EDS IV
...xtreme

User Guide

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EDS IV
...xtreme

Introduction

Welcome

Dear Customer,

At Melco we recognize that ease of use equals productivity. With this in mind we have redesigned our legendary EDS software. EDS IV ...xtreme is the successor to Melco's EDS III embroidery design system. It is based on Melco's proven Stitch Generator. The addition of a new intuitive user interface makes it the most productive software in the embroidery industry. In order to guarantee a smooth transition into EDS IV, Melco has maintained compatibility with existing design formats, such as Condensed, Expanded and Alphabets, etc. The Digitizing Assistant and other new features give EDS IV users the fast track to quality designs.

Together with EDS IV you get Melco's proprietary Embroidery Network System (ENS). This powerful software allows you to centralize and automate production management tasks such as sending and queuing designs to individual Melco embroidery machines; collecting and displaying machine performance data including thread and bobbin breaks, run times, and down time; immediately access machine operation and service information to assure proper operation and maintenance of all embroidery machines and components (see ENS User's manual for more information).

Thank you for being Melco's business partner.

What's New in EDS IV Version 3.00

Applies to All Product Levels

- Supports the reading and writing of Janome .jef home format (pages 147, 148, 150)
- Graphic Background (Fabric Background) (p. 193)
- Sequenced lettering (p. 221)
- The behavior for Lock Stitches and Trims has changed for closest point and non-closest point alphabets (p. 226)
- Hoop Manager (p. 213)
- Alignment Tools (p. 124)
- Factory Default Settings (p. 164)
- Hide Stitches Tool (p. 177)
- Two Different Types of OFM File Compatibility (p. 150)

Applies to Base, Midpoint, and Summit Product Levels

- The ability to perform outline editing has been added to Base level
- Walk and Manual Walk Digitizing capabilities have been enabled for Base level
- Accelerator Editor (User defined Hot-Keys) (p. 158)
- Convert / Restore Alphabets (p. 160)
- The option to change the wireframe point size (p. 171)
- Complex Fill Pull Compensation (p. 206)
- Global Scale Factors (p. 138)
- Enhanced Find Feature (p. 138)
- Grouping and Ungrouping Tools (p. 176)
- Design Database Application (p. 114)

Applies to Midpoint and Summit Product Levels

- Capped and Mitered Corners (p. 195)
- Expanded Editing with the Project View Stitches Tab (p. 179)
- Retrace Tool (p. 237)

System Requirements
- PC with a Pentium II 300 MHz or higher processor (Pentium III 450 MHz or higher recommended)
- Microsoft Windows 98 or Windows Millennium or Windows XP Home or Windows XP Professional or Windows 2000 operating system.
- 128MB of RAM (128MB (+) recommended) for Windows 98/ME; 128MB (128MB (+) recommended) for Windows XP Home, Windows XP Professional and Windows 2000.
- Super VGA video adapter and monitor configured for 1024x768 resolution or higher, video driver set to High Color or better for Windows 98 / Millennium; 32768 color or higher for Windows XP Home, Windows XP Professional and Windows 2000. If you want to change the settings of your screen resolution, please click on the "Start" button of your Windows taskbar, followed by a click on "Help". Do a search for "display, resolution".
- Parallel port for EDS IV security dongle
- CD-ROM drive (required for EDS IV installation, 16X is recommended)
- Two or three button mouse (3 button mouse preferred)
- Internet Explorer 5.0 or greater

Incompatible Hardware / Software

EDS IV users should avoid the HP Deskjet G55 printer Driver. Users have reported unspecified problems with EDS IV when this driver is installed.

Product Levels

The following product levels are available:

- EZ
- Base (Lettering)
- Mid-Point (Lettering, Editing)
- Summit (Lettering, Editing, Digitizing)

Product Options
The following options are available with EDS IV ...xtreme:

• Digitizing Assistant (requires Summit)

Installing the Dongle
The dongle is a security device that must re-installed in an active parallel port of your computer

1. Locate an active parallel port on the rear of your computer. Usually this is LPT1, but it could be LPT2 if you have two parallel ports.

2. Turn the computer OFF.

3. Secure the dongle with the captive screws at its sides.

Installing EDS IV ...xtreme
1. Insert the EDS IV ...xtreme Program CD into the CD ROM drive.

2. Follow the auto-run installation program instructions.

3. When asked to enter your access code you will find this by looking inside your EDS IV CD case. It's on the white label on the left side.

If the auto-run installation program doesn't begin:

1. Click on Start, Run to display the Run dialog box.

2. Browse to your CD ROM drive.

3. Select setup.exe and click Open.

4. Click OK and follow the on-screen instructions to install EDS IV extreme.

To Start the HTML Help System

Simply go to the Help Menu, select Help or press the ![help] toolbar button. You can also press the 'F1' key. When you are in a property page, press the 'F1' key to go directly to help on that dialogue.

Tips for using the HTML Help System:

- Use the red navigation bar buttons to easily access topics.

- There are three tabs on the left side to search for topics using Table of Contents, Index, or Search.

- You can click the Home button to display the initial screen at any time.

- When viewing Help, you can maximize the Help window or resize it to suit your preference. However, the Help System was designed to display optimally in the default window size.

- Click the Hide or Show navigation buttons to view or hide the TOC, Index, and Search tabs.

- Click the Back button to return to the previously viewed topic.

- Click Print to print topics. The Print dialog provides options for printing the current topic, everything contained in a current heading (based on the item selected at the TOC), or everything in the Help system. You can also right-click inside the topic frame and select Print from the pop-up menu.

- The Options drop-down button provides additional browse and navigation controls. Click and hold the Options button to show the additional controls.

- Many topics include a Related Topics button at the end of the text that displays a pop-up menu of related topics that you can click on and go to.

To Identify a Tool or Control in EDS IV

Position your mouse pointer over the tool or control and wait one second. A tool tip will appear showing the name.

For more information on this tool, go to the HTML Help System and type the name in the index tab, press "Display" or hit <Enter> on your keyboard.

You can also go to the Reference Page in the HTML Help System and click on the tool that way.

Tip

User Guide and HTML Help Note

Please keep in mind that the EDS IV User Guide and EDS IV HTML Help system contain reference for all product levels.

Quick Start
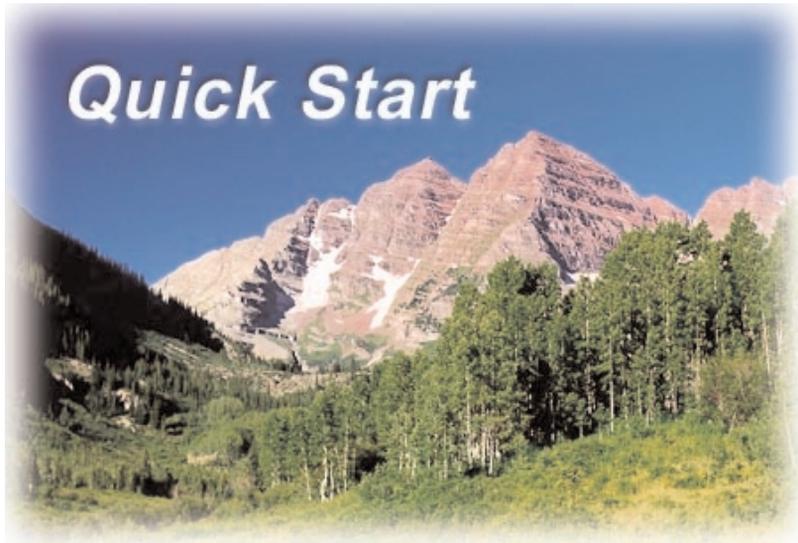
Basic Tutorial

Open a Design 📂

Opening a design in EDS IV is very similar to opening a design in EDS III.

Exercise

1. Click on the File Menu.

2. Click on Open (Or, click on the Open tool 📂 on the Main toolbar).

3. Click on Files of Type drop down menu to choose the embroidery file type.

4. Click on the design you would like to open (if the design is not in the list, you may have to look in another folder).

5. Click on Open or double click on the design.

Save a Design 💾

Saving a design in EDS IV is very similar to saving a design in EDS III.

Exercise

1. Click on File.

2. Click on Open.

3. Open Earthday.ofm from the \Designs folder.

4. Click on File.

5. Click on Save or Save As.

6. If Save As is chosen, the Save As dialog box is displayed.

7. Type a new filename.

8. Choose the file format from the Save as type drop-down menu.

9. Click on Save.

Import a Design

Importing designs to an embroidery formats is similar to EDS III.

Exercise

1. Click on File.

2. Click on Import.

3. The Import dialog box is displayed.

4. Click on the file format (if you do not know, click on unknown).

5. Click on the Directory button (there must be a disk in the disk drive).

6. Select the design.

7. Click on Import or double click on the design.

Export a Design

Exercise

1. Click on File.

2. Click on Export.

3. The Export dialog box is displayed.

4. Type the filename.

5. Choose the Embroidery format.

6. Click on the Export button (an embroidery format disk must be in the disk drive).

Auto Save

Exercise

1. Open any design.

2. Click on Tools drop-down menu from the Standard toolbar.

3. Click on the File Options tab.

4. Click on the (check) to turn Auto Save off (or on).

5. Type a new interval amount in minutes, to Auto Save.
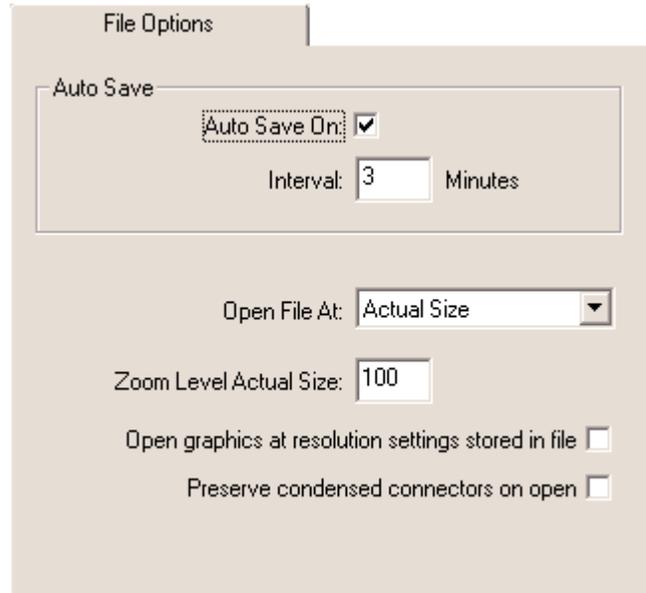
6. Click on OK.

Print a Design

Exercise

1. Open any design.

2. Click on the Print tool on the Main toolbar.

3. The Print dialog box is displayed.

4. Choose the parameters to print the designs.

5. Click on OK.

Add Lettering to a Design

Exercise

1. Open EDS IV.

Tip

You can print a design in 3D view after pressing the "View Stitches in 3D" button

 , then print .

2.   Open Earthday.ofm from the\Designs folder.

3.   Click on the Lettering tool .

4.   Left click on the screen workspace (View Window) where you
     want the lettering text to appear (notice the arrow has an A
     attached to it).

5.   Type the lettering parameters.
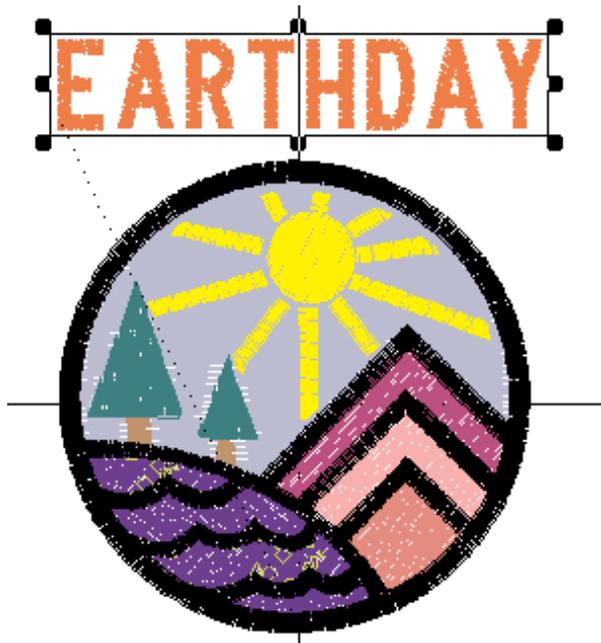
6.   Click on OK.

7.   The lettering will be inserted on the screen with the design.

8.   Adjust as needed.

Combine Two Designs Together in the Same Project

Exercise

1   Open any design.

2.   Click on the Insert File tool on the Main toolbar.

3. The Insert dialog box is displayed.

4. Look in the directory where the design is located.

5. Click on the design you want to insert.

6. Click on Open or double click on the design.

Check the Design Status

There are a couple of ways to obtain the design status for your designs in EDS IV.

Exercise

1. Click on File.

2. Click on Open.

3. Open "Earthday.ofm" design from the \Designs folder.

4. Click on View drop down menu and Properties.

5. The Design Properties dialog box comes up.

6. Click on the Status tab.

OR

Exercise

1. Click on File.

2. Click on Open.

3. Open "Earthday.ofm" design from the \Designs folder.

4. Highlight the design name in the Project View.

5. Right click with the mouse.

6. Choose Properties from the drop down menu.

7. Click on the Status tab.

Status

Size

Width	Height
2.909 in.	1.890 in.
739 pt.	480 pt.

Stitches

Total: 3627

By Color: 1: 866
            2: 2145
            3: 257
            4: 359

Point distance from origin

	X	Y
Minimum:	-370	-240
Maximum:	369	240
End:	-320	-196

X/Y Axis moves

Shortest: 0

Longest: 63
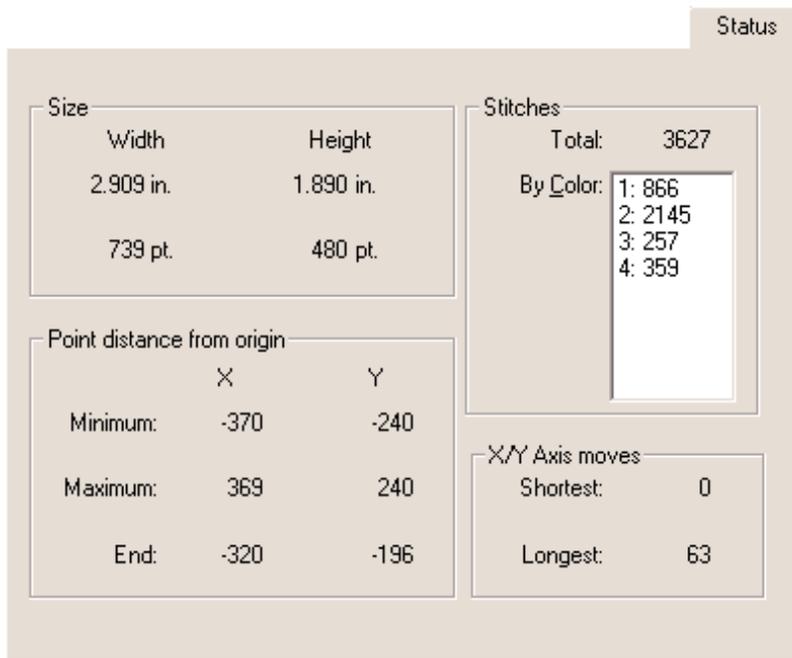
Save Notes to a Design

Exercise

1. Open any design.

2. Click on the Notes tool on the Main toolbar.

3. Type the notes for your design.

4. EDS IV automatically defaults to Word Pad for your notes. (You can change this to use any Windows application.)

5. The notes will be saved to any design that uses an .ofm file extension.

Tip

Once you have saved notes to your designs, you will see a picture of the notes tool added to the top level project in the project view.

Scale Designs

There are many ways to scale your designs. Please follow the exercises below to see just a few.

Exercise

1. Click on File.

2. Click on Open.

3. Open "Earthday.ofm" design from the \Designs folder.

4. Highlight (click to select) the design name in the Project View.

5. Right click on the design name with your mouse button.

6. Select Properties from the drop down menu.

7. Click on the Scale tab.

Scale

Proportional: ☐

Horizontal: `100` % `2.925` in.

Vertical: `100` % `4.051` in.

Expanded Stitch Processing: ☑
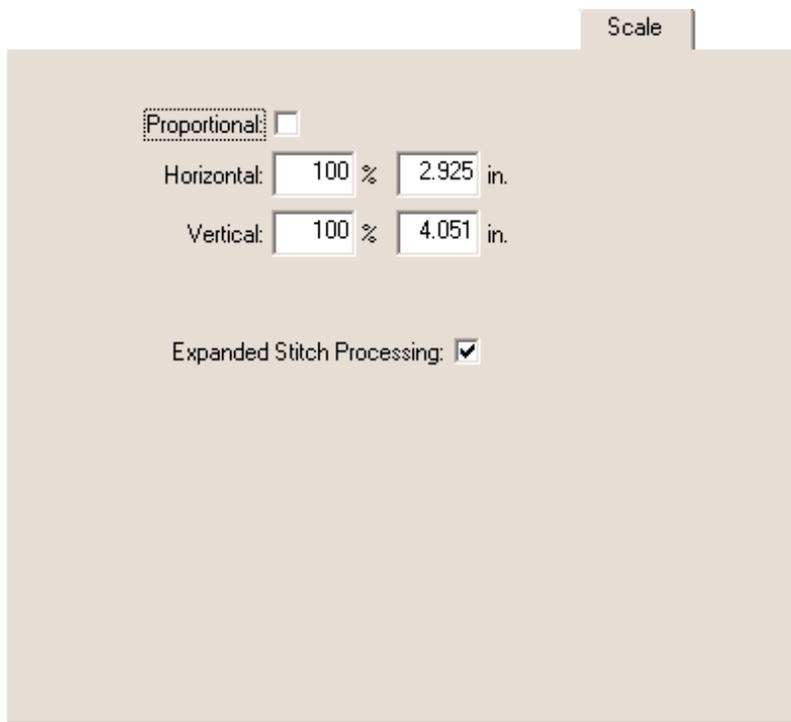
8. Enter a percentage scale or specify the design size by typing the design measurement.

9. If scaling proportional, click on proportional and type a horizontal size only.

10. Click on OK (or the Apply button).

OR

Exercise

1. Click on File.

2. Click on Open.

3. Open "Earthday.ofm" design from the \Designs folder.

4. Click on the View drop down menu on the Standard toolbar.

5. Click on Select Entire Design.

6. Click and drag on any of the black handles with the left mouse button.
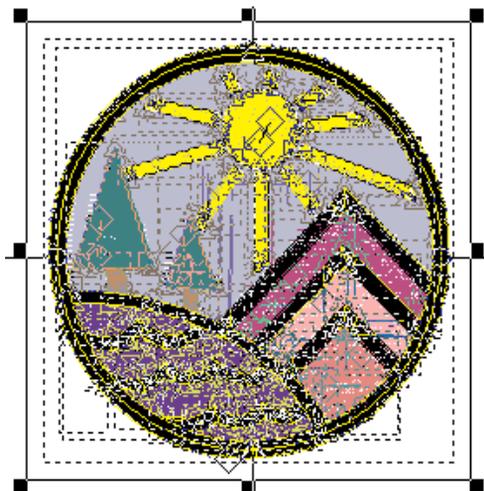
7. To scale the design proportionally, click and drag on any of the four corner handles.

8. To scale the design in the X or Y position only, click and drag on the black handles in between the corners.

Rotate a design

To rotate the entire design, following the exercises below:

Exercise

1. Click on File.

2. Click on Open.

3. Open "Earthday.ofm" design from the \Designs folder.

4. Left click to highlight (select) the design name in the Project View.

5. Right click on the design name.

6. Select Properties from the drop down menu.

7. Click on the Position Tab.

Position

X: [0]   in.
Y: [0]   in.
Rotate: [0]   degrees
Orientation   **F**
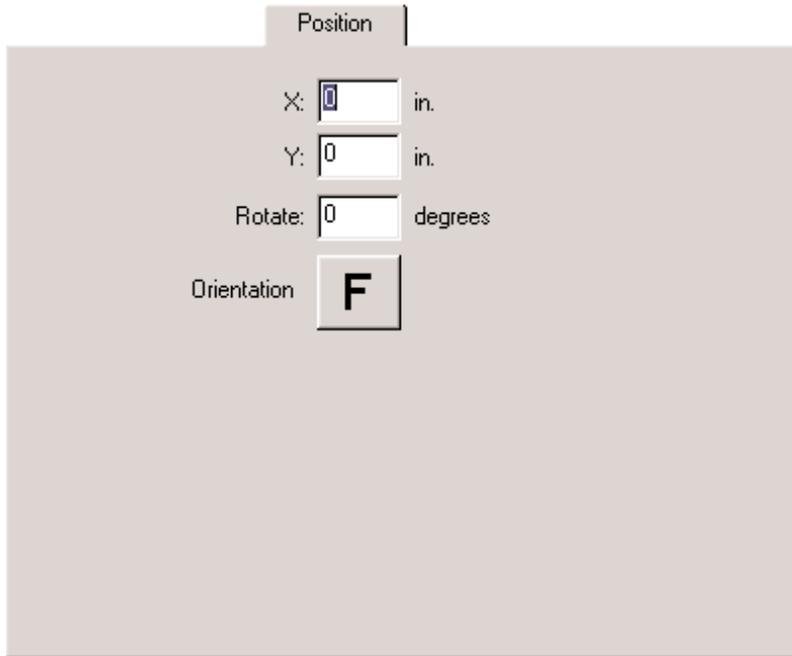
8. Type the desired rotation amount in degrees.

9. Click on OK (or the Apply button).

OR

Exercise

1. Click on File.

2. Click on Open.

3. Open "Earthday.ofm" design from the \Designs folder.

4. Left click to highlight (select) the design name in the Project View.

5. Right click on the design name.

6. Select, "Select Entire Design" from the drop down menu.

7. Right click anywhere on the design in the window.

8. Choose Rotate/Transform from the drop down menu.
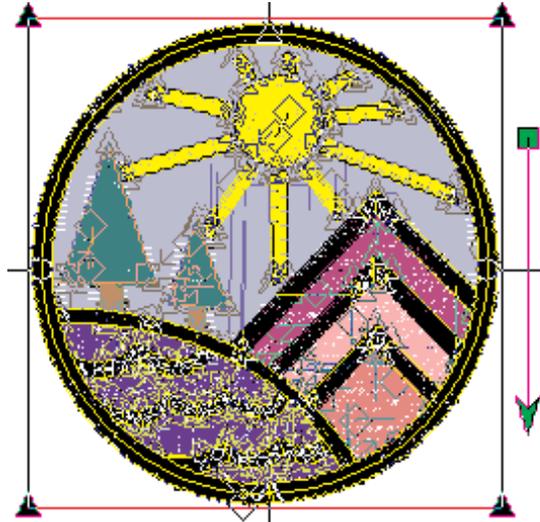
9. You will now have a box with a green arrow.

10. Click and drag the green rotation arrow.

11. To move the anchor point, click and drag with the left mouse button to place the center green box anywhere on the design.

12. Once you have placed the center rotation, click and drag the green arrow in the direction you would like to rotate (this is used as the pivot point of rotation).

Center Designs

Before you save or send the design to the machine to sew, you will need to Center the design, as was the case in EDS III.

Exercise

1. Open any design

2. Click on the Center design tool   on the Input toolbar.

3. Your design will be center, now you can save or sew.

Note: The design will not move on the screen if it was already in the center.

Redraw Speed

Exercise

1. Open any design

2. Click on the View Menu.

3. Choose "Redraw Speed".

4. From the pop-up menu choose a redraw speed from 1-9, 9 being the slowest.

Basic Lettering Tutorial

Start Lettering

Exercise

1. Click on the lettering tool **A** on the Input toolbar.

2. Left click on the screen workspace (View Window) where you want your lettering text to appear (notice the cursor arrow has an A attached to it).

3. The Lettering Properties box is displayed in your screen.
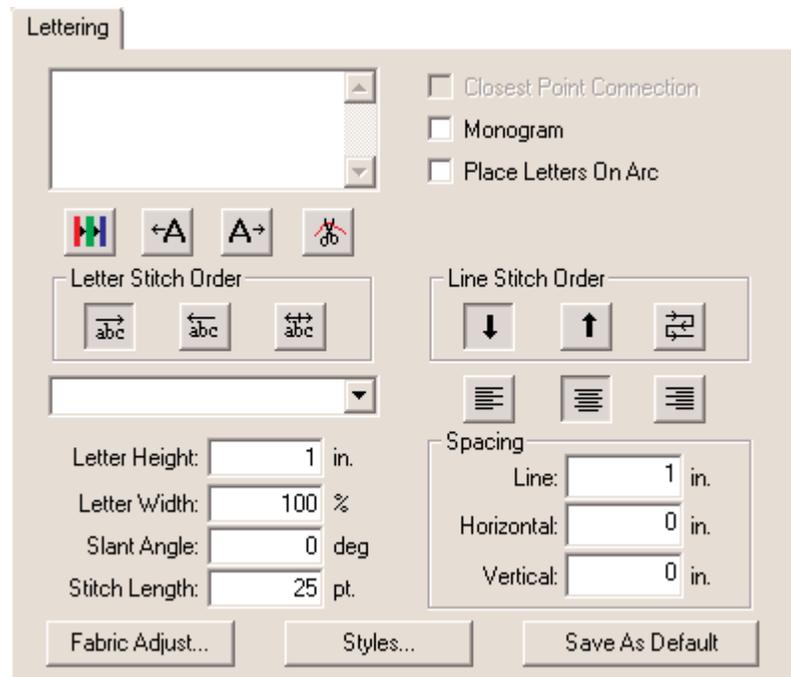
Add Color Changes

To add color changes between specific letters, you can use the F6 key on the keyboard or click on the color change tool in the lettering dialog box.

Exercise

1. Click on the Lettering tool **A** .

2. Left click on the screen workspace (View Window) where you want your lettering text to appear (notice the cursor arrow has an A attached to it).

3. Type "Melco" in the text space.

4. Place your cursor (left click) between the "M" and the "e" of word "Melco".

5. Click on the color change tool [icon] (notice the ^ is inserted).

6. Click on OK.

7. Double click on the text to adjust further.

Customized Spacing

To add or subtract spacing between specific letters, you can use the

F7 or F8 keys on the keyboard or click on the [icon] or [icon] tools in the lettering dialog box.

Exercise

1. Click on the Lettering tool **A** .

2. Left click on the screen workspace (View Window) where you want your lettering text to appear (notice the cursor arrow has an A attached to it).

3. Type "Melco" in the text space.

4. Choose "Melco Block" alphabet.

5. Change letter height to 1 inch.

6. Click on OK (notice the spacing needs to be adjusted between certain letters).

7. Double click on the lettering to select the lettering.

8. Place your cursor (left click) between the "M" and the "e" of the word "Melco".

9. Click on the ⁺A to insert < for less spacing.

10. Click on the to insert a > for positive spacing.

11. Click on OK.

12. Double click on the text to adjust further.

Add Specific Trims

To add a trim command between specific letters, your can use the F9

key on your keyboard or click on the trim tool ✂ in the lettering dialog box.

Exercise

1. Click on the Lettering tool **A** .

2. Left click on the screen workspace (View Window) where you want your lettering text to appear (notice the cursor arrow has an A attached to it).

3. Type "Melco" in the text space.

4. Place your cursor (left click) between "M" and the "e" of the word "Melco".

5. Click on the trim tool ✂ (notice the '¤' inserted).

Place Letters on an Arc
Exercise

1. Click on the Lettering tool $\mathbf{A}$.

2. Left click on the screen workspace (View Window) where you want your lettering text to appear (notice the cursor arrow has an A attached to it).

3. Type "Melco Embroidery" in the text space.

4. Click on "Place Letters On Arc".

5. Check the Arc Properties button.

6. The Arc Properties dialog box is displayed.
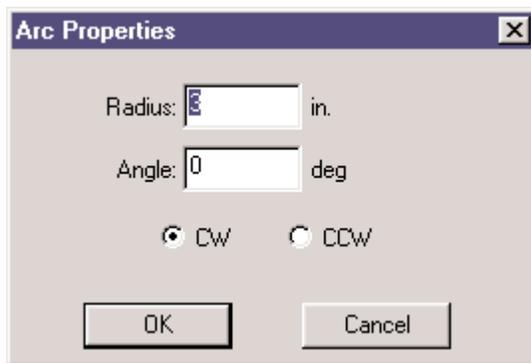
7. You can now change the Arc values.

8. Click on OK .

9. Click on OK again to apply your changes and get back to the View Window.

Change Column Width
Exercise

1. Click on the Lettering tool $\mathbf{A}$.

2. Left click on the screen workspace (View Window) where you

want your lettering text to appear (notice the cursor arrow has an A attached to it).

Click on the Column Tab.

The Column Width is in this dialog box.
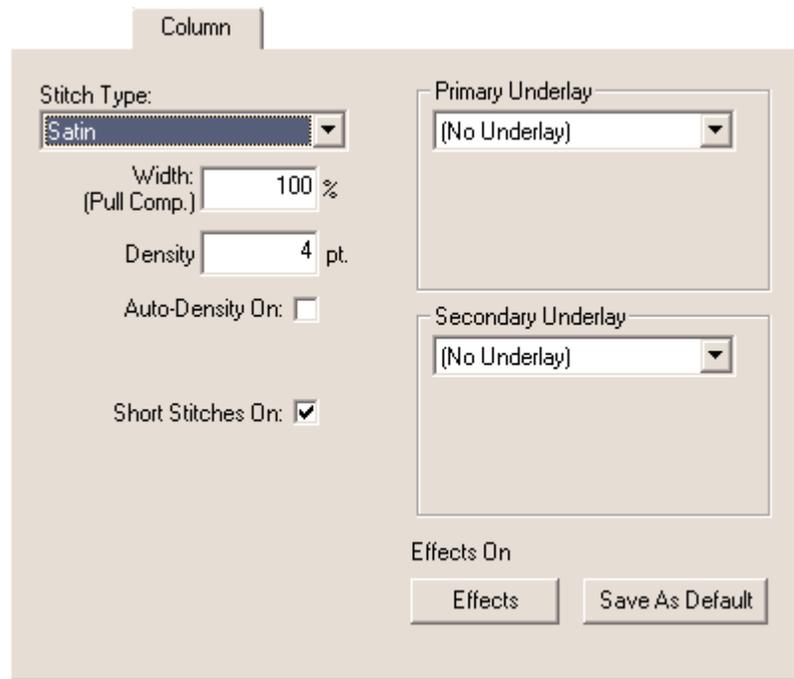
Change Density
Exercise

1. Click on the Lettering tool **A** .

2. Left click on the screen workspace (View Window) where you want your lettering text to appear (notice the cursor arrow has an A attached to it).

3. Click on the Column Tab.

4. You should see Density in this dialog box.

Add Underlay

Exercise

1. Click on the Lettering tool $\boxed{A}$.

2. Left click on the screen workspace (View Window) where you want the lettering text to appear (notice the cursor arrow has an A attached to it).

3. Click on the Column Tab.

4. Click on the Primary Underlay button to choose the different types of underlay.

Column	
Stitch Type:	Primary Underlay
Satin	(No Underlay)
Width: (Pull Comp.) 100 %	
Density 4 pt.	
Auto-Density On: ☐	Secondary Underlay
	(No Underlay)
Short Stitches On: ☑	
	Effects On
	Effects Save As Default
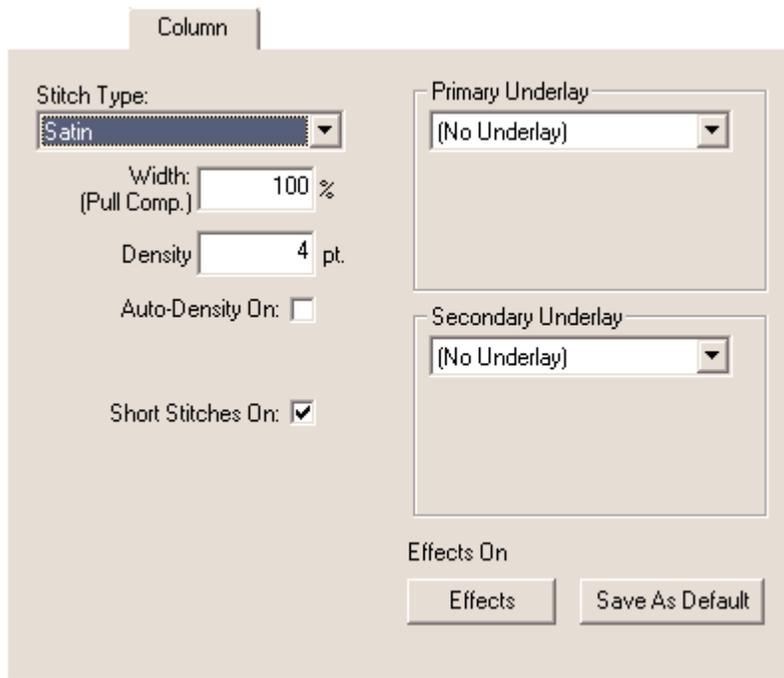
Center Designs

Exercise

1. Click on the Lettering tool $\boxed{A}$.

2. Left click on the screen workspace (View Window) where you

want the lettering text to appear (notice the cursor arrow has an A attached to it).

3. Type in the text.

4. Place the lettering in the View Window by pressing OK.

5. Click on the Center Design tool on the Input toolbar.

6. The design will now be centered.

Transform Lettering

Transformed lettering is even more powerful in EDS IV than it was in EDS III. Please follow the exercise to learn how to use this feature.

Exercise

1. Click on the Lettering tool .

2. Left click on the screen workspace (View Window) where you want the lettering text to appear (notice the cursor arrow has an A attached to it).

3. Type "Melco" in the text space.

4. Select "Athletic Block" Alphabet .

5. Change letter height to .75.

6. Click on OK.

7. You will see solid black handles around the text "Melco".

8. Click and hold the left mouse button (about 1 second) anywhere on the text "Melco" (or, click on the lettering in the View Window with your right mouse button and choose

Rotate\Transform from the pop-up menu). You will notice the
black diamonds control points in the corners. You can drag
these in any direction to transform the lettering text.

9. You can also insert input points on the line around the lettering
    text to transform even more.

    Left click ANYWHERE on the line with the mouse will give you a
    straight input point (notice the arrow is different, it changes to

    a ⬚).

    Right click ANYWHERE on the line with the mouse will give you
    a curved input point (notice the arrow is different, it changes to

    a ⬚).

10. Once the points have been inserted, click, hold and drag them
    to transform.

11. To delete an input point, select the point and press the delete
    key on the keyboard.

12. To select more than one input point, hold the control key down and left click on each one.

13. To switch the lettering text back to the solid scaling boxes, left click on any void area on the screen and then back on the lettering text.

Common Transformations

Pennant - With the left mouse button, select the upper right triangle control point. Hold down the (Ctrl) key and select the lower right corner point. Hold down the (shift) key and drag it away from the word. This works with all four corner points of the word.

Slanting - With the left mouse button, select the upper right triangle control point. Hold down the (Ctrl) key and select the lower right triangle point. Click on one of these points and drag it away from the word. This works with all four corner points of the word.

Bilinear - Select any of the corner triangle control points. With the left mouse button, click and drag in any direction.

Upper Bridge - Click the right mouse button on the line below the text (this will insert a circular control point). With the left mouse button, click on the point and drag it upward.

Lower Bridge - Click the right mouse button on the line above the text (this will insert a circular control point). With the left mouse button, click on the point and drag it downward.

Vertical Bridge (upper) - Click the right mouse button on the line above the text (this will insert a circular control point). With the left mouse button, click on the point and drag it upward.

Vertical Bridge (lower) - Click the right mouse button on the line below the text (this will insert a circular control point). With the left mouse button, click on the point and drag it downward.

Vertical ARC (upper) - Click the right mouse button on the line above the text (this will insert a circular control point). Click the right mouse button on the line below the text (this will insert a circular control point). Hold down the (Ctrl) key and left click the other circular control point. Hold down the (Alt) key, click on one of these points and drag it upward.

Vertical ARC (lower) - Click the right mouse button on the line above the text (this will insert a circular control point). Click the right mouse button the line below the text (this will insert a circular control point). Hold down the (Ctrl) key and left click the other circular control point. Hold down the (Alt) key, click on one of these points and drag it downward.

Ballooned - Click the right mouse button on the line above the text (this will insert a circular control point). Click the right mouse button the line below the text (this will insert a circular control point). Hold down the (Ctrl) key and left click the other circular control point. Hold down the (Shift) key, click on one of these control points and drag it away from the center of the text.

Squeezed - Click the right mouse button on the line above the text (this will insert a circular control point). Click the right mouse button on the line below the word (this will insert a circular control point). Hold down the (Ctrl) key and left click the other circular control point. Hold down the (Shift) key, click on one of these control points and drag it toward the center of the text.

Diamond - Click the left mouse button on the line above the text (this will insert a triangle control point). Click the left mouse button on the line below the text (this will insert a triangle control point). Hold down the (Ctrl) key and left click the other triangle control point. Hold down the (Shift) key, click on one of these control points and drag it away from the center of the text.

Further distortions - Left or right click anywhere on the line around the text to insert multiple control points. Click and drag these points to distort.

*Once you distort the lettering, notice the immediate change on your screen. This is a nice place to utilize the Undo and Redo tools if the look is undesirable.

Rotate Lettering

Exercise

1. Click on the Lettering tool **A** .

2. Left click on the screen workspace (View Window) where you want your lettering text to appear (notice the cursor arrow has an A attached to it).

3. Type "Melco" in the text space.

4. Choose "Block" alphabet.

5. Change letter height to 1.00 inch.

6. Click on OK.

7. Select the lettering.

8. Right click on the lettering and select "Rotate/Transform" form the pop-up menu. You can also click and hold with the left mouse button on the text for 1 second, this method may be difficult for some people.

9. Click and drag the green arrow that comes from the middle of the text to rotate.

10. To move the anchor point, click and drag with the left mouse button to place the center green box anywhere on the text.

11. Once you have placed the center rotation, click and drag the green arrow in the direction you would like to rotate (this is used as the pivot point of rotation).

Basic Editing Tutorial

Most editing will take place in the Project View or using the "wireframe" points on the design in the view window.

Instead of viewing the design in editing with Mark points as in EDS III, designs will now be viewed in a list as "elements" using the Project View on the right side of the screen. For those users who

have upgraded, adding and deleting functions such as color changes and trims are just as easy as in EDS III. Changing densities, column width and moving parts of a design will now all be much easier using the Project View.

As you will see, the project view is a very powerful tool when editing designs in EDS IV. The design "Earthday.ofm" will be used in all of the following exercises. This design was digitized on EDS IV and is included with your designs on EDS IV.

Work With the Project View

Exercise

1. Open EDS IV

2. Open the Earthday.ofm design in the \Designs folder.

3. The Project View starts with the name earthday. Below is the actual design with a + next to it.

4. Click on the + to expand and see all the elements associated with this design.

Note: you can use the scroll bar on the right of the Project View to scroll through the elements. If you click on a particular element to select it, notice that it is also selected on the design.

Insert Color Changes and Trims

Functions such as Color Changes and Trims are inserted in the Project View similar to the way they are inserted in the EDS III stitch list.

Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Click on the + to view the elements of the design.

4. Use the scroll bar to scroll to the area where the color change needs to be inserted.

5. Click on the element above where the color change needs to be inserted.

6. Click on the Color change tool .

7. The design will automatically regenerate to show the Color change.

Note: This same exercise can also be used for inserting Trims.

Change Stitch Length

Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Click on the + to view the elements of the design.

4. Use the scroll bar to scroll to the Walk stitch element that needs to be changed.

5. Left click to highlight the element.

6. Right click and click on properties.

7. Click on the Walk tab.

Walk Stitch

Stitch Type: Normal ▼

Retrace ☐

Stitch Length: 61   points

Save As Default

8. Type in a value for stitch length.

9. Click on OK or Apply.

Change Column Density

Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Click on the + to view the elements of the design.

4. Use the scroll bar to scroll to the element where the Column density needs to be changed.

5. Left click to highlight the column element to change.

6. Right click on the element and choose Properties.

7. Click on the Column tab.

Column

Stitch Type:
Satin ▼

Width: 100 %
(Pull Comp.)

Density 4 pt.

Auto-Density On: ☐

Short Stitches On: ☑

Primary Underlay
(No Underlay) ▼

Secondary Underlay
(No Underlay) ▼

Effects On

Effects   Save As Default
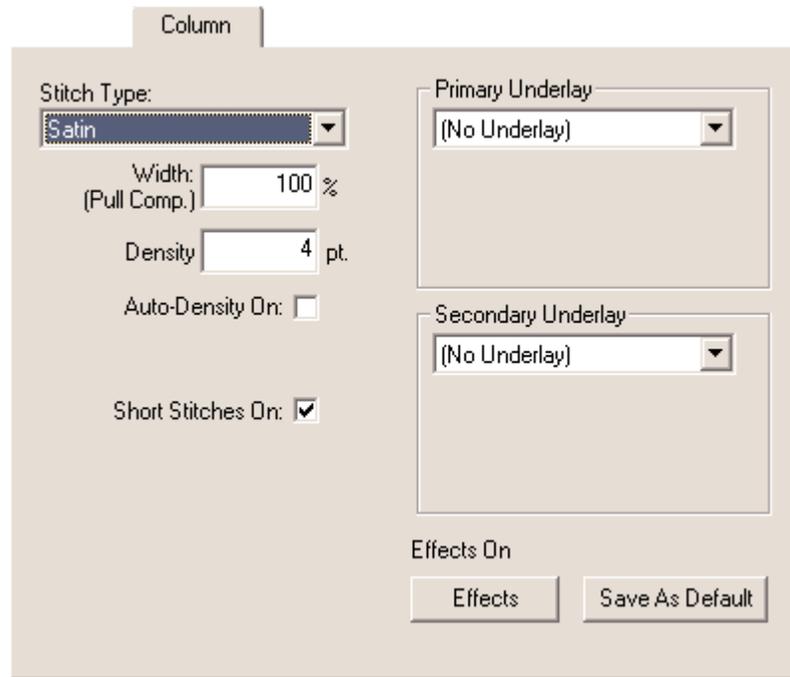
8.   Change the density setting or use Auto Density.

9.   Click on OK or Apply.

Note: This changes the properties for this element only. The rest of the design will not be effected.

Change Column Width
Exercise

1.   Open EDS IV.

2.   Open the Earthday.ofm design in the \Designs folder.

3.   Click on the + to view the elements of the design.

4.   Use the scroll bar to scroll to the element where the Column width needs to be changed.

5.Left click to highlight the Column element to change.

6.   Right click and choose Properties.

7. Left click on the Column tab.
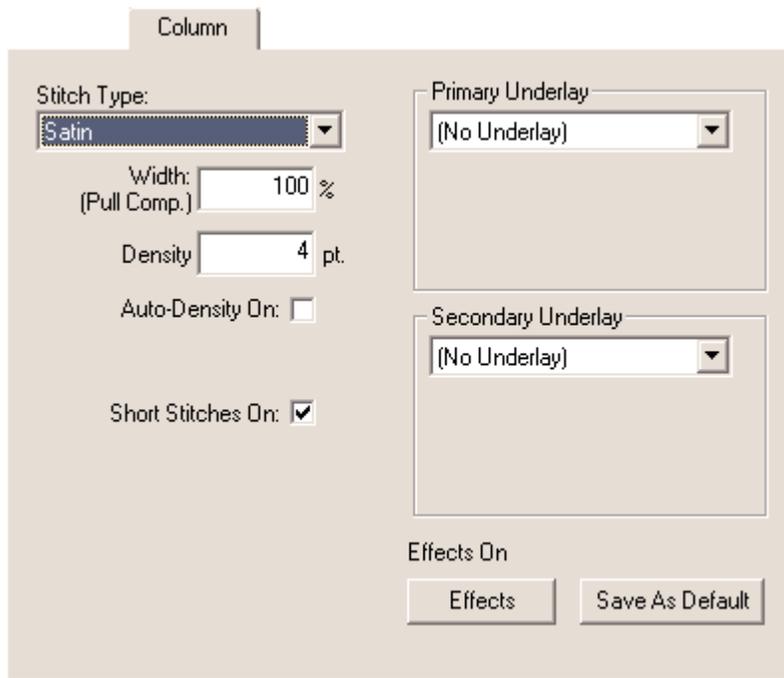
8. Change the Width setting

9. Click on OK or Apply

Note: This changes the properties for this element only. The rest of the design will not be effected.

Change Fill Density

Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Click on the + to view the elements of the design.

4. Use the scroll bar to scroll to the element where the Fill density needs to be changed.

5. Click on the Complex fill element with a left click.

6. Right click and choose Properties.

7. Click on the Fill tab.
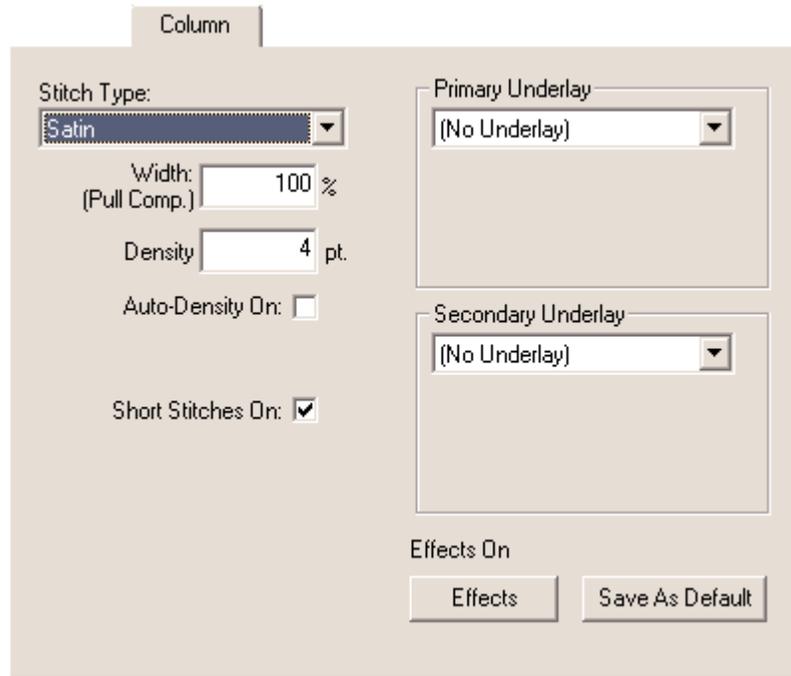
8. Change the Fill density.

9. Click on OK or Apply.

Note: The Fill type number, stitch length, # partitions, partition sequence and line angle can also be changed using the same exercise.

Note: This changes the properties for this element only. The rest of the design will not be effected.

Add Underlay to a Column
Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Click on the + to view the elements of the design.

