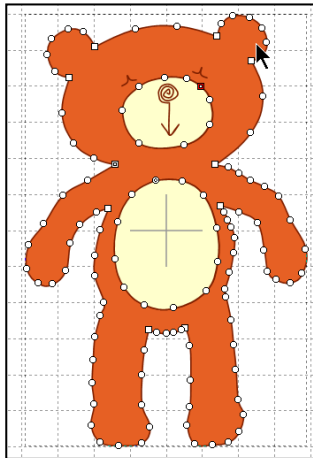




Working with Vector Graphics In 5D™ Design Creator Software

By Janie Lantz, Software Education Specialist






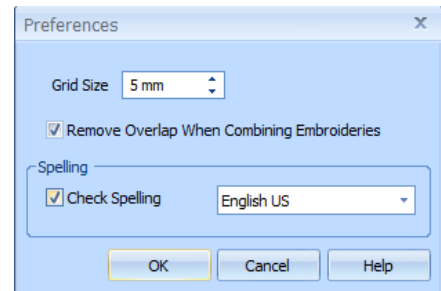
5D™ Design Creator Software offers two methods for working with graphic files when creating an embroidery design. The first method incorporates the Paint window, which produces Raster graphics that are formed from pixels. The second method works with vector graphics in the Draw window. Vector graphics consist of lines calculated mathematically from points, called nodes, rather than being composed of pixels. As you change the size of a vector graphic, the lines are mathematically recalculated between the nodes, making vector graphics produce a much cleaner image that may be changed without losing quality.

Reset All Modules

1. Open 5D™ Embroidery .
2. QuickLink to 5D™ Configure .
3. Click on **Reset All Modules**.
4. Click **OK** to the message, 'All modules will be closed and reset to their default settings'.
5. When you see the message, 'Please confirm that all modules except 5D™ Configure are now closed', ensure no other modules are open in the background. If they are, click on the module(s) in the background, and close after saving any work that might be in progress. Click **OK** to the 'All modules will be closed' message when you have verified all other modules are closed.
6. Click **OK** to the message, 'All modules are now reset to their default settings'.
Resetting the Modules will make all menus appear as they first installed, will reset all browse windows to their default size and folder, and will make the Control panels and toolbars reset to default. No changes will be made in custom settings such as MyThreads, MyMachines, or MyHoops.
7. Click **OK** to close 5D™ Configure.

QuickLink to 5D™ Design Creator Software

1. Open the **Desktop icon** . From the Program Folder, open **5D™ Embroidery** .
2. In the QuickLink Toolbar, select the **5D™ Design Creator icon** .
3. In the ExpressDesign Wizard – Choose Design Type, take a moment to review the options for creating Design Type.
4. **Click Help** in the lower right corner of the ExpressDesign Wizard. **Click and drag the scrollbar down** to learn more about each option in the Wizard.




Note: The first three options all contain 'Express' as part of their title, and all recognize raster graphics (pixilated). The fourth option, Load a Picture in the Paint Window, and the sixth, Load a Background Picture into the Draw Window, also recognize raster graphics.

The only Wizard options that recognize vector graphics (lines calculated mathematically from control points, called Nodes) are Load a Vector Graphic as Objects into the Draw Window, and Start a New Design with No Graphic (when you choose Draw Window in the Select Background Type step of the Wizard).


Exploring Vector Graphic Properties




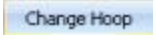
5. Select **Load a Vector Picture as Objects into the Draw Window**.

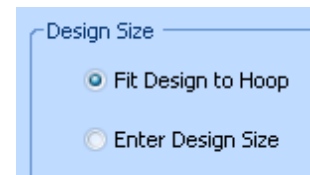
Notice how the 'i' for Information changes at the bottom of the selection menu.

6. Click **Next**.
7. In ExpressDesign Wizard – Choose Picture, click **View Picture** .



8. Click the **ellipsis**  and browse to **\my documents \5Dembroidery \samples \dcreate \pics2**.
9. Click **OK** to view the Thumbnails.


