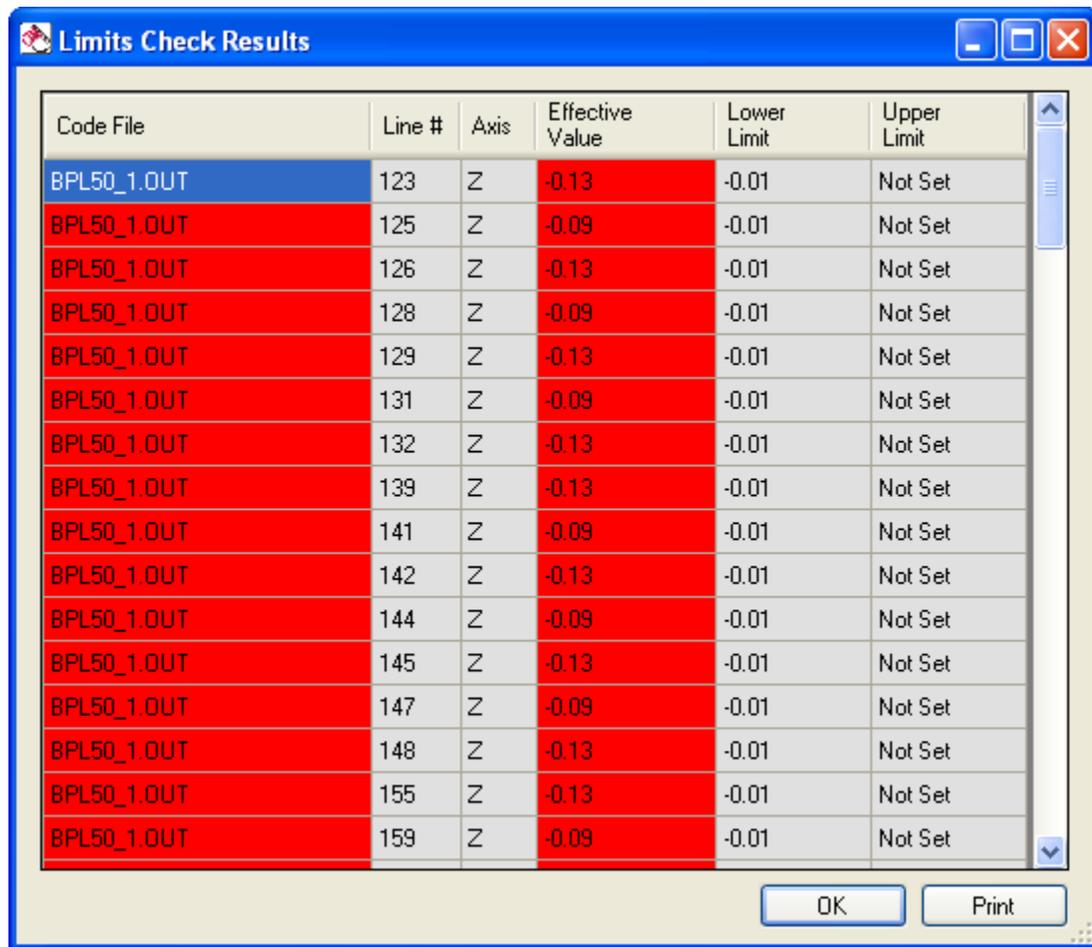
The Automatic G-Code Scanner will check each nc file generated by Router-CIM for a specific post processor and if the code contains a value outside the limits set in the scanner, then an error will be displayed when the job is run, and the code will be placed into a separate folder so that it is not run by mistake and the error can be fixed.



You can give each machine set-up a name, and then select the post processor to be used for that set-up and change the X, Y, and Z settings and whether or not to scan each axis for problems.

Machine Name	Post
Router	ROUTER.\$PP

If after a job is run, there are values beyond the limits set you will see a warning in the Limit Check Results.

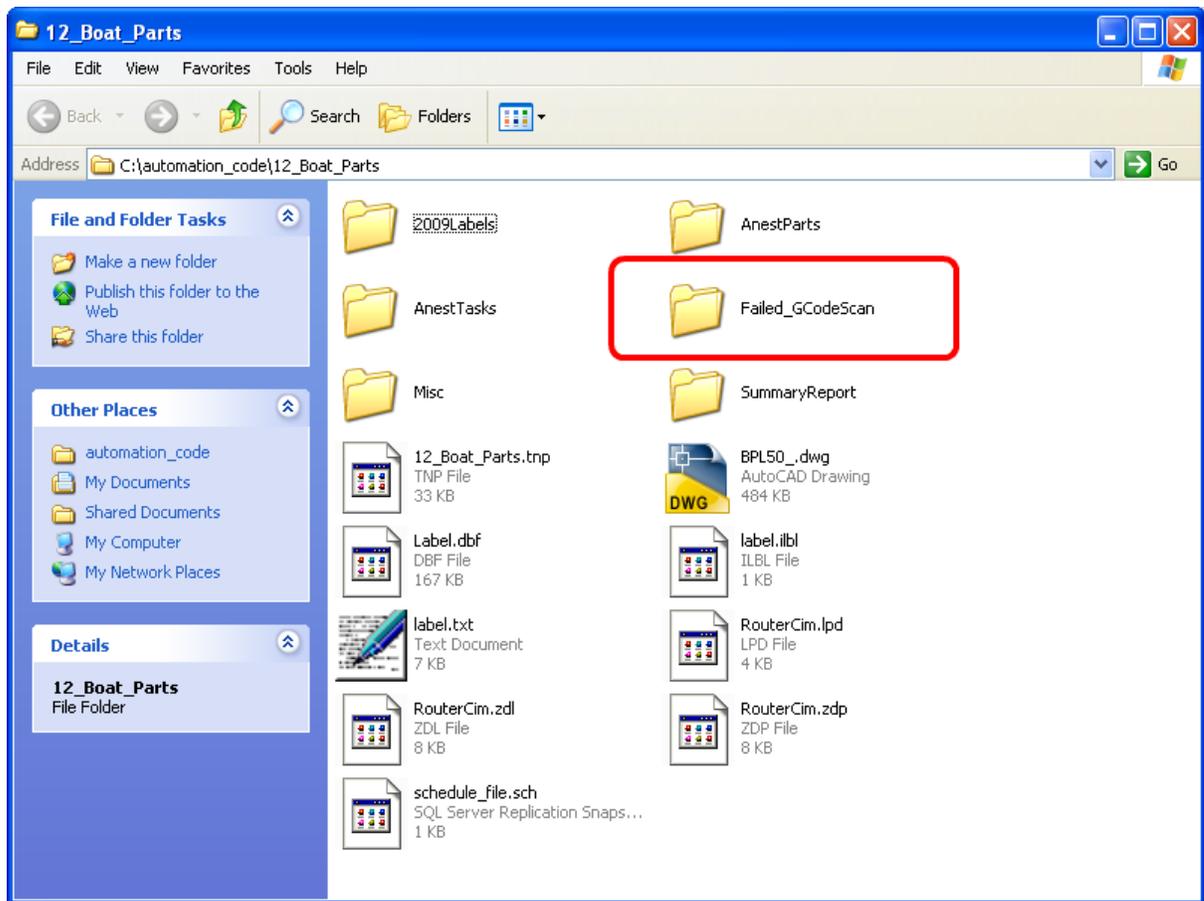


The image shows a software window titled "Limits Check Results". It contains a table with the following columns: Code File, Line #, Axis, Effective Value, Lower Limit, and Upper Limit. The table lists 15 rows of data, all from the file "BPL50_1.0UT". The "Effective Value" column is highlighted in red for all rows, indicating values that are more negative than the "Lower Limit" of -0.01. The "Upper Limit" for all rows is "Not Set".

Code File	Line #	Axis	Effective Value	Lower Limit	Upper Limit
BPL50_1.0UT	123	Z	-0.13	-0.01	Not Set
BPL50_1.0UT	125	Z	-0.09	-0.01	Not Set
BPL50_1.0UT	126	Z	-0.13	-0.01	Not Set
BPL50_1.0UT	128	Z	-0.09	-0.01	Not Set
BPL50_1.0UT	129	Z	-0.13	-0.01	Not Set
BPL50_1.0UT	131	Z	-0.09	-0.01	Not Set
BPL50_1.0UT	132	Z	-0.13	-0.01	Not Set
BPL50_1.0UT	139	Z	-0.13	-0.01	Not Set
BPL50_1.0UT	141	Z	-0.09	-0.01	Not Set
BPL50_1.0UT	142	Z	-0.13	-0.01	Not Set
BPL50_1.0UT	144	Z	-0.09	-0.01	Not Set
BPL50_1.0UT	145	Z	-0.13	-0.01	Not Set
BPL50_1.0UT	147	Z	-0.09	-0.01	Not Set
BPL50_1.0UT	148	Z	-0.13	-0.01	Not Set
BPL50_1.0UT	155	Z	-0.13	-0.01	Not Set
BPL50_1.0UT	159	Z	-0.09	-0.01	Not Set

At the bottom of the window, there are two buttons: "OK" and "Print".

In this case there were Z values more negative than the -0.01 value placed in the lower limit. All the files were flagged and the line number containing the error is shown along with its value. Once this window is acknowledged, the Results Folder can be opened and you will see a folder labeled Failed_GCodeScan and that will contain the bad nc code files.



Automatically Print Limit Check Report

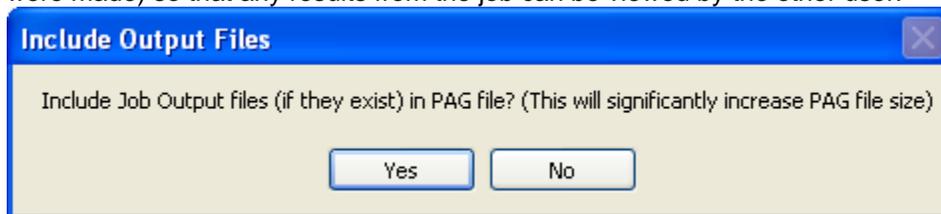
This option will send a limit check report to a printer when the job has completed. If there are errors, they will be shown on the report.

2.1.1.2.2 Pack and Go

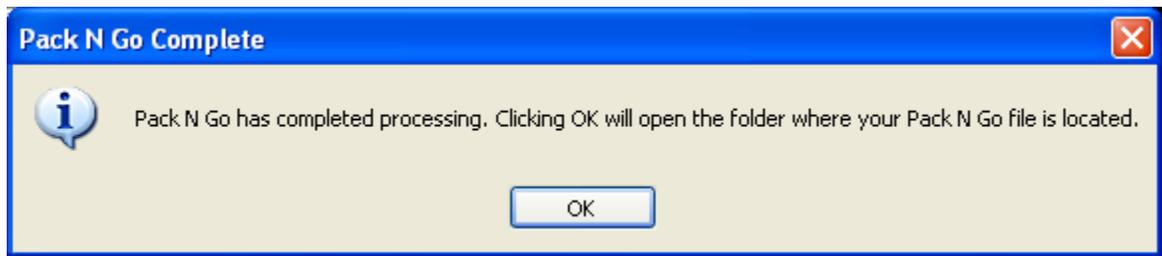
Pack and Go

The Pack and Go function will allow you to package any job into just one file that can be sent to another user of Router-CIM who can then unpackage that job and have the same settings as you did on your Router-CIM system when the job was run.

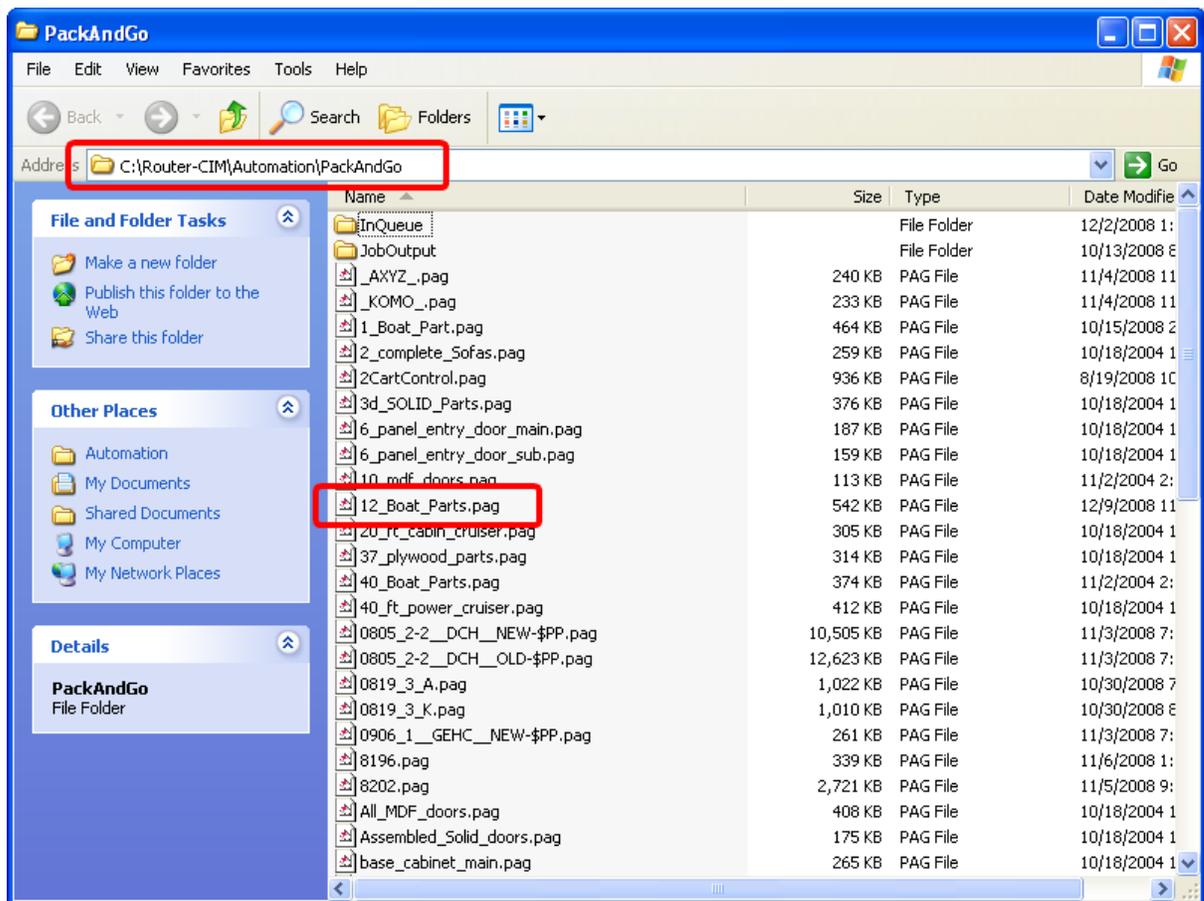
The Pack and Go function will ask you if you want to place all the output files into the package (if any were made) so that any results from the job can be viewed by the other user.



Next you will be shown a message that confirms that the Pack and Go file has been created.



Once you acknowledge this window, a folder will open and you can then see the pack and go file, which can be attached to an email or transferred via some other means to the other user.



The folder, by default is C:\Router-CIM\Automation\PackAndGo.

Pack and Go as a Backup

Another use for the Pack and Go system is to create backups of jobs that have run, so that all the settings are stored in one location, regardless of the database. The pack and go function will place the following items into the PAG file.

- Any drawings, macros, or dxf files from the job, along with their path and folder if necessary.
- The Knowledge drawing used for the job.
- The DOIT file used for the job.
- All post processor files used for the job.

- All job related settings.
- The material used on the job.
- If specified, the entire results folder and contents.

2.1.1.2.3 AutoNest System Preferences

AutoNest System Preferences

These are the default settings that AutoNEST will use when running a job.

The screenshot shows the 'AutoNEST - Sysdata' dialog box with the following settings:

- Directory Setting:**
 - Part / Ir-Stock Directory: c:\anest\parts
 - Task Directory: c:\anest\task
- Input Part / Ir-Stock - Layer Setting:**

	Layer Name	Color
Outer Profile :	*	*
Inner Profile :	*	*
Part Leadin :	Part-Leadin	*
- Nested Layout Presentation:**
 - Units : Decimal Imperial
 - Accuracy : 1
 - File Format : VEC
 - Layer / Color : Layer / Color Setting
 - Label Parts
 - Label Repeated Parts
 - Text Size : 0.8"
 - Layout Summary
 - Task Summary
 - Text Size : 0.8" (for Layout Summary), 0.8" (for Task Summary)
 - Display Repeated Layout

Buttons: OK, Cancel, Help

Part / Ir-Stock Directory

The folder where the Anest Parts are stored and accessed for each job run. Irregular Stocks can also be stored in this folder.

Task Directory

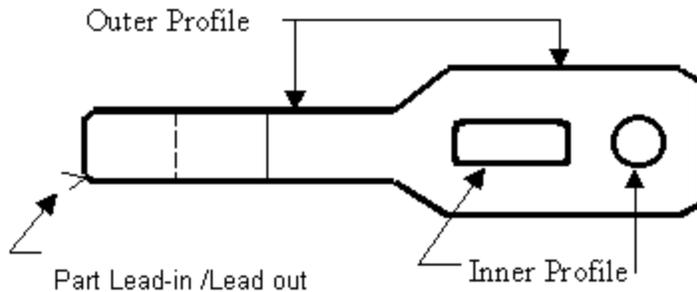
The folder where the Anest Task (job) files are stored and accessed for each job run.

Outer Profile

Inner Profile

Part Leadin

These are the layer, color and part leadin/leadout “FILTER” settings that you can specify for both SavePART and DXF2VEC commands. These settings are especially helpful if the parts that you are saving or converting contain marking lines that touch or intersect the external /internal profiles of the shapes. By specifying the layer/color/part leadin filters, you will help SavePART and DXF2VEC commands to differentiate profiles that are crucial to nesting (outer and inner profiles of the part) against those that are not (markings or folding lines). You can specify more than ONE colors in the “Color” field by entering for example “1,3” for colors 1 and 3 (separated by a comma)



Units

The units setting of inputs and outputs. There are 4 choices to choose from :

- Metric
- Architectural Imperial (1' 3-1/4")
- Decimal Imperial (15.25")
- Engineering Imperial (1' 3.25")

Accuracy

The number of decimal places or the number of digits to the right of the decimal point (0 to 4). If the unit chosen above is Architectural Imperial, Sysdata will prompt for the denominator of the fraction to which the accuracy is to be expressed. e.g. :

- 1 for full integers, no fractions
- 2 for 1/2" (half)
- 4 for 1/4" (quarter)
- 8 for 1/8" (eighth)
- 16 for 1/16" (sixteenth)

File Format

This option decides which Part file format is to be used when generating graphical nested layout on screen. Three choices are available as below:

- DWG
- VEC
- DXF

If you have chosen VEC format, please note the “Nested Layout - Layer Settings” (click the “Layer Setting” button) for defining the layers and colors of the nested layout. If you have chosen DXF or DWG format, the nested layouts will display the layers/colors of your parts as they were originally created.

Layer / Color

The following Dialog Box will appear when selecting this button: _Layer / Color Setting

Nested Layout Presentation - Layer / Color Setting [X]

Parts Outer Profile :	Part-O-Profile	Color	Auto
Parts Inner Profile :	Part-I-Profile		Auto
Part Profile with Bridge :	Part-w-Bridge-Profile		7 - Black/White
Parts Label :	Part-Label		6 - Magenta
Stock Sheet :	Stock		7 - Black/White
Bridge :	Bridge		1 - Red
Summary Report :	Summary		4 - Cyan

OK
Cancel

User can define the layer and color for Part Labels, Stock Sheet and Summary reports. PARTS If the Sysdata "File Format" is VEC, the Parts displayed on the nested layout will follow the layer and color settings here. If DWG or DXF "File Format" are chosen, the Parts' layer and color settings will be exactly the same as they were originally saved.

See diagram below for explanation of each of the names.

Layout Summary

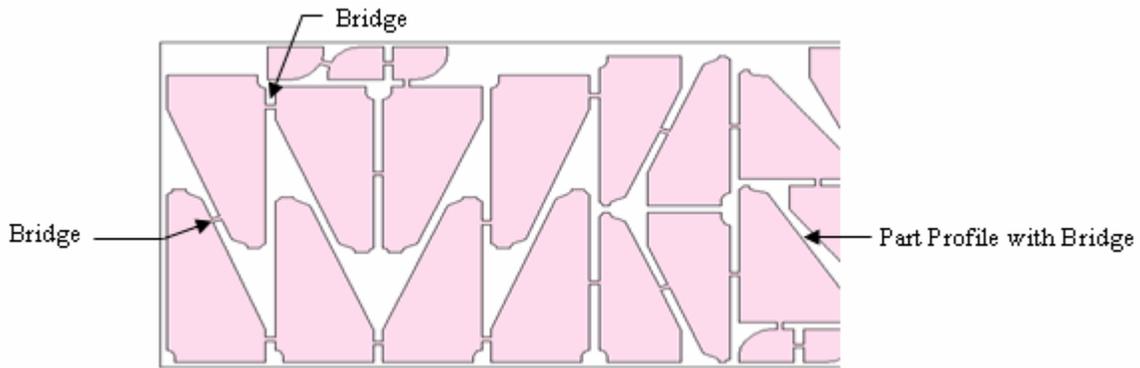
NESTING REPORT OF
TASK NAME: PIP-02

STOCK	STOCK #1
QTY	1
STOCK SIZE	2420 00x4220 00
ENCLOSING RECT	2299 70x3785 10
ENCLOSING RECT:	9164534 47
STOCK SIZE	1021 2400 00
	29.74%
TOTAL SHAPE AREA:	5771 286 01
ENCLOSING RECT	9164534 47
	62.97%
SHAPE NAME	

Task Summary

NESTING SUMMARY	
SHAPE NAME	TOTAL
PART1	4 x6
PART2-A	2 x2
PART3	10 x10
PART4	6 x10
PART5	2 x10
TOTAL	36 x66

Summary Report - consisting of both Layout Summary and Task Summary



Label Parts Text Size

Mark this checkbox if you wish to display Part Label. And set the Text size of the Part label when displayed on screen. To change the layer/color of the Part labels, click the "Layer/ Color Setting" button

Label Repeated Parts

Mark this checkbox if you wish to add a part Label on each and every part on the nested layout. When this checkbox is un-marked, if there are 10 parts of the same name nested, only ONE of the 10 will be labeled.

Layout Summary Text Size

Layout Summary – report on the nested results of a particular stock layout.

Task Summary Text Size

Task Summary – report summary on the nested results of a Task (.job). Mark the relevant checkboxes if you wish to display the reports and set the Text Size of the Reports when displayed on screen. See the above Illustration.

Display Repeated Layout

Mark this check box if you wish to display the same nested layout repeatedly, otherwise the Quantity in the Layout Summary will show how many sheets of the same nest are necessary.

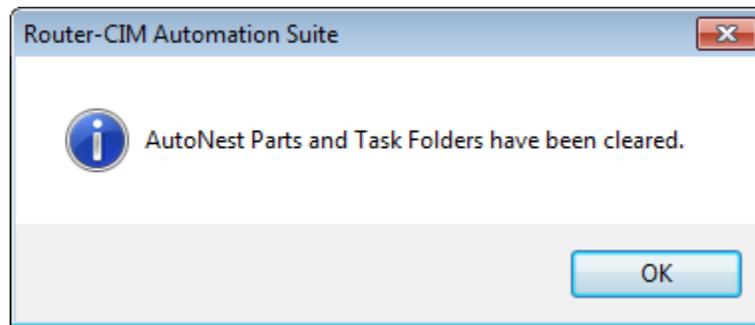
2.1.1.2.4 Clear AutoNest Task and Part Folders

Clear AutoNest Task and Part Folders

This option will remove all the contents of the AutoNEST parts folder and the AutoNEST tasks folder. After running many jobs, these folders can become very large and may contain previous copies of a job or the parts in a job that may not be current.

It is a good practise to clean these folders out from time to time.

Once you select this option, you will have a momentary pause and then the following confirmation is shown.

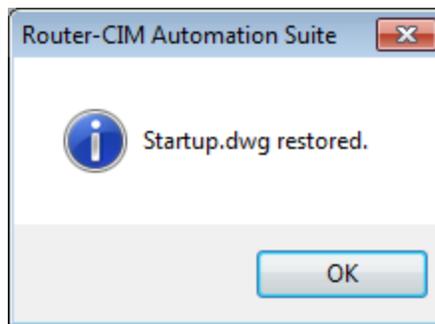


2.1.1.2.5 Restore Startup Drawing

Restore Startup Drawing

The startup drawing (Startup.dwg) contains various bits of data for Router-CIM to function. Occasionally that drawing can become corrupt due to an accidental save. If the drawing does become corrupt using this option will restore it to the default drawing status.

Once this option is selected, the following confirmation will appear.



2.1.1.2.6 Create New Knowledge Drawing

Create New Knowledge Drawing

A new knowledge drawing can be created with this option, even if you do not currently have a job selected. Once this option is selected, you will get the Router-CIM Configuration Wizard and can select your machine. Router-CIM will then start, and you can import or create new knowledges and save the drawing.

You must use the SaveAs option and give the drawing a different name. The system opens up a drawing called NewKnoweldgeDrawing by default and this is write protected (set as Read-Only), so that you must use the SaveAs option and give your knowledge drawing a different name.

2.1.1.2.7 Save Current Settings as Job Default Settings

Save Current Settings as Job Default Settings

Using this option will store whatever the current settings in the currently selected job are and make

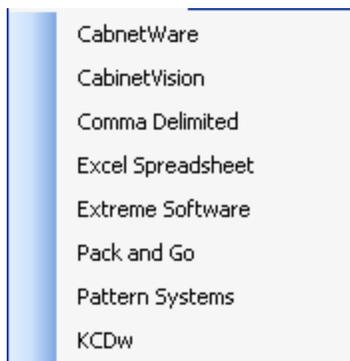
them the defaults for any new job that is created, or any new job that is made with the right click 'Cut with Router-CIM' option.

The settings that are used are:

Knowledge Drawing
DOIT file
Current Material
All Part related settings

2.1.1.3 Import Wizards

Import Wizards Menu



Router-CIM has several Import Wizards used to create jobs in just a few steps. There are several 3rd party packages that create geometry and job settings that Router-CIM can read and then create a job from those parts and/or settings.

In addition to the 3rd party imports, there are two generic imports for either a comma-delimited file or an Excel spreadsheet that can be handy to create jobs from. Additionally, there is the Pack and Go import to bring a job into Router-CIM that was packaged previously using the Pack and Go option.

The Import Wizards available are:

- Cabnetware
- Cabinet Vision
- Comma Delimited
- Excel Spreadsheet
- Extreme Software
- Pack and Go
- Pattern Systems
- KCDw

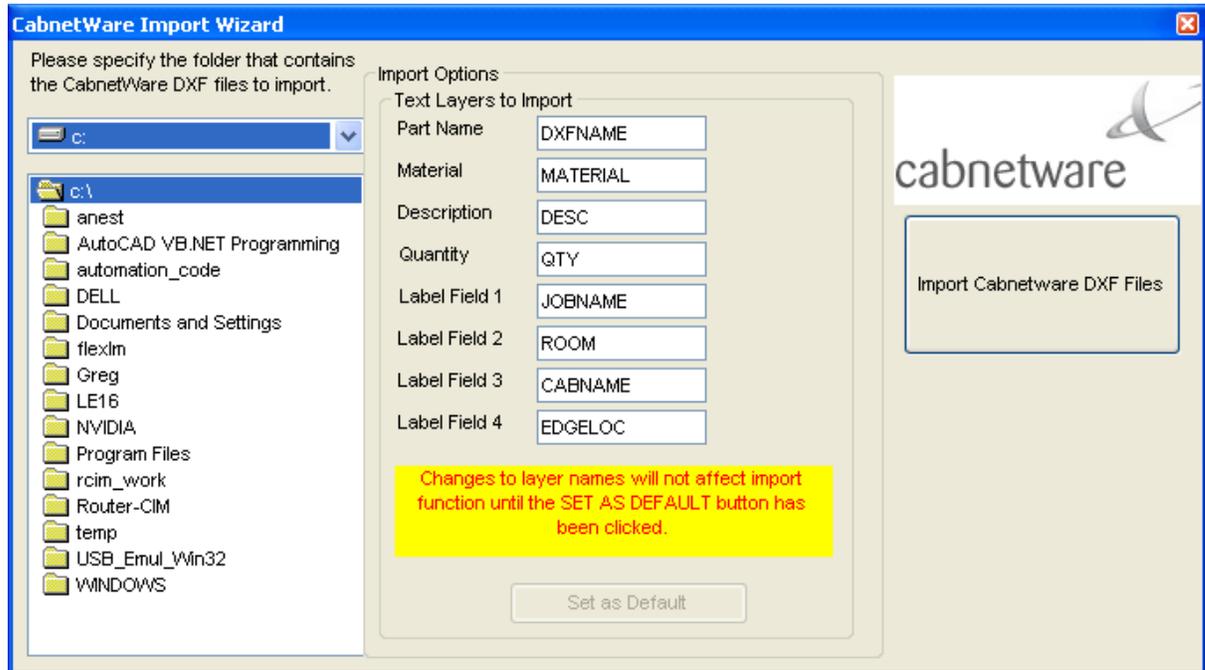
2.1.1.3.1 Cabnetware

Cabnetware

Cabnetware integrates room and cabinet design capabilities with manufacturing tools. Cabnetware is for residential and commercial manufacturers of casework; allowing them to generate detailed drawings for use with building contractors and architects. This program has

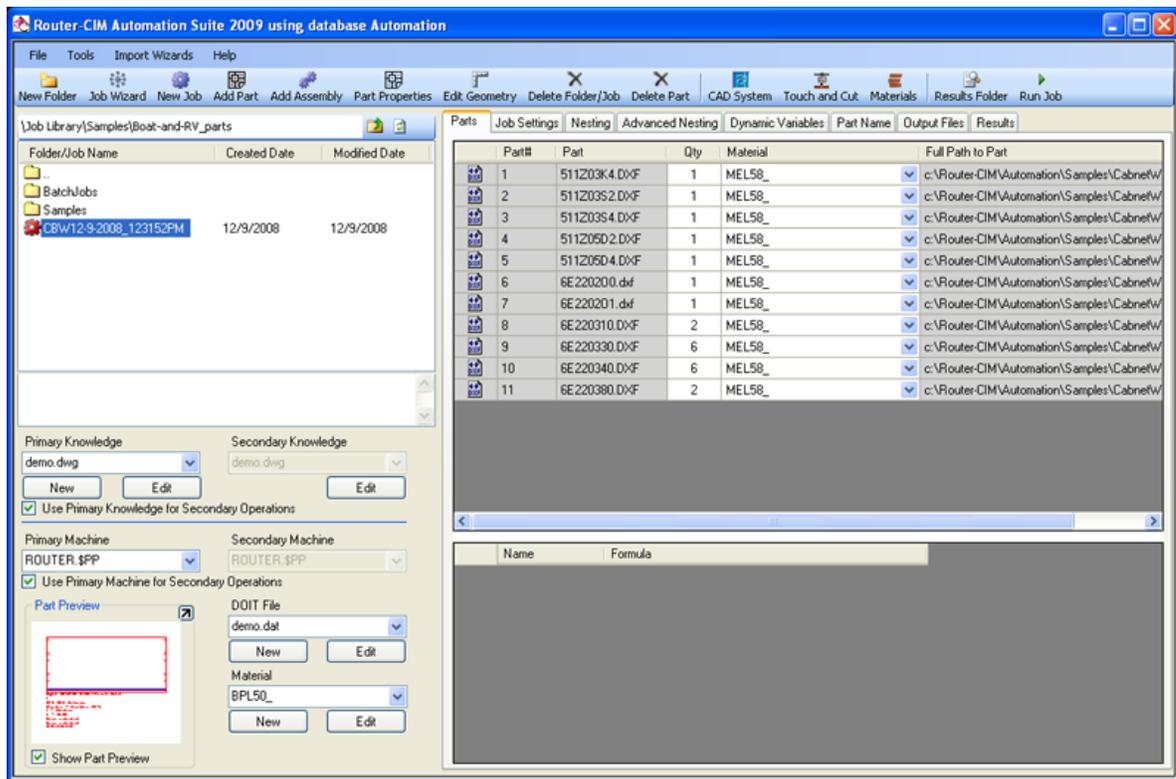
modules that allow it to export layered DXF files that can be imported into Router-CIM with the help of the Cabnetware import wizard.

Select the Cabnetware wizard from the list and you are presented with the following window.



Select the folder where the DXF files are located on the left side. In the middle column you may edit the layers that the Cabnetware software presents it data on. Normally this is only done once and then left alone, however the option exists to change it should this be necessary.

Once the folder containing the DXF files is selected, press the Import Cabnetware DXF Files button and a job will be added to the current folder.



The Text Layers in Cabnetware DXF files contain information such as Material, Quantity, Job Name, DXF Name, etc... These are needed to process the parts through Router-CIM. The text is typically located in the lower left corner of the DXF.



Right DRAWER SIDE (Front Side)

1
 5/8 G2S Melamine
 Woodco - Boulder FS-A
 1 - Kitchen
 6 - BASE
 None selected
 None selected
 511Z03K4.DXF

Settings in Cabnetware

The following are the default layer names that should be used in Cabnetware.

- The outside of the part should always be placed on a layer that begins with **BORDER**
- All vertical drill holes, regardless of size, should be placed on layer **VBORE**
- Dadoes and rabbet's with a width of .25 inch should be placed on layer **ROUTE 250**
- Dadoes and rabbet's with a width of .375 inch should be rectangles on layer **ROUTE 375**
- Dadoes and rabbet's with a width of .500 inch should be rectangles on layer **ROUTE 500**
- Dadoes and rabbet's with a width of .625 inch should be rectangles on layer **ROUTE 625**
- Dadoes and rabbet's with a width of .750 inch should be rectangles on layer **ROUTE 750**

The following layers are for the text in each dxf file (Text height should be .125 and Text spacing should be .130).

- Part description should be placed on a layer called **DESC**
- Part quantity should be placed on a layer called **QTY**
- Part material should be placed on a layer called **MATERIAL**
- Job name should be placed on a layer called **JOBNAME**
- Room name should be placed on a layer called **ROOM**
- Cabinet name should be placed on a layer called **CABNAME**
- Edge band location should be placed on a layer called **EDGELOC**
- Edge band material should be placed on a layer called **EDGEMAT**
- DXF file name should be placed on a layer called **DXNAME**

Layer	Knowledge	Tool	Spindle#
Border	Border	.5" Compression	1
Vbore	Vbore	Multi Spindle Gang Drill	Varies
Route250 Route375	Dado250	.25 Router Bit	2
Route500 Route625 Route750	Dado500	.5" Down Shear	3

Table 1. Layer to Knowledge Association for Cabnetware Router-CIM

Cabnetware Notes:

In the Cabnetware "CNCAPP.INI" file the following should be set:

- Reverse Panel Reference = Y
- Reverse Verticals Reference = Y
- Output DXF Rects = Y

To access the "CNCAPP.INI," in the Cabnetware CNC Link, go to "Help" pull down menu and select "About Cabnetware CNC" and then click on the purple disk icon to edit the INI file.

All geometry that is to be cut in like fashion (same tool, spindle, feed rate etc.) should be placed on the same layer.

Typically, dadoes and rabbet's should be output as rectangles that overlap the edge of the material by one tool radius (if the cut is to extend to the edge of the part).

All geometry should be output with negative thickness indicating cut depth.

Backside Parts with Cabnetware

There is a provision in Cabnetware to identify the parts which have backside or secondary operations. Likewise in Router-CIM there is a similar provision.

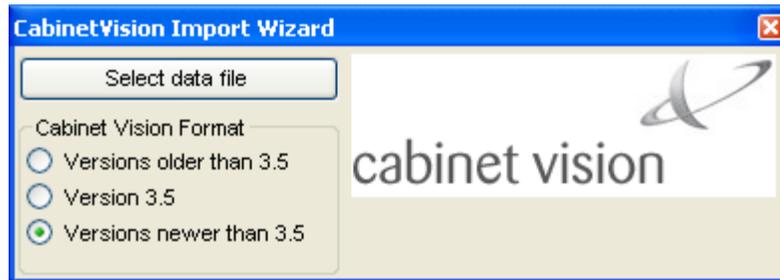
The parts which have dxf names that end in 1, 3, 5 are all treated as backside parts. When Router-CIM reads them in, it determines that last character and sets the job up to cut that as a separate part from the nested parts. It is likely in these types of jobs to have the same part name, except for the last character. The one that ends in zero (0) for instance will be nested and the one that has a 1, 3 or 5 will be cut as a single operation.

2.1.1.3.2 CabinetVision

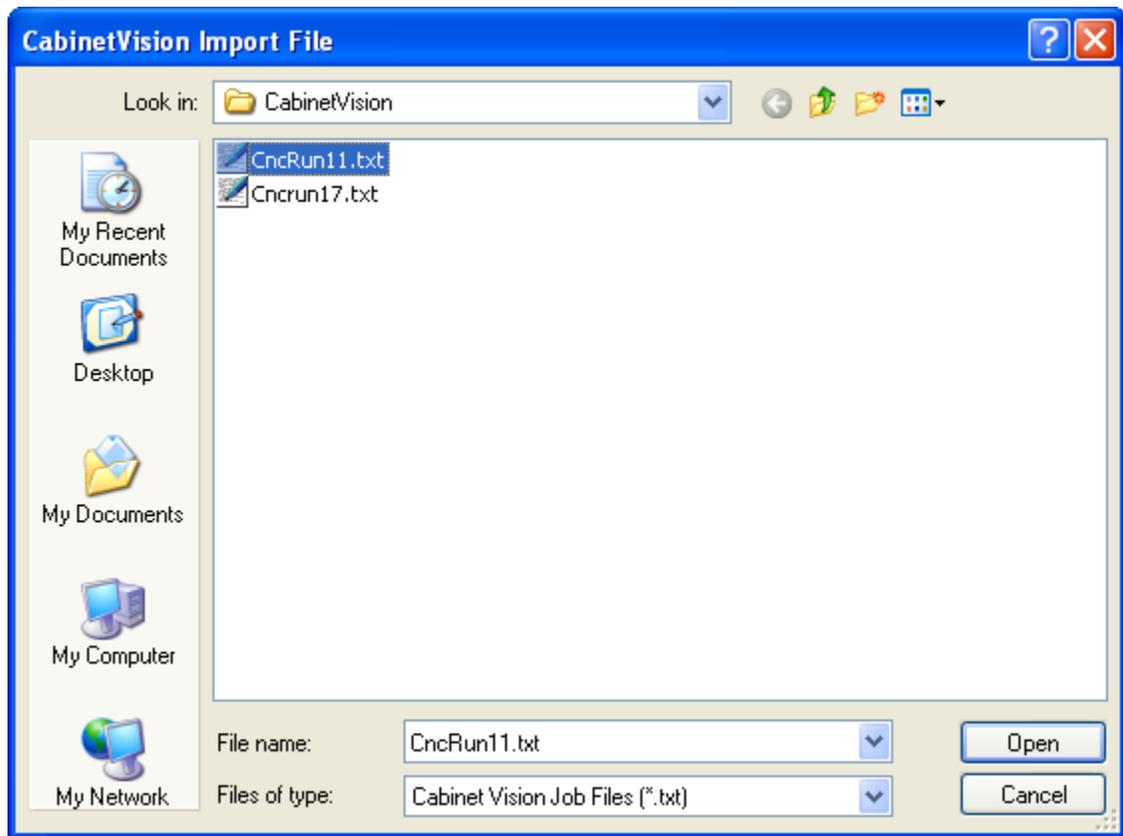
CabinetVision

Cabinet Vision is a Planit Solutions cabinet design and manufacturing program. This program has modules that allow it to export layered DXF files that can be imported into Router-CIM with the help of the Cabinet Vision import wizard.

After making a job in Cabinet Vision, select the Cabinet Vision Import Wizard. You can select the format that matches the version of your Cabinet Vision software.



A window will appear allowing you to select the data file that was produced along with the layered DXF files.



Select the Cncrun file for the job you wish to run and click Open. The files will be imported into Router-CIM in the current Jobs folder. The Cncrun file contains all the data for the job relating to the parts, materials, quantities and label information.

Settings for Cabinet Vision

The following are the default layer names that should be used in Cabinet Vision.

- The outside of a part should always be placed on a layer that begins with PANEL
- All vertical drill holes, regardless of size, should be placed on layer DRILL
- The Board layer should be placed on a layer that begins with BOARD
- Dadoes and rabbets with a width of .25 inch should be rectangles on layer ROUTE 250
- Dadoes and rabbets with a width of .375 inch should be rectangles on layer ROUTE 375
- Dadoes and rabbets with a width of .500 inch should be rectangles on layer ROUTE 500
- Dadoes and rabbets with a width of .625 inch should be rectangles on layer ROUTE 625
- Dadoes and rabbets with a width of .750 inch should be rectangles on layer ROUTE 750

Layer	Knowledge	Tool	Spindle#
Panel	Panel	.5" Compression	1
Drill	Drill	Multi Spindle Gang Drill	Varies
Route250 Route375	Dado 250	.25 Router Bit	2
Route500 Route625			

Route750	Dado 500	.5" Down Shear	3
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Table 1. Layer to Knowledge Associations for Cabinet Vision Router-CIM

Cabinet Vision Notes:

All geometry that is to be cut in a like fashion (same tool, spindle, feedrate, etc.) should be placed on the same layer.

Typically, dados and rabbets should be output as rectangles that overlap the edge of the material by one tool radius (if the cut is to extend to the edge of the part).

All geometry should be output with negative thickness indicating cut depth.

Backside Parts with Cabinet Vision:

There is a provision in Cabinet Vision to identify the parts which have backside or secondary operations. Likewise in Router-CIM there is a similar provision to cut them apart from the nested parts.