4. Use the scroll bar to scroll to the Column element that needs Underlay.

5. Left click to highlight the Column element to change.

6. Right click and choose Properties.

7. Click on the Column tab.

```
Column

Stitch Type:                          Primary Underlay
[Satin                    ▼]          [(No Underlay)          ▼]

        Width:   [    100] %
    (Pull Comp.)

       Density   [      4] pt.

  Auto-Density On: □                   Secondary Underlay
                                      [(No Underlay)          ▼]

  Short Stitches On: ☑


                                      Effects On
                                      [ Effects ]  [ Save As Default ]
```
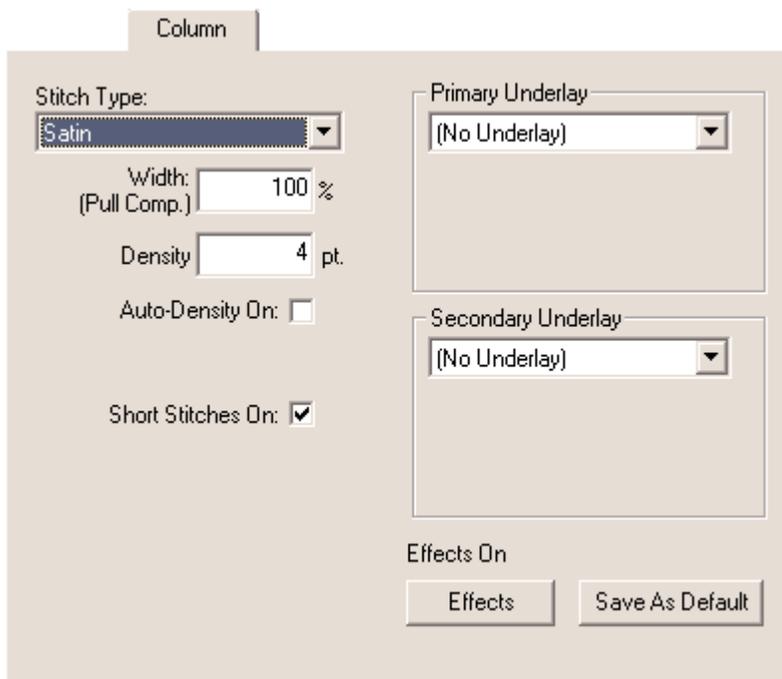
8. Click the down arrow at Primary Underlay and choose an underlay (choose a secondary underlay if necessary).

9. Click on OK or Apply.

Note: this changes the properties for this element only. The rest of the design will not be effected.

Add Underlay to a Fill

Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Click on the + to view the elements of the design.

4. Use the scroll bar to scroll to the Fill element that needs underlay.

5. Click on the Complex fill element with a left click.

6. Right click and choose Properties.

7. Click on the Fill tab.
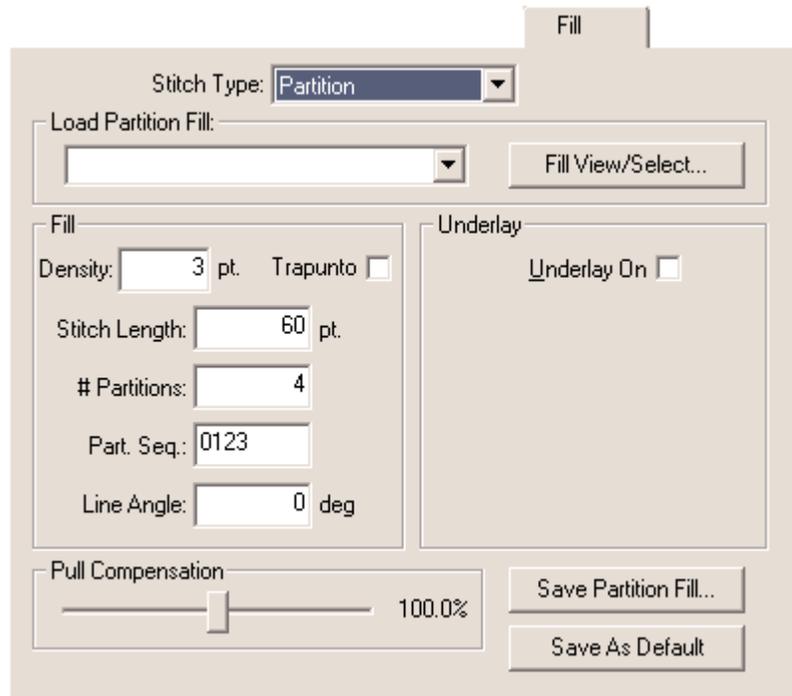
8. Click in the box beside Underlay On.

9. Change Stitch Length, Border Margin, and Density or Angle if necessary.

10. Click on OK or Apply

Save Partition Fill

This gives the capability to save a user defined fill with a specific Density, Stitch Length, # Partitions, Partition sequence, and Line angle,

Exercise

1. Open EDS IV.

2. Click on the New tool.

3. Click View drop down menu and choose Properties.

4. Click on the Fill tab.

5. Input the Density, Stitch Length, # of Partitions, Partition Sequence and line angle of the new fill.

6. Click on Save Partition Fill button.
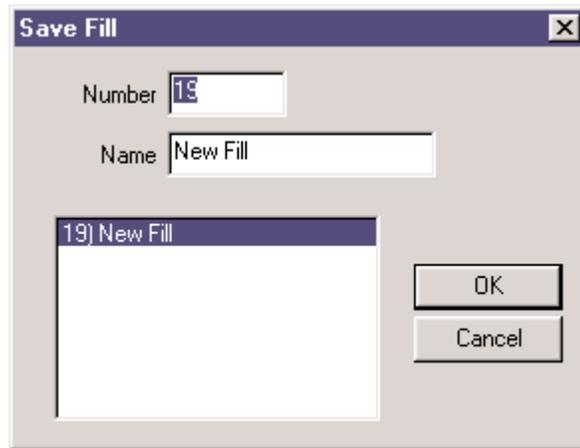
7. Type in a number (other than 1 - 18).

8. Type in a name for the new fill.

9. Click OK out of the Save Fill tab.

10. Click OK out of Element Properties.

11. This fill is ready to be applied to an existing fill in any design. To apply, see change fill density in tutorial.

Note: Also, in the Fill tab, click on Fill tab/Select to view the fill partition graphically.

Delete Parts of a Design and Functions
Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Click on the + to view the elements of the design.

4. Use the scroll bar to scroll to the element to delete.

5. Left click to highlight on the element.

6. Press the Delete key on the keyboard or go to the Edit drop down menu and click on Clear.

7. Design regenerates automatically.

Note: EDS IV has unlimited undo's if you deleted the wrong element.

Add Lock Stitches to a Particular Element of a Design
Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Click on the + to view the elements of the design.

4. Use the scroll bar to scroll to the element that needs lock stitches.

5. Click on the element with a left click.

6. Right click and choose Properties.

7. Click on the Lock/Trim tab.
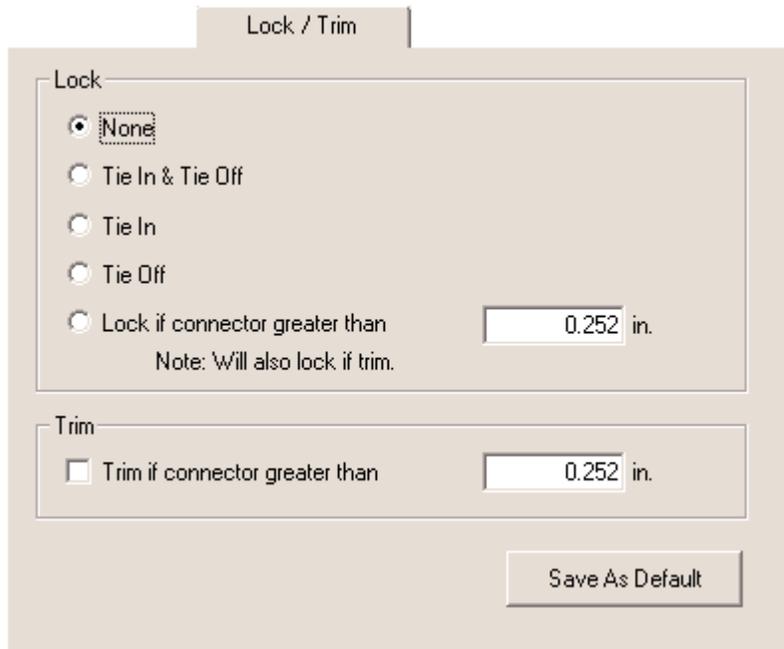
8. Click on the box beside Tie in & Tie off.

9. Click OK or Apply.

Note: If Tie in & Tie off is turned on, EDS IV will insert a lock stitch at every connector.

Add Lock Stitches to an Entire Design
Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Left click on the design in the Project View.

4. Right click and choose Properties.

5. Click on the Lock/Trim tab.

6. Click on the box beside Tie in & Tie off.

7. Click OK or Apply.

Note: If Tie in & Tie off is turned on, EDS IV will insert a lock stitch at every connector.

Select Entire Design

Click on "Select All" toolbar button.

Select Design Graphically

Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Zoom out if necessary in order to see entire design click here for help on Zoom.

4. Using a left click, click and drag a box around the entire design.

Select Design Through the Project View

Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Click on the + to view the elements of the design.

4. Click on the first element in the design.

5. Use the scroll bar to scroll to end of the Project View.

6. Hold down the Shift key on the keyboard.

7. Click on the last element of the design.
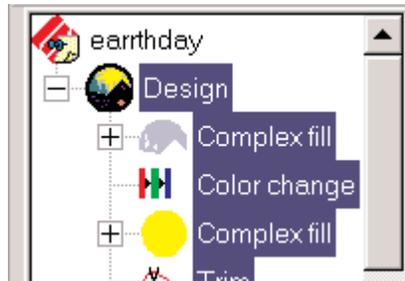
Note: All elements are highlighted in the Project View and design is also highlighted.

Select Entire Design Through Keyboard Shortcut Keys

Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Hold down Ctrl + A on the keyboard.

Note: This selects the entire design as well as all elements in the Project View.

Selecting Multiple Parts of a Design

Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Click on the + to view the elements of the design.

4. Left click on any element in the design.

5. Hold down the Ctrl key on the keyboard.

6. Left click on other elements while continuing to hold down the Ctrl key.

7. Once the multiple elements are highlighted they can be moved, changed, or deleted.

Scale a Design Through the Project View
Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Left click on the design to highlight.

4. Right click on the design and choose Properties.

5. Click on the Scale tab.

```
                                              Scale

        Proportional: ☐
        Horizontal:    100 %    2.925  in.

          Vertical:    100 %    4.051  in.


        Expanded Stitch Processing: ☑
```
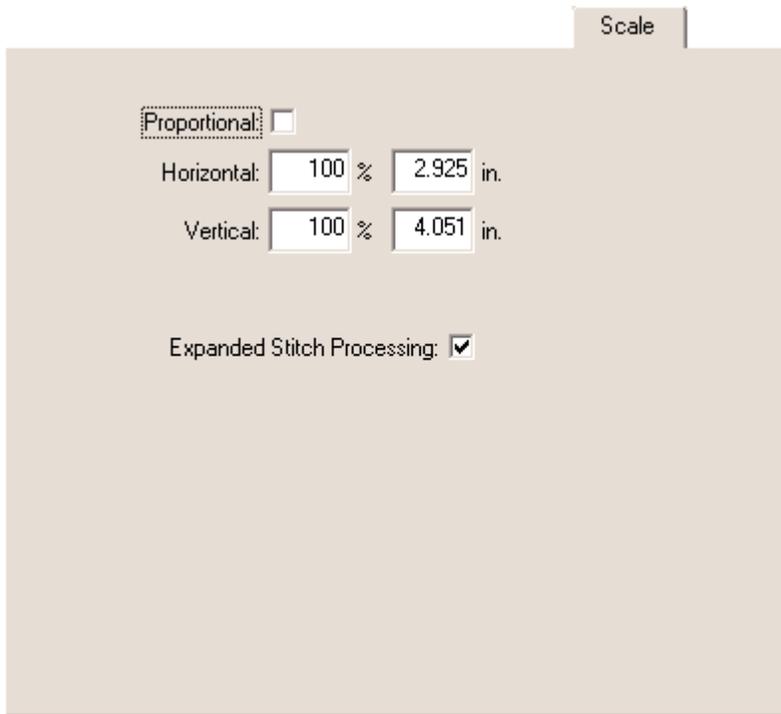
6. Type in a percentage or measurement for the entire design.

7. If scaling proportional, click on Proportional and type a
    horizontal size only.

Scale a Design Graphically

Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Select the entire design (see Selecting entire design in the tutorial).

4. Click on one of the four corner box handles and drag in or out to scale.
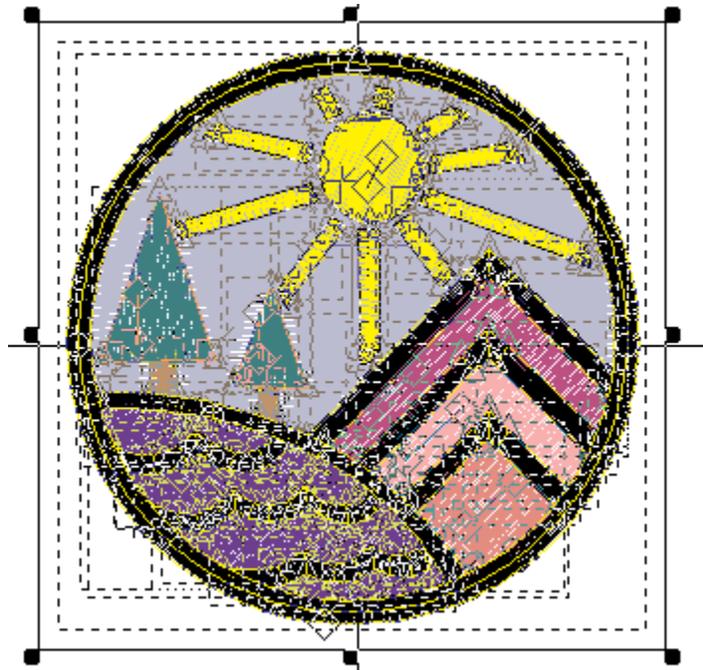
Scale Part of a Design Through the Project View

Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Left click on the + next to the design to show all the elements.

4. Use the scroll bar on the right to move to the element to be scaled.

5. Left click on the element that needs to be scaled

6. Right click on the element and click on properties.

7. Click on the Scale tab

8. Type in a percentage or measurement for the element.

9. If scaling proportional, click on Proportional and type a horizontal size.

Note: If more than one element needs to be scaled, see Selecting multiple parts of a design in Editing tutorial.

Scale Part of a Design Graphically

Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Left click on the + next to the design to show all the elements.

4. Left click on the element that needs to be scaled or left click directly on the design to select element.

5. There is now a box around the element on the design.

6. Click on one of the four corner handles and drag in or out to scale.

Editing Wireframe Data

Exercise

Selecting Wireframe Input points

Please complete this entire exercise to learn how to select, change, add, move, or delete wireframe points.

1. Open EDS IV.

2. Open the Earthday.ofm design from the \Designs folder.

3. Zoom in on the Sun in the design using one of the zoom methods.

4. Click on the Edit mode tool [cursor icon] on the Input toolbar.

5. Select the sun on the design by clicking on it with the left mouse button (there will be an eight handled box around the shape).

Note: Notice the Project View will highlight this element in the design list.
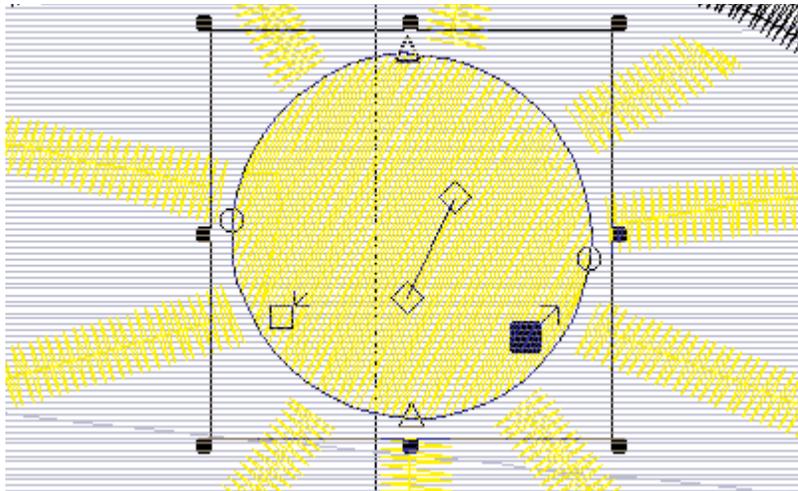
6. When your cursor is over the input point on the wireframe of the sun.

•   The mouse pointer will show a triangle [triangle cursor icon] when placed over a digitized straight input point.

•   The mouse pointer will show a circle [circle cursor icon] when placed over a digitized curve input point.

•   The mouse pointer will show a line [line cursor icon] when placed over any wireframe line.

7. Click on the input point to select it. The input point will be
    highlighted and show as a solid triangle or solid circle.

Changing Wireframe Input Points

8. Double click on the wireframe point with your left mouse
    button.

9. The Wireframe Point dialog box is displayed.
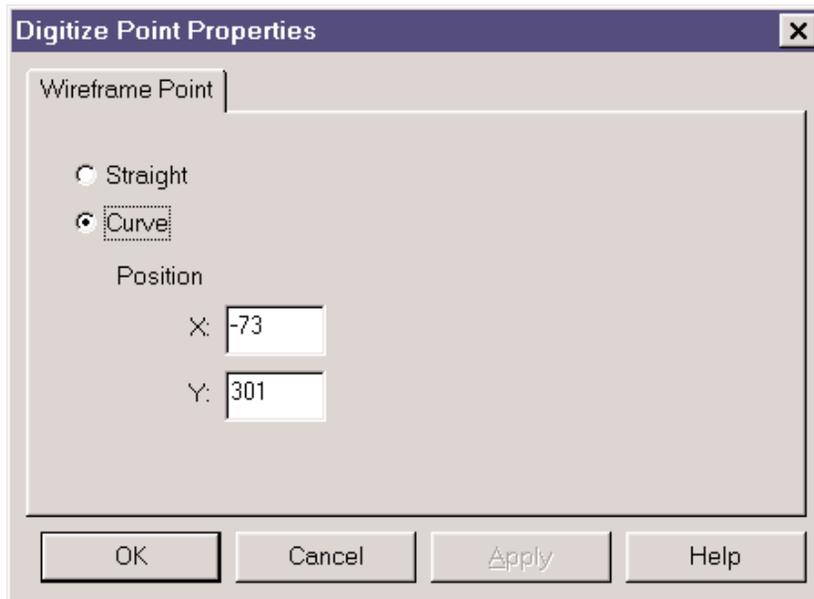
10. Change to straight or curved.

11. Click on OK (or apply).

Note: An alternative way to change the wireframe point from straight
to curved or curved to straight is to hold down the shift key and left
click on the point.

Adding Wireframe Input Points

12. Left click anywhere on the wireframe line.

13. Left click will add a straight and right click will add a curved
    input point.

Moving Wireframe Input Points

14. Left click on the wireframe point.

15. Click, hold and drag the input point with the mouse button.

Note: Notice the change immediately on the screen.

Deleting Wireframe Input Points

16. Left click on the wireframe point.

17. Press the delete key on the keyboard.

Note: Notice the change immediately on the screen.

Cut, Copy and Paste
Exercise

1. Open EDS IV.

2. Open the Earthday.ofm design in the \Designs folder.

3. Left click on the + next to the design to show all the elements.

4. Left click on the element that needs to be Cut or Copied.

5. Click on the tool to Cut or Copy .

6. The element is now on the clipboard.

7. Scroll to the area where it needs to be pasted.

8. Click on the paste tool .

9. The Cut or Copy of the element will be pasted in under the element that's highlighted.

Note: These elements can also be copied to an existing design or new design.

Basic Digitizing Tutorial

In this section we are assuming you have some digitizing experience. All the new digitizing techniques will be covered in the exercises included with this tutorial. For beginning digitizers, you can also refer to other tutorials by clicking on the "Related Topics" button at the bottom of this page. To edit the elements digitized, please see the editing tutorial.

To complete this part of the tutorial, we will be digitizing elements of the Earthday.bmp graphic to show you how to digitize in EDS IV using wireframe techniques. Wireframe points are shown with straight or curved lines on the screen to give you a visual feedback on the shape based on the points you digitize. To see a completed version of the design, open Earthday.ofm from \Designs folder.

Please load Earthday.bmp, located in the \Designs\Graphics folder to follow along with in the digitizing exercises in this tutorial (see Open a Graphic).

Scan an Image

Exercise

1. Open EDS IV.

2. Click on File.

3. Click on New.

4. Click on Scan Image.

5. The Scanner drive software dialog box comes up.

6. Scan the Image.

7. After scanning the Image, a dialog box is displayed to save the graphic.

8. Save the graphic or cancel.

Open a Graphic

Exercise

1. Open EDS IV.

2. Click on File.

3. Click on Open or Insert.

4. The Open/Insert dialog box is displayed.

5. Click on "Files of Type" drop down menu and choose "All Graphics" (if the graphic is not in the list, you may have to look in another folder).

6. Open Earthday.bmp from \Designs\Graphics folder.

7. Click on Open or double click on the graphic filename.

8. Notice the graphic filename is inserted into the Project View list.

Save a Graphic
Exercise

1. Scan or Open a Graphic in EDS IV.

2. Right click on top of the Graphic on the screen.

3. Select "Save As" from the drop down menu.

4. The "Save Image As" dialog box is displayed.

5. Type a filename.

6. Select the directory to save it in.

7. Click on Save.

Note: Choose *.bmp, *.pcx, *.jpg, or *.tif file types.

Scale a Graphic
Exercise

1. Scale graphically

2. Open EDS IV.

3. Open Earthday.bmp from \Designs\Graphics folder.

Tip

After digitizing stitches in a design, the graphic is automatically saved with the project file (.ofm).

4. Left click to highlight the graphic name in the Project View.
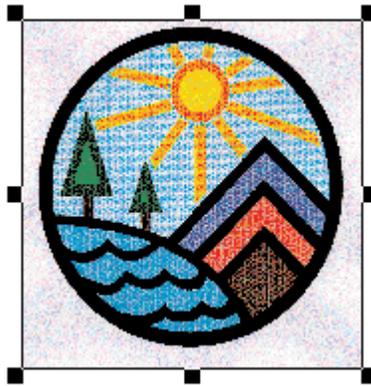
5. The graphic will now have 8 black handles around it.

6. To scale the graphic proportionally, click on any of the four corner handles.

7. To scale the graphic in the X or Y position only, click on the black handles at the top, bottom, or sides.

OR

Exercise

Scale numerically

1. Open EDS IV.

2. Open Earthday.bmp from \Designs\Graphics folder.

3. Left click to highlight the graphic element in the Project View.

4. Right click on the graphic name in the Project View.

5. Select Properties from the drop down menu.

Note: You can also double click on the graphic to access the Scale Properties dialog box.

6. Click on the Scale tab.
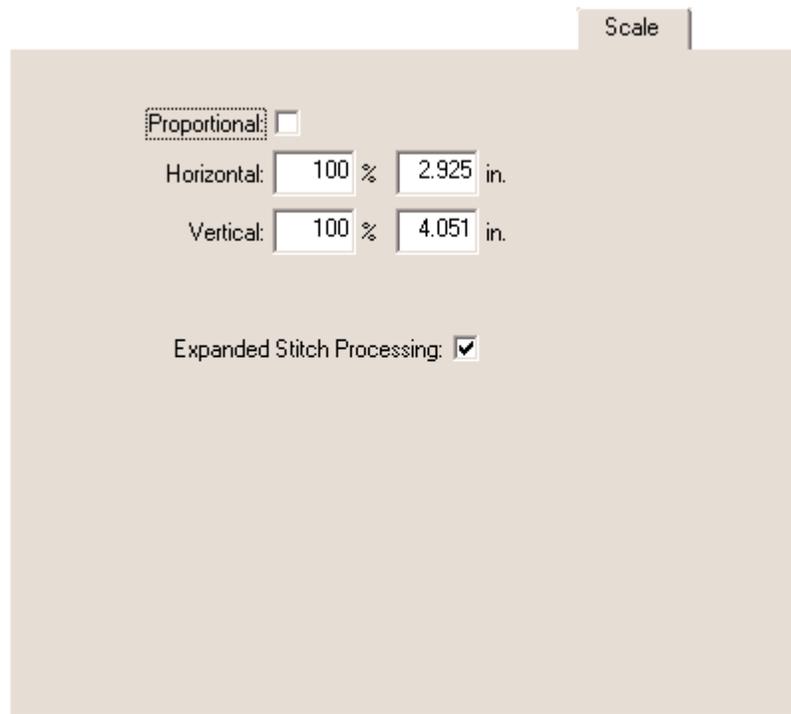
7. Enter a percentage scale or specify the measurement.

8. Click on OK (or apply).

Hide a Graphic
Exercise

1. Open EDS IV.

2. Open Earthday.bmp from \Designs\Graphics folder.

3. Click on the Hide graphic tool on the View toolbar.

4. Click on the Hide graphic tool again to turn it back on.

Note: Even if the graphic is hidden, it will still save with the project.

Set Stitch Length

Exercise

1. Open EDS IV.

2. Open Earthday.bmp from \Designs\Graphics folder.

3. Click on the Walk normal or Walk bean stitch tool on the Input toolbar with the right mouse button.

4. The Walk Element Properties box is displayed.

5. Change the stitch length to the desired amount.

6. Click on OK (or apply).

Note: The stitch length will now be set for every element you digitize forward.

Digitize Walk Normal or Walk Bean Stitches

Exercise

Open Earthday.bmp from \Designs\Graphics folder.

1. Left click either the Walk normal or Walk bean stitch tool on the Input toolbar. An alternative way is to click with the right mouse button anywhere on the View Window (work area).

2. Digitize the following run stitch using input reference points to mark the area of where the stitches will be placed (steps 1 through 5). The Status line will give input prompts to follow throughout the process. (See the example on the next page)

- The left click on the mouse is used to insert a straight input point. A triangle represents each straight point.

- The right mouse button is used to insert a curved input point. A circle represents each curved point.

- Always start with the left click.

- If the shape is curved, in some cases you will need to alternate between left click and right clicks.

- Notice the wireframe outlines that form on the screen while digitizing.

- If you make a mistake or click too many points, simply press your backspace key on your keyboard to delete the last input point. Each time the backspace key is pressed, the input points will be deleted in sequence.

3. When you are finished digitizing the shape, press the Enter key on the keyboard.

4. Notice the stitches on the screen as well as the element created in the Project View.
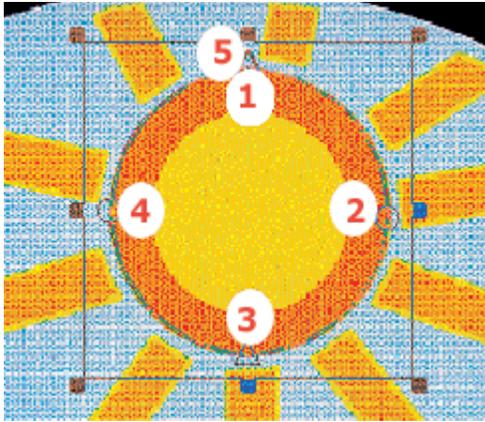
Retrace

Exercise

1. Right click on the Walk normal (or Walk bean) stitch tool on the Input toolbar.

2. The Walk Elements Properties box is displayed.

3. Check the Retrace button to turn it on.

4. Click on OK (or apply).

Note: The retrace will start from the last input point and retrace back to the first input point.

Set Density For Columns

Exercise

Open Earthday.bmp from \Designs\Graphics folder.

1. Right click on the Column 1, Column 2 or any Singleline tool on the Input toolbar.

2. The Column Element Properties box is displayed.
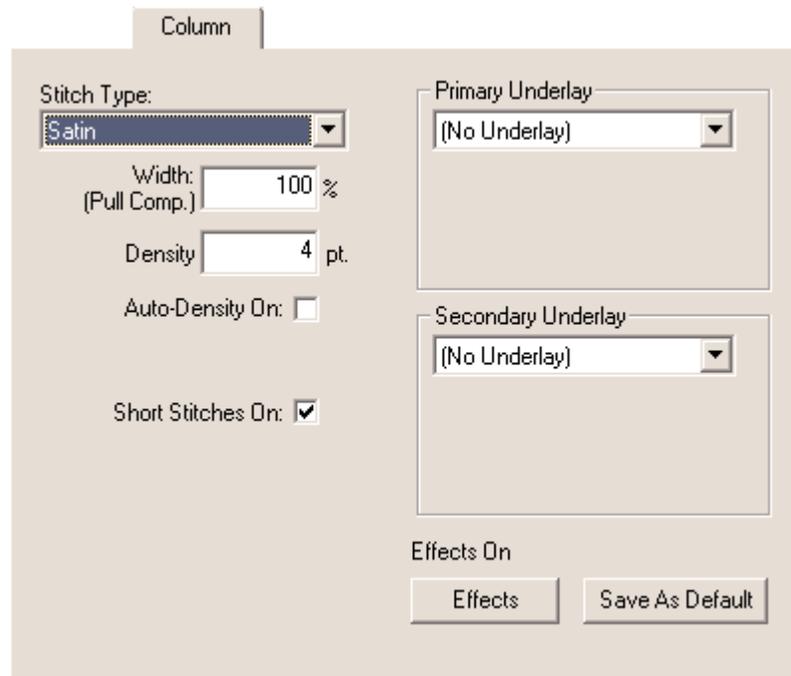
3. Change the Density to the desired amount or use the "Auto-Density" checkbox.

4. Click on OK (or Apply).

Note: The Density will now be set for every element you digitize forward.

Auto Underlay

Exercise

1. Right click on Column 1, Column 2, or Singleline Center tools on the Input toolbar.

2. The Column Element Properties box is displayed.
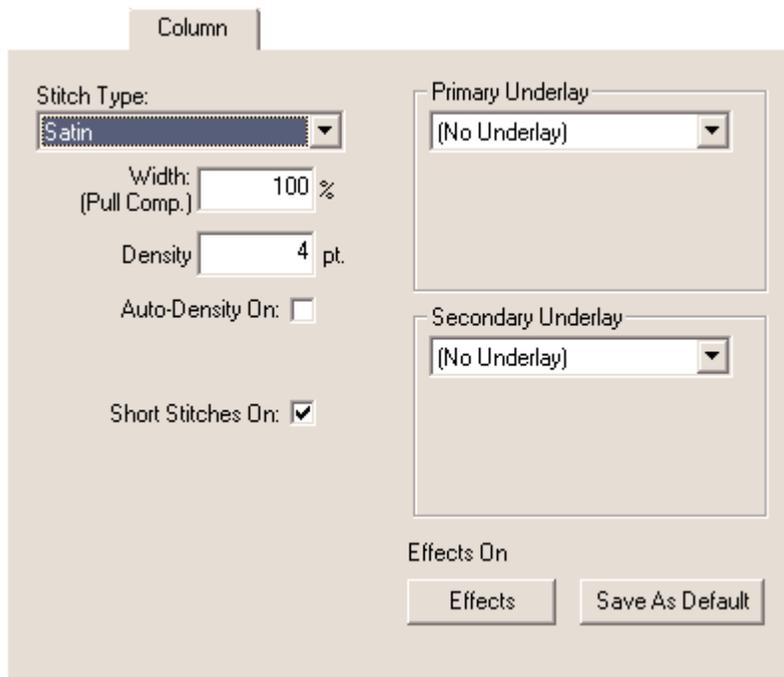
3. Click on down arrow to access Primary Underlay types.

4. Choose Edge Walk, Center Walk or Zigzag as an underlay type.

5. Click on OK (or apply).

Note: The underlay will now be set for every element digitized forward.

Digitize a Column Using Column 1

Exercise

Open Earthday.bmp from \Designs\Graphics folder.

1. Left click the Column 1 tool on the Input toolbar. An alternative way is to click with the right mouse button anywhere on the View Window (work area).

2. The Satin stitch tool will automatically be activated on the Input toolbar.

Note: Columns are usually digitized with satin stitches. However, other stitch types are available: Zigzag, E stitch, or Fill.

3. Digitize the following column using input reference points to mark the area where the stitches will be placed. These input points must placed on alternate sides of the column. The Status Line will give input prompts to follow throughout the process. (Follow steps 1 through 10 in the example on the next page)

• The left click on the mouse is used to insert a straight input point. A triangle represents each straight point.

• The right mouse button is used to insert a curved input point. A circle represents each curved point.

• Always start with the left click. This is similar to digitizing with mark points in that you must have even numbers of points on alternate sides of the column.

• If the shape is curved, in some cases you will need to alternate between left click and right clicks.

• Notice the wireframe outlines that form on the screen as you digitize. If they cross, they will show an X and you will get a bow tie effect of the stitching.

• If you make a mistake or click too many points, simply press the backspace key on the keyboard to delete the last input point. Each time the backspace key is pressed, the input points will be deleted in sequence.

4. When you are finished digitizing the column, press the Enter key on the keyboard.

5. Notice the stitches on the screen as well as the element created in the Project View.
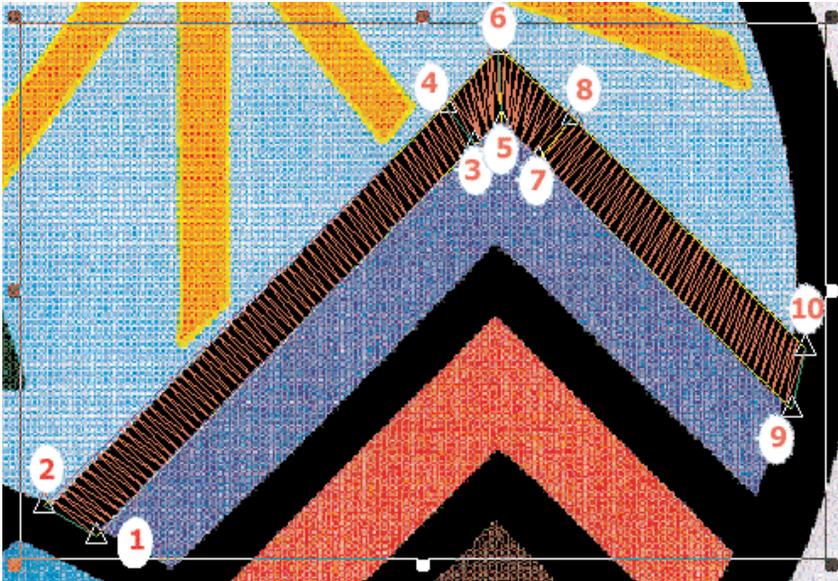
Digitize a Column Using Column 2

Exercise

Open Earthday.bmp from \Designs\Graphics folder.

1. Left click the Column 2 tool on the Input tool bar. An alternative way is to click with your right mouse button anywhere on the View Window (work area).

2. The Satin stitch tool will automatically be activated on the Input toolbar.

Note: Columns are usually digitized with satin stitches. However, other stitch types are available: Zigzag, E stitch, or a Fill.

3. Digitize the following column using input reference points to

mark the area of where the stitches will be placed. The Status Line will give input prompts to follow throughout the process. (Follow steps 1 through 9 in the example below)

- The left click on the mouse is used to insert a straight input point. A triangle represents each straight point.

- The right mouse button is used to insert a curved input point. A circle represents each curved point.

- Always start with the left click. This is similar to digitizing with mark points in that you digitize one side of the column (steps 1 through 5 in the example below), press the enter key and then starting from the top, digitize the other side (steps 6 through 9 in the example below).

- If the shape is curved, in some cases you will need to alternate between left click and right clicks.

- Notice the wireframe outlines that form on the screen as you digitize.

- If you make a mistake or click too many points, simply press the backspace key on the keyboard to delete the last input point. Each time the backspace key is pressed, the input points will be deleted in sequence.

4. When your are finished digitizing the column, press the Enter key on the keyboard.

5. Notice the stitches on the screen as well as the element created in the Project View.
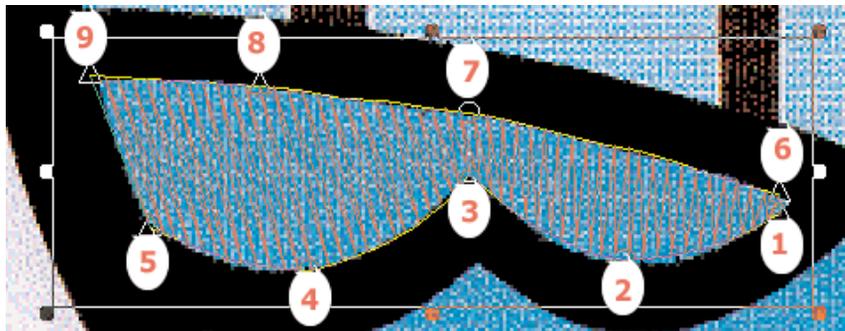
Digitize a Singleline

Singleline is the same on EDS IV as EDS III except now you are digitizing using wireframe techniques. This Input method is used for columns with a consistent width. It is most often used for digitizing boarders and outlines.

Exercise

Open Earthday.bmp from \Designs\Graphics folder.

1. Left click any of the Singleline center , left or right tools on the Input toolbar. An alternative way is to click with the right mouse button anywhere on the View Window (work area).

2. The Satin stitch tool will automatically be activated on the Input toolbar.

Note Columns are usually digitized with satin stitches. However, other stitch types are available: Zigzag, E stitch, or a Fill.

3. Digitize the following column using input reference points to mark the area of where the stitches will be placed. This is similar to digitizing with mark points, if you choose Center, you will need to digitizing down the center of the column (steps 1 through 5 in the example on the next page). The Status Line will give input prompts to follow throughout the process.

• The left click on the mouse is used to insert a straight input point. A triangle represents each straight point.

• The right mouse button is used to insert a curved input point. A circle represents each curved point.

• You must always start with the left click.

• If the shape is curved, in some cases you will need to alternate between left click and right clicks.

• Notice the wireframe outlines that form on the screen as you digitize.

• If you make a mistake or click too many points, simply press the backspace key on the keyboard to delete the last input point.

Each time the backspace key is pressed, the input points will be deleted in sequence.

4. When your are finished digitizing the column, press the Enter key on the keyboard.

5. Enter the first width point of the column using the left mouse button (step 6 in the example below).

6. Enter the second width point of the column using the left mouse button again to give it the width (step 7 in the example below). Digitize the column width points anywhere on your screen.

7. Notice the stitches on the screen as well as the element it created in the Project View.
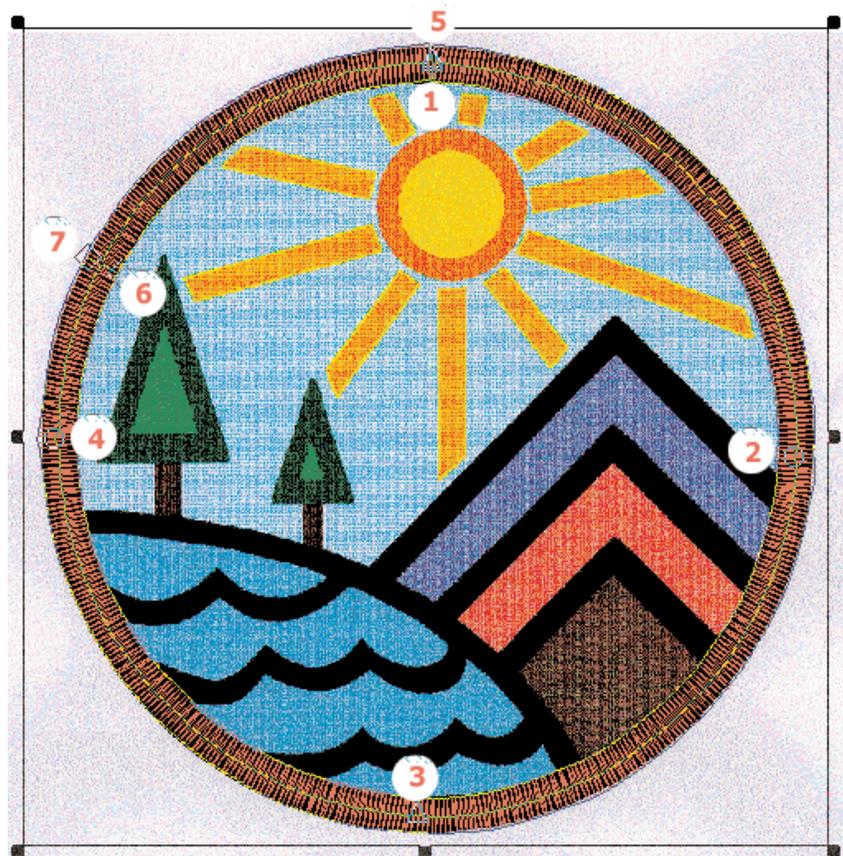
Column Width Numerically

Exercise

To specify the exact width for any Singleline column:

1. Right click on any of the Singleline tools on the Input toolbar.

2. The Element Properties box is displayed

3. Click on the Singleline tab.

4. Define the exact column width in the space provided.

5. Click on OK (or apply).

6. Digitize the Singleline column.

7. When the status line prompts you to enter the column width, press the enter key.

Digitize Color Changes/Trims

Exercise

1. At any point while digitizing click on the Color Change tool

    ![icon] on the toolbar, or to insert a trim click on the Trim tool

    ![icon] .

2. Notice the Color change element or Trim element added to the Project View list.
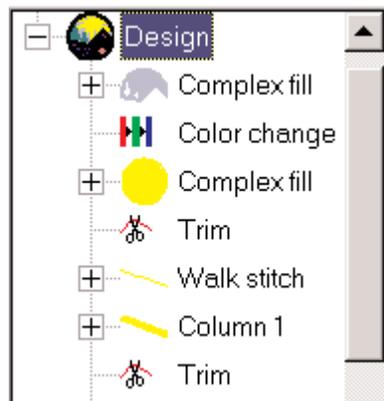
Choose Fill

Exercise

1. Right click on the Complex fill tool on the Input toolbar.

2. The Fill Element Properties box is displayed.
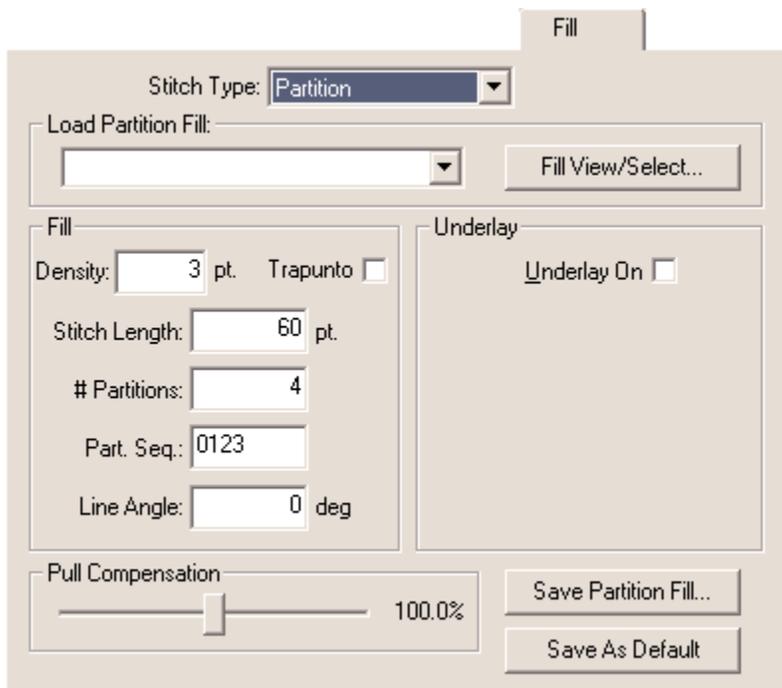
3. Click on Load Partition Fill to get a drop down menu of the available fills.

4. Select the desired Fill type.

5. Click on OK (or Apply).

Note: The Fill type will now be set for every element you digitize forward.

Digitize a Complex Fill

Exercise

Open Earthday.bmp from \Designs folder.

1. Left click the Complex fill tool on the Input toolbar. An alternative way is to click with the right mouse button anywhere on the View Window (work area).

2. The Fill stitch will automatically be activated.

3. Digitize the following fill using input reference points to mark the area where the stitches will be placed (steps 1 through 6 in the example on the next page). The Status Line will give input prompts to follow throughout the process.

• The left click on the mouse is used to insert a straight input point. A triangle represents each straight point.

• The right mouse button is used to insert a curved input point. A circle represents each curved point.

• You must always start with the left click.

• If the shape is curved, in some cases you will need to alternate between left click and right clicks.

• Notice the wireframe outlines that form on the screen as you digitize.

• If you make a mistake or click too many points, simply press the backspace key on the keyboard to delete the last input point. Each time the backspace key is pressed, the input points will be deleted in sequence.

4. Press the Enter key on the keyboard when finished with the first outline.

Note: After pressing Enter, the status line will prompt you through the next steps to complete the Complex fill.

5. Digitize the second outline (hole) using left or right clicks (steps 7 through 13 in the example below).

6. Press Enter.

7. Digitize the third outline (hole) using left or right clicks (steps 14 through 21 in the example below).

8. Press Enter.

9. When all the outlines are complete, press Enter.

10. Digitize the Complex fill entry point using the left click (step 22 in the example below).

11. Digitize the Complex fill exit point using the left click (step 23 in the example below).

12. Digitize two points for the stitch direction using the left click (step 24 & 25 in the example below).
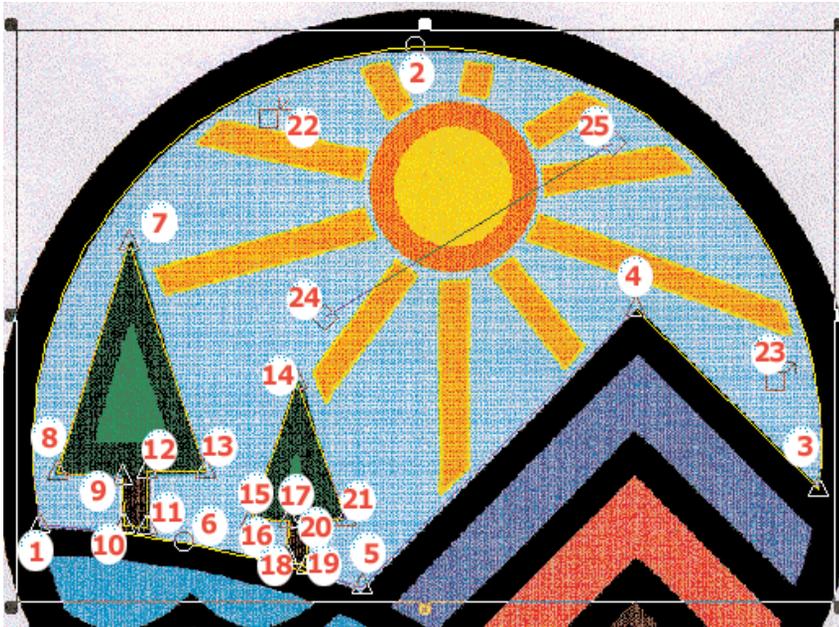
13. Notice the stitches on the screen as well as the element it created in the Project View.

Column Stitches

This exercise will demonstrate how to digitize a column 1 and a
column 2. When digitizing columns, you should always begin and
end your columns with straight points.

Digitize a column 1 using straight points

Insert a graphic (example, melco_tutor.tif from

C:\Designs\Graphics). Zoom in on the area that you would like
to digitize first. Keep in mind that the stitch list order is the same
order the the machine will perform the sew-out. Select the column 1

 element .

