



***FlowNEST***  
***User's Guide***  
*M-323 Version 6.0*

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Flow International Corporation  
23500 64th Avenue South  
Kent, WA 98032 USA

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# FlowNEST

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## CHAPTER 1

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### ***Introduction***

FlowNEST is part of the FlowMaster software produced by Flow International Corporation (FLOW). The FlowNEST manual includes:

- FlowMaster Overview (Chapter 1)
- FlowNEST Installation (Chapter 1)
- FlowNEST Overview (Chapter 2)
- FlowNEST Step by Step (Chapter 3)
- FlowNEST Advanced Features (Chapter 4)

### ***FlowMaster overview***

FlowMaster is a fully automated machine-tool software program created specifically for waterjet and abrasive waterjet shapecutting. Operators of all skill levels can easily use the system, which integrates the ultrahigh-pressure pump, PASER ECL *Plus*, and the X-Y cutting table.

FlowMaster requires FlowPATH and FlowCUT. FlowNEST is an available option.

- FlowPATH is used for CAD and part program processing to order the jet-cutting path. It imports or produces vector-based (DXF) drawing files and outputs an ordered path (ORD) file to use in FlowCUT.
- FlowCUT uses the ORD file from FlowPATH to generate and communicate code to the machine tool and drive the PASER ECL *Plus* or waterjet to cut parts.
- FlowNEST is used to geometrically nest different parts on selected sheet material. It takes ORD (or DXF) files of individual parts and automatically combines them into a new larger ORD file suitable for use in FlowCUT. It can also save the quantity and types of parts nested into an NST file for later use.

User manuals for FlowPATH, FlowCUT and FlowNEST are located on the FlowMaster CD.

- M-320, *FlowPATH User's Guide*
- M-322, *FlowCUT User's Guide*
- M-323, *FlowNEST User's Guide*

The following FLOW manuals were provided with your system. If you need additional copies, contact Customer Service.

- M-359, *PASER ECL Plus Operation and Service Manual*
- A high-pressure pump manual or an integrated X,Y system manual

### ***Conventions***

**Note:** Provides operational instructions that help you use the program more effectively.

### ***Safety***

FlowNEST produces information that will be used to control the FLOW machine tool.

**WARNING**  
**This machine tool uses a waterjet or abrasivejet and must be treated as a powerful cutting tool. Read and adhere to all safety guidelines in all the operation and service manuals as well as supporting documentation to ensure safe cutting operations.**

## ***FlowNEST Installation***

### **System requirements**

The following are minimum system requirements:

- IBM-PC or compatible with a Pentium 800 MHz processor
- At least 512 MB of RAM
- A hard disk drive with at least 2 GB of available hard disk space
- Microsoft Windows 98, ME, 2000, or XP
- An SVGA graphics card using a 256 color display
- CD-ROM drive

### **Installing FlowMaster**

Read the following before installing FlowMaster

- FlowMaster will only run under the Microsoft Windows operating systems.
- You will need a serial number; it is located on the back of the software package.
- Follow the installation procedure on the CD.
- If you have any questions, call Flow Technical Service at (253) 813-3318.

### ***To install FlowMaster***

1. Close all applications.
2. Insert the FlowMaster CD-ROM into your CD-ROM drive. An auto-run dialog will automatically appear.
3. Click on **Install Software**.
4. Instructions will appear on your computer screen to guide you through the remainder of the installation.

## ***Technical support***

If you have a question about a specific FlowMaster program, consult the User's Guide for that program. If you have a question about the PASER ECL *Plus*, refer to manual M-359, *PASER ECL Plus*. If you have a question about the X-Y machine tool or the intensifier pump, consult these equipment manual(s).

If you cannot find the answer using these resources, telephone the FLOW support network in Kent, Washington at (253) 813-3318. When you call, you should be at the machine tool or computer and have the appropriate product documentation at hand. Be prepared to give the following information:

- The version number of FlowNEST that you are using.
- The machine tool configuration you are using (Bengal, Integrated Flying Bridge, Waterjet Machining Center, etc.).
- What happened and what you were doing when the error occurred (document the error if possible).
- How you tried to solve the problem.