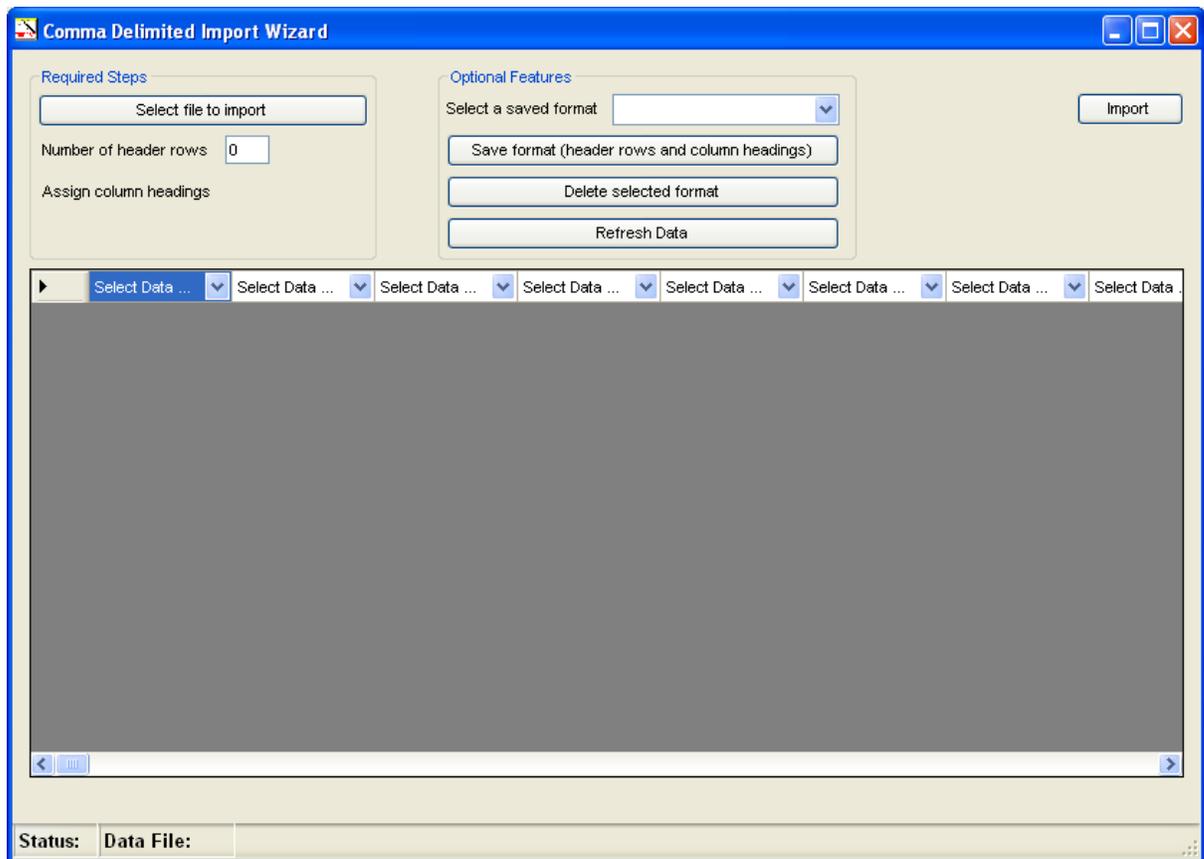
The parts which have dxf names that include an "F" as the fourth character are all entered as two parts automatically by the system, one which has the "F" in the fourth position, and one that has a "B" in the fourth position. When Router-CIM reads them in, it determines that identifying character and sets the job up to cut the "B" part as a separate part from the nested parts. It is expected that the Job Editor will have both parts in it when the import is complete, but the "B" part will not appear in the cncrun.txt file. If you then select the "B" part, you will notice in its properties that it has the flag set to be cut as a single operation.

If the "B" part exists in the Cncrun file, then you will see three parts with similar names, as the system automatically loads the "B" part when the "F" part is present. If it encounters a "B" part in the list, Router-CIM will treat that as another part in the job, which likely will be incorrect.

2.1.1.3.3 Comma Delimited

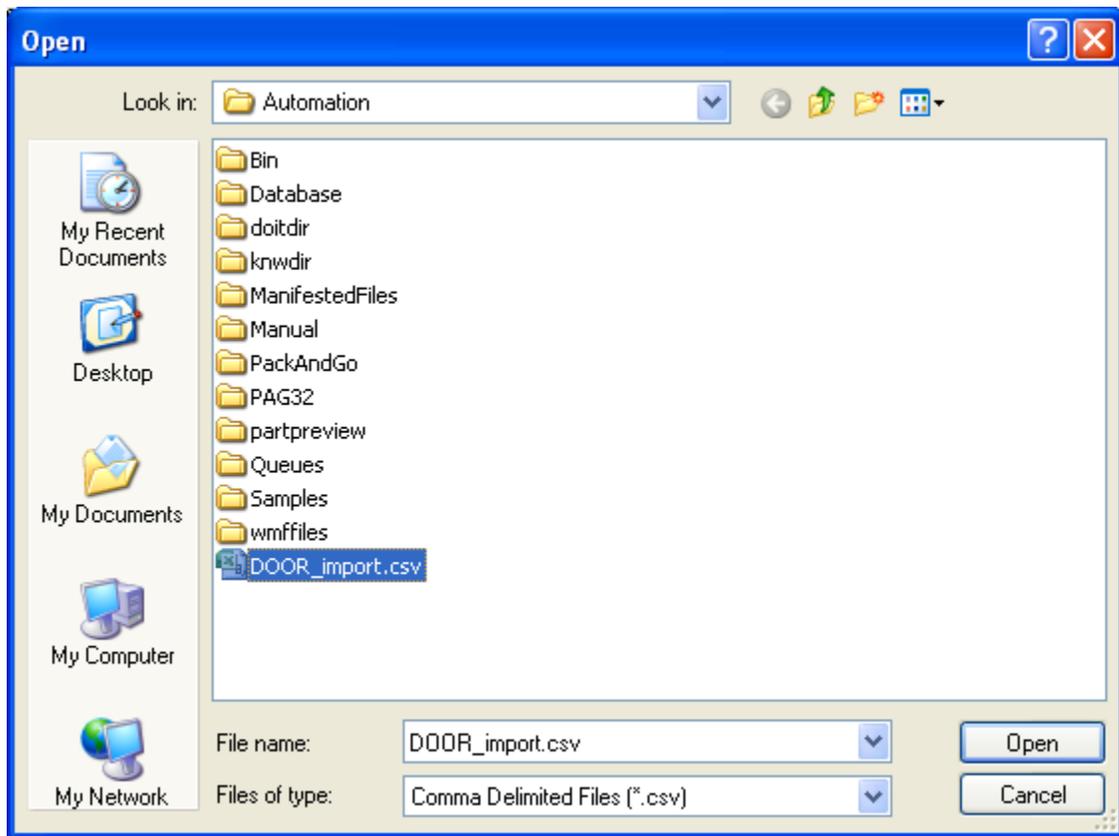
Comma Delimited

The comma delimited import wizard allows you to import parts from a file with a comma-delimited format. This means that there is a comma separating each column of data and each column contains the same type of data. This is very similar to the Excel Spreadsheet format, as the files are very similar.



Select File to Import

Pressing this button shows a dialog where you can select a .CSV file to import into Router-CIM.



Number of Header Rows

If your comma delimited file has header rows in it for any reason, you can bypass those and get straight to the data by specifying how many header rows to skip.

Assign Column Headings

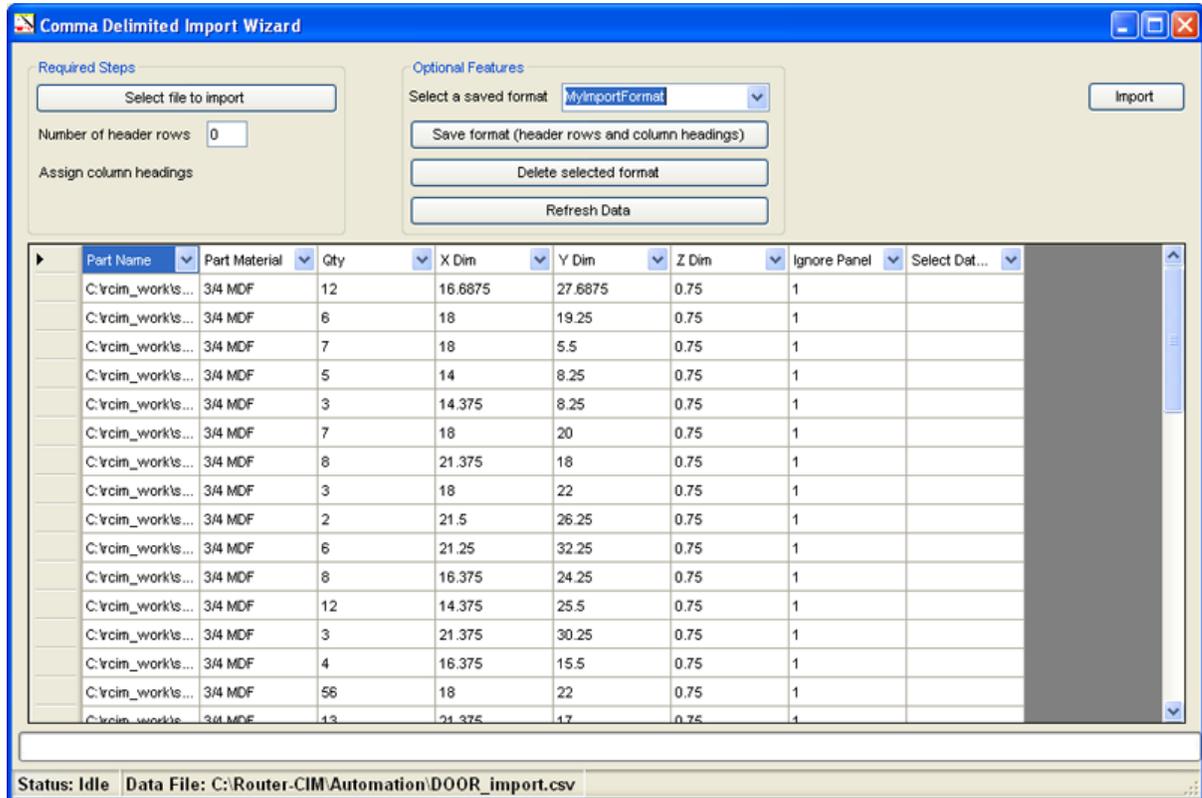
Assigning Column Headings will allow you to select the data for each column in the imported file. The choices available in the pulldown list are:

- Ignore
- Part Name
- Part Material
- Quantity
- X Dim
- Y Dim
- Z Dim
- Ignore Panel
- Backside
- Description
- Label Info 1 - 8
- Rotate Part
- Rotate Angle
- Knowledge Drawing
- DOIT file
- Print Nests
- Print Single Part
- Job Name
- Filler Quantity
- Start Point on Longest Side

Nest Rotation
 Mirror
 Mirror Type
 Variable

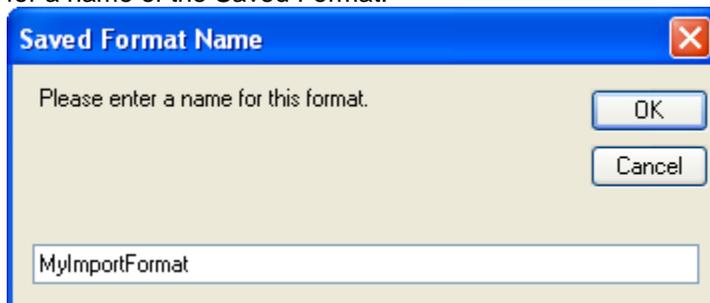
Changing Header Rows

To change any of the header rows, select the arrow next to the heading name and pick on the new heading desired.



Save Format

You are able to save the data that is set up for a job by selecting Save Format. You will be prompted for a name of the Saved Format:



Selecting OK will add this name to the Saved Format list so that you can select this format at a later time instead of re-selecting each column.

Delete Selected Format

You may delete the saved selected format from the saved format list.

Refresh Data

This option refreshes the screen, displaying all column headings selected or imported.

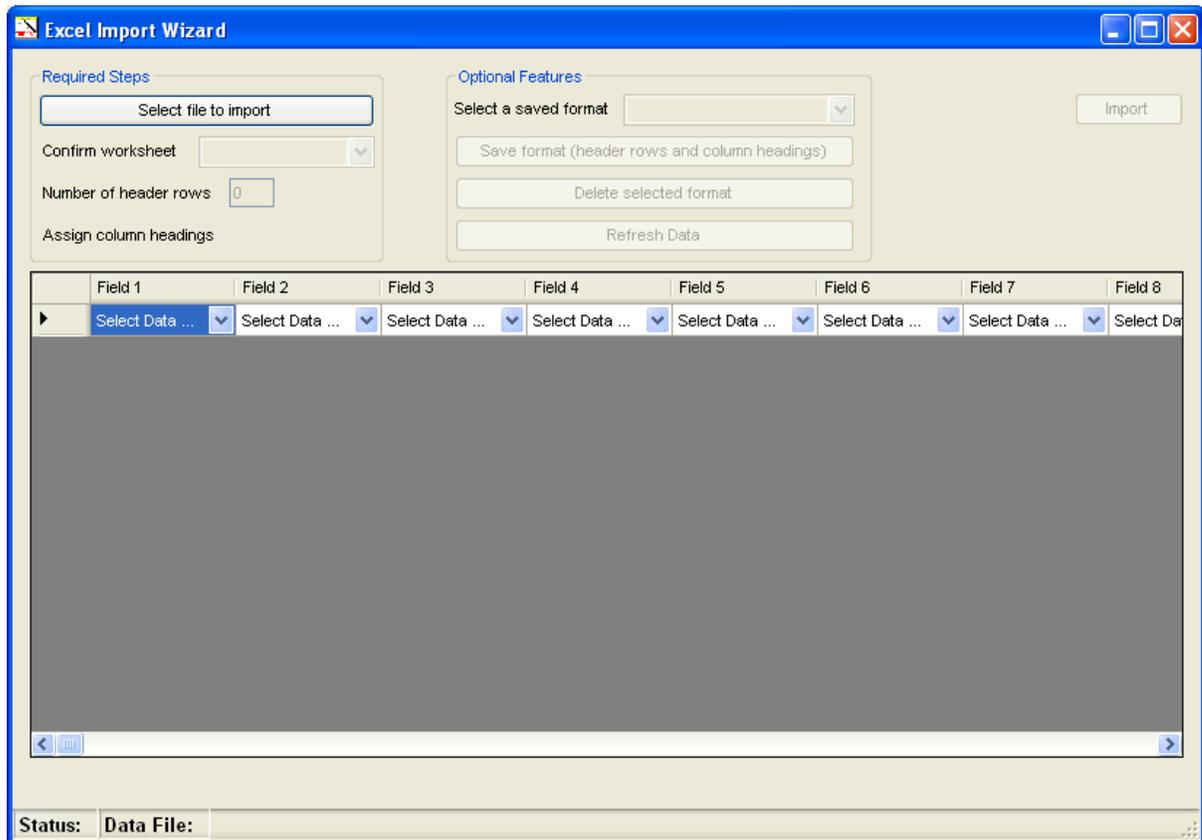
Import

Finally when you are done selecting your file and headings, you can import the file into Router-CIM and it will build a job from the selected data

2.1.1.3.4 Excel Spreadsheet

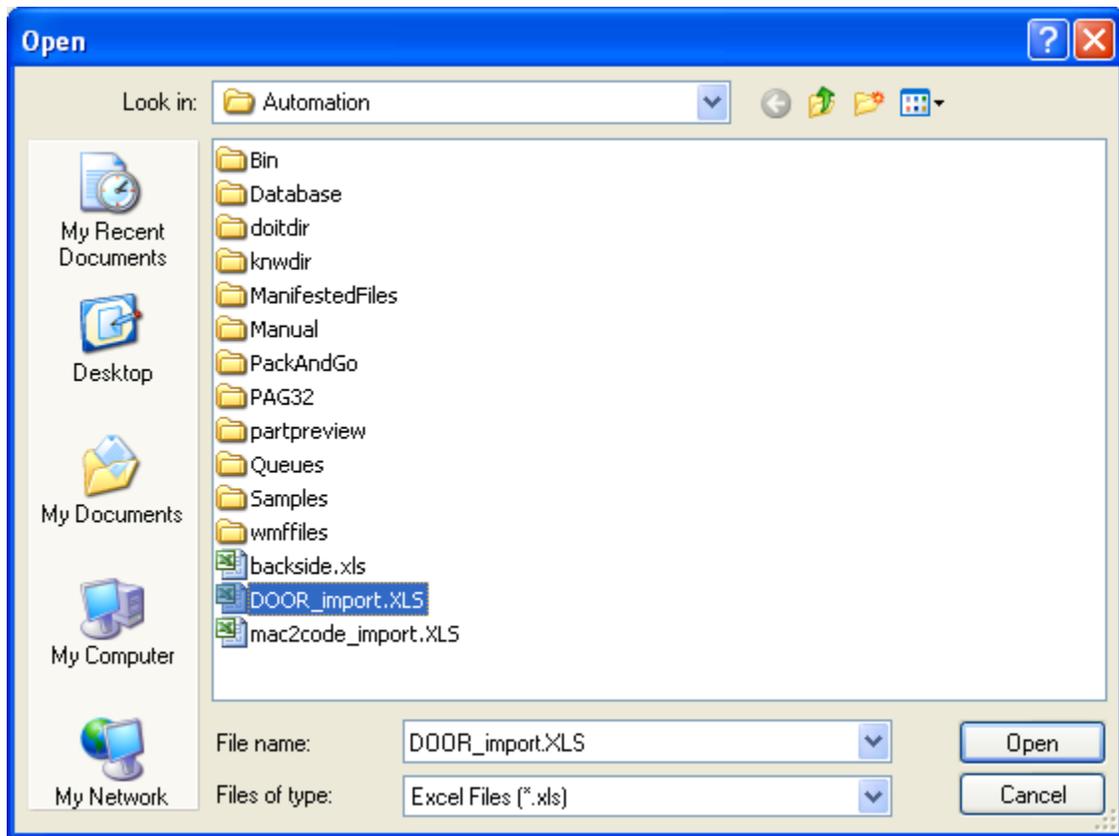
Excel Spreadsheet

The Excel import wizard allows you to import parts from a file with a comma-delimited format. This means that there is a comma separating each column of data and each column contains the same type of data. This is very similar to the Excel Spreadsheet format, as the files are very similar.



Select File to Import

Pressing this button shows a dialog where you can select a .CSV file to import into Router-CIM.



Number of Header Rows

If your comma delimited file has header rows in it for any reason, you can bypass those and get straight to the data by specifying how many header rows to skip.

Assign Column Headings

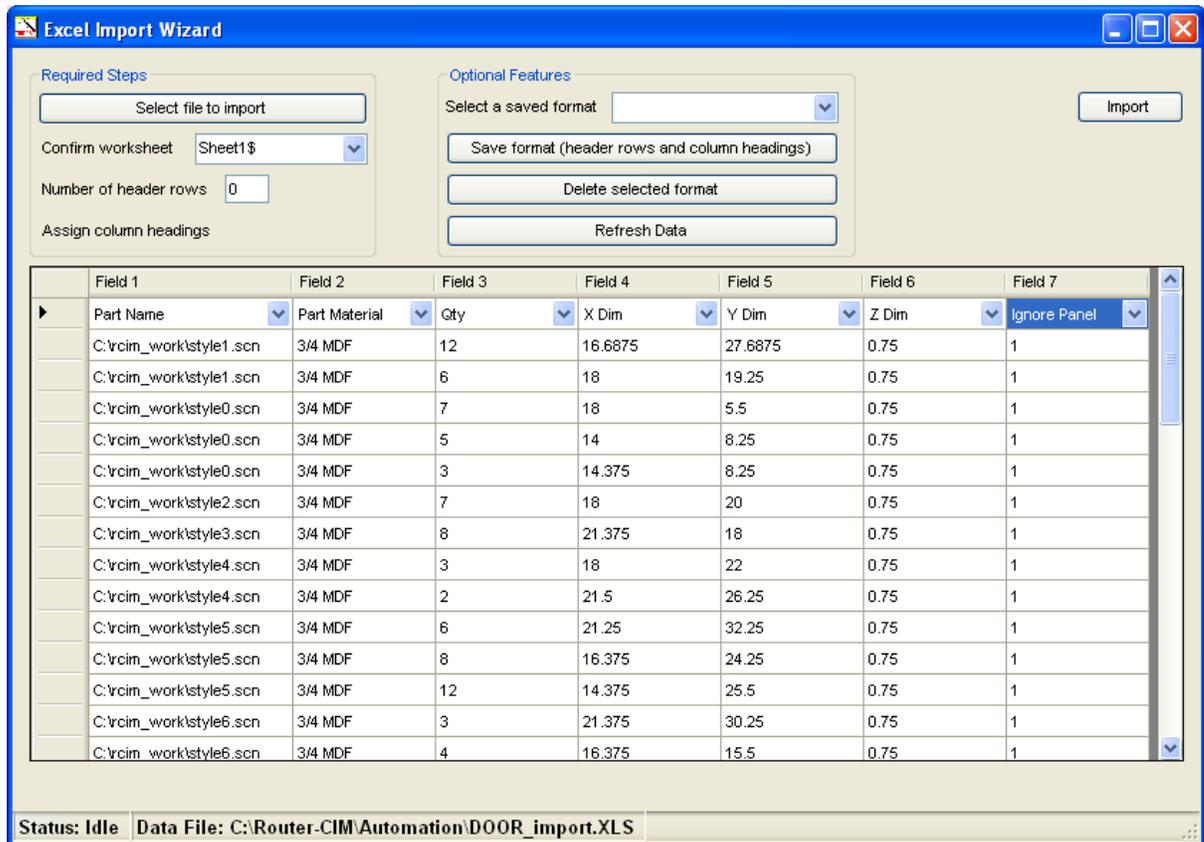
Assigning Column Headings will allow you to select the data for each column in the imported file. The choices available in the pulldown list are:

- Ignore
- Part Name
- Part Material
- Quantity
- X Dim
- Y Dim
- Z Dim
- Ignore Panel
- Backside
- Description
- Label Info 1 - 8
- Rotate Part
- Rotate Angle
- Knowledge Drawing
- DOIT file
- Print Nests
- Print Single Part
- Job Name
- Filler Quantity
- Start Point on Longest Side

Nest Rotation
 Mirror
 Mirror Type
 Variable

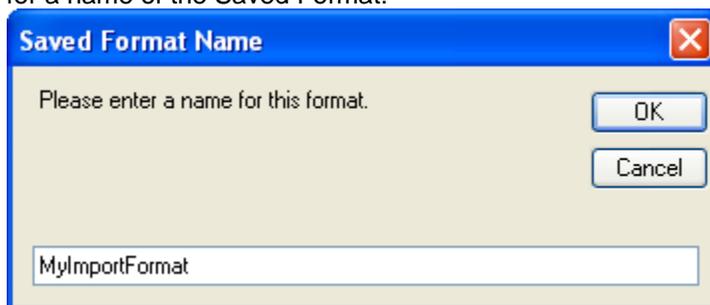
Changing Header Rows

To change any of the header rows, select the arrow next to the heading name and pick on the new heading desired.



Save Format

You are able to save the data that is set up for a job by selecting Save Format. You will be prompted for a name of the Saved Format:



Selecting OK will add this name to the Saved Format list so that you can select this format at a later time instead of re-selecting each column.

Delete Selected Format

You may delete the saved selected format from the saved format list.

Refresh Data

This option refreshes the screen, displaying all column headings selected or imported.

Import

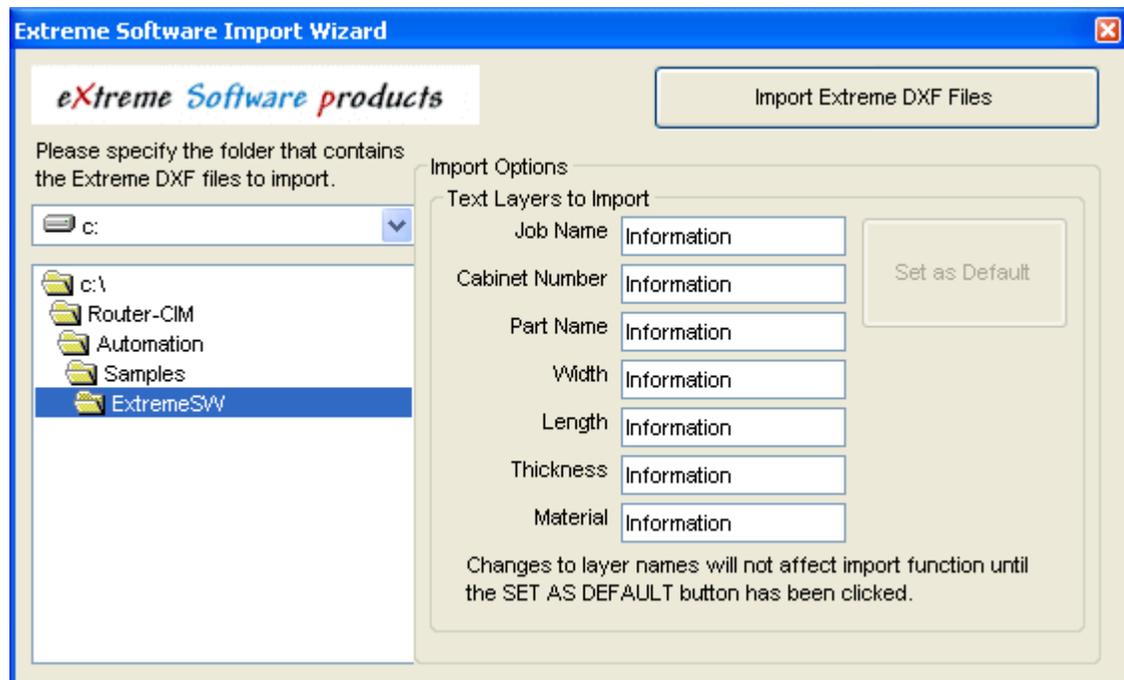
Finally when you are done selecting your file and headings, you can import the file into Router-CIM and it will build a job from the selected data

2.1.1.3.5 Extreme Software

Extreme Software

Extreme Software Products makes a cabinet design software with an easy to use graphical interface. Router-CIM can import the files that this software package creates and process them in a job. The Extreme Software Import Wizard is a very simple interface to get the parts from one software to another.

Extreme Software will export DXF files to a folder of your choosing. In Router-CIM, select the Extreme Software Import Wizard and a window will appear allowing you to select the folder where the dxf files are stored. Select the folder and click on Import Extreme DXF Files.

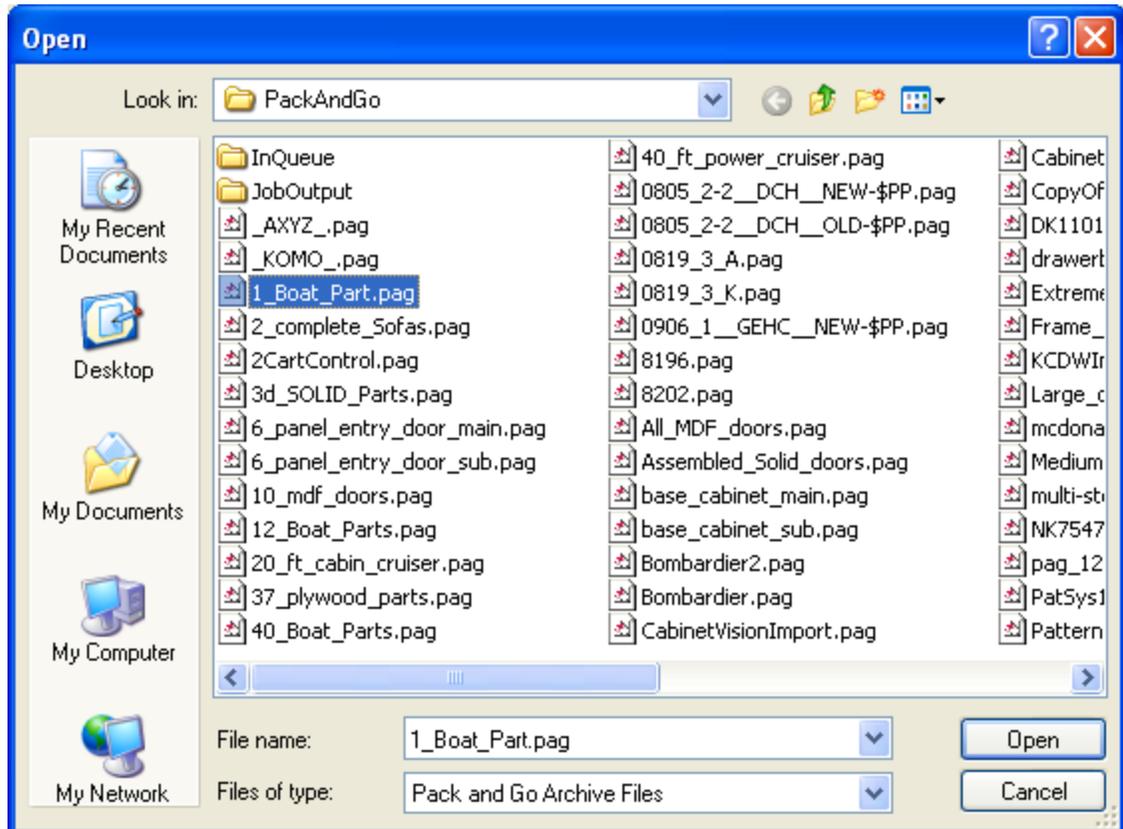


There is a section in the Import Wizard that shows where some of the job information from the DXF files is stored. By default, all the information is stored on layer "Information". If that changes in your DXF files, input the layer name where the data is kept, and Router-CIM will read that data when it imports each DXF File.

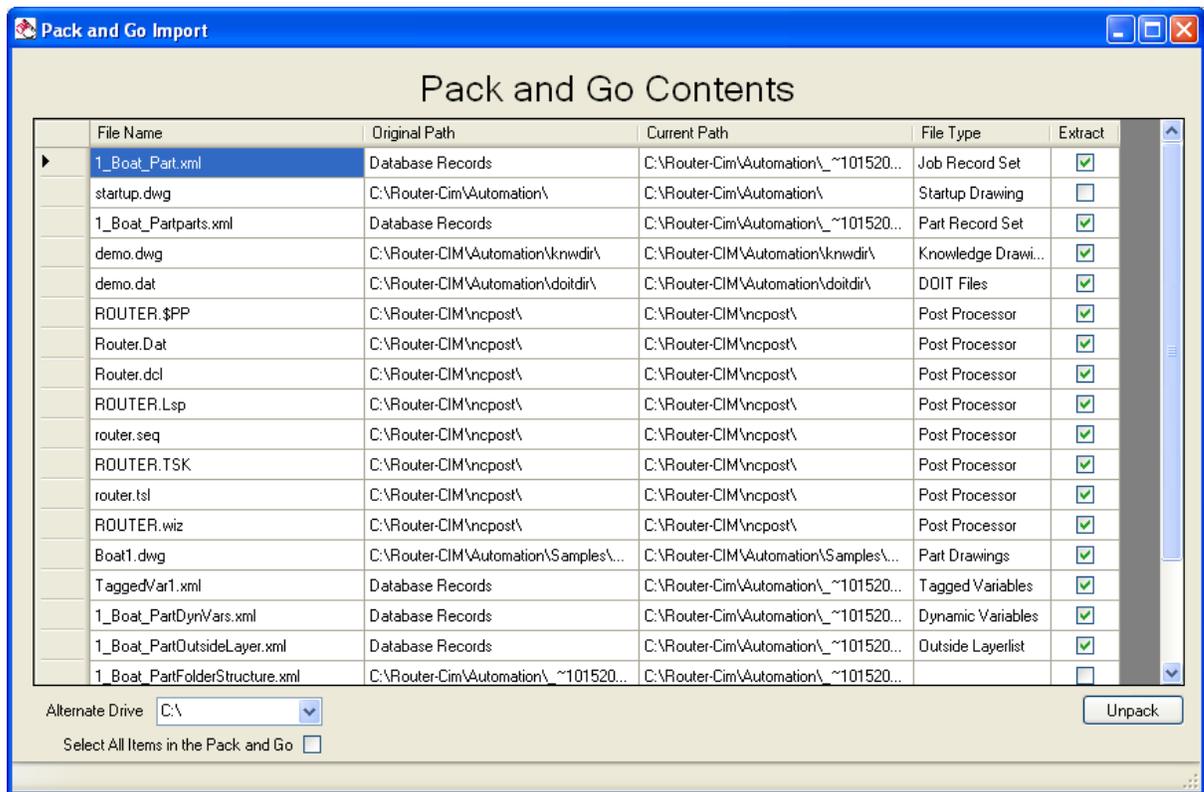
2.1.1.3.6 Pack and Go

Pack and Go

Pack and Go is the Router-CIM format for packaging all the elements of a job into one file. To import that file into Router-CIM as a job, select pack and go from the import list, and a window will appear where you can select the PAG file from.



Once that file has been selected, you will be show a list of all the elements of a job that can be imported. Most of the time, you can select all the elements, but a check box is provided for you to remove elements from the selection.



Once you have all the elements selected that you wish to import, select the Unpack button and a job will be created in the current folder.

2.1.1.3.7 Pattern Systems

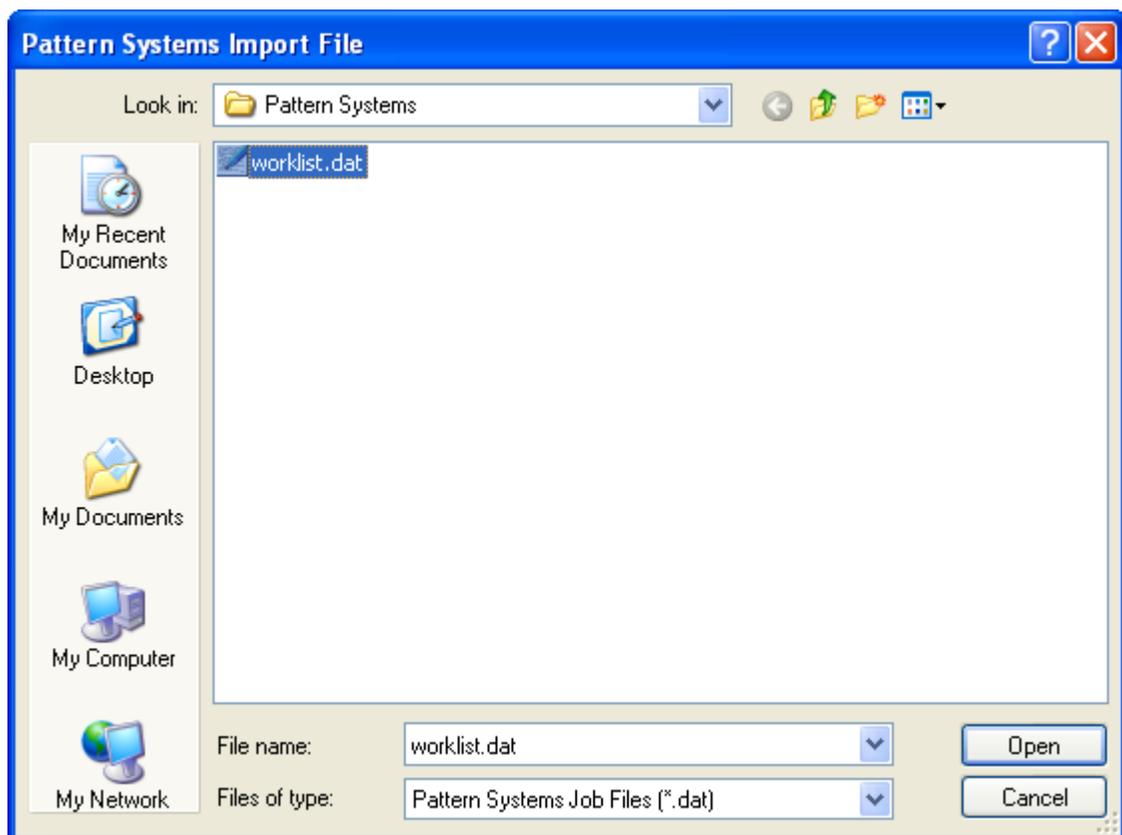
Pattern Systems

Pattern Systems software allows the creation of layered DXF files for import. Once the DXF Files have been made, Pattern Systems will also create a Job File that describes the material used, the part names, quantities, edge treatments, etc. That Job file can be selected and Router-CIM will import the files into a Router-CIM Automation job.

Select the Pattern Systems Wizard and a window will appear allowing you to select the data file from Pattern Systems. Click Select Data File.



A new window will appear allowing you to navigate to the folder where the job and dxf files you made with Pattern Systems are stored.



Select the data file and click on Open. The files will be imported into Router-CIM as a job in the current folder.

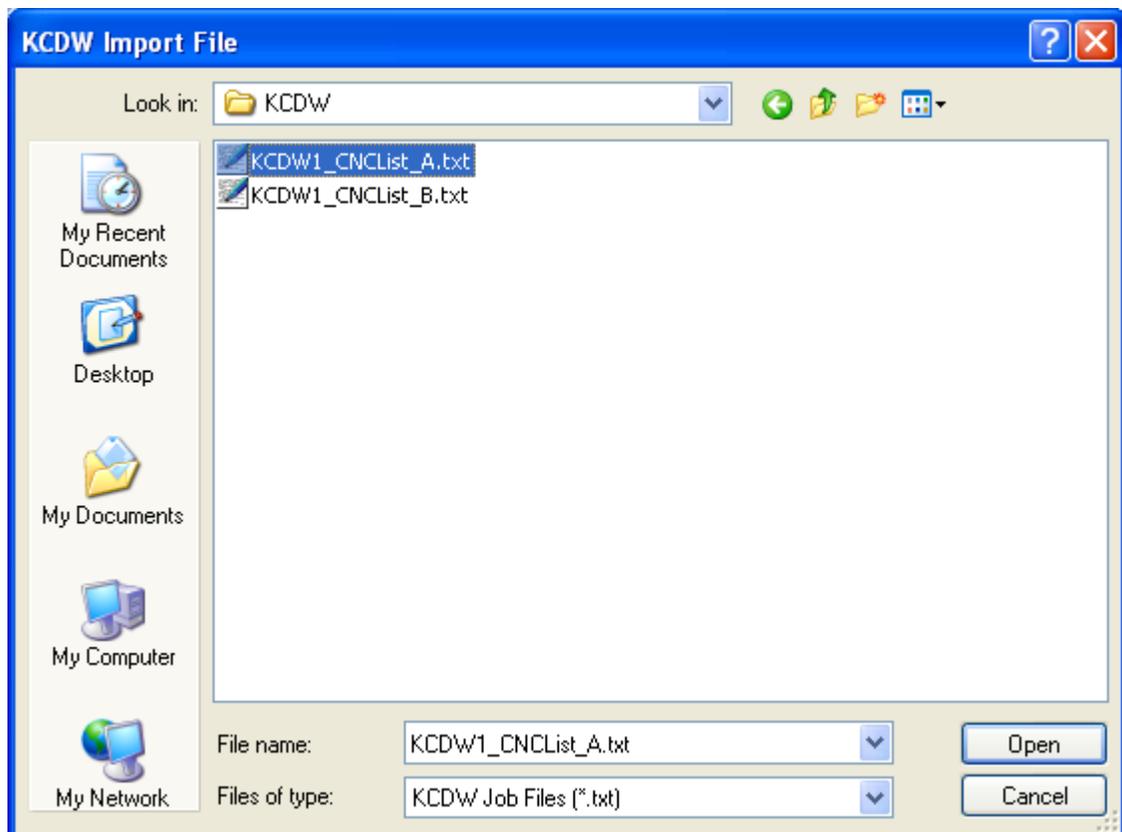
2.1.1.3.8 KCDw

KCDw

With the KCDw Machining version, layered DXF files are created and stored in a folder of your choosing. It will also create a job file that describes the material, part names, etc. Once the DXF files are created, select the KCDw Import Wizard in Router-CIM.

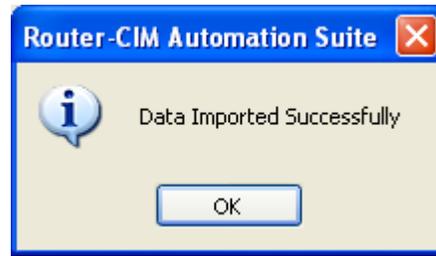


Click on Select Data File and a new window will appear allowing you to select the job file that KCDw created.



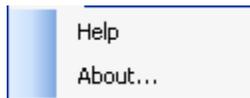
There is typically only one job file in each of the folders where the job DXF files are created. Select the job file and the parts will be inserted into Router-CIM as a job in the current folder.

A confirmation window will show up when the file is imported successfully.



2.1.1.4 Help

Help Menu



Help

Selecting Help opens a copy of this file with only Automation Suite related information.

About

About shows an informational window displaying the current version of your Router-CIM software and also a link to the web based help desk system. Should you need help and not be able to reach tech support via the toll free number, you may fill out a support ticket in the browser window that opens and a message will be emailed to the support desk.

2.1.2 Toolbar

Toolbar



The toolbar in Router-CIM allows access to many functions within jobs, parts, and folders.

2.1.2.1 New Folder

New Folder



Using this option will create a new folder in the current position of the job tree.