10. Click **Page Down**  or **Page Up**  to scroll through the graphics stored in the folder.
11. Place the cursor over any thumbnail graphic and the name will pop up. Notice these files are **.4qb**, a vector graphic image type.
12. Click **Page Up**  to go to the top menu, and click the **last thumbnail** at bottom right, **Teddy.4qb**. The image will load automatically into the viewer, and you can click **Next**.
13. In ExpressDesign Wizard – Design Size, you may either specify the Hoop Size or the desired Design Size by either Height or Width.
14. Select **Fit Design to Hoop**.
15. Click **Change Hoop** .
16. Change the Hoop Group to **PFAFF® creative sensation™**. Change the Hoop Size to the **120mm x 120mm – creative™ 120 Square Hoop**. Make Orientation **Vertical**, and then click **OK**.
17. Click **Finish**.





The Filmstrip, Groups and Paths

18. The image is loaded into the Draw tab, with the Filmstrip on the left, and the Draw Window Control Panel on the right.
19. The Filmstrip shows a Root and a Group Insert with a + left of the words.
20. Click the **+ sign**, and the Group Insert will open.
21. Within the Group Insert, three Paths and another Group are shown, stepped in to show they are sub-components of the Group Insert.


Tip: A Vector Graphic will always load into the Draw Window as a Group Insert, signifying the artwork was inserted initially as a grouped element.

You can click on a Group Insert in the Filmstrip, and then click Ungroup  in the Group Tools from the Control Panel, to separate the Group Insert into its component parts. The Group Insert will then disappear, as the parts are no longer grouped as they were when inserted!

If the separate parts are re-selected, and Grouped , they will then appear as 'Group' immediately under the Root, but no longer appear as Group Insert.


You must click Undo  several times, if you want to go back to the point where you first inserted the artwork with the Wizard, showing Group Insert in the Filmstrip.

22. If necessary, click the + sign beside Group Insert to open the group and view the component parts again.




23. In the Select tools in the Control Panel, click **Box Select**  to ensure it is highlighted (engaged).
24. Click the **first Path** in the Filmstrip, the teddy bear body. Notice the yellow body is surrounded by a select box within the work area.
25. Click and **drag** the select box **to the side**, and only the body will move. Notice the body is a complete 'layer' of color and outline.

When vector graphics that contain layers are loaded into the Draw tab in 5D™ Design Creator, all existing layers of color are maintained. If we create stitches in the body area of the bear, the entire area will be filled, and no 'holes' will be created under subsequent layers we might create, such as the muzzle or belly.


If you wanted to create the body in a fur-like pattern texture, and then create an overlay of Wave Fill or Motif Fill in the muzzle and belly, working with layers could be very useful.



26. Click **Undo**  once to move the body back into place.

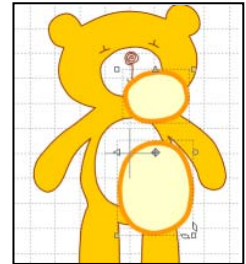
Combining Paths

27. Hold down the **CTRL** key on the keyboard. In the Filmstrip, click the **second Path**, the bear's belly. Both the body and the belly will be surrounded by boxes.
28. Click **Combine Paths**  from the Edit tools in the Control Panel.
29. The smaller element will create a void in the larger element, the bear's body, and the smaller element will disappear.
30. Now, we could create a body fill with no stitches under the belly area, except we have no image in the belly area over which to create a fill!
31. Click **Undo** .
32. Click outside all the objects to deselect them.
33. Click the **second Path**, the belly, to select with a box.
34. Hold down the **CTRL key**, and click the **third path**, the muzzle.
35. Click **Copy**  to place both selected elements on the Clipboard viewer in the Control Panel.


Tip: Because you copied both elements at the same time, they will paste in as a 'Group'.

36. Hold down the **CTRL** key. Click the **first Path**, the bear's body, in the Filmstrip. All three Paths will be surrounded by individual select boxes.
37. Click **Combine Paths**  in the Edit tools in the Control Panel.
38. The bear's body now has voids the size and shape of the muzzle and belly areas.