1. Input your first point by left clicking in the View Window over
    the graphic, which will input a straight point.

2. Now input the second point parallel to the first input point.

3. Input the third point on the same side of the column as your
    first input point.

4. Input the forth point parallel to the third point. These steps are
    illustrated below in red numbers. Now press the Enter key to
    complete your wireframe column and generate stitches. This is
    the simplest type of column.
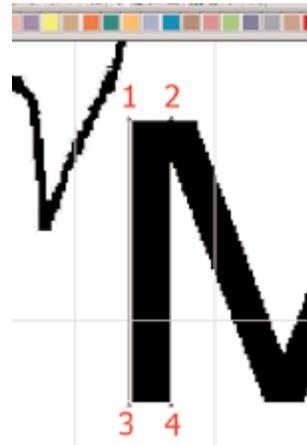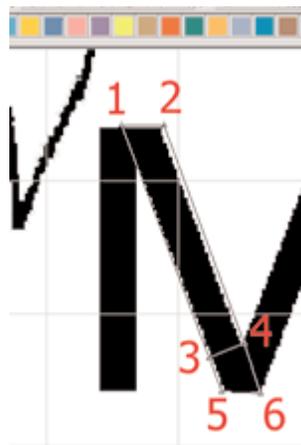
<div>
Tip

When digitizing
something like a
capital "M", you
will want to plan
ahead on what
column goes first.
For example you
may want to
stitch out the V
area of the
capital "M"
before the
straight column
on the sides of
the capital "M".
By digitizing in
that order, the V
area columns will
lay under the
straight columns.
</div>

The end result after stitching these two columns (and pressing the

"view stitches in 3D" button) will look like this:
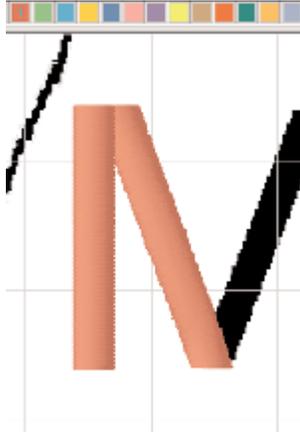
Digitize a column 1 using curved and straight points

A simple example of this would be to digitize the letter "c".

1. Input your first straight point (by left clicking).

2. Input your second straight point parallel to the first (left click).

3. Input the third point half way around the "c" on the same side of the column as your first input point, this point will be a curved point that you input by right clicking.

4. Input another curved point (right click) on the opposite side of the column, parallel to the third point.

5. Input the fifth point at the end of the "c" on the same side of the column as the first and third. This will be a straight point that you will input by left clicking.

6. Input the final point on the opposite side of the column, parallel to the the fifth point. This will be another straight point that you will get by left clicking. Press the Enter key when you are finished. This example is illustrated on the next page with the steps labeled with red numbers:
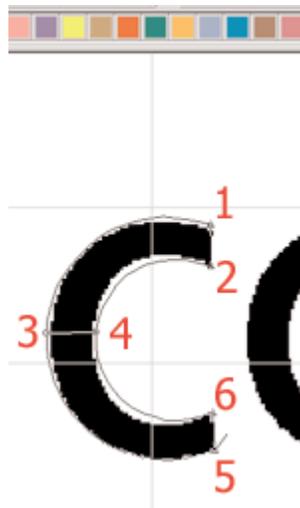
The end result after pressing the "view stitches in 3D" 3D button , looks like this:

Digitize a column 2 using curved and straight points

Select the column 2 ◇ element . A column 2 is digitized by inputting the curved and straight points on one side of the column first, then press the Enter key. Now input the curved and straight points on the opposite side of the column. When finished, press the Enter key to complete the column 2. In the same graphic that was used for the above columns, there is a stem of a flower. It is a good idea to think about the sewing order of things before beginning this column.

In this example, you will probably want to sew the flower stem from the bottom up so that you can go into the next element easier. Left click to input straight points, right click to input curved points.

1 - straight

2 - curved

3 - straight

4 - curved

5 - straight

6 - straight

7 - straight

8 - curved

9 - straight

10 - straight

11 - curved

12 - straight

13 - curved

14 - straight

15 - straight

16 - curved

17 - straight
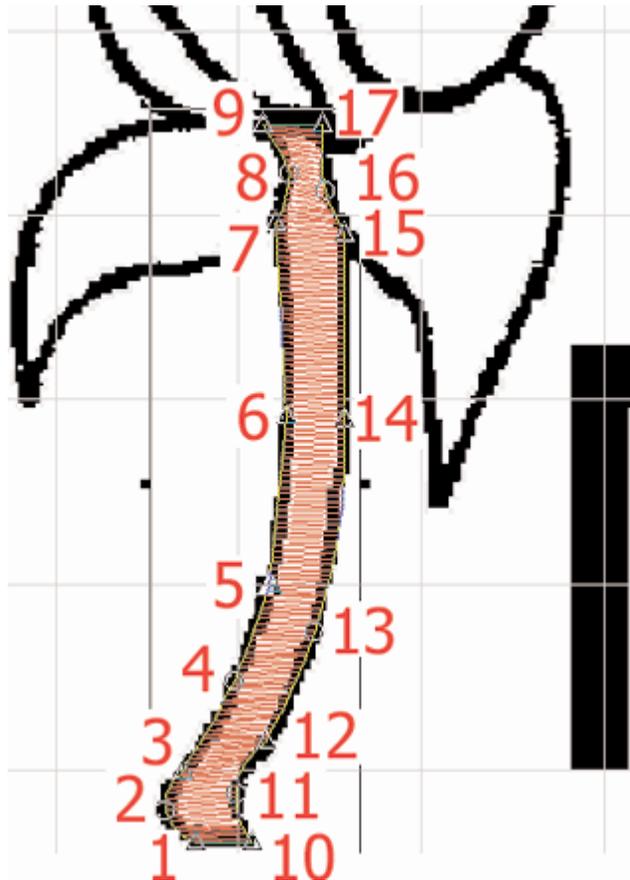
Tip

To determine proper sewing order of elements: When digitizing, always keep in mind that you want the embroidery peripheral to be able to sew from one element to another with very little movement in between the elements.

Tip

Remember that straight input points are represented by a small triangle and curved input points are represented by a small circle.

The end result after pressing the "view stitches in 3D" 🎛 button ,
looks like this:
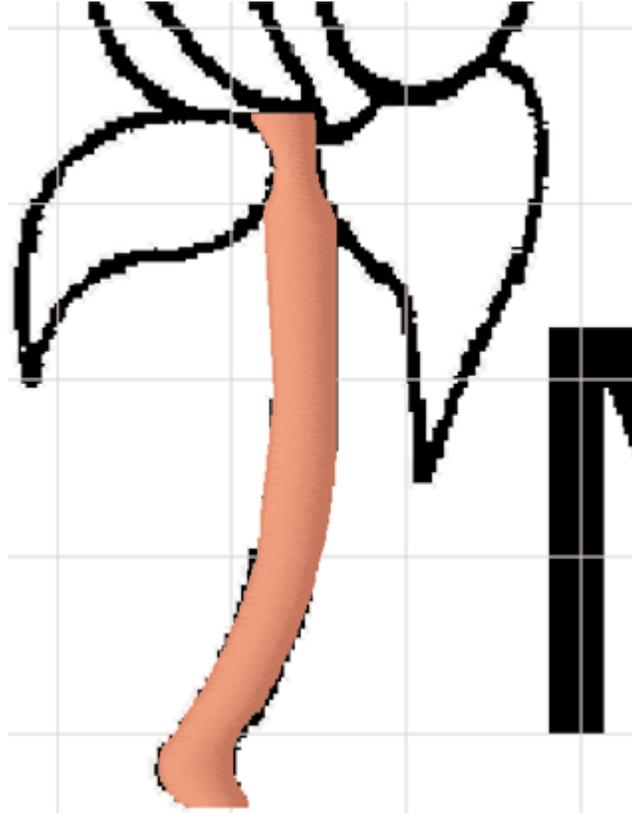
Digitizing with a column 2 is especially useful in comparison to a
column 1 when you want to digitize a column that isn't parallel.

Decorative Stitch

Decorative stitch is used to repeat a digitized design along a walk input line.

Decorative stitches can consist of walks, columns, fills, and lettering or a combination of elements.

You can choose from several decorative stitches included with EDS IV or create your own using "Create Decorative Stitch".

To use the standard decorative stitches

Left click on the decorative stitch tool on the Input toolbar.

Choose the stitch that you want to use, press OK.

Digitize the same as a normal walk stitch using straight and/or curved input points.

Refer to the Walk Stitch Tutorial for more information on digitizing Walk stitches.

Creating Decorative Stitches

To create a decorative stitch, go to the Custom Menu and select "Create Decorative Stitch". A screen will pop up where you will create your decorative stitch.

Tip

It is very useful to load a graphic into the EDS IV View Window before creating decorative stitches, so that you have a graphic to digitize more precisely.
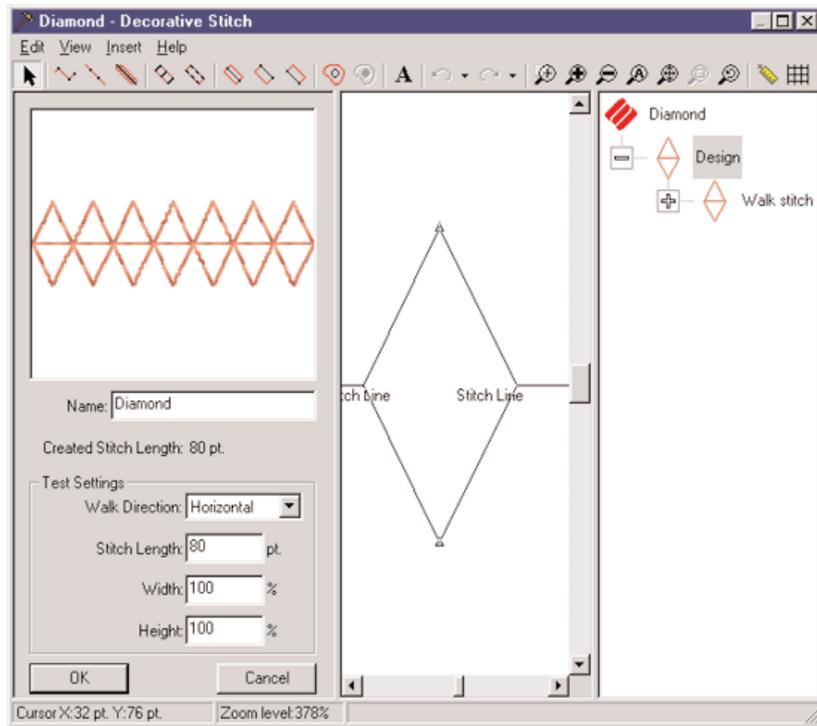
Zoom in if needed and turn on the grid ⊞ to be more exact.

Select, the element (Manual or Walk stitch, a Column element, or Complex Fill) that you would like to digitize with. Follow the basic digitizing rules.

It is very important that you start and end your element on the "Stitch Line." If you end somewhere above or below the line, another stitch will be automatically generated for you to the stitch line and you may not get the desired decorative stitch. It is also very important to remember that you cannot begin and end your stitch in the same place.

In the "Diamond" decorative stitch for example, the steps are labeled below in red letters.

1. Start on the "Stitch Line".

2- 5. Input points.

6. Input last point on the "Stitch Line" and not on the same point as the first input point.

Once you are finished creating your decorative stitch, you can name it and save it. If saved, it will be added to the decorative stitch list that you can choose from within the Walk Stitch property page.

Test Settings

•   Walk Direction will give you a graphical example of how the decorative stitch will look in different directions.

•   Stitch Length will modify the decorative stitch proportionally.

•   Width will change the horizontal width of the decorative stitch.

•   Height will change the vertical height of the decorative stitch.

Tip

When creating decorative stitches, start and stop on the "Stitch Line". Do not end in the same place that you began the stitch. The actual "Created Stitch Length" is determined by the width between the first and last input points. Where your last input point is, the next stitch will begin.

Editing Decorative Stitches

To edit decorative stitches go to the Custom Menu, "Edit Decorative Stitches". A pop-up dialog will appear and you can select the name of the stitch and then press Edit.

To select the stitch by viewing an image of it press the "Stitch View/Select" button. You will get a pop-up screen with an image of all your decorative stitches along with the name of each and the date and time created. Select the one that you would like to edit by clicking on it and then press "OK".

Press OK. You will now see the name of the fill that you just selected in the "Edit Decorative Stitches" pop-up dialog. Press the Edit button.

While editing a decorative stitch, always keep in mind that the Created Stitch Length is proportional size that you first saved.

Design Elements

An element is an EDS IV term that describes the smallest component of a design that consists of multiple points. The design elements of EDS IV are Manual Stitch, Walk Stitch (normal, bean, and decorative), Column 1 and Column 2, Single line (center, left, and right), Complex Fill, and Lettering.

To create new embroidery elements click on the toolbar button for the element type that you want to create. There are several input sequences that are used for the various elements. Use the left mouse button to input straight points and the right mouse button for curve points. Straight points appear as a small triangle; curve points appear as a small circle. All elements start with a straight point and end with either the Enter key or the middle mouse button, if available.

Manual and Walk elements are linear input methods that you create by entering the points in sequence from beginning to end. Manual stitches give you more control to digitize an exact outline. Where you place the points is where your needle penetrations will be without extra needle penetrations in between. This is very useful in digitizing very small items where you need to be very exact. This is located as a toolbar button, in the Insert Menu and also by right clicking in the View Window. Walk stitches are the equivalent to running stitches in EDS III and are typically generated in making underlay and outline stitching. Walk stitches are the simplest stitches to make when digitizing. They can be generated in two methods, straight lines or automatic curves. For example, If you are digitizing the outline of a square select walk stitch, then left click at the first corner of the square. Now, go to the second corner and left click, the third corner and left click, the forth corner and left click, back to the first corner and left click. It doesn't matter how big the square is when you are using walk stitch; needle penetrations will be inserted every 30 points along the way. The default setting is 30 points and can be changed under walk stitch properties. This is located as a toolbar button, in the Insert Menu and also by right clicking in the View Window.

Tip

While you are digitizing, you can change your current input element to the previous element type by pressing 'P' on your keyboard.

Column 1 is used to generate parallel columns. The stitches are generated back and forth between two outside lines that are parallel (or nearly parallel) to each other. The simplest representation of a shape that would lend itself to a column 1 stitching is the letter l. You can find this function in three locations: the toolbar button, under the Insert Menu, or by right clicking in the View Window. Column 2

 is used more often to generate column stitches for non-parallel columns. To obtain this, first digitize all of the outline stitches from the beginning on one side of an element, then from the beginning again on the other side of the element. You can find this function in three locations: the toolbar button, under the Insert Menu, or by right clicking in the View Window.

Singleline is a method of producing columns that maintain an equal width throughout the column. Single line center, single line left, and single line right are the three different types of single line input. The difference between these three types is just the positioning of the stitch area surrounding the line that you create. You can find each of these three functions in three locations: the toolbar button, under the Insert Menu, or by right clicking in the View Window.

When creating a Single line center column you will first digitize the basic wireframe outline of the design. Then following the instructions located in the grey area below the View Window (the status line), input the first and second width points. The distance between these two points will determine the width of your column with your wireframe line in the center. This is the same procedure

used to input a Single line left and a Single line right .

Single line automatically terminates after inputting the width of the second point.

Complex fill is the tool on the left with the red outline. To digitize a complex fill, select the complex fill tool by left clicking on it, or by right clicking inside the view window and selecting complex fill. Now input the wireframe outline of the complex fill. By inputting straight or curved points. The last point input should end up being close to the first point that you input, then press Enter or Return. This

will connect the last point with the first point. Next, if there are any small holes or places that you do not want the fill to cover, digitize a wireframe outline around those just as you did the first outline and press Enter after each one. After you have finished digitizing the complex fill and any holes, press Enter again.

Now enter the entry point and exit points (where you would like the first and last needle penetrations to be). The final thing to do is to enter two points that will determine the direction of stitches.

If you have finished a complex fill and decide later that it should contain some empty spaces (holes), you can insert them without having to digitize the fill again. The toolbar button next to the complex fill button (with the black outline and the filled in hole) is the complex hole button. Select your design by right clicking on it, then select the complex hole tool. Now digitize the wireframe outline of the hole and press Enter.

Complex fill automatically terminates after the second direction point is put in.

You can get to complex fill and hole with the tools on the toolbar, through the Insert Menu, or by right clicking in the View Window.

If a point is entered incorrectly, pressing the Backspace key will remove the input points in reverse order.

Complex Fill and Complex Hole

This exercise will demonstrate how to digitize a complex fill and then insert a hole. When digitizing complex fills, you should always begin and end your wireframe outline with straight points.

Digitize a complex fill

Insert a graphic (example, melco_tutor.tif from

C:\Designs\Graphics). Zoom in on the area that you would like to digitize first. Keep in mind that the stitch list order is the same order the machine will perform during the sew-out. Select the

complex fill element. Below is an example of a complex fill with the steps labeled with red numbers.

1. Input your 1st point by left clicking in the View Window over the graphic. This will input a straight point.

2. The 2nd point for this example is a curved point which you input by right clicking.

3. straight

4. curved

5. straight

6. curved

7. straight

8. straight

9. curved

10. straight

11. straight

12. straight

13. curved
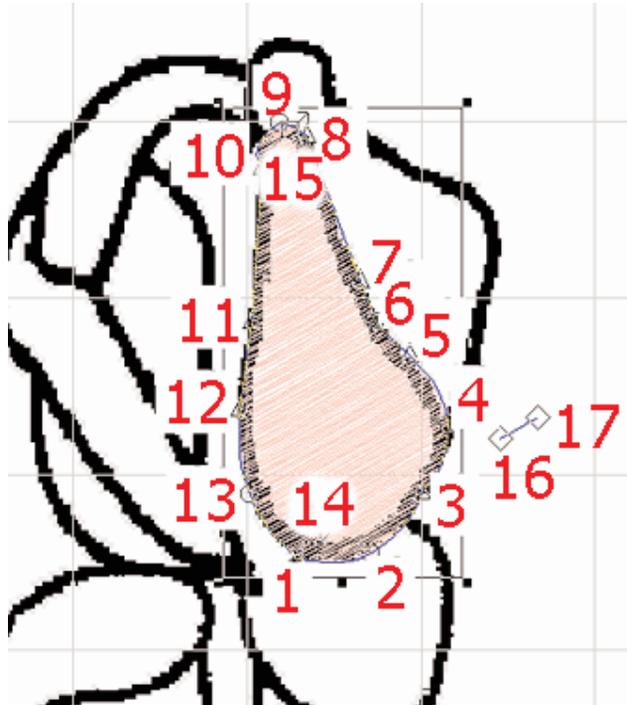
After inputting the last point of the complex fill, press the Enter key.

Now, if you have any holes to input in the complex fill you can digitize the wireframe outline of these the same way that you digitized the wireframe outline of the complex fill. If you don't have any holes to digitize, press the Enter key again.

14. Input the complex fill entry point with a left click. The entry point is where you would like the stitches to begin on the complex fill.

15. Input the complex fill exit point with a left click. The exit point is where you would like the stitches to tie off and end the complex fill.

16. Input the first direction point with a left click.

17. Input the second direction point with a left click. The direction of the line between the two direction points determines the direction of the fill stitches on the complex fill just digitized. The stitches will now be generated on the complex fill. The direction points can be anywhere in the View Window (inside or outside of the complex fill).

The end result after pressing the "view stitches in 3D" ![3D] button , looks like this.
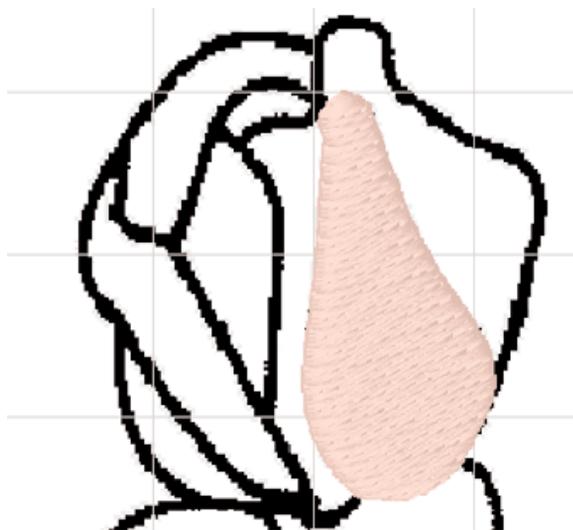
Digitize a complex hole after completing the complex fill

After completing the complex fill on the rose pedal, you may decide you would like to put a shadow of a slightly darker color using stitches going in a different direction. You wouldn't want to put another fill on top of the existing one because you will have too many stitches on top of each other, therefore you want to insert a hole.

You can also use holes on areas that are supposed to be blank or not filled in with stitches.

1. Select the complex fill by left clicking inside of it, if it is not already selected. You can tell an element is selected if it has a

box around it and the wireframe points are shown. When an
element is selected you can edit it.

2. Select the complex hole tool .

3. Digitize the outline of the hole that you want to create. Use the
    left mouse click for straight points and right mouse click for
    curved points.

4. When finished with the outline, press the Enter key.

The end result of
the above complex
fill with a hole
inserted looks like
this:
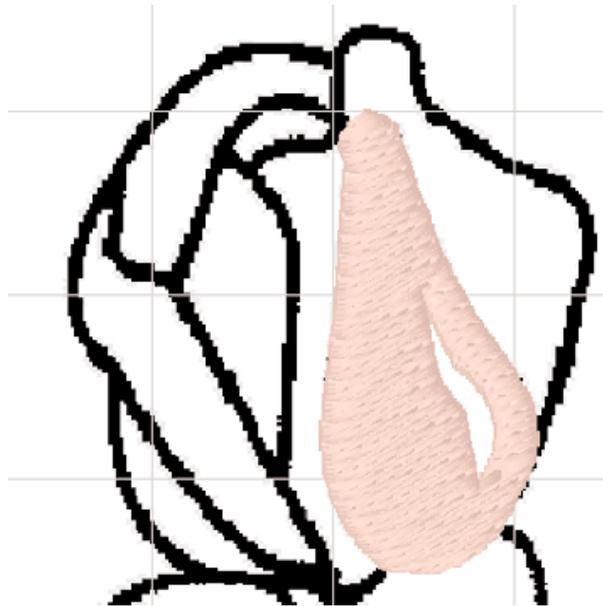
On the example of the rose pedal, a color change was inserted and a column fill was then stitched over the hole and the end result of that looks like this:
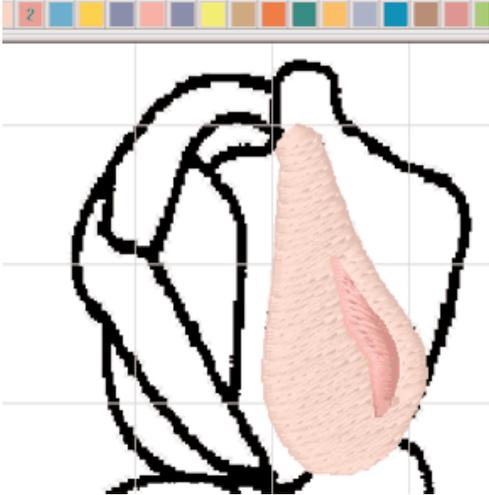
Group Names

Group Names is a new feature available in EDS IV. This feature is most commonly used to individualize uniforms for members of sports teams or corporate uniforms. The Group Names can be stored in a variety of different ways.

To Create Group Names

1. Open a new screen in EDS IV.

2. Click on the Tools drop down menu.

3. Select "Create Group Names".

4. "Group Names" is displayed in the layout screen.

Note: The Group Names will pick up the properties from the current settings in the Lettering Parameters.

5. Double click on the "Group Names" lettering.

6. The lettering Properties dialog box is displayed with "Group Names" text.
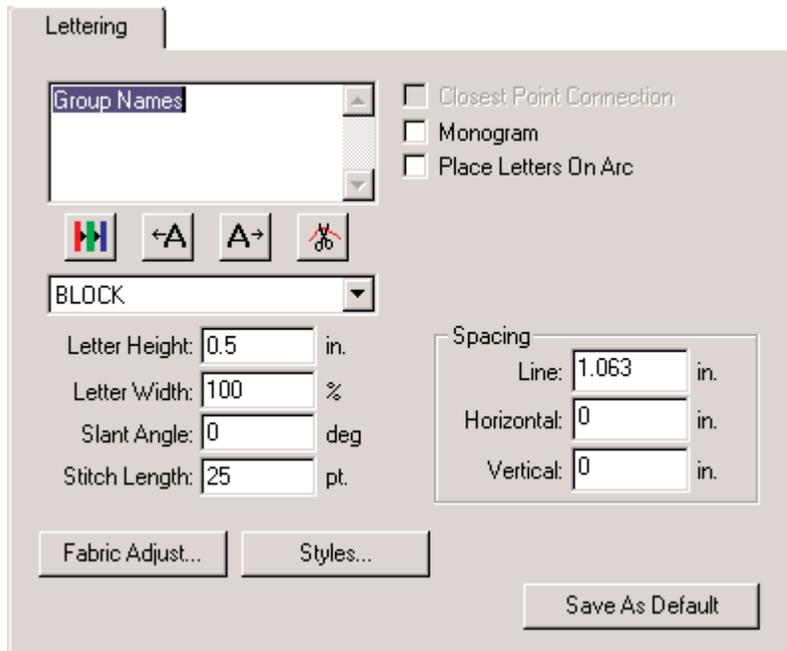
7. Choose the desired text values for the Group Names (example: Alphabet style, letter height, Column width, etc).

8. Click on the Group Names Tab.

9. The Group Names Tab is displayed.
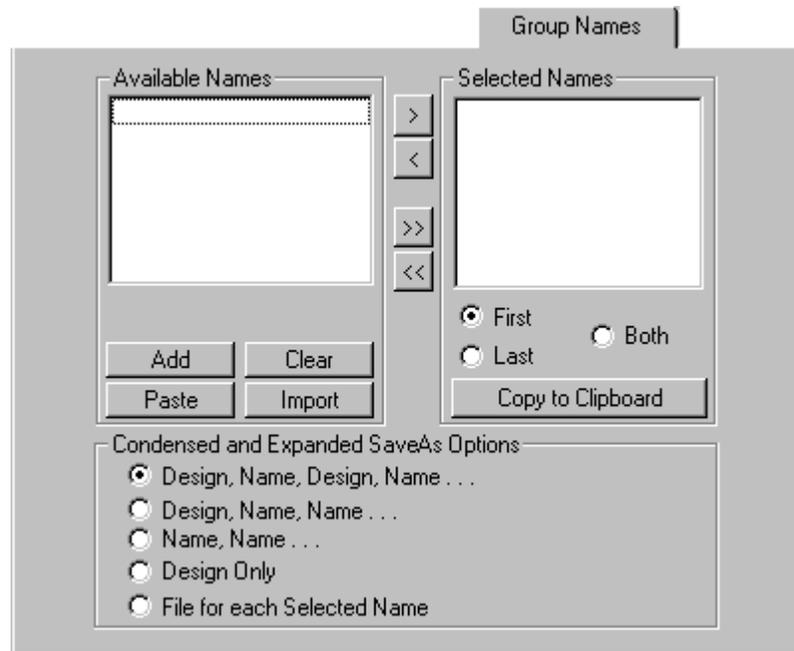
10. To Add Names (use one of the following methods):

Add: Click on the Add Button. This will make a small edit window available to immediately type each name. You can type a list of names, separated by commas into that window. (Example; John Jones, Greg Smith, Paul Johnson) Click on the Add button again to insert the names into the Available Names list.

Paste: Click on the Paste Button. The names will be inserted in the Available Names list.

Note: Prior to doing this, the names must first be pasted to the clipboard from another application. When using another application, a carriage return is the same as typing a comma in the Add section.

Import: Click on the Import Button. The Open Dialog box is displayed to choose the directory and text files to insert. Click on the file and the names will be inserted in the Available Names list.

Note: Prior to doing this, the files need to be saved as a *.txt file from another application (for example NotePad). When using another application, a carriage return is the same as typing a comma in the Add section.

Clear: If clear is clicked, all the names from both Available and Selected areas will be emptied.
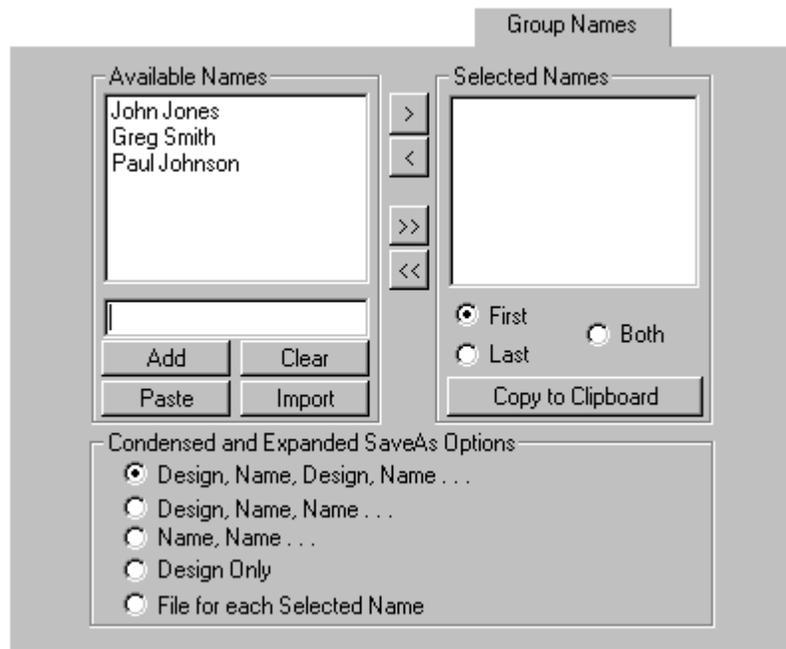
11. Once all the names have been added to the list:

- Click the All button (>>) to move all the names to the Selected Names box.

- Or, click on the specific name then click the (>) to send the names one at a time.

12. Choose First, Last or Both.

- The names displayed in the Selected Name list are the names that will sew.

- Even if only using the first name, always store the first and last name for added flexibility at a later time.

- To modify the Selected Name list, click on the (<<) button to empty the list of Selected Names. Or select a specific name and click the (<) button delete it from the list.

- If "Copy to Clipboard" is clicked, the names in the Selected

Name list will go to the Clipboard to be used in another application.

13. Select a "Condensed and Expanded Save As Option" (see explanations below). When saving just lettering, it does not matter which Option is selected.

Condensed and Expanded Save As Options:

Design, Name, Design, Name...

When saved in this format, the design and Group names are saved together. The embroidery machine will sew the Design, the first named typed, the design, the next name and so on.

Design, Name, Name...

When saved in this format the machine will sew the Design once and the each name saved. This format is usually used for multi-head machines when the same design is sewn on all the heads and then each name sewn on each garment.

Name, Name...

When saved in this format, the design will not be saved with the Group Names. This usually means the design is already sewn on the garment, then you decide you want group names added. This is typically used for a single head machine.

Design Only

When saved in this format, the design sews where you place it in relation to the names for a later time. This is typically used for a multi-head machine.

File for each Selected Name

When saved in this format, each name will be saved as a separate design. The first two characters of multiple group name files are numeric, i.e. 01Bill.exp 02Mary.exp, etc. These files can be used at a later date.

Note: After the design has been saved in Condensed or Expanded format, a color change command will be inserted after each Group Name.

14. Click on OK or Apply (The names will not be shown on the screen until the lettering is saved).

15. Click on File and Save As.

16. Type the filename and desired directory to save in.

17. Select condensed or expanded (the file must be saved as condensed or expanded format before it can be stitched.)

18. Click on OK.

Note: The last name displayed in the Selected Name list will display in the layout screen.

19. Click on File and Close the design.

20. Re-Open the design in EDS IV.

21. The Design will open with the names on top of each other with color changes added.

22. Send the file to the machine.

23. When programming the design to sew, use a P as Color 1 (in the machine Color menu) to force the machine to stop after sewing each name. This will enable you to insert the next hoop and press start to sew the next name. (Melco embroidery machines only)

To add names to an existing design

1. Open any design or create the design to stitch the names with.

2. Click on the Tools drop down menu.

3. Select "Create Group Names".

4. "Group Names" is displayed in the layout screen.

Note: The Group Names will pick up the properties from the current settings in Lettering Parameters.
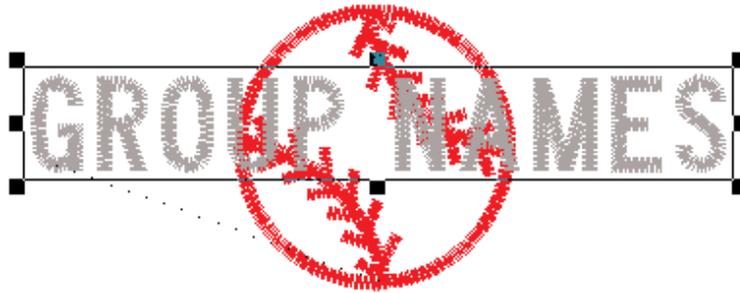
5. Left click and drag the eight handled box (Group Names) to the correct position on the layout screen.
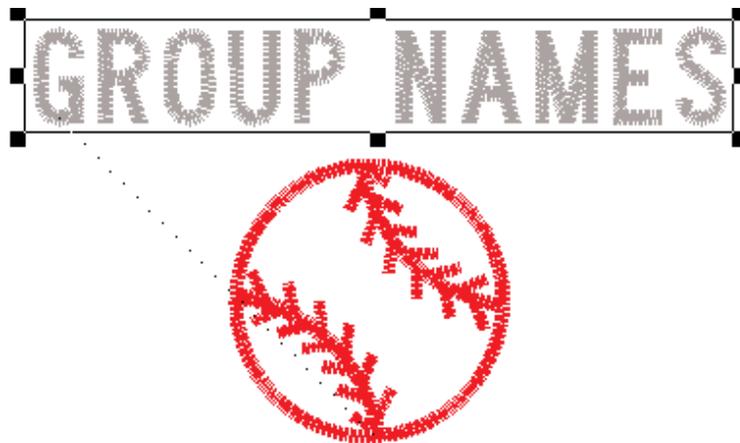
6. Double click on the "Group Names" lettering.

7. The Lettering Properties dialog box is displayed with "Group Names" text.
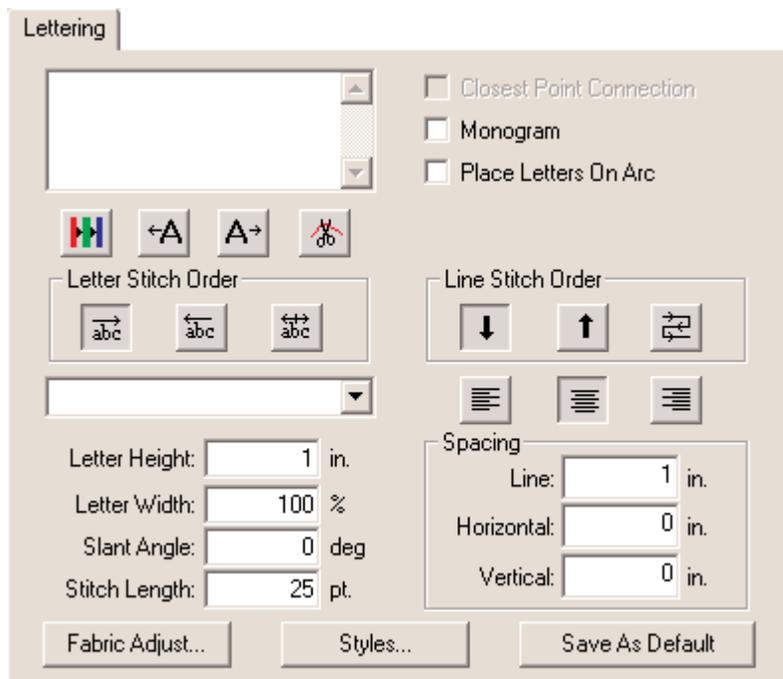
Follow steps 8 -23 in the Create Group names to complete.

Image Modification

In this exercise you will find the different ways to manipulate an image or graphic file. When a graphic file is loaded, a clipboard is imported, or an image is scanned into the EDS IV View Window, you may manipulate it in several areas. You have the options of Hide/Show a graphic and Dim/Brighten a graphic under the View Menu. You also have the option to change the position, orientation, and the scale of the graphic or image. These options are all available to you by double clicking on the graphic itself or by double clicking on the graphic in the tree view. You can also Hide/Show a graphic by

pressing the ![icon] toolbar button.

When you double click on the graphic or image a Properties dialogue with three tabs will appear.
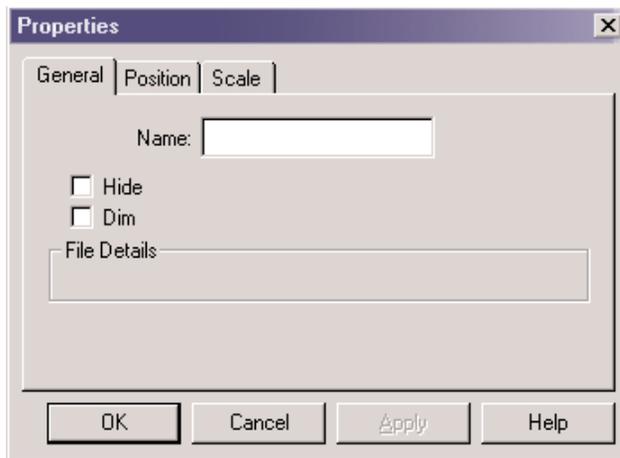
Under the Graphic General Properties tab you can view the name of the graphic and it's location. Besides the View Menu, you can also see on the General Properties tab gives you the ability to Hide/Show and Dim/Brighten the graphic. You can hide the graphic by putting a check mark beside Hide with your left mouse button. If the graphic is already hidden and a check mark appears beside Hide, then click again on Hide to Show the graphic. You may want to hide the graphic when you are digitizing. This will allow you to view the progress of your work better without the graphic behind the stitches. If you would like to see your stitches a little bit better, but not completely hide your graphic, you can left click to place a check

beside Dim. Left click again to Brighten the graphic. Practice Hide/Show and Dim/Brighten.

Click on the Position tab. Here you can change the position and orientation of the graphic.

Position represents the number of embroidery points (1/254th of an inch) that the center of the image is offset from the center of the design (or View Window). This allows you to move your image with respect to the design.

X offset allows you to move the image left or right. Enter positive values to move right. Enter negative values to move left.

Y offset allows you to move the image up or down. Enter positive values to move up. Enter negative values to move down.

Orientation gives you the ability to manipulate the horizontal and vertical presentation of the image. This function presents combinations of axis mirroring and axis property swapping in such a way to present the 8 views shown in the orientation box as you click on the box.

The F in the orientation box represents the position the image on the screen is currently being presented.

The image modification attributes are only saved when you save them as a project.

Practice changing the position and orientation of the graphic to view how it changes.

The third tab in the Graphic Properties is for scaling the graphic or image. The scale can be proportional or non-proportional depending on whether or not you have checked the "Proportional" box. If you left click, which places a check mark in the box, the horizontal scale is exactly the same as the vertical scale. This will keep the image from being distorted. If the "Proportional" box is not checked, then you can scale just the Horizontal axis or the Vertical axis. You can enter a percentage or a measurement. These are linked, so if you change a percentage the measurement changes proportionally.

Anytime that you are in a property page, you can click "Apply" after making a change and it will immediately apply your change. The advantage of using "Apply" verses clicking "Okay" after a change is that you can apply your changes and still move on to making other changes. Once you click on "Okay", your changes will be applied and the property dialogues will close and you will be back at the View Window. You can also click "Cancel" and the property dialogues will close without implementing the last change.

Loading and Scanning Images

With EDS IV, you have the ability to perform on-screen digitizing. Before you can do that you may want to have an image on the monitor screen. This can be done by scanning a new design or loading an existing graphic image file.

Loading

You can load an existing graphic image with the Insert function under the File Menu or click on the insert toolbar button .

The other option is to scan an image directly into EDS IV. You can load and save bitmaps in the following formats:

Format Acronym	Format Description	Extension
BMP	Windows (and OS/2) Bitmap	.bmp
JPEG	Industry Standard Compressed Image Format	.jpg
PCX	PC Paintbrush Format (ZSOFT)	.pcx
TIFF	Tagged Information File Format	.tif

After selecting "Insert", you may browse the directories to find the desired graphic file.

Scanning

The scanning function allows you to scan a design directly into the monitor screen for on-screen digitizing. This function works with any scanner which complies with the "TWAIN" scanning industry standard communications format. You may buy any TWAIN compatible scanner to implement scanning in EDS IV.

Note 1: TWAIN 32 compatible scanners are not the same as TWAIN compatible scanners and can not be implemented from the EDS IV program.

Note 2: Be advised that Melco cannot and does not support any scanners in the market place. Any technical assistance that may be required with the scanner you purchase must be obtained through the scanner dealer.

If you attempt to use a scanner which does not comply with TWAIN, you will not be able to access the scanning program directly from the EDS IV program. You must go into the scanning program independent from EDS IV to perform the scanning operation. Then you will be able to "load" any properly saved graphic files that have been scanned with that scanner.

The only requirement for loading a graphic file is that the file format is one of the formats supported by EDS IV. The graphic load and save functions support most industry standard graphic formats. See the above section on loading for information on which formats are supported.

An additional feature in the On-Screen Digitizing and Scanning option allows you to import graphical data from the clipboard to the EDS IV Layout window. This feature allows you to import graphics from any Windows based application.

Once loaded into the Layout window, images can be scaled, rotated, dimmed, and zoomed to give you the maximum flexibility in displaying your image for digitizing a design on screen.

Select Scanner

This function need only be performed when you start the scanning process for the first time. You will not need to return to this function unless you add a scanner or want to change to a different scanner that already exists with the system. The last scanner you select in this function will remain the "default" scanner indefinitely.

1. If you have just opened EDS IV, click on File in the menu bar and then click on New in the drop down menu. If already in a View Window go to step 2 to start a graphic load.

2. In the new View Window click on the File Menu then click on Select Scanner.

The Select Source dialog box will appear showing the available TWAIN compatible scanners associated with your system.

If your scanner does not appear in the Sources list, refer to the following discussion:

•   For the Select Scanner function to identify the available TWAIN compatible scanners attached to the computer system, the

TWAIN software which came with your scanner must first be properly installed and configured for your system.

- Melco has found that a common mistake is the failure to add the path for your scanner to the autoexec.bat file.

- Refer to your scanner manual and the Microsoft Windows user's Guide for information on modifying the autoexec.bat file.

3. Click on the source you wish to scan with to highlight the desired source.

4. Click on the Select button to choose the scanner and return to the current EDS III Layout window.

Each time you open EDS IV and perform the Scan function from this point forward, the scanner you just selected will remain the selected scanner. The scanner you select will remain the "default" scanner until you go into the Select Scanner function and select a different scanner.

Scan

EDS IV does not directly interface with any scanner. When you select Scan you are telling EDS IV to load the selected scanner's software to perform the scan and return the image to EDS IV. As a result, the screen that you see when you select Scan will depend on the software that came with your scanner. When the TWAIN driver you selected is finished, it will return the image to EDS IV for display. At that point you can change the scale or orientation, etc.

• In the View Window click on the File Menu then click on Scan image.

The selected scanner manufacturer's operating software will appear on the screen and the scanning operation will begin. You will be able to work inside the scanner operating software just as if you had opened it independent of the EDS IV program.

Tips for Successful Scanning

1. High resolutions (such as 300 dpi) will consume lots of memory, and may slow down your system.

2. Color images may significantly slow your system and make it harder to see your stitches, even with Dull Graphic.

3. If you use color, use no higher color resolution than the driver you have installed in Windows. If your Windows uses 256 colors, then scanning a graphic as a 24 bit graphic makes it larger than it needs to be! Check your scanner manual for instructions to select your color resolution.

After the scanning operation is completed and you close the scanner manufacturer's software program, the screen returns to the active EDS IV program and you may begin to perform some of the available image modifications or go directly to digitizing in the View Window.

Pattern Fill

Pattern Fill is a custom stitch type used in digitizing complex fills. It is used for large areas to obtain artistic effects in designs.

The fill stitching in a pattern fill is a satin stitch with needle penetrations forming the chosen pattern.

You can choose from several of the standard pattern fills included with EDS IV or create your own using "Create Pattern Fill".

To use the standard pattern fills

Right click on the complex fill element on the Input toolbar.

Under Stitch Type, choose Pattern.

Select the Pattern from the drop down menu.

Click OK.

Digitize the outline of the shape using the complex fill digitizing rules.

Refer to the Complex Fill Tutorial for more information on digitizing complex fills.

Creating Pattern Fills

To create a pattern fill, go to the Custom Menu and select "Create Pattern Fill". A screen will pop up where you will create your pattern fill. A screen will pop-up to allow you to create the pattern fill.

Zoom in if needed and turn on the grid ⊞ to be more exact.

Select, the element that you would like to digitize with (walk or manual stitch). Follow the basic digitizing rules.

In the "small diamond" pattern fill for example, the steps are labeled below in red letters.

After selecting walk stitch digitize a diamond shape using straight input points (left clicking). Steps 1-4. Press the Enter Key.

Digitize another diamond shape with the walk element, inputting straight points. Steps 5-8. Press the Enter Key.

Once you are finished creating your pattern fill, you can name it and save it. If saved, it will be added to the pattern fill list that you can choose from within the Fill property page.

Test Settings

- Width will change the horizontal width of the pattern fill.

- Height will change the vertical height of the pattern fill.

- Remember that when changing test settings you can always refer back to the created width and height to see the first saved settings.

Editing Pattern Fills

To edit pattern fills go to the Custom Menu, "Edit Pattern Fills", a pop up dialog will appear and you can select the name of the fill and press Edit.

To select the Fill by viewing it, press the "Pattern View/Select" button and you will get the following dialog.

Press OK. You will now see the name of the fill that you just selected in the "Edit Pattern Fill" pop-up dialog. Press the Edit button.

Singleline Columns

This exercise will demonstrate how to digitize singleline columns. When digitizing columns, you should always begin and end your columns with straight points.

Digitize singleline columns using straight points

Zoom in on the area that you would like to digitize first. Keep in mind that the stitch list order is the same order that the machine will perform the sew-out. Select a singleline element.

1. Input your first point by left clicking in the View Window, which will input a straight point.

2. Input a second straight point (left click). Press the Enter key to complete the singleline.

3. Now you have to determine the width of the column that you are digitizing. Left click to enter the first width point.

4. Move your cursor from the first point to the desired width and left click again to insert the second width point. An example of this is illustrated below with the steps labeled with red numbers.
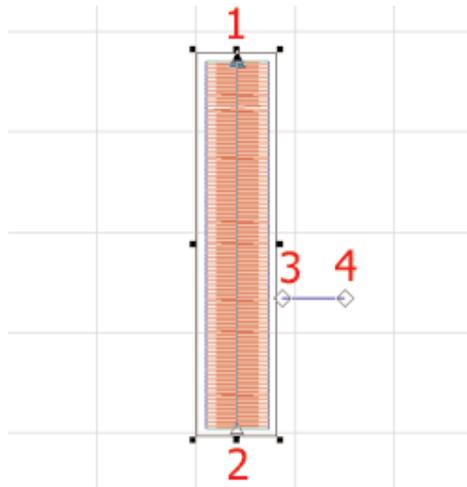
For this example, it didn't matter where the width points were placed, but if you are digitizing over a graphic (and need to be precise) you may want to place your width points over the graphic.