Folder/Job Name	Created Date	Modified Date
..		
12_Boat_Parts	7/28/2003	7/15/2008
20_ft_cabin_cruiser	7/17/2003	6/25/2008
3d_SOLID_Parts	7/17/2003	6/25/2008
40_ft_power_cruiser	7/17/2003	6/25/2008
NewFolder		

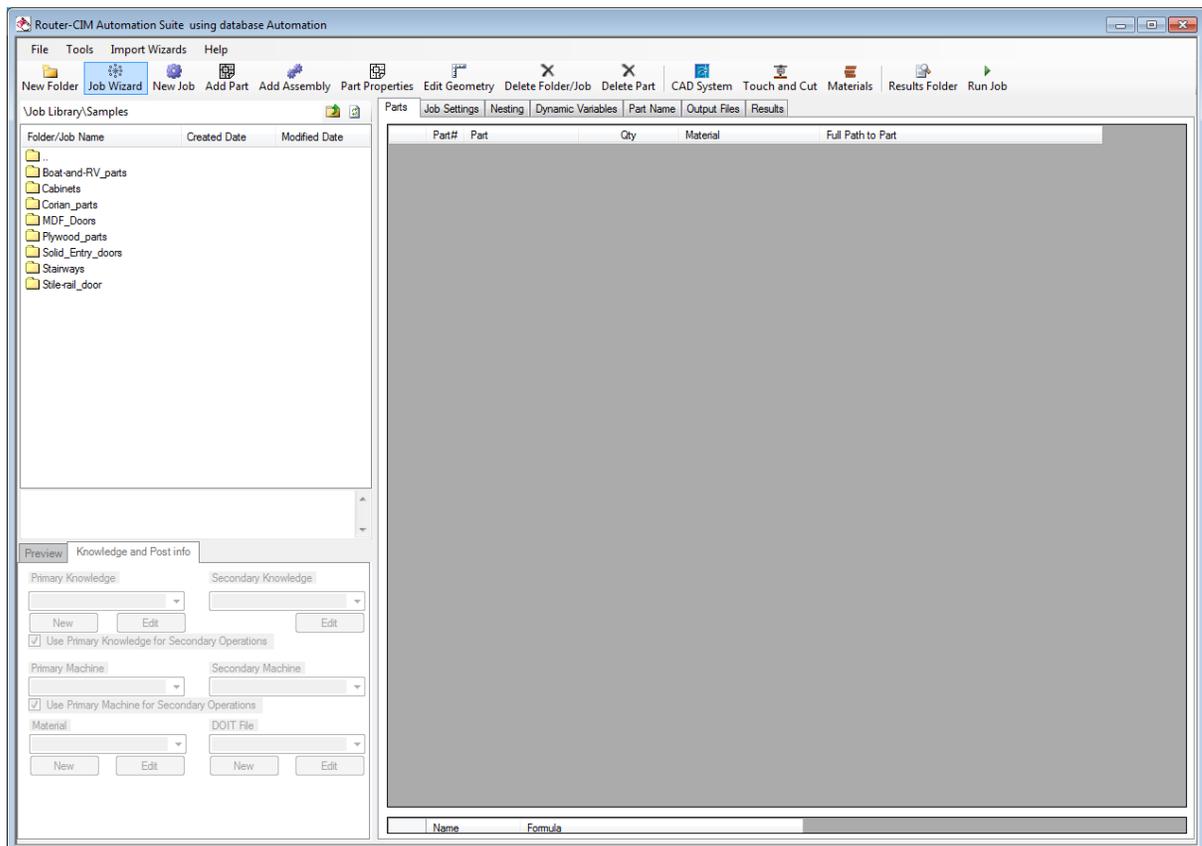
2.1.2.2 Job Wizard



Job Wizard

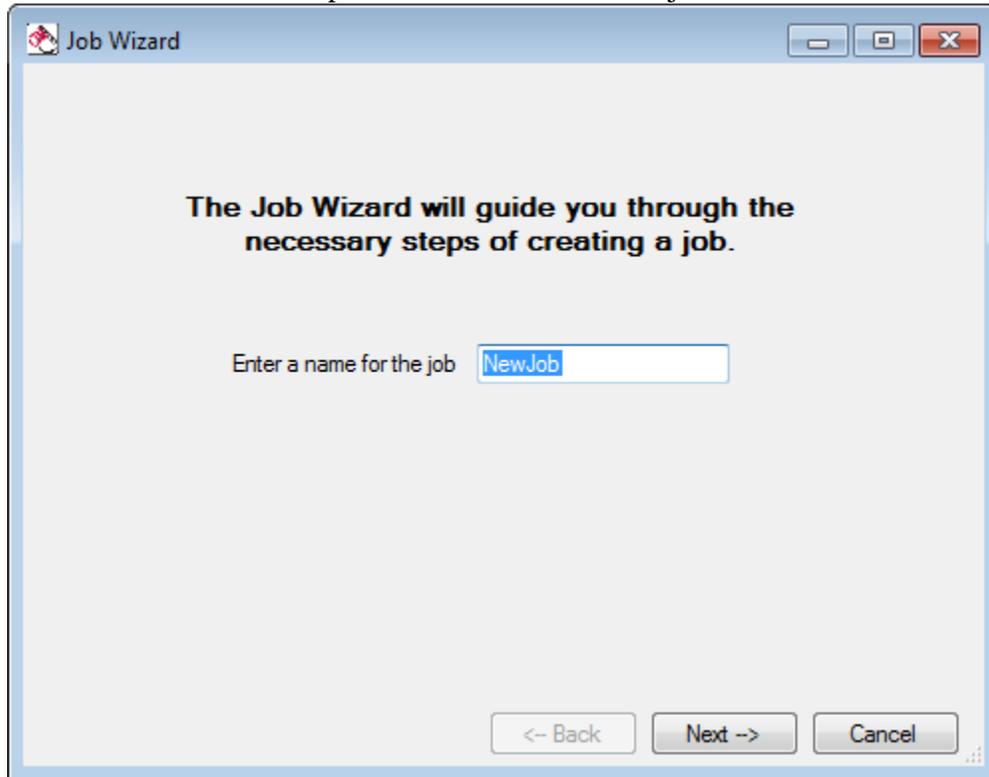
Using the Job Wizard, you can create a job in a step by step fashion.

Pick the Job Wizard



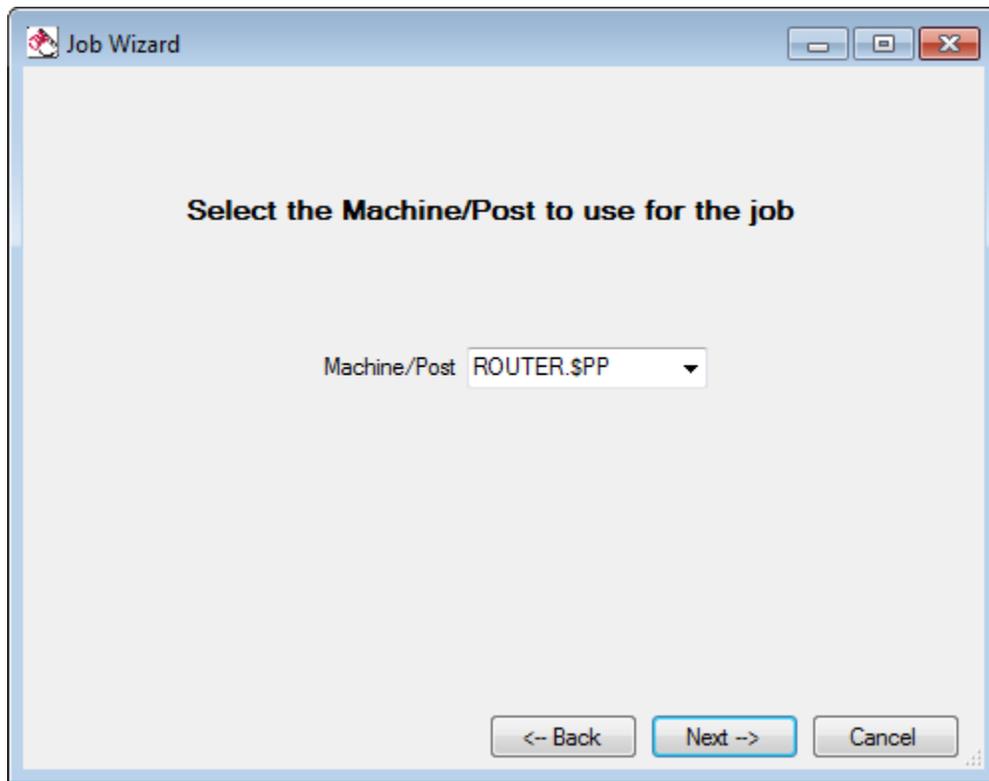
Enter a job name and pick Next.

The job name will also be the output folder name where the job results are stored.



Select your Machine/Post processor and pick Next.

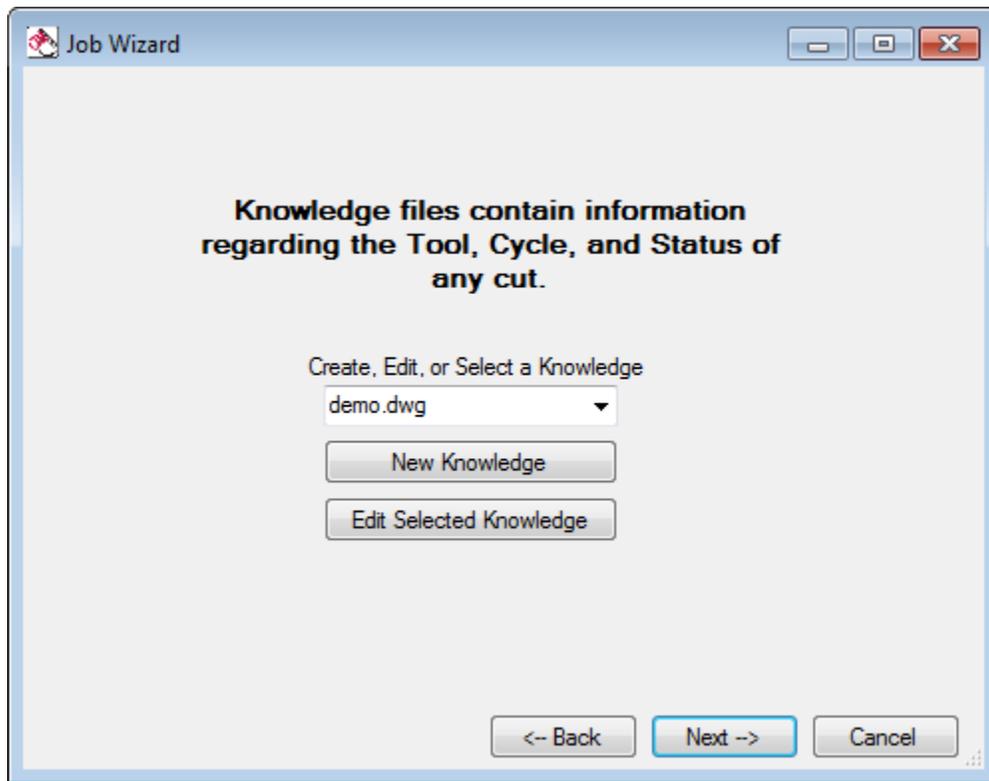
The post processor makes the machine code for different types and configurations of CNC machines.



Create, Edit or Select a Knowledge drawing and pick Next.

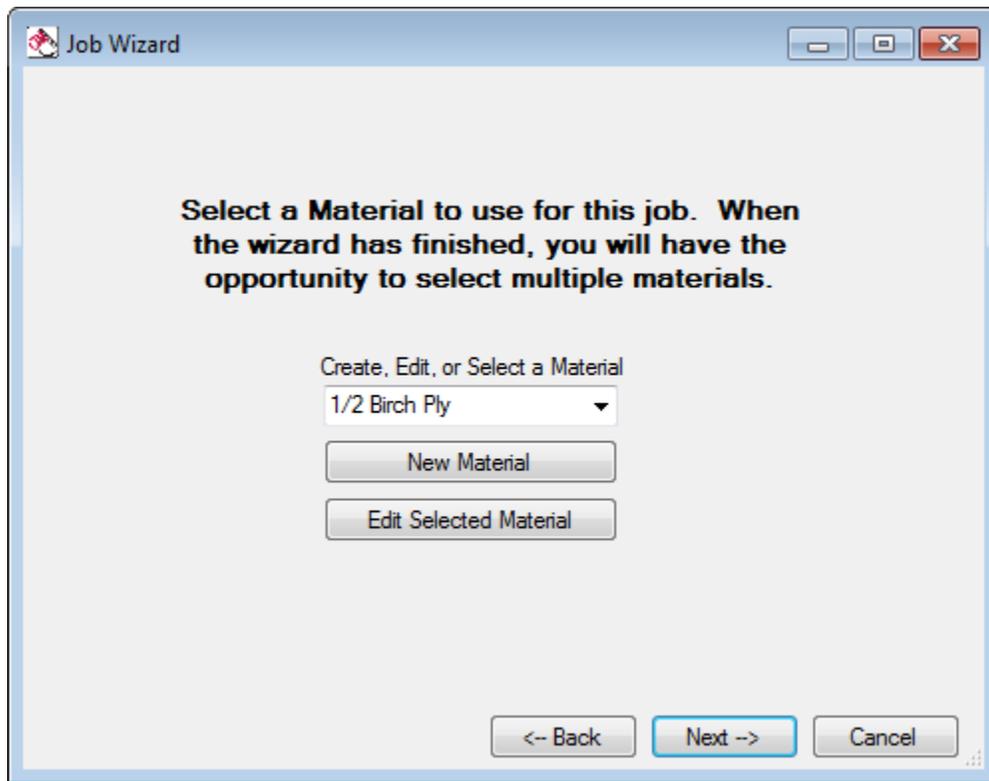
The knowledge drawing is a collection of machining operations that are saved and named within this drawing. You can make a new knowledge drawing where you build knowledges and save /name them. You then save that drawing and use it as your knowledge drawing.

From this screen, you can also edit existing knowledges that are stored in a selected knowledge drawing.



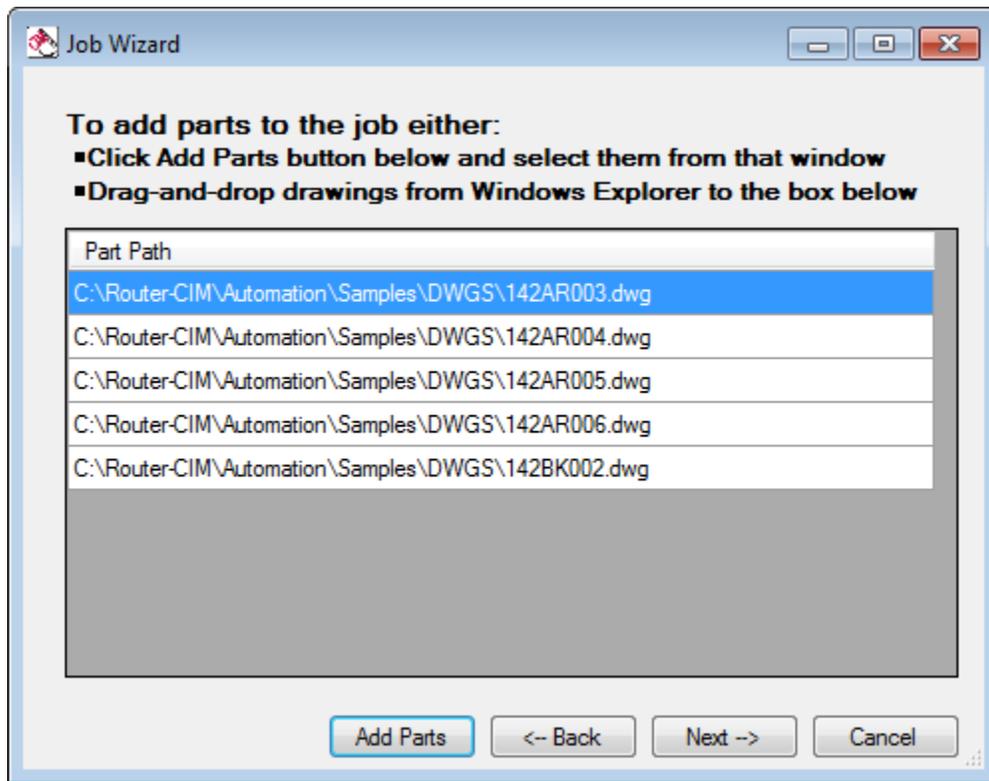
Create, Edit, or Select a default material and pick Next.

The material determines the sheet size when nesting parts. The material also determines the material thickness and if Z zero is the top of the material or top of spoil board.



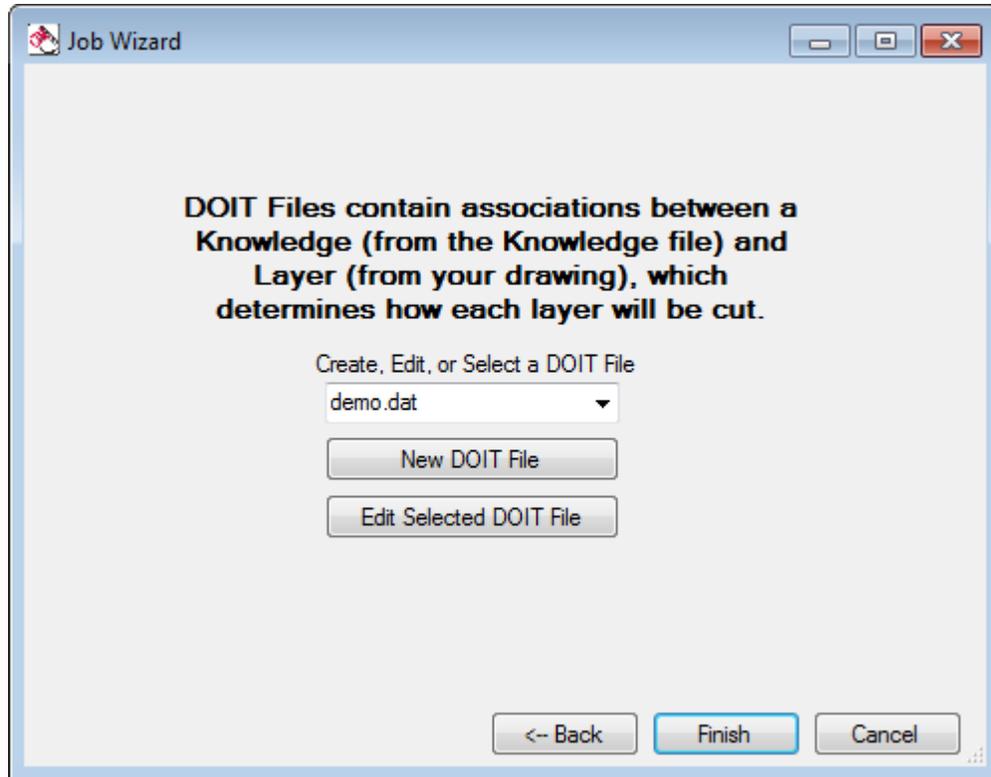
Add parts to your job and pick Next.

From this screen, you can add parts to your Router-CIM job. Add parts by picking the Add parts button and browsing for DWG, DXF, or SCN files to add. You can also drag files from Windows Explorer and drop them into this window.

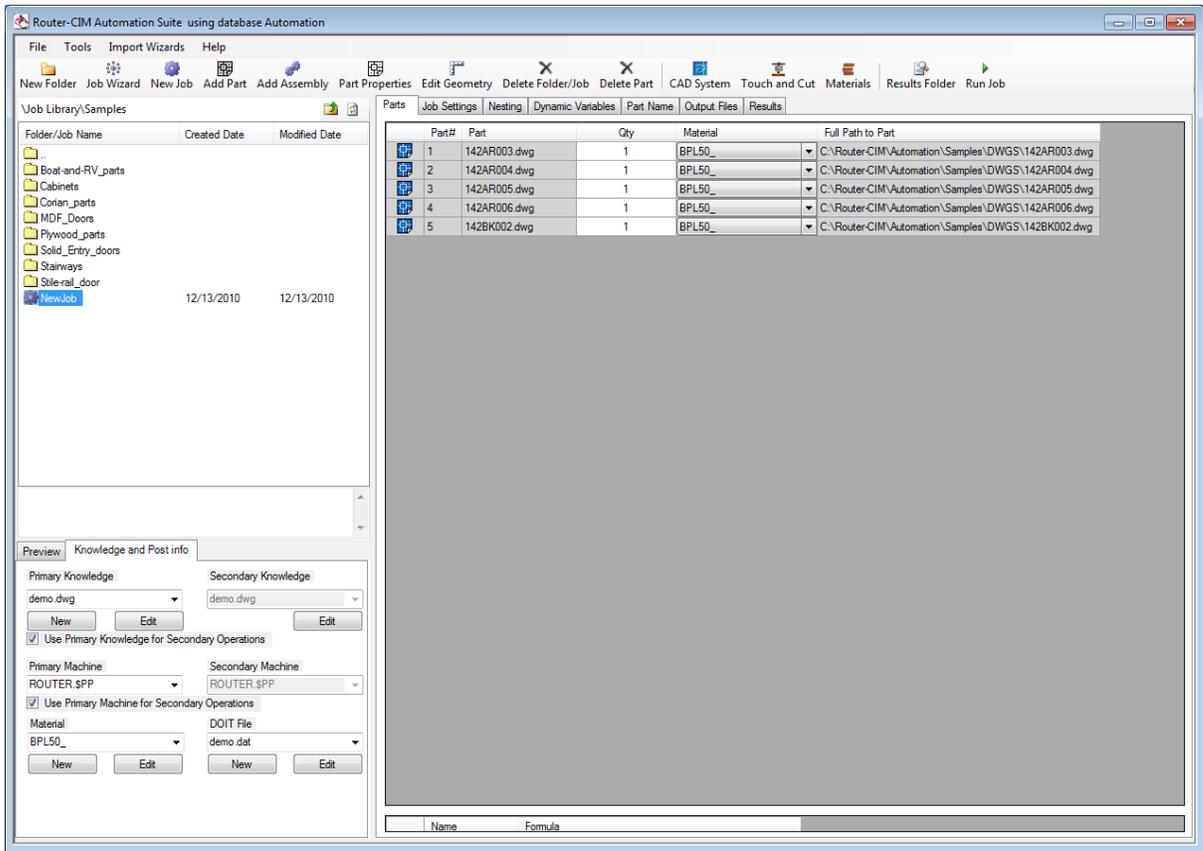


Create, Edit, or Select a DOIT file and pick Finish.

The doit file contains the association list that cuts a specific layer with a specific knowledge. You can make a new doit file and choose what knowledge cuts what layer or you can edit the selected doit file.



Pick the Run Job button to run your job.



Pick Open Results Folder

Run the output files on your machine.

2.1.2.3 New Job

New Job



This option will create a new job in the currently select folder.

Folder/Job Name	Created Date	Modified Date
..		
12_Boat_Parts	7/28/2003	7/15/2008
20_ft_cabin_cruiser	7/17/2003	6/25/2008
3d_SOLID_Parts	7/17/2003	6/25/2008
40_ft_power_cruiser	7/17/2003	6/25/2008
NewJob	12/9/2008	12/9/2008

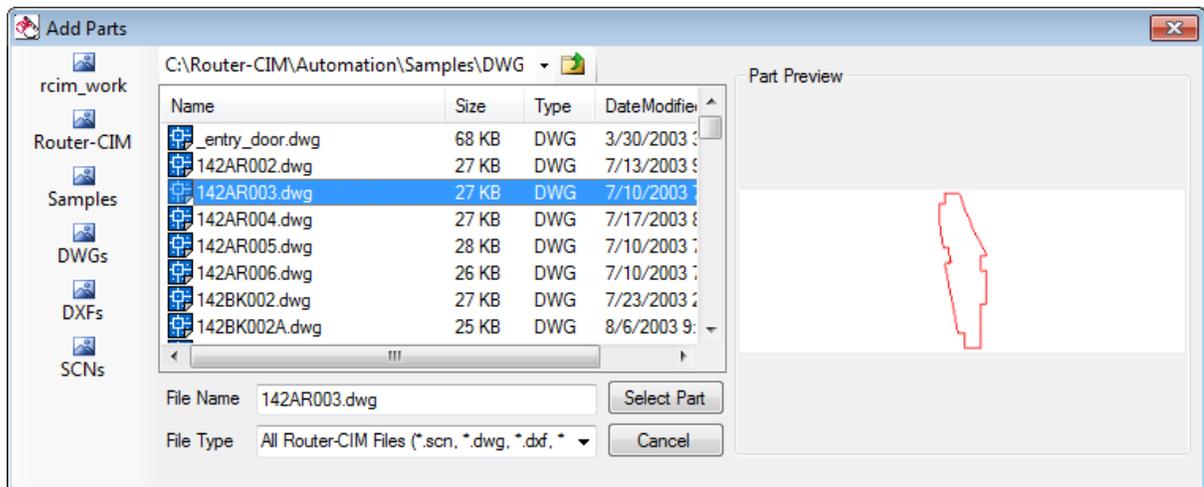
The new job will have the name of NewJob until you rename it. The job will contain no parts, but will have all the default settings in use.

2.1.2.4 Add Part

Add Part



Selecting this option will open the Add Parts window. This window has several options, you can select default folders rcim_work, or Router-CIM as well as set the default types of files to DWG, DXF, or SCN files. You can see a preview of the part, unless multiple parts are selected.



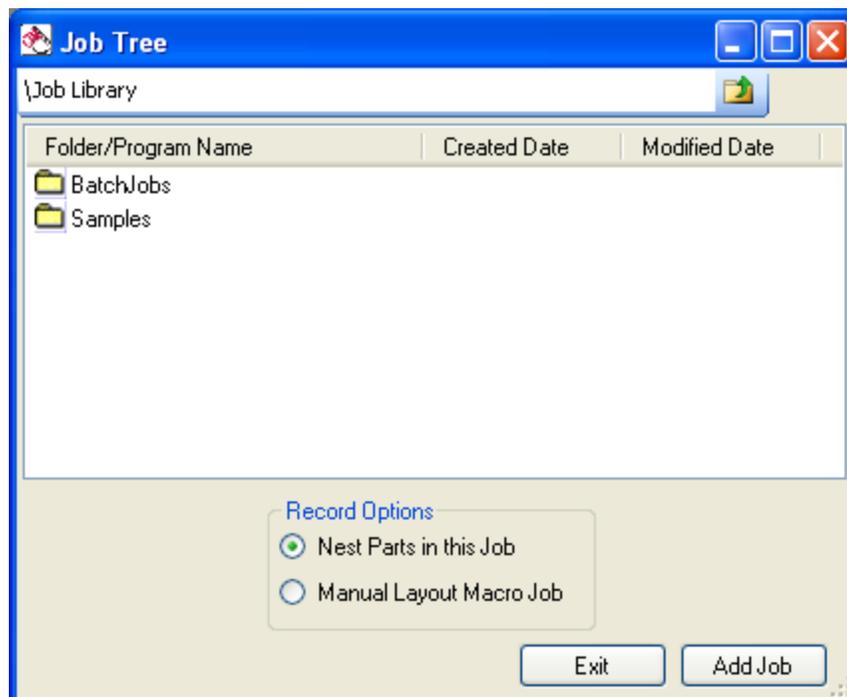
2.1.2.5 Add Assembly

Add Assembly

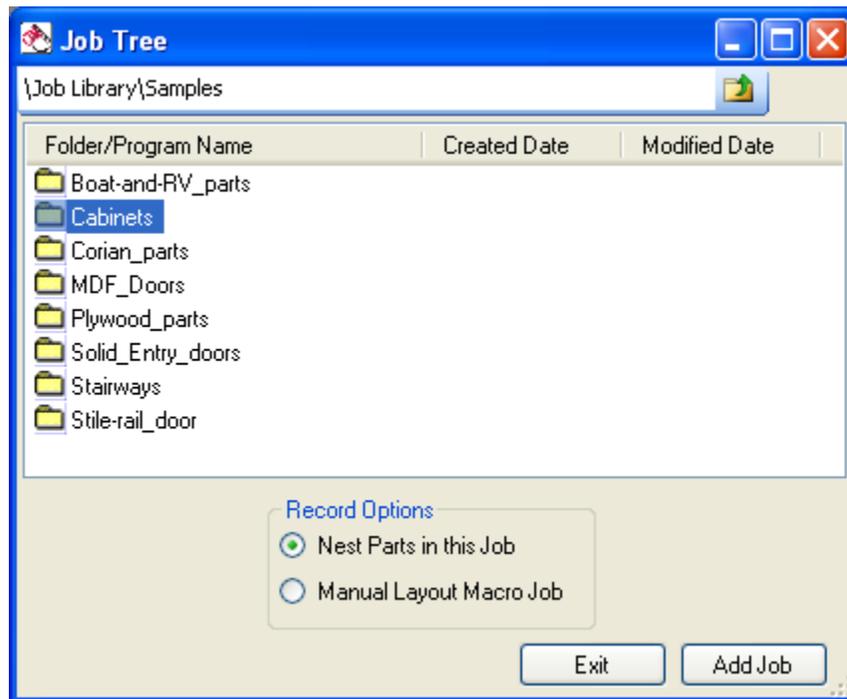


An assembly is simply another job that already has parts and settings. If you make a new job, and then select add assembly, you will be prompted with a window to pick the job you would like to add to the current job you have selected.

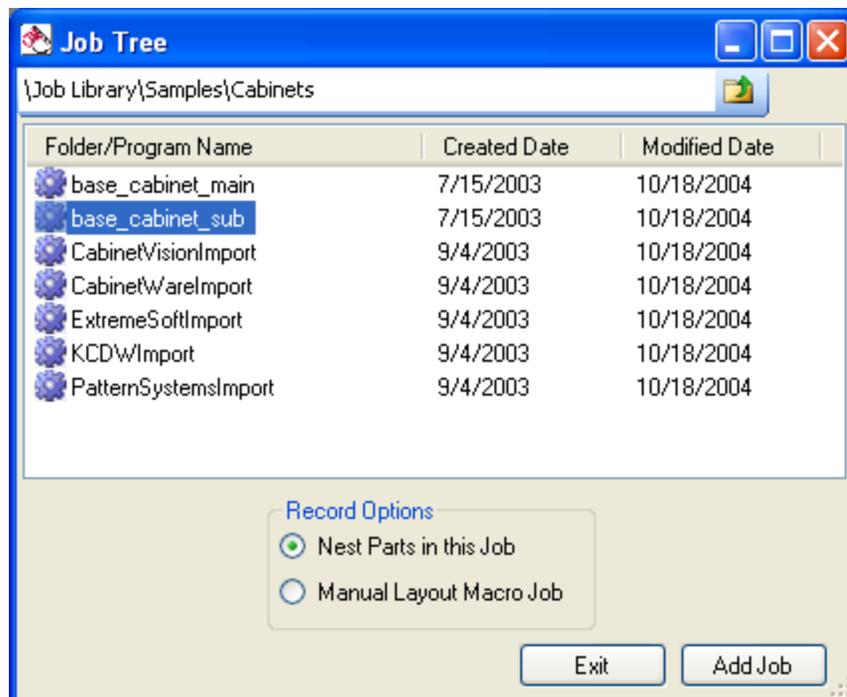
From the job tree in this window, select Samples.



Then select Cabinets.



Finally, select Base_Cabinet_Sub as the job, and then click on Add Job.



The whole job will be added to the current job as a part.

Part#	Part	Qty	Material	Full Path to Part
1	base_cabinet_sub	1	MDF75_	base_cabinet_sub

2.1.2.6 Part Properties

Part Properties



This selection opens the part properties window.

Part Properties

Part Information Knowledge Information

Part Name: C:\Router-CIM\Automation\Samples\DWGS\142AR003.dwg

Record Desc:

Material: BPL50_

Quantity: 1 Maximize parts on sheet of material
**This will change the quantity to -1

Filler Qty: 0

Label Information

Customer Name: Customer Addr. 1:

Customer Addr. 2: Customer City:

Customer State: Customer Zip:

Customer Phone 1: Customer Phone 2:

Inherit Label Data from Job

Part Orientation

Rotate Part Rotate Angle: 90

Mirror Part Mirror Axis: Horizontal

Nest Rotation: Same as Material

Part Options

Ignore Layer Panel

Start Point on longest side of part

Manual Origin Part

Nest and Code As Single Part

Nest Part

Code As Single Part

Has an Associated Backside Macro

Is an Irregular Stock Shape

Use ShapeDone Part when possible

Macro Dimensions

Length:

Width:

Depth:

OK Cancel

This will show the current properties of the currently selected part in a job. If no part is selected, the first part in the job is shown.

2.1.2.7 Edit Geometry

Edit Geometry



Selecting Edit Geometry will open AutoCAD and show the currently selected part. If no part is selected you will be prompted to select a part first.

2.1.2.8 Delete Folder/Job

Delete Folder/Job



This option deletes a job if a job is selected or an entire folder if a folder is selected. You cannot get these jobs or folders back once they are deleted, so be sure to have a pack and go of the job or a backup of the database if you think you might want them back at some point.

2.1.2.9 Delete Part

Delete Part



Selecting this option will delete the selected part from within a job.

You may also delete a part by right clicking on it and selecting delete from the menu.

2.1.2.10 Cad System

Cad System



This option is a shortcut to starting AutoCAD. Using this option will start AutoCAD in a new blank or default drawing.

2.1.2.11 Touch and Cut

Touch and Cut



Touch and Cut is a tool that will allow you to select a part within a job and make Router-CIM cut and sequence only that one selected part.

2.1.2.12 Materials

Materials



The materials button opens the Material Database for viewing or editing.

Material	Code	X Dim	Y Dim	Thickness	Bridge Width	Left Edge Allowance	Right Edge Allowance	Top Edge Allowance	Btm Edge Allowance	Irregular Edge Allowance	Rotation
250 UHMW Sheet	UHMW25...	120	48	0.25	0.8	0.125	0.125	0.125	0.125	0.125	ALL
1 Melamine	MEL1_	96.875	48.875	1	0.75	0.125	0.125	0.125	0.125	0.125	ALL
1/2 Baltic Birch Ply	BP50_	96	48	0.5	0.85	0.125	0.125	0.125	0.125	0.125	0 180
1/2 Birch Ply	BPL50_	96	48	0.5	0.65	0.625	0.625	0.625	0.625	0.625	ALL
1/2 Birch Plywood	BPL500_	96	48	0.5	0.85	0.125	0.125	0.125	0.125	0.125	ALL
1/2 Maple Ply	MPL50_	96	48	0.5	0.85	0.125	0.125	0.125	0.125	0.125	ALL
1/2 Mel 1sWhite	MEL50_	97	49	0.5	0.85	0.125	0.125	0.125	0.125	0.125	ALL
1/2 Mel 2sWhite	MLW500_	96	48	0.5	0.7	0.125	0.125	0.125	0.125	0.125	ALL
1/2 Plywood	PLY500A_	96	48	0.5	0.625	0.2	0.2	0.2	0.2	0.2	ALL
1/4 A1 Birch	BIRC25_	96.5	48.5	0.25	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 A1 Chery	CHER25_	96.5	48.5	0.25	0.75	0.125	0.125	0.125	0.125	0.125	0
1/4 A1 KNOTTY PINE	KPIN25_	96.5	48.5	0.25	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 A1 MAPLE	MAPL25_	96.5	48.5	0.25	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 A1 Oak	OAK25_	96.5	48.5	0.25	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 Baltic Birch Ply	BBP25_	60	60	0.2187	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 Birch Ply	BIR25_	96.5	48.5	0.25	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 G2S Black Melamine	BMEL25_	96.875	48.875	0.25	0.85	0.125	0.125	0.125	0.125	0.125	ALL
1/4 G2S Maple Melamine	MAP25G_	96.875	48.875	0.25	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 G2S Melamine	MEL25G_	96.875	48.875	0.25	0.85	0.125	0.125	0.125	0.125	0.125	ALL
1/4 HICKORY	HICK25_	96.5	48.5	0.25	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 MDF	MDF25_	96	48	0.25	0.85	0.125	0.125	0.125	0.125	0.125	ALL
1/4 Mel 1sAlm 1sWhite	MLW25_	96	48	0.25	0.85	0	0	0	0	0	ALL
1/4 Mel 1sWhite	MEL25_	96	48	0.25	0.85	0.125	0.125	0.125	0.125	0.125	ALL

2.1.2.13 Results Folder

Results Folder



Selecting this option will show you the result folder for a job, if a job is selected. If no job is selected, then the base results folder (the one containing all the others) is shown. The default results folder can be specified in the system settings under System Folders >> Data Output Folder.

2.1.2.14 Run Job

Run Job



This button starts the selected job in Router-CIM and begins processing.

2.1.3 Folder Tree

Folder Tree

The folder tree is where your jobs are stored. Each job can be in the main folder or they can be stored in sub folders. The preference for how you store jobs is really up to you. In this example, there is a folder called Samples.

Folder/Job Name	Created Date	Modified Date
BatchJobs		
Samples		

Selecting the Samples folder opens the tree further to show several other folders.

Folder/Job Name	Created Date	Modified Date
..		
Boat-and-RV_parts		
Cabinets		
Corian_parts		
MDF_Doors		
Plywood_parts		
Solid_Entry_doors		
Stairways		
Stile-rail_door		

Each of these folders contain jobs. Using these folders is simply a way to keep them separated according to their types. Selecting Plywood_parts will show the jobs inside that folder.

Folder/Job Name	Created Date	Modified Date
..		
12_Boat_Parts	7/28/2003	7/15/2008
20_ft_cabin_cruiser	7/17/2003	6/25/2008
3d_SOLID_Parts	7/17/2003	6/25/2008
40_ft_power_cruiser	7/17/2003	6/25/2008

There could have been even more folders in this folder if the jobs needed to be separated further.

2.1.3.1 Batch Jobs

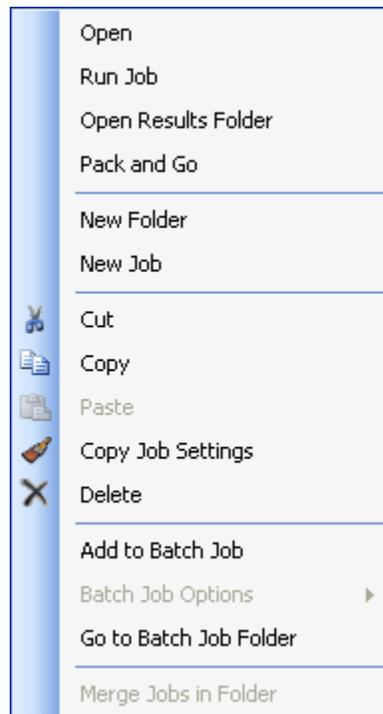
Batch Jobs

Batch Jobs are somewhat special and have a folder of their own. A batch job is really several jobs, each in one folder and run one at a time. Each job in a batch will run until it is done, and when it is done and all the code is made, then the next job will start up. None of the parts from one job are cut or nested with parts from another job.

To create a Batch Job, go to any folder containing jobs, and right click on a job and select Add to Batch Job. For instance, Select the Samples folder, and then the Boat-and-RV_parts folder. In this folder there are 4 jobs.

Folder/Job Name	Created Date	Modified Date
..		
12_Boat_Parts	7/28/2003	7/15/2008
20_ft_cabin_cruiser	7/17/2003	6/25/2008
3d_SOLID_Parts	7/17/2003	6/25/2008
40_ft_power_cruiser	7/17/2003	6/25/2008

Select the 12_Boat_Parts job and Right-Click on it to bring up the menu, then select Add to Batch Job.

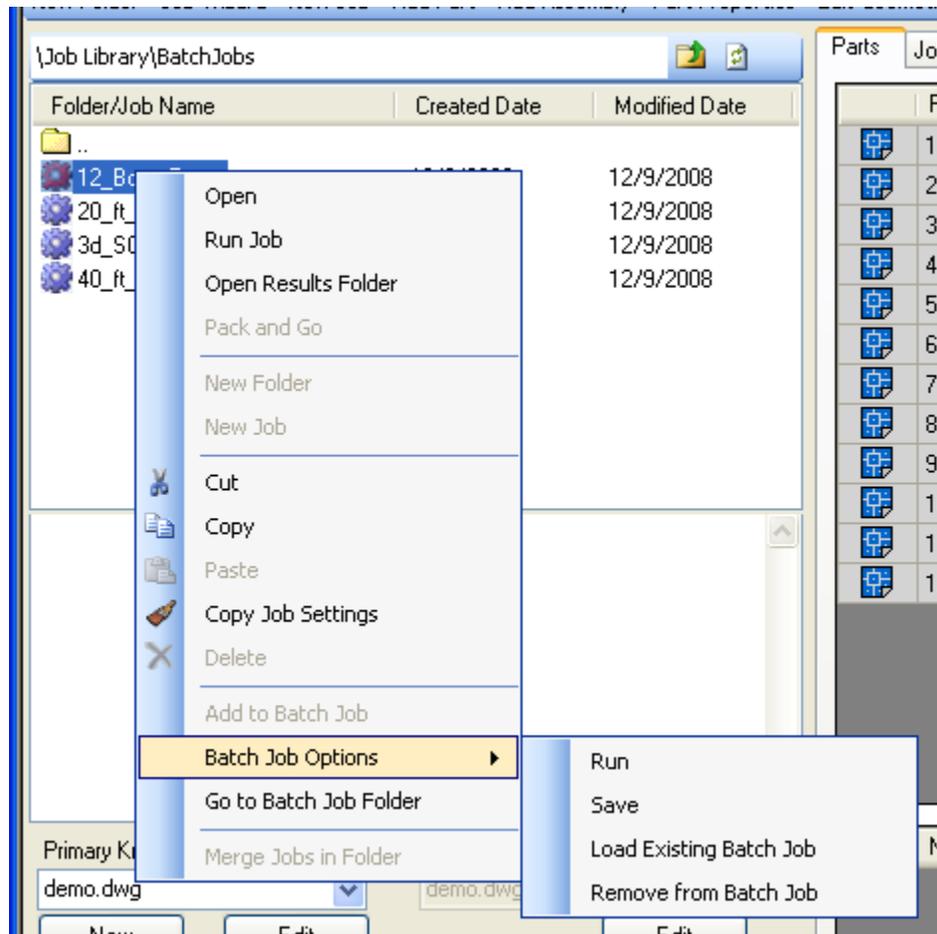


Now do the same for each of the other three jobs in the folder. There is 10_ft_cabin_cruiser, 3d_SOLID_parts, and 40_ft_power_cruiser. Add each of these to a Batch Job.

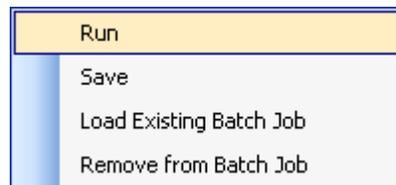
Next, click back to the top of the job library and select Batch Jobs. You will see each of the 4 jobs listed under Batch Jobs.

Folder/Job Name	Created Date	Modified Date
..		
12_Boat_Parts	12/9/2008	12/9/2008
20_ft_cabin_cruiser	12/9/2008	12/9/2008
3d_SOLID_Parts	12/9/2008	12/9/2008
40_ft_power_cruiser	12/9/2008	12/9/2008

If you Right-Click on one of these jobs now you will see Batch Job Options.