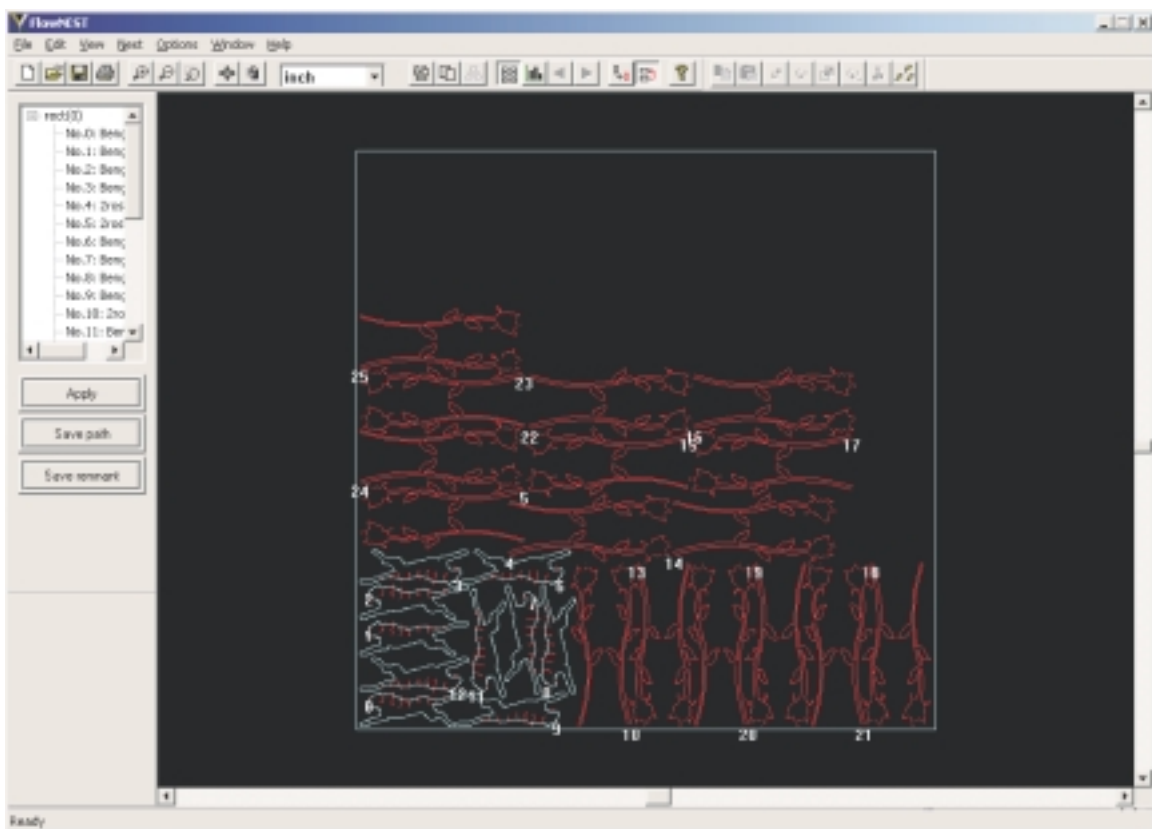
**Notes**





## CHAPTER 2

### *FlowNEST Overview*









The FlowNEST interface and tool bars are described in this display. The FlowNEST tool bars give you instant access to the most frequently used FlowNEST commands. Many of these commands are also accessible through menu selections. When you move the mouse pointer to an icon on a tool bar, a description appears near the icon and in the message bar at the bottom of the screen. The tool bar icons are described on the next page.



### Tool bar icons

	<b>Command</b>	<b>Menu</b>	<b>Description</b>
	New	File	Create a new file.
	Open	File	Open an existing NST file. FlowNEST displays an Open dialog box.
	Save	File	Save an *NST file.
	Print	File	Print the active file.
	Zoom in	View	Increase the size of the drawing in the Parts window.
	Zoom out	View	Decrease the size of the drawing in the Parts window.
	Zoom Window	View	Click and drag to zoom in on a specific area.
	Zoom extend	View	Fill the display with the part.
	Previous window	None	Return the display to the previous window.
		System unit	Set the system unit. Select either millimeter or inch.
	Part data	Edit	Open the part list screen. Click Add to open the dialog box.
	Sheet data	Edit	Open the sheet list screen. Click Add to open the dialog box.
	Execute	Nest	Execute the nesting procedure.
	Nesting result	Edit	Show the nest result.
	Statistics	Nest	Show the nesting report.
	Previous sheet/ Next sheet	None	Show the previous nest sheet/show the next nest sheet.
	Highlight part	Option	Highlight a selected part.
	Edit part se- quence	Option	Edit sequence of nested parts.
	About	Help	Display the program information, version number, and copyright.
	Delete part	Edit	Delete the highlighted part.
	Step setting	Edit	Open the Step Setting dialog box.

### *Edit tool bar icons*

	Copy part	Edit	Copy the highlighted part.
	Add part	Edit	Pull up a simplified part data dialog box to add one part.
	Move part	Edit	Move the highlighted part.
	Rotate part	Edit	Rotate the highlighted part.
	Step move	Edit	Move a highlighted part using the arrow keys on the keyboard.
	Step rotate	Edit	Rotate a highlighted part using the arrow keys on the keyboard.
	Delete part	Edit	Delete the highlighted part.
	Step setting	Edit	Open the Step Setting dialog box.

### *Languages*

The FlowNEST application screen can be viewed in several different languages.

Select **Options | Language** to choose the language you wish to use. A checkmark appears next to the selected language and the application window changes to that language.

## Notes

## CHAPTER 3

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### ***FlowNEST Step by Step***

Complete the following steps to use FlowNEST:

1. Start FlowNEST.
2. Select the nesting parameters (optional).
3. Select the parts.
4. Select the sheet.
5. Execute the nest.
6. Save the file.
7. Print the file.
8. Advance to FlowCUT.

#### ***Start FlowNEST***

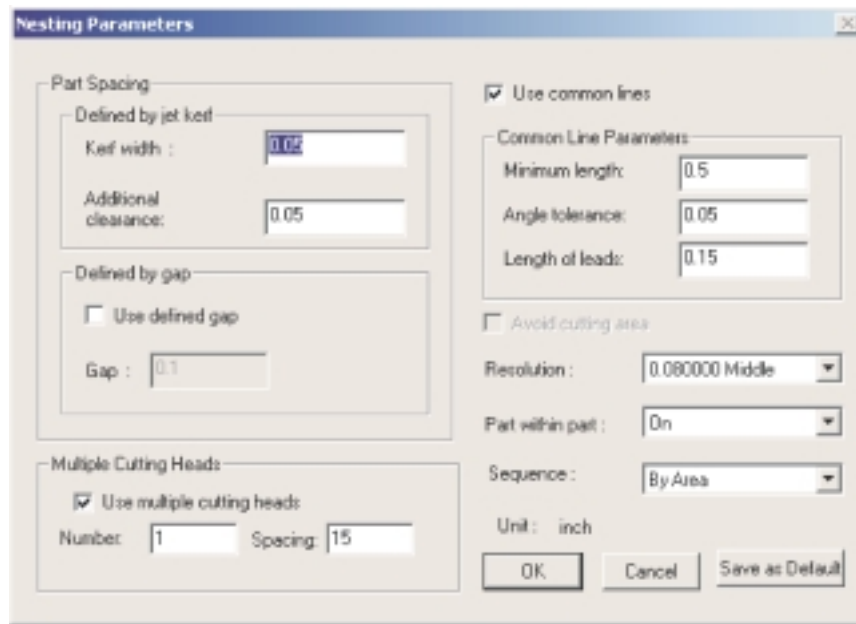
Click on **Start | Programs | FlowMaster 6.0 | FlowNEST** or click on the FlowNEST icon .