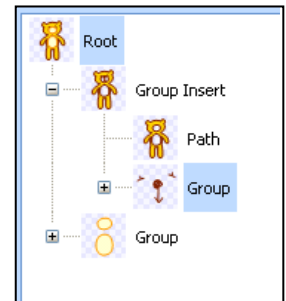
39. Click **Paste**  in the DrawEdit toolbar at the top of the Work Area. The muzzle and belly will be pasted back into the work area, and will still be surrounded by select boxes.
40. To move the selected areas into place over the voids in the bear's body, click and drag within one of the select boxes (when the 'move'  cursor is visible). Alternatively, you may 'nudge' the selected objects using the keyboard arrow keys.







Changing Order of Objects in the Filmstrip

41. View the Filmstrip sequence. The objects are layered so the top element comes first in the design. To make the muzzle's details visible, they need to be last in the Filmstrip.
42. Click the **Group** with the facial features in the Filmstrip to select with a box. At the bottom of the Filmstrip, click **Move Forwards** . The Group should move down in the list.

However, because it is part of the original Group Insert, it is as far toward the bottom as it can go. The next group down is a separate entity, as shown by the stepped sections in the Filmstrip.




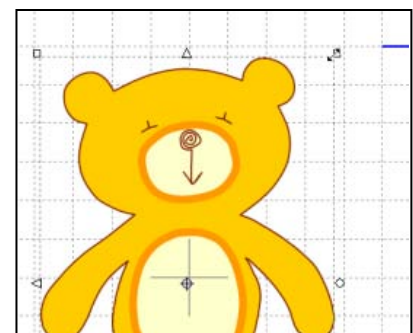
43. Click the **Group Insert** in the Filmstrip, near the top.
44. Click **Ungroup**  in the Group toolbar in the Control Panel.
45. Click **Box Select** .
46. Click the **Group** of **facial features** in the Filmstrip.
47. Click **Move Forwards** . The Group will now move down a step in the Filmstrip.


Alternatively, you could have selected **Move to Front**  to place the selected object at the end of the Filmstrip, the 'last' object in the layers, which means it's now on top of all the other objects!

48. Click **Select All**  in the Select toolbar in the Control Panel.


Group and Change the Image Size

49. Click **Group** .
50. You now have one select box in the work area around the entire Group.
51. Place the cursor over one of the **square select handles** on the corner of the select box.




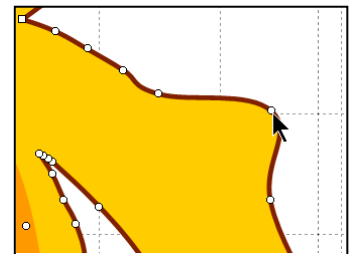
52. Click and **drag** to make the bear slightly smaller.
53. Click **Center in Hoop**  in the DrawDesign toolbar at the top of the Work Area, and the bear's image will be centered both Vertically and Horizontally.




Edit Design Shaping with Nodes

54. Click the Group's **+ sign** if necessary (under the Root) in the Filmstrip to open all the objects in the Filmstrip. Even though the objects are grouped, all the individual elements are available within the Group.
55. Click the **Path** for the bear's body.
56. In the Edit Toolbar in the Control Panel, click **Edit Nodes** .

Nodes are control points that define the angle or curvature of the connecting lines. A round node specifies a curving line. A square node (created by holding the CTRL key down while you click or move a node) makes an angle or straight line segment.

57. Click the **+** on the **Zoom slider** at bottom right until you are zoomed to about 100%.
58. Click the **Overview window** in the Control Panel.
59. Click and drag the zoom **indicator box** until the right arm is centered in the Work Area.
60. Click and **drag a node** on the outer arm to shape an elbow on the arm.
61. Zoom very closely on the area where the arm meets the body on the lower side. Several nodes are grouped almost on top of each other, because the darker outline has an angular jog near the end of the 'v'.
62. Select **Delete Nodes**  from the Edit tab in the Control Panel. Click on any nodes you'd like to remove.




63. Click **Edit Nodes**  again, and hold down the **CTRL key** on the keyboard. Click to **select and then release** on the node remaining on the end of the 'v'. When you release the node, you will have a square point, and a sharp corner.
64. Click **Zoom to Fit** .
65. Continue to **Edit Nodes**  as desired, to reshape the bear.





Tip: You can click and move nodes to reshape the lines of any selected object in the Filmstrip.