From here you can Run the batch, save the batch to run it later, load a saved batch, or remove a job from the batch list.



2.1.4 Part Window

Part Window

The Part Window contains all the settings for the parts inside the job. It is also the container for many of the job-specific settings. Each of these settings is available in one of the tabs at the top of the part window. These are available only when a job that contains parts is selected.

The part window itself is editable for some of the part settings. You can change a parts Quantity, or Material directly from the part window by selecting the field and changing the value. Select a part and then select the quantity field. It will highlight indicating you can change the value. In this case we will change it from 4, to 6.

The top screenshot shows a table with columns: PartNum, PartName, Qty, MaterialId, and FullPath. The data is as follows:

PartNum	PartName	Qty	MaterialId	FullPath
1	Boat1.dwg	4	1/2 Birch Ply	C:\R...
2	Boat3.dwg	2	1/2 Birch Ply	C:\R...
3	Boat4.dwg	2	1/2 Birch Ply	C:\R...
4	Boat5.dwg	4	1/2 Birch Ply	C:\R...

The bottom screenshot shows the same table, but the 'MaterialId' for 'Boat1.dwg' is highlighted, showing a dropdown menu with '1/2 Birch Ply' selected.

Changing the material is just as easy. You can pull down the materials available from the list on a selected part and change the material to another from the list.

The table shows the following data:

Part#	Part	Qty	Material	Full Path to Part
1	Boat1.dwg	6	BPL50_	C:\Router-CIM\Automation\Samples\DWGS\Boat1.dwg
2	Boat2.dwg	1	BPL500_	C:\Router-CIM\Automation\Samples\DWGS\Boat2.dwg
3	Boat3.dwg	2	CDR_G_	C:\Router-CIM\Automation\Samples\DWGS\Boat3.dwg
4	Boat4.dwg	2	MDF58_	C:\Router-CIM\Automation\Samples\DWGS\Boat4.dwg
5	Boat5.dwg	4	MDF75_	C:\Router-CIM\Automation\Samples\DWGS\Boat5.dwg
6	Boat6.dwg	1	MEL250A_	C:\Router-CIM\Automation\Samples\DWGS\Boat6.dwg
7	Boat7.dwg	3	MEL58_	C:\Router-CIM\Automation\Samples\DWGS\Boat7.dwg
8	Boat8.dwg	3	MEL750_	C:\Router-CIM\Automation\Samples\DWGS\Boat8.dwg
9	Boat9.dwg	3	BPL50_	C:\Router-CIM\Automation\Samples\DWGS\Boat9.dwg
10	Boat10.dwg	3	BPL50_	C:\Router-CIM\Automation\Samples\DWGS\Boat10.dwg
11	Boat11.dwg	3	BPL50_	C:\Router-CIM\Automation\Samples\DWGS\Boat11.dwg
12	Boat12.dwg	3	BPL50_	C:\Router-CIM\Automation\Samples\DWGS\Boat12.dwg

Selecting the BPL500_ material from the list changes the material that particular part is going to use.

Double-Clicking on any part will display the Part Properties.

These are the part related properties that can be individually changed on any part in a job.

2.1.4.1 Part Properties

Part Properties

The part properties are broken down into two tabs. They are Part Information and Knowledge Information.

Part Properties

Part Information Knowledge Information

Part Name: C:\Router-CIM\Automation\Samples\DWGS\142AR003.dwg

Record Desc: [Empty]

Material: BPL50_

Quantity: 1 Maximize parts on sheet of material
**This will change the quantity to -1

Filler Qty: 0

Label Information

Customer Name: [Empty] Customer Addr.1: [Empty]

Customer Addr.2: [Empty] Customer City: [Empty]

Customer State: [Empty] Customer Zip: [Empty]

Customer Phone 1: [Empty] Customer Phone 2: [Empty]

Inherit Label Data from Job

Part Orientation

Rotate Part Rotate Angle: 90

Mirror Part Mirror Axis: Horizontal

Nest Rotation: Same as Material

Part Options

Ignore Layer Panel

Start Point on longest side of part

Manual Origin Part

Nest and Code As Single Part

Nest Part

Code As Single Part

Has an Associated Backside Macro

Is an Irregular Stock Shape

Use ShapeDone Part when possible

Macro Dimensions

Length: [Empty]

Width: [Empty]

Depth: [Empty]

OK Cancel

Part Information

Path to Part

This box displays the path and name of the current selected part.

Part Description

Optional. An editable field that will allow you to enter information you want to appear in the part description location of a label or a description you want to store in the job for the part if you do not use labels.

Part Material

Shows the material selected for the current part, and also allows you to change the part material from a drop-down list containing all the materials in your current database.

Quantity

Editable field to display or set the number of the selected part you want to appear in the job.

Filler Quantity

Optional. Allows you to set any number of this part to use to fill in gaps and open space in the nest. Use this option if you can store an extra quantity of the current part. Router-CIM will only generate filler parts if the option to allow them is turned on and there is sufficient room in the nest. No regular required parts from the job will be sacrificed to allow filler parts.

Label Information

Optional. There are 8 editable fields that can contain any data you think relevant to appear on the part labels. You can place data in as many or as few of these as you wish.

Inherit Label Data from Job

It is possible to have this data set to the same values for every part automatically if you set them in a job and make that job a template. This setting in each parts properties to 'Inherit Label Data from Job' will set all the label fields for each part to whatever they were set to in the job that the parts were added to.

Part Orientation

Rotate Part

Checking this option will force the part to rotate to the angle set in the Rotate Angle field (to the right). Whether or not the material has part rotation set, this field will override the setting and rotate the part from the default view it was drawn in. This setting has no effect on the material rotation angle and any material related settings will occur during the nesting section of a job run.

Only Pattern Recognition will stop this rotation. If a part is being drilled with Pattern Recognition and has more than 1 hole drilled at a time (in other words a pattern of two or more) then the part will be rotation locked and cannot be rotated.

Rotate Angle

Controls the rotation angle of the part when an override to the rotation angle is needed. See above.

Mirror Part

Checking this option will force the part to be mirrored about the axis specified to the right (Mirror Axis).

The mirroring is done prior to cut and it is entirely possible to have a part mirrored and rotated using the rotate commands within this section.

Pattern Recognition has no effect on mirror since the part will still have the orientation of its holes in the same direction.

Mirror Axis

Controls the direction of the mirror. Available options are Vertical or Horizontal. The Mirror Part box must be checked to turn this option on.

Nest Rotation

This is the default setting for the current part nested on a sheet. You can allow it to rotate based on the material settings or force it to override the material settings and control the rotation angle. The available options are Same as Material, ALL, 0, 0 90, 0 180, 0 90 180. Once this setting is changed the part rotation will be set to this setting and ignore the material setting. Note that it is possible to have this rotation set as well as the Rotate Part box checked and multiple angle rotations will occur.

Part Options

Ignore Layer Panel

When checked, this will ignore the default rectangle for the panel size on a macro, even if there is a layer to knowledge association present for it. It will further ignore that layer for nesting purposes.

Start Point on longest side of part

If checked, this option will move the start point of the shapes on the currently selected part to the mid point of whichever element on that particular shape is the longest, whether that is a line or an arc.

Manual Origin Part

This option is for Router-CIM macros only and will allow you to set where the origin of the part is instead of assuming 0,0.

Nest and Code As Single Part

This option will allow all the parts in a job to have code created not only for the nests, but it will also generate one nc code file for each individual part in the job.

Nest Part

This will cause the parts in the job to be nested on the specified material.

Code As Single Part

Any part with this option checked will be cut and have code made for just the one part and it will not be considered for nesting.

Has an Associated Backside Macro

This option is for Router-CIM macros only and will cause Router-CIM to look for a macro with the same name, followed by -b. The backside macro will then be cut as a single part (not nested) and the code included in the results folder. For instance Style1.scn has a backside macro named Style1-b.scn.

If Style1.scn were a part in a job, you could check this option and both Style1.scn and Style1-b.scn would be cut, but only Style1.scn would be nested. The code for Style1-b.scn would be as a single part.

Is an Irregular Stock Shape

A drawing that has geometry on layer IR_STOCK can be placed in a job and then if this option is checked, that shape would be used as a piece of material for nesting. Any shape is allowed, but it should be a closed polyline (on layer IR_STOCK).

Use ShapeDone Part when possible

Checking this option will allow the ShapeDone feature to be used on the selected part. Once the part is cut, that part and tool paths will be placed in the ShapeDone folder so that if it is cut at a later time, and has not been modified, it will simply be passed directly to nest and will not be cut again.

Macro Dimensions

Generic Record X Dim

When a Router-CIM macro is used, the X dimension setting can be overridden with this field.

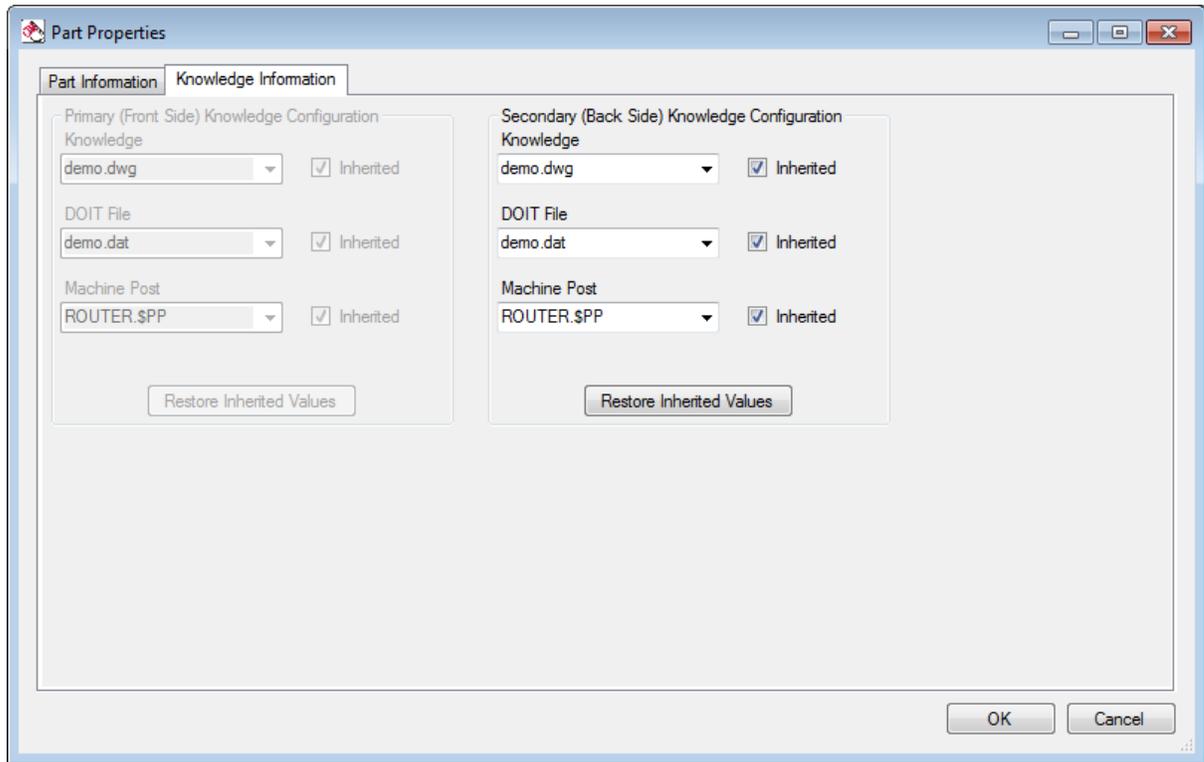
Generic Record Y Dim

When a Router-CIM macro is used, the Y dimension setting can be overridden with this field.

Generic Record Z Dim

When a Router-CIM macro is used, the Z dimension setting can be overridden with this field. Note that the material can be used for the Z value to determine a parts thickness.

Knowledge Information



It is possible to have certain parts in a job nested and cut on one machine, and single parts (not nested) cut on another machine. These single parts can be secondary operations to a particular part, or just some parts that you wish to cut one at a time on a different machine. These parts cannot be nested. They can use a different knowledge drawing, DOIT file, Post Processor, and different part settings. They all, however, must be set to Code as Single Part.

Primary Knowledge Configuration

When a job has parts that are marked as Code as Single Part, the Knowledge Information screen will be available. You can set the Primary Knowledge in this window to run with a different knowledge drawing, DOIT file, and post processor than the other parts that are being cut in the main job.

Secondary Knowledge Configuration

This is only for Router-CIM macros, where the part properties are marked "Has an Associated Backside Macro". The backside macro (same name as the regular macro, with a -b at the end) can be cut with a different knowledge drawing, DOIT file, and post processor than the front side (nested side) of the same macro.

When using this feature, you should uncheck the box marked "Use Primary Knowledge for Secondary Operations" if you need a secondary knowledge drawing, and also the "Use Primary Machine for Secondary Operations" to specify the secondary post processor.

The screenshot shows the 'Knowledge and Post info' tab with the following settings:

- Primary Knowledge:** demo.dwg (Buttons: New, Edit)
- Secondary Knowledge:** demo.dwg (Button: Edit)
- Use Primary Knowledge for Secondary Operations
- Primary Machine:** ROUTER.\$PP (Buttons: New, Edit)
- Secondary Machine:** ROUTER.\$PP (Buttons: New, Edit)
- Use Primary Machine for Secondary Operations
- Material:** BPL50_ (Buttons: New, Edit)
- DOIT File:** demo.dat (Buttons: New, Edit)

Inherited

Checking the Inherited box in any of these fields will set that particular property to the same settings as the main window is using for the job.

2.1.4.2 Job Settings

Job Settings

The Job Settings tab in a job contains the variables that affect various aspects of the job during the automation run. There are several sections to these settings.

Output DXF for laser
 Enable ShapeDone
 Rename Outside Layers
 Area Tolerance
 Sequence Sorting Options

Printing and Reporting
 Select Printer
 Print Nests
 Print Non-Nested Parts
 Reset Sheet Counter for Each Material
 Print Material Usage Report
 Print Sheet Quantity on Label
 Print One Barcode Label per Sheet
 Create Summary Report

Labels
 Customer Name
 Customer Addr1
 Customer Addr2
 Customer City
 Customer State
 Customer zip
 Customer Phone
 Customer Phone

New Part Defaults
Part Nesting Options
 Nest and Code As Single Part
 Nest Part
 Code as Single Part
*This will disable ShapeDone for this Part
 Has an Associated Backside Macro
 Is an Irregular Stock Shape
 Use ShapeDone
 StartPoint on longest side of part
 Default Quantity
 Default Filler Quantity

Output DXF for laser

This option will create a DXF file of each nest or single part cut for a projection laser to use in order to show the layout of the parts on the table. If you do not have a projection laser, leave this option off.

Enable Shape Done

Enabling Shape Done will turn on Shape Done for the job. If parts have the option turned on to enable Shape Done, then a copy of the part will be stored with the knowledge drawing.

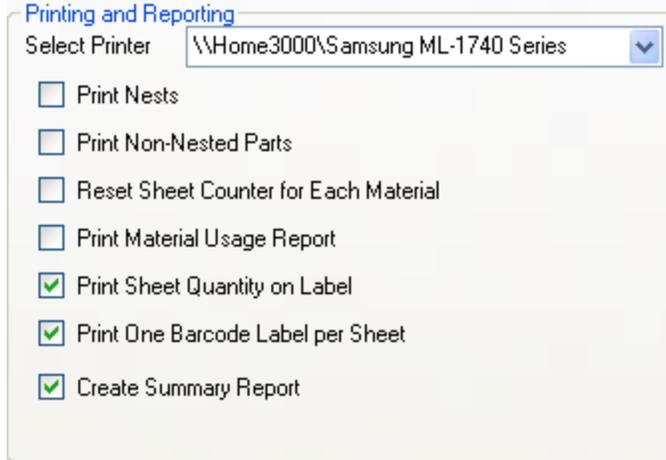
Rename Outside Layers

If this option is checked, the the area tolerance is filled in, parts with less area than the amount listed will have the outside layer rename with a prefix of SML so that an alternate knowledge can be used on them. This is useful if you cut small parts and they tend to lose vacuum or move.

Sequence Sorting Options

You may select from any of the sorting options listed and that option will be used to sort all the parts in the job during Sequence.

Printing and Reporting



Printing and Reporting

Select Printer \\Home3000\Samsung ML-1740 Series

- Print Nests
- Print Non-Nested Parts
- Reset Sheet Counter for Each Material
- Print Material Usage Report
- Print Sheet Quantity on Label
- Print One Barcode Label per Sheet
- Create Summary Report

Select Printer

This option will allow you to select a printer for the plotting of the nested and non-nested parts.

Print Nests

If checked, you will get a print of each nested sheet sent to the printer automatically during the job run. One print for each nest.

Print Non-Nested Parts

If checked and you have parts that are set to Code as Single Part, they will be printed during the job run. One print for each part.

Reset Sheet Counter for each material

If checked, the counter for the nc code file will have its numbers reset each time it encounters a new material. So if you had two nests, one on MDF75 and one on BIR500, you would get files named MDF751 and BIR5001. If the box was unchecked, you would get MDF751 and BIR5002. The last digit is the sheet count.

Print Material Usage Report

Turned on, a material report will automatically be printed at the end of the job.

Print Sheet Quantity on Label

Turned on, you will have the number of the sheet listed for each nc code file on the label.

Print One Barcode Label per Sheet

If checked, there will be a barcode label printed in the label file for each sheet nested in the job.

Create Summary Report

If checked, there will be a summary report created at the end of each job run. This will be an Excel spreadsheet and contain material and tooling data for the job.

Labels

Labels

Customer Name	<input type="text" value="JobLabel1"/>
Customer Addr1	<input type="text" value="JobLabel2"/>
Customer Addr2	<input type="text" value="JobLabel3"/>
Customer City	<input type="text" value="JobLabel4"/>
Customer State	<input type="text"/>
Customer zip	<input type="text"/>
Customer Phone	<input type="text"/>
Customer Phone	<input type="text"/>

This section is where you can place any custom data you wish to appear on your labels for each part.

New Part Defaults

StartPoint on longest side of part

Using this option will insure that when new parts are added to a job, the Startpoint on longest side of part box is checked by default.

Checking this box will force Router-CIM to move the startpoint to the longest side of the part, regardless of where the startpoint exists currently.

Default Quantity

This field allows you to set the default quantity that parts are set to when they are added to a new job. When a new job is created, the number of parts that are set automatically will be set to this number.

Default Filler Quantity

This parameter is to set the default number of filler parts set for each new part in a job. If there is enough space in the nest, then these parts will be placed in the nest to fill the space and boost sheet yield, up to the number set in this section.

Part Nesting Options

Nest and Code as Single Part

Checking this option will cause Router-CIM to nest each part in the job, and also make a separate NC program for each and every part on its own. This is useful for situations where a part is later broken or lost, a piece of material can be placed on the machine at the home position and run just the program for the one part.

Nest Part

When enabled, this option will cause Router-CIM to place every part in the job into a nested sheet based on the material specified. If more than one material exists for parts in a job, nests will be created for each sheet with the parts specified for that material.

Code as Single Part

Using this setting will cause Router-CIM to make a separate NC program for each part in a job. No parts will be nested together.

Has an Associated Backside Macro

When using macros, it is sometimes possible to have a macro for operations on the front of the part and also for operations on the back of a part. When this is true, enabling this option will allow one of the macros to be placed into a nest and the other side will be coded as a single part with a separate NC program. This option only works on macros, and the backside

macro must have the same name as the front side but end in '-b'. For instance Style11.scn has an associated back side macro named Style11-b.scn.

Is an Irregular Stock Shape

If you have an irregular shaped piece of material that you want to use as a sheet to nest parts on, you may include that drawing in the job as a part and then set this option for that particular part. Router-CIM will not cut this shape, but will use it to nest parts in. The geometry of the irregular stock sheet should be drawn on layer IR_STOCK.

Use ShapeDone

This option must be turned on in order for a part to be passed to the ShapeDone folder and stored.

2.1.4.3 Nesting

Nesting

The screenshot displays the Nesting software interface with the following sections and options:

- Nested Layout Presentation**
 - Labels**
 - Label Parts
 - Label Repeated Parts
 - Text Size:
 - Summary Report**
 - Include Summary Report
 - Text Size:
 - Location: (dropdown)
 - Length:
 - Accuracy: (dropdown)
 - Measurement: (dropdown)
 - Use AutoNest Font Settings
 - Display Repeated Layouts
- Packing Direction Control**
 - Auto
 - Horizontal Packing
 - Vertical Packing
- Nesting Start Point**
 - Four radio buttons around a central grey rectangle, with the bottom-left button selected.
- Sheet Origin**
 - Four radio buttons around a central grey rectangle, with the bottom-left button selected.
- Global options at the bottom:
 - Save Nests or Parts as Drawings
 - Save AutoNEST Parts and Tasks

Nested Layout Presentation

This section contains parameters that affect the look of the nested sheet, summaries, and part labels on the nest.

Labels

Label Parts

If you want the parts in the nest labeled, check this option. This option is ON by default.

Label Repeated Parts

Check this option when you want each part in the nest labeled, even when it is duplicated in the nest pattern.

This option is ON by default.

Text Size

Set the text size (in current units) for the text that appears on the part labels.

Default value is 0.75"

Summary Report**Include Summary Report**

The Summary Report is a recap at the end of the last nested sheet that shows how many parts have been nested and the material cost.

NESTING SUMMARY

PART NAME	BASIC QTY	FILLER QTY
1	12/12	-
2	12/12	-
3	8/8	-
4	4/4	-
5	12/12	-
6	10/10	-
7	8/8	-
8	4/4	-
9	12/12	-
10	10/10	-
TOTAL PARTS NESTED	92/92	-
STOCK	QTY	COST
60.0"x96.0"	5	90.00
TOTAL	5	90.00

Text Size

This setting controls the text size of the summary report.

Location

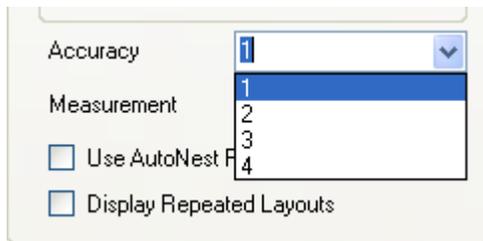
The location of the Summary Report can be set to either RIGHT, TOP-LEFT, or TOP-RIGHT.

Length

This is the distance between the nested sheets as they are displayed on the screen. This value is in default units.

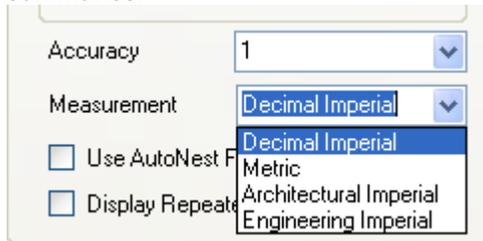
Accuracy

This is a font setting for the decimal places that will show for the numbers in the nest summaries. For instance using 1 will show a material as 96.0x60.0. Using more than one will increase the number of decimal locations that are reported. 1-4 are the only possible inputs in the list.



Measurement

The measurement type will be used by the font that displays the units used in the nesting and summaries.



The default setting is Decimal Imperial.

Use AutoNest Font Settings

Checking this box will override the Accuracy and Measurement settings above and use the settings set by the nest program instead.

The default is to leave this box unchecked and use the settings in this menu.

Display Repeated Layouts

Using Display Repeated Layouts will show a nested sheet in the nest drawing for every sheet needed in the job. Typically, if there is a nest that needs to be run more than once, the quantity field will simply show the quantity of that sheet that you need to run, instead of making duplicate nests. So, if you run a job and the nest drawing shows 2 sheets, but there are several programs to run, then you can check the sheet quantity in the nested sheet for how many instances of that sheet are needed.

Packing Direction Control

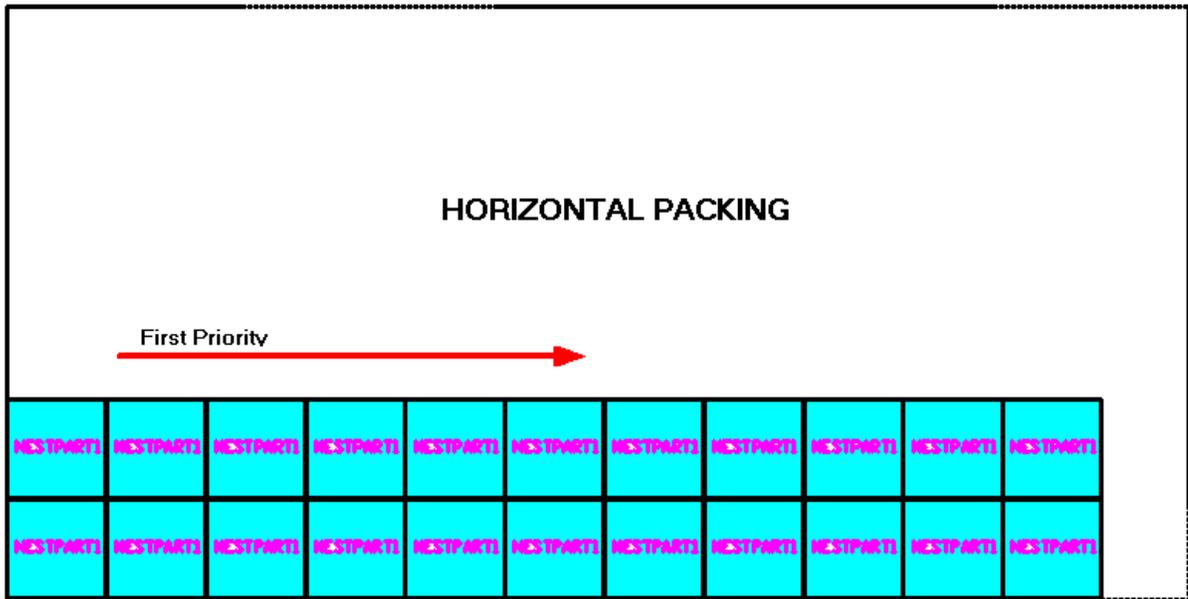
Packing Direction Control is the setting for the method used to place parts on the nested sheet.

Auto

Auto will place parts with no particular preference for Horizontal or Vertical packing, but using the most efficient method to gain yield from the sheet.

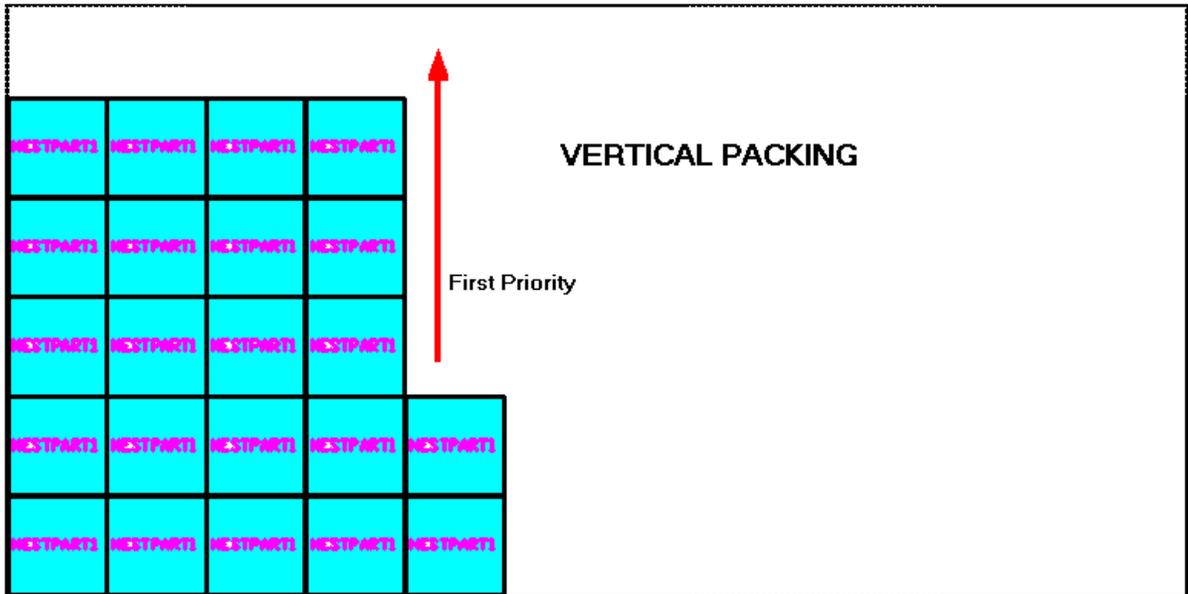
Horizontal Packing

Horizontal Packing will favor placing parts across the sheet (in X) before moving up the sheet (in Y).



Vertical Packing

Vertical Packing will favor placing parts moving up the sheet (in Y) before moving across the sheet (in X).



Nesting Start point



This selection will change the location where nest starts placing the parts.

Sheet Origin



The sheet origin is the corner where 0,0 is located, affecting the creation of the nc code by generating X, and Y values relative to the start point.

Save Nests or Parts as Drawings

Checking this parameter will save a copy of the nest layout drawing or single parts drawings in the job results folder. This is useful to review the nest results for a job.

Save AutoNEST Parts and Tasks

Checking this option will create a folder inside the job results folder containing the AutoNEST parts and task files for the job. This is useful if you want to keep the results folders for backup and need to run the nest later.

2.1.4.4 Advanced Nesting

Advanced Nesting

Advanced nesting is a set of features that allow for more efficient methods of cutting parts in a nest. There are methods to keep the tool down in the material for as long as possible while cutting all the profiles of the parts (Staydown). There is also a method to cut in on two parts at the same time by cutting between the parts and spacing the parts so that the cutting tool contacts a part on each side as it moves through the sheet (Common Line). One advanced method involves cutting both sides of a sheet while the parts are still nested together by first cutting one side (but not cutting through the parts, then flipping the sheet over and cutting the other side, cutting the parts loose at that time (Backside Nesting). The final advanced method is a procedure that allows you mix multiple jobs together, but control the number of jobs that get mixed into one sheet, allowing you to sort the parts easier as they come off the machine, but still allowing higher yields in the sheet by allowing the maximum number of parts/sizes available to fill the nest (Cart Control Nesting).

Each of these methods are described here along with their required settings.

Nested Layout Presentation		Nesting Bridge Parameters	
Horizontal Spacing	<input type="text" value="1.1"/>	<input checked="" type="radio"/> Off	<input type="radio"/> Staydown
Vertical Spacing	<input type="text" value="1.2"/>	<input type="radio"/> Common Line	
Layouts per Row	<input type="text" value="0"/>	Bridge Width	<input type="text" value="0.0000000000"/>
		Minimum Corner Offset	<input type="text" value="0"/>
		Minimum Bridge Angle	<input type="text" value="0"/>
		Maximum Bridges Per Part	<input type="text" value="0"/>
<input type="checkbox"/> Enable Backside Nesting			
Open Cart Control Grouping Key	<input type="text" value="Customer Info 8"/>		

2.1.4.4.1 Nested Layout Presentation

Nested Layout Presentation

The options in Nested Layout Presentation will allow you to format the result nest drawing so that the nested sheets are easier to see, read and print. You are allowed control over a system of layout that has rows and columns, referred to as Horizontal Spacing, Vertical Spacing, and Layouts per Row.

Horizontal Spacing

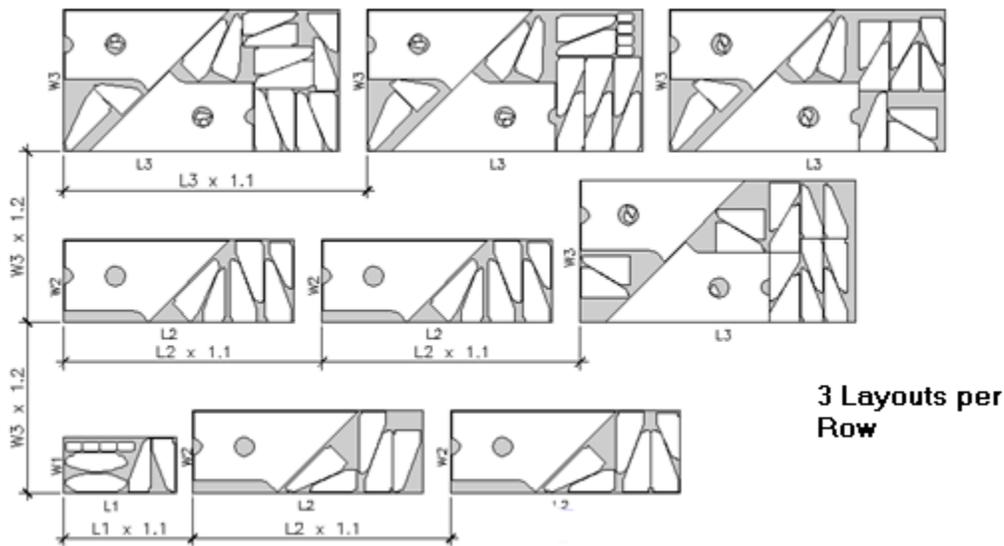
This is the setting for the horizontal spacing between the nested sheets when repeated horizontally. This would be similar to the spacing between Columns on a spreadsheet.

Vertical Spacing

This is the setting for the vertical spacing between the nested sheets when repeated vertically. This feature would be similar to the spacing between Rows in a spreadsheet.

Layouts per Row

This is the number of nested sheets in a row to display horizontally. The sheets will continue vertically until all sheets are shown.



2.1.4.4.2 Nesting Bridge Parameters

Nesting Bridge Parameters

Off

Setting this parameter to Off will create a standard type of nest and place the parts on the sheet with all their tool paths. This is the default method of nesting with no advanced features. Typically this results in a separate tool path around each, individual part in the nest.

Staydown

Staydown nesting will attempt to place the tool in the nest and leave the tool in the material as much as possible as it cuts around all the parts. This will typically create small bridges between the parts as the

tool cuts around them. These bridges can be a positive value so that there is a tab holding the parts together, or it can be a negative value so that the tool overlaps the starting point of the bridges.

Bridge Width

Use this parameter to set the width of the bridges between the parts.

Minimum Corner Offset

The minimum corner offset is how far from the corner of the nested part the bridge can appear. You do not want the bridge on the very corner of the part, especially if you wish to use a negative tab that the tool will cut off. Typically you would put a number in there that would allow for the entire tool diameter to move from the tab to the corner of the part (so at least 1 tool diameter plus).

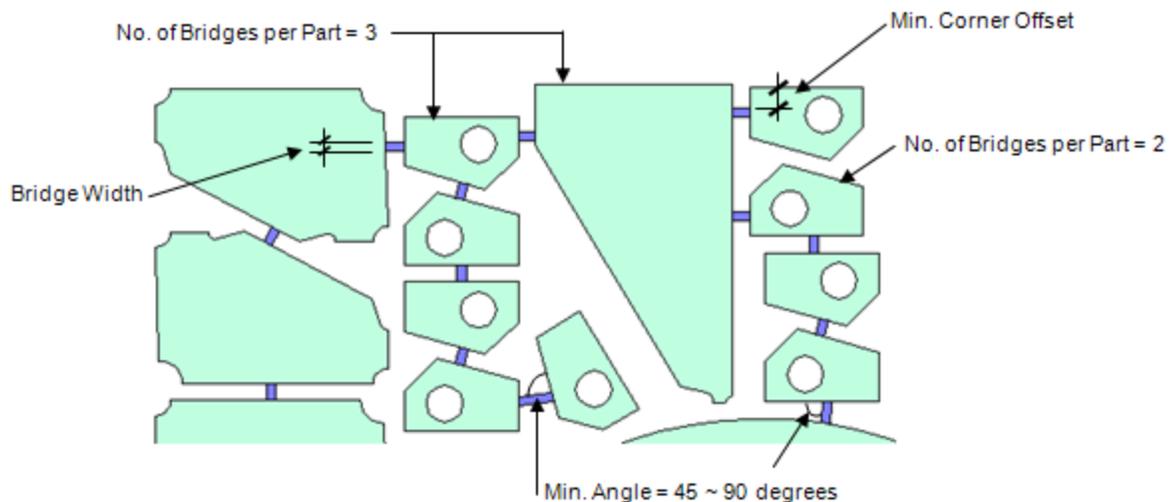
Minimum Bridge Angle

This is an angle between 45° - 90° , to specify the minimum angle to consider for placing a bridge between two parts. Typically you would not want an angle that was too acute, or the bridge and resulting corner can become unsuitable for a tool to cut.

Maximum Bridges Per Part

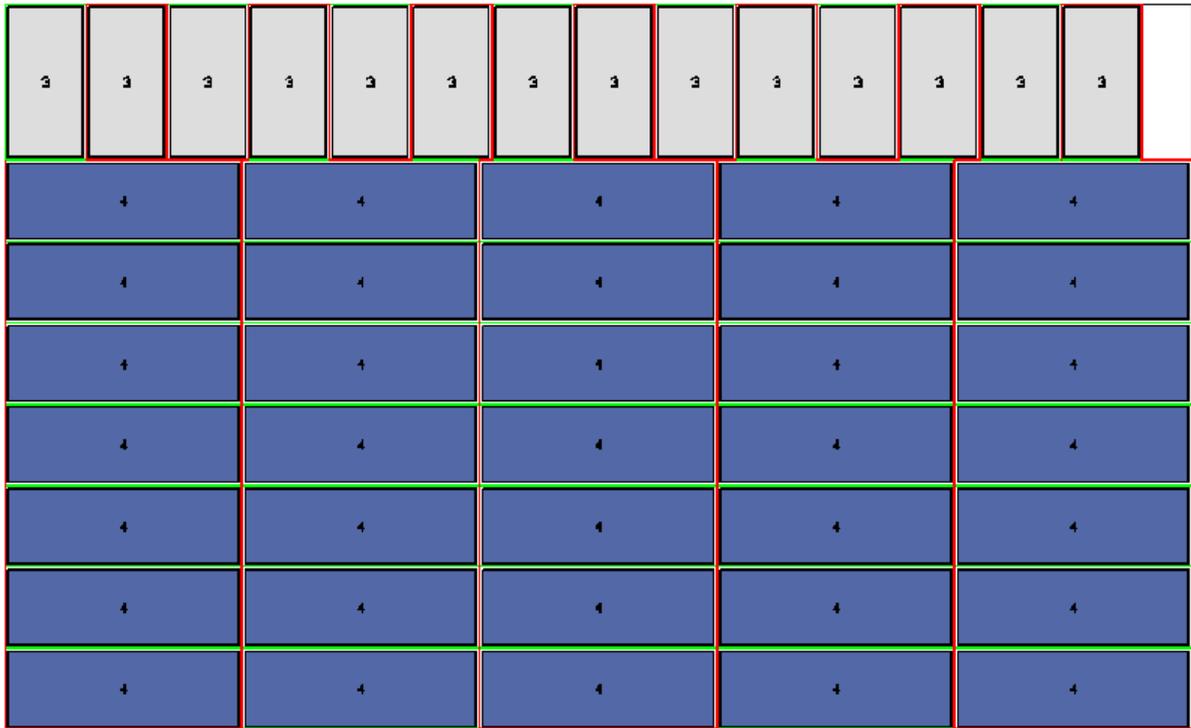
There will often need to be several bridges on a part depending on the nest. This field limits the number of bridges that the nest can use to hold the parts together. This sometimes means that there will be more tool paths made if the number of bridges is too small. A good starting default is 4.