Digitize singleline columns using curved and straight points:

An example of this would be to digitize a circle.

1. Input your first point by left clicking in the View Window, which will input a straight point.

2. Input a curved point 1/4 of the way around the circle by right clicking.

3. Input a straight point 1/2 of the way around the circle by left clicking.

4. Input a curved point 3/4 of the way around the circle with a right click.

5. Input the final point a little bit passed the first point to insure that the stitches meet up when sewn out. The final point should be a straight point that you get by left clicking. When the wireframe outline is completed press the Enter key.

6. Now enter the first width point by left clicking.

7. Determine the desired width and place your cursor that distance from the first width point and left click to enter another width point. This example is illustrated below with the steps labeled with red numbers.

You can always refer to the status line below the View Window to give direction for the next step while digitizing an element.
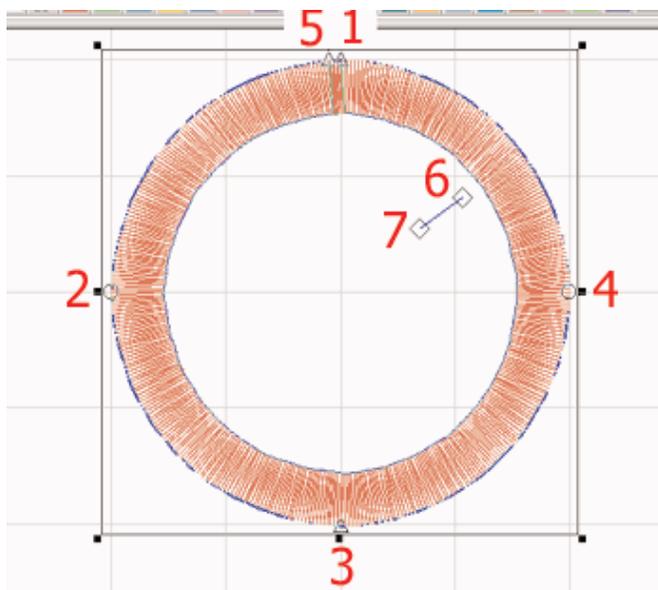
Transform/Rotate

Once you have selected an element by clicking on it and getting a black box with handles around it, you can do the following:

To resize or edit, place your cursor over the black boxes until a double arrow cursor appears. This type of cursor lets you know which way you can move. Move the handles by clicking and dragging them in the direction that you would like to go. You can manipulate elements to make them wider, thinner, taller, shorter, or a combination or these. Also refer to Edit mode in the reference section of this manual.

If you right click on the selected element, you should get a menu of options. Toward the bottom of the menu, you will see Transform/Rotate, click on that. You will now have a box around your element that looks like this:

To rotate the element: you will use the green arrow that comes from the middle of the element. You can click and drag the center green box to have the center of rotation anywhere that you would like. Once you have determined the center of rotation, click and drag the green arrow in the direction that you would like your element to rotate.

To transform the element: click and drag the triangles in the corners of the black box. You can drag them in any direction to transform the element. You may also use multiple select, click on one of the triangles, hold down the Control Key, click another triangle. Once you have selected the desired triangles, let go of the Control Key. Now click and drag just one of the triangles in the desired direction.

Tip

To select all elements in a design quickly, press Ctrl 'A'.

To transform a lettering job, enter one or more curved or straight points on the black selection box. Left click and drag on a single point. To "balloon" a lettering job, enter a curved point on the top and bottom of the black selection box at the points where you desire ballooning to occur. Hold down the Shift Key, right click and drag. Also refer to the Upgrade Tutorial for Lettering on common transformations.

When you are manipulating an element, all of the stitch information will be automatically filled in to fit the new shape of the element.

Walk ✎ and Manual ⌁ Stitches

Walk stitches can be digitized with straight and curved points. Straight points are input using a left mouse click. Curved points are input using a right mouse click.

Digitize a walk stitch using curved and straight points

Insert ▸▤ a graphic (example, melco_tutor.tif). Zoom in 🔍 on the area that you would like to digitize first. Keep in mind that the stitch list order is the same order the the machine will perform the sew-out. Select the walk stitch element .

This exercise goes through digitizing an outline around the letter "e". This exercise will take two steps.

1. First, digitize the outline inside of the letter "e". The first input point is a straight point (left click) on the bottom left side of the outline.

2. Now input a straight point on the right side on the bottom.

3. Input a curved point (right click) on the top of the curve.

4. Input the final point in the same place as the first point. Press the Enter key to complete the outline.

The outline is illustrated below with the steps labeled in red.
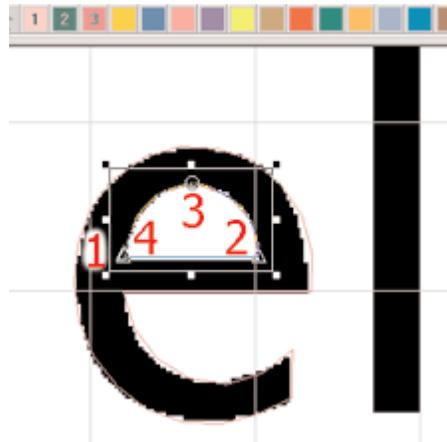
Now digitize the outline around the outside of the letter "e".

1 - straight

2 - curved

3 - straight

4 - straight

5 - curved

6 - straight

7 - curved

8 - straight

9 - straight
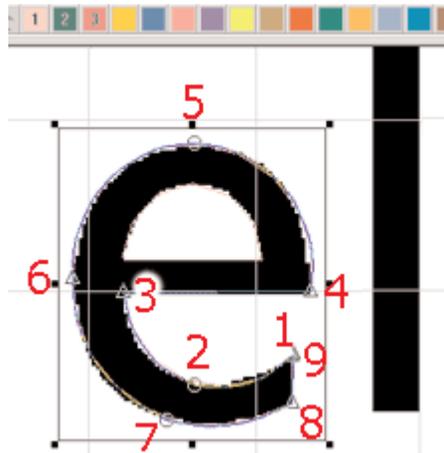
The end result after pressing the "view stitches in 3D" button , looks like this:
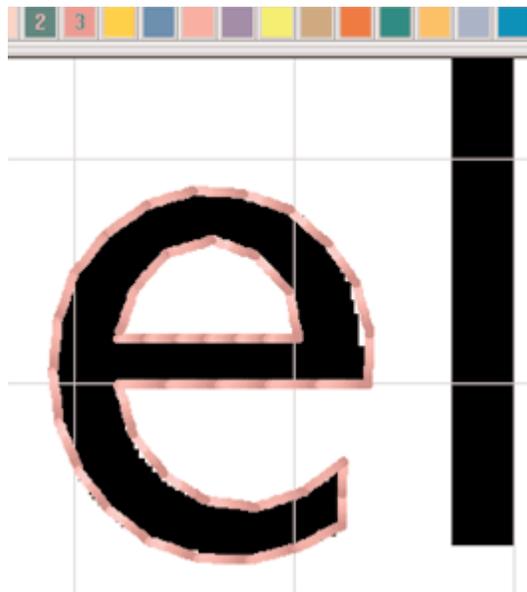
Digitize a manual stitch

You can only use straight points for digitizing a manual stitch. This type of element is usually used for items where you want to be able to determine where your needle penetrations are. Maybe you would like to have the look of a long stitch without changing the stitch length on you walk stitch. An example of when to use a manual stitch element would be when digitizing grass. When representing blades of grass with thread, you may not necessarily want needle penetrations throughout the blades of grass.

1. Left click to input first needle point (penetration).

2. Left click again to input second needle point. Press the Enter key to end the manual stitch element.

Here is an example of manual vs walk stitch after zooming in and pressing the "view stitches in 3D" button:

When using walk stitch, needle penetrations are automatically input in between the wireframe points; whereas, manual stitch has a long stitch from one wireframe point to the next.

manual walk
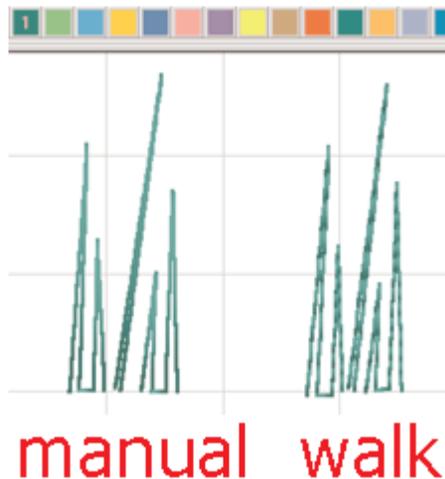
Another use for manual stitch is to aid in manual trimming for peripherals that do not have trimmers.

Reference

Design Database

The EDS IV Design Database application allows embroidery shops and digitizing houses the ability to enter Design-Customer information into a database.

It allows you to categorize Designs through subjects, enter and save customer information and link it to a Design to form an order and to find any document by any search conditions.

For further information about the Design Database, please refer to the Help System once you have opened the Design Database.

Icon Generator

During installation a shortcut to the Icon Generator is added to the Windows Desktop. Double clicking on this shortcut will launch a small dialog application that uses, but is independent of, EDS IV. Icon Generator is separate from EDS IV because it may require a long time for it to complete its work. We did not want to keep you from using EDS IV during the time required to generate icons and update design properties for your designs.

What is Icon Generator?

EDS IV includes a Windows 'shell extension' that displays icons for embroidery files in Explorer, Find Files, and File Open, Save, and SaveAs dialogs within EDS IV. EDS III provided a similar but less widely available capability within its graphical file open. The icon files with extensions such as .cpf, and .epf, which we call shadow files, that were produced by EDS III will continue to be used by EDS IV when available. For designs that were not produced by EDS III, for example those purchased as a library, these shadow files must be generated.

Icon Generator scans your hard disk(s) searching for embroidery files. It keeps counts of expanded, condensed, and project (OFM) files that need to have their icons and design properties generated or brought up to date. This only needs to be done when you first install EDS IV and whenever you copy embroidery designs from diskettes or CD-ROM libraries of designs. EDS IV will function correctly without running Icon Generator but its integration with Windows will not be as tight from a visual perspective because the icons for some files may not be correctly displayed. It will be more difficult for you to locate the embroidery file you wish to open until Icon Generator has done its work.

What if I have designs on multiple drives or network connections?

You can easily create multiple Icon Generator shortcuts on your desktop, each with a different Target path root. Alternatively you might choose to respecify the Target path root within the shortcut whenever you wish to launch the Icon Generator. To set or change the Target path root on a shortcut to Icon Generator simply right-button click on the shortcut, select Properties from the context menu, and on the Shortcut Tab note that Target is selected. Target is an edit field that is of the form path\EdsShadow.exe TargetPath. The Target Path in a normal install should be C:\Designs and can be changed to any other path or network share. Normally this will not be needed if you have organized your system so that all designs are either in C:\Designs or in sub-directories below that directory, e.g. C:\Designs\Birds or C:\Designs\JonesConstruction, because Icon Generator knows how to find designs in all sub-directories of the Target root.

What will happen when I run Icon Generator?

The visual behavior will be different depending on whether EDS IV is running when you double-click on the Icon Generator shortcut. If it is running, Icon Generator will find it and use EDS IV. If it is not running, Icon Generator will invisibly launch EDS IV and run it in the background. Note that if EDS IV is not installed on the same computer from which Icon Generator is run you will not be able to generate/update icons. The Icon Generator itself is a short, wide dialog that contains, initially, the EDS IV icon to the left of counts of files to update. Beneath that icon the Target root path will initially be displayed, and below that a progress indicator. Begin and Cancel buttons on the right are the only controls you will use to control Icon Generator. When you click Begin, the button will be relabeled Pause and Icon Generator will begin searching for embroidery files in the Target path root and continue through all sub-directories. You can click Pause at any time; the button will be relabeled Resume and Icon Generator will discontinue its work until you click that button. Cancel allows you to dismiss Icon Generator completely.

What happens if I cancel Icon Generator?

If you cancel Icon Generator before it has completed its work then it will pick up where it left off when you run it again. Alternatively, you can click the Pause button if you need to work in EDS IV without the

distraction of files being opened in your workspace, and then click Resume should you take a coffee break or go to lunch. There is almost no system resource cost to leaving Icon Generator launched but Paused so you can use it to generate and update icons at your convenience.

How long will Icon Generator run?

This all depends on the number of embroidery files that require icon generation/update. If all of your embroidery files were generated by EDS III it may take only a few seconds. If you have placed the entire Dakota Designs library on your hard disk and you have a slow computer it can require more than a day to complete its work. Progress will be indicated by the progress indicator and reduced counts of files but you should be aware that some files can take considerably longer than others to process.

What can go wrong ...

Two things can cause Icon Generator to fail. First, if it encounters non-embroidery files with extensions of EXP, CND, or OFM, a variety of failures can occur. The offending file can be read from the line that initially contained the Target root path so you can readily identify the source of the failure. In addition, a very small number of embroidery design errors cannot be correctly diagnosed in condensed files. This occurs fewer than three times in a thousand files among the more than fifteen thousand files used to test Icon Generator and EDS IV. Should you experience such a failure, note the name of the offending file and either remove it or rename it with a different file extension and restart Icon Generator.

Custom Menu

Decorative Stitch

Decorative stitch is used to repeat a digitized design along a walk input line.

Decorative stitches can consist of walks, columns, fills, and lettering or a combination of elements.

You can choose from several decorative stitches included with EDS IV or create your own using "Create Decorative Stitch".

To use the standard decorative stitches

Left click on the decorative stitch tool ![icon] on the Input toolbar.

Choose the stitch that you want to use, press OK.

Digitize the same as a normal walk stitch using straight and/or curved input points.

Creating Decorative Stitches

To create a decorative stitch, go to the Custom Menu and select "Create Decorative Stitch". A screen will pop up where you will create your decorative stitch.

Zoom in if needed and turn on the grid to be more exact.

Select, the element (Manual or Walk stitch, a Column element, or Complex Fill) that you would like to digitize with. Follow the basic digitizing rules.

It is very important that you start and end your element on the "Stitch Line." If you end somewhere above or below the line, another stitch will be automatically generated for you to the stitch line and you may not get the desired decorative stitch. It is also very important to remember that you cannot begin and end your stitch in the same place.

Tip

It is very useful to load a graphic into the EDS IV View Window before beginning this procedure, so that you have a graphic to digitize more precisely.

In the "Diamond" decorative stitch for example, the steps are labeled below in red letters.

1. Start on the "Stitch Line".

2- 5. Input points.

6. Input last point on the "Stitch Line" and not on the same point as the first input point.

Once you are finished creating your decorative stitch, you can name it and save it. If saved, it will be added to the decorative stitch list that you can choose from within the Walk Stitch property page.

Test Settings

- Walk Direction will give you a graphical example of how the decorative stitch will look in different directions.

- Stitch Length will modify the decorative stitch proportionally.

- Width will change the horizontal width of the decorative stitch.

- Height will change the vertical height of the decorative stitch.

Editing Decorative Stitches

To edit decorative stitches go to the Custom Menu, "Edit Decorative Stitches". A pop-up dialog will appear and you can select the name of the stitch and then press Edit.

To select the stitch by viewing an image of it press the "Stitch View/Select" button. You will get a pop-up screen with an image of all your decorative stitches along with the name of each and the date and time created. Select the one that you would like to edit by clicking on it and then press "OK".

Press OK. You will now see the name of the fill that you just selected in the "Edit Decorative Stitches" pop-up dialog. Press the Edit button.

While editing a decorative stitch, always keep in mind that the Created Stitch Length is proportional size that you first saved.

Pattern Fill

Pattern Fill is a custom stitch type used in digitizing complex fills. It is used for large areas to obtain artistic effects in designs.

The fill stitching in a pattern fill is a satin stitch with needle penetrations forming the chosen pattern.

You can choose from several of the standard pattern fills included with EDS IV or create your own using "Create Pattern Fill".

To use the standard pattern fills

- Right click on the complex fill element on the Input toolbar.

- Under Stitch Type, choose Pattern.

- Select the Pattern from the drop down menu.

- Click OK.

- Digitize the outline of the shape using the complex fill digitizing rules.

Creating Pattern Fills

To create a pattern fill, go to the Custom Menu and select "Create Pattern Fill". A screen will pop up where you will create your pattern fill. A screen will pop-up to allow you to create the pattern fill.
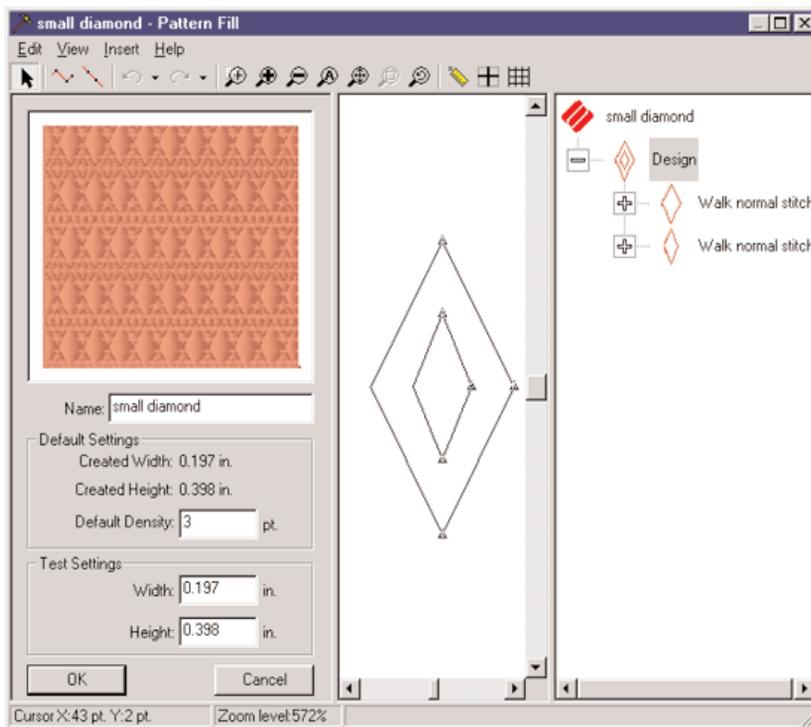
Zoom in if needed and turn on the grid to be more exact.

Select, the element that you would like to digitize with (walk or manual stitch). Follow the basic digitizing rules.

In the "small diamond" pattern fill for example, the steps are labeled on the next page in red letters.

After selecting walk stitch digitize a diamond shape using straight input points (left clicking). Steps 1-4. Press the Enter Key.

Digitize another diamond shape with the walk element, inputting straight points. Steps 5-8. Press the Enter Key.

Once you are finished creating your pattern fill, you can name it and save it. If saved, it will be added to the pattern fill list that you can choose from within the Fill property page.

Test Settings

• Width will change the horizontal width of the pattern fill.

• Height will change the vertical height of the pattern fill.

• Remember that when changing test settings you can always refer back to the created width and height to see the first saved settings.

Editing Pattern Fills

To edit pattern fills go to the Custom Menu, "Edit Pattern Fills", a pop up dialog will appear and you can select the name of the fill and press Edit.

To select the Fill by viewing it, press the "Pattern View/Select" button and you will get the following dialog.

Press OK. You will now see the name of the fill that you just selected in the "Edit Pattern Fill" pop-up dialog. Press the Edit button.

Insert Custom File

This applies to users that have previously installed EDS IV, created decorative stitches and/or patternfills and are now re-installing EDS IV.

A new menu item has been added under the Custom Menu. This new menu item is Insert Custom File. Open Windows Explorer by right clicking on your Start Menu, browse to your EDS IV directory. In your EDS IV directory you will have a CustomFactory.cff file that contains any decorative stitches and pattern fills that you have created. To keep these decorative stitches, you will need to copy the CustomFactory.cff file and paste it into another directory other than EDS IV (Temp directory for example). Now re-install EDS IV. The new install will overwrite the existing CustomFacotory.cff file. After the install is complete, open EDS IV. Click on File Menu, New. Click Custom Menu, Insert Custom File. Browse to the location that you previously pasted the .cff file into (Temp directory). Once you have selected it, click Open. This will merge the two .cff files.

Editing Tools

Alignment Tools

There are two ways to align you elements within your project. You can use "Snap to Grid", which will align element(s) or design(s) in comparison with the Grid or the "Alignment Tools", which will align elements or designs in comparison with each other.

Snap to Grid

After pressing the Grid button , you can press the "Alignment

Tools" button to quickly move a design or element to an exact location around the grid. You can have one or more elements or design selected when using this feature.

After pressing the "Snap to Grid" button you will see the following dialogue:

For help on using this dialogue, follow the steps below:

Select the axis you would like to move along (horizontal or vertical or perhaps both).

Determine the value (in inches) of how far you want to move (keep at 0.00 if you want to be directly centered, on top or below the axis).

Click on one of the radio buttons next to "Center on", "Top of", or "Bottom of".

Click Apply or OK.

Below is an example of a centered design with the following attributes:

Horizontal, 0.00 in., Top of

Vertical, 0.00 in., Right of
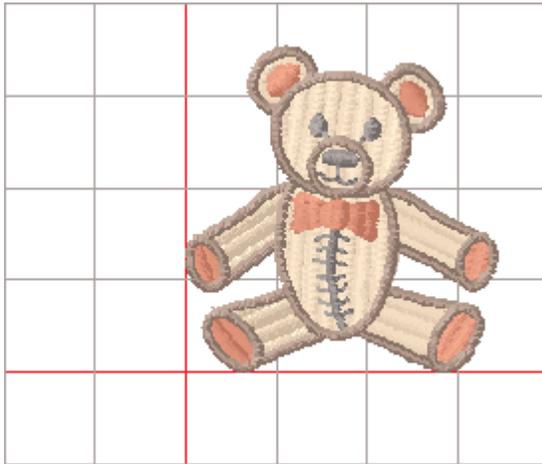
If you have previously used EDS III, the "snap to grid" function works the same as "Line Type Options". The Line type options were "Line Center Middle", "Line Center Bottom", "Line Normal", and "Arc Normal". There isn't an equivalent in EDS IV to "Arc From Center". Below are examples of how to achieve the same position using "Snap To Grid":

Line Center Middle

An explanation of how this will sew on EDS IV is: The lettering object will start at the center/middle of the lettering then jump to the 1st letter position to begin to sew. It will continue to sew the lettering object, then when finished will jump back to the center of the lettering object (the lettering is centered both vertically and horizontally). So, in other words the design starts and stops in the exact center of the lettering. This is the most common method used to sew lettering.

1. Create a lettering element
2. Click "Snap To Grid"
3. Select Horizontal, Center on
4. Select Vertical, Center on
5. Click OK

Line Center Bottom

An explanation of how this will sew on EDS IV is: The lettering object will start at the middle/bottom of the lettering then jump to the 1st letter position to begin to sew. It will continue to sew the lettering object, then when finished will jump back to the center/bottom of the lettering object (the lettering is centered horizontally). This is most commonly used for placement above a pocket or straight line. When the design is traced, you will be able to see where the exact bottom of the lettering will sew on your fabric.

1. Create a lettering element
2. Click "Snap To Grid"
3. Select Horizontal, Top of
4. Select Vertical, Center on
5. Click OK

Line Normal

An explanation of how this will sew on EDS IV is: The lettering object will start at the current needle position, which is the bottom of the 1st letter typed. When finished sewing, the needle will return to same starting position.

1. Create a lettering element
2. Click "Snap To Grid"
3. Select Horizontal, Top of
4. Select Vertical, Right of
5. Click OK

Arc Normal
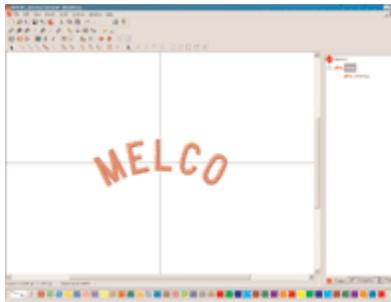
1. Create a lettering element
2. In lettering property page, select "Place letter on arc"
3. Click on "Snap To Grid"
4. Select Horizontal, Center on
5. Select Vertical, Center on, Click OK.

Align Each Element in Group: Use this feature after you have a group of elements. For help on Grouping refer to that section of the manual. To use this feature, select one element in the group, click on the "Alignment Tools" button, select the type of "Snap to Grid" you want, click to insert a check mark in the check box next to "Align Each Element in Group". Now click on "Apply" and "OK".

Alignment Tools

After selecting more than one element or design, click on the "Alignment Tools" button. You will then see the following dialogue displaying the different ways that the elements or designs can be aligned. You may also use the tools that are the Alignment toolbar to align the tools. Below is a short description of each type of alignment and the tool that can also be used to perform that function.

Align

Alignment
- ○ Top Edge
- ○ Bottom Edge
- ○ Left Edge
- ○ Right Edge
- ○ Center Horizontally
- ○ Center Vertically

Spacing
- ☐ Space Evenly Horizontally
- ☐ Space Evenly Vertically
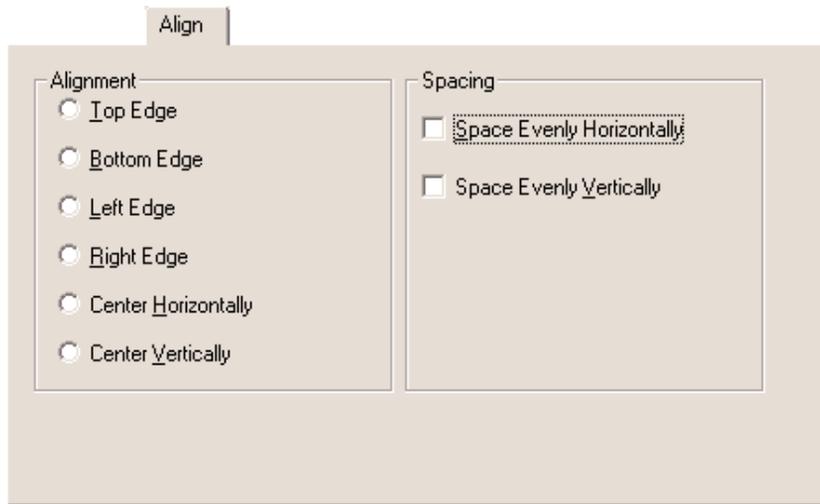
Top Edge Alignment: This aligns your selected (or grouped) elements or designs to the top edge of the highest element or design.

Bottom Edge Alignment: This aligns your selected (or grouped) elements or designs to the bottom edge of the lowest element or design.

Left Edge Alignment: This aligns your selected (or grouped) elements or designs to the left edge of the very left element or design.

Right Edge Alignment: This aligns your selected (or grouped) elements or designs to the right edge of the very right element or design.

Center Horizontally: This finds the center point between all of the selected elements or designs and aligns them on an invisible horizontal line according to that center point. Note that this does not center them according to origin, use Snap to Grid for doing that.

Center Vertically: This finds the center point between all of the selected elements or designs and aligns them on an invisible vertical line according to that center point. Note that this does not center them according to origin, use Snap to Grid for doing that.

Spacing

Space Evenly Horizontally: ⚏ This feature determines the distance between three or more elements or designs and spaces the horizontal distance between them evenly. You must have three or more elements or designs selected or grouped to use this feature.

Space Evenly Vertically: ⚎ This feature determines the distance between three or more elements or designs and spaces the vertical distance between them evenly. You must have three or more elements or designs selected or grouped to use this feature.

Edit Mode

You can enter the Edit Mode by clicking on the black cursor that is in the input toolbar. You can also simply right click inside of the element. You can also press the "Esc" key on the keyboard to enter Edit Mode. Do not use the "Esc" method of entering Edit Mode if you are in the process of digitizing an element because the element will be removed.

An eight handled box will appear around the element. You can place the cursor over the handle and it will change into a sizing or scaling

cursor ⬚ . Left click and drag when this cursor appears to change the size of the element.

Left click inside the box to change the eight handled box into a four handled box. You can place the cursor over the handle to change the

cursor into a rotating cursor ⬚ . Left click and drag when this cursor appears to rotate the element.

To move the element simply place the cursor inside the box. When

the move cursor ⬚ appears, left click and drag to the desired position.

Editing Digitized Points

While in the Edit Mode you can move, add and delete digitized points.

To move a point place the cursor over the straight digitized point or curved digitized point until that particular cursor appears then left click and drag it to the desired position.

You can use this same method to move the entry and exit points as well as the to move the thread direction points.

When the particular cursor appears over a point, you can left click to select the point. From there you can press delete to remove that point.

When the digitized point is selected you can also right click to get a pop-up menu that gives you the properties option. There you can change the exact coordinates of that particular point.

In Edit Mode you also have the option of adding digitizing points to the outline. Move the cursor along the outline to get this cursor . Then simply left click to insert a straight point and right click to insert a curve point.

Mirroring

These tools allow you to quickly mirror an element or a whole design. Simply, select an element, multiple elements, design(s), or entire project, then click the vertical or horizontal toolbar button. Below are examples of vertical and horizontal mirroring:

Original   **Vertical Mirroring**

Original   **Horizontal Mirroring**
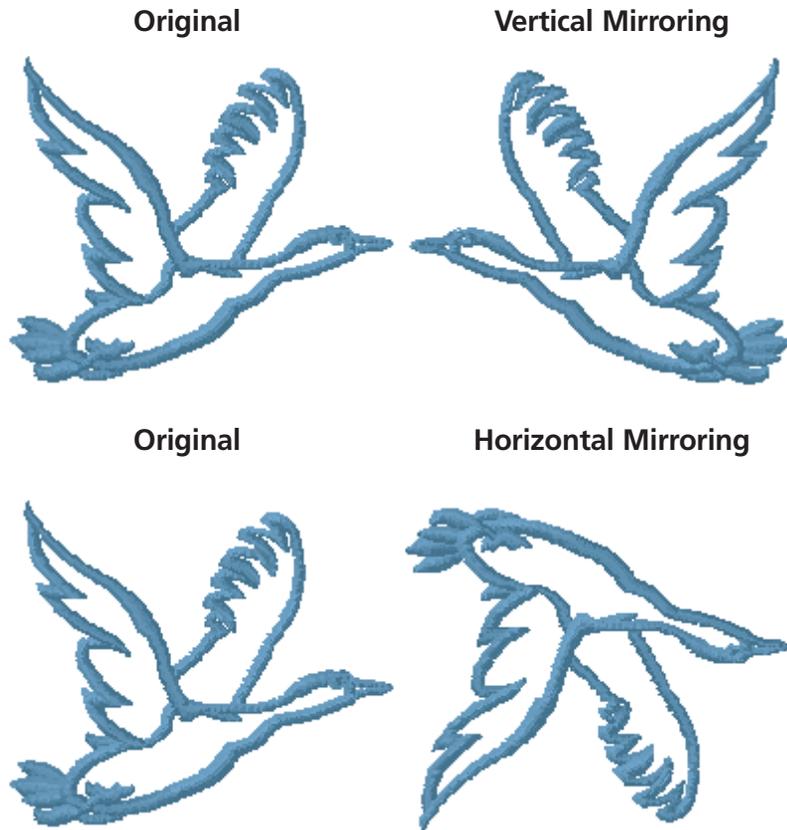
Previous and Next Element

After bringing up a design, you may have multiple layers of stitches in the same area. An easy way to find elements under other elements without having to search through the stitch list would be to use the Previous and Next Element tools. Select a point that is digitized over another element, then click the Previous Element tool. You will see the selected element move to the previous element in the stitch list.

Edit Menu

Center Design ✖

places the design's center in the exact center of the peripheral's sewing field. This is an important step before sending the design to be sewn. You can find this function in two locations: the toolbar button and under the Edit Menu.

Change Element Type 🖼

This feature allows you to select an element and change it to another element. Besides being able to replace one element type with another element type, you can also add an element type to another element type. This feature can be used on all element types except Manual Stitch. For the different types of element changes that you can make, look on page 135 - 136

Example of when to replace an element type:

A walk stitch used to outline a design just doesn't seem to be wide enough to stand out on a "plush" type of fabric (i.e. thick fleece) that the design is being sewn on. In this case, you can select the walk stitch outline, click on the "Change Element Type" 🖼 toolbar button, select singleline column, click "Replace". This will be a lot thicker and show up better on the fabric.

Example of when to add an element type:

After creating a complex fill, it is a lot faster to use the "Change Element Type" to add a border to the fill instead of digitizing around it. To do this, simply create a complex fill, click on the "Change Element Type" 🖼 toolbar button, select walk stitch or column stitch, click "Add". This is also very useful for changing fills to walk or singleline column for applique purposes.

There are three different methods for changing element type. They are through the view window, the project view, or through the Edit Menu. You can convert one or more expanded elements.

Changing Element Type Through the View Window or Project View:

1. Select the element

2. Right click

3. Select "Change Element Type" from the pop-up menu.

Changing Element Type Through the Edit Menu:

1. Select the element

2. Click on the "Edit Menu"

3. Select "Change Element Type".

You can always edit an element that you have added or replaced.

When you have a complex fill selected that has a hole in it, you will get one element for the complex fill and another element for the hole.

You can also select multiple elements to change as long as there are of the same element type (i.e. all complex fills).

When you add new items, they will be inserted (in the project view "stitch list") directly after the element that they were created from except for the following cases:

• When you create a walk, click on "Change Element Type", select complex fill, click "Add". The complex fill will be inserted before the walk because there is an assumption that the walk is supposed to be the border.

• When you have created an element (i.e. fill or column) and choose to "Add" a "Singleline With Input Line". The Singleline column will always be inserted before the original element because there is an assumption that the singleline is to be the border.

• If you use "Set Insert Here" in the project view, then the new items will be inserted at that location. This is especially useful when wanting all of your borders to be at the end.

- To use "Set Insert Here", go to the desired location in the project view, right click, select "Set Insert Here". Whatever you create next will be added in the   desired location.

Below are pictures of the dialogues for "Change Element Type":

From Walk Normal Stitch to Singleline or Complex Fill.

Change Element Type

From: Walk Normal Stitch

Create
- ● Single Line
- ○ Complex Fill

[Add]   [Replace]   [Cancel]
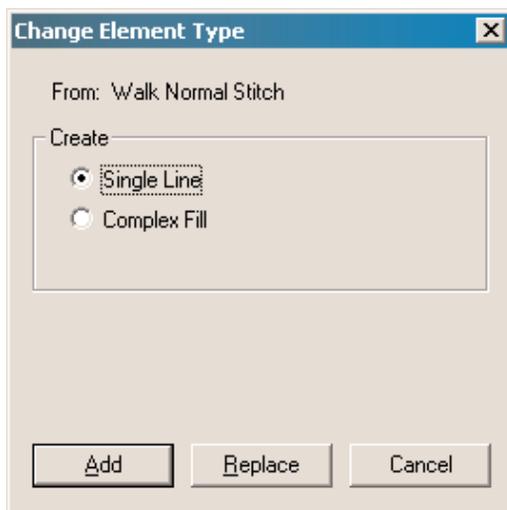
From Complex Fill to Walk Normal Stitch, Walk Bean Stitch, or Singleline.

Change Element Type

From: Complex Fill

Create
- ● Walk Normal Stitch
- ○ Walk Bean Stitch
- ○ Single Line

[Add]   [Replace]   [Cancel]
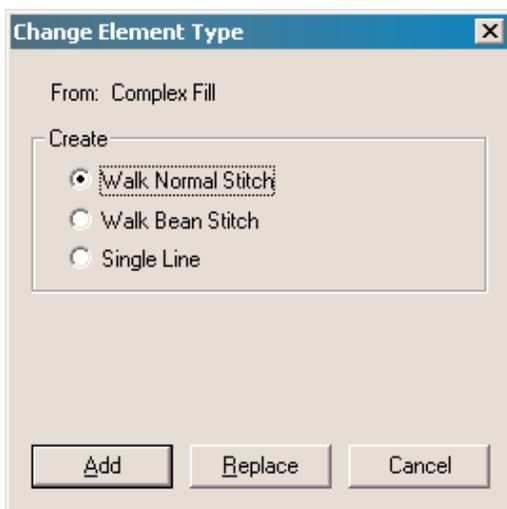
Tip

When using the "Change Element Type" function, some minor editing may need to be performed after. This is especially true around corners of elements and first and last points of columns. You can edit your new element just as you would any other digitized element.

From Singleline to Walk Normal Stitch, Walk Bean Stitch, or Complex Fill.
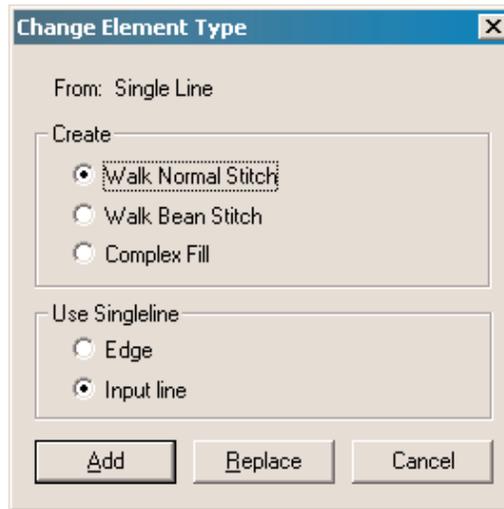
In the case of the Singleline Column, you also have the option to use the edge of the column or the input line. When using the "Edge" complex fill is no longer an option but singleline is added to the list. Using the "Edge" is used when wanting to put a border around a singleline column.

Convert Expanded To Wireframe

EDS IV will allow you to convert expanded data to wireframe data. You can do this at all levels, project, design, and element. There are three different methods for converting expanded data. They are through the view window, the project view, or through the Edit Menu. You can convert one or more expanded elements.

Converting Expanded Data Through the View Window or Project View:

1. Select the element, design, or project

2. Right click

3. Select "Convert Expanded To Wireframe" from the pop-up menu.

Converting Expanded Data Through the Edit Menu:

1. Select the element, design, or project through the view window or project view

Tip

When converting Expanded data to Wireframe, it is always a good idea to check the wireframe data. You may want to perform some minor editing on the elements.

2. Click on the "Edit Menu"

3. Select "Convert Expanded To Wireframe".

This feature only applies to EDS IV Summit and Midpoint product levels.

Lettering To Wireframe

Once you have completed a lettering element, you can convert the lettering to wireframe. By doing this, the lettering will be converted to complex fills, columns, and/or walk stitches which can easily be edited. This is very useful to do when you would like to edit individual parts of letters within a lettering element. There are four ways to convert lettering elements to wireframe data. They are through the toolbar button, through the View Window, though the Project View, or through the Edit Menu. You can change one lettering element at a time or multiple lettering element.

The easiest way is through the toolbar button:

1. Select the lettering element

2. Click on the toolbar button.

Converting lettering to wireframe data through the View Window or Project View:

1. Select the lettering element, design, or project

2. Right click

3. Select "Convert Expanded To Wireframe" from the pop-up menu.

Converting lettering to wireframe data through the Edit Menu:

1. Select the lettering element, design, or project through the view window or project view

2. Click on the "Edit Menu"

3. Select "Convert Expanded To Wireframe".

Copy

copies the selected element to the clipboard. You can find this function in three locations: the toolbar button, under the Edit Menu, or by right clicking in the View Window.

Cut

removes an element, once it has been selected, and places it on the clipboard where it can be pasted into another location if desired. This function can also be used as a means of deleting an element. You can find this function in three locations: the toolbar button, under the Edit Menu, or by right clicking in the View Window.

Find

Under the Edit Menu or by pressing 'Ctrl' F, you can get a dialogue to search for elements within the project view. After receiving the dialogue, click on the down arrow to choose the element type to search for, then click "Go To". This will highlight the element type you choose to search for within the project view. You can also be more specific and enter the number of the stitch or element.

Global Scale Factor

You can change the global scaling factors for the wireframe elements throughout an entire design. To access these scale factors click on the "Edit Menu", then "ScaleFactors". You will then see the following dialogue:

Scale Factors ✕

Column Density: [100] %

Column Fill Density: [100] %

Column Fill Stitch Length: [100] %

Walk/Underlay Stitch Length: [100] %

Fill Density: [100] %

Fill Stitch Length: [100] %

[OK]   [Cancel]
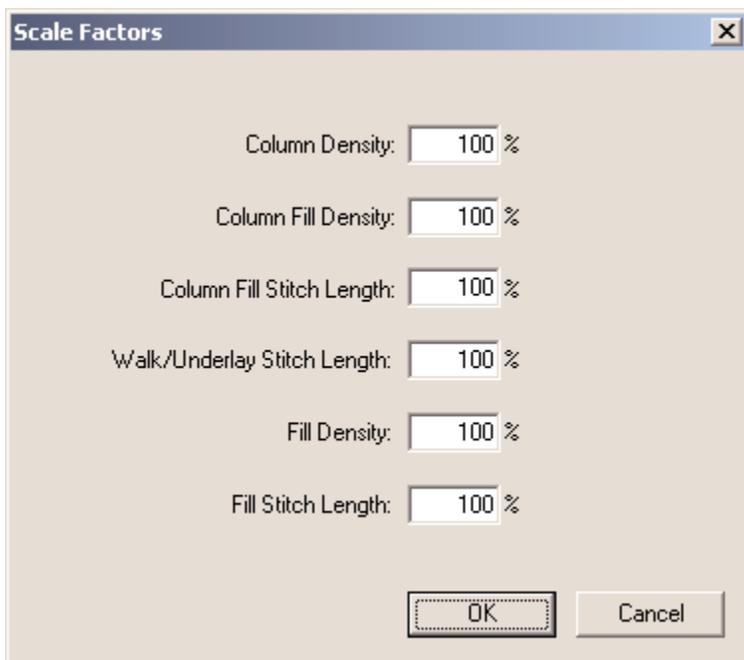
An example of this is a design containing fill stitches at different densities. If you were to change the Global Scale Factor for fill density to 130 %, each separate complex fill will have 30% fewer stitches. If one fill density was set to 4.2, that same fill will now have a density of 5.5. Whereas another fill in the same design that had a 8 density would now be a 10.4 density.

Paste

inserts the contents of the clipboard into the area that you have selected with your cursor and replaces any item or element that is selected. You can only use paste after you have cut or copied an element to the clipboard. You can find this function in three locations: the toolbar button, under the Edit Menu, or by right clicking in the View Window.

Split Element

You have the ability to split elements using this feature. You must first select a point in your element where you would like the split to occur. Then click on the "Split Element" button or click on the "Edit Menu", "Split Element". The point that you had selected will exist in both of the new elements. You can split all types of columns and walk stitches. The following rules do apply:

You can only split on a straight point, not on a curved point, because splitting on a curved point would change the shape of the element.

You cannot split at the ends of an element.

For Column 2, you must select two points to split, one on each side. Hold down the "Ctrl" key to select multiple points.

For Column 1, you can select just 1 point because column 1s have matching pairs.

Undo

is used to "undo" certain actions. Not all actions are supported by Undo. By clicking the drop down arrow, that is next to the Undo toolbar button, you will get a list of items that may be undone. The keyboard short-cut key for this function is Ctrl Z. You can find this function in two locations: the toolbar button or under the Edit Menu.

Redo

is used to "redo" certain actions. Not all actions are supported by Redo. By clicking the drop down arrow, that is next to the Redo toolbar button, you will get a list of the items that may be redone. The keyboard short-cut key for this function is Ctrl Y. You can find this function in two locations: the toolbar button or under the Edit Menu.

File Menu

Embroidery Network System

Embroidery Network System (ENS) is a standalone Windows 95/98 32 bit program that allows the remote control and monitoring of EMB, EMT, and EMC type embroidery machines. ENS can be used by non EDS users who wish to have EDS like control over their Melco embroidery network(s). ENS contains the existing EDS Ethernet and StarLAN networking functionality plus some additional features.

How to send a design to the peripheral:

Click the ENS toolbar button or select Embroidery Network System from the File Menu.

From within ENS, there are 2 ways to transfer file to a peripheral. You can use the Send button, or you can use the drag-and-drop method. Use whichever method is more comfortable for you.

Using the Send button

1. Make sure you have the Transfer tab active (click on it if you do not).

2. Select the desired machine(s) in the Peripheral List (along the left hand side of the screen); use the <Shift> or <Ctrl> keys as you click the mouse button to select multiple peripherals.

3. Choose the drive and/or folder; click in the Look In field to do this.

4. Select the file(s) to be transferred; use the <Shift> or <Ctrl> keys as you click the mouse button to select multiple files.

5. Once the desired file(s) are selected, click the Send button to send the design to the selected peripheral(s).

Using Drag-and-Drop

1. Make sure you have the Transfer tab active (click on it if you do not).

Tip

Even when you choose the wrong format, EDS IV will automatically select the correct format for you.

2. Choose the drive and/or folder; click in the Look In field to do this.

3. Select the file(s) to be transferred; use the <Shift> or <Ctrl> keys as you click the mouse button to select multiple files.

4. Once the desired file(s) are selected, click and hold the left mouse button; move your cursor over the peripheral of your choice, and release the mouse button. This will send the file(s) to that peripheral.

Import and Export

Some of the designs you work with may be on a floppy disk. EDS IV is compatible with DOS, Melco, Premier, Tajima, Barudan FDR and FMC, and ZSK disks, all of which have unique formats. The following chart outlines when to use each command.

To perform this operation	Use this command for DOS formats	Use this command for non-DOS formats
Load design file into EDS IV	Open or Import	Import
Save to hard drive (all files saved on the hard drive are DOS formats)	Save or Save As	N/A
Save to floppy disk	Save, Save As, or Export	Format the disk appropriately, then Export

Importing a Design

To import a design, click the file menu, then Import. The Import dialog box will pop-up. The steps for importing are illustrated below in red numbering.

1. Click on the desired format.

2. Click on the desired drive.

3. Click on the "Directory" button to browse for the location.

4. Select the file to import from the list of files

5. Click the "Import" button.
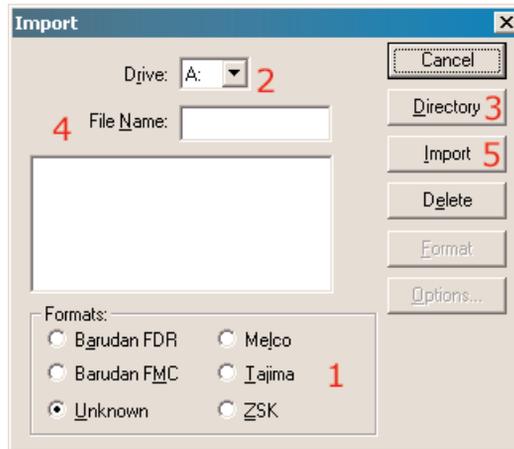
Formatting

Disks must be formatted to match the file type before a file can be written to it. You can format the disk from the Export or Import dialog box. Follow these steps to format a disk:

1. Click on File, Import or File, Export to display the Import or Export dialog box.

2. Select the correct format.

3. Select the correct drive.

4. Click on Format to format the disk.

Important Information on the Melco Format

The Melco format was developed to work with early Melco embroidery machines and other older embroidery products. Hardware required to read the Melco format is becoming increasingly difficult for Melco's suppliers to provide. Therefore, Melco cannot guarantee that it will be able to support the Melco format in the future.