Change Object Properties

66. Click **Box Select**  in the Select tools in the Control Panel.
67. Click the **Path** for the **bear's body** in the Filmstrip.
68. Hold down the **CTRL key**. Click on the **Paths** for the **muzzle** and for the **belly**. All three Paths will be surrounded by select boxes.
69. Hover over the select boxes in the Work Area and **right click** to open the Object Properties.
70. **Left click** on the **dark brown color**. This will change the lines in all three objects to dark brown.
71. Click **OK** to Object Properties.
72. Click on the **Path** with the **bear's body**.
73. **Right click** over the **select box** in the Work Area.
74. In Object Properties, **right click** on the **light brown** to change the **fill** color of the bear's body.
75. Click **OK** to Object Properties.

Save Image Files

76. Click **Save As Drawing** , and save in **Documents \5DEmbroidery MyPictures**. Name the picture **MyTeddy**. Note the **Save As Type** is **.4QB**. Click **Save**.
77. Select **File** in the Menu Bar at the top of the Work Area. Select **Export as Clip Art**.
Note there is no icon for this command.
78. Click the drop-down menu in **Save As Type**, and select the **file format of your choice**. Name the file **MyTeddy**. Click **Save**.
79. Click **Send to Wizard**  from the DrawMain toolbar. Click **No** to the prompt to save the Teddy again.

Send To Wizard from the Draw Tab

80. Send to Wizard has two options.
81. The first, **Merge All Layers** (flatten) will automatically make the artwork one single layer, and will determine the optimal order to stitch the design elements, producing a .can file with stitch objects.
82. The second, **Retain individual object layers**, will create the areas of stitches exactly as you created them, and the same order as they appear in the Filmstrip.

Tip: With the second option, if we had not created voids in the bear's body fill, we could have made a solid body area with open overlay objects of the muzzle and belly!

83. Select **Retain individual object layers**. Click **OK**.

84. The Wizard will finish, and produce a finished .can file.


85. Click the **Edit tab**. Review the elements used to create the .can file. Note the larger objects with a fill color were created as fill areas with borders, simplifying the number of objects in the .can file.

86. Click **New** . If prompted to save the .can file, click No.

87. In the ExpressDesign Wizard – Choose Design Type, select **Load a Vector Picture as Objects into the Draw Window**. Click **Next**.

88. Click **View Picture** .

89. Browse to **Documents \MyPictures**. Select **MyTeddy.4QB**. Click **Next**. Leave all settings the same in ExpressDesign Wizard – Design Size. Click **Finish**.

90. Select **Send to Wizard** . Choose **Merge All Layers** (flatten).

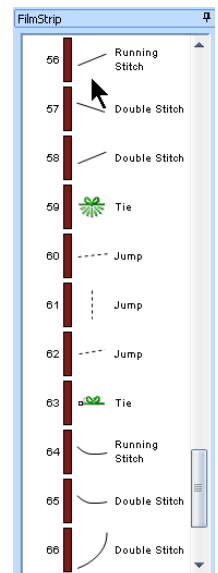
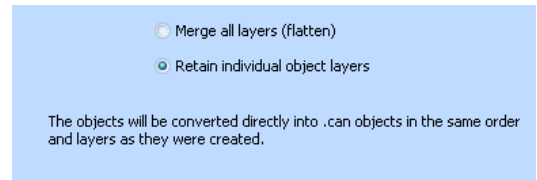
91. In ExpressDesign Wizard – Choose Design Type, choose **Create Express Embroidery**. Click **Next**.

92. In ExpressDesign Wizard – Reduce Colors, leave everything as it is. Click **Next**.

93. In ExpressDesign Wizard – Choose Thread Colors, place a check beside **Automatically Remove Background Colors**. Leave **Remove Background Color Only** selected. Click **Next**.

94. In ExpressDesign Wizard – Fabric and Stitch Type Options, **uncheck Design Underlay**. Click **Finish**.

95. Select the **Edit tab**. Scroll through the Filmstrip and review the number of elements used to create the embroidery design. Note the outlines were traced by themselves, and appear as multiple segments of stitches in the .can file.



Vector graphics in the Draw tab offer multiple other options as well. Browse the 5D™ Design Creator Help files for more techniques and information!