Illustration for Bridge Parameters

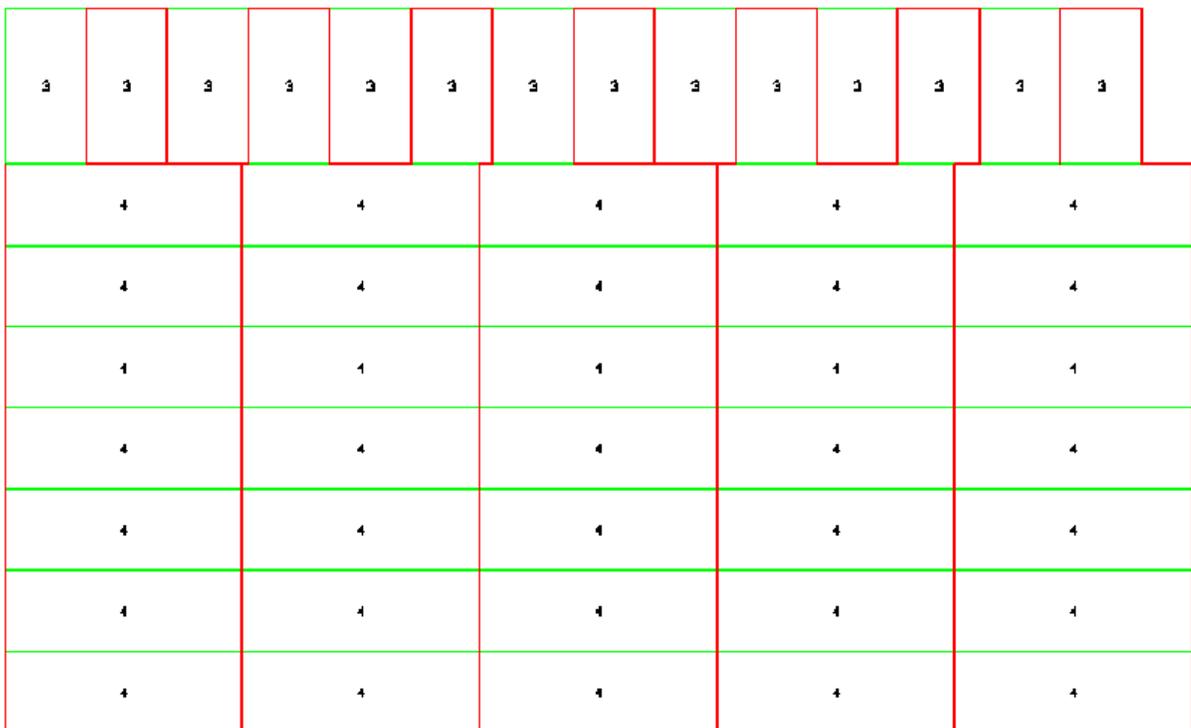


Common Line

Common Line will create a series of tool paths between the parts attempting to make the fewest tool path moves and still cutting all the parts. This means that the tool will be cutting parts on both sides of the tool path, instead of making one tool path around each individual part. Consider the following nest of parts, cut with Common Line:

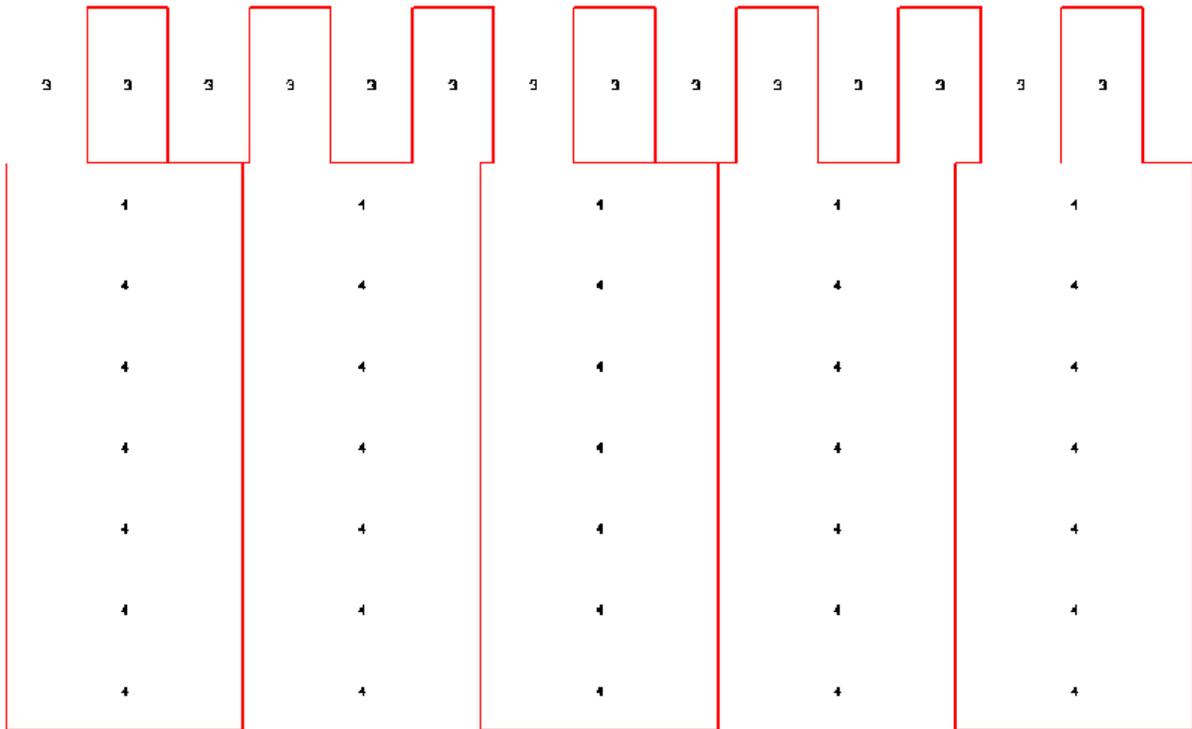


These parts are laid out according to size so that the common edges are matched. Looking at the same nest without the parts, shows the tool path motions:

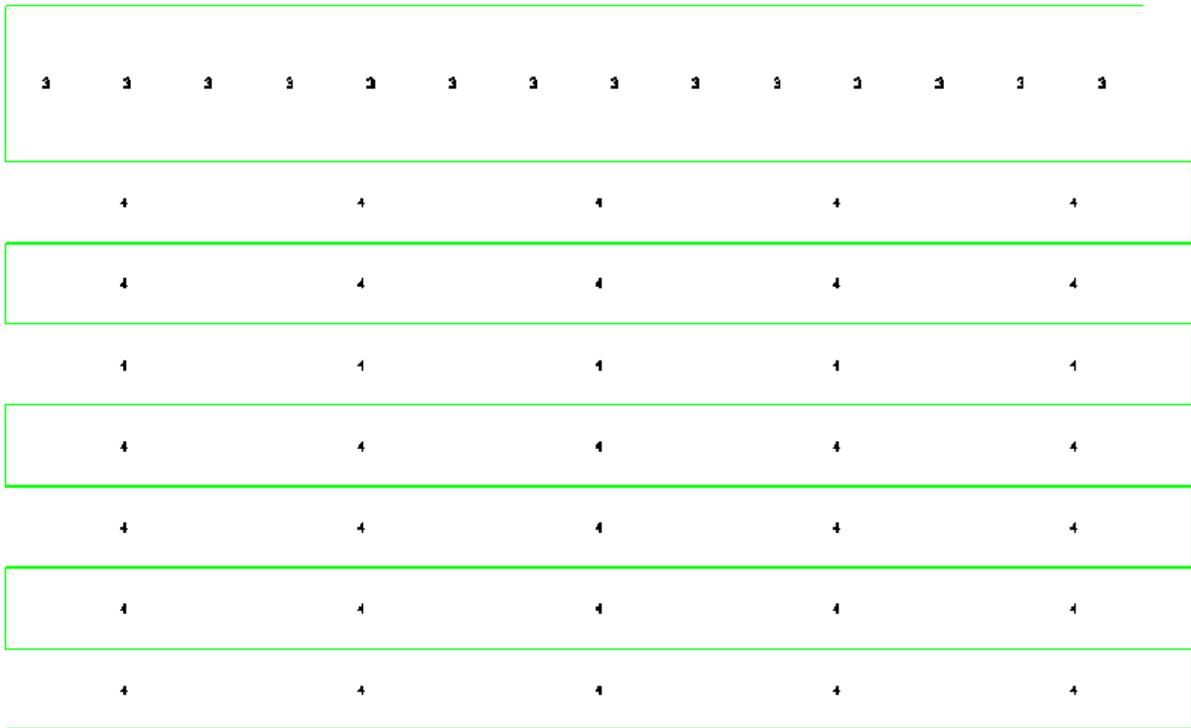


Here the hint of fact that there are really only two tool paths on the entire nest starts to show. If we

isolate just the vertical tool path (red line shown) we can see:



The above illustration shows that the tool path winds through the parts without lifting, cutting each of the vertical sections as it moves through the nest. Further isolating the horizontal tool paths shows the rest of the tool path.



This is the horizontal path that cuts the rest of the geometry in the nest.

The end result being that with only two tool paths the tool is able to stay in the nest longer, eliminating the constant index moves from part to part and also is better able to maintain a more constant chip load, which keeps the tool cooler and makes it last longer. The result being a faster and more efficient process.

2.1.4.4.3 Enable Backside Nesting

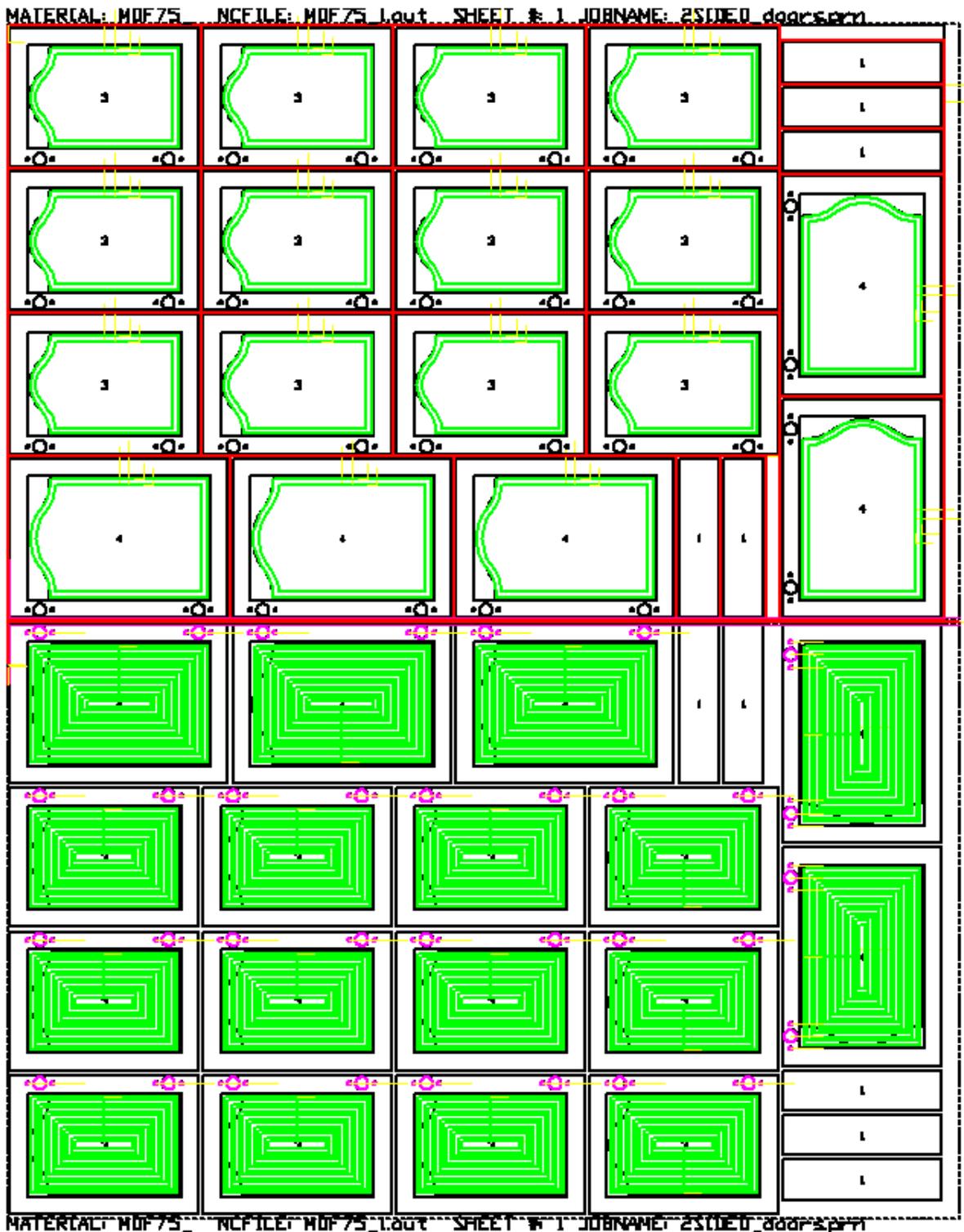
Enable Backside Nesting

Use this option to turn on and off the Backside Nesting feature.

Backside nesting will allow you to cut on both sides of a nested sheet, enabling you to make all the necessary router operations on a part without having to place any parts back on the machine one at a time for re-processing.

Typically the back side is cut first. Outside profile cuts (through cuts) can be made halfway through on the back and then all the way through on the front, or they can be cut all the way through on the front side (second side).

Consider the following nest of parts:

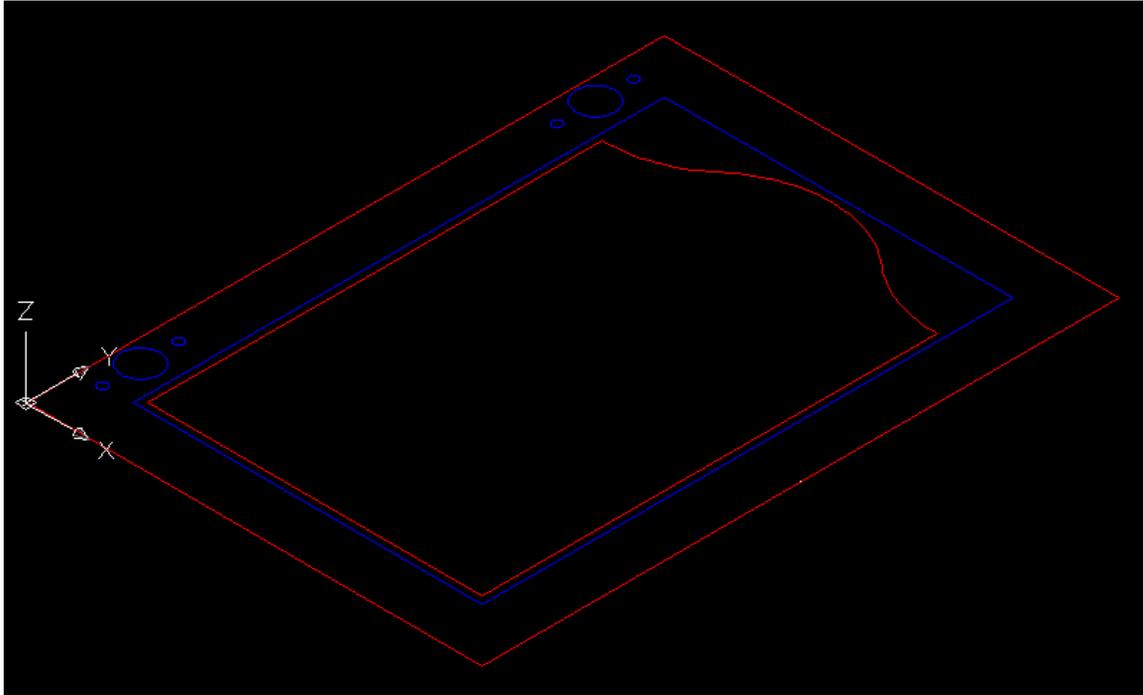


In this scenario, the bottom sheet has all the glass pockets, hinge hardware cuts, etc. that will be necessary on the back side. Then there is a reference cut made on the top and top left corner of the sheet. Next the sheet can be flipped over with the reference point being placed against the location pins. Then all the parts can have the details cut and then the profiles can be cut, releasing the part from the sheet. In this case, Common Line cutting could also be used on the top to reduce the cycle

time necessary to release the parts from the sheet.

Operation

The general rules to this method are that all the geometry for the part (front and back side) must be in one drawing and on separate layers that can be controlled with a layer to knowledge association in the DOIT files.



In the drawing shown above, the red geometry is cut on the front side of the sheet and the blue geometry is cut on the back side of the sheet. Both front and back geometry must exist in the same drawing, dxf, or macro file.

The front and or back geometry can have negative thickness. If you want your knowledge to cut to the geometry thickness, then your total cut depth can either be left blank, or have a capital A, or a backslash and a value. Blank or A will make the cut depth to the geometry thickness. A backslash and a value will cut that value more or less than the geometry thickness:

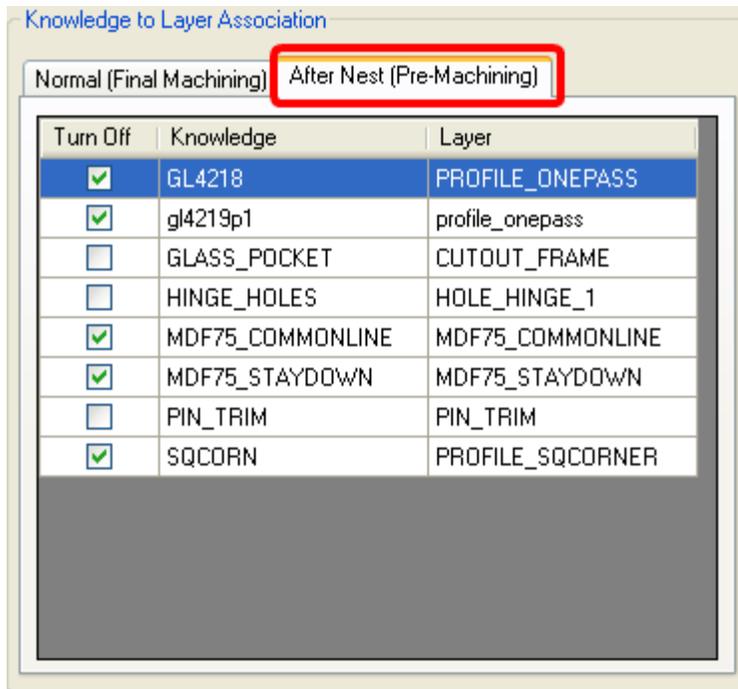
Status Information	
Safety Plane	*.25
Depth per Pass	1.
Total Cut Depth	/-.005

This example will cut .005 MORE than the geometry thickness. If the geometry is -.75 thick, the cut depth will be -.755

Status Information	
Safety Plane	*.25
Depth per Pass	1.
Total Cut Depth	/-.125

This example will cut .125 LESS than the geometry thickness. If the geometry is -.75 thick, the cut depth will be -.625

In the DOIT editor, there are two tabs. One for cuts on the first side and one for cuts on the second side. The order of these are as follows; The After Nest (pre-machining) tab is for the cuts that will happen first, before the sheet is turned over. The Normal (final machining) tab is for the cuts that will happen when the sheet is flipped over, containing all the cuts that will happen last and when the parts are cut loose from the sheet.



Turn Off	Knowledge	Layer
<input checked="" type="checkbox"/>	GL4218	PROFILE_ONEPASS
<input checked="" type="checkbox"/>	gl4219p1	profile_onepass
<input type="checkbox"/>	GLASS_POCKET	CUTOUT_FRAME
<input type="checkbox"/>	HINGE_HOLES	HOLE_HINGE_1
<input checked="" type="checkbox"/>	MDF75_COMMONLINE	MDF75_COMMONLINE
<input checked="" type="checkbox"/>	MDF75_STAYDOWN	MDF75_STAYDOWN
<input type="checkbox"/>	PIN_TRIM	PIN_TRIM
<input checked="" type="checkbox"/>	SQCORN	PROFILE_SQCORNER

First side (non through) cuts happen with this list.

Knowledge to Layer Association

Normal (Final Machining) After Nest (Pre-Machining)

Turn Off	Knowledge	Layer
<input type="checkbox"/>	GL4218	PROFILE_ONEPASS
<input type="checkbox"/>	gl4219p1	profile_onepass
<input checked="" type="checkbox"/>	GLASS_POCKET	CUTOUT_FRAME
<input checked="" type="checkbox"/>	HINGE_HOLES	HOLE_HINGE_1
<input type="checkbox"/>	MDF75_COMMONLINE	MDF75_COMMONLINE
<input type="checkbox"/>	MDF75_STAYDOWN	MDF75_STAYDOWN
<input checked="" type="checkbox"/>	PIN_TRIM	PIN_TRIM
<input type="checkbox"/>	SQCORN	PROFILE_SQCORNER

Second side (and through) cuts happen with this list.

If you want to cut half way through on the front, and half way through on the back, then you need a knowledge and layer association that cuts half way through for both the Normal tab and another (or the same) knowledge association for the After Nest tab. If you want to cut all the way through on the front side, then that knowledge / layer association should be done in the Normal machining tab.

You would never cut all the way through on the After Nest because that would separate all the parts and you could not flip the sheet over!

Once you make the associations in these two lists, save the DOIT file.

The 2 sided nesting is activated by checking the box in the Advanced Nesting tab that says "Enable Backside Nesting".

Nested Layout Presentation

Horizontal Spacing

Vertical Spacing

Layouts per Row

Enable Backside Nesting

Open Cart Control Grouping Key

Nesting Bridge Parameters

Off Staydown Common Line

Bridge Width

Minimum Corner Offset

Minimum Bridge Angle

Maximum Bridges Per Part

Also in the Advanced Nesting tab, the vertical spacing needs to be set at 2.5 or more. This ensures that there is enough room to mirror the sheets.

Note that 2 sided nesting requires rectangular stock only, irregular stock shapes with more than 4 sides will not be mirrored.

Trim cut

A trim cut is made along the edge of the back side sheet. This trim cut ensures a good edge to place up on the pop up pins when the sheet gets flipped over.

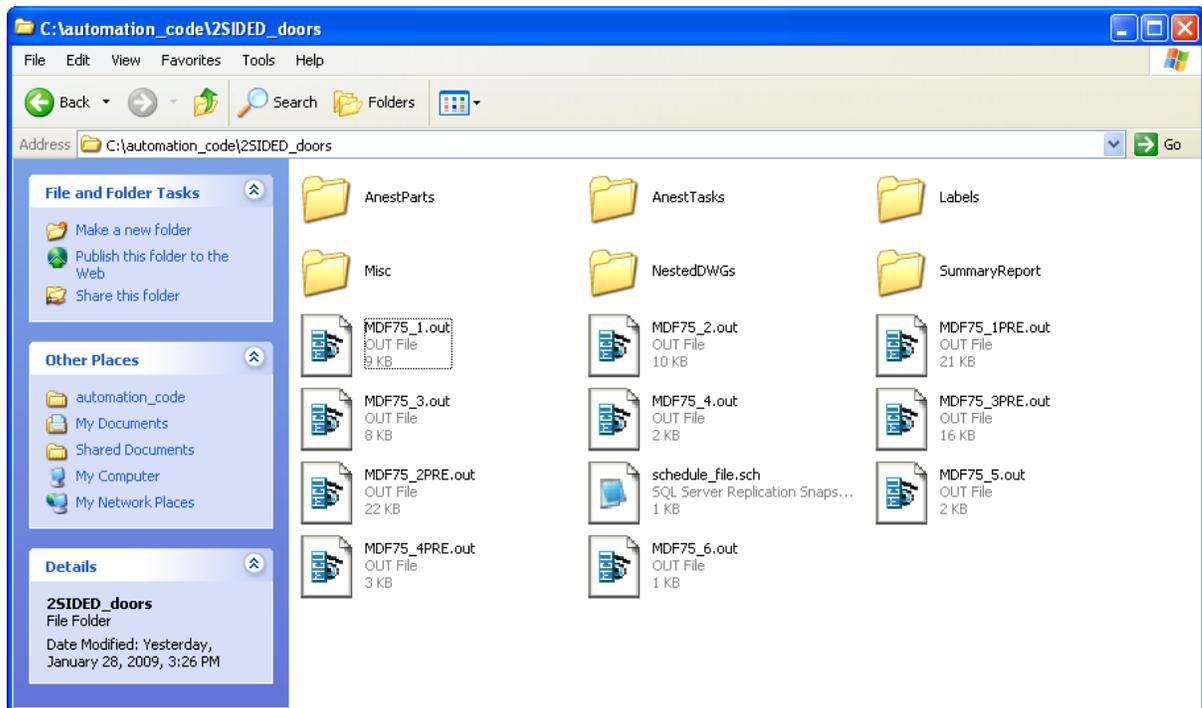
Router-CIM automatically makes geometry on layer pin_trim. You need a knowledge named pin_trim associated to layer pin_trim in the after nest DOIT file. This knowledge is a centerline cut set to offset by the tool radius, cut to the RH and CCW direction.

The pin_trim geometry is offset by $\frac{1}{2}$ of the edge allowance and will be shaved off the back side of the sheet and the origin of the main nc code file will be shifted by that amount.

Results

When the job is run, the results will have two NC Code files for each sheet.

The regular sheet name and one with PRE in the name. The PRE is the back side and it is run first.



Operation

- In the Advanced nesting tab, the Enable Backside Nesting box is checked and the vertical spacing is set to 2.5 or more
- Parts are added to a job. These parts must have geometry for both front and back side machining.
- The DOIT file has associations for both the front and back sides
- The After Nest tab in the DOIT file requires a layer to knowledge association called pin_trim. This is the trim cut to ensure a stable edge to flip the sheet against.
- Run the job.
- Load the sheets backside up at the CNC. The backside is the first machining to be done, then the sheet is flipped over and the front side machining is done.
- The results will have 2 NC Code files for each sheet. The regular sheet name and one with PRE in the name. The PRE is the back side and it is run first.
- The schedule file will have the PRE file first, then the regular NC Code name. This makes the back side of the sheet, flip it over, then the top side of the sheet.

Schedule file

The schedule file will be created with the files listed in the proper order to be executed.

```
1,MDF75_1PRE.OUT,1,1,00:00:00,00:00:00
1,MDF75_1.OUT,1,1,00:00:00,00:00:00
2,MDF75_2PRE.OUT,1,1,00:00:00,00:00:00
2,MDF75_2.OUT,1,1,00:00:00,00:00:00
3,MDF75_3PRE.OUT,1,1,00:00:00,00:00:00
3,MDF75_3.OUT,1,1,00:00:00,00:00:00
```

2.1.4.4.4 Cart Control Nesting

Open Cart Control Grouping Key

This is the field you can use to set the cart name or number for each part. You can choose from Record Description, or Label Fields 1-8 (Customer Info 1-8 by default).

Whichever key you choose, when adding parts to a job, you will place the cart name or number in the specified field so that the nest program can group the cart parts together.

Cart Control Nesting

Cart Control Nesting will allow you to control, to some degree, the jobs that are nested together on your sheet stock when multiple jobs are run together in Router-CIM Automation. Normally if you place parts from multiple jobs together in Router-CIM, there is no control over which parts will end up together on a sheet, since yield is the highest concern at that point. This can lead to confusion or lost time as the parts are sorted at the machine, after being cut, so that they can be stacked together with other parts from the same job.

As an example, if you had parts from 5 jobs together, it is entirely possible to have parts from all 5 jobs on the same sheet. This would cause the workers removing the parts to have 5 stacks (or carts) at the machine so that they can place the parts from the same jobs together. A more efficient way of performing these tasks might be to limit how many carts (or jobs) can be nested together on the same sheet. So, if the max number of carts is set to 2, then you can only have parts from 2 carts together on the sheet at one time until one of the two carts is finished, then another cart is added so that there are still only two until one of those carts runs out of parts, then another is substituted, and so on until all the parts from all 5 carts are finished. This way there are no more than two carts to stack at one time, or possibly 3 if you run out of parts for a cart part way through a sheet.

To control this in Router-CIM, you must have the Advanced Nesting option and in the Advanced Nesting tab set what field will be the Open Cart Control Grouping Key in the part parameters. In this case the key is Label Field 8 (Customer Info 8).

Once this is set, in your job you should set which parts belong to which job (or cart). In the case below, the part is set for Cart1. You can use any description for the field that identifies the cart, as long as all the parts in the same cart use exactly the same description.

Path to Part	C:\rcim_work\STYLE0.SCN		...
Part Description			
Part Material	3/4 MDF		
Quantity	12	<input type="checkbox"/> Maximize parts on sheet of material <small>***This will change the quantity to -1</small>	
Filler Qty	0		
Label Information			
Generic Label 1	label 1	Generic Label 2	label 2
Generic Label 3	label4	Generic Label 4	label 3
Generic Label 5		Generic Label 6	
Generic Label 7		Generic Label 8	Cart1
<input type="checkbox"/> Inherit Label Data from Job			
Part Orientation			
<input type="checkbox"/> Rotate Part	Rotate Angle	0	
<input type="checkbox"/> Mirror Part	Mirror Axis	Horizontal	
Nest Rotation	Same as Material		
Part Options			
<input type="checkbox"/> Ignore Layer Panel			
<input checked="" type="checkbox"/> Start Point on longest side of part			
<input type="checkbox"/> Manual Origin Part			
<input type="radio"/> Nest and Code As Single Part			
<input checked="" type="radio"/> Nest Part			
<input type="radio"/> Code As Single Part			
<input type="radio"/> Has an Associated Backside Macro			
<input type="radio"/> Is an Irregular Stock Shape			
<input type="checkbox"/> Use ShapeDone Part when possible			
Macro Dimensions			
Generic Record XDim	12		
Generic Record YDim	4		
Generic Record ZDim	.75		

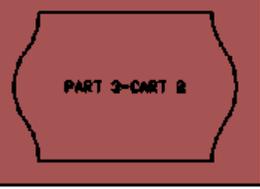
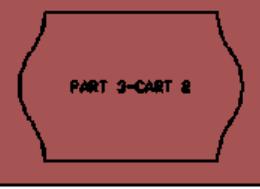
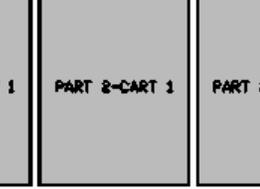
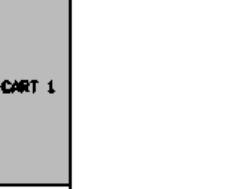
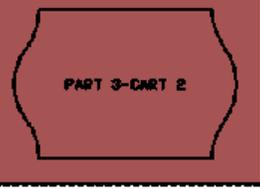
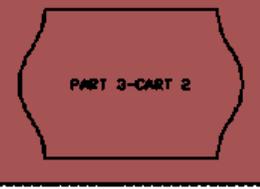
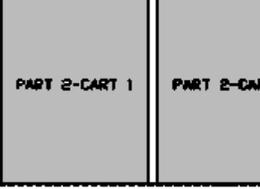
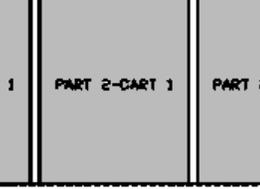
In the material, you can choose the number of Jobs per cart. This is really the number of groups of parts that have the same record description per sheet in this material. The Open cart threshold is an override that says if there is at least the percentage shown of available space then go ahead and add another group of parts with the same description on this sheet. In this case, only two carts can be on the same sheet because there would have to be 100% of the space (empty sheet) left over in order to add a third cart to the sheet.

Stock Settings			
Sheet Stock Y Dim	60	Quantity	999
Sheet Stock X Dim	96	Priority	10
Thickness	0.75	Jobs per Cart	2
Bridge Width	0.75	Open Cart Threshold	100
Cost	18	<input type="checkbox"/> Z0 is top of Material	

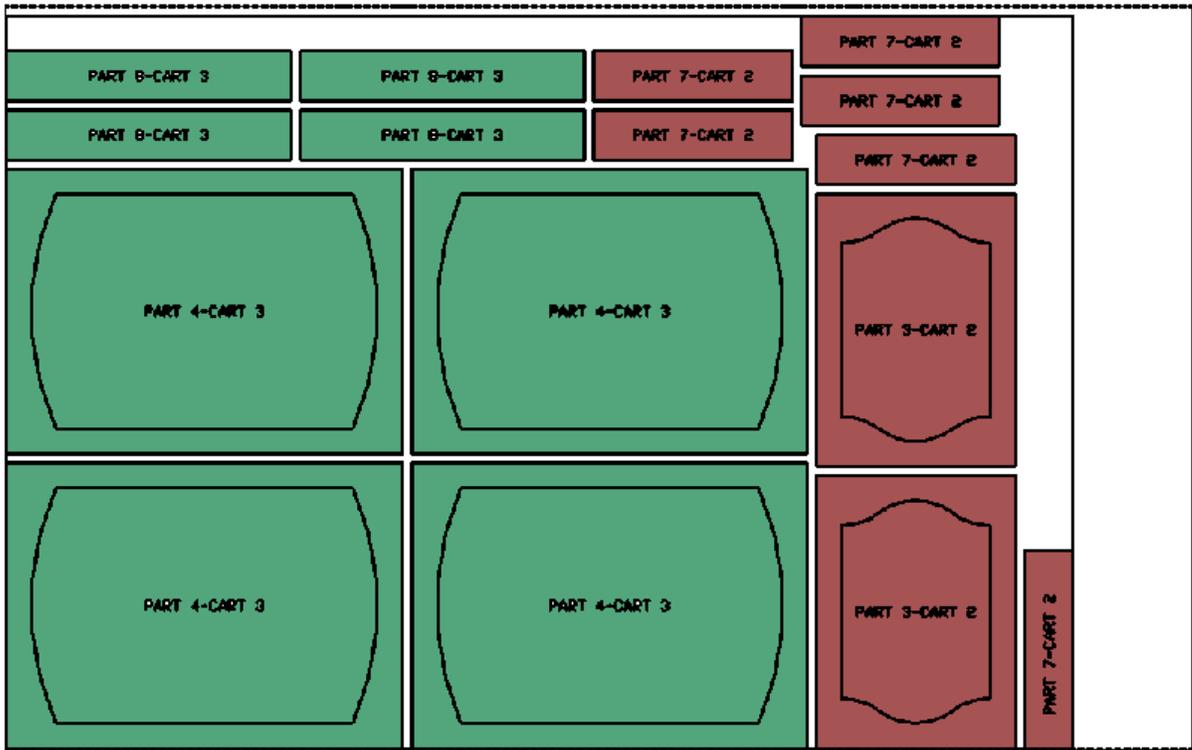
This example will use a job that has 10 parts that belong to 5 different carts. The breakdown is like this:

	Part#	Part	Qty	Material		X Dim	Y Dim	Z Dim	Full Path to Part
	1	STYLE0.SCN	12	3/4 MDF	CART 1	12	4	.75	C:\rcim_work\STYLE0.SCN
	2	Style1SQ.scn	12	3/4 MDF	CART 1	12	16	.75	C:\rcim_work\Style1SQ.scn
	3	STYLE2.SCN	8	3/4 MDF	CART 2	16	22	.75	C:\rcim_work\STYLE2.SCN
	4	STYLE6.SCN	4	3/4 MDF	CART 3	23	32	.75	C:\rcim_work\STYLE6.SCN
	5	STYLE8.SCN	12	3/4 MDF	CART 4	19	23	.75	C:\rcim_work\STYLE8.SCN
	6	STYLE9.SCN	10	3/4 MDF	CART 5	18	24	.75	C:\rcim_work\STYLE9.SCN
	7	STYLE0.SCN	8	3/4 MDF	CART 2	16	4	.75	C:\rcim_work\STYLE0.SCN
	8	STYLE0.SCN	4	3/4 MDF	CART 3	23	4	.75	C:\rcim_work\STYLE0.SCN
	9	STYLE0.SCN	12	3/4 MDF	CART 4	19	4	.75	C:\rcim_work\STYLE0.SCN
	10	STYLE0.SCN	10	3/4 MDF	CART 5	18	4	.75	C:\rcim_work\STYLE0.SCN

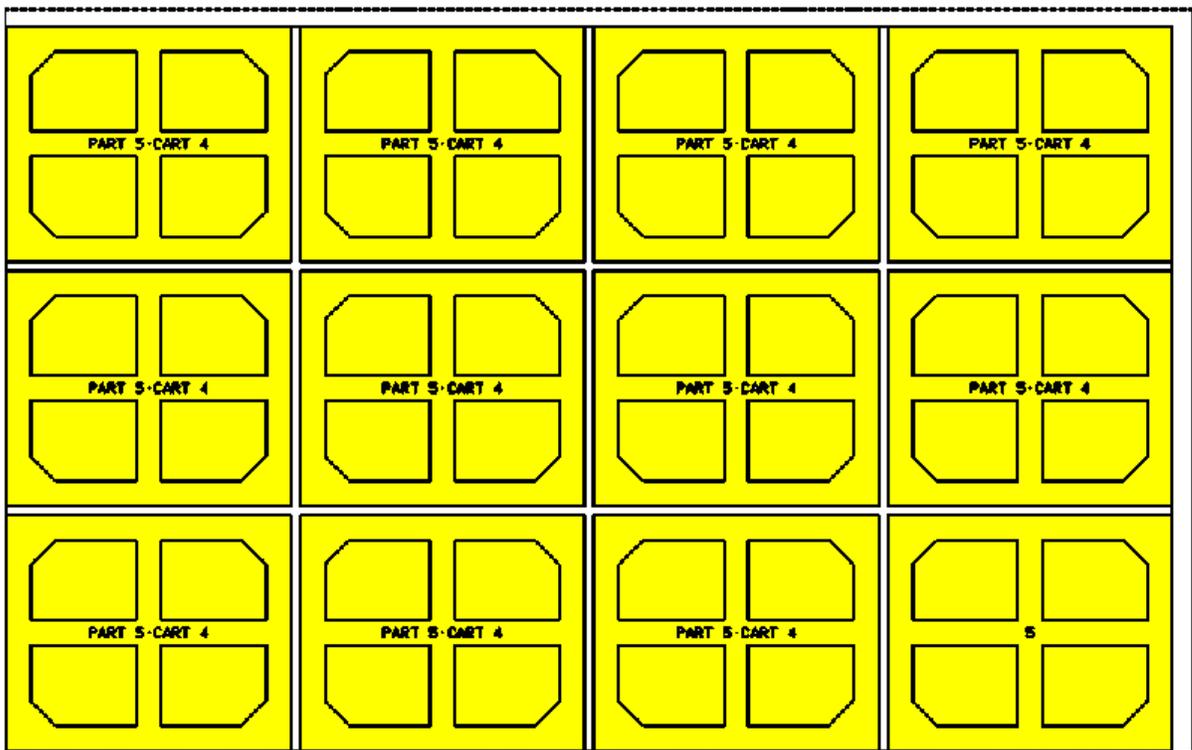
Once this job is nested with the previously set parameters the sheets will look like this:

PART 7-CART 2	PART 1-CART 1	PART 1-CART 1	PART 1-CART 1	PART 1-CART 1	PART 1-CART 1	PART 1-CART 1	PART 1-CART 1
PART 7-CART 2	PART 1-CART 1	PART 1-CART 1	PART 1-CART 1	PART 1-CART 1	PART 1-CART 1	PART 1-CART 1	PART 1-CART 1
							
							
							

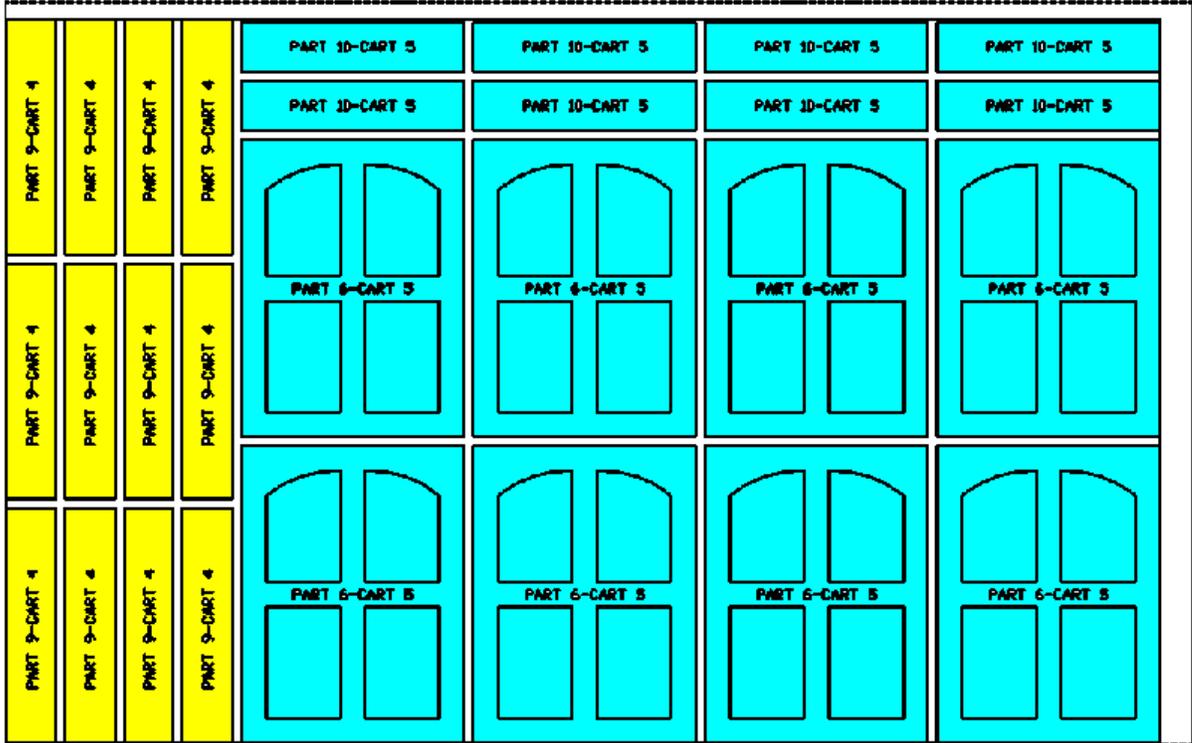
Sheet 1 has parts 1, 2, 3, and 7 which are from Cart 1 and Cart 2. Cart 1 is finished.



Sheet 2 has parts 3, 4, 7 and 8 which are from Cart 2 and Cart 3. Cart 2 is finished. Cart 3 is also finished.



Sheet 3 has part 5 which is from Cart 4 only.



Sheet 4 has parts 6, 9, and 10 which are from Cart 4 and Cart 5. Cart 4 is finished.



2.1.4.5 Dynamic Variables

Dynamic Variables

	Name	Value
▶	MDF75	.75
	MEL750	.75
	PLY250	.25
	MDFXX	.75
	WHT75	0.750
	BIR25	0.25
	MEL75	0.750
	ALM75	0.750
	BBP25	0.2187
	MEL25	0.25

This section will show all the Dynamic Variables from a macro job or part. If there are no macros in the job, the default will show each of the materials as the materials can be used for setting thickness in a macro.

2.1.4.6 Part Name

Part Name

Section 1	Section 2	Section 3	Section 4	Section 5
<input type="radio"/> Part Name	<input type="radio"/> Part Name	<input type="radio"/> Part Name	<input type="radio"/> Part Name	<input type="radio"/> Part Name
<input checked="" type="radio"/> Part Number	<input type="radio"/> Part Number	<input type="radio"/> Part Number	<input type="radio"/> Part Number	<input type="radio"/> Part Number
	<input type="radio"/> Material	<input type="radio"/> Material	<input type="radio"/> Material	<input type="radio"/> Material
	<input type="radio"/> X Dim			
	<input type="radio"/> Y Dim			
	<input type="radio"/> Z Dim			
	<input type="radio"/> Quantity	<input type="radio"/> Quantity	<input type="radio"/> Quantity	<input type="radio"/> Quantity
	<input type="radio"/> Job Name			
	<input type="radio"/> Label 1			
	<input type="radio"/> Label 2			
	<input type="radio"/> Label 3			
	<input type="radio"/> Label 4			
	<input checked="" type="radio"/> None			
	Section Prefix <input type="text" value="-"/>			

Sample Part Name

There are 5 possible sections to compile the data embedded in the part name as it appears on the nested sheet. Each section will appear in the Sample Part Name box at the bottom to show an example of how the name might look should certain options be specified.

The prefix for each section can be specified as a character you wish displayed between each field.

The following shows Section 1 set to Part Name instead of Part Number:

Section 1
<input checked="" type="radio"/> Part Name
<input type="radio"/> Part Number

Sample Part Name

Changing Section 1 to Part Number and Section 2 to Part Name gives you this result:

Section 1	Section 2
<input type="radio"/> Part Name	<input checked="" type="radio"/> Part Name
<input checked="" type="radio"/> Part Number	<input type="radio"/> Part Number

Sample Part Name

And using all 5 sections could give you the following result (which is a very long file name).