Tip

If you click on the Options button while working with a Tajima format disk, a message box will ask you if you want to update the Boot Record of the disk. This refers to some Tajima disks that have an improper internal label and cannot be read by a DOS computer. If you have problems loading a Tajima disk, click on the Options button and respond Yes to the message.

Melco recommends exporting designs in the Melco format ONLY when the equipment sewing the design requires the Melco format. Otherwise, save designs in the DOS format or the format associated with your particular embroidery product.

Other embroidery formats supported by EDS IV are not affected by this situation.

Exporting a Design

Remember, a disk must be of the proper format before you can export a design to it.

Click on File, then Export to display the Export dialog box.
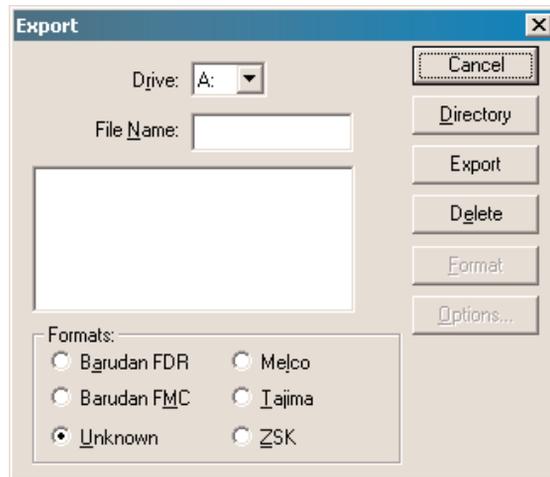
If you are not sure of the format, click on Unknown, then on the Directory button. EDS IV will determine the format of the disk and make the selection for you.

Needle Sequence (for non-DOS Disk and Tape Output)

Needle Sequencing allows the user to produce designs that contain embedded needle sequence information particular to Barudan and ZSK multi-head peripherals. The Needle Sequence dialog box is displayed when you click on the "Options" button in the Export dialog box.

The number of allowed Needle Sequences (i.e., color changes) has increased from 7 to 99. Currently, the maximum needle value is 7.

File Name Standards

The filename conventions for floppy disk formats are given below. These rules must be followed for the disk to be read by other systems:

DOS Format

DOS format names consist of a 1-8 character filename and one of the following extensions:

.CND - Condensed Format

.EXP - Expanded Format

.OFM - Project (Layout format)

Barudan FDR Format

Barudan FDR uses a numeric format. The file number can be from 1 to 36. In addition, a label of up to 8 characters may be specified with this file number. The number and the label must be separated by a colon.

Examples:

3

26:SNAIL

Barudan FMC Format

Barudan FMC uses a numeric format. The file number can be from 1 to 36. No character labels are allowed.

Examples:

3

26

Melco Format

MELCO format names consist of a 1-6 character filename and one of the following extensions:

.CND - Condensed Format

.EXP - Expanded Format

Premier/Stellar Format

The PREMIER/STELLAR format uses the Indirect mode of specifying file names (see your Premier or Stellar manual for a description of Indirect mode). In general, you can think of a Premier/Stellar filename as a number between 1001 and 1999.

Examples:

1001

1930

The Options button allows you to specify 5 different sizes for the hardware scaling of the design at sew-out time. The defaults are:

Smallest: 50%

Smaller: 75%

Larger: 125%

Largest: 150%

Enter new sizes as a ratio to 1.00, for example 125% is entered as 1.25

Note: The Stellar 1 can only read files saved in this format. The Premier can read Tajima and DOS (.EXP) files as well.

Exporting to Stellar only works on the 'A' drive.

Tajima Format

Tajima format uses a numeric format with numbers ranging from 1-999. Beginning with EDS IV release 1.32, any 1-8 character name is also supported. In addition to a filename, a 1-8 character label can be specified after the filename and separated by a colon (like the Barudan FDR format.)

Examples:

1

G001 (How the old Tajima format stored the name 1)

1:TEST

APPLE:TEST (The new Tajima Format)

ZSK Format

Zsk format uses a numeric format with numbers ranging from 1-999.

Examples:

1

12

234

Insert

will provide you with the Insert dialogue box. In this dialogue box, you have the ability to browse for the desired file or project. You also have the ability to view a thumbnail image of each design as it is selected. The thumbnail image is displayed on the right side of the Insert dialogue box. With the Insert dialogue box, you can insert a file into the current project. You have the ability to insert embroidery files, condensed files, expanded files, Tajima files, OFM files, and graphics files. You can not insert a project file into another project file. You can find this function in two locations: the toolbar button or under the File Menu. You can insert the following types of files:

Embroidery Files	Brother Files (*.pes)
Graphics Files	Elna Files (*.sew)
Project Files (*.ofm)	Janome Files (*.jef)
Condensed Files (*.cnd)	Janome Files (*.sew)
Expanded Files (*.exp)	Pfaff Files (*.pcs)
Tajima Files (*.dst)	Pfaff Macintosh (*.pcm)
Barudan FDR Files (*.fdr)	Poem/Singer Embroidery Files (*.csd)
Barudan FMC Files (*.fmc)	Singer (*.xxx)
ZSK Files (*.zsk)	Viking Files (*.hus)
Baby Lock Files (*.pes)	OESD Files (*.oef)
Bernina Files (*.pes)	

In Summit and Midpoint product levels you will have an option on the insert dialogue box for "Open graphics at resolution settings

stored in file". If checked, this option will insert graphics files at there proper resolution that they were saved at. If this option is unchecked, the graphic will insert at 254 dpi (100 pixels per cm) which is required for Digitizing Assistant.

New

creates a new blank view window or project based on default settings. You can find this function in two locations: the toolbar button or under the File Menu.

Open

will provide you with the Open dialogue box. In this dialogue box, you have the ability to browse for the desired file or project. You also have the ability to view a thumbnail image of each design as it is selected. The thumbnail image is displayed on the right side of the Open dialogue box. With the Open dialogue box, you can open embroidery files, project files, condensed files, expanded files, Tajima files, OFM files, and graphics files. You can find this function in two locations: the toolbar button or under the File Menu. You can open the following formats:

Embroidery Files	Brother Files (*.pes)
Graphics Files	Elna Files (*.sew)
Project Files (*.ofm)	Janome Files (*.jef)
Condensed Files (*.cnd)	Janome Files (*.sew)
Expanded Files (*.exp)	Pfaff Files (*.pcs)
Tajima Files (*.dst)	Pfaff Macintosh (*.pcm)
Barudan FDR Files (*.fdr)	Poem/Singer Embroidery Files (*.csd)
Barudan FMC Files (*.fmc)	Singer (*.xxx)
ZSK Files (*.zsk)	Viking Files (*.hus)
Baby Lock Files (*.pes)	OESD Files (*.oef)
Bernina Files (*.pes)	

In Summit and Midpoint product levels you will have an option on the open dialogue box for "Open graphics at resolution settings

stored in file". If checked, this option will open graphics files at there proper resolution that they were saved at. If this option is unchecked, the graphic will open at 254 dpi (100 pixels per cm) which is required for Digitizing Assistant.

Print ⏻

When you click on the Print tool, you will get a dialogue page where you can select Printer, number of copies, what to print. When choosing what to print, you have the option of printing the Design, the Status/Notes, the Object (stitch) list. Print is also located under the File Menu along with Print Preview and Print Setup...

Files created in EDS IV should be saved as Project files (*.ofm) for back up purposes. The ability to save as condensed or expanded is there as well.

Print Preview: Allows you to preview what the print will look like.

Print Setup...: Allows you to choose the Printer, What you would like to print, Paper, and Orientation.
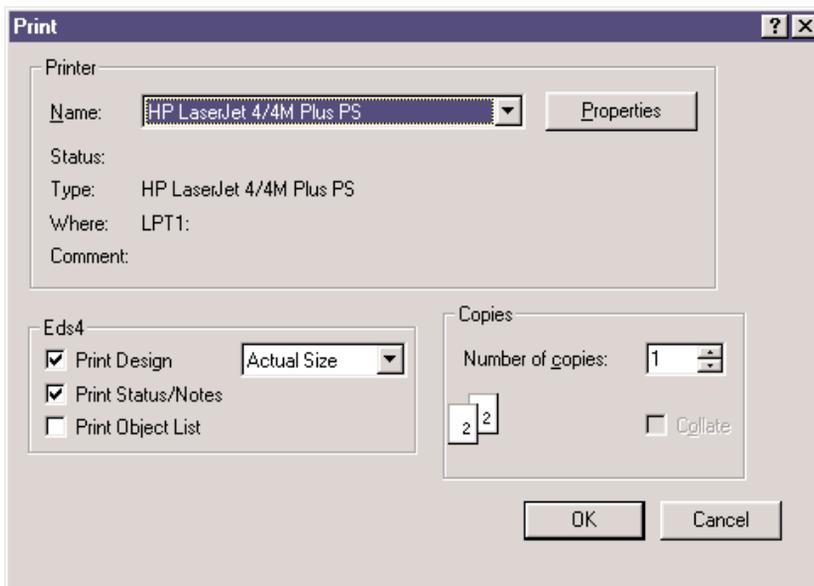
Save 🖫

will save the active file with it's current file name, location, and file format. If these properties have not already been defined then you will receive the Save As dialogue box. You can find this function in two locations: the toolbar button or under the File Menu.

Save As

when you select Save As from the File Menu or you receive the Save As dialogue box when selecting the Save toolbar button, you will need to determine the file name, location, and format. You can save in the following formats:

Note: This version of EDS IV is capable of producing two types of OFM files. Files saved as "Melco Project File (*.ofm)" can only be read with this version or higher versions of EDS IV. Files saved as "Melco Version 2.00 (*.ofm)" can be read by any EDS IV user that has version 2.00.006 or higher software. To change the type of OFM file that is saved, select the desired file type from the "Save as type" list-box control in the Save As dialog box.

Insert Menu

Updates Auto Lock/Trim 🏠

Anytime that you make a change to the Lock/Trim Property page, you

should click on the Auto Lock/Trim button 🏠 to update your project, stitchlist, etc. When you save your .ofm file as a .cnd or .exp file the locks and trims will be automatically updated, but it is still a good idea to always click this button after changing the Lock/Trim Property page.

Auto Shapes ⬭⬯☐▭☆

This feature allows you to insert one or more of the following shapes into a design: circle, ellipse, square, rectangle and star. Each shape may be inserted as a walk stitch, bean stitch, decorative stitch, single line center, single line left, single line right and complex fill. This feature is only available for EDS IV Summit and Midpoint product levels.

To insert a shape, you must first select the desired stitch type (e.g. decorative stitch), then select the shape (e.g. ellipse) from the input toolbar. Now, click the mouse once, then move the mouse and click again, the selected shape will appear with the selected stitch type (note: this is not a click and drag operation). See the following tables for the characteristics of shape and stitch type.

Stitch Types: Walk, Bean, Decorative				
	Center Point	Anchor Point	Entry Point	Exit Point
Circle	1st Click	N/A	2nd Click	2nd Click
Ellipse	N/A	1st Click	0 Degrees	0 Degrees
Square	N/A	1st Click	Top Center	Top Center
Rectangle	N/A	1st Click	Top Center	Top Center
Star	1st Click	N/A	Top Point of Star	Bottom Right Point of Star

Stitch Types: Single Line Center / Left / Right					
	Center Point	Anchor Point	Entry Point	Exit Point	Width
Circle	1st Click	N/A	2nd Click	2nd Click	20 Points
Ellipse	N/A	1st Click	0 Degrees	0 Degrees	20 Points
Square	N/A	1st Click	Top Center	Top Center	20 Points
Rectangle	N/A	1st Click	Top Center	Top Center	20 Points
Star	1st Click	N/A	1/2 way down on the right from the top point of the star	1/2 way down on the right from the top point of the star	20 Points

Tip

One typical use for auto shapes is to create outlines around designs. Try this using decorative stitch for an interesting effect.

Stitch Types: Complex Fill					
	Center Point	Anchor Point	Entry Point	Exit Point	Width
Circle	1st Click	N/A	-90 Degrees From 2nd Click	90 Degrees From 2nd Click	Drag Line
Ellipse	N/A	1st Click	2nd Click	2nd Click	Drag Line
Square	N/A	1st Click	1st Click	2nd Click	Horizontal
Rectangle	N/A	1st Click	1st Click	2nd Click	Horizontal
Star	1st Click	N/A	Top Point of Star	Bottom Right Point of Star	Horizontal

Bean Stitch

Where a normal stitch lays one length of thread down for each stitch, a bean stitch lays down three lengths of thread. The bean stitch is often used to digitize a thicker outline around an element. The bean stitch design consists of laying down a normal stitch in the forward direction, then going back to the original start of that normal stitch with another needle penetration, and again forward to the end of the first stitch with another needle penetration.

Color Change

is an instruction to the peripheral to pause for a re-thread on a single-needle machine, or to change to a different needle on a multi-needle machine. it also changes the color in the View Window to the next color in the color palette. This function also inserts a color change command after the currently highlighted data-set in the stitch list. You can find this function in three locations: the toolbar button, under the Insert Menu, or by right clicking in the View window. The keyboard shortcut for this is F6.

Column 1

is used to generate parallel columns. The stitches are generated back and forth between two outside lines that are parallel (or nearly parallel) to each other. The simplest representation of a shape that would lend itself to a column 1 stitching is the letter l. You can find this function in three locations: the toolbar button, under the Insert Menu, or by right clicking in the View Window.

Column 2

is used more often to generate column stitches for non-parallel columns. To obtain this, first digitize all of the outline stitches from the beginning on one side of an element, then from the beginning again on the other side of the element. You can find this function in three locations: the toolbar button, under the Insert Menu, or by right clicking in the View Window.

If a point is entered incorrectly, pressing the Backspace key will remove the input points in reverse order.

Complex Fill and Hole

Complex fill is the tool on the left with the red outline. To digitize a complex fill, select the complex fill tool by left clicking on it, or by right clicking inside the view window and selecting complex fill. Now input the wireframe outline of the complex fill. By inputting straight or curved points. The last point input should end up being close to the first point that you input, then press Enter or Return. This will connect the last point with the first point. Next, if there are any small holes or places that you do not want the fill to cover, digitize a wireframe outline around those just as you did the first outline and press Enter after each one. After you have finished digitizing the complex fill and any holes, press Enter again.

If you have finished a complex fill and decide later that it should contain some empty spaces (holes), you can insert them without having to digitize the fill again. The toolbar button next to the complex fill button (with the black outline and the filled in hole) is the complex hole button. Select your design by right clicking on it, then select the complex hole tool. Now digitize the wireframe outline of the hole and press Enter.

Complex fill automatically terminates after the second direction point is put in.

You can get to complex fill and hole with the tools on the toolbar, through the Insert Menu, or by right clicking in the View Window.

If a point is entered incorrectly, pressing the Backspace key will remove the input points in reverse order.

Lettering A

After you have clicked on this tool, click inside the view window. A Lettering Properties Dialogue will appear. Lettering Properties consist of four tabs: the Lettering Tab, the Column Tab, the Lock/Trim Tab, and the View Tab. For further information, refer to the Properties section for each tab.

Tip

Besides pressing the lettering input tool , you can also press 'T' on your keyboard to begin a lettering element.
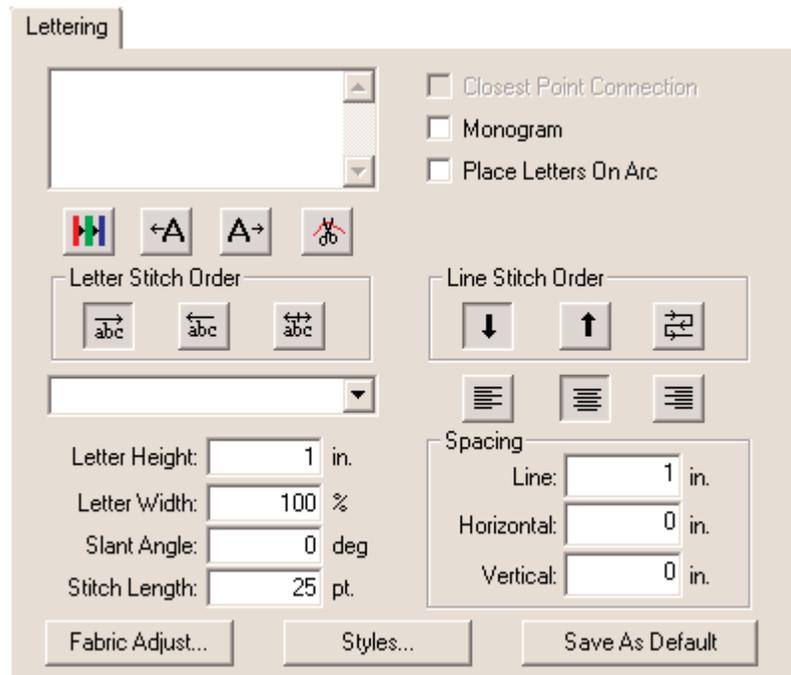
Manual Stitch

Manual stitches give you more control to digitize an exact outline. Where you place the points is where your needle penetrations will be without extra needle penetrations in between. You can only use straight points for digitizing a manual stitch. This type of element is usually used for items where you want to be able to determine where your needle penetrations are. This is located as a toolbar button, in the Insert Menu and also by right clicking in the View Window.

If a point is entered incorrectly, pressing the Backspace key will remove the input points in reverse order.

Return to Origin

This function is normally used at the end of the digitizing process to tell the embroidery peripheral to return the needle to the design origin. It is most helpful to you and your customers to start and end a design at the exact center of the design. You generally want to have lock stitches at the end of a design, trim, then return to origin.

Single line column

is a method of producing columns that maintain an equal width throughout the column. Single line center, single line left, and single line right are the three different types of single line input. The difference between these three types is just the positioning of the stitch area surrounding the line that you create. You can find each of these three functions in three locations: the toolbar button, under the Insert Menu, or by right clicking in the View Window.

When creating a Single line center   column you will first digitize the basic wireframe outline of the design. Then following the instructions located in the grey area below the View Window (the status line), input the first and second width points. The distance between these two points will determine the width of your column with your wireframe line in the center. This is the same procedure

used to input a Single line left   and a Single line right   .

Single line automatically terminates after inputting the width of the second point.

If a point is entered incorrectly, pressing the Backspace key will remove the input points in reverse order.

Trim

A trim command causes peripherals equipped with trimmers to perform a trim. This function also inserts a trim command after the currently highlighted data-set in the stitch list. You can find this function in three locations: the toolbar button, under the Insert Menu, or by right clicking in the View Window.

Walk Jump Stitch

The Walk Jump Stitch element is used to position the needle in the hoop without sewing stitches to the new position. The Walk Jump Stitch does not create needle penetrations. The input method is the same as the Walk Stitch element using a combination of straight and curve wireframe points. Left click for straight points, right click for curved points.

The Walk Jump Stitch element is used to manually connect sections of designs and to position the needle outside of the boundaries of the design in order to position material for an applique.

This is located as a toolbar button, in the Insert Menu and also by right clicking in the View Window. This element is available for EDS IV Summit and Midpoint Product Levels.

Walk Stitch

Walk stitches are the equivalent to running stitches in EDS III and are typically generated in making underlay and outline stitching. Walk stitches are the simplest stitches to make when digitizing. They can be generated in two methods, straight lines or automatic curves. For example, If you are digitizing the outline of a square select walk stitch, then left click at the first corner of the square. Now, go to the second corner and left click, the third corner and left click, the forth corner and left click, back to the first corner and left click. It doesn't matter how big the square is when you are using walk stitch; needle penetrations will be inserted every 30 points along the way. The

default setting is 30 points and can be changed under walk stitch properties. This is located as a toolbar button, in the Insert Menu and also by right clicking in the View Window.

If a point is entered incorrectly, pressing the Backspace key will remove the input points in reverse order.

Stitch Types
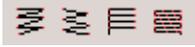
After selecting a column 1, column 2, or a single line column, you can choose from four different stitch types. The different stitch types are Satin Stitch , Zigzag Stitch , E Stitch , and Fill Stitch . If you don't select the stitch type when first inputting the column, then you will need to go into the Column Properties to change the stitch type. Choosing the stitch type is also available under the Stitch Type Menu.

The new Zigzag stitch is similar to a Satin stitch. Zigzag's can be used for underlays and boarders around lettering. Use Column 1, 2 or Singleline Input tools to digitize a Zigzag.

The new E stitch is similar to a Satin stitch. E stitches can be used for applique tack-downs or border stitching. Use Column 1, 2 or Singleline Input tools to digitize an E stitch.

Tools Menu

Accelorator Editor

You have the option of assigning EDS IV functions to the hotkey (or key combination) of your choice. Click on "Tool", then "Accelerator Editor". You will see the following dialogue:
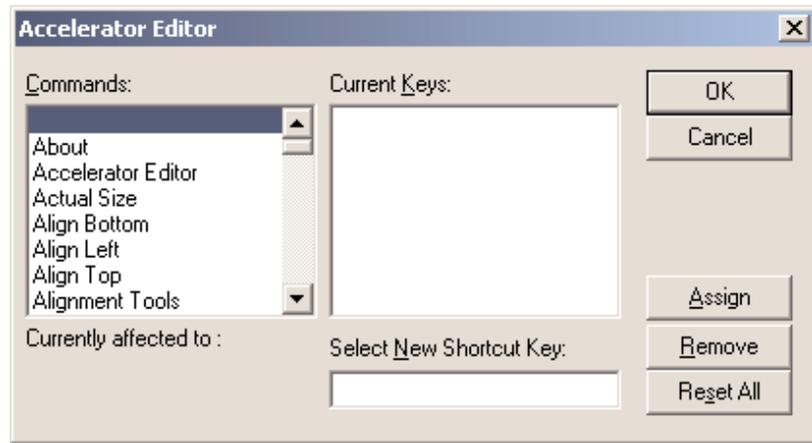
Commands: This list box contains a list of all of the available commands from the menus and toolbars.

Current Keys: This list box displays the accelerators currently defined for the highlighted selection in the "Commands" box. The gray selections are default accelerators that cannot be removed or changed. The black accelerators are user defined (defined by you), and can be removed or changed. NOTE: Default accelerators are displayed in gray, and user defined accelerators are displayed in black.

Select New Shortcut Key: This edit box allows you to enter in any key combination that you wish to be an accelerator/hotkey for the highlighted selection in the "Commands" list box.

Currently Affected To: Upon clicking the "Assign" key, if the key sequence in the "Select New Shortcut Key" box has already been defined for another command, that command text is displayed here. The Accelerator Manager prevents you from entering in duplicate accelerators.

Assign Button: This assigns the key sequence in the "Select New Shortcut Key" box to the highlighted selection in the "Commands" box. Pressing this button also saves the accelerator key sequence in

your registry.

Remove Button: This removes the highlighted selection in the "Current Keys" box from the list, as well as your registry.

Reset All Button: This removes all of the accelerators that you have defined from the "Current Keys" box and the your registry, and reloads the default accelerator table.

Example of use

1. Click on the "Tools" menu, and then click on "Accelerator Editor". This will display the Accelerator editor dialog box.

2. Choose a command that you wish to add a hotkey for and then click on it in the "Commands" box.

3. Now click in the "Select New Shortcut Key" box and type in the key sequence you want for the hotkey.

4. Click on "Assign"

5. Click on "OK"

Business Assistant

The Business Assistant is a utility to help you calculate the cost on a per item basis. You can find the Business Assistant, it is under the Tools Menu. Below is a picture of the Business Assistant dialogue.
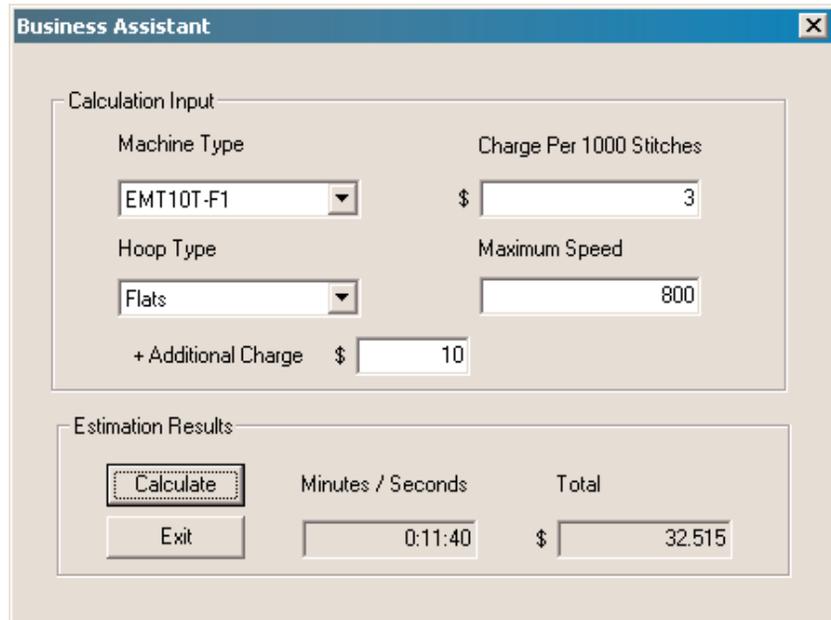
You may select the machine and hoop type. Values may be entered for a charge for each 1000 stitches and the maximum speed the design will be sewn at. You may also enter a price for any additional charges (for example a setup fee price). Click on the "Calculate" button to see the total sewing time (hours:minutes:seconds) and total price. The Business Assistant supports all monetary values supported by the Window's regional settings. Estimates from the Business Assistant are not available for printing at this time.

Convert / Restore Alphabets

All alphabets currently being sold by Melco contain lock stitches at the end of each letter in the alphabet. These lock stitches are what "ties down" the stitching at the end of each letter. EDS IV allows you to add lock stitches to a lettering job from the Lock / Trim tab. However, because the lock stitches are already digitized into the alphabet, the result is multiple lock stitches that will create an undesirable knotting effect.

To remove all existing lock stitches from all installed alphabets, click
on the "Tools Menu", "Convert Alphabets". You will get the
following dialog box:

Convert Alphabets ✕

This will remove digitized lock stitches from all installed
alphabets.

Continue Cancel

When clicking on "Continue", all lock stitches will be removed from
the alphabets that are installed on your hard drive. If you want to
stop click, "Cancel". When converting alphabets, it may take several
minutes to complete.

If you decide that you didn't want to remove the lock stitches from
the alphabets, click on "Tools Menu", "Restore Alphabets". You will
get the following dialogue box:

Restore Alphabets

Cancel

This will restore all alphabets from the backup files.
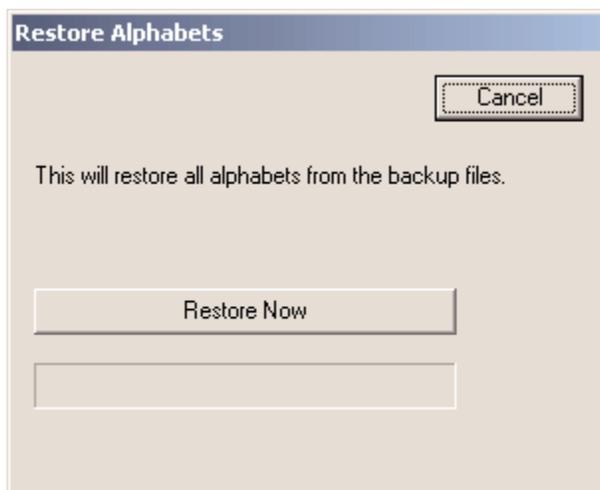
Restore Now

When clicking on "Restore Now", all of the installed alphabets will
be restored to their backup file.

Design Filter

This function applies to the editing of Expanded data designs only.

Turn on the functions that you wish to affect you design by left clicking in the box next to the function (click again and the check mark, that was just inserted, will be removed). A check mark in the box symbolizes the the function is ON, whereas no check mark in the box symbolizes that the function is OFF.

Accumulate Jump Stitches: When you digitize a jump stitch between two points, the computer makes the move in increments of the stitch length you are using. For example, if the total distance you are moving is 360 points, and your stitch length is 40 points; then the computer will generate 9 stitches (in the jump stitch mode) to cover that distance.

By turning ON this function, you will force the computer to cover the 360-point distance in increments of the maximum stitch length for the format you are using. Most multi-head machines have a maximum stitch length of 127 points.

Assuming we are using a format with a 127-point maximum stitch length; then the computer would generate only 3 stitches to cover the 360 point movement. This would decrease the design's stitch count, and save a little sewing time.

Accumulate Needle Ups: This function is very similar to Accumulate Jump Stitch except it acts on Needle Up stitches.

Accumulate Short Stitches: This function will delete all short stitches that are equal to, or less than, the length that you set in Short Stitch Length. This function will filter out a series of short stitches; therefore, if you desire to protect your lock stitches, you must enter the number of consecutive short stitches that you want to protect in the After Short stitch count box.

The box below Accumulate Short Stitches, labeled "After _ Short," is the short stitch count. This function is used in conjunction with Accumulate Short Stitches, and allows you to determine the number of consecutive short stitches that will not be deleted when you use the Accumulate Short Stitches function. You may enter any number up to and including 20 stitches.

Delete Single Short Stitches: This does not refer to your column stitches; but rather those zero-motion or tiny walk stitches that are sometimes in designs. There are also some very tiny stitches in the fills that are digitized when the needle begins sewing a new line of stitch.

This function will only delete a single short stitch; that is, a short stitch that is preceded by, and followed by, a stitch that exceeds the length defined in Short Stitch Length. Two or more consecutive short stitches will not be affected by this function. This function allows you to filter out any random short stitches without filtering out your lock stitches.

Maximum Stitch Length: Any stitches greater than this value will be broken down with intervening jump stitches by the computer. For most multi-head formats this value should not exceed 127 points. For Tajima format this value should not exceed 121 points.

Needle Ups to Jumps: Turn this function ON to have all Needle Up stitches changed to Jump stitches. The advantage of using Jump stitches is that the main shaft of the sewing peripheral continues to turn while the jump stitch solenoid holds the needle up to keep it from sewing. Needle Up movements, on the other hand, stop the main shaft while the rack moves. This causes you to lose time during the sewing of a design.

This function literally changes each expanded Needle Up to a Jump stitch in the design data.

Short Stitch Length: This function allows you to enter a length, from 0 to 5 points, that defines what a short stitch is. For example, if you enter a length of 3 points; then any stitch that has a length of 3 points or less will be considered a short stitch, and will be acted upon the other short stitch functions.

Factory Defaults

The Factory Defaults dialog box can be found by clicking on the "Tools Menu", then "Factory Defaults". You can restore the default settings for Complex Fill, Column 1, Column 2, Singleline Columns, Walk Stitches, Lettering, the Workspace Area (View Window), Color Palette and Grid/Origin.
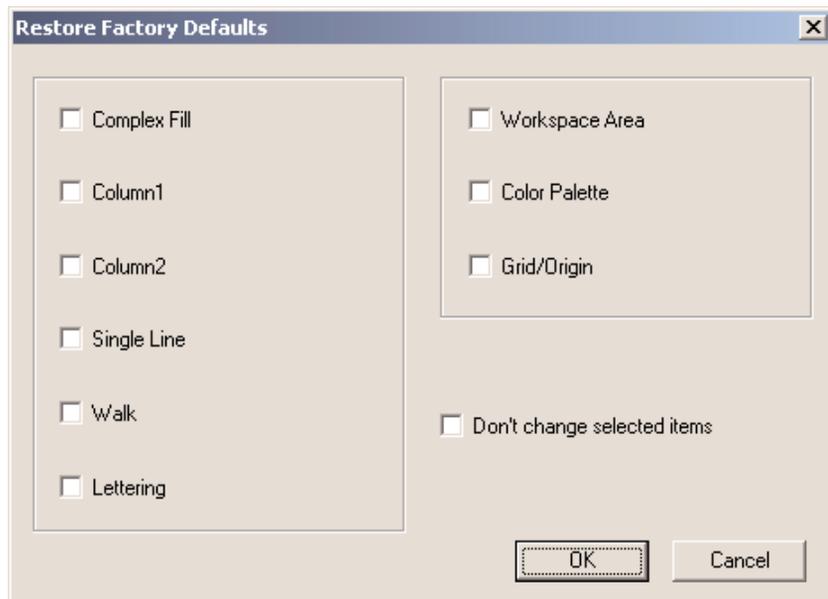
An example of how to restore the current settings to the factory default settings follows:

1. Start Eds4

2. Open a design with one or more of the element types listed above.

3. Change the properties for one or more of the element types listed above.

4. Display Factory Defaults dialog box (under the Tools Menu).

5. Restore defaults for each type. This should be done at all selection levels (Project, design, element).

Group Names

This is a new feature of EDS IV that replaces most of the functionality of EDS III's Step and Repeat with more powerful, distributed functionality. Group Names allows you to add a single replaceable lettering field to a project and a list of names to be stitched into that field to a project and a list of names to be stitched into that field whenever you save the project to condensed or expanded files. This list of names becomes part of the project and can be managed either within EDS IV or from the Windows Explorer, providing distributed access to this exciting new feature.

Group Names will always stitch last so it will always be fully visible regardless of its positioning relative to the other designs in your project. Choosing the position and lettering properties will often involve some experimentation and compromise considering that the length of names to be substituted often varies considerably. Preview capability allows substitution of any selected name into the replaceable field at design time to assist with those choices. The full range of lettering properties are available but cannot be varied from name to name. Similarly, the position of the Group Names field is fixed and cannot be varied from name to name during a single Save As operation. It is, of course, possible to select File Save As to generate expanded or condensed file output then adjust the position of the field, reselect long names, and generate another expanded or condensed file.

While Group Names will most commonly be used to individualize uniforms for members of sports teams, the capability is generally applicable to batch personalization of multiple embroidered garments. A simple database of available names is associated with the project and can be updated, altered, and multiple different sets of names can be selected from available names. Copying the project file copies the available names but the list can be cleared and repopulated with a new set of names, possibly for a different customer. Risks of stitching an incorrect, or misspelled name on a garment are reduced by allowing copies of the selected list to be made to the windows clipboard and then e-mailed or faxed to customers prior to actually generating the

expanded or condensed files. Sending a copy of this list to your printer can provide identification of any particular name with the appropriately sized garment when not stitching on one-size fits all items.

The range of output options must be set prior to choosing File, Save As to generate either expanded or condensed files. These output options can be set from the same property page you will use to manage the lists of available and selected names. There are five options that result in generating from one file containing copies of the design and one name for all of the selected group names through separate files for each of the names. Understanding which option to choose from this list will allow you to shorten the total time required to stitch out embroidery machines that incorporate "SomeCodeName".

As you can see, there is considerable power and flexibility in the Group Names feature, but the workflow to add group names to any existing project could hardly be simpler. First, choose Tools, Group Names from the EDS IV menu. Position the resulting lettering relative to the rest of the design. Next, right click on the Group Names object clipboard or import from a text file. You can then select on or more names, or even the entire available list by selecting names and clicking > or >>. If you click on one of the selected names, it will replace the Group Names text as a preview and you can reposition the field after dismissing the Property Page. Remember that only a single position for the Group Names field is available each time you generate expanded or condensed files. Finally, you will choose File, Save As and set the file type to either expanded or condensed, navigate to the directory where you would like to store the resulting output, and click "OK". You should choose the output directory carefully when generating multiple group names files to avoid mixing these with designs that do not contain group names. To assist in making this distinction, the first two characters of multiple group name files are numeric, i.e. 01Bill.exp 02Mary.exp, etc. so they will sort to the top of the list in Explorer when the list is sorted on name.

All of this sounds more complex than it actually is and once you have used group names for one to two projects your productivity in using it to personalize designs will soar by comparison with any other method, in any other embroidery design system. Being able to allow the production department to manage the database of names form

computers that do not necessarily have EDS IV installed allows the workflow to be distributed in shops where networks may include multiple production workstations but only a single EDS IV design station. This is the kind of functionality you will come to expect from your embroidery system and it is available exclusively from Melco.

Workflow

The first and last step handled form within EDS IV, i.e. choosing Tools, Group Names and later, File, Save As. These are easy and, as noted, must be completed from within EDS IV.

Managing the list of available and selected Group Names can be carried out either within EDS IV or within Explorer, by right button mouse clicking on the appropriate object or file and selecting Properties. The Group Names tab will contain a property page that allows you to add, import, paste, clear, copy to clipboard, and otherwise select names form the available list. Note that the list boxes are intentionally not self sorting so that names will remain in the order added and Clear will empty BOTH lists.

Clicking "Add" will make a small edit window available immediately above the "Add" button. You can type a list of names, separated by commas, into that edit window and then click "Add" again to place them in the Available Names List. Note that you can add names that include First Last names as, for example, "John Jones, Mary Jo Williams, …". After selecting an individual name you can then choose to substitute First Name only, Last Name only, or both but you should be aware that for Mary Jo Williams the first name will be considered Mary and her last name Jo Williams. If this is not what you want to happen to such names you should type Mary Jo as Mary_Jo. It will appear as Mary_Jo in the list but when stitched out the "_" will be replaced by a space.

Generally you will not Add names individually because of the possibility of making errors. Moreover, the list of Available Names cannot be edited after names have been added. There is, however, a very simple way to edit the list and the order of the names using NotePad or any word processor. Be sure the list of names has been saved to the project file if you just added them. First, click << to empty the list of Selected Names and then click >> to place a complete copy of Available Names into Selected Names. Select the "Both" radio button to assure that the complete name is showing for each. Next

click "Copy to Clipboard" to copy the list of Selected Names to the Windows clipboard and then paste it into whatever text editor you regularly use. You may note some additional information enclosed parenthetically but you can ignore it as balanced parentheses and enclosed text will be removed when pasting or importing files. With the list in your favorite editor you are free to Edit, Copy to place it back into the clipboard. Returning to the Group Names Property Page, click "Clear" to empty the list and then Paste the edited names back into Available names list. If something goes wrong, click "Cancel" on the Property Page and whatever data was in the project file will be kept safely. If you are happy with the edited data list click "OK" to save it.

Note that you also can save your list of names into a text file, for example using NotePad. The value of doing this is that you can associate comments with each name in the list as in the following example:

John Jones (male 16-32 left pocket)

Mary Jo Williams (female small left sleeve)

And so on…

Printing this list will assist the embroidery peripheral operator to associate the proper garment with the name. Note, as mentioned above, balanced parenthesis and their contents will be ignored and ends-of-line can be substituted for commas to separate names. Beware of open parenthesis without a balancing close as you may lose names from the list.

The real power of this multi-step editing process is that lists of Available Names can be quickly extracted form e-mail without risk of misspelling and copied back to e-mail or fax before stitching to verify the names with customers. The longer the list the more you'll appreciate this functionality. One misspelled name can turn profits into losses on expensive uniforms!

After making changes to Group Names properties be sure to click "Apply" or "OK" if you wish to save those changes to the project file. If you wish merely to experiment with the lists but not save changes, click "Cancel". Doing this in Explorer works directly with the project file but within EDS IV you must actually choose File, Save or click "OK" to save the project file before it will be permanently recorded on disk.

Output Options

Group Names must be processed into expanded or condensed files before they can be stitched on embroidery peripherals. This occurs when you File, Save As to either expanded or condensed. There are five optional output formats, the first four will result in the generation of only a single file, whether expanded or condensed. The final output option results in multiple files, named 01name1.exp, 02name2.exp, etc. being generated where each file can be sewn separately. When these files are placed on a diskette and viewed on a sewing peripheral, the numeric order will help the operator keep them in sequence.

The reason there are so many output options that result in a single file is that large Group Name jobs can be run simultaneously on multi-head machines using <<SomeCodeName>>. Generally, when stitching on a single-head machine you will use option 1, i.e. Design, Name, Design, Name and change garments on color changes after the name, or use option 5, File Per Name for greater control of the process.

Options

Auto Save: You can turn auto save on or off by clicking in the box next to Auto Save. A check mark in the box symbolizes that auto save is on, click again to remove the check which symbolizes that auto save is off. Next to Interval you can insert a number that will determine how often auto save will save your file.

File Options

Auto Save

Auto Save On: ☑

Interval: 3   Minutes

Open File At: Actual Size ▼

Zoom Level Actual Size: 100

Open graphics at resolution settings stored in file ☐

Preserve condensed connectors on open ☐

Open File: You can have your files open up to actual size or to fit the whole screen.

Preserve Condensed Connectors On Open: When checked EDS IV will create a jumpstitch object for each portion of a condensed design

Tip

If your computer stops responding while you are working in EDS IV, the next time you open EDS IV you will be given the option to recover any work that was saved with Auto Save. After the recovered files are open you should save them with a new name. Do not save them in the temp directory because these files are managed by EDS IV and will be deleted.

that was in the needle up mode. If the box is not checked the needle up sections of the condensed design are discarded and EDS IV automatically creates connectors to move between sections of the design.

Auto Scroll: Auto Scroll works as you are in the middle of digitizing an element. When you move your cursor out of the view window, auto scroll will scroll the view window to follow the direction of your cursor. You can change the speed of the auto scroll from 1 to 10.
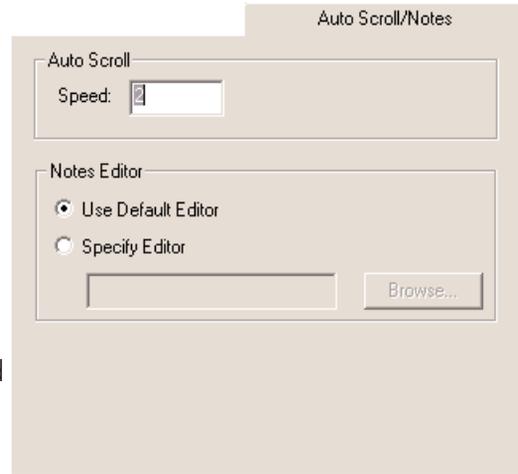
Notes Editor: If you choose to use a different editor than the default (microsoft word for example), click in the radio button next to Specify Editor and then browse to the desired one. Notepad is the default editor.

Measurement Units: You have the option of changing the measurement units on the properties listed. You can have the units in embroidery points, millimeters, centimeters, or inches.
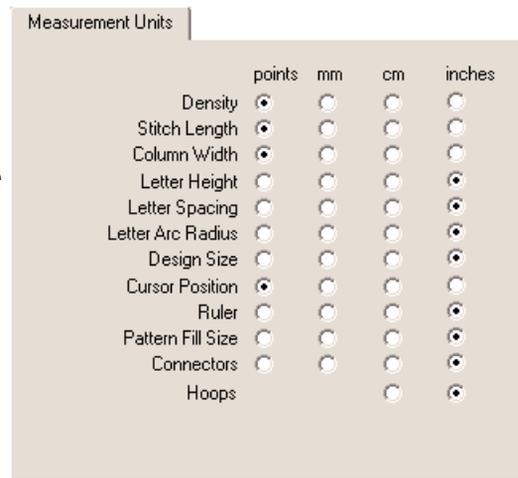
Editing Properties

Wireframe Point Size

You have the option of changing the size of the wireframe points when you view them in the View Window. The default is Small (9 pixel).

Tablet Digitizer

This option applies only to EDS IV Summit product level.

The process of digitizing with a tablet is similar to on-screen digitizing. You can create elements by inputting a series of straight and/or curved points. Please scroll down for further information.

The required components for tablet digitizer are as follows:
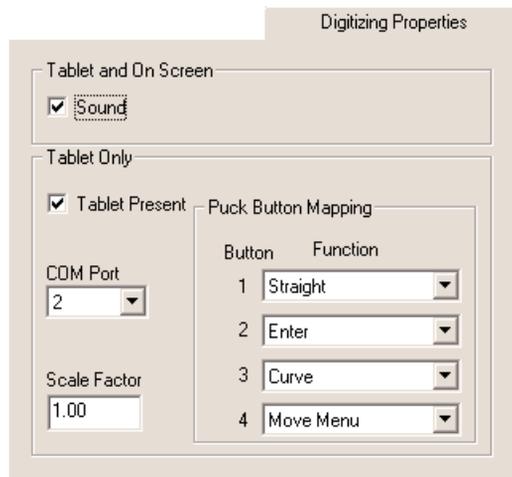
- Digitizing Tablet - Any tablet that conforms to Summagraphic's Microgrid Format (most tablets supported by EDS III fall into this category).

- Tablet Toolbar - A "stick on" template that closely resembles the EDS IV input toolbar

- Computer Serial Port - capable of handling 2400baud, no parity, 8 data bits and 1 stop bit.

- EDS IV Summit Level - The tablet will only function with the EDS IV Summit Level product.

Tablet Setup

If you have the Summit product level, the tablet may be set up by clicking on the "Tools:Options" menu in EDS IV. Then click on the "Digitizing Properties" tab.

All controls (except sound) will initially be disabled. To enable all controls, click on the "Tablet Present" checkbox. Select the COM port per your hardware capabilities. You can select how your puck buttons are mapped. Default mappings are as follows:

- Button 1 - Straight Point
- Button 2 - Enter
- Button 3 - Curved Point
- Button 4 - Move Tablet Toolbar

The Tablet Toolbar

The tablet toolbar is a stick on device that contains tools for the various digitizing functions. Because of it's similarity to the EDS IV input toolbar, only differences are described below.

Set Origin - To set the origin of the artwork, click on this tool followed by a puck click (any puck button not mapped as the "Move menu" button) on the origin of the artwork.

Set Horizontal - To set the angle of the artwork, click on this tool followed by a puck click (any puck button not mapped as the "Move menu" button) on the bottom left edge of the artwork followed by another click on the bottom right edge of the artwork.

Move Artwork - This function allows you to digitize a design which has artwork larger than the active area of the tablet digitizer. You are able to digitize up to a point, then move your artwork and resume digitizing with no break in the design. To move artwork and maintain the original origin, perform the following steps:

1. Click on the Move Artwork tool

2. Click on a point (example point x) on the artwork

3. Move the artwork

4. Click on point x again

5. Click on the bottom left edge of the artwork followed by another click on the bottom right edge of the artwork

6. Continue digitizing as normal

Retrace On/Off - Click on the retrace button to switch from 'On' to 'Off'. When this function is 'On", an newly digitized walk stitches will retrace back to the first digitized point.

Backspace - This tool simulates the pressing of the "Backspace" key on the keyboard. Each time this tool is clicked on, the last entered point is removed from the screen.

Escape - This tool simulates the pressing of the "Escape" key on the keyboard. Click on this tool to remove the last digitized element.

Digitizing Hints

1. The artwork origin and angle are saved in the registry. Once the parameters are set, it is only necessary to change them when the artwork is moved.

2. It is not necessary to "start a digitizing session" as it was in EDS III. Once the tablet is configured the user may enter points by choosing the appropriate input tool from the tablet toolbar or the EDS IV input toolbar and then entering straight and/or curved wireframe points.

3. While an element is being digitized from the tablet, mouse input from EDS IV is ignored. Mouse input will be recognized once the element is finished being digitized.

4. All element parameters such as density, underlay, stitch length, etc. are set from the property sheets as done for on screen digitizing.

Digitizing Sound Effects

This feature only applies to EDS IV Summit product level. EDS IV supports the ability to produce audible sounds when a mouse button or puck button is clicked during digitizing. To enable this effect, click on the menu item "Tools:Options" followed by a click on the "Digitizing Properties" tab (you must have the Summit product level).