#### ***Select nesting parameters (optional)***

Default settings have been established for all nesting parameters to give optimal results for most applications. Access the Nesting parameters dialog box to change these settings for custom applications. Once you have selected the proper settings, you can skip this step and proceed to the next step.

1. Select **Edit | Nesting parameters** to open the Nesting parameters dialog box.
2. Part Spacing: FlowNEST provides two methods to determine spacing between nested parts:
  - **Defined by jet kerf:** Jet kerf is the effective diameter of the jet. The orifice (waterjet) and mixing tube (abrasive waterjet) diameters define the jet kerf. You can choose to leave additional space between parts in addition to the jet kerf. This additional clearance accommodates part handling or the additional region cut as the jet is deflected on outside corners. Use this method if you frequently change cutting diameters and adjust the nest spacing with each change. Enter a jet kerf inch/mm measurement and an additional clearance measurement to change the default setting.

- **Defined by gap:** If it is not important to change the nest spacing when the jet kerf changes, simply define a fixed gap between parts. This selection will appear dimmed until it is selected. Select Defined by gap by clicking in the “Use defined gap” box. This inserts a checkmark in the box. Enter a measurement for the gap.



### 3. Other options:

- **Multiple cutting heads:** If multiple cutting heads are available, enter the number of cutting heads available and the spacing (in inches) between the cutting heads.

**Note:** This can only be used with rectangular sheets.

- **Use common lines:** Click “Use common lines” to enable common line cutting. FlowNEST will locate parts with straight sections side-by-side. One cut will apply to two parts. Enter the Minimum length, Angle tolerance, and Length of lead-in/lead-out.

Minimum length: FlowNEST will not attempt to make a common line of an entity less than this length.

Angle tolerance: FlowNEST will adjust the rotation of two parts so that they can share a common line if their angle difference is less than this value. Making this value too large may add significant time in completing the nest.

Length of lead-in/lead-out: The length of any additional lead-in/lead-out FlowNEST must add in order to accommodate a common line.

**Note:** Common line cutting and the Multiple cutting heads option will not work together.

- **Avoid cutting area:** Check the “Avoid cutting area” box to follow the cutting path and keep from traversing over previously cut parts.

**Note:** “Avoid cutting area” is not available if either “Multiple Cutting Heads” or “Use common lines” is selected. Also, if you execute the nest and then check “Avoid cutting area,” you do not have to re-execute the nest.

- **Resolution:** Select an option from the list to change the default setting. Resolution affects the accuracy of the nest. It determines the size of the smallest feature recognized by the nesting software. A fine grid resolution (0.020 fine) will nest parts in a tighter fit. However, it will take more time to nest the parts. A coarse resolution (0.20 coarse) will produce a looser fit and use more material, but it will take less time to nest the parts. A default of 0.08 inch/2.03 mm is recommended.
  - **Part within part:** Select On or Off. A selection of On (the default) allows the program to nest parts within other parts. When Off is selected, parts cannot be nested within other parts. Nesting parts within a part will require more time to nest, but it will maximize the available material. To change the default setting, select Off from the option list.
  - **Sequence:** Parts with equal priority can be nested according to Area (the default) or Perimeter. If Area is selected, parts of equal priority with the largest area will be nested first. A selection of Perimeter will nest parts with the largest perimeter first. To change the default setting, select Perimeter from the default list.
  - **Save as Default:** This saves all your parameter settings using the selected options. These values will be used for all sessions unless changed.
4. Select **OK** to close the dialog box and complete the parameter settings.

### Select the parts

**Note:** FlowNEST 6.0 CANNOT nest parts that have different (Z) elevations. Z settings in your file can cause an unreliable or defective ORD file, and the nest could include unreliable results.

1. Select **Edit | Part Data** or click the Part data icon  to select the parts. Select **Add** to display the Part Data dialog box.



- Using the folder window, find the directory that contains the part data ORD or DXF files and double-click on it. Choose the desired file by clicking on the down arrow on the “Files of type” box to select the file type. A list of file names will appear in the filename window. Click once on the filename in the list; it is displayed in the File name box. If the Preview box is checked; a thumbnail sketch of the part is displayed.

Once you have selected the part you wish to nest, FlowNEST gives you several options that affect the fit of the nest and the amount of time it takes to perform the nesting calculations. These options are **Quantity**, **Angle**, and **Priority**.

If you check **Use part as filler**, the program will fill any available space on the sheet with these parts after the other parts have been nested. Note that when this option is checked, you cannot enter the quantity. The program will enter the quantity for you.

- **Quantity.** The number of selected parts you want to nest.
- **Angle** refers to degree of rotation. For example, if you enter 5 degrees in this field, every 5 degrees of rotation the program will attempt to place the part on the sheet for the best fit. A selection of 5 degrees will take longer to nest the part but will maximize material use. A value of 180 degrees will take less time to nest the part, but it may use more material. If a value greater than 180 degrees is used, FlowNEST will not rotate the part. When nesting rectangular parts, use 90 degrees to keep the parts square to each other.
- **Priority.** The order in which the parts are nested on the sheet. Use a higher number to nest a part first. For parts of equal priority, the area or perimeter length of the part determines the nesting order. See *Nesting parameters*.