Section 1	Section 2	Section 3	Section 4	Section 5
<input type="radio"/> Part Name	<input checked="" type="radio"/> Part Name	<input type="radio"/> Part Name	<input type="radio"/> Part Name	<input type="radio"/> Part Name
<input checked="" type="radio"/> Part Number	<input type="radio"/> Part Number	<input type="radio"/> Part Number	<input type="radio"/> Part Number	<input type="radio"/> Part Number
	<input type="radio"/> Material	<input checked="" type="radio"/> Material	<input type="radio"/> Material	<input type="radio"/> Material
	<input type="radio"/> X Dim			
	<input type="radio"/> Y Dim			
	<input type="radio"/> Z Dim			
	<input type="radio"/> Quantity	<input type="radio"/> Quantity	<input checked="" type="radio"/> Quantity	<input type="radio"/> Quantity
	<input type="radio"/> Job Name			
	<input type="radio"/> Label 1	<input type="radio"/> Label 1	<input type="radio"/> Label 1	<input checked="" type="radio"/> Label 1
	<input type="radio"/> Label 2			
	<input type="radio"/> Label 3			
	<input type="radio"/> Label 4			
	<input type="radio"/> None	<input type="radio"/> None	<input type="radio"/> None	<input type="radio"/> None
	Section Prefix <input type="text" value="-"/>			

Sample Part Name

Keep in mind that this is to set the name of the part as it shows in the nested sheets. If you have small or narrow parts, and a lot of combinations to the name field, the text will overlap other parts and could become confusing.

The default is to use only the Part Number.

2.1.4.7 Output Files

Output Files

Similar to the Part Name section the Output Files parameters contain 5 sections to allow you to string together names for the NC Code files that have the proper meaning for you.

Output File Extension

Section 1

- Job Name
- Material Name
- First Material Attribute
- Label Field 1
- Label Field 2

Section 2

- Job Name
- Material Name
- First Material Attribute
- Label Field 1
- Label Field 2
- None

Section 3

- Job Name
- Material Name
- First Material Attribute
- Label Field 1
- Label Field 2
- None

Section 4

- Job Name
- Material Name
- First Material Attribute
- Label Field 1
- Label Field 2
- None

Section 5

- Job Name
- Material Name
- First Material Attribute
- Label Field 1
- Label Field 2
- None

The default name for the code files is set to Material Name. Using other combinations appends those combinations to the name. Examples of the name are show below.

Using all 5 fields can create a very long file name, and there are no delimiters between the sections (as some controllers will not allow special characters).

Output File Extension

Section 1

Job Name

Material Name

First Material Attribute

Label Field 1

Label Field 2

Section 2

Job Name

Material Name

First Material Attribute

Label Field 1

Label Field 2

None

Section 3

Job Name

Material Name

First Material Attribute

Label Field 1

Label Field 2

None

Section 4

Job Name

Material Name

First Material Attribute

Label Field 1

Label Field 2

None

Section 5

Job Name

Material Name

First Material Attribute

Label Field 1

Label Field 2

None

So this filename would be MDF75CartControl_1BlueJobLabel1JobLabel2.out

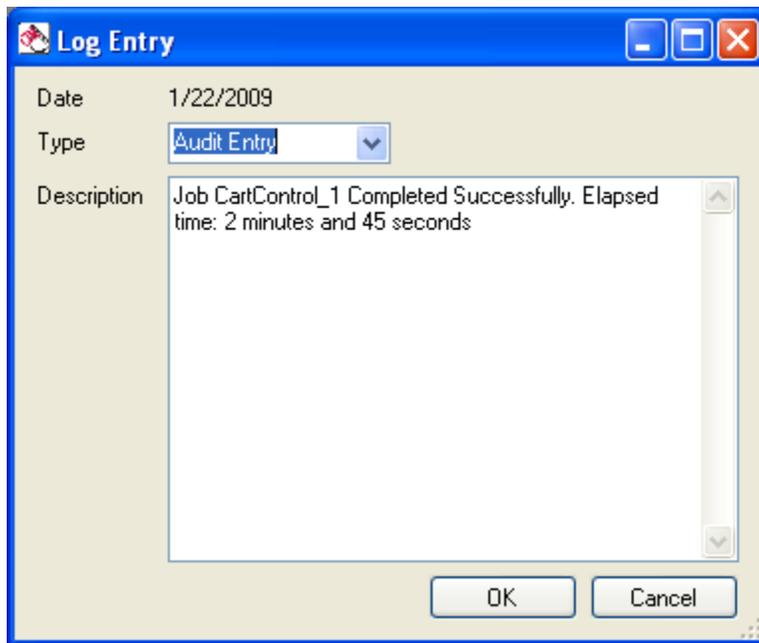
2.1.4.8 Results

Results

The results section will display a log for each time the job is run, and place in the log the results of the run.

	Entry Type	Entry Date	Entry Text
	Audit Entry	1/22/2009	Job CartControl_1 Completed Successfully. Elapsed time: 2 minutes and 45 seconds
	Audit Entry	1/12/2009	Job CartControl_1 Completed Successfully. Elapsed time: 2 minutes and 41 seconds
	Audit Entry	1/12/2009	Job CartControl_1 Completed Successfully. Elapsed time: 2 minutes and 55 seconds

You can double-click on any of these logs, and you will see the summary:



Also right-clicking on an entry shows a menu which will allow you to add a new entry, edit and entry, or delete an entry.

	Entry Type	Entry Date	Entry Text
	Audit Entry	1/22/2009	Job CartControl_1 Completed Successfully. Elapsed time: 2 minutes and 45 seconds
	Audit Entry	1/22/2009	Job CartControl_1 Completed Successfully. Elapsed time: 2 minutes and 41 seconds
	Audit Entry	1/22/2009	Job CartControl_1 Completed Successfully. Elapsed time: 2 minutes and 55 seconds

- New
- Edit
- Delete

2.2 Variables Window

Variables Window

The variables window displays all tagged variables for a part, or any global variables for an assembly.

Tagged Variables

These variables are marked in the macro as tagged so that they may be modified in the job individually. In this instance a door macro is selected and several variables display in the Variables Window.

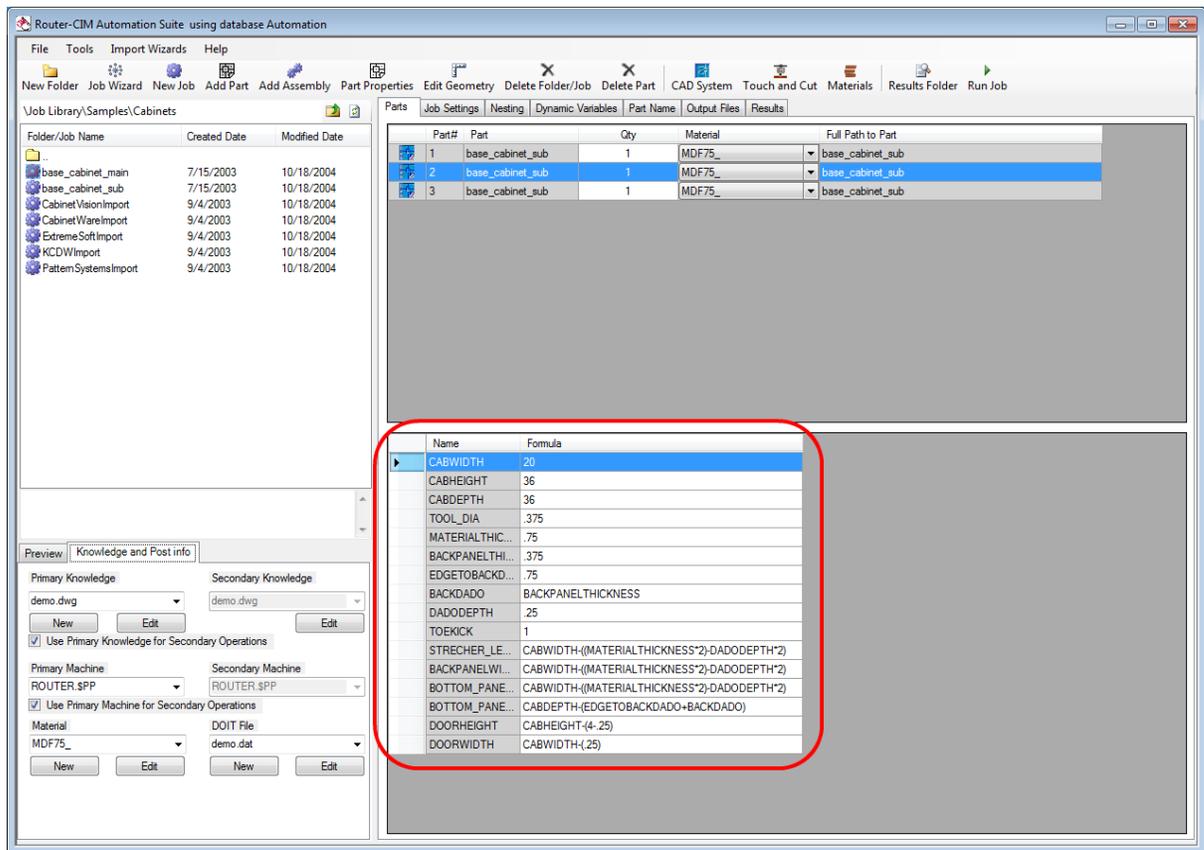
Part#	Part	Qty	Material	X Dim	Y Dim	Z Dim	Full Path to Part
1	STYLE0.SCN	34	MDF75_	4	16	.75	C:\vcim_work\STYLE0.SCN
2	Style1SQ.scn	18	MDF75_	14	19	.75	C:\vcim_work\Style1SQ.scn
3	STYLE2.SCN	7	MDF75_	16	22	.75	C:\vcim_work\STYLE2.SCN
4	STYLE6.SCN	9	MDF75_	23	32	.75	C:\vcim_work\STYLE6.SCN
5	STYLE8.SCN	3	MDF75_	19	23	.75	C:\vcim_work\STYLE8.SCN
6	STYLE9.SCN	10	MDF75_	18	24	.75	C:\vcim_work\STYLE9.SCN
7	STYLE10.SCN	5	MDF75_	17	26	.75	C:\vcim_work\STYLE10.SCN
8	STYLE13.SCN	7	MDF75_	19	23	.75	C:\vcim_work\STYLE13.SCN
9	STYLE17.scn	3	MDF75_	24	30	.75	C:\vcim_work\STYLE17.scn
10	STYLE20.SCN	6	MDF75_	17	25	.75	C:\vcim_work\STYLE20.SCN
11	STYLE26.SCN	6	MDF75_	22	22	.75	C:\vcim_work\STYLE26.SCN
12	STYLE27.SCN	11	MDF75_	24	35	.75	C:\vcim_work\STYLE27.SCN
13	STYLE32.SCN	4	MDF75_	23	25	.75	C:\vcim_work\STYLE32.SCN
14	STYLE34.scn	5	MDF75_	21	26	.75	C:\vcim_work\STYLE34.scn
15	STYLE38.scn	4	MDF75_	19	25	.75	C:\vcim_work\STYLE38.scn
16	STYLE39.scn	5	MDF75_	24	31	.75	C:\vcim_work\STYLE39.scn
17	STYLE40.scn	5	MDF75_	22	16	.75	C:\vcim_work\STYLE40.scn

Name	Formula
RAIL_LEFT	2
RAIL_RIGHT	2
STYLE_TOP	2
STYLE_BOTTOM	2
STICK	2
CROWN	2
CORNERS	.001
FLAT	.1

You can edit the Formula value for the tagged value by selecting it and typing in a new formula or value. You cannot change the variable name.

Global Variables

Global variables are typically variables that affect more than one part in an assembly. Instead of having the same variable in each part and trying to remember to change the value for each part, you would make a global variable and have it changed once and that change would affect each macro that uses that variable. For instance, there may be several macros that make up a cabinet, but you would only want to change the cabinets Height once and have all the parts relate to that value. Height would be a global variable.



This job (base_cabinet_main) has 3 assemblies in it. Each of them are the same assembly, but the global variables for CABWIDTH, CABHEIGHT, and CABDEPTH can be changed to allow 3 different size cabinets, just from changing those 3 global variables. This way none of the parts in the sub job has to be changed on its own.

2.3 Knowledge Settings

Knowledge Settings

Knowledge Settings are all the parameters relating to the Knowledge Drawings, DOIT file, Primary and Secondary Machines and Materials.

Preview Knowledge and Post info

Primary Knowledge demo.dwg New Edit

Secondary Knowledge demo.dwg Edit

Use Primary Knowledge for Secondary Operations

Primary Machine ROUTER.\$PP

Secondary Machine ROUTER.\$PP

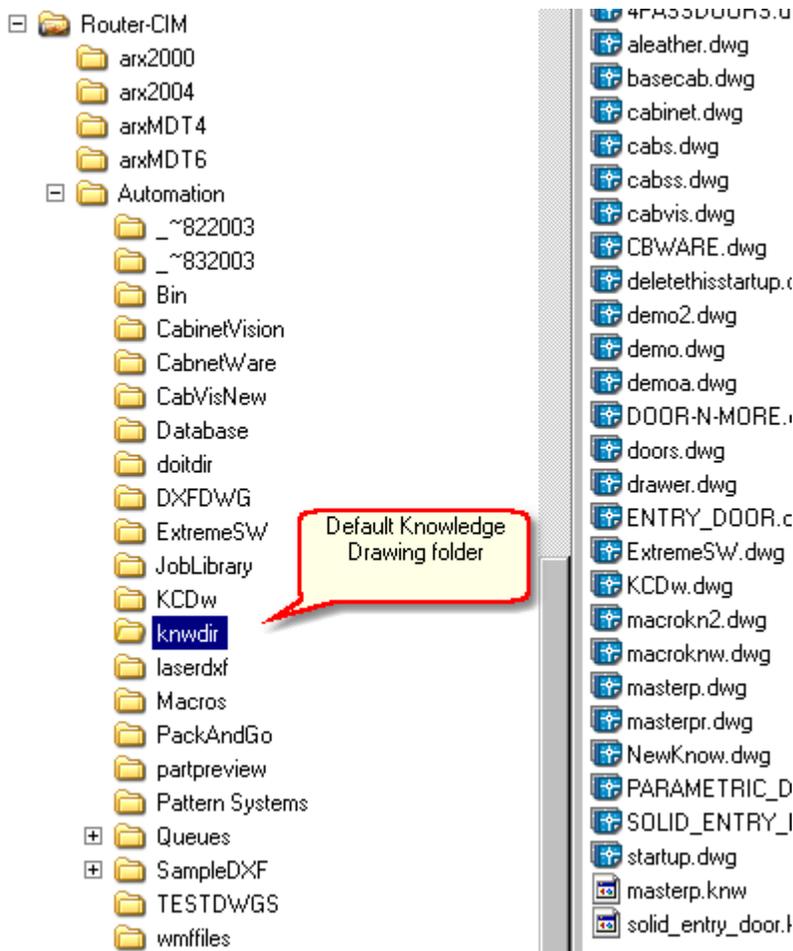
Use Primary Machine for Secondary Operations

Material BPL50_ New Edit

DOIT File demo.dat New Edit

Primary Knowledge

The Primary Knowledge drawing is the drawing that contains the cut knowledges for the parts in a job. If each of the parts are to be nested together, then a single knowledge drawing is all that is necessary. By default, the knowledge drawings are stored in a sub-folder of Router-CIM. This location is editable in the System Defaults windows under Paths.



Secondary Knowledge

If a part in the job that is being processed has a backside operation that must be performed, a separate piece of NC Code must be made for that operation. In this instance, a Secondary Knowledge Drawing and Post processor can be used. When you unselect the box marked "Use Primary Drawing for Secondary Operations" another set of choices appears for a Secondary Knowledge Drawing and Post Processor.

New Knowledge Drawing

This button will allow a new Router-CIM session to start in AutoCAD. The post processor can be specified in the Configuration wizard. Then, new knowledges can be inserted and the drawing can be saved with a new name so that it is added to the list of available drawings.

Edit Knowledge Drawing

Edit Drawing will allow you to have the Knowledge drawing opened in AutoCAD, with Router-CIM running so that you can add, change, or delete cut knowledges or edit fixtures or table drawings in the knowledge drawing that you have selected. Router-CIM will load with the same configuration that the knowledge drawing was made with originally. For instance, if the drawing was configured for a specific post processor when it was made, then it will load into Router-CIM with that post processor in use when selected for editing.

Use Primary Knowledge for Secondary Operations

This allows you to use the same knowledge drawing for any secondary drawings that are to be cut, like a backside operation that has a separate drawing and needs separate code.

Primary Knowledge: demo.dwg
Secondary Knowledge: demo.dwg
 Use Primary Knowledge for Secondary Operations

Primary Knowledge: demo.dwg
Secondary Knowledge: doors.dwg
 Use Primary Knowledge for Secondary Operations

Primary and Secondary Machine

The Primary and Secondary post processors may be selected from this list of available post processors. Only the post processors in the working Router-CIM\Ncpost folder will be available for selection. If you do not see the post processor for your machine in this list, contact Komo / CIM-Tech for more information.

If the Secondary machine selection is not available, uncheck the box marked Use Primary Machine for Secondary Operations.

Primary Machine: ROUTER.\$PP
Secondary Machine: ROUTER.\$PP
 Use Primary Machine for Secondary Operations

Primary Machine: ROUTER.\$PP
Secondary Machine: ROUTER.\$PP
 Use Primary Machine for Secondary Operations

DOIT File

Router-CIM's automation runs on the drawing Layer to Cut Knowledge association principle. That means that for each Layer in a drawing that has geometry that you want cut on the machine, a Cut Knowledge must exist. Further, the two of them must be associated together in the system to allow Router-CIM to know that the partnership exists. From this area you may select a DOIT file (that is a Layer/Knowledge Association file) from the list of available DOIT files in the \Router-CIM\Automation\Doitdir folder. You can edit the selected file and add/remove associations, and even created new DOIT files for use in Router-CIM. For more information on DOIT, see the DOIT Tutorial in Chapter 25.

DOIT File: demo.dat
New Edit

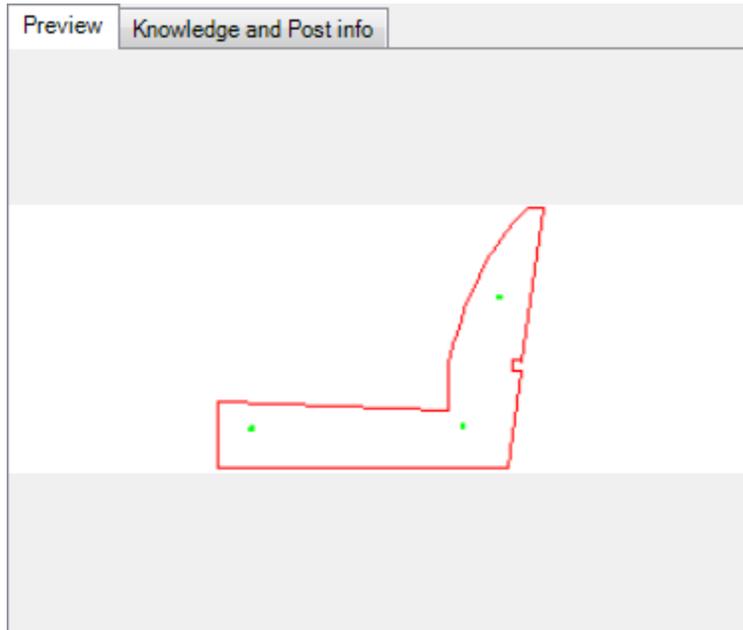
Material

You can select the jobs material here from the list of available materials in the materials database. You can also create or edit a material with the options provided.

Material: 1/2 Birch Ply
New Edit

Part Preview

The part preview window will allow you to see a thumbnail image of the currently selected part. You can enlarge the image by selecting the arrow in the upper right corner. You can also suppress the display of the preview by un-selecting the Show Part Preview box.

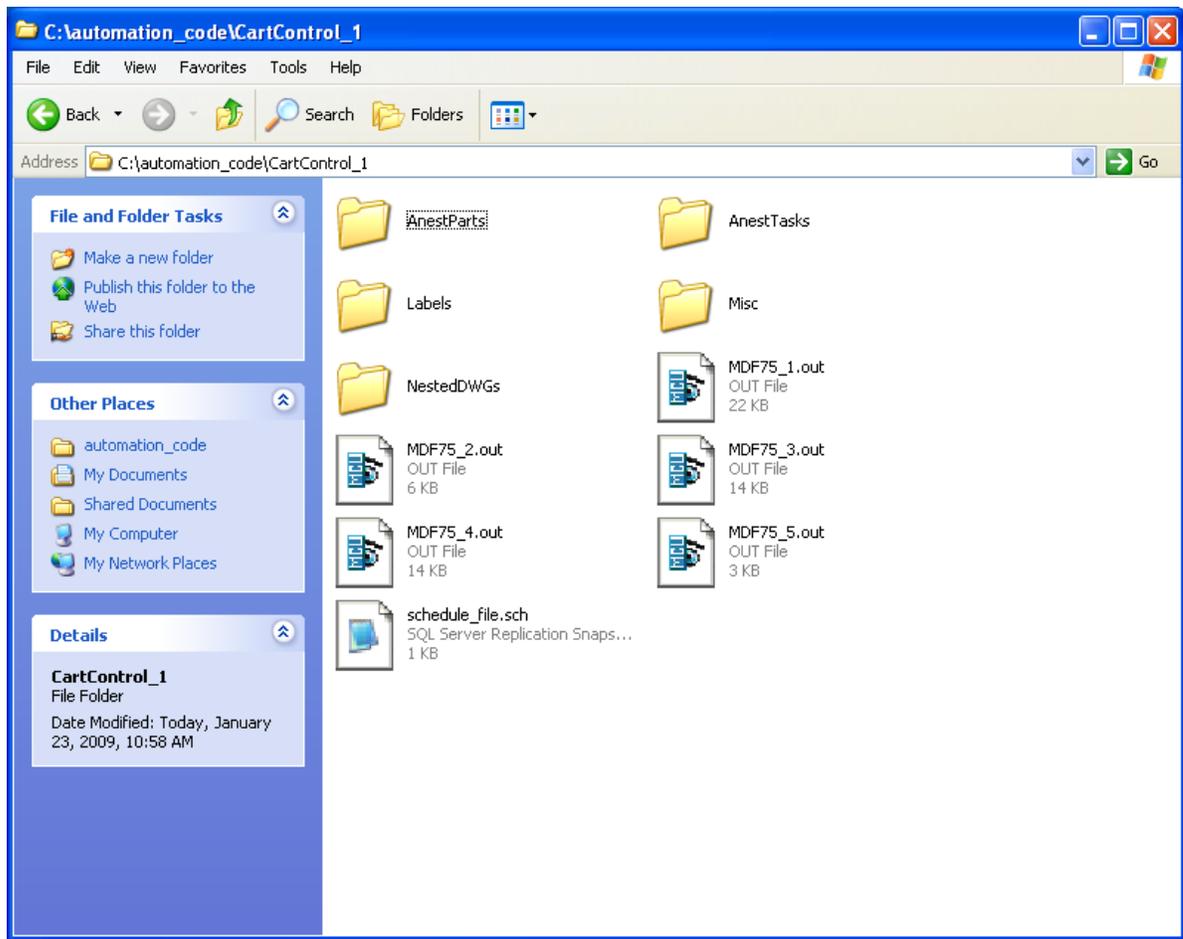


2.4 The Results Folder

The Results Folder

After every job is run in Automation, there is a folder created with the same name as the job name. This folder contains all the files created by the job as a result of the run in Automation.

The result folder will have your NC Code files, summary reports, nested drawings, AutoNEST parts and tasks, schedule files, etc.



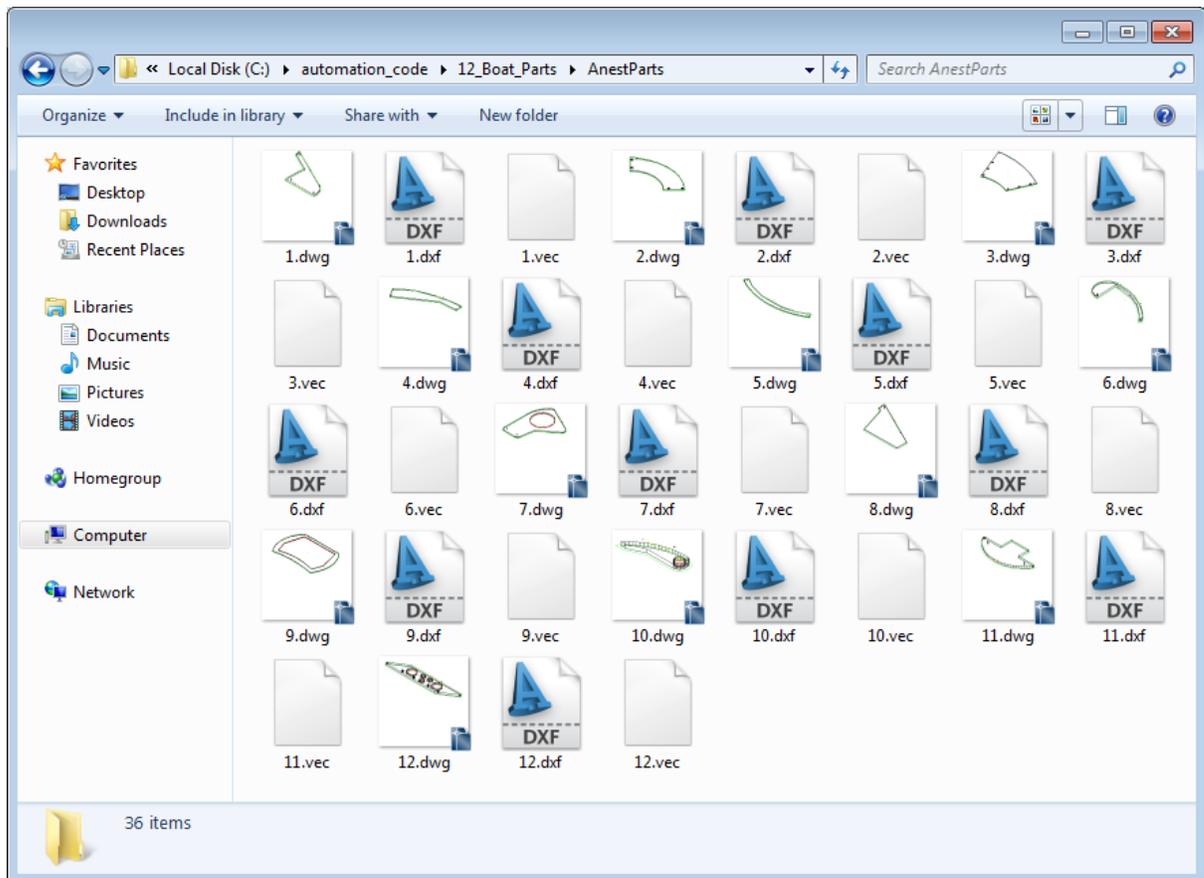
Sample Results Folder from a job named CartControl_1

The Root folder (with the job name) will contain the nc code files, and schedule file for the job and also the separate folders for the other data created by the job.

2.4.1 AnestParts

AnestParts subfolder

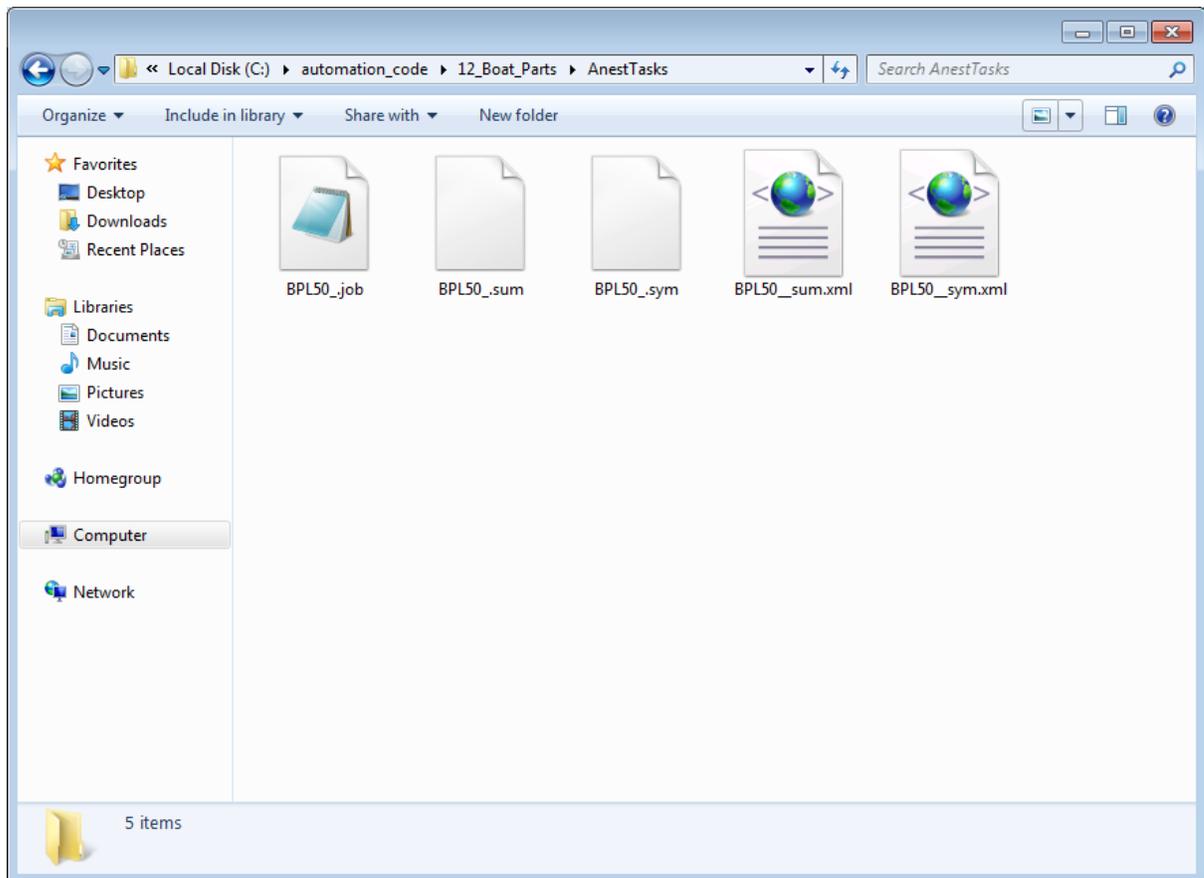
All of the part files (.dwg, .dxf & .vec) for each part will be stored in this folder for AutoNEST to recreate the parts with.



2.4.2 AnestTasks

AnestTasks subfolder

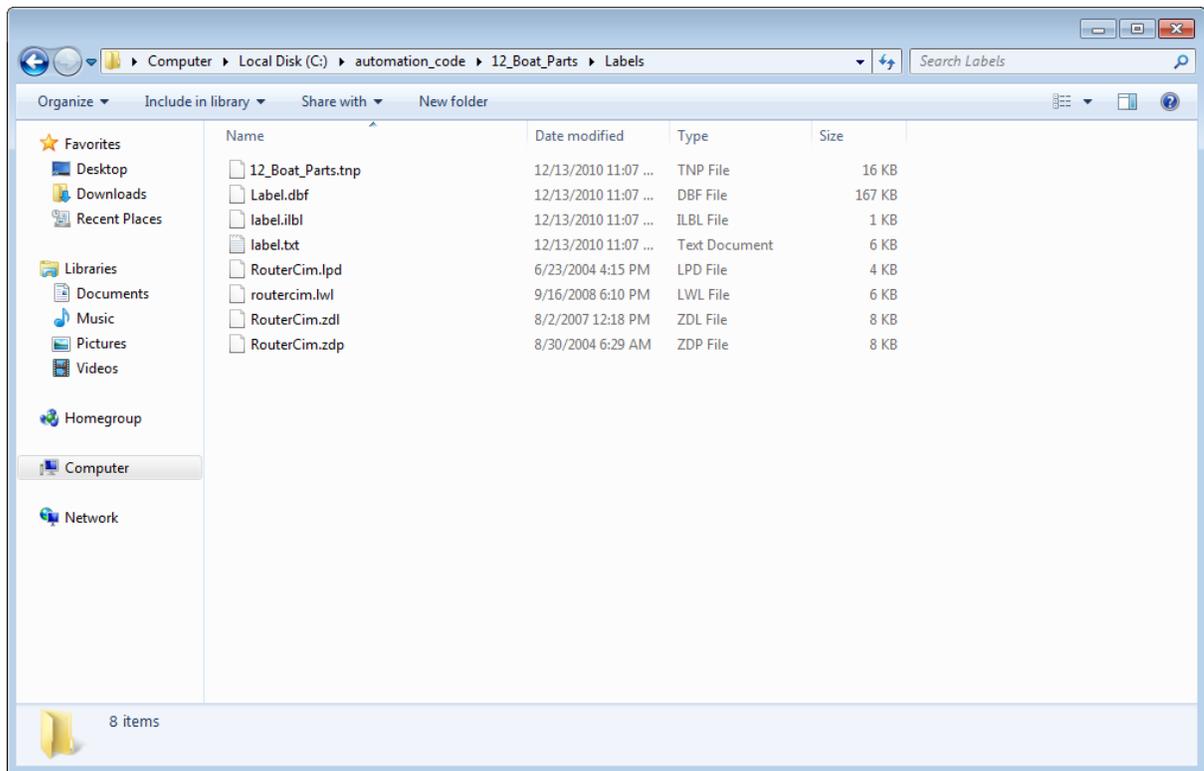
All the task files (.sym, .sum, .sgd and .job) for the job that AutoNEST needs to recreate the job settings.



2.4.3 Labels

Labels subfolder

All the label files for the job are stored in this folder. There are label files for Avery Label Pro, Avery Design Pro, a comma-delimited label text file, and a label database file. These labels can be opened in the software of your choice. Router-CIM includes Avery Label Pro, and a limited time install of Avery Design Pro.



2.4.4 Misc

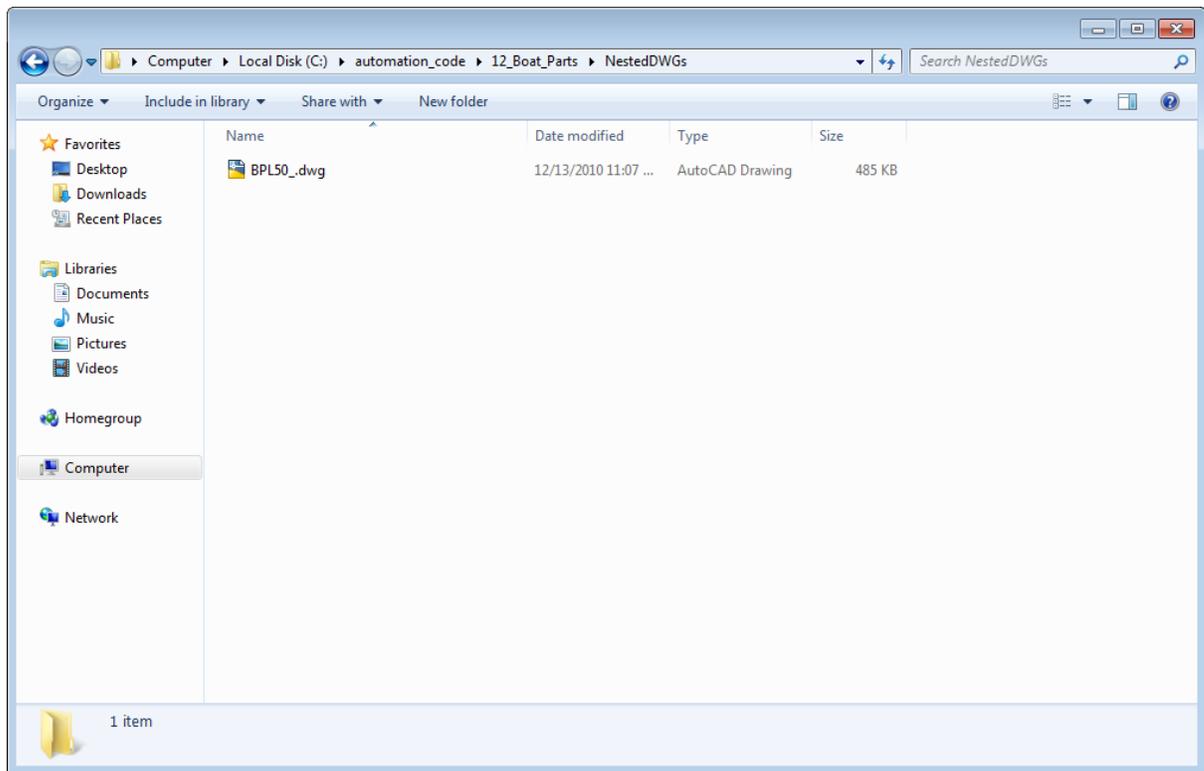
Misc subfolder

Typically this folder contains the error log and any other miscellaneous files created by the job. It is usually empty if the job run successfully.

2.4.5 NestedDWGs

NestedDWGs subfolder

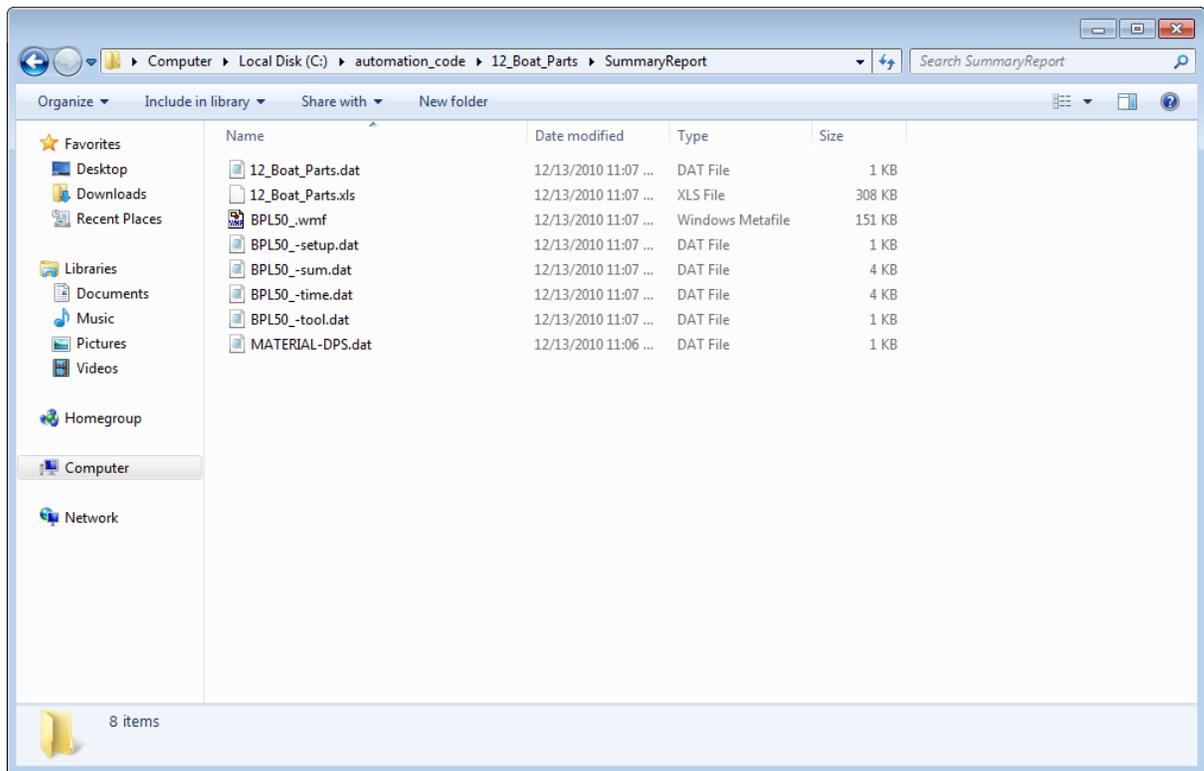
This folder contains the nest drawing for all the materials in the job. Each material will have a separate drawing containing all the nests for that material.



2.4.6 Summary Report

Summary Report subfolder

This is optional, but if the create summary report option is checked in the job, the summary report data files and Excel spreadsheet will be contained in this folder.



2.5 Materials Editor

Materials Editor

The Materials Editor contains a database of all your materials and their individual settings. The Material Editor has several options available:

Material	Code	X Dim	Y Dim	Thickness	Bridge Width	Left Edge Allowance	Right Edge Allowance	Top Edge Allowance	Btm Edge Allowance	Irregular Edge Allowance	Rotation
.250 UHMW Sheet	UHMW25...	120	48	0.25	0.8	0.125	0.125	0.125	0.125	0.125	ALL
1 Melamine	MEL1_	96.875	48.875	1	0.75	0.125	0.125	0.125	0.125	0.125	ALL
1/2 Baltic Birch Ply	BP50_	96	48	0.5	0.85	0.125	0.125	0.125	0.125	0.125	0 180
1/2 Birch Ply	BPL50_	96	48	0.5	0.65	0.625	0.625	0.625	0.625	0.625	ALL
1/2 Birch Plywood	BPL500_	96	48	0.5	0.85	0.125	0.125	0.125	0.125	0.125	ALL
1/2 Maple Ply	MPL50_	96	48	0.5	0.85	0.125	0.125	0.125	0.125	0.125	ALL
1/2 Mel 1sWhite	MEL50_	97	49	0.5	0.85	0.125	0.125	0.125	0.125	0.125	ALL
1/2 Mel 2sWhite	MLW500_	96	48	0.5	0.7	0.125	0.125	0.125	0.125	0.125	ALL
1/2 Plywood	PLY500A_	96	48	0.5	0.625	0.2	0.2	0.2	0.2	0.2	ALL
1/4 A1 Birch	BIRC25_	96.5	48.5	0.25	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 A1 Cherry	CHER25_	96.5	48.5	0.25	0.75	0.125	0.125	0.125	0.125	0.125	0
1/4 A1 KNOTTY PINE	KPIN25_	96.5	48.5	0.25	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 A1 MAPLE	MAPL25_	96.5	48.5	0.25	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 A1 Oak	OAK25_	96.5	48.5	0.25	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 Baltic Birch Ply	BBP25_	60	60	0.2187	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 Birch Ply	BIR25_	96.5	48.5	0.25	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 G2S Black Melamine	BMEL25_	96.875	48.875	0.25	0.85	0.125	0.125	0.125	0.125	0.125	ALL
1/4 G2S Maple Melamine	MAP25G_	96.875	48.875	0.25	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 G2S Melamine	MEL25G_	96.875	48.875	0.25	0.85	0.125	0.125	0.125	0.125	0.125	ALL
1/4 HICKORY	HICK25_	96.5	48.5	0.25	0.85	0.125	0.125	0.125	0.125	0.125	0
1/4 MDF	MDF25_	96	48	0.25	0.85	0.125	0.125	0.125	0.125	0.125	ALL
1/4 Mel 1sAlm 1sWhite	MLW25_	96	48	0.25	0.85	0	0	0	0	0	ALL
1/4 Mel 1sWhite	MEL25_	96	48	0.25	0.85	0.125	0.125	0.125	0.125	0.125	ALL

2.5.1 New

New

The New option allows you to enter a new material into the database.