When "Sound" is selected to "On", an audible tone will be heard from the computer each time a button is pressed on the active digitizing device (mouse / puck). The following table shows what tones will be heard depending on the operating system and hardware present:

Windows NT / 2000 with a sound card	Unique tone from sound card
Windows NT / 2000 without a sound card	Unique tone from computer speaker
Windows 98 with sound card	Unique tone from sound card
Windows 98 without sound card	Standard system "beep" from computer speaker

Security

There are three tabs under the Tools Menu, Security. The three tabs are General, Levels, and Options.

The General Tab displays The Melco Dongles that are attached to that particular computer and the Serial Number associated with each dongle.

General

Melco Dongles Attached to this Computer

Product

EDS IV
Embroidery Network System

Serial Numbers

Melco

Sentinel

The Levels Tab displays the Current Level. If upgrading to another level, here is where you will type in the password for the higher level. The first level is "Base", which is primarily a lettering system. The next Level is "Mid-point", which contains lettering and editing. The top level is "Summit", which contains lettering, editing, and digitizing.

Levels

Level

Current Level

Level Selection

Base

Mid-point

Summit

The Options Tab displays
the available options
and this is where you
would type the
password for purchased
options.

Options	
Option	Password
Embroidery Network System	
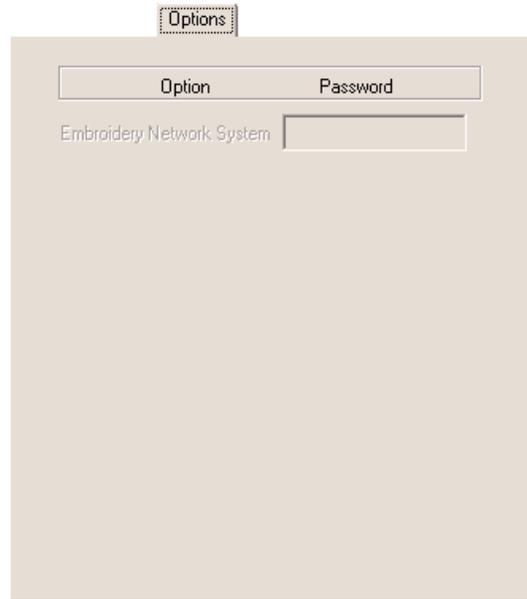
View Menu

Design Notes

Design Notes is a useful tool for documenting information of the
design (i.e., maximum & minimum height, with, stitch count, colors,
etc.) To insert notes, simply click on the "Notes" tool. Type the
desired text and save. To view design notes, right click on the top
level project in the stitch list and select Design Notes. This is also
located under the View Menu.

Display Hoop

By selecting Display Hoop, a dialogue will pop-up. This dialogue will
give you the ability to choose the machine type, which hoop, display
that hoop on the screen and even trace your design to make sure the
current design fits in the selected hoop. You can also create new
hoops, look in the Properties section of this manual under Hoop
Control.

Grouping   Ungrouping

You can access Grouping or Ungrouping through the "View Menu"
or by clicking on the toolbar buttons.

After selecting more than one element, you can group them by

simply clicking on the Group Button [icon] . After doing so a number is automatically assigned to that group. You can view this number in the Project View.

If you click on any of the items within the group, the whole group will be selected. The only exception to this is if you click in the View Window and drag a box around part of the design to select elements, then the whole group may not be selected. The reason for this exception is so that you can still have temporary grouping without having to ungroup your numbered groups.

The Group Button also has a drop down arrow for easy selection. If you click on this arrow you can select the number of the group and the whole group will be selected in the Project View and the View Window.

To ungroup a group, select an element from that group and click on

the Ungroup Button [icon] . This will remove all of the currently selected elements from their group.

Hide/Show Graphic [icon]

After you have inserted a graphic, you can click on this tool to hide. Click again to show the graphic. These options are also located under the View Menu.

Hide/Show Stitches [icon]

After you have inserted an element or design, you can click on this tool to hide the stitches. Click again to show the stitches. These options are also located under the View Menu.

Color Palette

The color palette displays a large choice of colors. Each square represents a color. These colors are used to draw out your design in the View Window. Color one can be thought of as needle one on the peripheral, but color palette does not control the peripheral. Colors are supplied to aid in visualizing what the final sew out will look like. Color one will sew out first, color two will sew out second, and so on. A number will appear on the color box in the color palette

only when the color is active in the design. Every color is editable. To edit the colors, you can right click anywhere on the color palette. Once you right click a color menu will appear with several features. The first feature is that you can hide the color that you right clicked on. The second feature is that you can show the color if it is already hidden. If a color is hidden it will have an X on top of it. You can also simply left click on a color to show or hide it. An X on top of the color symbolizes that it is hidden. No X on top of the color symbolizes that the color is not hidden. From the color menu, you can also hide all of the colors in the design. If you would like to have one color displayed at a time, to show the order of sewing for

example, you can use the "Walk Through Colors" tool . The "Walk Through Colors" tool is displayed after the background color button.

If you would like to change the color of the background (the View Window area behind the design), right click on the first box in the

color palette .

Another feature of the color menu is the Drag Customization. Once you are in the Drag Customization mode you can click on a color, drag it and drop it onto the position where you would like it to be.

The last box in the color palette , represents the color wrap. This image is always displayed at the end of the colors in the color palette. Color wrap is explained in more detail under Color Properties.

The final feature of the color menu is Properties. Refer to Color Properties for more information.

Project Views

When selecting Project Views from the View Menu, a portion of the EDS IV screen will be given to a box containing three tabs. These three tabs are Project, Navigator, and Palette. These tabs are designed to function as an assistant while you are working on a project. If you would like to not have the Alternate Views displayed, you can un-select them from the View Menu. You can also un-select them by right clicking in the empty grey space to the right of the toolbars.

Tip

Remember, when you are in Drag Customization Mode, you will not be able to get out of that mode until you right click and end Drag Customization.

Project The Project Tab displays a tree view or a list of everything that you have done within a project. The highest level in the tree view is the project. The project name is editable in the project properties general tab. You can get to the properties menu by selecting the name of the project from the tree view and then right click.

The next level in a project is the Design Level. A project can consist of one or more designs. The name of the design is editable in the design properties general tab. You can get to the properties menu by selecting the name of the design from the tree view and right click.

The next level in a project consists of the elements of each design. Each design can consist of one or more elements. The elements that make up a design can be Manual Stitch, Walk Stitch, Column1, Column 2, Single line center, Single line left, Single line right, Complex Fill, Lettering, Color Change, Trim, and Return to Origin.

The next level that follows after the elements is the stitch list that displays the data-sets that are present. A data-set is any command that produces a stitch. If the design is wireframe (.OFM), the stitch list information will be in wireframe outline parameters. If the design is condensed (.CND), the stitch list information will be in mark point parameters. If the design is expanded (.EXP), the list will be in stitch parameters.

Stitches The Stitches Tab was designed to aid you with expanded editing. It displays two windows. The first window is the Project window and the Second is the Stitches window. The Stitches window shows all of the expanded stitches for an entire project. The expanded stitches are also numbered. This expanded data is only editable in an expanded design or an expanded element. When viewing the expanded data from a wireframe or condensed design, the expanded data will have (RO) next to it. This indicates that data is Read Only and cannot be edited.

To navigate through the expanded data list you can scroll using your mouse, use the "Home", "End", "Page Up", "Page Down" keys, or the arrow keys on your keyboard. If you want to edit a particular expanded piece and can see it in the Project window, click on the icon in the Project window and it will take you to the beginning of

Palette The Palette Tab displays a large choice of colors. Each square represents a color. These colors are used to draw out your design in the View Window. Color one can be thought of as needle one on the peripheral, but color palette does not control the peripheral. Colors are supplied to aid in visualizing what the final sew out will look like. Color one will sew out first, color two will sew out second, and so on. A number will appear on the color box in the color palette only when the color is active in the design. Every color is editable. To edit the colors, you can right click anywhere on the color palette. Once you right click a color menu will appear with several features. The first feature is that you can hide the color that you right clicked on. The second feature is that you can show the color if it is already hidden. If a color is hidden it will have an X on top of it. You can also simply left click on a color to show or hide it. An X on top of the color symbolizes that it is hidden. No X on top of the color symbolizes that the color is not hidden. From the color menu, you can also hide all of the colors in the design. If you would like to have one color displayed at a time, to show the order of sewing for

example, you can use the "walk through colors" tool . The "walk through colors" tool is displayed after all of the colors boxes in the palette.

If you would like to change the color of the background (the View Window area behind the design), right click on the first box in the

color palette .

Another feature of the color menu is the Drag Customization. Once you are in the Drag Customization mode you can click on a color, drag it and drop it onto the position where you would like it to be.

The last box in the color palette , represents the color wrap. This image is always displayed at the end of the colors in the color palette. Color wrap is explained in more detail under Color Properties.

The final feature of the color menu is Properties. Refer to Color Properties for more information.

Ruler

This is a very useful tool to use if you would like to measure elements. This function is located as a toolbar button and also under the View Menu. If you would like to change the units of measure, you can do that by going to the Tools Menu, selecting Options, clicking on the Measurement Units and look for Ruler in the list.

To use this feature click the ruler toolbar button, click on the starting point from which you would like to measure and drag your mouse to end point of your measurement. While doing this look to the bottom of your screen on the status bar to view the measurement. Let go of your mouse button to start a new measurement. To turn off the Ruler feature, click on the ruler toolbar button again.

Show Grid

By selecting Show Grid, a framework of evenly spaced vertical and horizontal black (default color) lines will be displayed behind the design in the View Window. The default setting for the spacing of the grid is .5 inches. All default settings can be changed by right clicking over the tool and entering the properties menu. You can find the Show Grid function in two locations: the toolbar button or under the View Menu.

Show Origin

By selecting Show Origin, two grey (default color) lines will be highlighted along the center X and Y axis of the View Window. Where the two lines cross is where the origin and center of the design are located. When you center your design it will be centered here at the origin. All default settings can be changed by right clicking over the tool and entering the properties menu. You can find this function in two locations: the toolbar button or under the View Menu.

Show Stitches in 3D

This will generate the stitches of a design in the View Window in a three dimensional perspective.

Besides pressing the toolbar button, you can also hold down the Alt key and press '3' to turn on "View Stitches in 3D".

Status Bar

The status bar displays helpful information about your project. The first box tells you the placement of your cursor. The second box tells you what level of zoom that you are at. The third box gives you very important steps for digitizing when you are inputting an element. Below the status bar boxes you will find helpful information on each tool when your cursor is above it.

Cursor X:-445 Y:+143	Zoom level:100%	Input first point of element
For Help, press F1		

Toolbars

The Menu Bar consists of a window icon , the standard minimize application, maximize application, exit application, and nine different menus. The nine menus are file, edit, view, insert, tools, custom, window, and help.

File   Edit   View   Insert   Tools   Custom   Window   Help   _ |🗗| ✕

The Main Bar consists of new file, open file, insert, save, notes, ENS, cut, copy, paste, undo, redo, print, and about.

The View Toolbar consists of the zoom tools, ruler, origin, grid, snap to grid, view in 3D, hide/show graphic, and hide/show stitches.

The Object Toolbar consists of select all, group, ungroup, previous/next element, color change, trim, return to origin, lettering to wireframe, change element type, split element, auto lock/trim, center design, mirroring tools, digitizing assistant (partial), and digitizing assistant (full) if available.

The Input Toolbar consists of edit mode, manual stitch, walk jump stitch, walk (normal) stitch, bean stitch, decorative stitch, column 1, column 2, singleline columns, complex fill, complex hole, lettering, retrace, satin stitch, zigzag stitch, E stitch, fill stitch, and auto shapes.

The Mini-Palette Toolbar consists of background color, walk through color, colors, and wrap colors if used. You can also hide/show colors by clicking on them.
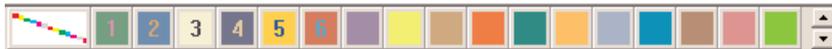
If you would like to not have the toolbars showing, you can turn them off by selecting View Menu, toolbars, click on the individual toolbars to hide/show them. You can also do this by right clicking in the empty grey space to the right of the toolbars.

You can also customize your toolbars to not show some of the tools or to change the order in which the tools are displayed. To do this, right click on the toolbar. When a the "customize" pop-up menu appears, left click on it.

You can move your toolbars around to any place on the screen. To do this, place your cursor in the far left corner of the toolbar, hold down the left mouse button and drag it to where you want and let go.

Zoom

Graphical Zoom in allows you to click and drag a box around the area that you would like to zoom in on. This operation is more specific than Zoom in.

Zoom in enlarges a portion of the design on the screen. To move to a different portion use the scroll bars. This is useful for more precise editing. It does not affect sewing size.

Zoom out decreases the design size on the screen. It does not affect sewing size.

Tip

Besides pressing the toolbar button to use zoom in, you can also use a keyboard shortcut by pressing the '+' on your keyboard.

Zoom actual ![icon] displays on the screen the actual sewing size of a design. After changing the design view, click this tool to bring the design view back to it's actual sewing size.

Zoom to fit ![icon] will increase or decrease the design size to fit the entire design on the screen. Click this tool to display the full design. It does not affect sewing size.

Fit Selection Zoom ![icon] allows you to zoom in on a specific area that you would like to edit. After you have an area selected to edit, click on the fit selection tool.

Zoom previous ![icon] will return one previous zoom level. It does not affect sewing size.

You can find all of the Zoom functions in two locations: the toolbar buttons or under the View Menu.

Window Menu

View Window

is where you will view the project. The view window can also be thought of as your work area or work space.

You can have multiple view windows (projects) open at a time. Through the Window Menu you can arrange multiple windows by tiling or cascading them.

Inside the view window is also where you will do your editing and digitizing. This can be done using the menu bar or the toolbar, but the easiest way is to use your mouse and the right mouse button function.

Tip

Keyboard Shortcuts
Zoom Out - '-'
Zoom Actual - 'A'
Zoom to Fit - 'F'
Zoom Previous - 'L'

Properties
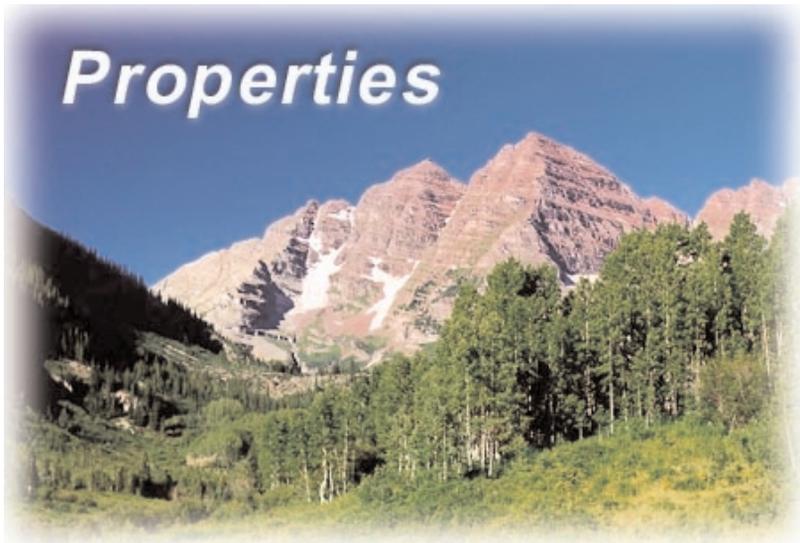
Color Properties

The three tabs for changing color properties are the Select Tab, Options Tab and Graphic Background Tab.
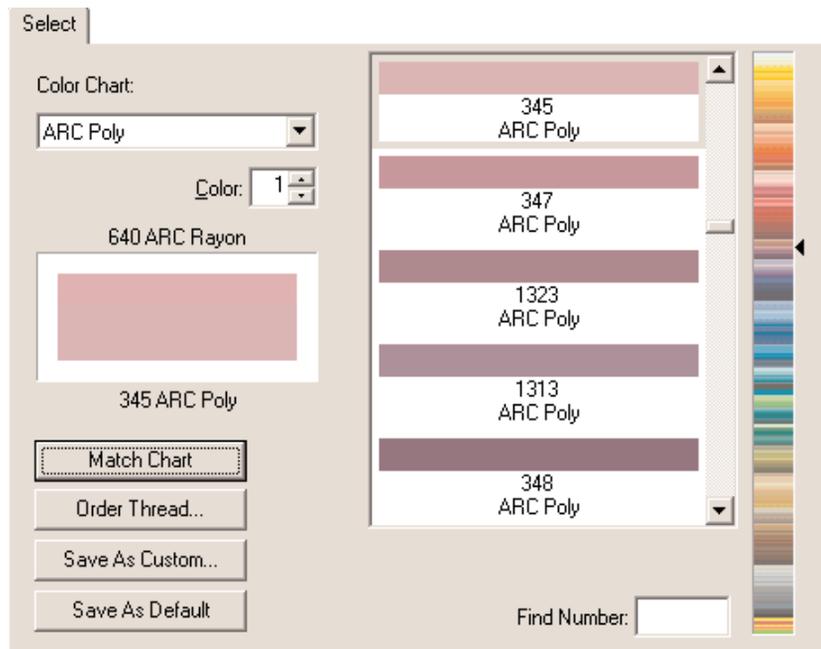
Color Chart: The Select Tab lets you choose colors from three different color charts included with EDS IV. The three different color charts to choose from are System RGB Colors, ARC Poly Embroidery Thread, and ARC Rayon Embroidery Thread. To select the different charts, click on the down arrow and make your selection. If you have other color charts already installed on your computer (color charts have a file extension of .tch), you may copy these files through Windows Explorer and paste them into the EDS IV\Color Data Directory. These files can now be viewed directly in EDS IV via the Color Chart list box.

Color: Once you are in the color properties dialogue, you can change all of the colors in your design. The box next to Color: displays the number of the color on the palette that you are currently changing. You can use the up and down arrows to move to the desired color on the palette. This is very useful. It allows all of the colors to be changed at one time instead of having to double click on each one to change them. The current color displays in the color box below.

The name of the currently applied color and it's graphical representation display on the top half of the box. If you choose another color it will display on the bottom of the color box (until applied, then it is the current choice on top). In the Property page above shows "640 ARC Rayon" as the applied (current color) and "345 ARC Poly" as the new color (recent color that has been clicked on). If the user clicks on "Apply" "345 ARC Poly will be the current color and displayed on top. When you choose a different Color Chart than the current one, the Color Selection will automatically scroll to the closest match color (this is determined by the RGB value of the color). This closest match color will display on the bottom. You can choose to apply it or scroll through the Color Selection to another color.

Color Selection: On the right side of the color properties dialogue you can choose from a list of colors. The system RGB colors are like that of other color property dialogues in graphics programs and works the same.

The ARC Poly and ARC Rayon embroidery thread menus display the colors of embroidery threads that are available. This is very useful if you would like to match your colors in EDS IV with the actual thread colors. The color code numbers are listed below the color. Click to the right of the color list bar to get close to the desired color, then use the scroll bar to move through the zoomed version to get the exact color.

Find Color Code: This is very useful to use if you have the code from the spool of thread and you would like to apply the exact color to your design. Simply enter the code and once it is highlighted in the zoomed version of the color list (it will have a blue box around it), click on the color in the color list. For most color charts, you can also do a find (search) by name of thread.

Match Chart: If you would like to apply a different color thread chart than the current one, you can select a different color chart, click on match chart and all of the colors in

Order Thread: If you are connected to the internet, this link will take you directly to everythingembroidery.com where you can order threads online. The link goes directly to the everythingembroidery.com store. Once you are in the online store look to the left of the screen where you will find a link to the section for ordering thread.

Tip

Match Chart is a great tool to match the color palette colors to your "Custom Color Chart".

Replacement Box: The top half of the color box (on the left of the color property dialogue) displays what color is currently applied to the particular color in the color palette. The bottom half displays the new selection.

Save As Custom: using "Save As Custom", you can create custom color charts and custom color palettes.

> **Custom Color Chart:** You may want to put together a Custom Color (thread) Chart that contain certain thread colors. Custom Color Charts may consist of thread colors from multiple Color Charts (i.e. colors from both ARC Poly and ARC Rayon).

To save a Custom Color Chart, right click on the color palette, then click on the "select tab".

1. choose your colors by clicking on the desired color chart (from the drop down list of color charts).

2. select the color (this is the number next to Color:, for instance start with color 1).

3. choose a color from the color selections in the chart.

4. click apply.

5. move on to the next color (number next to Color:, for instance next would be number 2).

6. at this point you may also change the Color Chart for different color selections.

7. after you have selected all of your desired colors, click on the "Save As Custom" button.

8. type in a desired name, select the number of colors for your palette, make sure that Color Chart has a black circle in the button to the left of it.

9. click OK.

> **Custom Color Palette:** You may want to put together Custom Color Palettes. For example an embroiderer may have different custom color palettes that they use for particular designs. When

Tip

Great way for an embroiderer to save a color chart consisting of the threads they personally have on hand (in stock).

saving a Custom Color Palette you can just right click on the color palette, select "Load Custom Palette", choose your desired palette, and click OK.

To save a Custom Color Palette, follow the same steps as you would for saving a Custom Color Chart (described above), with the exception of step number 8. In step 8, make sure that Palette (not Color Chart) has a black circle in the button to the left of it.

Save As Default: Anytime that you change a setting or settings and press the Save As Default button your changes will be saved. Even if you exit out of EDS IV and get back in again, your default settings will be saved.

The Options Tab gives you several options to change that directly effect Color Properties.
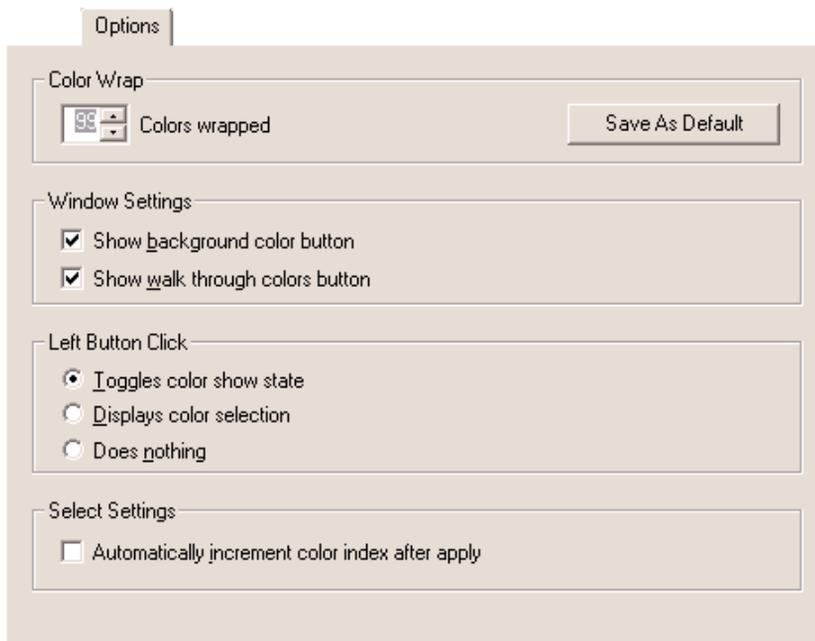
Color Wrap: This is where you can select how many colors you would like to have in a color wrap. The way that a color wrap works, is that for example you have two colors in a wrap. As you are digitizing you insert a color change, this will bring you to the second color. When you insert another color change you will be back at the

first color. In other words you will go through the colors to the last one and then wrap around to the beginning color. This option also has a "Save As Default" button.

Left Button Click: The default setting for this is to have the left mouse button click over a color toggle you through hide/show of colors. You can change this to "Displays color selection," which will bring you directly into the color properties.

Select Settings: When you are in the color properties and you are selecting the colors for your color palette, you can select the desired color for number 1, click "Apply", select the desired color for number 2, click "Apply", and so on.

Window Settings: If you do not want to have the background color button shown on the color palette, click in the box next to "Show background color button". This will remove the check mark from the box which signals that the button is hidden. The same applies to the walk through color button "Walk Through Colors"

 .

The purpose of graphic background is to provide a view of the
embroidery design against a graphic of fabric.
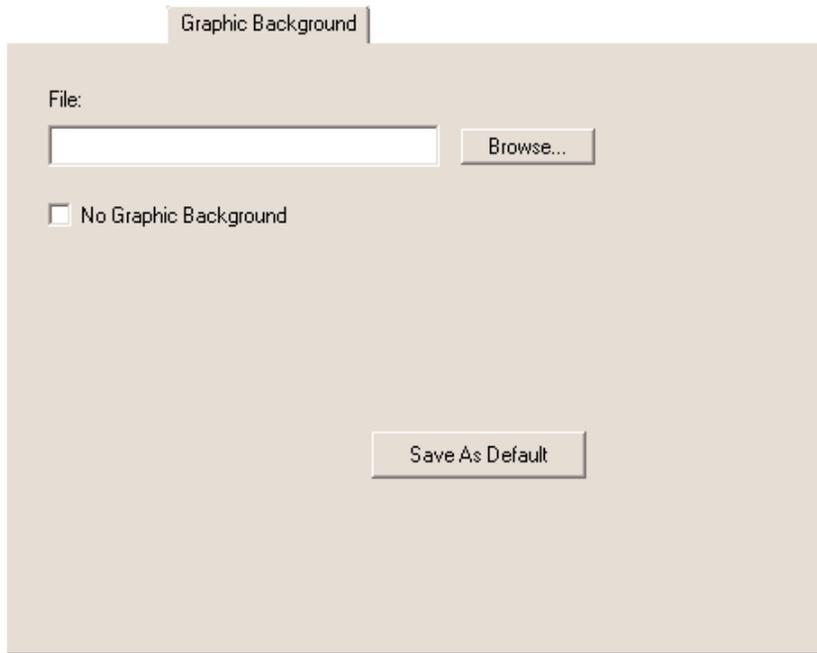
To display a fabric on your screen, right click on any existing color box
in the Palette tool bar. Select "Properties". The Color Properties
Dialog box is displayed. Click on the "Graphic Background" Tab.You
can now select a fabric file that will be displayed into the background
of the View Window. To display a fabric, click on the "Browse"
button. Navigate to the C: Program Files directory/Melco Embroidery
Systems/EDSIV/Fabrics. Select a fabric from the list and click on
"Open".

Click on "Apply" to immediately see the fabric on your screen.

Anytime that you are in a property page, you can click "Apply" after
making a change and it will immediately apply your change. The
advantage of using "Apply" verses clicking "OK" after a change is
that you can apply your changes and still move on to making other
changes. Once you click on "OK", your changes will be applied and
the property dialogues will close and you will be back at the View
Window. You can also click "Cancel" and the property dialogues will
close without implementing the last change.

Column Tab
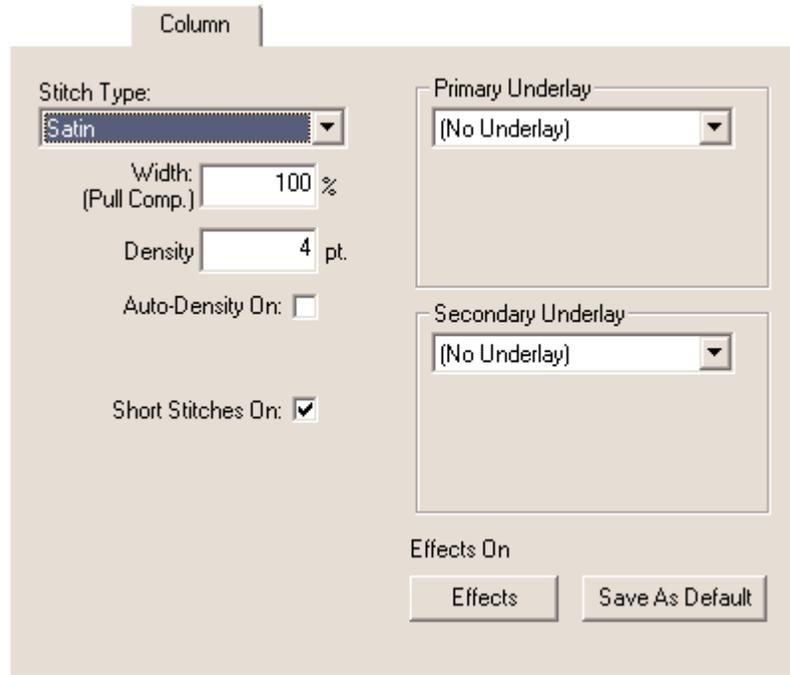
Auto-Density: most columns aren't going to be straight from beginning to end. The width may increase, decrease, and increase again. In this situation it is very useful to use the Auto-Density option instead of having to manually insert density changes throughout your stitchlist. Auto density will determine the density changes for you. To implement the Auto-Density function, left click in the box. Click again to remove the check mark which turns Auto-Density off. Below is an example of Auto Density turned on.

Density = 4

Colorado

Auto Density On

Colorado

Density: refers to the space between each line of stitching. When this space is decreased, the lines of stitching per inch increases. To create more lines of stitching per inch, decrease the density value. A general rule of thumb is:

• As design size increases, density value should decrease.

• As design size decreases, density value should increase.

The default Density setting is 4 points.

Refer to the density conversion chart below for further information:

SPI	Points	SPI	Points	SPI	Points
20	12.70	41	6.20	62	4.10
21	12.10	42	6.05	63	4.03
22	11.55	43	5.91	64	3.97
23	11.04	44	5.77	65	3.91
24	10.58	45	5.64	66	3.85
25	10.16	46	5.52	67	3.79
26	9.77	47	5.40	68	3.74
27	9.41	48	5.29	69	3.68
28	9.07	49	5.18	70	3.63
29	8.76	50	5.08	71	3.58
30	8.47	51	4.98	72	3.53
31	8.19	52	4.88	73	3.48
32	7.94	53	4.79	74	3.43
33	7.70	54	4.70	75	3.39
34	7.47	55	4.62	76	3.34
35	7.26	56	4.54	77	3.30
36	7.06	57	4.46	78	3.26
37	6.86	58	4.38	79	3.22
38	6.68	59	4.31	80	3.18
39	6.51	60	4.23	81	3.14
40	6.35	61	4.16		

Density Conversion Table (Stitches Per Inch > Points)

Column Effects:

There are four effects that can be applied when digitizing columns, these are Capped Corners, Mitered Corners, Random Edge and Custom Density.

Corners

Capped and Mitered Cornering are for Singleline and Column1 type columns. These two methods of stitching around corners give EDS IV the ability to drastically change its direction of stitching without taking anything away from the stitch quality or appearance.

Mitered Corners can be described as two columns with slanted edges that match up or blend together at the corner (imagine how a corner comes together on a picture frame, this is what the stitches will look like on a Mitered Corner when it is sewn out). By inserting a degree value (75 degrees for example) for Mitered Corners, you are telling EDS IV that you want the corners of singleline or column 1 columns to have Mitered Corners once the angle is 75 degrees or smaller. Refer to the example below to better understand the angle value.
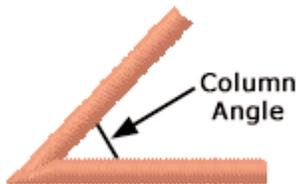
You also have the ability to determine how much the overlap should be when the two edges of a Mitered Corner meet (20 points is an example). Refer to the example below to visualize the overlap of a Mitered Corner. The following example has a very loose density and exaggerated overlay values on the stitches view for better visualization. The highlighted area illustrates the overlay area.
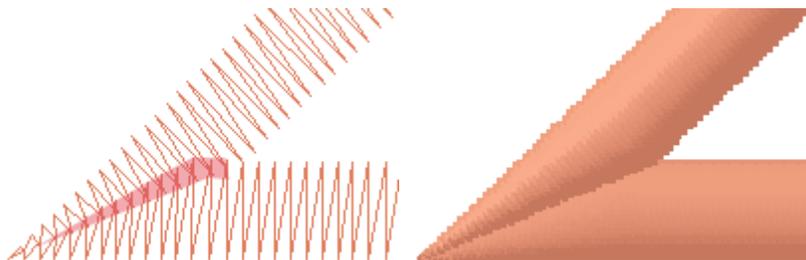
Capped Corners look like there is a "cap" over the area where two columns meet at a point. By inserting a degree value (45 degrees for example) for Capped Corners, you are telling EDS IV that you want the corners of singleline or column 1 columns to have Capped Corners once the angle is 45 degrees or smaller.

You also have the ability to determine how much the overlap should be (3 points for example). Refer to the example below to visualize the overlap of a Capped Corner. The following example has a very loose density and exaggerated overlay values on the stitches view for better visualization. The highlighted area illustrates the overlay area.
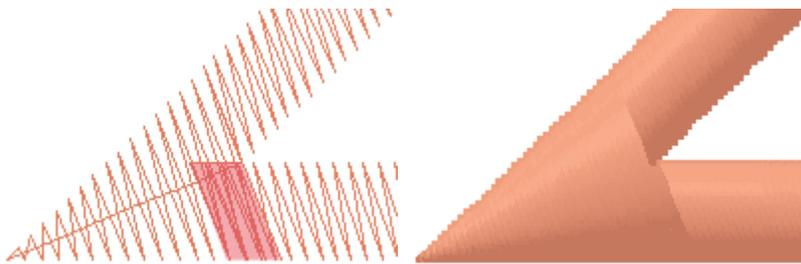
Automatic Smooth Cornering is for Singleline and Column1 type columns. This involves automatically inserting pairs of straight points on each corner edge to allow for smoother stitching around the corner. Automatically inserted points may be converted to wireframe points by right clicking on the element and selecting "Convert Corners to Wireframe".

You have full control over this feature via the "Column Effects" property page, which gives you the ability to toggle each feature. You also have control over which angles capping and mitering will occur, allowing one method to take precedence over the other.

Column 1 and Singleline corners only have the ability to be capped and/or mitered if a pair of straight points binds them. A mismatch of points (i.e. a straight point on the inside edge and a curved point on the outside edge or vice versa) or a pair of curved points, will result in our current standard method of cornering being applied. For automatic smooth cornering to occur the corner must be bound by straight points as well as having straight edges.

You can have multiple types of corners turned on and set for different degrees of angles. On the next page is a picture of the Corners Tab.
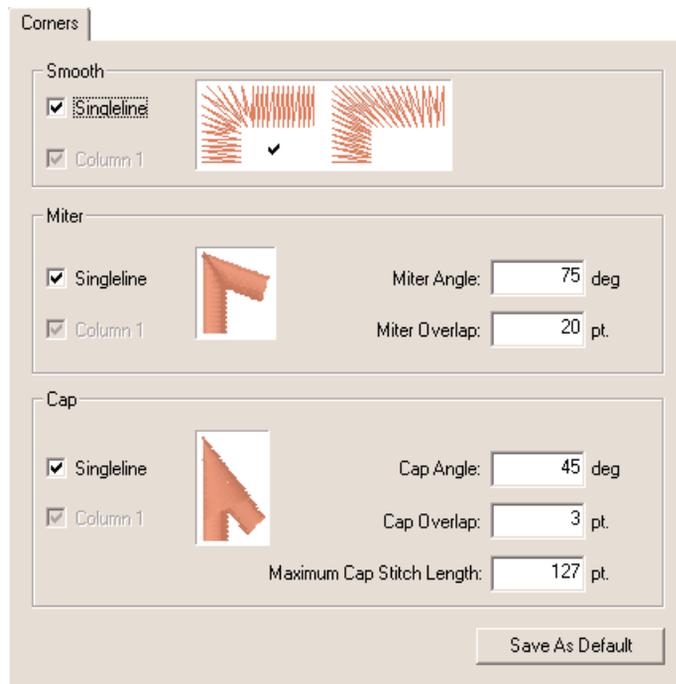
Random Edge

Random Edge is very useful in embroidery to create the effects of shading, the look of hair and many other possibilities.

Random Edge allows the user to specify a column edge stitch length variance. This means one or both sides of a column are randomly zig zaged in and out instead of the usual even column edge. This effect can be applied to side one, side two or both column sides. Random Edge applies to all of the following column stitch types: Satin Stitch, Fill, E Stitch, and ZigZag.

When applying Random Edge to a column, select edge one, edge two, or both edges. Next select the width percentage from 0 to 100%. The width percentage represents the range of variation width.

Note that the Random Edge Data cannot be saved as part of a condensed file.

On the next page is a view of the Random Edge Property Tab:

Edge: None ▼
None
Edge One
Edge Two
Both
Width: 0   %

Save As Default
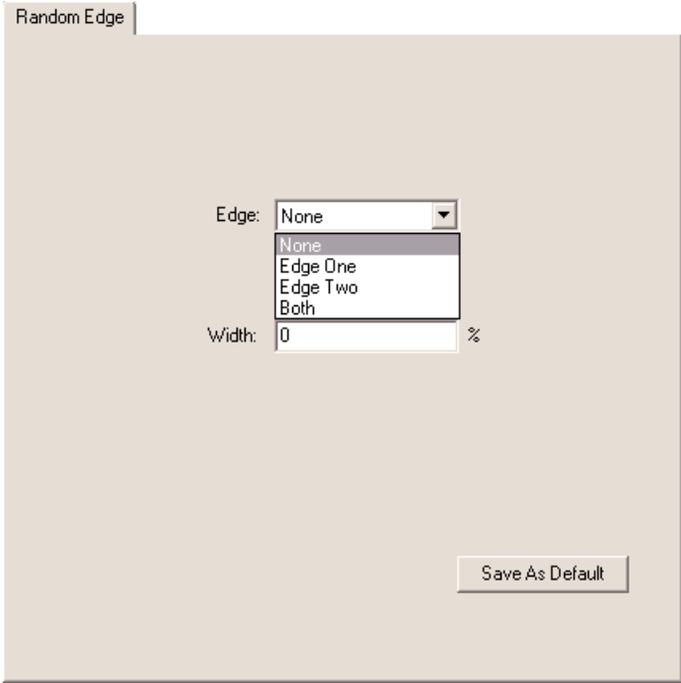
Below is an example of Random Edge combined with Custom Density
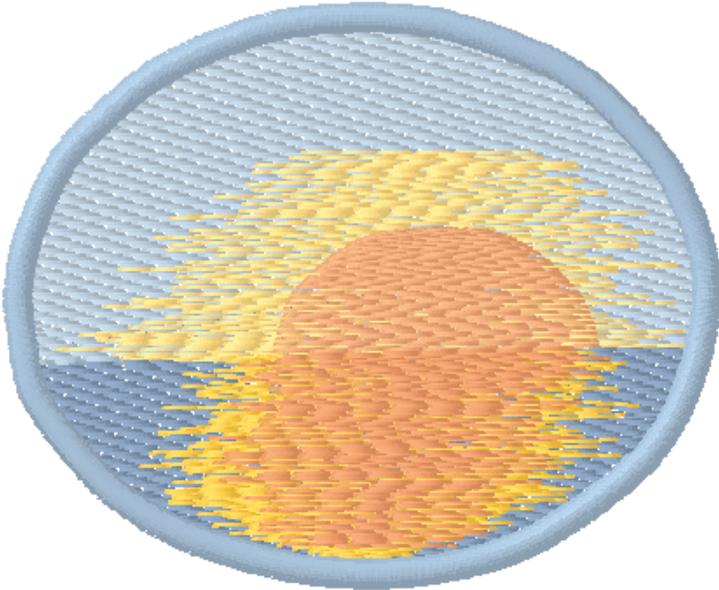
Custom Density

Custom Density has been added to this version of EDS IV. Custom Density allows the user to specify variable density often used for color blending. Accordion Effect will apply to all of the following column stitch types: Satin Stitch, Fill, E Stitch, and ZigZag.

Note: Custom Density Data cannot be saved as part of a condensed file.

Inverse check box will be applied to the standard accordion types listed in the combo box. It will have the following effects:

• Linear Increasing shows Linear Decreasing

• Convex shows Concave

• Exponential Increasing shows Exponential Decreasing

• Wave Increasing shows Wave Decreasing

• Custom

Below is a view of the custom density property tab:
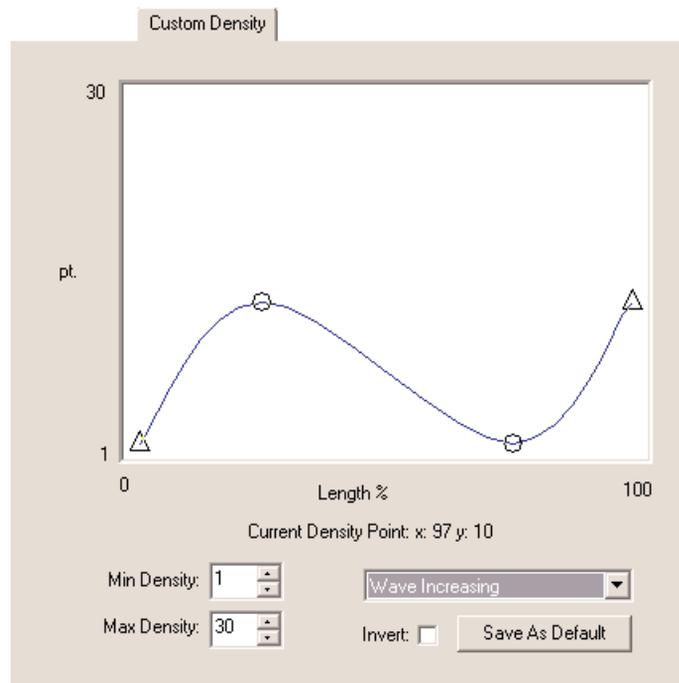
Below is an example of Custom Edge Combined with Decorative Stitch
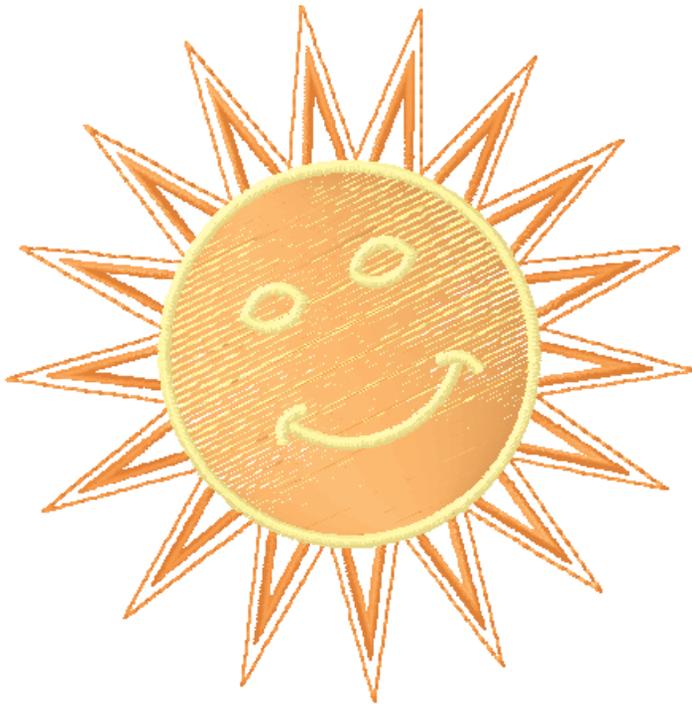
Save As Default: Anytime that you change a setting or settings and press the Save As Default button your changes will be saved. Even if you exit out of EDS IV and get back in again, your default settings will be saved.

Short Stitches: When digitizing columns, particularly letters or numbers, stitches will build up on the inside of a sharp arc or turn in the design. This build-up often causes thread breaks because stitches begin to fall on top of each other at the same location. Even if thread breaks don't occur, the look of the stitching may not be ideal. Using the short stitch option prevents this build-up by inserting shorter stitches throughout the curve or turn making it a much smoother transition. The software determines where short stitches should be inserted based on the relative length of the sides of a column segment, their length as a percentage of the actual distance across the column, and how many will be generated between any two normal length stitches as shown in the example on the next page.
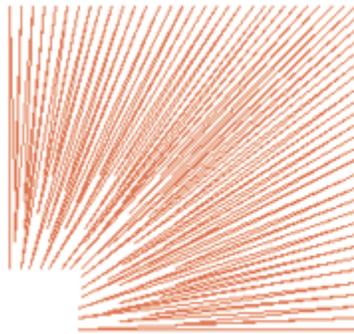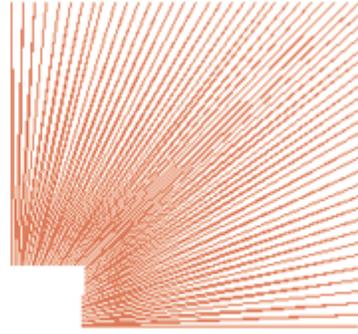
Short Stitches On   Short Stitches Off

The default setting is for short stitches to be On since short stitches will only be generated where the software determines short stitches will be needed to prevent stitches on top of stitches. If you would like to turn short stitches Off, left click in the box next to the short stitches option.

Stitch Type: You have the option of choosing from four different stitch types which are Satin, Fill, E Stitch, and Zigzag.

Column Fills: When choosing a "Fill" type of column, besides the standard column properties you also have the options to enter the stitch length, the number of partitions, and the partition sequence. Refer to the Fill Tab section (page 204) where you can find information on partition fills. Note: you can not use pattern fills on columns.

Underlay: Underlay is used to help keep the material from stretching or distorting during the top stitching process and to hold the stitches out of the nap of the fabric. The Primary Underlay is the first underlay that will stitch out. Secondary Underlay may be selected as well if you would like two types of underlay. There are three types of underlay:

- Center Walk Underlay: is a walk stitch down the middle of the column. After selecting a center walk underlay, you have the option to change the stitch length. The default stitch length is set at 30 points.

- Edge Walk Underlay: is a walk stitch that runs along the edge of the column. After selecting an edge walk underlay, you have the option to change the stitch length and the percentage of the column width where you would like the edge walk to appear. The default stitch length is set at 30 points. The default width percentage is set at 70%.

- Zigzag Underlay: is a walk stitch that zigzags from left to right down the length of the column. After selecting a zigzag underlay, you have the option to change the stitch length and percentage of the column width where you would like the underlay to appear. The default stitch length is set at 15 points. The default width percentage is set at 70%.

Underlay is available for Satin, Fill, and Zigzag type columns.

Width: You can change column width by percentage. The default setting for column width is 100%, which can also be referred to as actual size. To make columns bigger, choose a percentage over 100%. To make columns smaller, choose a percentage below 100%.

Anytime that you are in a property page, you can click "Apply" after making a change and it will immediately apply your change. The advantage of using "Apply" verses clicking "OK" after a change is that you can apply your changes and still move on to making other changes. Once you click on "OK", your changes will be applied and the property dialogues will close and you will be back at the View Window. You can also click "Cancel" and the property dialogues will close without implementing the last change.

Design Tab
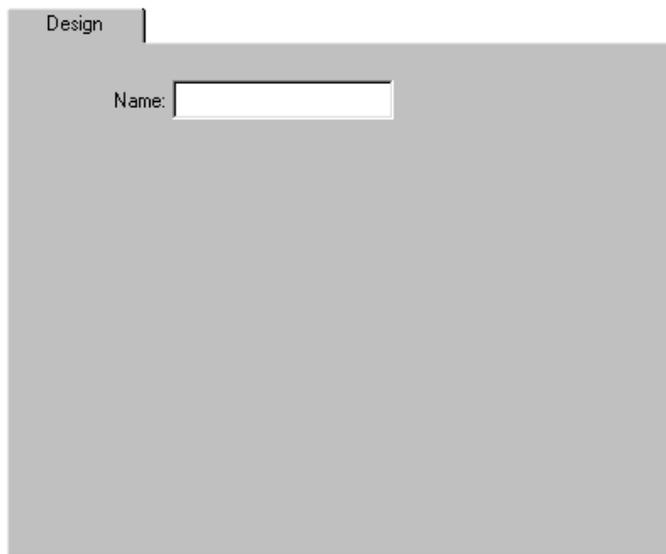
Name: This will display the name of the design. You can change the design name by clicking in the white area, selecting the text, and typing the desired name.