**Note:** FlowNEST was specifically designed to nest ORD files produced by FlowPATH; however, it can also nest standard DXF files. DXF files should not contain rapid traverse lines or have lead-in/lead-outs on the outside perimeter. Using ORD files is the preferred method except when nesting with common lines. In the case of a common line, FlowNEST will add the lead-in and lead-out on the common line. For inside features such as holes, FlowNEST adds a default arc lead-in and arc lead-out. If the inside feature has dimensions of less than 0.25 in., you should draw the lead-in and lead-out on the DXF image (see *Assign lead-in/lead-out properties*). FlowNEST will automatically detect these features and connect rapid traverse lines to them.

- After selecting the part, FlowNEST offers several additional options.

- **Grain:** If the part needs to be oriented with respect to a grain line or pattern on the sheet, use the Horizontal, Vertical, or Angle setting to set orientation. If grain is irrelevant, the default setting is Ignore.
- **Cluster type:** If you want to group parts, use the Auto Pair feature to group them horizontally or vertically. You must enter an even quantity to automatically pair the parts. If you enter an uneven number, an error message appears. If you click **OK** to the error message, FlowNEST will subtract one part from your quantity and enter the new quantity in your Part List. If you click **Cancel**, FlowNEST will return to the Part data dialog box where you can change the quantity to an even number. The default setting for Cluster type is Ignore.
- **Connected point tolerance:** Because FlowNEST part files are ORD files and do not have gaps in the entity connections, connected point tolerance values are not required. However, you may enter a value for connected point tolerance (default is 0.001 in.) under special circumstances.

**Note:** Do not change this value without consulting Flow Technical Service.

- **Save as Default:** You can save all part information as a default, which allows you to use the same part information for all parts. Most users use the same angle and priority settings and



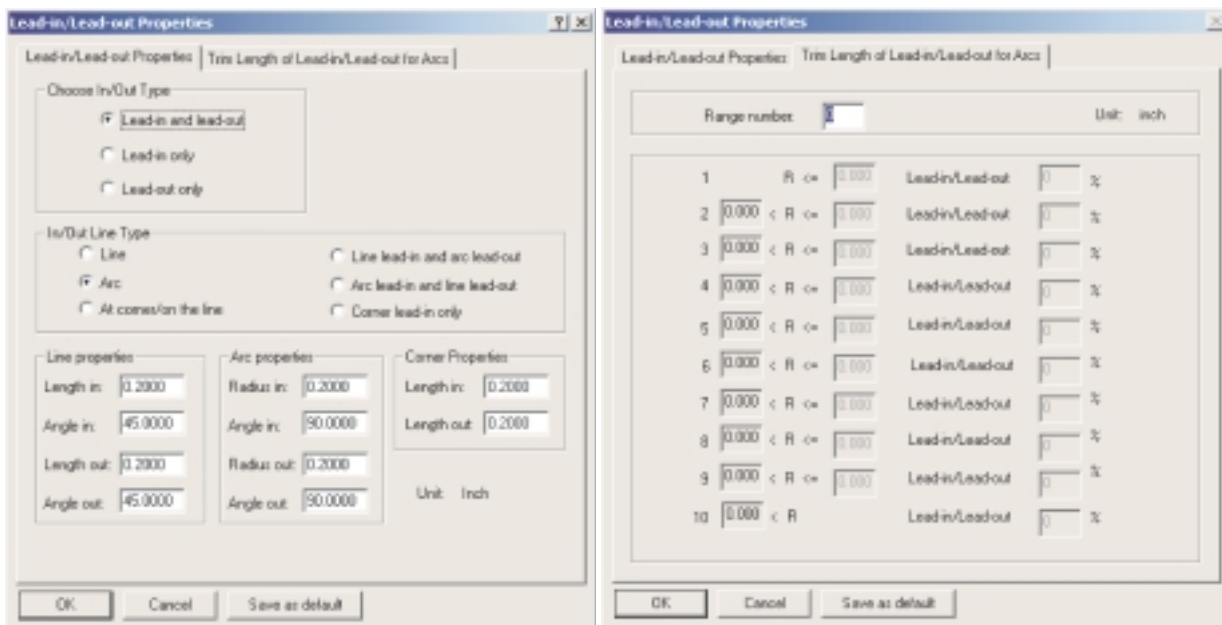
only occasionally change the grain options. By saving the most commonly used settings, a selected part will only need to be given a quantity number in future runs.

4. Select **OK** to enter the part after all options have been set. There will be a short pause while FlowNEST performs some calculations.
5. To add additional parts to the Part List, select **Add** and repeat Steps 1–4.
6. To make changes to the settings of any part in the list, highlight the part name in the Part List and click on **Modify**. To remove a part from the list, click on Delete.

### Assign lead-in/lead-out properties (DXF files only)

If you insert DXF parts, the parts have no lead-in/lead-out. Lead-ins and lead-outs are entry and exit points for the jet. Lead-in is the point at which the jet enters the shape, and lead-out is the point at which the jet exits the shape. The profiles are cut in the order in which you assign lead-ins/lead-outs.

Select **Edit | Lead-in/lead-out properties...** to open the Lead-in/Lead-out Properties dialog box to confirm or change properties.



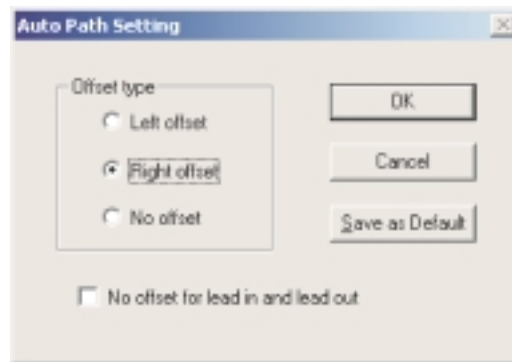
Select the **Trim Length of Lead-in/Lead-out for Arcs** tab to set range(s) for a percentage of the length defined in Arc properties. If the circle is small, the default lead-in/lead-out settings can be inadequate. You can set arc size ranges and choose what percent of the arc properties to use.