The screenshot shows the 'Material Properties' dialog box with the following fields and settings:

- Material Description:** Melamine
- Material Code:** MEL1_
- Material Handling Code:** (empty)
- Stock Settings:**
 - Sheet Stock Y Dim: 48.875
 - Sheet Stock X Dim: 96.875
 - Thickness: 1.00
 - Bridge Width: .75
 - Cost: 0.00
- Quantity:** 999
- Priority:** 10
- Jobs per Cart:** 100
- Open Cart Threshold:** 95
- Z0 is top of Material
- Edge Allowances:**
 - Left Edge Allowance: .125
 - Right Edge Allowance: .125
 - Top Edge Allowance: .125
 - Bottom Edge Allowance: .125
 - Irregular Stock Edge Allowance: .125
- Material Rotation:**
 - Allow Part Rotation (All)
 - No Part Rotation (0)
 - Grain Rotation (0 180)
- Material Attributes:**
 - Color: (empty)
 - Thickness: (empty)
 - Supplier: (empty)
 - Supplier Number: (empty)
- Scrap Management:**
 - Make a Scrap Cut
 - Min Scrap Size: 20.00
 - Distance from Part: 1.175
 - Inventory Scrap
 - Use Scrap
- Scrap Manager Table:**

X Dim	Y Dim	Qty	Priority
- Multi-Stock Nested (Advanced Nesting Users Only):**
 - Priority
 - Best Yield
 - Best Price
 - Automatically Decrease Qty
- Alternate Sizes Table:**

XDIM	YDIM	Qty	Priority	Cost

Shown above is the default screen for adding a new material to the material database. There are several default settings that will be present, but the main information that must be entered is the Material Description, Material Code, Sheet Y Dim, Sheet X Dim and Thickness. Without those, the material cannot be saved.

Each of the settings are described in the Properties section.

2.5.2 Copy

Copy Material

This function will copy the currently selected material into a new material so that you can maintain the copied materials settings. You should specify a new Material Description and you must enter a unique Material Code.

The screenshot shows the 'Material Properties' dialog box with the following fields and settings:

- Material Description:** Copy of 250 UHMW Sheet
- Material Code:** (empty)
- Material Handling Code:** (empty)
- Stock Settings:**
 - Sheet Stock Y Dim: 48
 - Sheet Stock X Dim: 120
 - Thickness: 0.25
 - Bridge Width: 0.8
 - Cost: 0.00
- Quantity:** 999
- Priority:** 10
- Jobs per Cart:** 100
- Open Cart Threshold:** 95
- Z0 is top of Material
- Edge Allowances:**
 - Left Edge Allowance: 0.125
 - Right Edge Allowance: 0.125
 - Top Edge Allowance: 0.125
 - Bottom Edge Allowance: 0.125
 - Irregular Stock Edge Allowance: 0.125
- Material Rotation:**
 - Allow Part Rotation (All)
 - No Part Rotation (0)
 - Grain Rotation (0 180)
- Material Attributes:**
 - Color: (empty)
 - Thickness: (empty)
 - Supplier: (empty)
 - Supplier Number: (empty)
- Scrap Management:**
 - Make a Scrap Cut
 - Min Scrap Size: 15
 - Distance from Part: 1.175
 - Inventory Scrap
 - Use Scrap
- Scrap Manager Table:**

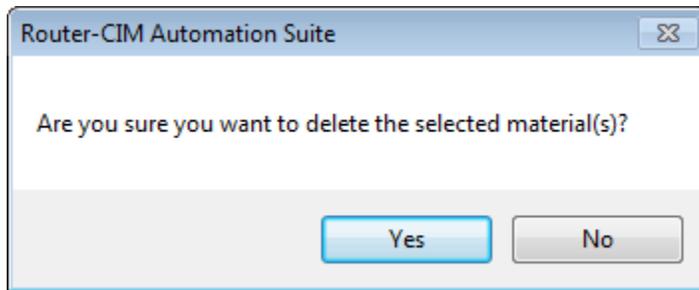
X Dim	Y Dim	Qty	Priority
- Multi-Stock Nested (Advanced Nesting Users Only):**
 - Priority
 - Best Yield
 - Best Price
 - Automatically Decrease Qty
- Alternate Sizes Table:**

XDIM	YDIM	Qty	Priority	Cost

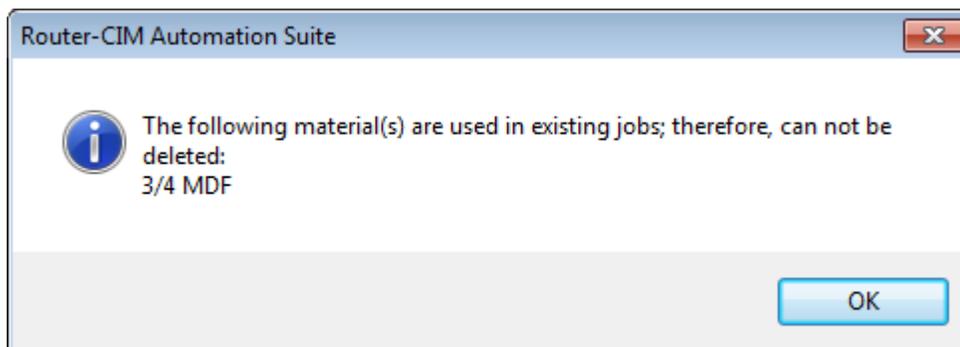
2.5.3 Delete

Delete Material

To remove a material from the database, select it in the list and then select the Delete button. You will be prompted to be sure you want to remove the material.



If the material selected is in use in the database on a job in the job tree, you will see the following message:



You then must remove the job that has parts using that material in order to remove the material from the list.

2.5.4 Properties

Material Properties

There are several default settings that will be present, but the main information that must be entered is the Material Description, Material Code, Sheet Y Dim, Sheet X Dim and Thickness. Without those, the material cannot be saved.

Material Description (Mandatory)

A text field describing the material. This description is most used in the labeling where the material description may be necessary.

Material Code (Mandatory)

The Material Code is a field that accepts an 8 digit code. This code can contain letters and numbers or an underscore (_). This field should ALWAYS start with a letter or underscore. Starting the description with a number can result in issues later during job runs under certain circumstances.

Material Handling Code (Optional)

If your machine is equipped with an automatic material load/unload mechanism, you can enter the bunk number where the material is stored here and during the creation of the nc code file, the proper commands will be issued to grab the material from the correct location.

Stock Settings

Sheet Stock Y Dim

The dimension of the material in the Y direction on the machine. This is always a positive number.

Sheet Stock X Dim

The dimension of the material in the X direction on the machine. This is always a positive number.

Thickness

The thickness of the material. This is always a positive number.

Bridge Width

This is the minimum distance to keep between parts when nested on the sheet. Typically this is set to at least the largest tool diameter in the job being run.

Cost

You may specify the cost of the material in this location. If you have advanced nesting, then you can also add multiple materials of the same type and list their cost, and allow Router-CIM to use the material sized based on cost per job instead of yield only.

Quantity

You may specify a number of sheets on hand in this location. The maximum number of sheets is 999. If you specify a lower number and the job runs out of material, you will be alerted that no suitable stock sizes are available.

Priority

You may specify a priority number from 1-10 for a material, and also for sub-materials of the same type. If you have advanced nesting, you can sort by priority, allowing the use of specific sizes of material as a preference.

Jobs per Cart

If you have advanced nesting and wish to use Cart Control, you specify the number of open carts that can be nested on a sheet at any one time. The default is set to 100 to bypass this consideration.

Open Cart Threshold

This value is a percentage from 0-100. The Open cart threshold is an override that means that there must be at least the percentage shown of available space left in order to add another cart of parts with the same material description on this sheet. So, 100 means only the number of carts shown above is allowed, no matter what, and 0 would mean that more carts will be added to the sheet. Any number in between will be compared against the remaining space left in the sheet after the required parts have been put on and if there is enough space, more can be added.

Z0 is top of Material

Typically Z0 is at the top of the spoilboard (bottom of part). Router-CIM automatically shifts all the tool paths and code to allow for the material thickness so that the tool paths are made properly for the material in the job. However, if you touch off your tools to the top of the material instead, check this box to avoid Router-CIM shifting all the tool paths.

Edge Allowance

You can specify areas to leave empty and have the parts offset from by filling in the edge allowances for each of the sides of the sheet. Router-CIM will not nest any parts in this area. This is useful to keep parts for lining up exactly on an unfinished edge of a sheet.

Left Edge Allowance

Default minimum distance to leave empty from the left side of the sheet to the nested parts.

Right Edge Allowance

Default minimum distance to leave empty from the right side of the sheet to the nested parts.

Top Edge Allowance

Default minimum distance to leave empty from the top side of the sheet to the nested parts.

Bottom Edge Allowance

Default minimum distance to leave empty from the bottom side of the sheet to the nested parts.

Irregular Edge Allowance

Default minimum distance to leave empty from the any side of the sheet to the nested parts.

Material Rotation

Material rotation controls how parts are allowed to be placed on the nested sheet.

Allow Part Rotation (All)

Rotation set to all will allow parts to be rotated at any angle from 0-360° in 1° increments. See part property overrides for individual part rotation considerations.

No Part Rotation (0)

Rotation set to 0 will not allow a part to be rotated from the angle it is drawn in. See part property overrides for individual part rotation considerations.

Grain Rotation (0 180)

Rotation for consideration of grain will only allow a part to be rotated 180° on a nested sheet so that it is aligned with the grain of the material. Consideration should be given to the orientation of the part drawing when considering grain rotation. See part property overrides for individual part rotation considerations.

Material Attributes

You can specify material attributes that you wish to have appear on labels. These fields can be customized in the Automation Settings.

Scrap Management**Make a Scrap Cut**

Using this setting will force Router-CIM to create a scrap tool path as long as there is a knowledge named SCRAP in the knowledge drawing.

Min. Scrap Size

This parameters is the minimum amount of material left, in units from the right edge of the sheet, required in order to save the scrap and make a scrap cut. If there is less material than this free (from the right edge) then the scrap will not be cut off.

Distance from Part

This setting is the distance from the edge of the furthest right hand part to the scrap cut off in current units. Typically this is where you can allow for the radius of the largest tool to cut out the parts and further allow for space to cut off the scrap.

Inventory Scrap

Setting this option will allow Router-CIM to add newly cut scrap pieces into the materials scrap inventory.

Use Scrap

Setting this option will force Router-CIM to use scrap material in the job if it is available and of suitable size.

Scrap Manager

The Scrap Manager is where you can add, delete, modify scrap pieces in the scrap inventory of the current material. These settings only affect the scrap of the current material.

Multi Stock Nested(Advanced Nesting Users Only)

Priority

Best Yield

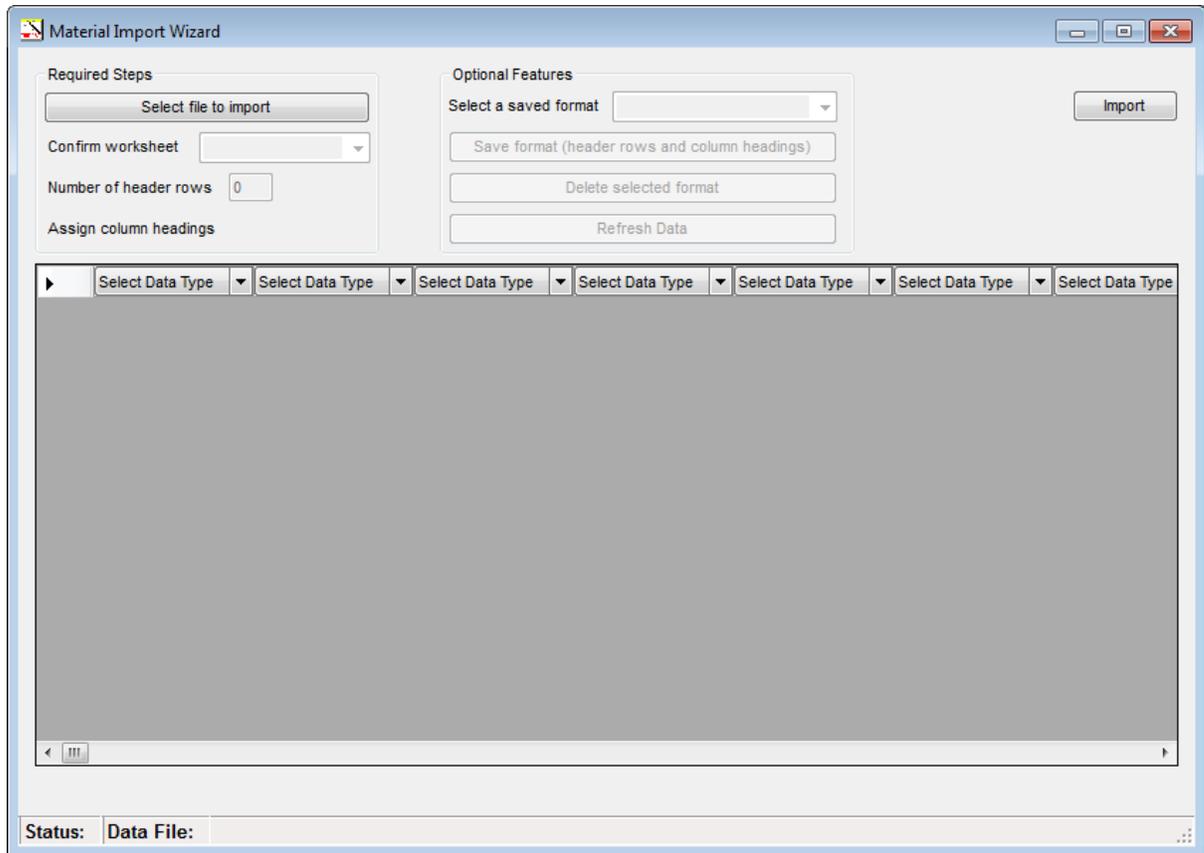
Best Price

Automatically Decrease Qty.

Alternate Sizes

2.5.5 Import

Import Material



This window will allow you to import materials into the material database from a saved Excel Spreadsheet (.xls), Comma Delimited file (.csv) or a previously exported Automation Material database list (.mtl file). The fields for each column are user definable except in the case of the Automation Material database file, which will fill in the fields automatically.

The available data types for each field are:

- Material Description
- Material Code
- X Dim
- Y Dim
- Thickness
- Min. Drop Off
- Bridge Width
- Left Edge Allowance
- Right Edge Allowance
- Top Edge Allowance
- Bottom Edge Allowance
- Irregular Stock Edge Allowance
- Rotation
- Cut Scrap
- Use Scrap
- Inventory Scrap
- Scrap Cut Distance from

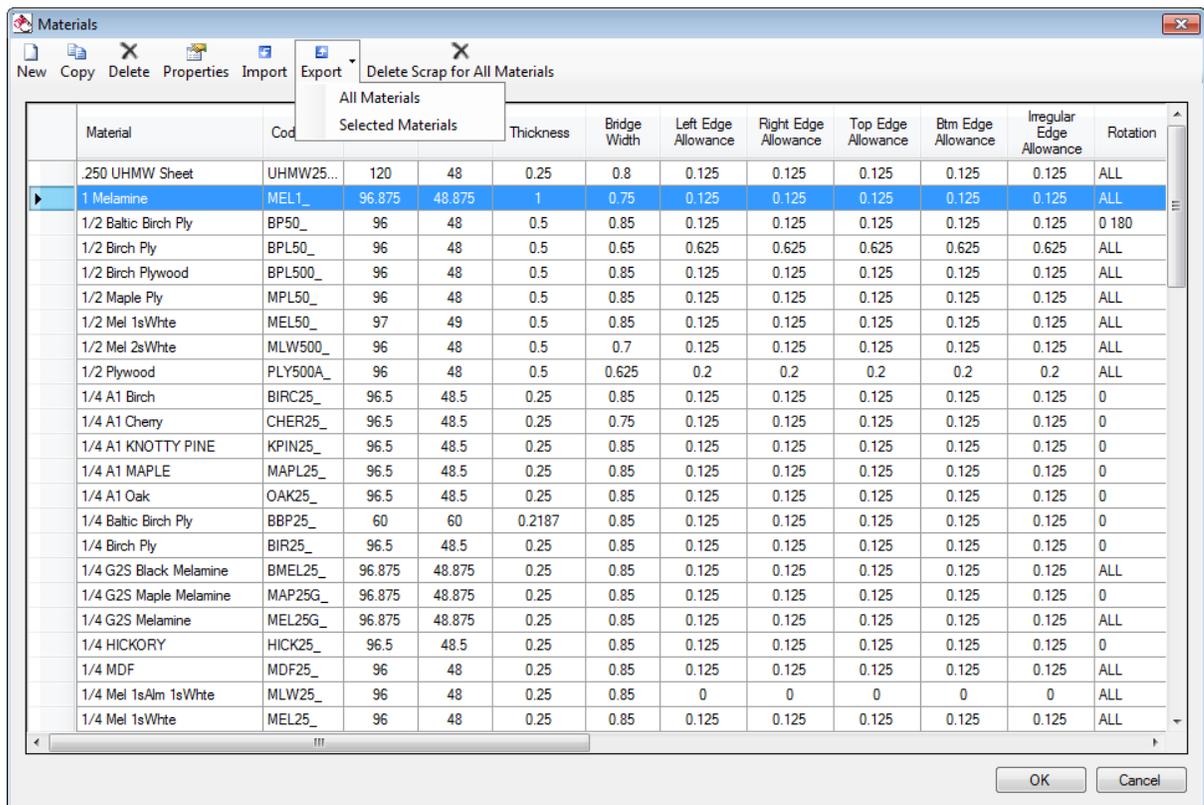
Material Handling Code
 Attribute 1
 Attribute 2
 Attribute 3
 Attribute 4
 Attribute 5
 Z0 is top
 Cost
 Nest Type (0; Priority
 Jobs per Cart
 Open Cart Threshold
 Quantity
 Priority
 Alt. Materials Decrease
 Ignore

2.5.6 Export

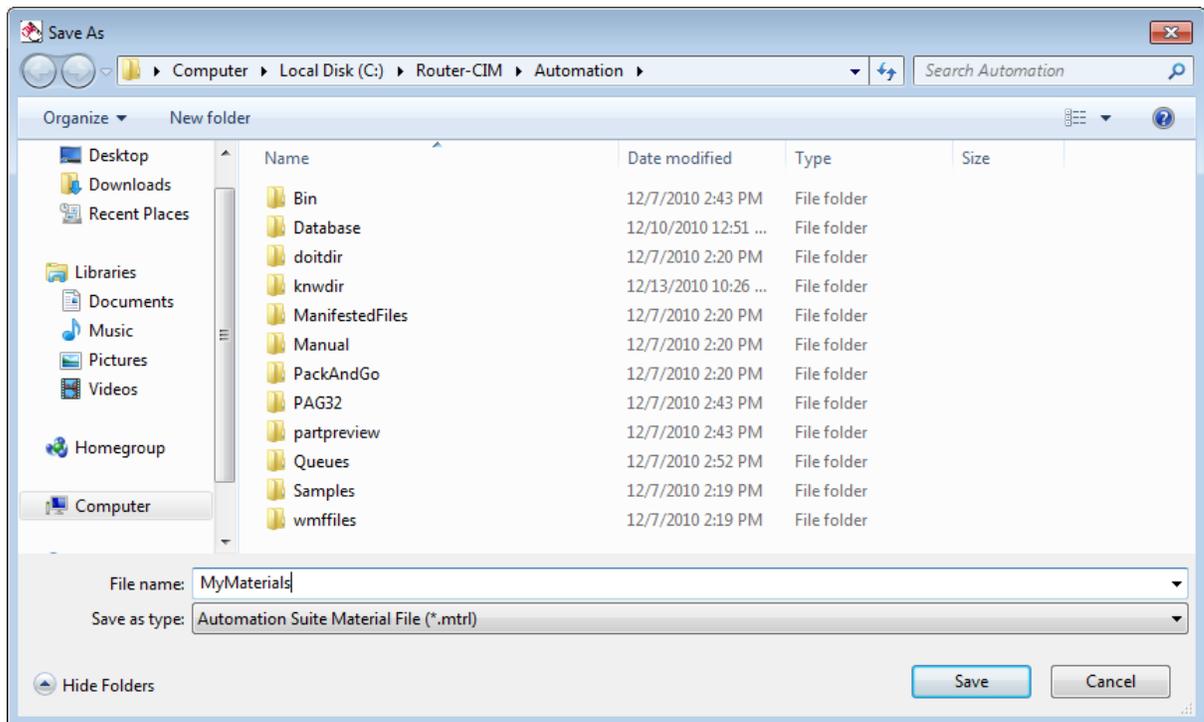
Export Material

Router-CIM Automation will allow you to export one, several, or all materials to an importable database. This allows you to share or back up your materials database so that you can import it into another database at a later time, or on another computer.

To export materials, select one or more materials from the list or optionally select All Materials.



You will next be shown a screen where you can select a name and location for the exported materials file to be stored.

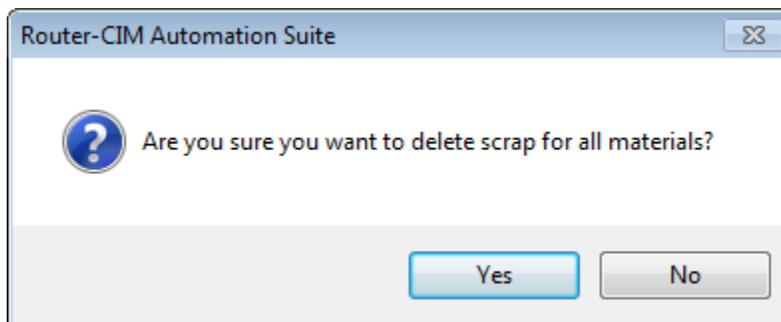


Once you select Save, the material file will be exported and ready for later import.

2.5.7 Delete Scrap for All Materials

Delete Scrap for All Materials

You may delete the scrap entries for all materials by selecting this option. You will be prompted with the following screen to be sure you wish to delete all the scrap entries in the database. Once the scrap entries are deleted, you cannot get them back!



2.6 Batch Processing

Batch Processing

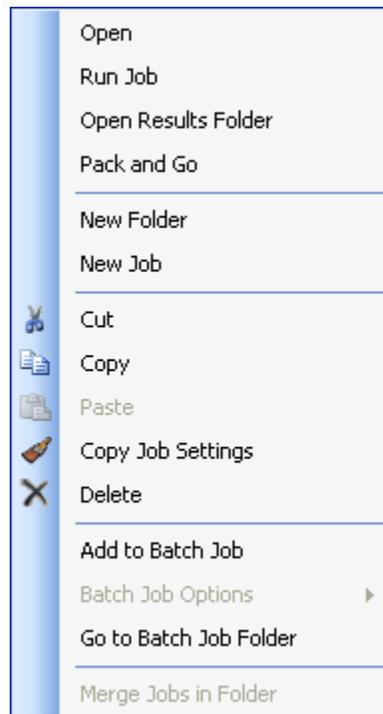
If you wish to load several jobs into Automation at one time, and have them executed in order, separately, then you can use Batch Processing. The process is relatively simple in that you would build your separate Router-CIM jobs as normal, and then add them (one at a time) into the batch folder. Once you create a batch job, you can run the entire batch and Router-CIM will run each job individually to completion, creating an output folder for each job, before going on to the next.

Batch Jobs are somewhat special and have a folder of their own. A batch job is really several jobs, each in one folder and run one at a time. Each job in a batch will run until it is done, and when it is done and all the code is made, then the next job will start up. None of the parts from one job are cut or nested with parts from another job.

To create a Batch Job, go to any folder containing jobs, and right click on a job and select Add to Batch Job. For instance, Select the Samples folder, and then the Boat-and-RV_parts folder. In this folder there are 4 jobs.

Folder/Job Name	Created Date	Modified Date
..		
12_Boat_Parts	7/28/2003	7/15/2008
20_ft_cabin_cruiser	7/17/2003	6/25/2008
3d_SOLID_Parts	7/17/2003	6/25/2008
40_ft_power_cruiser	7/17/2003	6/25/2008

Select the 12_Boat_Parts job and Right-Click on it to bring up the menu, then select Add to Batch Job.

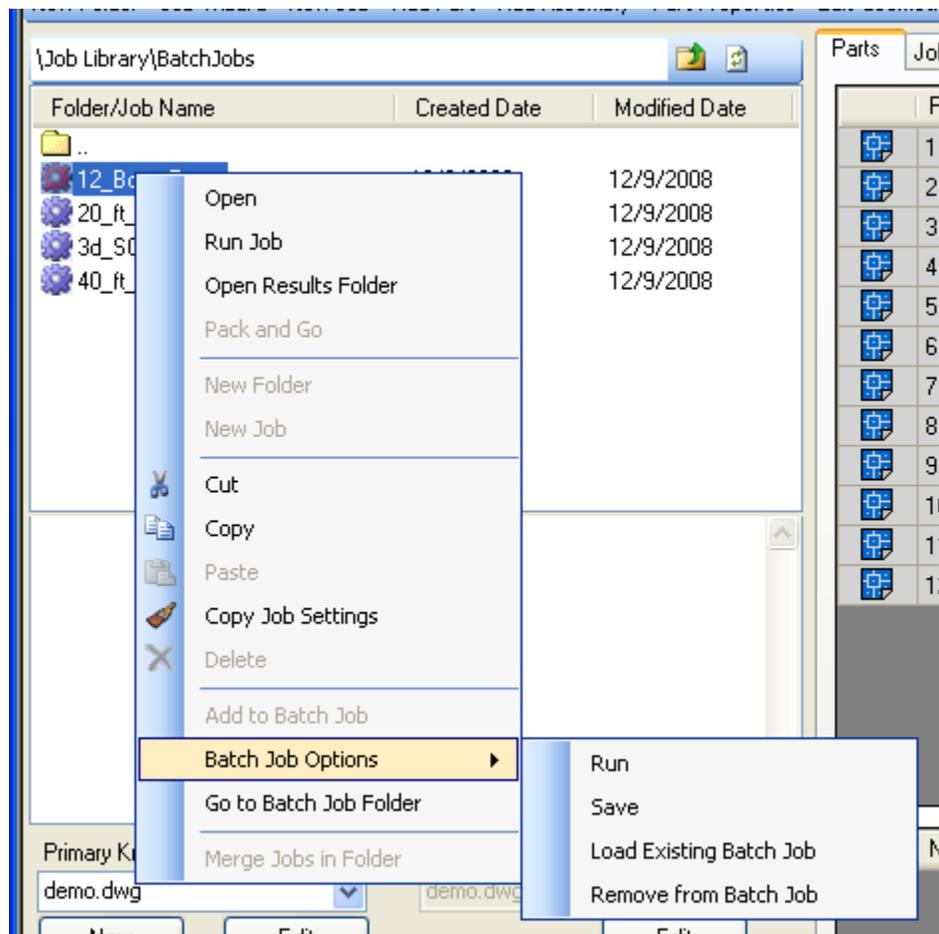


Now do the same for each of the other three jobs in the folder. There is 10_ft_cabin_cruiser, 3d_SOLID_parts, and 40_ft_power_cruiser. Add each of these to a Batch Job.

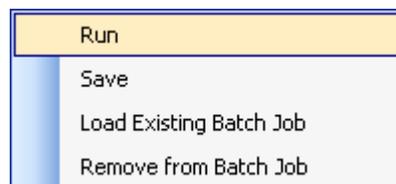
Next, click back to the top of the job library and select Batch Jobs. You will see each of the 4 jobs listed under Batch Jobs.

Folder/Job Name	Created Date	Modified Date
..		
12_Boat_Parts	12/9/2008	12/9/2008
20_ft_cabin_cruiser	12/9/2008	12/9/2008
3d_SOLID_Parts	12/9/2008	12/9/2008
40_ft_power_cruiser	12/9/2008	12/9/2008

If you Right-Click on one of these jobs now you will see Batch Job Options.



From here you can Run the batch, save the batch to run it later, load a saved batch, or remove a job from the batch list.



2.7 Labeling

Labeling

Router-CIM provides label information in several formats. You can modify the labels as necessary to match your requirements.

Two programs are shipped with Router-CIM Automation Suite.

One is Avery Label Pro, which is only suitable for 32 bit systems. The other is Avery Design Pro, which will install on 32 or 64 bit systems.

The following section describes how to modify the labels to suit your design.

2.7.1 Modifying Labels in Automation Suite

Label data files are created in Router-CIM Automation Suite in a number of formats, however only Avery Label Pro and Avery Design Pro are provided with templates for creating labels from Automation Suite.

You can modify either the Label Pro or Design Pro templates. Detailed instructions are included here for those two formats.

2.7.1.1 Avery Label Pro

How to create a new label design for Automation using Avery Label Pro

Follow the steps below to create a new label to be used with Automation Suite. These instructions are for Avery Label pro but can be adapted to many other labeling software solutions.

Router-CIM generates up to 4 different label types in the label.txt file based on your labeling preferences set in Router-CIM Automation suite. Some of these labels use the same fields so you will need to pay attention to the maps below when assigning overlapping fields to a label.

Type 1) Header labels:

(1 per job) Contains Job information and Router-CIM version information

Type 2) Part Labels:

(1 per part cut) Contains individual part information including nest references for easy part location.

Type 3) Scrap labels:

(1 per left over sheet cut) Contains inventory information for off fall from nesting sheets.

Type 4) Barcode labels:

(1 per nc code file generated) Contains the name of the nc code files to run along with quantity information.

Notes:

Field 1 is intended to STAND OUT and should be a larger, bold, and alternate color (if used) so it is easy to identify.

Field 13 will point to an image and should be sized based ton your label selection and personal preference

Field 15 is ONLY used by a barcode label and should be assigned to BARCODE 3 of 9 font

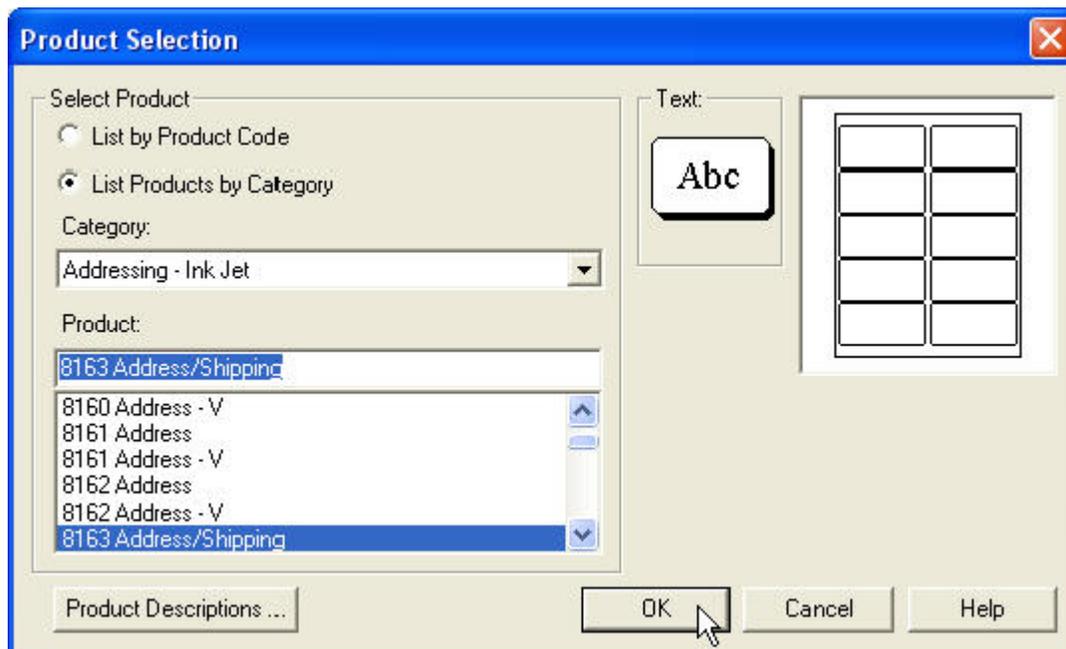
Open Avery Label Pro.



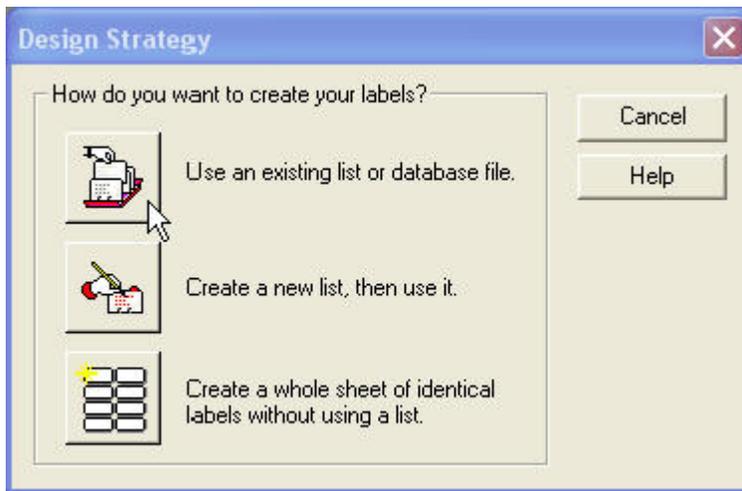
At the Start Screen for Avery, click 'Create a New Design'.



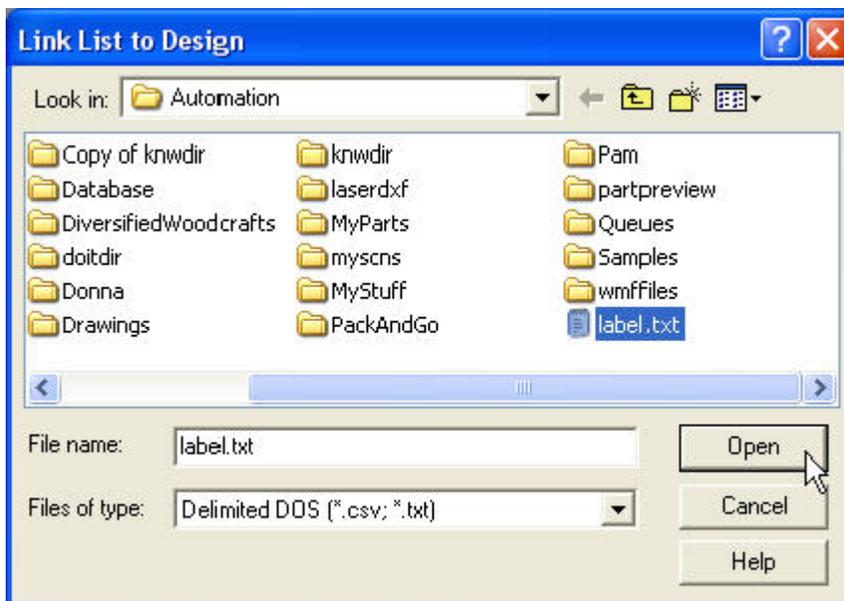
At the Product Selection screen, Choose the label you would like to use and click 'OK'.
KEEP IN MIND THAT THE SIZE OF THE LABEL DICTATES HOW MUCH INFORMATION YOU CAN USE ON THAT LABEL.



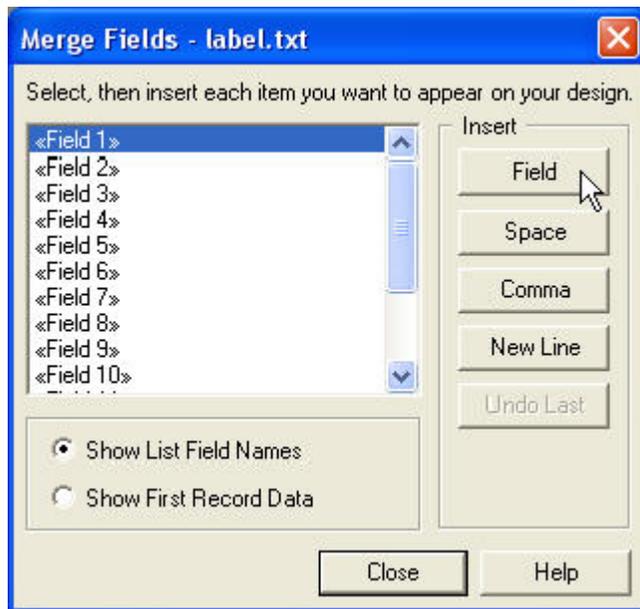
At the Design Strategy screen, click 'Use an existing list or database file.'



At the Link List to Design screen, change File of type: to read a .txt file and Look in: Automation. Then find the label.txt file, highlight it and click 'Open'.



At the Merge Fields – label.txt, Start inserting the fields that you would like to use into the new label design. (See next page for a list of Field Names)



	Router-CIM Label file map	
FIELD #	HEADER LABEL description	
Field1:	Job name	* JOB: labels *,
Field2:		not used,
Field3:		not used,
Field4:		not used,
Filed5:	Router-CIM Version information	* ROUTER-CIM LABELING *,
Filed6:		not used,
Field7:	Router-CIM Version information	* for Router-CIM 2010 *,
Field8:		not used,
Field9:		not used,
Field 10:		not used,
Filed 11:		not used,

Field 12:		not used,
Field 13:	Points to a blank file so nothing appears on label	C:\Router-CIM\automation\blank.wmf,
Field 14:		not used,
Field 15:		
Field 16:		
Field 17:		
Field 18:		
Field 19:		
Field 20:		
Field 21:		

FIELD #	PART LABEL description	PART LABEL sample data
Field1:	Nest ID#	NEST ID # 5,
Field2:	Quantity	QTY: 5 OF 12,
Field3:	Part Name	PART: 57.DWG,
Field4:	Not Used	not used,
Field5:	X & Y dimensions	DESC: DESCRIPTION,
Field6:	Description	MATERIAL# 3/4 MDF,
Field7:	Material	not used,
Field8:	Sheet #	SHEET # MDF75_1,
Field9:	Customer Info 1 (Shows as "N/A" if not used in job)	label1,
Field 10:	Customer Info 2 (Shows as "N/A" if not used in job)	label2,
Field	Customer Info 3 (Shows as "N/A" if not used in job)	label3,

11:	in job)	
Field 12:	Customer Info 4 (Shows as "N/A" if not used in job)	label4,
Field 13:	Part Graphic	C:\Router-CIM\Automation\wmffiles\5.wmf,
Field 14:	backside	not used,
Field 15:	Barcode Graphic	not used,
Field 16:	Customer Info 5	label5,
Field 17:	Customer Info 6	label6,
Field 18:	Customer Info 7	label7,
Field 19:	Customer Info 8	label8,
Field 20:	NC Code file name without extension	MDF75_1,
Field 21:	Part label multiplier	1,

FIELD #	SCRAP LABEL description	SCRAP LABEL sample data
Field1:	Label Title	**** SCRAP INVENTORY ****,
Field2:	X size of scrap	XDIM: 19.8223,
Field3:	Y size of scrap	YDIM: 48.0000,
Field4:	Scrap qty	SCRAP QTY: 1,
Field5:	Material type	MATERIAL TYPE# 3/4 MDF,
Field6:		not used ,
Field7:		not used ,
Field8:		not used ,
Field9:		not used ,
Field 10:		not used ,

Filed 11:		not used ,
Field 12:		not used ,
Field 13:	Points to a blank file so nothing appears on label	C:\Router-CIM\Automation\blank.wmf,
Field 14:		not used ,
Field 15:		not used
Field 16:		
Field 17:		
Field 18:		
Field 19:		
Field 20:		
Field 21:		

FIELD #	BARCODE LABEL description	
Field1:		not used,
Field2:		not used,
Field3:		not used,
Field4:		not used,
Filed5:		not used,
Filed6:		not used,
Field7:		not used,
Field8:		not used,
Field9:		not used,
Field 10:		not used,

Filed 11:	Number of sheets to run	Sheets to run:1,
Field 12:		not used,
Field 13:		not used,
Field 14:	Stock size required	Stock Size: 48.00 X 19.82,
Field 15:	Name of NCCODE file displayed in barcode 3 of 9 font	MDF75_1.out
Field 16:		
Field 17:		
Field 18:		
Field 19:		
Field 20:		
Field 21:		

When you are finished designing your label, it **MUST** be saved and named RouterCim.lpd

TIP: You should first go to C:\Router-CIM\Automation and rename the existing RouterCim.lpd to a different name. This way, you will always have your original.

The next step **MUST** be done for this to work!

Open Windows Explorer and go to:

C:\Router-CIM\Automation and rename the file called label.txt. **DON'T DELETE IT**, just rename it.

Example: label-ORIG.txt

You will need the label.txt in the future to either edit your existing label or to create a new label.

If you ever have to edit your existing RouterCim.lpd, simply open Windows Explorer and go to:

C:\Router-CIM\Automation

then rename the file back to label.txt then double-click on the RouterCim.lpd in the same Automation folder to edit your existing label.

When your are finished editing, don't forget to again rename the label.txt again.

If you forget to rename the label.txt to another name, it **WILL NOT WORK**.

2.7.1.2 Avery Design Pro

How to create a new label design for Automation

using Avery Design Pro 5.0

Follow the steps below to create a new label to be used with Automation Suite using Avery Design Pro 5.0.