Load Partition Fill: By pressing the down arrow below Load
Partition Fill, you can select the desired fill by name.

Fill View/Select: By pressing this you will get a graphical list of all of
the saved partition fills.

1) Fill 1	2) Fill 2	3) Fill 3	4) Fill 4	5) Fill 5

7) Fill 7	8) Fill 8	11) Fill 11	12) Fill 12	13) Fill 13

15) Fill 15	16) Fill 16	17) Fill 17	18) Fill 18
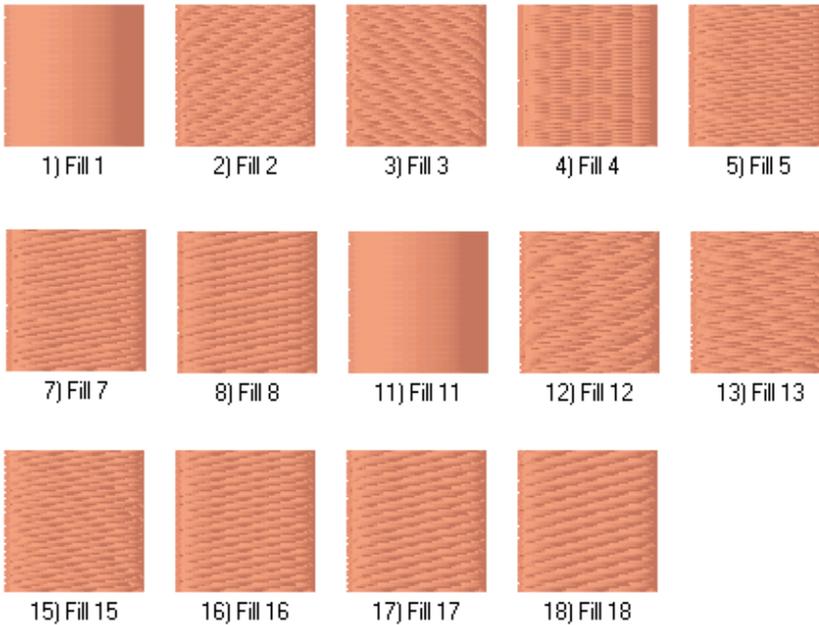
From here you can click and select the desired fill then press OK. This
is very useful to visualize how the fill will stitch out.

Pull Compensation: The primary use of this feature is to compensate for the pull. When the pull compensation value for a given complex fill is changed, all adjustments will be made with respect to each individual stitch line length and direction. For example, if the pull comp. is set to 103% for a given complex fill, each individual stitch line will be increased in length by 3% with respect to its current stitch direction. To visualize how the stitches compensate in the direction of your stitch direction, grab an end of your stitch direction line and rotate it to another position, view the example below:

Wireframe Outline

Stitch Direction Line
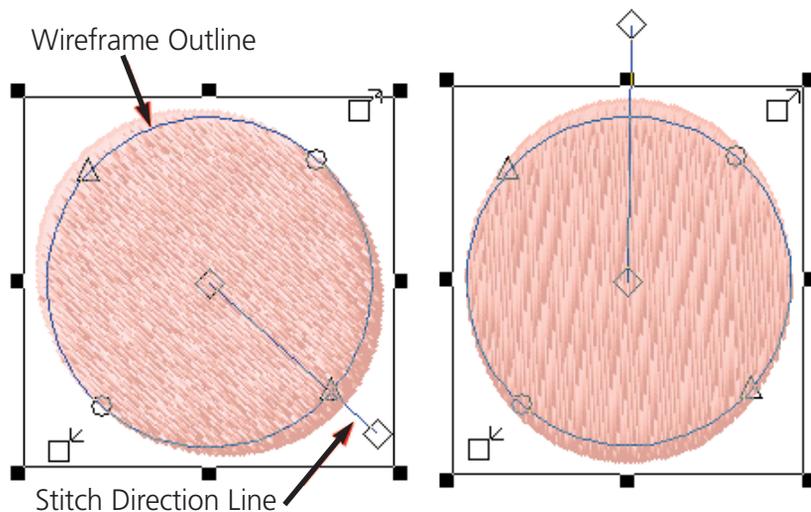
The reason for using pull compensation has to do with the way stitches pull on different types of fabric. For example, you may have a circle type of fill with an outline, sewing this on certain fabrics may cause the circle to pull inward after being sewn on the fabric and not be the perfect circle that it was digitized as. Also, the outline may not exactly line up with the circle as it should. Using the pull comp feature can correct a situation like this. Like many things in embroidery, knowing which values are best for the different types of fabric will take practice.

You can slide the slider bar using your mouse, click and drag the rectangle to the right side for positive pull compensation and to the left for negative pull compensation.

Beside the click and drag method, you can also use your left and right arrow keys on your keyboard to change the percentage value.

Tip

If you want to remove the pull compensation from the fill, simply move the slider bar back to the 100.0 (100%) position.

Save As Default: Anytime that you change a setting or settings and press the Save As Default button your changes will be saved. Even if you exit out of EDS IV and get back in again, your default settings will be saved.

Save Partition Fill: You can create your own partition fills by selecting different combinations of parameters. If you would like to save the new set press the Save Partition Fill button.
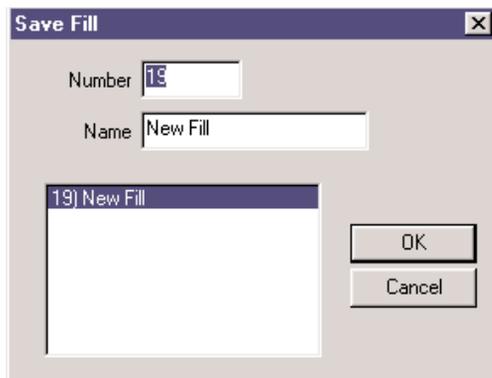
From here you can then designate a number and a name for the new fill then press OK. It will then be added to the partition fill select list, which you can get to by pressing the down arrow under "Load Partition Fill" or by pressing Image Select.

Trapunto: will allow you to move the underlay of a complex fill to the side of the element, instead of through the middle. This will prevent the underlay from being conspicuous on larger space values or higher density fills. Click to insert a check mark in the box next to Trapunto to apply this type of underlay, click in the box again to un-apply trapunto. You have the option to apply trapunto or underlay, not both. Below is an example of a complex fill with trapunto applied.

Without Trapunto   With Trapunto
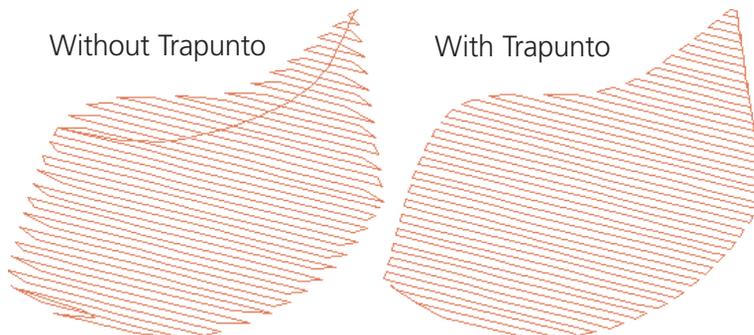
Underlay: You have the options of turning on underlay and applying it to a fill. Click to insert a check mark in the box next to Underlay to apply underlay, click in the box again to un-apply underlay.

Anytime that you are in a property page, you can click "Apply" after making a change and it will immediately apply your change. The advantage of using "Apply" verses clicking "OK" after a change is that you can apply your changes and still move on to making other changes. Once you click on "OK", your changes will be applied and the property dialogues will close and you will be back at the View Window. You can also click "Cancel" and the property dialogues will close without implementing the last change.

Graphic Properties

When you double click on a graphic or image a Properties dialogue with three tabs will appear.
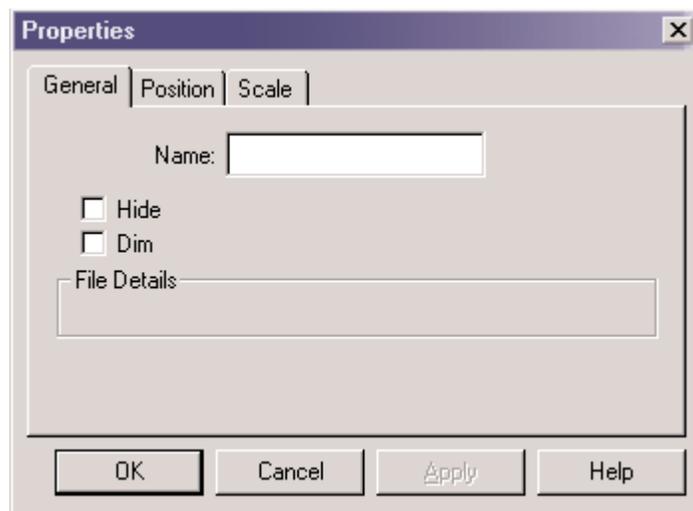
Under the Graphic General Properties tab you can view the name of the graphic and it's location. Besides the View Menu, you can also see that that General Properties tab gives you the ability to Hide/Show and Dim/Brighten the graphic. You can hide the graphic by putting a check mark beside Hide with your left mouse button. If the graphic is already hidden and a check mark appears beside Hide, then click again on Hide to Show the graphic. You may want to hide a graphic when you are digitizing to view the progress of your work

better without the graphic behind the stitches. If you would like to see your stitches a little bit better, but not completely hide your graphic, you can left click to place a check beside Dim. Left click again to Brighten the graphic. Practice Hide/Show and Dim/Brighten.

Click on the Position tab. Here you can change the position and orientation of the graphic.

Position represents the number of embroidery points (1/254th of an inch) that the center of the image is offset from the center of the design (or View Window). This allows you to move your image with respect to the design.

X offset allows you to move the image left or right. Enter positive values to move right. Enter negative values to move left.

Y offset allows you to move the image up or down. Enter positive values to move up. Enter negative values to move down.

Orientation gives you the ability to manipulate the horizontal and vertical presentation of the image. This function presents combinations of axis mirroring and axis property swapping in such a way to present the 8 views shown in the orientation box as you click on the box.

The F in the orientation box represents the position that the image on the screen is currently being presented.

The image modification attributes are only saved when you save them as a project.

Practice changing the position and orientation of the graphic to view how it changes.

The third tab in the Graphic Properties is for scaling the graphic or image.

The scale can be proportional or non-proportional depending on whether or not you have checked the "Proportional" box. If you left click, which places a check mark in the box, the horizontal scale is exactly the same as the vertical scale. This will keep the image from being distorted. If the "Proportional" box is not checked, then you can scale just the Horizontal axis or the Vertical axis. You can enter a percentage or a measurement. These are linked, so if you change a percentage the measurement changes proportionally.

Anytime that you are in a property page, you can click "Apply" after making a change and it will immediately apply your change. The advantage of using "Apply" verses clicking "OK" after a change is that you can apply your changes and still move on to making other changes. Once you click on "OK", your changes will be applied and the property dialogues will close and you will be back at the View Window. You can also click "Cancel" and the property dialogues will close without implementing the last change.

Grid and Origin Properties

Display Above Embroidery Objects: Click in the box next to this option to have the grid and origins lines displayed above the embroidery that is in the View Window. A check mark in the box symbolizes that the lines will be displayed in front of (above) the embroidery whereas having no check mark in the box symbolizes that the lines will be behind the embroidery.

Grid: You can click in the box next to Display Grid to display or not to display the grid lines in the View Window. A check mark in the box symbolizes that the grid lines will be displayed whereas no check mark symbolizes that the grid lines will not be displayed.

- **Grid Color:** If you would like to change the color of the grid lines, click on the box next to Grid Color:. This will take you to a color dialogue where you can choose another color then click OK. The default color is grey.

- **Grid Spacing:** This gives you the option to change the spacing between the grid lines. Click in the white area next to Horizontal: to change the spacing between the horizontal lines. After clicking in the white area simply type in a desired measurement. You can also use the up and down arrows to change the measurement

value. Click in the white area next to Vertical: to change the spacing between the vertical lines.

- **Grid Type:** You can choose whether you would like the grid lines to be displayed as lines or as dotted lines. To do this, click in the radio button next to the desired choice.

- **Method:** This gives you the option to display only horizontal lines, only vertical lines, or both horizontal and vertical lines. To do this, click in the radio button next to the desired choice.

Origin: You can click in the box next to Show Origin to display or not display the origin lines in the View Window. A check mark in the box symbolizes that the origin lines will be displayed whereas no check mark symbolizes that the origin lines will not be displayed.

- **Origin Color:** If you would like to change the color of the origin lines, click on the box next to Origin Color: This will take you to a color dialogue where you can choose another color then click OK. The default color is black.

- **Origin Type:** You can choose whether you would like the origin lines to be displayed as lines or as dotted lines. To do this, click in the radio button next to the desired choice.

Save As Default: Anytime that you change a setting or settings and press the Save As Default button your changes will be saved. Even if you exit out of EDS IV and get back in again, your default settings will be saved.

Anytime that you are in a property page, you can click "Apply" after making a change and it will immediately apply your change. The advantage of using "Apply" verses clicking "OK" after a change is that you can apply your changes and still move on to making other changes. Once you click on "OK", your changes will be applied and the property dialogues will close and you will be back at the View Window. You can also click "Cancel" and the property dialogues will close without implementing the last change.

Hoop Manager

This feature allows the user to display numerous different types of

hoops on the screen. Right click on the "Hoop Control" button
to access the hoops.

The Hoop Manager dialog box will appear.
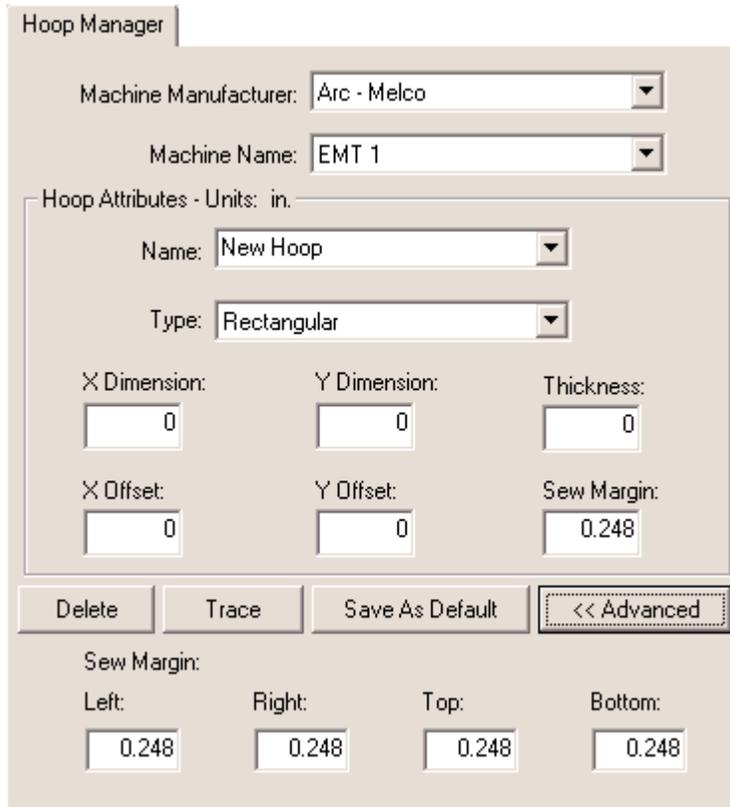
Machine Manufacturer: Click on the "Machine Manufacturer"
arrow to display a list of many embroidery machine manufactures.
The manufacturer will determine which hoops are shown in the
"Machine Name" list. By selecting ARC - Melco in the "Machine
Manufacturer" list, the user may then use the "Machine Name" list
to select the specific ARC - Melco hoop types.

Hoop Attributes: Hoop Attributes may be viewed by selecting the
hoop type from the "Name" list. The pre-defined hoops have

programmed dimensions which will display but will be grayed out, which means the user can not change the information.

Click on apply to view the hoop on the screen. The solid line represents the inside edge of the inner hoop. The dotted line represents the inside edge of the inner hoop minus the sew margin.

New Hoop: User defined hoops may be setup by selecting "New Hoop" from the "Name" list. The type of hoop can also be defined (Rectangular, Circular, square, etc.).

- The X Dimensions the width of the hoop from left to right and the Y Dimensions are the height of the hoop from top to bottom. These measurements should be the outside edge of one side to the outside edge of the other side.

- The X and Y offset is the distance from the machine origin to the hoop center. All the Melco hoops have offsets preprogrammed to work.

- The Hoop Thickness is the width of the outside edge of a hoop wall to the inside edge of a hoop wall.

- The Sew Margin is the distance between the inside of the hoop wall to your hoop limit. By saying Hoop Limit, this is the very edge that stitches may be sewn. The sew margin area should give ample clearance for the needle/pressure foot. This is important so that your needle/pressure foot does not touch the hoop.

Trace: After selecting a hoop, you can click on the trace button and EDS IV will trace your design and give you a message stating that your hoop fits or that it does not fit in the selected hoop.

Advanced: Under the advanced button you will find the individual sew margins for let, right, top, and bottom of the hoop. These are adjustable in the case that you would like to have a larger sew margin on one side then on the other.

Lettering Tab
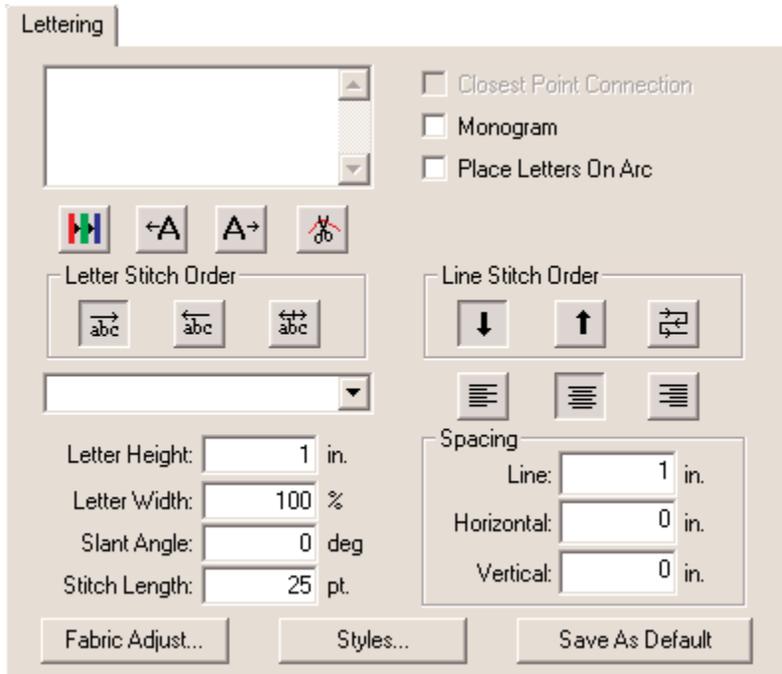
Alphabets: To select the font or alphabet that you would like the text design to appear in, left click on the down arrow on the Lettering Tab, located under the Letter Stitch Order box and above the Letter Height box.

Closest Point: When a closest point alphabet is used, you may choose to have the letters connected using the closest point. Click the box next to Closest Point Connection to place a check mark in the box that symbolizes that the function is On. This will automatically insert the entry and exit points at the closest point between the letters. Click in the box again to remove the check which symbolizes that the function is Off.

Color Change Command (keyboard shortcut F6): A color change command will instruct the peripheral to pause for a rethread on single-needle machines, or to change to a different needle on a multi-needle machine. It also changes the color in the View Window to the next color in the palette.

Tip

For instructions on using alphabets, please refer to the alphabet code sheet for that alphabet. (alphabets.pdf, also located in your HTML Help System).

To add a color change in the text dialogue box, place the cursor

between the letters and click [image]. A ^ symbol marks the color change.

Customized Spacing: [image] [image] Sometimes text is too crowded or too loosely spaced. This often happens to arc lettering. To illustrate customized spacing, you can do the following exercise:

First, select Athletic Block (do this by clicking the drop-down arrow that is below the spacing buttons). Now set letter height to .75 and type DECEMBER in the text dialogue box. Next click a check mark into the

"Place Letters On Arc" box. Click "OK". Your image should look like the first one in the image to the right, Notice that E,M, and B are closer together than the rest of the letters.

Right click or double click anywhere on the element to get to the properties page. Now place your cursor between the Letters E and M.

Click the [A→] button or press F8 to add space. Click between the letters M and B. This command will display in the text dialogue box as this » symbol. Press "OK". Your image should now look like the second one that is displayed to the right. Each » adds a space equal to 1/16 of the letter height. For example, with a 1" letter, the space would be 1/16". With a 0.5" letter, the space would be 1/32".

You can also decrease the space between letters that are too far apart. Again, you should place the cursor in the text box between the letters that are too far apart, in the text dialogue box. Next click the

[←A] button or press F7 and a « symbol will appear in the text box. Click OK and the letters will move closer together. Each « subtracts a space equal to 1/16 of the letter height.

Fabric Adjust: When you click on this button, a Fabric Adjust Dialogue box will appear.
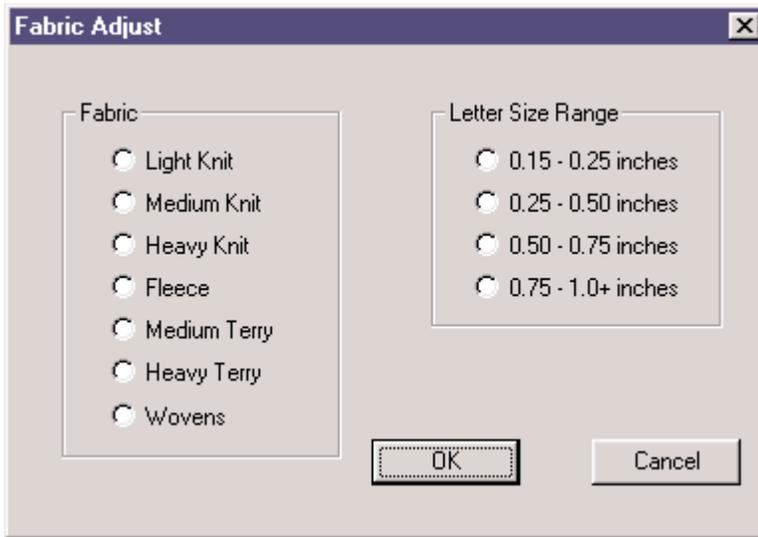
Because lettering is so exact and may be very small, it is possible for the actual sew out to turn out different from the way that it looks in the View Window when it was digitized. This is especially true when you are sewing on different types of material. The lettering may bunch up or become knotted, even in a way that is illegible. This may happen because of the material that you are sewing on. You can prevent this from happening by first selecting the type of fabric that you are using, here on the Fabric Adjust Dialogue box. Select the fabric by left clicking on one of the types. Light knit is an example of type. After you have selected the type of fabric, you must select the Letter Size Range as well. Fabric Adjust will not implement any changes without both the Fabric and the Letter Size Range being selected.

After you have selected the fabric and letter size range, Fabric Adjust will change some of the default settings on the Lettering Properties accordingly. You will notice a change in Stitch Length on the Lettering Tab. You will also notice changes in Density, Column Width, and Primary Underlay Type on the Column Tab.

Letter Height: This is where you can set the overall height of a capital letter. The default is one inch.

Letter Width: This increases or decreases the overall width of each letter. The value is set at 100%, which is actual size. To increase the letter width, type in a percentage that is greater than 100% up to 190%. To decrease the letter width, type in a percentage less then 100% down to 0%. Below is an example:

25%   50%   75%   100%   125%   150%

Tip

For instructions on using monogram alphabets and their borders, please refer to the alphabet code sheet for that alphabet. (alphabets.pdf, also located in your HTML Help System).
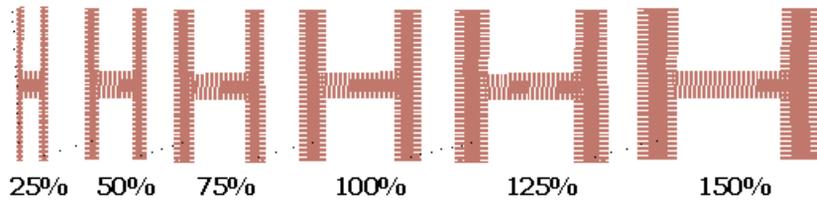
Monogram: When using a non-monogram alphabet to create a monogram you can do this by clicking in the box next to monogram. A check mark in the box symbolizes that this function is on whereas, no check mark symbolizes that this function is off. For standard monogram alphabets (3 letter alphabets like 3 Letter Circle), you don't have to turn on the Monogram feature in EDS IV. This is automaically turned on for you.

Monogram Properties: When using a non-monogram alphabet you have the option to change the letter height and/or density of the individual monogram letters, click the "Monogram Settings" button. The following dialogue box will pop-up:

Place Letters On Arc: When you choose to place letters on an arc the text will curve, To select this function left click. A check mark will appear in the small box to the left symbolizes that this function is turned on.

Arc Properties: When placing letters on an arc you have the option to change the arc properties. You can change the radius, the angle, and the direction. To change the direction, click the radio button for CW (clock wise) or CCW (counter clock wise).
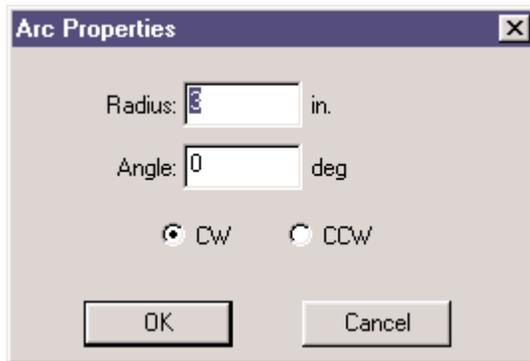
Arc Radius: The radius of a circle is the distance from the center of the circle to the circumference of the circle. The longer the radius, the less the amount of curvature in the arc (an arc is a piece of a circle).

Arc Angle: The arc angle is a position on a circle where the center of your lettering will be located. This position is entered in degrees; with 0 (zero) degrees being the top of a circle, and 180 degrees being the bottom of a circle.
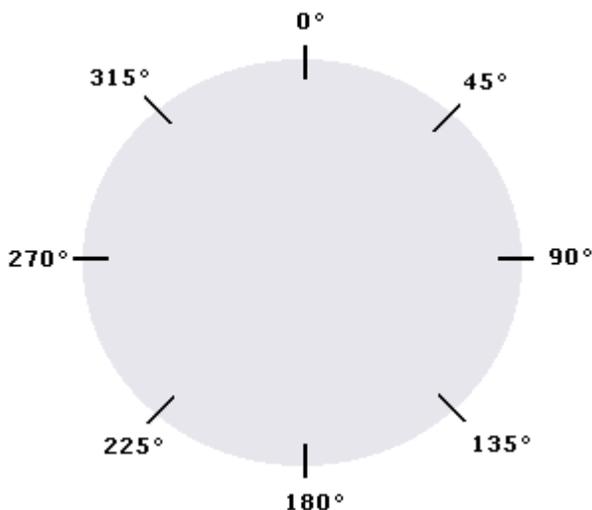
Angle Type CW or CCW: The angle type is a direction of sewing. In most cases, you will want to be sewing in a CW (clockwise) direction if the arc angle is in the top half of a circle. You will want to be sewing in a CCW (counterclockwise) direction if the arc angle is in the bottom half of the circle.

Radius: 1in.
Angle: 0°
Type: CW

Radius: 1in.
Angle: 180°
Type: CCW
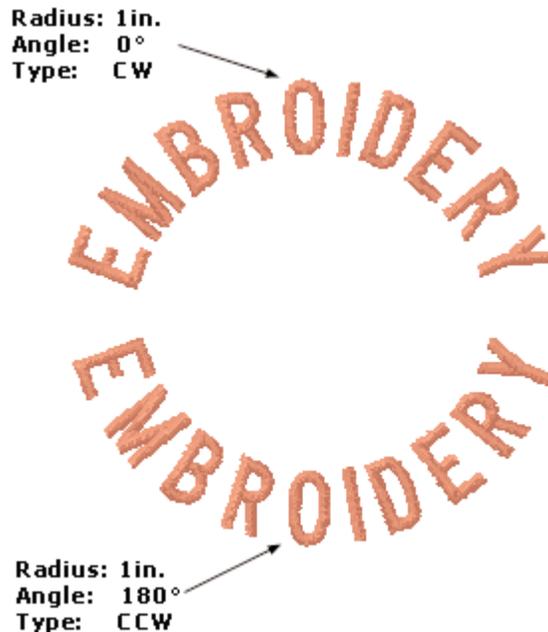
A common occurrence when sewing counterclockwise is that the letters may touch. To correct this, you must use some positive horizontal spacing between the letters.

Even though the word "Denver" was entered first before "Colorado", the design sews as shown above when you have your

arc properties set at 180° and CCW. This can be corrected by making the "Line Spacing" a negative value, example -1 instead of the default 1. The Sewout will then look like the example below.

Save As Default: Anytime that you change a setting or settings and press the Save As Default button your changes will be saved. Even if you exit out of EDS IV and get back in again, your default settings will be saved.

Sequenced Lettering: There are many options available that can be applied to the stitch order of your letters or lines of text.

Letter Stitch Order: This option gives you more control of how each letter will sew out.

Left to Right [abc→] - Stitching will start with the left letter and proceed to the right.

Right to Left [←abc] - Stitching will start with the right letter and proceed to the left.

Center Out [←abc→] - Stitching with start in the middle and proceed to the farthest right, then come back to center and proceed to the farthest left.

Note: Center out stitching is commonly used to solve problems with registration, such as caps and difficult fabrics.

Line Stitch Order: This option gives you more control of how each line will sew out.

Top to Bottom ![icon] - Stitching order will start with the top line of letters and proceed to the bottom line.

Bottom to Top ![icon] - Stitching will start with the bottom line of letters and proceed to the top.

Line Wrapping ![icon] - Stitching will start at the side specified by the letter stitch option, left-to-right or right-to-left and alternate the direction for each of the lines of the lettering object. Center out letter stitch order is not available with line wrapping.

Slant Angle: This inclines lettering in increments of one from +15 to -15. Positive values slant lettering to the right and negative values slant lettering to the left. Below is an example:

-15°   -7°   0°   7°   15°
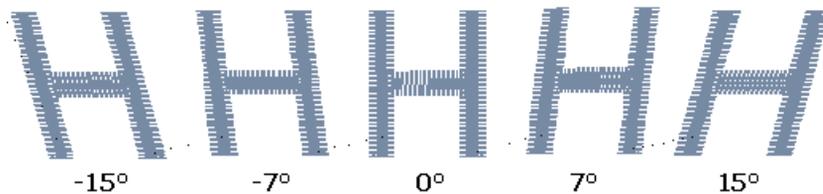
Spacing

- Horizontal Spacing: By putting a positive value here,space will be added in between the letters. A negative value will take away space between the letters.

- Line Spacing: If you have multiple lines of text, you can increase or decrease the spacing in between the separate lines.

- Vertical Spacing: By putting a positive value here, vertical height will be added in between each letter, so that each letter is higher than the one before. A negative value will cause each letter to be lower than the one before.

Tip

Here is an example of changing line spacing: If you have 1.00 inch letter height you could add half of that (.50) to equal 1.50 inch line spacing for a sufficient amount of space between the lines.

Stitch Length: This determines the length of each walk or manual stitch used to move from one area of sewing to another or as the underlay. These stitches are often covered by column stitching. The default is 30 points for 1 inch letter height. Use the table to the right as a guide when changing letter height:

Lettering Size	Stitch Length
0.5 inch or greater	30-40 points
0.25 inch to 0.5 inch	25-30 points
0.25 inch or smaller	20-25 points

Text Dialogue Box: When you click inside the large white box, your cursor will appear in the top left corner. This is where you will type out your text design.

Trim (keyboard shortcut F9): A trim command causes peripherals equipped with trimmers to perform a trim between each letter. Trims between lower case script lettering are unnecessary. Add a trim in the text dialog box placing your cursor (left clicking) between the letters you want to trim. When the cursor appears, click

the button or press F9. A ¤ symbol will appear in the text dialogue box to mark the trim. There will be no visible difference in the View Window.

Anytime that you are in a property page, you can click "Apply" after making a change and it will immediately apply your change. The advantage of using "Apply" verses clicking "OK" after a change is that you can apply your changes and still move on to making other changes. Once you click on "OK", your changes will be applied and the property dialogues will close and you will be back at the View Window. You can also click "Cancel" and the property dialogues will close without implementing the last change.

Lock Stitch/Trim Tab

Lock Stitches are several small stitches sewn to prevent stitching from being pulled out. The term "tie in" refers to lock stitches that are placed at the beginning of an embroidery element to lock the first stitches in to place. The term "tie off" refers to lock stitches at the end of an embroidery element to lock the last stitches in to place.

Lock Stitch If Connector Greater Than: You can click in the box next to this function to have lock stitches inserted only when the connector length (distance between two elements) is greater than a desired length. A check mark in the box symbolizes that this function is on whereas no check mark symbolizes that this function is off. To specify length, click in the white area next to this option and enter the length.

None: No automatic lock stitches will be inserted.

Save As Default: Anytime that you change a setting or settings and press the Save As Default button your changes will be saved. Even if you exit out of EDS IV and get back in again, your default settings will be saved.

Tie In: Will only insert a "tie in" in every element.

Tie In & Tie Off: Select to insert a "tie in" and "tie off" in every element.

Tie Off: Will only insert a "tie off" in every element.

Trim If Connector Greater Than: You can click in the box next to this function to have trims inserted when the connector (distance between two elements) is greater than a desired length. A check mark in the box symbolizes that this function is on whereas no check mark symbolizes that this function is off. To specify length, click in the white area next to this function and enter the length.

The Lock/Trim Tab allows you to make lock and trim settings per element including the connector length settings. In the situation where multiple elements are selected:

- If the elements do not all have the same lock settings, then the property page will not have any of the choices selected. If you select one, then all of the selected elements will now have that option.

- In some of the elements have trim on and others off, the Trim checkbox will show up with a gray check mark.

- If the elements do not all have the same connector greater than fields, then a 0 will show.

All of the "Lock Stitch" properties also apply to the individual letters in a lettering element as well. Please consider the following tips when it comes to lettering:

- Many alphabets already have (tie off) lock stitches already in them. If lock stitches are turned on through the Lock/Trim properties, existing lock stitches will not be deleted and additional lock stitches may be generated.

- When "Trim if connector greater than" is on, it places a trim command at the end of each letter in a lettering element, but trims that are generated through the function will not be displayed in the text box on Lettering Tab.

- No trims will be allowed between letters of closest point alphabets.

Lock Stitches and Trims for Lettering:

When inserting a lock stitch or trim into a lettering element, what happens will depend on if the alphabet is a closest point alphabet or a non-closest point alphabet. Refer to the chart below for help.

Lock Stitch Function	Closest Point Alphabet	Non-Closest Point Alphabet
Tie In & Tie Off	A lock stitch will exist at the start of the first letter and the end of the last letter.	A lock stitch will exist at the start of each letter and at the end of each letter.
Tie In	A lock stitch will exist at the start of the first letter.	A lock stitch will exist at the start of each letter.
Tie Off	A lock stitch will exist at the end of the last letter.	A lock stitch will exist at the end of each letter.
Add Lock	There will not be any lock stitches generated, unless there are color changes between letters.	A lock stitch will exist at the end of any letter and the start of any letter where the distance between those stitches is greater than the user specified length. Also, a lock will exist if there are color changes between letters.
Add Trim	There will not be any lock stitches generated, unless there is a trim between letters.	A lock stitch will exist at the end of any letter and the start of any letter where the distance between those stitches is greater than the user specified length. A trim will be added between the letters.

Anytime that you are in a property page, you can click "Apply" after making a change and it will immediately apply your change. The advantage of using "Apply" verses clicking "OK" after a change is that you can apply your changes and still move on to making other changes. Once you click on "OK", your changes will be applied and the property dialogues will close and you will be back at the View

Window. You can also click "Cancel" and the property dialogues will close without implementing the last change.

Position Tab
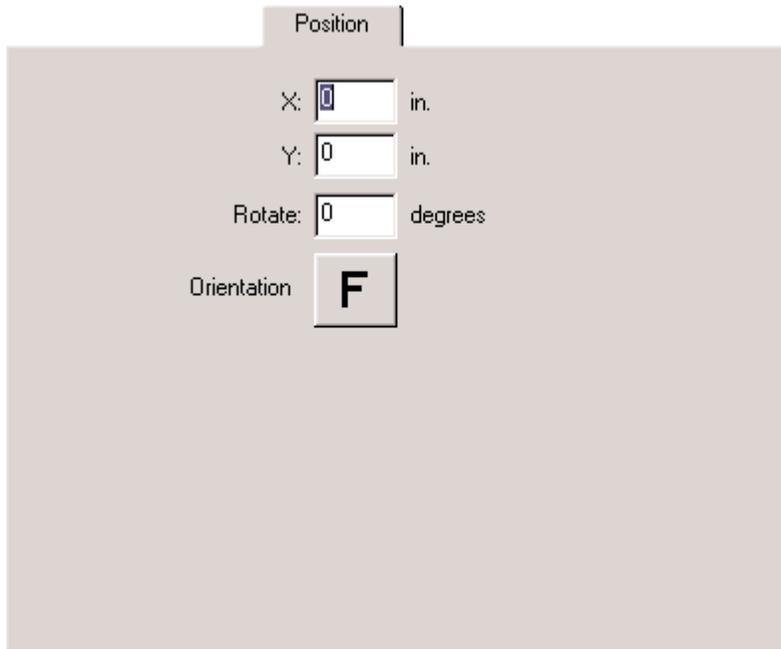
Orientation: Sometimes design orientation must be altered for proper results. To change the orientation, click on the F to the right of Orientation until the desired orientation displays.

Rotate: Positive degree values rotate the element clockwise and negative degree values rotate the element counter-clockwise.

X: This type of movement will move the element to the left or right on the X axis in inch values. Positive values move the element to the right. Negative values move the element to the left.

Y: This type of movement will move the element up or down the Y axis in inch values. Positive values move the element up. Negative values move the element down.

Anytime that you are in a property page, you can click "Apply" after making a change and it will immediately apply your change. The advantage of using "Apply" verses clicking "OK" after a change is that you can apply your changes and still move on to making other

changes. Once you click on "OK", your changes will be applied and the property dialogues will close and you will be back at the View Window. You can also click "Cancel" and the property dialogues will close without implementing the last change.

Project Tab

File: The location and file name of the project will be displayed here.

Project Level Settings: These settings let you change the Maximum Stitch Length for all elements within a project, The Connector Stitch Length throughout a project, and you can have Return To Origin on.

Save As Default: Anytime that you change a setting or settings and press the Save As Default button your changes will be saved. Even if you exit out of EDS IV and get back in again, your default settings will be saved.

Workspace Area: The Workspace Area is the area within the View Window where you do your editing and digitizing. If your stitches fall out of the Workspace Area, you can use the scrollbars to move around your project. You can also change the height and the width

measurements by clicking in the white area and typing the desired measurement. The default settings are 16 inches by 16 inches. You can press the Save As Default button to have new projects open with the desired measurements.

Anytime that you are in a property page, you can click "Apply" after making a change and it will immediately apply your change. The advantage of using "Apply" verses clicking "OK" after a change is that you can apply your changes and still move on to making other changes. Once you click on "OK", your changes will be applied and the property dialogues will close and you will be back at the View Window. You can also click "Cancel" and the property dialogues will close without implementing the last change.

Scale Tab

By scaling, you can reduce or enlarge an element horizontally, vertically, or equally in both directions. When you scale an element, all of the embroidery properties are preserved. After the scaling modifications are complete, the stitches are re-generated according to the new outline that you have created.

You can scale multiple elements. You can also scale elements manually in the View Window.

Proportional: By having this option on (with a check mark in the box), you are sure to scale the design equally both the horizontally and vertically. If you would like to only scale horizontally or only scale vertically, you can turn this option off by clicking on the Proportional box (which will remove the check mark).

Horizontal: This is where you can specify an exact percentage or measurement to scale horizontally.

Vertical: This is where you can specify an exact percentage or measurement to scale vertically.

Expanded Stitch Processor: This version of EDS IV contains an expanded stitch processor. The stitch processor is invoked when scaling an expanded design. It will automatically increase or decrease the design stitch count when the design is scaled up or down.

Note that when scaling expanded designs the stitch length does not change.

The expanded Stitch Processor is always enabled when graphically scaling an expanded design. To scale an expanded design without stitch processing, follow the steps listed below:

1. Un-check the "Expanded Stitch Processing" control on the Scale Tab.

2. Enter the desired scale factors.

3. Click on Apply or OK.

When wanting to scale an expanded design with stitch processing, you also have the options to change the Column/Satin Density percentage and Fill Density percentage. To do this, you will need to click on the "Stitch Processing" Tab. Below is a picture of the Stitch Processing Tab:
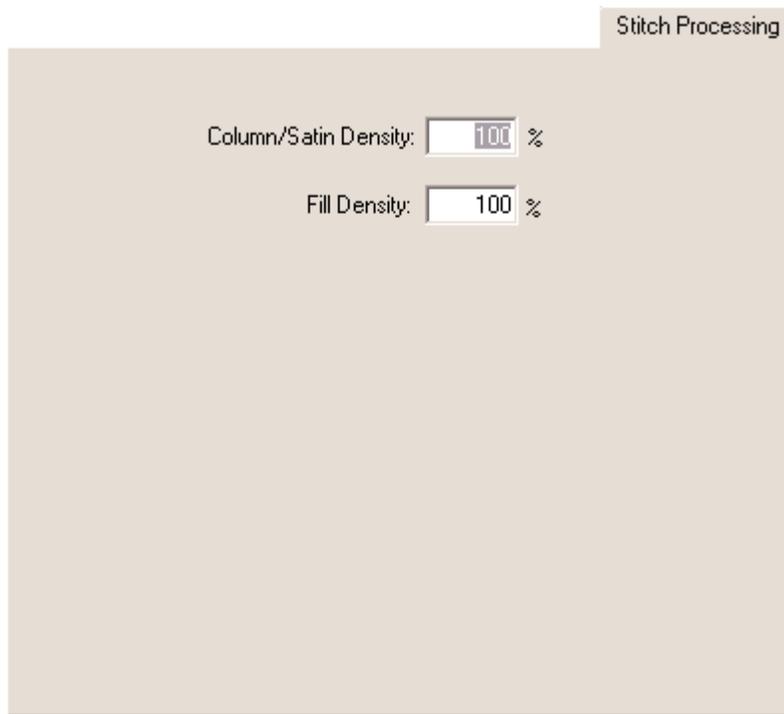
Stitch Processing

Column/Satin Density: [100] %

Fill Density: [100] %

Anytime that you are in a property page, you can click "Apply" after making a change and it will immediately apply your change. The advantage of using "Apply" verses clicking "OK" after a change is that you can apply your changes and still move on to making other changes. Once you click on "OK", your changes will be applied and the property dialogues will close and you will be back at the View Window. You can also click "Cancel" and the property dialogues will close without implementing the last change.

Tip

To maintain approximately the same density, the Column and Fill Density controls should be set to 100%.

Tip

You may not want to use stitch processing while scaling an expanded design for the following reasons:

- If you are scaling 30 - 40% more or less than original.

- If you are scaling more than twice the size of the original.

Singleline Tab

Width: [ ] in.

Center line ○
Left of line ○
Right of line ○

Save As Default

Save As Default: Anytime that you change a setting or settings and press the Save As Default button your changes will be saved. Even if you exit out of EDS IV and get back in again, your default settings will be saved.

Width: This gives you the option of changing the width measurement for Single line center, Single line left, and Single line right.

Anytime that you are in a property page, you can click "Apply" after making a change and it will immediately apply your change. The advantage of using "Apply" verses clicking "OK" after a change is that you can apply your changes and still move on to making other changes. Once you click on "OK", your changes will be applied and the property dialogues will close and you will be back at the View Window. You can also click "Cancel" and the property dialogues will close without implementing the last change.

Status Tab

The Status Tab allows you to quickly review the statistics of the selected element, design, or project. This tab is not editable.

Distance From Origin

- **End:** The end measurement that is below the X displays the distance of the last stitch point in relation to the X axis. The end measurement that is below the Y displays the distance of the last stitch point in relation to the Y axis.

- **Minimum:** The minimum measurement that is below the X displays the most minimum point of an element in relation to the X axis. The minimum measurement that is below the Y displays the most minimum point of an element in relation to the Y axis.

- **Maximum:** The maximum measurement that is below the X displays the most maximum point of an element in relation to the X axis. The maximum measurement that is below the Y displays the most maximum point of an element in relation to the Y axis.

Size: This shows the status of the element in inches and points. The measurement below the X is basically the horizontal measurement of

the element. The measurement below the Y is basically the vertical measurement of the element.

Stitches

- **By Color:** This gives you a list of how many colors and the total stitch count per color.

- **Longest:** This gives you the longest stitch of the element, design, or project.

- **Shortest:** This gives you the shortest stitch of the element, design, or project.

- **Total:** This gives you the total stitch count of the element, design, or project.

Anytime that you are in a property page, you can click "Apply" after making a change and it will immediately apply your change. The advantage of using "Apply" verses clicking "OK" after a change is that you can apply your changes and still move on to making other changes. Once you click on "OK", your changes will be applied and the property dialogues will close and you will be back at the View Window. You can also click "Cancel" and the property dialogues will close without implementing the last change.

View Tab

Here is where you can choose what you would like to display in the View Window. To show these items in the View Window, click in the box that is to the left of the option. A check mark in the box symbolizes that the option will be displayed. Click again to remove the check mark, which symbolizes that the option will not be displayed.

Save As Default: Anytime that you change a setting or settings and press the Save As Default button your changes will be saved. Even if you exit out of EDS IV and get back in again, your default settings will be saved.

Show Connectors: This lets you view the connecting lines between elements. Basically they can be thought of as the needle movement from a tie off on one element to the tie in of another element. Connectors are viewed as dotted black lines in the View Window.

Show Expanded Points: This lets you view the expanded points of a design.

Show Stitches: This lets you view the stitches as they would appear in a sew-out.

Show Wireframe Lines: This lets you view the wireframe outline of the element.

Show Wireframe Points: This lets you view the wireframe points of the element.

Anytime that you are in a property page, you can click "Apply" after making a change and it will immediately apply your change. The advantage of using "Apply" verses clicking "OK" after a change is that you can apply your changes and still move on to making other changes. Once you click on "OK", your changes will be applied and the property dialogues will close and you will be back at the View Window. You can also click "Cancel" and the property dialogues will close without implementing the last change.