- Enter the number of ranges you wish to use.
- Enter the radius between two numbers for each range.
- Enter the percentage of the length (defined in the Lead-in/Lead-out Properties tab).

**Note:** For more detailed information about lead-in/lead-out properties, see manual M-320, FlowPATH User's Guide.

### Auto path setting



Select **Edit | Auto path setting**. The Auto path setting dialog box appears (see Figure B). Select offset choice (left, right, or no offset) and click OK.



**Note:** For more detailed information about auto path setting, refer to manual M-320, FlowPATH User's Guide.

### Shape library

The shape library consists of common, predefined shapes. A dialog box allows you to specify parameters of the shape.

1. To go to the shape library, select **Edit | Part data** or click the Part data icon . Select **Add** to display the Part data dialog box.
2. Click on the Shape Library icon .



3. Click on a shape to select it. A shape dialog box will appear.

4. Enter the parameters.

**Notes:**


- “Base” is not used by FlowNEST.
- “Color” establishes the colors that FlowCUT uses to represent the rapid traverse, scribe, and cutting moves, as described in the following table.

Index	Color	Indicates
2	Gray	Scribe (water only/no abrasive)
3	Dotted teal	Rapid traverse (no waterjet)
4	Light green	20% speed
5	Blue	40% speed
6	Cyan	60% speed
7	Magenta	80% speed
8	Yellow	100% speed

To keep the shape dialog box open so you can add more parts of that specific shape, go to Step 5. If you are only adding one shape from the dialog box, go to Step 6.

5. Select **Apply** to add the shape to the parts list and to keep the dialog box open. When you have added as many parts as you need from the shape dialog box, go to Step 6.
6. Select **OK** to add the shape to the parts list and close the dialog box.

## Select the sheet data

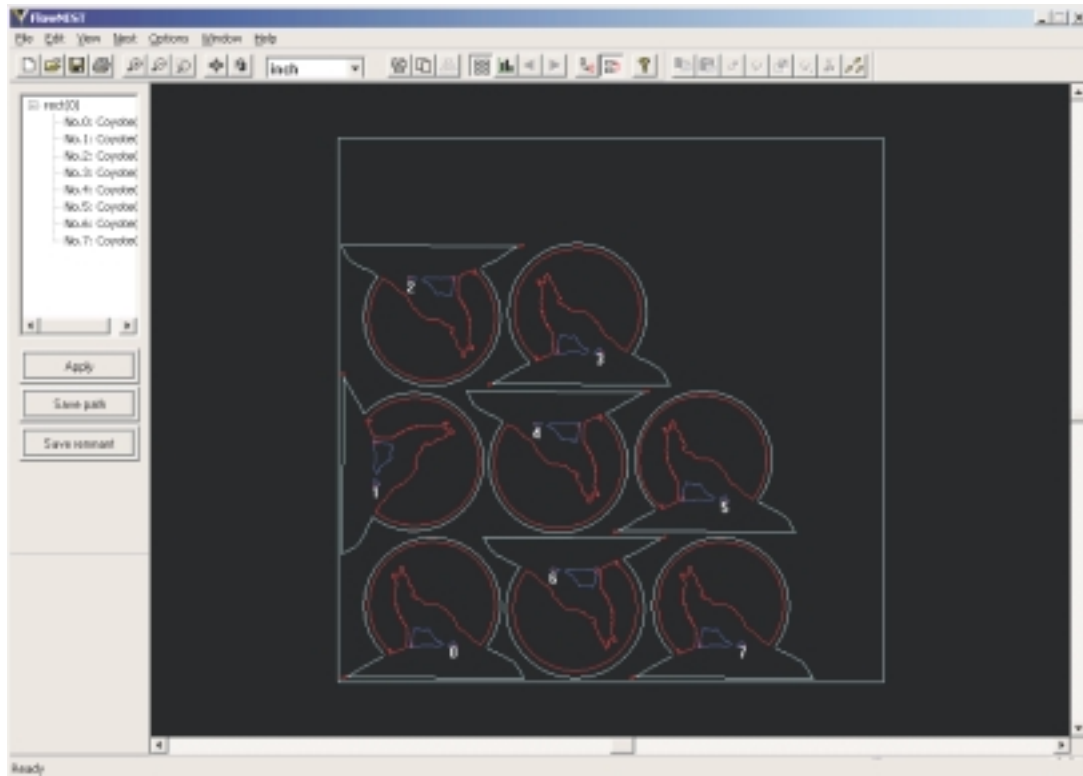
1. Select **Edit | Sheet data** or click the Sheet data icon . Select **Add** to open the Sheet data dialog box.




2. Find the directory that contains the sheet data DXF files and double-click on it.
  - Click on the file name in the list to display it in the file name box. Check the Preview box to see a thumbnail sketch of the sheet.
  - If a rectangular sheet will be used, click on “Use the rectangle defined above” and enter the length and width of the sheet. (The file name and List Files of Type boxes are unavailable when this option is selected.)
3. After selecting the sheet, FlowNEST offers several additional options.
  - **Quantity:** Enter the number of sheets you will be using. If you want FlowNEST to use as many sheets as necessary to nest your full data selection, check “Unlimited quantity.”
  - **Grain:** If the part to be cut needs to be oriented with a grainline or pattern on the sheet, use the horizontal (X), or vertical (Y) setting to define the grain direction of the sheet.
  - **Start nest at:** Determines where on the sheet the nest will begin. Select lower left, top left, lower right, or top right.
  - **Connected point tolerance:** Enter a value for connected point tolerance. When using DXF files it is possible that small gaps exist in the drawing entities. This setting will connect those gaps. Any unconnected entities within the specified tolerance will be treated as connected.
  - **Save as Default:** All sheet information can be saved to use on the next job, which can save time if you’re cutting many of the same parts using the same sheet material.