Before you begin, make a new folder anywhere on your hard drive and name it anything you like. (ie. Template) (I put my new folder on the desktop)

Using your windows explorer, go to C:\Router-CIM\Automation\Bin and copy the file called Label.dbf into the folder that you just created.

While your there, make a copy of the original RouterCIM.zpd file that is in that folder also.

Open Avery Design Pro.

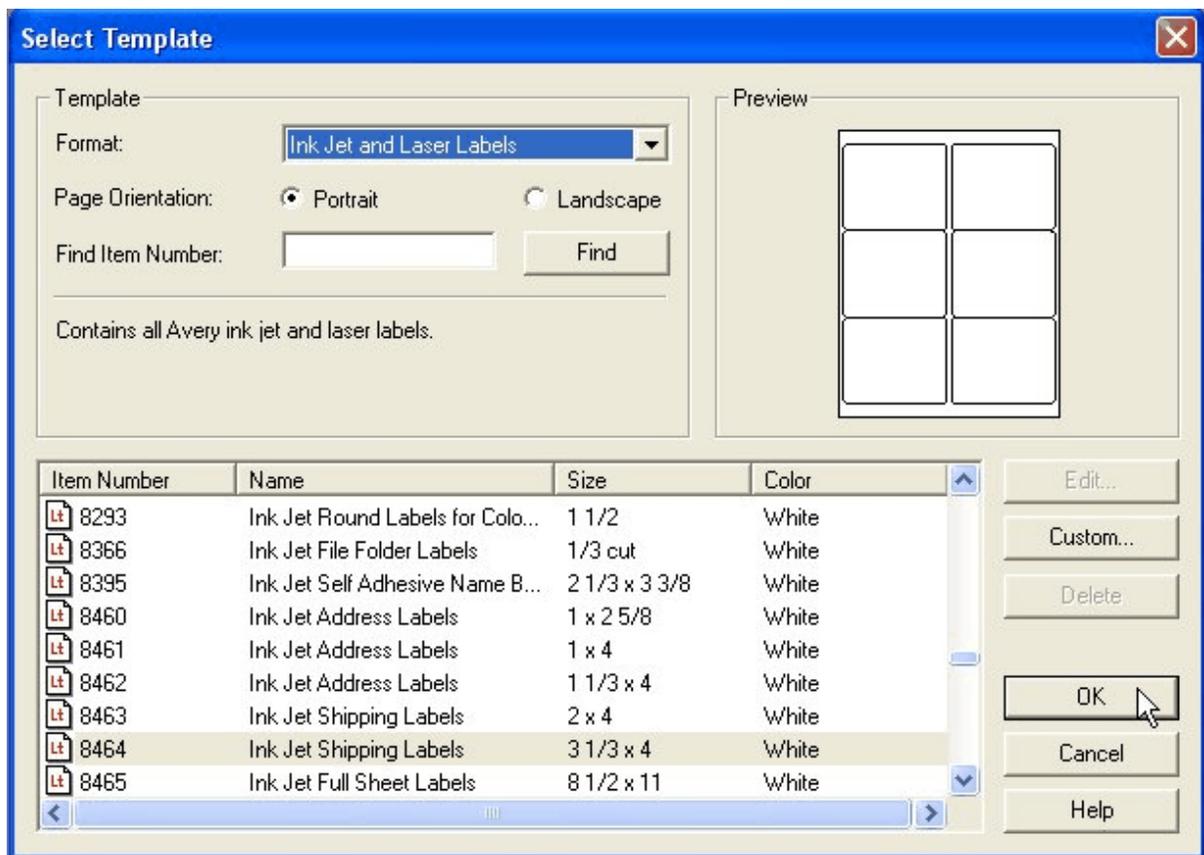


At the Start Screen for Avery Design Pro, click 'Design from Scratch'.

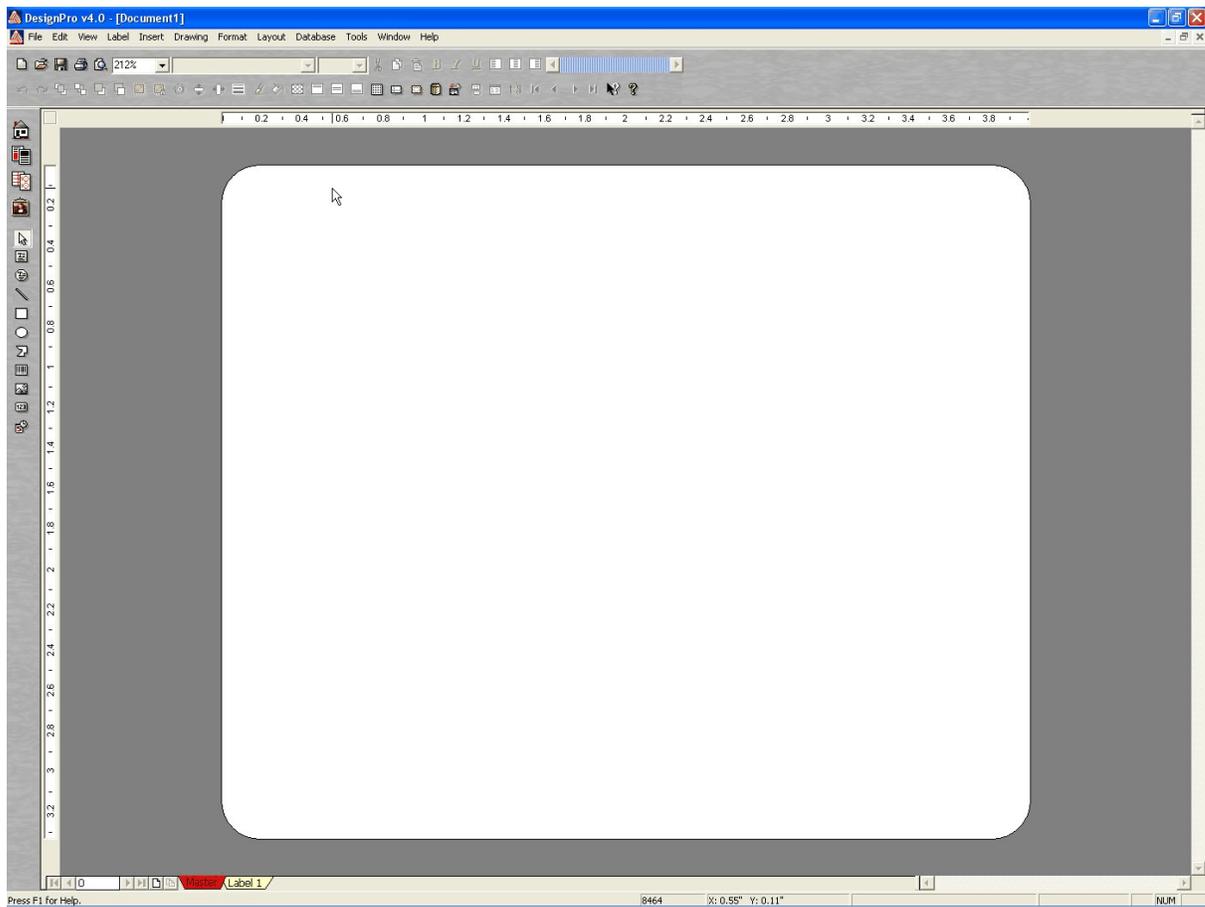


At the Select Template screen, choose the label you would like to use and click 'OK'. For this tutorial, I will be using the 8464 shipping labels.

KEEP IN MIND THAT THE SIZE OF THE LABEL DICTATES HOW MUCH INFORMATION YOU CAN USE ON THAT LABEL.



This screen shows actual label that you chose in the previous step.



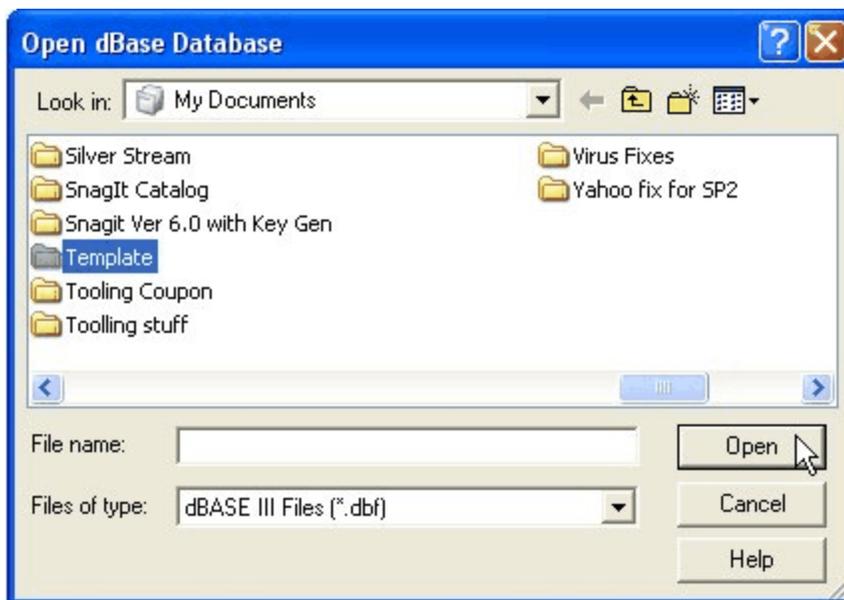
From the Database pull down menu, choose Open...



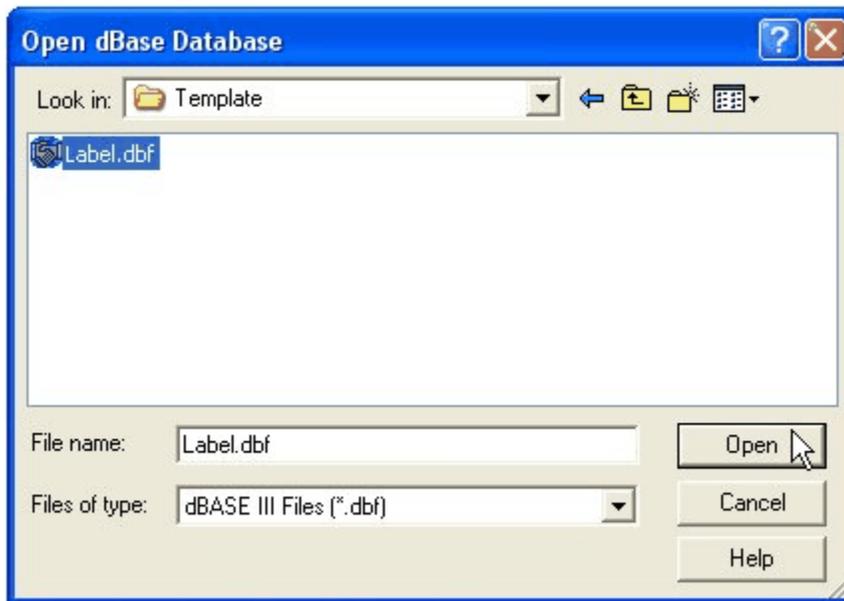


Click on the “Open Database” icon.

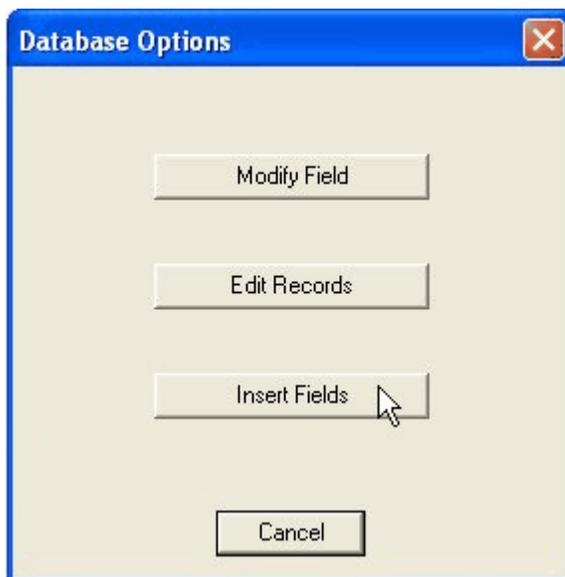
At this screen, go to the folder that you created at the very beginning that has the label.dbf



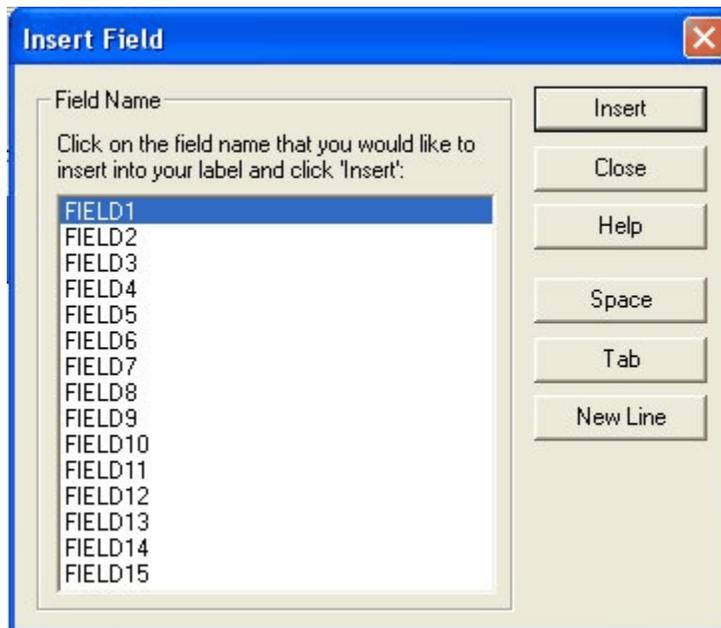
After opening the Template folder (or whatever you called it), select the label.dbf and click ‘Open’.



At the next screen, select 'Insert Fields'.



This will open the Insert Fields box.



The next few images will show Field descriptions.

Router-CIM Label file map		
FIELD #	HEADER LABEL description	
Field1:	Job name	* JOB: labels *,
Field2:		not used,
Field3:		not used,
Field4:		not used,
Field5:	Router-CIM Version information	* ROUTER-CIM LABELING *,
Field6:		not used,
Field7:	Router-CIM Version information	* for Router-CIM 2010 *,
Field8:		not used,
Field9:		not used,
Field 10:		not used,

Filed 11:		not used,
Field 12:		not used,
Field 13:	Points to a blank file so nothing appears on label	C:\Router-CIM\automation\blank.wmf,
Field 14:		not used,
Field 15:		
Field 16:		
Field 17:		
Field 18:		
Field 19:		
Field 20:		
Field 21:		

FIELD #	PART LABEL description	PART LABEL sample data
Field1:	Nest ID#	NEST ID # 5,
Field2:	Quantity	QTY: 5 OF 12,
Field3:	Part Name	PART: 57.DWG,
Field4:	Not Used	not used,
Filed5:	X & Y dimensions	DESC: DESCRIPTION,
Filed6:	Description	MATERIAL# 3/4 MDF,
Field7:	Material	not used,
Field8:	Sheet #	SHEET # MDF75_1,
Field9:	Customer Info 1 (Shows as "N/A" if not used in job)	label1,
Field	Customer Info 2 (Shows as "N/A" if not used	label2,

10:	in job)	
Filed 11:	Customer Info 3 (Shows as "N/A" if not used in job)	label3,
Field 12:	Customer Info 4 (Shows as "N/A" if not used in job)	label4,
Field 13:	Part Graphic	C:\Router-CIM\Automation\wmffiles\5.wmf,
Field 14:	backside	not used,
Field 15:	Barcode Graphic	not used,
Field 16:	Customer Info 5	label5,
Field 17:	Customer Info 6	label6,
Field 18:	Customer Info 7	label7,
Field 19:	Customer Info 8	label8,
Field 20:	NC Code file name without extension	MDF75_1,
Field 21:	Part label multiplier	1,

FIELD #	SCRAP LABEL description	SCRAP LABEL sample data
Field1:	Label Title	**** SCRAP INVENTORY ****,
Field2:	X size of scrap	XDIM: 19.8223,
Field3:	Y size of scrap	YDIM: 48.0000,
Field4:	Scrap qty	SCRAP QTY: 1,
Filed5:	Material type	MATERIAL TYPE# 3/4 MDF,
Filed6:		not used ,
Field7:		not used ,
Field8:		not used ,
Field9:		not used ,

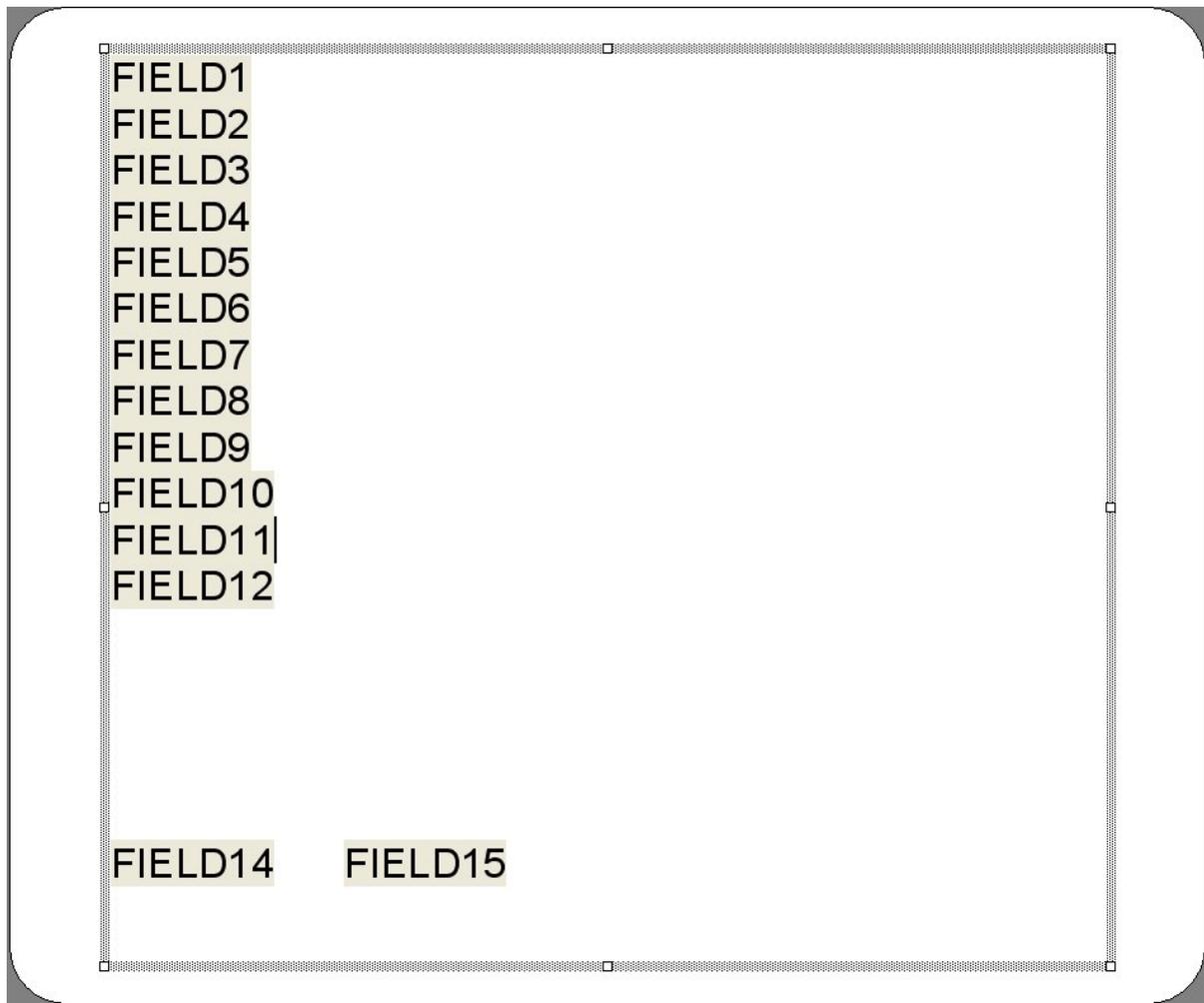
Field 10:		not used ,
Field 11:		not used ,
Field 12:		not used ,
Field 13:	Points to a blank file so nothing appears on label	C:\Router-CIM\Automation\blank.wmf,
Field 14:		not used ,
Field 15:		not used
Field 16:		
Field 17:		
Field 18:		
Field 19:		
Field 20:		
Field 21:		

FIELD #	BARCODE LABEL description	
Field1:		not used,
Field2:		not used,
Field3:		not used,
Field4:		not used,
Field5:		not used,
Field6:		not used,
Field7:		not used,
Field8:		not used,
Field9:		not used,

Field 10:		not used,
Field 11:	Number of sheets to run	Sheets to run:1,
Field 12:		not used,
Field 13:		not used,
Field 14:	Stock size required	Stock Size: 48.00 X 19.82,
Field 15:	Name of NCCODE file displayed in barcode 3 of 9 font	MDF75_1.out
Field 16:		
Field 17:		
Field 18:		
Field 19:		
Field 20:		
Field 21:		

Using the Insert, Space, and New Line buttons, you can make the layout for you're your new labels. Because of the size of this label, I was able to fit all of the fields on this label.

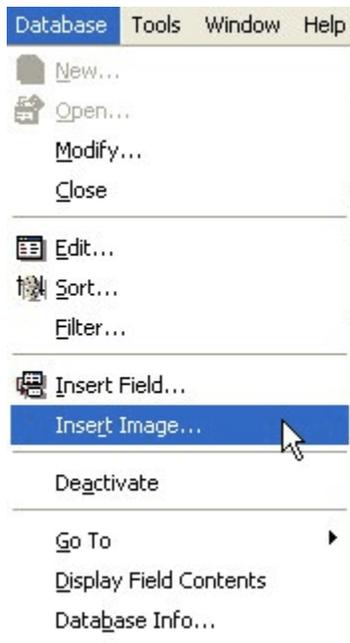
Remember, the size of the label you choose dictates how much information (or how many fields) you can actually place on the label.



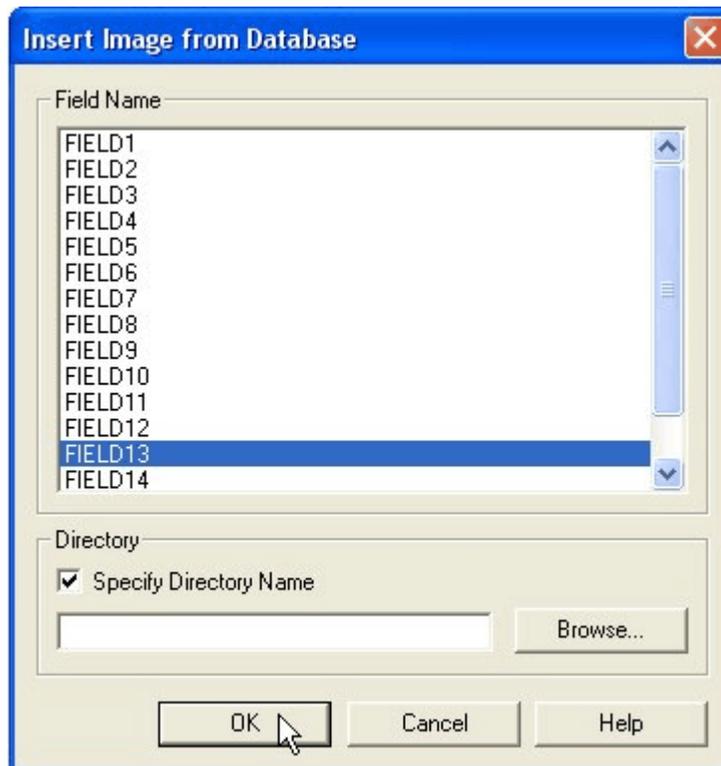
Notice the placement of fields 14 and 15. This will be important because placing it at the bottom of the label; these fields will be at the bottom of the Bar Code. Also notice that Field 13 is not on the label above. This is explained next...

Field 13 is the graphic that can show the picture of your part on the label.

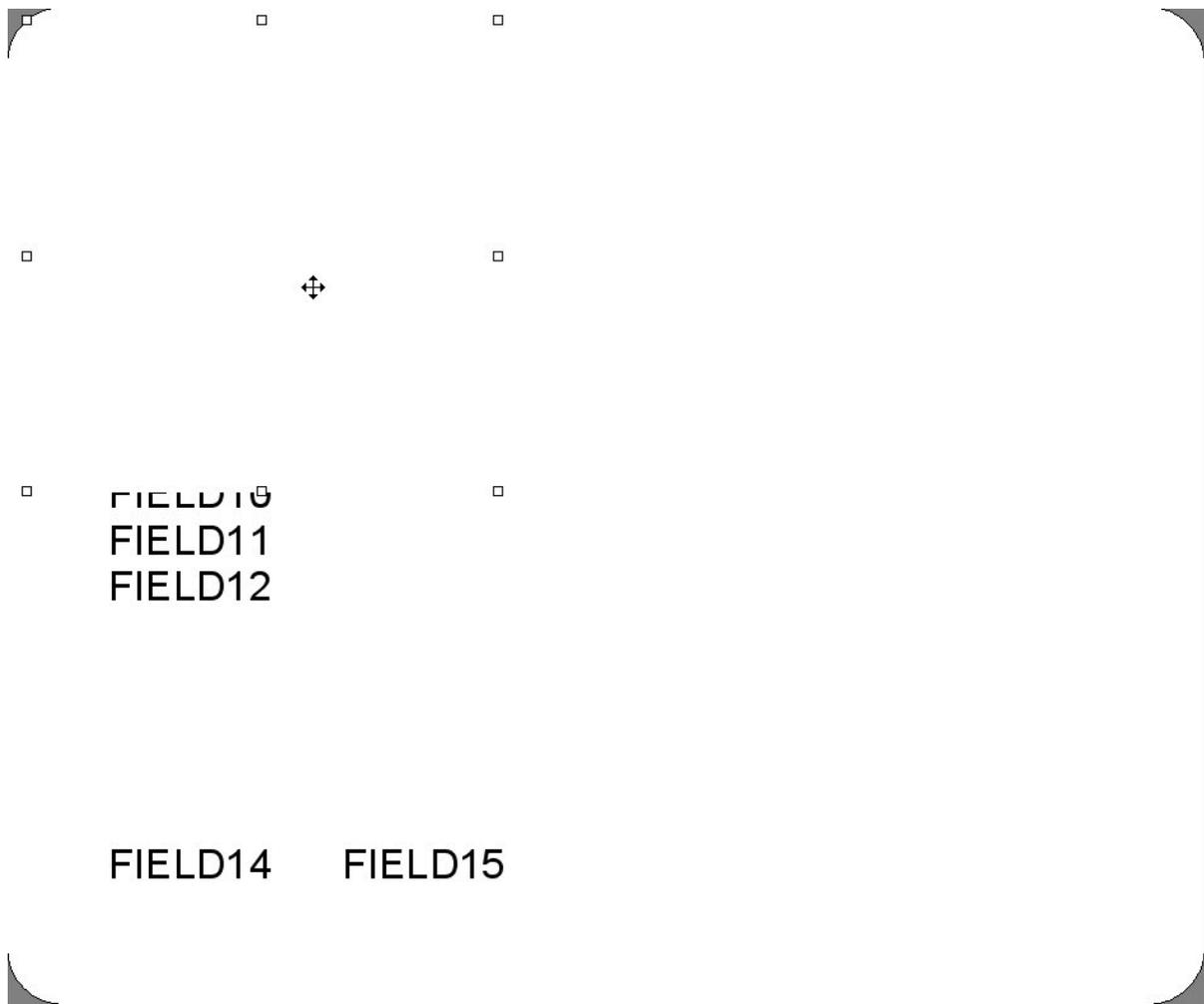
To place a graphic on the label, from the Database pull down menu, choose 'Insert Image'



Choose Field 13 and click OK.



By default, the graphic is placed in the upper left corner of the label.



By grabbing and dragging, place the graphic box in the location you would like your graphic to be placed. For this example, I have placed the graphic in the lower right corner.

FIELD1
FIELD2
FIELD3
FIELD4
FIELD5
FIELD6
FIELD7
FIELD8
FIELD9
FIELD10
FIELD11
FIELD12

FIELD14 FIELD15

Field 15 is used to place a Bar Code graphic on the label.

First, from the Insert pull down menu, choose 'Bar Code'.



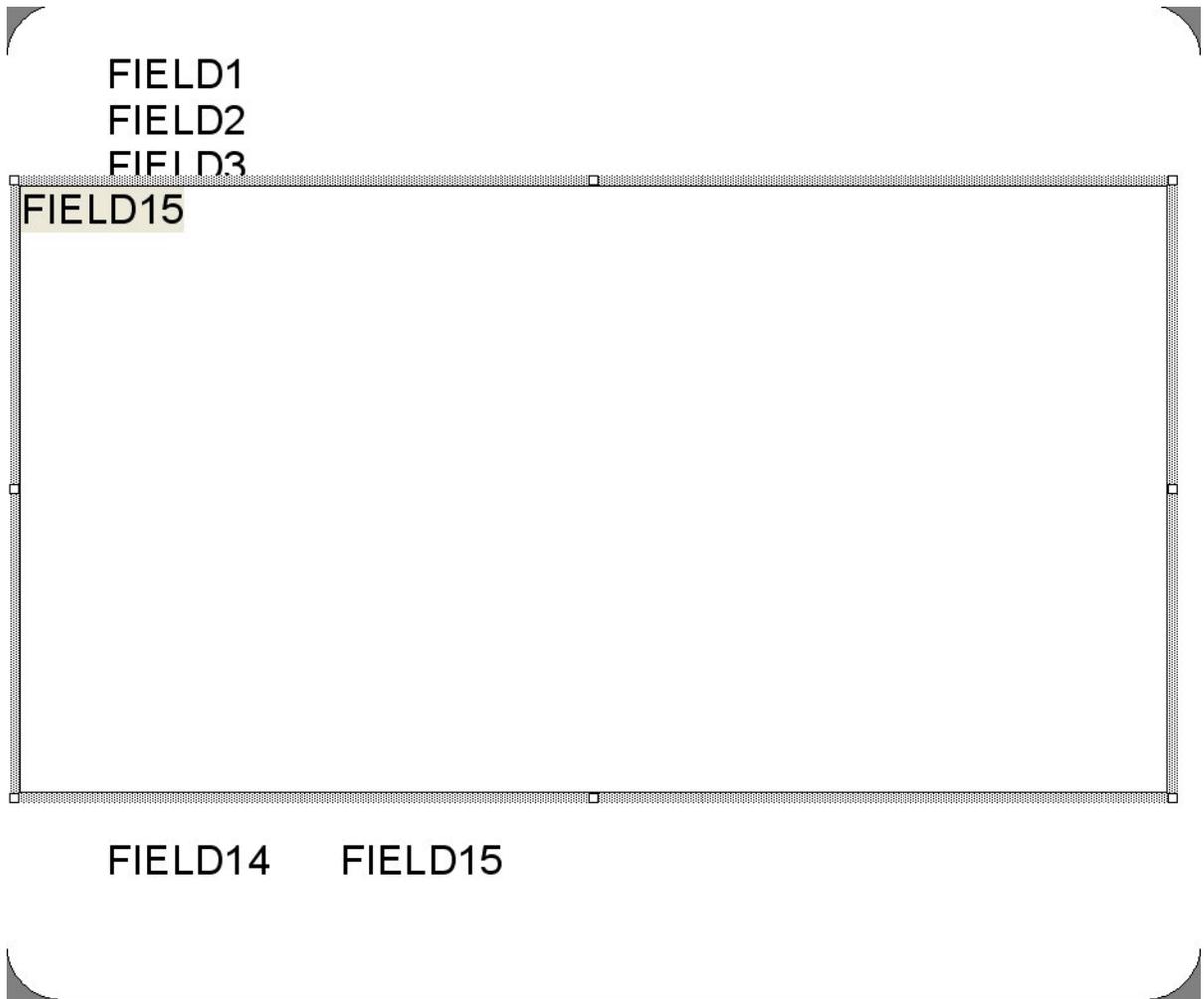
Your cursor will now change, drag from the upper left to the lower right to create a box.

The diagram shows a form layout with the following fields:

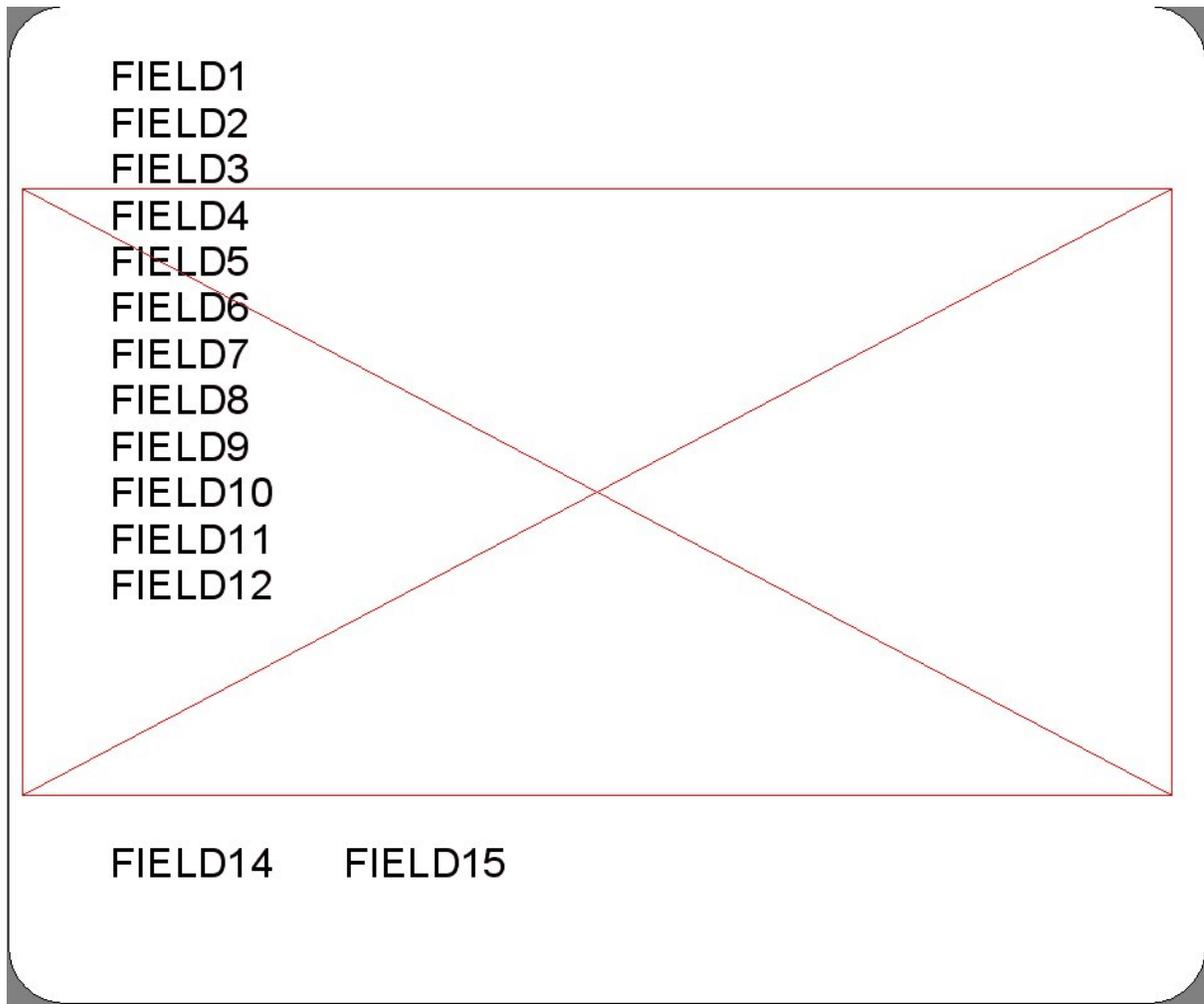
- FIELD1
- FIELD2
- FIELD3
- FIELD4
- FIELD5
- FIELD6
- FIELD7
- FIELD8
- FIELD9
- FIELD10
- FIELD11
- FIELD12
- FIELD14
- FIELD15

Fields FIELD4 through FIELD12 are enclosed in a dashed rectangular box. Fields FIELD14 and FIELD15 are positioned at the bottom of the form, separated from the other fields by a dashed horizontal line.

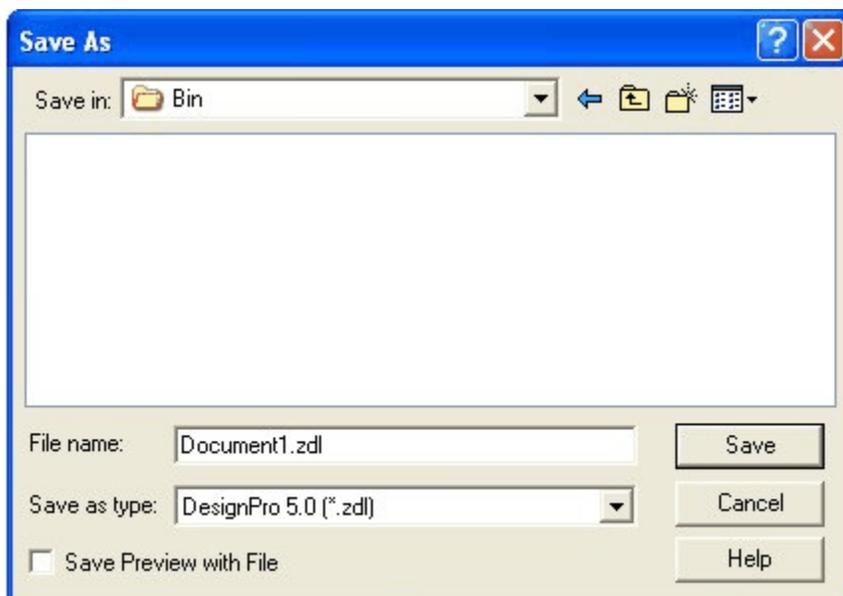
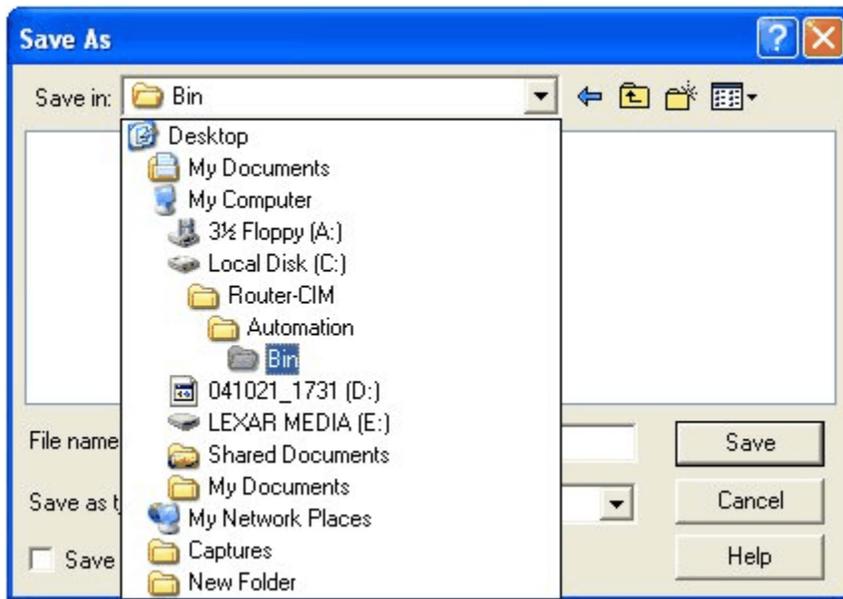
After the box is created, from the Database pull down menu, choose 'Insert Fields' and click on Field15 and click 'Insert'.



When finished, your label should look like this.



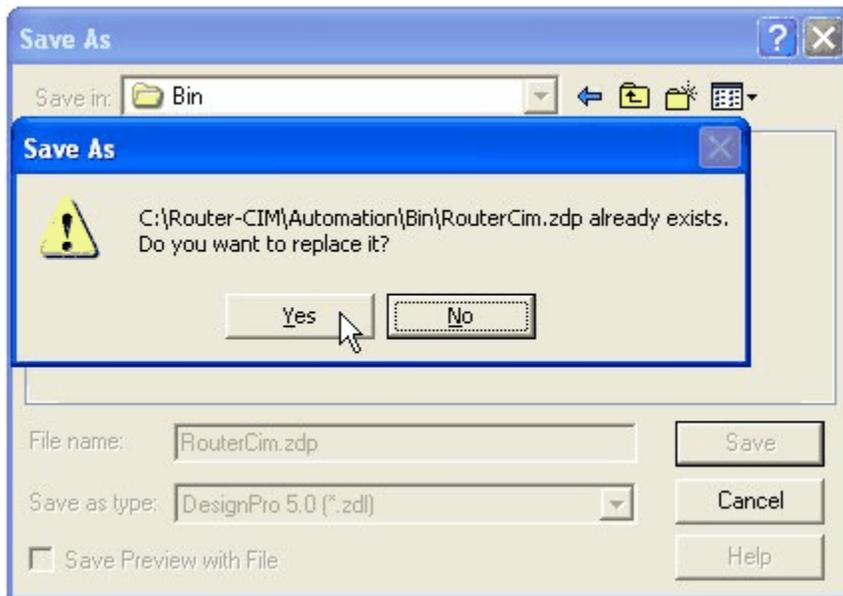
Now it's time to save your label. Choose "Save" or "Save As" from the file pull down menu. The Save in: should be set to C:\Router-CIM\Automation\Bin. The file name MUST BE CALLED RouterCIM.zdp. If it is not named RouterCIM.zdp, it will not work.



PLEASE NOTE THE FILE NAME:

The only choice you have is to save it as a .zdl type at this point.
In the File name: type in RouterCIM.zdp and click Save.

You should be asked if you would like to overwrite the file. Answer 'Yes'



Copy the label.dbf file from the Template folder created in the beginning of the tutorial to the C:\Router-Cim\Automation\Bin folder and choose yes to overwrite the existing file. Then delete the copy in the Template folder.

You are finished....run a job through Automation.

When the job is finished and you open the Data Folder, you will see a RouterCIM.zpd file. Double-click on it. You will probably have to set the path for windows to open this type of file. The application to use would be the Labeler.exe found in C:\Program Files\Avery Dennison\DesignPro 5.0 Limited Edition folder.

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