Walk Stitch Tab

Walk Stitch

Stitch Type: Normal ▼

Retrace ☐

Stitch Length: 61 points

Save As Default

Retrace: When you digitize a walk stitch and have the retrace on, the walk stitch will be stitched out twice, the second walk stitch on top of the first walk stitch. This is useful in making a single walk stitch appear thicker. To turn this function on, left click in the box next to "Retrace." A check mark will appear to symbolize that this

function is on. Click again to remove the check mark, which symbolizes that this function is off.

Another method to click on the Walk Stitch Button ![walk stitch button], click on the

Retrace Button ![retrace button] and start digitizing. Click again on the Retrace Button to turn Retrace off. If Retrace is applied to a walk stitch, it will display "Retrace" in the Project View. To un-apply Retrace to a particular element, you need to go into the Walk Stitch Property page, un-click the checkmark next to "Retrace", click "OK.

Save As Default: Anytime that you change a setting or settings and press the Save As Default button your changes will be saved. Even if you exit out of EDS IV and get back in again, your default settings will be saved.

Stitch Length: Here you can a insert a measurement to determine stitch length.

Stitch Type: The three stitch types that you have to choose from are Normal, Bean, and Decorative.

• **Walk Normal Stitch:** This is a normal walk stitch with automatic needle penetrations in between each element input point.

• **Walk Bean Stitch:** Where a normal stitch lays one length of thread down for each stitch, a bean stitch lays down three lengths of thread. When choosing Bean stitch you have the option to change the thickness of the stitch.

• **Walk Decorative Stitch:** From within the Walk Stitch Properties you can select Decorative Stitch under Stitch Type. You can then select which saved stitch you would like to use, by pressing the drop down arrow next to Stitch: or press the Image Select button to see a graphical version.
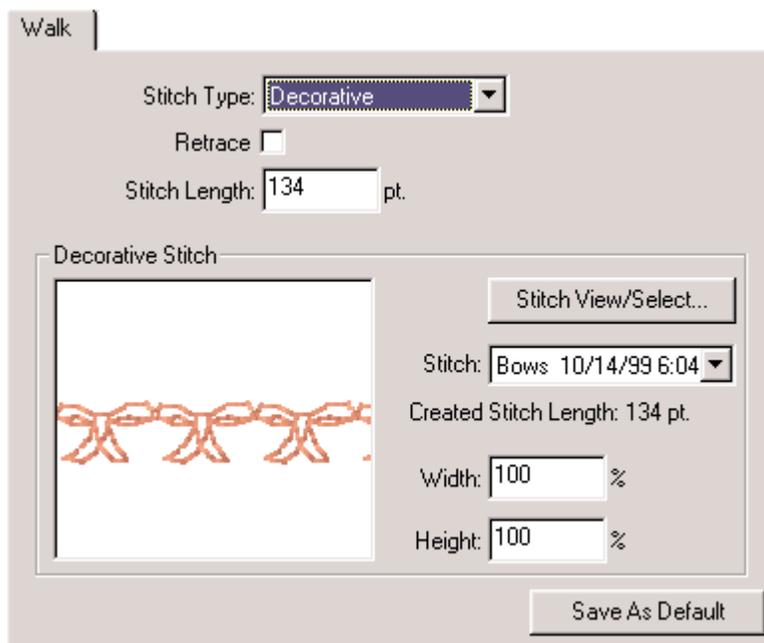
Walk

Stitch Type: Decorative ▾

Retrace ☐

Stitch Length: 134 pt.

Decorative Stitch

Stitch View/Select...

Stitch: Bows 10/14/99 6:04 ▾

Created Stitch Length: 134 pt.

Width: 100 %

Height: 100 %

Save As Default

Anytime that you are in a property page, you can click "Apply" after making a change and it will immediately apply your change. The advantage of using "Apply" verses clicking "OK" after a change is that you can apply your changes and still move on to making other changes. Once you click on "OK", your changes will be applied and the property dialogues will close and you will be back at the View Window. You can also click "Cancel" and the property dialogues will close without implementing the last change.

Digitizing Assistant
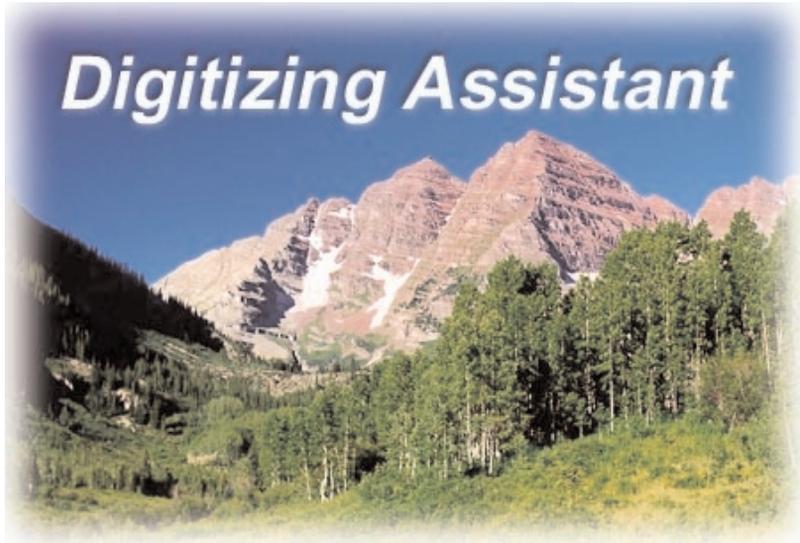
Digitizing Assistant

Introduction

This is an overview of the Digitizing Assistant module, how it works, and its intended use.

Digitizing Assistant is an advanced automation software module, which allows custom artwork (either from a scanner or paint program) to be directly converted to embroidery design data for EDS IV. More specifically, Digitizing Assistant has been designed to dramatically reduce the amount of time and expertise needed to create sophisticated embroidery designs from original artwork. To accomplish this design goal, Digitizing Assistant incorporates state-of-the-art image processing and artificial intelligence technologies that effectively duplicate the operations that an expert digitizer would perform when punching artwork by hand. For the digitizer, this translates into tremendous time savings, in some cases allowing work that would normally take hours, to be completed within minutes. Alternatively, for the small embroidery shop, Digitizing Assistant may allow users to forgo the cost and time required to send out basic artwork for custom embroidery punching. Digitizing Assistant software does not eliminate the need for expert digitizers. However, for typical business logo artwork or basic clipart the software can provide an enormous savings in time and effort and can significantly reduce the amount of training or expertise required to quickly create custom embroidery designs.

Documentation Overview

The remainder of this chapter covers the general principles that must be understood in order to use Digitizing Assistant for EDS IV most effectively. This includes an explanation of the type and quality of images that should be used as input, as well as some common pitfalls that you may encounter when using an automation system such as this. After this overview is presented a basic tutorial is provided that allows you to become familiar with most of Digitizing Assistant's features while working on real designs. After completing all of the tutorials, a user should be fairly proficient using the system. Finally, you will find references that contain detailed descriptions of all program features and their intended use.

What kinds of images will Digitizing Assistant for EDS IV work with?

Digitizing Assistant will only import 24-bit color graphic files or scanned images that are scanned using 24-bit color (i.e. millions of colors). Images must be of a high resolution for the software to work properly, usually at least 300dpi (dots per inch). Within these restrictions, the software is designed to convert two classes of images, "clean" images or "noisy" images. Clean images require less processing and typically originate as clip art or some other machine generated artwork (i.e. they are not scanned or if they are scanned, they have been cleaned of all noise prior to processing). Clean images do not have half-toning, dithering, anti-aliasing or any other feature that may make the image appear blurry or imprecise. Thus, clean images basically consist of clear large well-defined regions of solid colors. What follows below are more specific descriptions of these two classes of images and how to distinguish between them. Knowing about the quality and type of source image that one is working with will allow a user to determine what types of operations need to be performed such that high quality embroidery may be generated. Also note that the examples directory (installed with your EDS IV software; default: C:\Designs\Graphics) contains some complete examples of noisy and clean images (all Floral designs and Earthday are noisy, others are clean). You may want to review some of these examples in order to gain a better idea of the differences between these types of images. In terms of using Digitizing Assistant with these types of images, clean images typically require less processing and can be automatically converted to embroidery using a simple three-step process. Alternatively, noisy images must undergo some additional processing by the system that effectively transforms them into clean images first. Or if a user prefers, an image may also be cleaned using third party photo editing or paint programs.

How to determine whether an image is clean or noisy

As briefly described above, noisy images may have several distinct features which distinguish them from clean images. In many cases, the differences between these two types of images are more clearly seen by zooming in on (or magnifying) the image. The Figure below highlights some of these distinctions.

Noisy versus Clean Image Samples. The left side is the original (noisy) image as it was acquired using a 24-bit color scanner. The right side is the same image after cleaning was performed. The lower two pictures show magnified sections of the images above. Notice that colors in the noisy image are not solid (e.g. the red appears to have darker gold polka dots - an effect caused by half-toning in the original image). Also notice that the boundaries between different
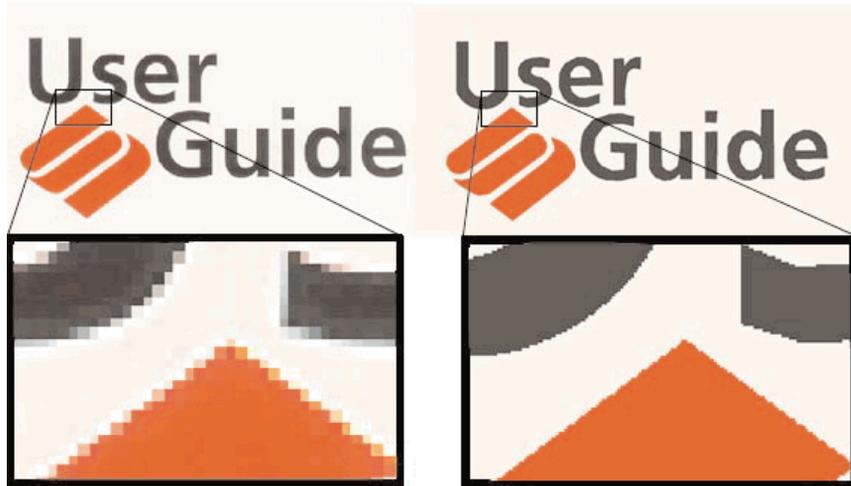
colors are not sharp. This "blurriness" is commonly attributable to a process known as anti-aliasing. Thus, in the clean image on the right, the effects of half-toning and anti-aliasing have been completely removed.

How to determine the proper resolution to scan or store images

The images that Digitizing Assistant converts must be stored at a high resolution in order for optimal results to be achieved. To understand what this means, it is useful to discuss how scanned pictures are stored in a computer and what is meant by the term high-resolution.

When a picture is loaded into the computer via a scanner, it is broken down and stored as a series of colored dots (termed picture elements or pixels for short). As seen in the magnified portions of the above figure, each pixel can be viewed as a small square dot of a single color that corresponds to a specific location within the original image. However, the number of dots (i.e. pixels) that are scanned and stored for any given picture is dependent on the resolution at which the

picture was scanned. Specifically, the resolution specifies how many dots (i.e. pixels) are generated per square inch (or per square millimeter). In order for humans to see a sharp image (i.e. without noticing these small dots), an image must have a high resolution. For example, at a resolution of 300 dots per inch (dpi), the dots become so small that they typically go unnoticed when viewed by the human eye. Alternatively, a low-resolution image, for example stored at 100 dots per inch, may appear jagged or unclear because the individual dots are much larger and become more noticeable. Thus as expected, in order for Digitizing Assistant to be effective in generating accurate embroidery designs that do not appear jagged, the source image must be relatively sharp and must be stored at a high resolution.

The total number of dots (or pixels) needed to accurately store a specific image depends on the resolution (dpi) and on the desired output size of the image. For example, a 2 inch by 1 inch picture stored at 300 dpi (dots per inch), should have a width of 600 dots and a height of 300 dots. The bare minimum dpi resolution that Digitizing Assistant requires when generating artwork of a desired size is approximately 250 dpi, which roughly corresponds to the inherent resolution at which condensed data points are stored. If all of this talk about dpi, pixels, and resolution is a bit confusing, don't worry, this information is only provided to help you understand the requirements of Digitizing Assistant. If this information doesn't help, forget it and simply follow the general guidelines presented in the next section.

Basic guidelines for determining required scan resolutions

1. You need to have relatively clean and reasonably sized source material. The size of the logo present on a typical business card may not be sufficient source material, especially if the logo on the card is 0.2" x 0.1" and you want embroidery that measures 5.0" x 2.5". Thus, it is generally recommended that at least letterhead sized artwork be obtained and used with Digitizing Assistant. Ideally, you would like to have a large clearly printed logo (camera ready) before you employ the use of Digitizing Assistant. However, we realize that in reality, this is not practical. Hence, most logos or artwork taken from business letterhead are typically large enough to be scanned and used with Digitizing Assistant. The basic idea to remember here is that you can't start with very tiny artwork and expect to generate large accurate

embroidery because when you blow up or enlarge the artwork it will become extremely blurry.

2. Important: Keep the target resolution in mind when you are scanning the source material. If the logo measures approximately 2"x1" and you want embroidery that measures 4"x2" you should consider scanning the image at 600 dpi to produce the equivalent of a 300 dpi 4"x2" image. This is where scanner resolution becomes a factor. If your scanner supports 4800dpi X 4800dpi scanning but has a specification stating that it only has a 300dpi x 300dpi optical resolution, this will produce a blurrier image than if you had a scanner with a true 600 dpi optical resolution. The biggest things to remember here are: A) you need a decent quality scanner, and B) there are limits to how much you can blow up (or enlarge) an image. If you only have .5" x .25" artwork, even if you scan it in at 1200dpi, it is going to become extremely blurry and produce poor results.

3. When scanning an image and deciding upon the optimal scan resolution, there are two factors that are always in opposition to one another. The first factor is to reduce noise and blurring (attributable to features such as half-toning) when scanning. One way of accomplishing this is to scan at a low resolution or a low dpi (e.g. 100dpi). Unfortunately, the second factor requires that a large enough design be produced so that the design is processed at the correct scale. To provide for this second factor, it is often necessary to scan at a high resolution (e.g. 600dpi). Hence, there are two opposing considerations that must be balanced when picking a scan resolution. The larger the source material, the more flexibility one has in balancing these considerations. Thus, it is always better to have large artwork (i.e. from advertising materials, etc.), versus having small artwork (i.e. from business cards, etc.). For example, if you have a 6"x3" logo and you only need to produce embroidery that measures 3"x1", you may be able to scan the logo in at as little as 150dpi. Besides effectively reducing the size of the logo, this allows much of the noise or half-toning that may be present in the image to be reduced even before cleaning is performed from within Digitizing Assistant.

4. Clipart: All of the information mentioned in items 1 and 2 above also applies to clipart. It is most favorable if the clipart is in a vector format like that used in Corel Draw (e.g. a cdr file). In this

case, all you need to do is think about what size image you need (e.g. 2"x1" logo = 600 x 300 pixels), and then just export the clipart as a bitmap image of this size. If the clipart is not in a vector format (e.g. pcx, bmp, etc.), you are basically limited to the size it was saved as, since if you try to enlarge it a lot, it will become blurry. For example if the clipart was saved at 100dpi and measures 2"x1" (i.e. 200 dots x 100 dots), this really means that you could only produce a .66"x.33" design. Since .66"x.33" is, in most cases, an impractical size for embroidery, you would have to conclude that this clipart image is not usable. Other considerations when generating images to be processed from clipart include making sure that paint program features such as anti-aliasing and super-sampling have been turned off or disabled. While these features, in many cases, make the image appear clearer to the human eye, they actually distort the appearance of an image from the computer's perspective.

As far as obtaining all of this information about dpi, size, etc. from a stored image file, the information is usually stored with the image and can be viewed using most paint programs. For example, if you open the image in Microsoft Photo Editor (included with Microsoft Office), you can go to Page/Properties and look at the resolution and size tabs in the dialog box that opens and this will tell you the specs for the image.

A good rule of thumb that may be used to decide whether an image has a high enough resolution is to view the image at a zoom factor of 50% on screen. At this zoom factor the image should still appear quite large, consume almost the entire screen area, and appear relatively sharp. Oppositely, to determine the presence or amount of noise within an image, it is often useful to zoom in or enlarge an image to more than 200% for close examination (as shown in the noisy vs. clean figure). Quite often, parts of an image that need to be adjusted or eliminated may only be visible when the image is viewed at this enlarged scale.

As with any tool, through continued experience scanning images and using Digitizing Assistant, the user should be able to gain an intuitive feel for how an image should be scanned without having to spend any significant amount of time thinking about or computing sizes and dpi. Hence, most of the information that has been provided in this section has been intended to simply supply a foundation for this intuition.

Invoking Digitizing Assistant

1. Start EDS IV and load desired graphic - meeting requirements discussed in previous chapter (e.g. select one from \Designs\Graphics).

2. Scale and position graphic, if necessary.

3. Invoke Digitizing Assistant by clicking one of the following icons on the toolbar

Digitizing Assistant (full) will allow you to trace the whole image;

If you want to trace only a selected region of the graphic then click the following icon:

Digitizing Assistant (partial) will allow you to trace the selected part of the graphic. After partial mode is selected you have to click on the area you would like to trace.

Overview of Digitizing Assistant Use

As mentioned previously, Digitizing Assistant operates upon both clean and noisy images. Noisy images (images which contain various types of noise as explained earlier) must undergo some additional preprocessing steps which effectively transform them into clean images before they are converted to embroidery. Thus, there are fundamentally two different processes that the user may perform when using Digitizing Assistant. The first is a cleaning process and the second is the process of converting a clean image to embroidery. What follows below is a brief overview of each of these two processes (each of which consists of 3 distinct steps).

Cleaning Images

The three pictures shown above indicate the three buttons used to clean images. These buttons also represent the first three basic steps that must be performed in order to process a noisy image.

The Clean Image Button The first button (depicting a picture of a scrub brush) is pressed immediately after a noisy image is loaded or

scanned. The processing performed after pressing this button attempts to rid the image of various types of noise that may be present as well as to determine the number of unique solid colors that compose the image. At the completion of this processing a dialog box is displayed that indicates the number of solid colors detected. This number may be corrected by the user (if desired) to reduce the number of colors used to create a clean version of the image. Once the dialog box is closed, a rough outline of the image is also created which delineates contiguous shapes within the image. Note that at any point, view controls may be used to hide or display the generated outline and/or bitmap. After the image has been processed using the clean image button, additional "touch-ups" may be required. Hence, one or more of the image editing tools may be used to further correct any inaccuracies or noise remaining within the image. In this case, temporarily hiding the image's outline may be useful if pixel editing around the boundary of an object is required. It is also at this point that any objects which are particularly small or of a very fine thickness should be removed (if they haven't already been eliminated during the cleaning step). The paint can flood fill tool is often useful for performing this task if required. One other common "touch-up" that may be required is the use of the line tool such that those objects that have bled into one another or merged may be properly divided.

The Re-Segment Image Button This button should be pressed after the bitmap is cleaned and any touch-up image editing is complete. Pressing this button effectively generates a new, more precise outline of the processed image. Additionally, if curve fitting has been enabled, smooth curves along the boundaries of regions within the image are automatically detected and appropriate arcs are generated. After pressing this button, the user may adjust the positioning of outline points using the mouse cursor. Additionally, the point/arc add and delete tools may be used to add or remove points from the image's outline.

The Regenerate Image Button This button should be pressed after all outline editing has been completed. Processing performed here effectively "regenerates" the artwork by filling in the specified outlines with the appropriate solid fill colors. After this step is completed, the bitmapped artwork that is produced should be clean,

sharp, and free of all noise. At this point, the user may proceed to the final 3-step process that converts the clean artwork into an embroidery design. Or alternatively, the user may save the cleaned graphic to disc.

Tutorial - processing a clean image

This is a tutorial designed to familiarize you with the program's main features.

Step 1: Invoke EDS IV and start new project by pressing the New button.

Step 2: Press the Open button and click on the file type drop down menu and select "All Graphics".

Step 3: Browse to \Designs\Graphics and open "Fun Hat.bmp".

Step 4: Invoke Digitizing Assistant (full) , which will allow you to trace the whole image.

Step 5: Click on the Punch Design button to generate the final embroidery information. A simulation of the file is displayed on the screen. It is more noticeable that the stitching is only simulated for fill-stitch objects (not shown here) since no complex fill routines are generated.

The light blue color of the FunHat object indicates that it will be generated using satin stitches. Larger red circles at the centers of column intersections indicate control points that may be clicked upon to provide alternatives to a chosen intersection's interpretation. Also, displayed are the detected outlines of the objects. A segment containing a circle indicates a detection of the smooth arc (curved input point), while small squares indicate straight line segments (straight input points).
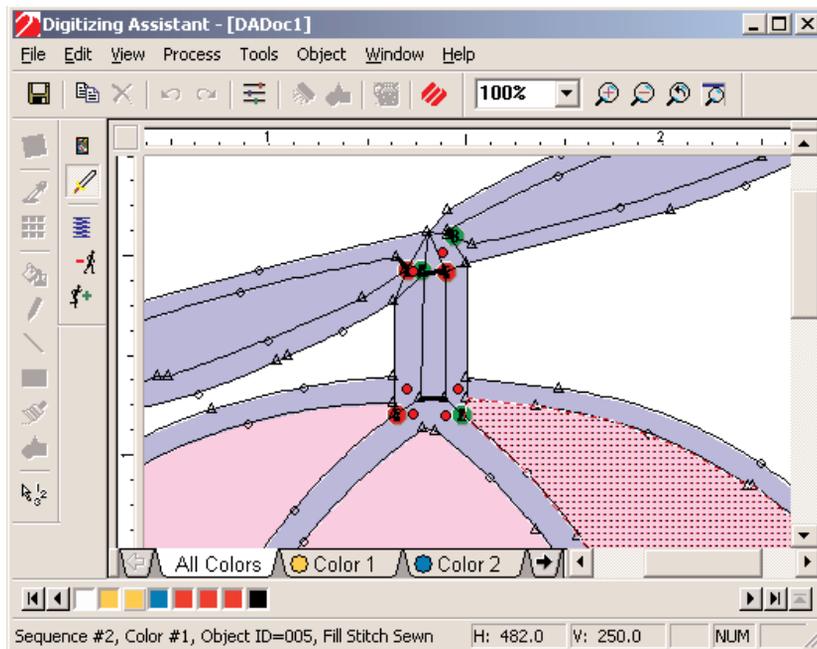
Step 6: Click on the Send to EDS IV Button. Embroidery data will be sent to EDS IV. You can now work with this as any other project in EDS IV where the digitizing was done manually.

Note: your embroidery data, created by tracing, will not be saved if you select "Exit" from the file menu.

Tutorial - processing a noisy image

This is a tutorial designed to familiarize you with the program's main features.

Step 1: Invoke EDS IV and start new project by pressing the New button.

Step 2: Press the Open button and click on the file type drop down menu and select "All Graphics".

Step 3: Browse to \Designs\Graphics and open "Floral1.bmp".

Step 4: Invoke Digitizing Assistant (full) ![] , which will allow you to trace the whole image.

Step 5: ![] For the purposes of this tutorial, it will be useful to ensure that curve fitting has been enabled. Hence, after the image has loaded, open the processing settings dialog box by clicking on the button displayed to the left and make sure the check box at the bottom of the dialog is checked. Then, click OK to close this dialog box.

Step 6: ![] Click on the Clean button which will attempt to remove noise from the image and segment the picture into well-defined solid regions. After processing you will be asked for the number of colors in the image (as a double check compared to what the software has determined).

Step 7: ![] Click on the Re-Segment button to re-outline the image. If curve fitting is enabled, this will also prompt the system to detect the presence of smooth curves along the edges of objects. Detected curves will be shown as sections of green arcs containing small green circles at their centers.

Step 8: ![] Click on the Regenerate button to fill in the outlines extracted. Slight adjustments may be made to outline vertices by clicking and dragging them before clicking the regenerate button.

Step 9: ![] Click on the Punch Design button to generate the final embroidery information. A simulation of the file is displayed on the screen. It is more noticeable that the stitching is only simulated for fill-stitch objects (not shown here) since no complex fill routines are generated.

Step 10: ![] Click on the Send to EDS IV Button. Embroidery data will be sent to EDS IV. You can now work with this as any other project in EDS IV where the digitizing was done manually.

Digitizing Assistant Reference

The Main Bar

Save Bitmap

Saves current bitmap and over writes existing bitmap if it was changed by Digitizing Assistant.

Copy to Clipboard

Copies selection to the clipboard to pasted later.

Undo/Redo

Can undo actions and redo actions after they are undone.

Processing Settings

Modifies the default settings used to convert images into embroidery design data. Specifically, clicking on this button will open up a dialog box containing various user adjustable settings. These settings include various thresholds that determine how closely an outline will follow the exterior edge of a bitmap region. Also included here is a setting that determines the default amount of overlap that occurs when embroidery objects are adjacent to one another. Lastly, at the bottom of the settings dialog box is a check box indicating whether curve fitting should be used during the conversion process.

Clean

Cleans an imported bitmap. This button (depicting a picture of a scrub brush) should be pressed immediately after a noisy image has been loaded or scanned. The processing performed upon pressing this button attempts to rid the image of various types of noise that may be present and also attempts to determine the number of unique solid colors that compose the image. At the completion of this processing a dialog box is displayed that indicates the number of solid colors detected. This number may be corrected by the user (if desired) to reduce the number of colors used to create a clean version of the image. Once the dialog box is closed, a rough outline of the image is

also created which delineates contiguous shapes within the image. Note that at any point, view controls may be used to hide or display the generated outline and/or bitmap. After the image has been processed using the clean image button, additional "touch-ups" may be required. Hence, one or more of the image editing tools may be used to further correct any inaccuracies or noise remaining within the image. In this case, temporarily hiding the image's outline may be useful if pixel editing around the boundary of an object is required. It is also at this point that any objects which are particularly small or of a very fine thickness should be removed (if they haven't already been eliminated during the cleaning step). The paint can flood fill tool is often useful for performing this task if required. One other common "touch-up" that may be required is the use of the line tool such that those objects that have bled into one another or merged may be properly divided.

Re-Segment

Re-Segment bitmap and create outlines after modifying pixels. This button should be pressed after the bitmap is cleaned and any touch-up image editing is complete. Pressing this button effectively generates a new, more precise outline of the processed image. Additionally, if curve fitting has been enabled, smooth curves along the boundaries of regions within the image are automatically detected and appropriate arcs are generated. After pressing this button, the user may adjust the positioning of the outline points generated using the mouse cursor. Additionally, the point/arc add and delete tools may be used to add or remove points from the image's outline.

Punch Design

This button performs the final processing step that creates the actual condensed embroidery data file from the interpreted objects. This button should be pressed after the cleaning and Re-Outline process has completed and the user has made any necessary changes or corrections. Upon completion of generation, the screen will display a simulated stitch output of the artwork. Note that this is not an actual stitch file, rather it is simply a simulated view that allows the user to quickly see the fill angles and general directions of stitching specified by the condensed data. This simulation may be animated using the View Stitching button. This animation, for example, allows one to view

the specific sequences or paths that were generated to create satin or fill stitching. After clicking this button, the final embroidery design may be saved to disk as a condensed data file or directly imported into a compatible embroidery design system.
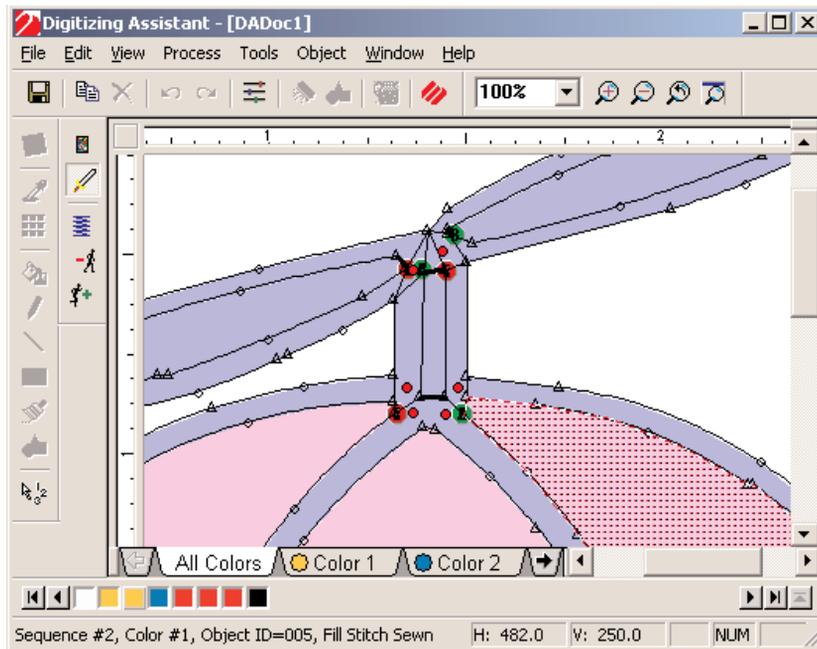
If an object has a light blue color that indicates that it will be generated using satin stitches. If an object has a pink color that indicates that it will be generated using fill stitches. Larger red circles at the centers of column intersections indicate control points that may be clicked upon to provide alternatives to a chosen intersection's interpretation. Also, displayed are the detected outlines of the objects. A segment containing a circle indicates a detection of the smooth arc (curved input point), while small squares indicate straight line segments (straight input points).

Send to EDS IV

After converting the graphic into embroidery, the next step is to send the data to EDS IV by pressing the Send to EDS IV button. Your embroidery data will not be saved if you exit from the file menu without sending the data to EDS IV.

The Zoom Bar `67%` ▾ ⊕ ⊖ ⊙ ⊡

Zoom In ⊕

Allows the user to zoom in on a specific location within an image. To use this tool, first click on this button (the button will then be shown as depressed). Then, position the mouse cursor at the upper left-most point of the area that you wish to view enlarged (notice the mouse pointer changes its appearance to a magnifying glass). Finally, while holding down the left mouse button, drag the magnifying glass cursor to the lower right-most point of the area to be viewed enlarged and then release the left button. Notice as you drag the magnifying glass that a rectangle is drawn showing the enclosed area that will be magnified.

Zoom Out ⊖

Zoom out to view an image at a smaller scale. After clicking on the Zoom Out button, more of an image should be viewable within the document window if parts of that image were hidden previously (i.e. if the image was too large to fit within the window previously). The design currently being viewed should appear smaller.

Zoom Last ⊙

Zoom the image using the most prior selected zoom setting. This tool is useful it is desired to momentarily zoom in on a particular area of an image for closer examination. Then, upon completion of this examination, the user may simply press the Zoom Last button to again view the design at the scale that was selected prior to the zoom in operation.

Zoom to Fit ⊡

Automatically zooms the image such that it is displayed to completely fit within the boundaries of its window. Pressing this button is useful if one wishes to see an image or design in its entirety without using the window's scroll bars.

The View Bar

View Bitmap

Displays or hides the current bitmap image being processed. It is often useful to hide or show the original bitmap image being processed when the user is adjusting, adding, or removing outline points. This allows the user to ensure that the outlines appropriately match the underlying bitmap artwork. When this button is shown as being depressed, the bitmap image should be visible.

View Edges

This button (depicting a picture of a sharp edged sword) displays or hides the detected edges (i.e. outer outlines) of objects contained within a design. When this button is shown as being depressed, the outline (or edges) of objects should be visible.

View Stitching

Displays or hides a simulation of the generated embroidery design stitching. When this button is shown as depressed, simulated embroidery stitching should be viewable on screen if condensed data has been generated. If the simulated stitching is hidden (by un-pressing this button) and then the View Stitching button is depressed again (via a second mouse click), this will cause an animation of the stitching to be re-displayed. The speed of this animation may be controlled via the Stitch Slower and Stitch Faster buttons. This animation gives a general indication of the order and direction of stitching for objects that have been generated.

Stitch Slower

Decreases the rate at which stitch animation occurs. See the description of the View Stitching button above to learn how to trigger a simulated stitching animation.

Stitch Faster

Increases the rate at which stitch animation occurs. See the description of the View Stitching button above to learn how to trigger a simulated stitching animation.

The Tools Bar

Level

Levels an image by aligning it with an imaginary line drawn or indicated using the cursor. This tool is useful when it is necessary to slightly rotate a scanned or loaded image so that its orientation is level or straight in the horizontal direction. To use this tool, first depress this button. Then, move the mouse cursor to a point somewhere on the far left side of the bitmap image (notice that the mouse pointer changes to indicate that the level tool has been selected). Then, press and hold down the left button while dragging the mouse to the right. The line that is generated while you are dragging the mouse should be positioned such that it is aligned with an imaginary line that would appear to be perfectly level with items contained in the bitmap image. When such a line is indicated, release the left button and the image should be automatically rotated such that this imaginary line is perfectly level or parallels the horizontal window boundaries

Eye Dropper

Selects the color of an area clicked upon with the mouse as the new current drawing color.

New Color

Opens a color selection dialog box that allows the user to choose a new drawing color. This tool is useful when the current drawing color needs to be changed to a color not already contained within the image (in which case the eye dropper tool may not be used).

Fill

Fills an area clicked upon with the mouse using the currently selected drawing color. For information on how to select a drawing color see the descriptions of the Eye Dropper and New Color buttons.

Pencil

Marks pixels with the currently selected drawing color when they are clicked upon with the mouse cursor. For information on how to select

a drawing color see the descriptions of the Eye Dropper and New
Color buttons.

Line

Draws a user-specified line using the currently selected drawing color.
For information on how to select a drawing color see the descriptions
of the Eye Dropper and New Color buttons.

Fill Rectangle

Fills a rectangle drawn with the mouse cursor using the currently
selected drawing color. For information on how to select a drawing
color see the descriptions of the Eye Dropper and New Color buttons.

Brush

Colors groups of pixels clicked upon with the mouse cursor using the
currently selected drawing color. For information on how to select a
drawing color see the descriptions of the Eye Dropper and New Color
buttons.

Regenerate

Regenerate color segments by filling within outlines. This button
should be pressed after all outline editing has been completed.
Processing performed here effectively "regenerates" the artwork by
filling in the specified outlines with the appropriate solid fill colors.
After this step is completed, the bitmapped artwork that is produced
should be clean, sharp, and free of noise. At this point, the user
may proceed to "Punch the Design", which converts the clean
artwork into an embroidery design. Or alternatively, the user may
copy the image to the Windows' clipboard to paste and save within
other Windows paint programs. This may prove useful if the
conversion to embroidery will occur at a later time, in which case, the
cleaned image can be quickly reloaded into Digitizing Assistant
eliminating the need to perform the cleaning process again.

Order Objects

Alters the sewing sequence of objects by repositioning them on the
object bar in the order in which they are clicked upon with the

mouse. This tool provides a quick way of specifying the precise order in which objects should be sewn. Note that as objects are clicked upon and repositioned on the object bar, they also become selected. This is to allow easy movement of a block of objects that have been precisely ordered to another location on the object bar (e.g. so this block of objects sews after another block of objects).

Entry/Exit Points

Digitizing Assistant shows an objects entry point by displaying a 🟢 icon at the needle entry location and an objects exit point is indicated by an 🔴 icon. It may be useful to modify these entry or exit points to change the way an object is sewn. Thus, these icons may be dragged with the left mouse button to any newly desired location along the edge of the associated object. To undo such a modification, the user may simply open the objects properties dialog box and re-select the closest point option (under entry exit point connections) to have the system re-adjust the entry and exit points for the object so that they lie closest to the objects sewn before and after the current object respectively.

Object Properties
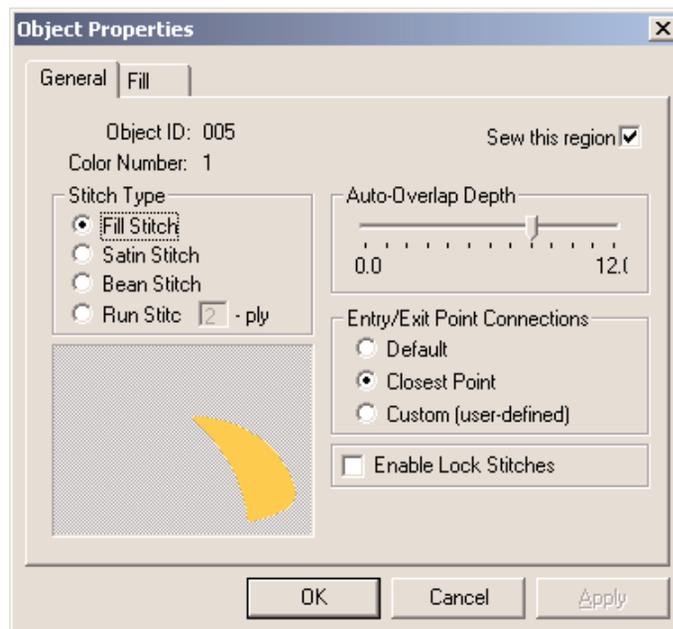
The Object Properties Dialog Box. Shown above are both pages (i.e.

tabs) of the object properties dialog box. The General page is displayed allowing settings that are applicable to all types of objects to be modified.
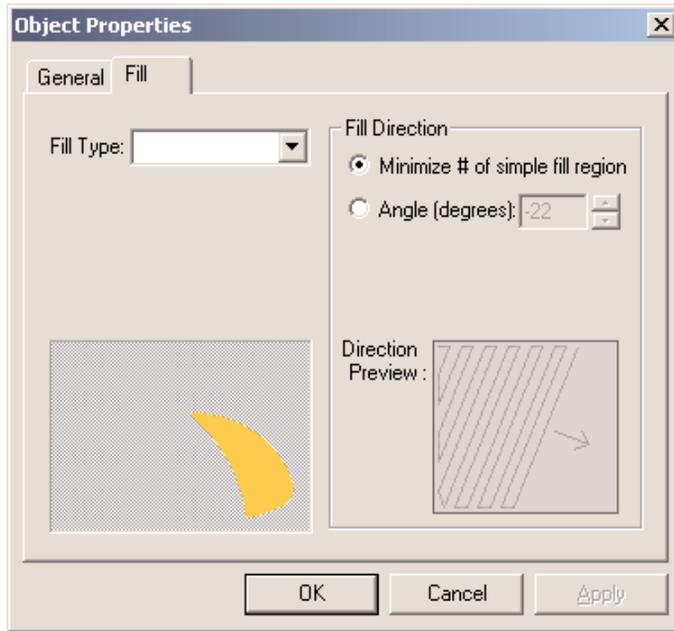
The Fill page is displayed allowing settings that are applicable to fill stitch objects to be modified.

The object properties dialog box may only be opened if there are one or more objects within the current document window that are selected. After selecting one or more objects, this dialog box may be opened by selecting Object I Properties from the menu bar. Settings that may be modified once this dialog box is opened include:

Stitch Type: This setting is located on the left side of the general page and allows the user to select what type of stitching should be used to sew the selected object(s).

Auto-Overlap Depth: This setting is located on the right hand side of the general page and specifies the degree to which adjacent objects overlap one another. For example, if a fill stitch type object is sewn prior to another adjacent (touching) object, the fill stitch boundary at the location where this adjacency occurs will be automatically extended by the amount specified here. Then, when the second object is sewn it will actually overlap or sew on top of the previously

sewn fill such that accurate registration is guaranteed. This setting works similarly for satin stitch type objects and also controls the degree to which satin columns extend underneath one another at column intersections.

Entry/Exit Point Connections: This setting is located in the lower right side of the general page and allows the user to select how entry and exit points should be calculated for the selected object(s). The initial value for this setting is Closest Point; however, when modifying a starting or ending point for an object manually, this setting is automatically changed to Custom (user-defined) for that object. Choosing the Default setting will allow the software to arbitrarily place entry and exit points for the selected object(s).

Enable Lock Stitches: This setting is located below the entry/exit point connections settings in the lower right side of the general page. It specifies whether a series of lock stitches are sewn near the exit point of an object before proceeding to the next object to be sewn. If this option is not checked, no lock stitches are generated.

Fill Direction: This setting is located on the right hand side of the Fill page. To access this page simply click on the tab at the top of the dialog box labeled Fill. There are two main choices relating to fill direction that may be selected here. The first choice, labeled Minimize # of simple fill regions, causes the system to automatically select a fill stitch direction that appropriately blends with surrounding adjacent regions while attempting to minimize the complexity of the fill that will be generated. The second choice, labeled Angle (degrees), allows the user to override the automatic settings and specify a desired fill angle in the text box to the right. There is also a preview area shown below these two choices which graphically illustrates the selected stitch direction.

Other items displayed on the general and fill pages (including the preview area in the lower left corner) are reserved for future use.

Processing Settings

The processing settings dialog box may be opened whenever there is an open document window displayed within Digitizing Assistant. To open this dialog box, simple click on the Processing Settings button or select Process Settings from the menu bar. Typically, most of the settings contained within this dialog box will never require

modification. They have already been set to produce optimal results in the most common situations. However, expert users may have a need to gain additional control over how images are processed. The top slider is still reserved for future use and will allow more precise control over the degree to which an image is cleaned during initial image processing steps. The middle two sliders control the accuracy with which outlines are generated. The lower the number (or the further left the slider is moved), the closer the outlines will match their associated bitmap areas. Note, too much accuracy can actually have a negative impact on final results since there will be little or no tolerance for slight noise that is common around region boundaries.

The bottom slider within this dialog box determines the default auto-overlap setting applied to all objects generated. This setting may also be set or overridden on a per object basic as described previously in the object properties section.
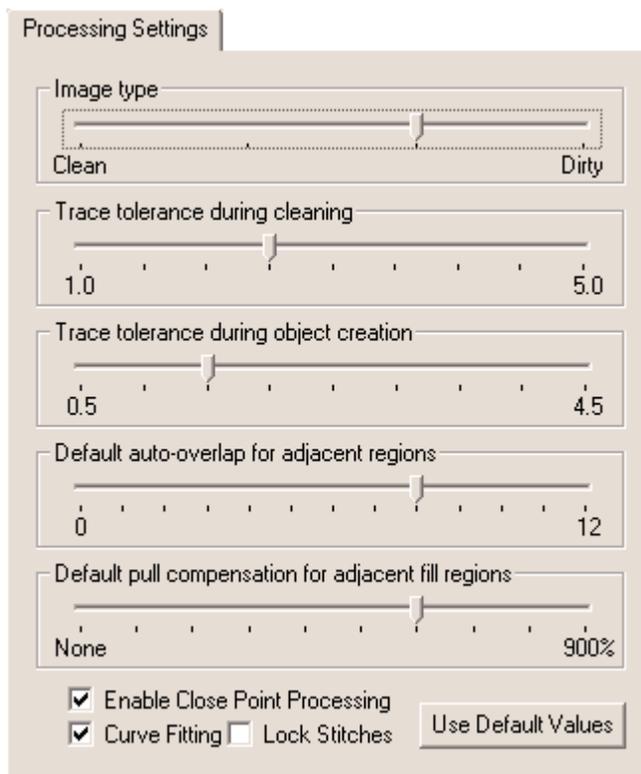
The small check box at the bottom of the first tab in this dialog box (labeled Curve Fitting) allows the user to enable or disable curve

fitting. If this box is checked, the system attempts to automatically fit curved arcs to boundaries that appear curved within an image. Curve fitting is useful for a variety of image types, however, it may be useful to disable this feature in certain cases where curves are known to be absent. There are also similar check boxes which allow other features (e.g. closest point connection processing & lock stitches) to be enabled or disabled. Closest point processing organizes stitching to minimize thread cuts. Specifically, this feature is responsible for choosing suitable entry and exit points (displayed via the and markers) for embroidery objects. The lock stitches check box indicates whether or not lock stitches should be generated automatically at the entry/exit points of embroidery objects.

The user should always adjust the settings displayed here with care since inappropriate settings may produce undesired results. Lastly, the second small check box at the bottom of this dialog determines if closest point processing will be enabled or disabled. The View tab displays the current colors used to display the various types of stitching. These colors can easily modified by clicking once on the color to be changed, bringing up a dialog box, and selecting the new color from this dialog box.

Addendum: Tips Concerning Sewing Order

A default object ordering is determined automatically after punching a design . During this step, Digitizing Assistant will try to produce a reasonable ordering taking into consideration which objects touch each other as well as each object's stitch type and their relative locations. However, it is certainly possible that this ordering is not optimal or that the system may have made some "mistakes" in determining object ordering. In this case, there are several ways a user may easily override the chosen object ordering depending on how much re-ordering is necessary.

If only one object seems to be ordered inappropriately, the user may simply select that object and then drag its associated button on the object bar to a new location. This technique also works when selecting multiple objects. Specifically after several objects are selected (while holding the CTRL key to do multiple selections), the user my drag the group of object buttons to a new location on the bar. At the new location, all selected objects will be inserted while maintaining their ordering relative to one another. Oppositely,

buttons on the object bar may be clicked upon and their associated objects will be shown selected in the design window. This is a quick way of seeing what object corresponds to a particular button in the sewing sequence.

If more drastic re-ordering is required, the Order Objects tool button may be used. After this button is depressed, objects will be ordered precisely in the order that the user clicks upon them. Note that while clicking the objects, they are ordered on the object bar and also selected. Thus, after ordering a small group of objects in a particular order, the user may then drag this group of objects to a new position in the sequence by dragging their buttons on the object bar (as mentioned above).

In general, modifying object ordering in Digitizing Assistant has been designed to be very easy and intuitive. Even with large designs, the user should be able to completely change sew order within a few seconds with a minimal amount of mouse clicks and/or drags.

Addendum: Corner Mitering

The corner mitering feature is used to improve how certain columns that connect at sharp angles are sewn. Examples include the tops of letters such as As, Ms, Ns, or others shapes that contain sharp corners. Specifying a corner miter allows these sharp corners to be sewn using a constant angle satin stitch within and around the connection. The order in which these connected columns are sewn does not matter since the software will automatically ensure that the appropriate sections of the miter are sewn in the correct order (i.e. the portion of the column that should be underneath the other column is always automatically sewn first).

Follow the instructions on the following images to understand how orner mitering is done.
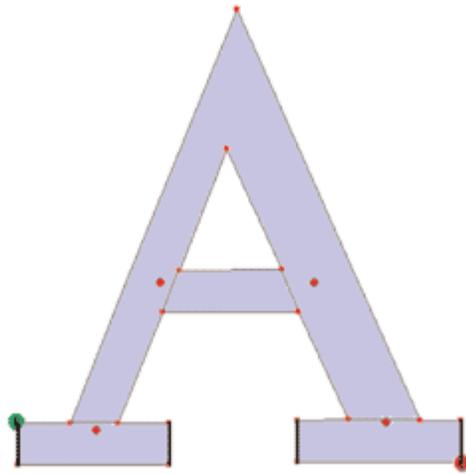
Here is an 'A' after loading the image, going through the steps of "create objects", "interpret objects", for an already cleaned artwork.

Right click over part of
letter A to be mitered
to insert a junction

Inserting a junction

Fill Stitch
✓ Satin Stitch
Bean Stitch
Run Stitch

✓ Sew Region

Insert Junction

Properties

Select Insert Junction

Inserting a junction

Click on red dot to select newly inserted junction, then drag the inside dividing point to the other side of the A (see next figure)

Setting the miter angle

Inside point dragged to this new location on other side of A

Completing the miter

Click outside of object to de-select it and then click on Generate CND button to generate the design

The finished miter