4. After all of the options have been entered, select **OK**. This closes the dialog box and adds the sheet data into the sheet list. The cursor will become an hourglass while FlowNEST performs some calculations.
5. To add additional sheets to the Sheet List, select **Add** and repeat Steps 1–4.
6. To make changes to the settings of any sheet in the list, highlight the sheet in the sheet list and click on **Modify**. To remove a sheet from the list, click on **Delete**.


### Execute the nest



1. Select **Nest | Execute** or click the Execute icon . (The icon and menu pick will be unavailable until the parts and sheets have been selected.) When you execute a nest, the cursor will turn into an hourglass while FlowNEST performs the nesting calculations. Depending on the nesting complexity and parameter settings, this can take a few seconds or several minutes.
2. When the nesting is complete, the Nesting Result Report will appear. The top window of this report lists the Part Name (the file location and name for each part requested), Nested Quantity (the number of parts FlowNEST was able to nest based on your sheet selection), Demanded Quantity (the number of parts you requested), and Remaining Quantity (the number of parts FlowNEST was unable to nest due to sheet limitation). The lower window lists the sheet name(s) and percentage of sheet utilized.
3. Click **OK** to return to the main window. The Parts window will show a visual of the nested parts and a part order number on or near each part. The Nest Results window (the window to the left of the parts window) will list the order of the parts by file name.
4. After viewing the nested file you can make changes by using the highlight and edit tools, or you can change the cutting order of the parts (for example, you may require a specific part to be cut first).


### ***Highlight the part***

By highlighting a part's file name you can determine its location on the sheet.


- Select **Options | Highlight part** or click the Highlight part icon  .
- Click on the part you want to highlight in the nest results window.

The selected part appears purple in the parts window. Once you have selected the part, you can copy, add, move, or rotate the part using the Edit menu or the edit tool bar.


### **Copy part**

- Select **Edit | Copy part** or click the Copy part icon  .
- Drag the copied part to a new location on the sheet. Click to place the part in the new location.
- Click **Apply** to assign a new order number to the part.


### **Add part**

- Select **Edit | Add part** or click the Add part icon  . A simplified Part data dialog box appears that allows you to add a single part to the sheet.
- Drag the new part to a location on the sheet. Click to place the part in the new location.
- Click **Apply** to order the new part and add it to the Parts window.


### **Move part**

- Select **Edit | Move part** or click the Move part icon  .
- Drag to move the part to a new location on the sheet. Click to place the part in the new location.


### **Rotate part**

- Select **Edit | Rotate part** or click the Rotate part icon  .
- Drag to rotate the selected part. Click to stop the rotation.


### **Step move part**

- Select **Edit | Step move** or click the Step move part icon  .
- Use the arrow keys on the keyboard to move the part horizontally or vertically to a new location.

### **Step rotate part**


- Select **Edit | Step rotate** or click the Step rotate part icon  .
- Use the arrow keys on your keyboard to rotate the part.

### **Delete part**

- Select **Edit | Delete part** or click the Delete part icon  .

The highlighted part will be deleted.

### **Step setting**

- Select **Edit | Step setting...** or click the Step setting icon  to open the Step setting dialog box. Enter the distance an X or Y step should be (in. or mm), or the degrees of rotation for each Step of Rotate.

### ***Edit the sequence***

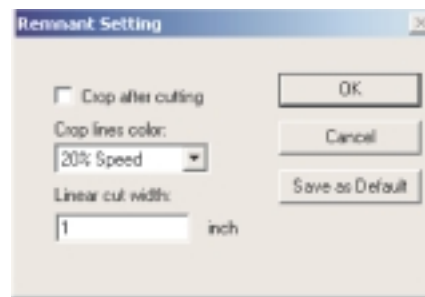
To edit the cutting order sequence of a particular part in the nest:

1. Select **Options | Edit sequence**.
2. Highlight the part in the Nest Results window; drag and drop the part to the new sequence position.
3. Select **Apply** to record the new part sequence. Click Apply before exiting the nested view screen or the changes will not take effect.

### ***Save the file(s)***

#### ***Remnant setting (optional)***

1. Select **Edit | Remnant setting** to open the remnant setting dialog box.



#### ***Crop after cutting***

2. Check the “Crop after cutting” box, select the cutting speed, and enter the Linear cut width (in.). The linear cut width determines the resolution of the crop line. A smaller value sets the crop line closer to the contour of the parts. A larger value causes the cropping to be made of long, straight cuts. A crop line will automatically be added to the cutting path (with a suspended pause). This will allow you to view and use just the remaining portion of the sheet for a later cut.  
  
If you do not want to create a crop line, uncheck the “Crop after cutting” box. You can still save the sheet as a DXF file, but when you open the file you will see the entire sheet with an outline of the parts cut from part of the sheet. You can still manually draw your own cutting lines.
3. Click Save as Default to save the selected options. These values will be used for all sessions unless changed.
4. Click **OK** to return to the main window.


### ***Cropping line***

This feature will be dimmed if “Crop after cutting” is selected in the Remnant Setting dialog box.

1. Select **Edit | Draw cropping line**.
2. Click just off the edge of the sheet to define the start point of the crop line.
3. Drag to the next desired point on the sheet and click.
4. Continue to define points on the sheet. The last point should be just off the edge of the sheet.
5. Move cursor to nested area and right click to end drawing crop line.

Select **File | Print preview** to view cropping lines. Select **Edit | Delete cropping line** to remove the cropping line.

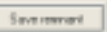
### Save the path as an ORD (required)

After you have executed the nest and performed any necessary edits, save the path as an ORD file by clicking on **Save path** . This saves the nest as an ordered cutting path suitable for use in FlowCUT.


**Note:** If your file has more than one sheet, you must select each sheet individually and save it as an ORD file. For example, if your file contains four sheets, you will create four ORD files.

**Note:** You must create the ORD file before you can cut the nested parts in FlowCUT.

### Save the sheet as a remnant (optional)

Click on **Save remnant**  to save the remnant sheet as a DXF file. This will allow you to geometrically nest other ORD files on the remnant sheet later.

### Save the NST file (optional)

Select **File | Save** or click on the Save tool bar icon  if you want to save the nested file with all parameters. An NST file can be used or revised for use on similar jobs if all parameters are saved. A NST file contains the Part data and Sheet list instructions, as well as the nest results.

**Note:** Do not click the Save tool bar icon to save the nested file as an NST if you do not intend to use it again.

## Print file

The print feature allows you to set up and print your file.



**Note:** You must execute a nest for the print feature to be available.

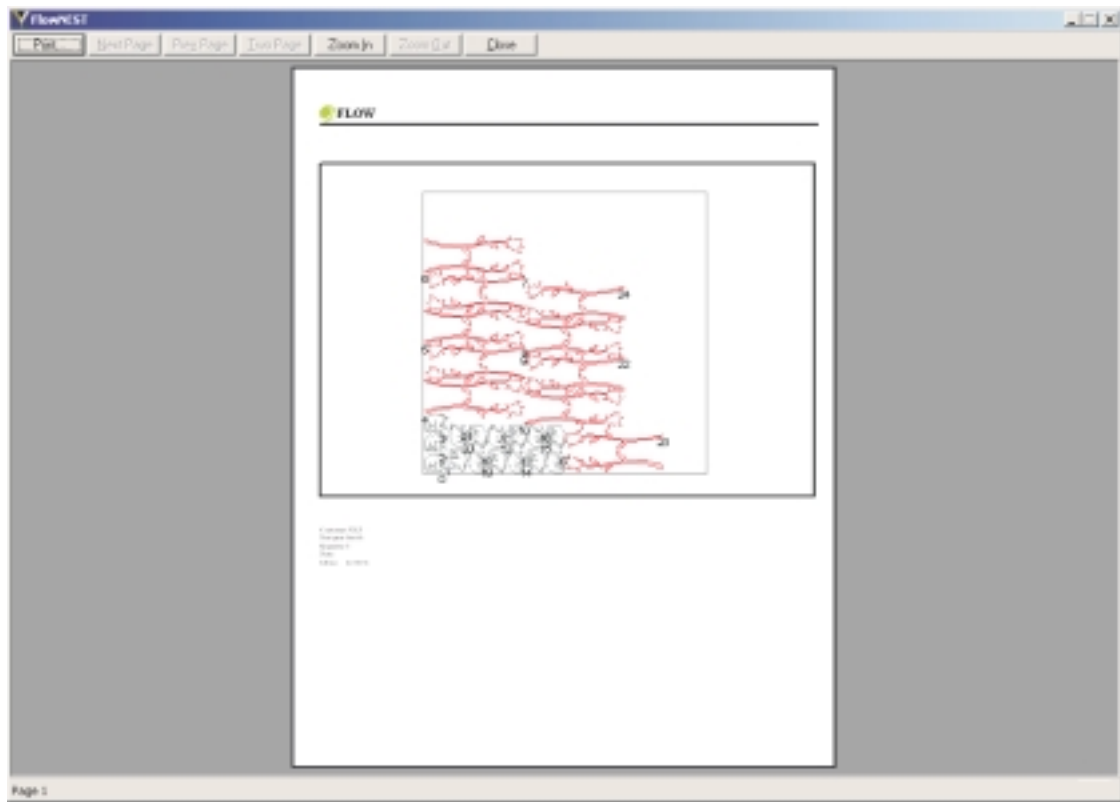
1. Select **File | Page Setup**. The Page Setup dialog box is displayed.
2. Enter the information you would like displayed on your printed drawing.
3. Click OK to save the information for the current drawing. Click Save as Default to save the information as the default settings.



4. Select **File | Print Setup**. The Print Setup dialog box appears.



5. Change the printer and printer options.
6. Click OK to save the information for the current drawing.
7. Select **File | Print Preview**. A preview of how your page will print is displayed.
8. Click Print icon  to print from the print preview mode or click Close icon  to close the print preview and return to FlowNEST.
9. Select **File | Print** to print the file.



## ***Advance to FlowCUT***

Refer to M-322, FlowCUT User's Guide.

## CHAPTER 4

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### ***Advanced Features***

FlowNEST includes some advanced features that may be useful for your nesting needs. The features include batch processing and single sheet optimization.

**Notes:**

Multiple heads and common line cutting will not work with these advanced features.

The shape library currently works only with Normal Task.

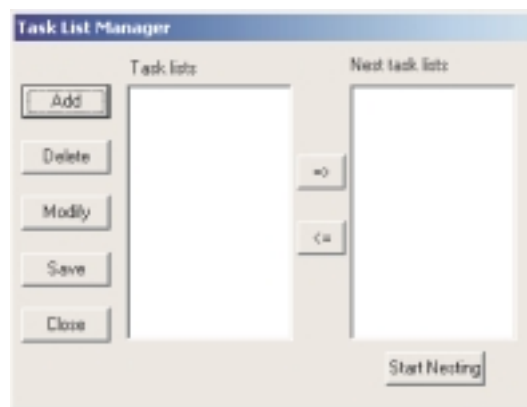
### ***Batch processing***

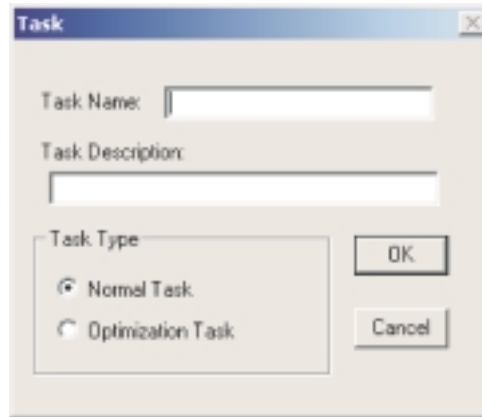
The main advantage with batch processing is that you can take multiple jobs and do them all at once. Batch processing automatically saves all ORD files for each individual sheet, saves all remnant DXF files, and saves the NST file.





There are two options available for batch processing—create a new task list, or open an existing task list.

### ***Create new task list***

1. Select **File | New task list** to open the Task List Manager dialog box.





2. Click **Add** in the Task List Manager dialog box to open the Task dialog box. Enter the name of the task, describe the task (optional), and choose a Task Type. The Task Type must be set to Normal Task for batch processing.
3. Click **OK** to return to the Task List Manager dialog box. The Task Name you just assigned should appear in the Task lists screen of the Task List Manager.
4. Select **Edit | Part data** or click on the Part data icon . Click **Add** under the Part List window. Add the parts you need to nest.
5. Select **Edit | Sheet data** or click on the Sheet data icon . Click **Add** under the Sheet List window. Add the sheet information.
6. Repeat Steps 2–5 to add additional tasks to the Task lists.
7. Click **Save** to save the task list for future use in the Save As dialog box.
8. Enter a name for the file.
9. Click on the task name from the Task lists box. Click  to add the task to the Nest task lists on the right side of the Task List Manager dialog box.
10. Click on the Start Nesting icon  to open the Choose Directory dialog box. Select the directory where you want the nest result to be saved. FlowNEST will automatically create a \Result directory under the directory you choose. The ORD, DXF, and NST files will be saved in this directory.
11. Click **OK**. The tasks will begin to nest. A status bar and percentage will appear on the left of your screen so you can track the status of the nest. When the nesting is done, a Task Nesting Finished box will appear. Click **OK** to return to the Task List Manager dialog box.
12. Click **Close**.

**Note:** If you will not use this nest again, you do not need to save the TSK file.


### ***Open existing task list***

1. Select **File | Open task list**. Select the saved task that you want to use and click Open. The Task List Manager dialog box appears. You can Add new tasks to the task list, or Delete or Modify existing tasks.
2. Refer to Steps 9–12 under **Create new task list**.

## Single sheet optimization

Single sheet optimization is useful if you have a sheet of material and you want to maximize sheet usage. This optimization process will place as many parts as possible on your single sheet of material.

The steps to create a Single sheet optimization are very similar to batch processing.


1. Select **File | New task list** to open the Task List Manager dialog box.
2. Click **Add** to open the Task dialog box. Enter the name the task, describe the task (optional), and choose a Task Type. The Task Type must be set to Optimization Task for single sheet optimization. Click **OK** to return to the Task List Manager dialog box. The Task Name you just assigned should appear in the Task lists screen of the Task List Manager.
3. Select **Edit | Part data** or click on the Part data icon . Select **Add** to display the Part data dialog box and a modified Part data dialog box appears. There is now a Max Quantity and Min Quantity selection in the Part data dialog box.

**Note:** The Single sheet optimization requires a large number of calculations and can be very time consuming. Keep the Max quantity and Min quantity as close together as possible to reduce the run time.

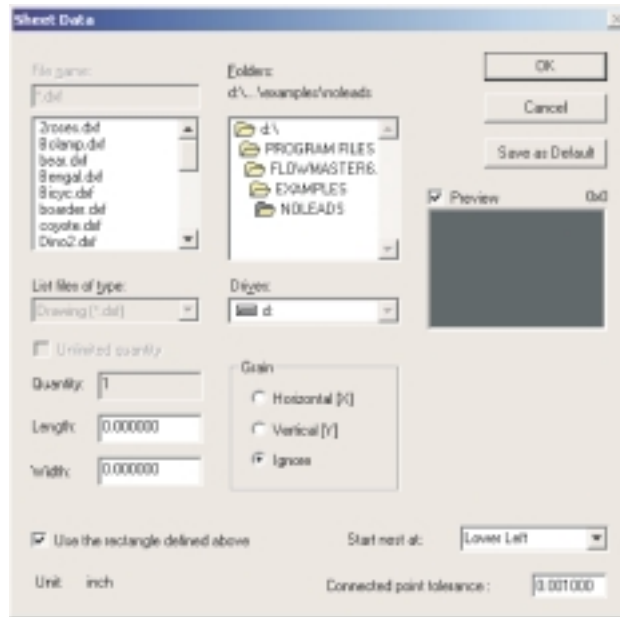


4. Select the part you wish to nest and choose your options.

**Note:** You can repeat Steps 3 and 4 to add more parts to nest.

5. Select **Edit | Sheet data** or click the Sheet data icon . Select Add to display the Sheet data dialog box.

**Note:** Note that the Quantity is automatically set to 1.



6. Select the file you wish to use or click on “Use the rectangle defined above” and enter a Length and Width.
7. Continue with Steps 7–12 under *Create new task list*.

**Notes**

## Notes