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4D Embroidery Extra
4D Stitch Editor
4D Sketch
4D Design Creator
4D Design Aligner
4D Organizer
4D Configure
4D Disk Manager
4D Reader/Writer USB
4D d-Card Reader/Writer
4D Vision
4D Disk Manager USB

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All of the projects and information presented in this book were completed using version 8.0 of the 4D Embroidery System and stitched out on a Husqvarna Viking Designer SE sewing machine. However, no warranty is given nor results guaranteed.

Questions, comments, and inquiries are welcomed by the author who may be contacted via email at his web site:

www.mrpatience.com

www.mrpatience.com

That is the address of my web site. If you have any questions about anything in this book, or about any of the modules in the ***4D Embroidery Software System,*** please do not hesitate to send me an email so that I can answer your question. I love to hear from my readers. I will answer your questions personally.

If your question requires a complex answer, then I will write a little procedure to answer that question, complete with graphics, and post it on my web site (and credit you if you don't mind) for everyone to download for free.

Aristotle wrote, "**For the things we have to learn before we can do them, we learn by doing them.**" I placed this quote in my second book when I spoke about the need to use the ***3D Embroidery Studio*** software often and to try out different things. It is just as true with ***4D Design Creator*** but with the added need to **stitch everything out on a test project before applying it to your final work**. There are two very good reasons for doing this.

First, and foremost, you will not accidentally ruin a nice garment or piece of fabric. But second, and most important, you can learn from your mistakes. Every time that you stitch out a project in a test stitch, **save the results**. If there are mistakes in the design, then write notes **right on the fabric**. Also, save the planning sheets that you made and see if you made any errors in your planning. Put the **original** planning sheets with the stitch out and save them for future reference. (I put mine in those clear document protectors and then keep them in a 3-ring binder.) Then I can always go back a see why something did or did not work and then refine my techniques and choices for future projects.

In addition, if I am going to embroider on fabric that has any stretch to it, I use similar fabric to test on. Buying extra fabric that has a lot of stretch can be expensive. Here is my secret to solve this problem. I make a visit to our local second hand clothing store and find a garment with similar material and stretch. I can usually buy garments for $2.00 - $5.00. Then, if my embroidery works out OK, I know that it will work on my actual project. I can then donate the embellished item back to the second hand store and someone else can enjoy my work.

Good luck with your design creation and please do not hesitate to contact me through my web site if you have any questions about anything involving any of the software in the **Viking 4D Professional System**.

Tim Frost

Table of Contents

Chapter 0 – Computer Skills Prerequisites

Before you begin learning about how to use ***4D Design Creator***, I presume that you already have certain basic computer skills. These basic skills are:

- How to create and navigate through the folder structure on your computer
- How to work with various dialogs presented by your computer's operating system to save and find folders and the files within them

If you skills in these areas are weak, then before you proceed with the projects in this book, you should download one (or both) of the free files on my web site. Depending upon which operating system you should download, read, and thoroughly understand the contents of either of these files. Go to this address:

www.mrpatience.com/Articles_Projects.htm

Once there, you will find two links that will open the file for the operating system you are using. Just **left click** on the link and the file will open on your computer. Once the file is open you can print it or save it to your hard drive for future reference.

Before you begin working through the exercises in this book you need to create a few folders and sub-folders to save your work. After you read through one of the above documents, then create the following structure on your hard drive:

C:\Design Creator Projects
C:\Design Creator Projects\CANs
C:\Design Creator Projects\Graphics
C:\Design Creator Projects\Stitch

Although I use other folder names in the computer skills documents such as **Embroidery Designs,** you can simply change those folder names to **Design Creator Projects** and use your newly learned skills to create the folders that you need. I will be referring to these folders during the course of working through this book.

Chapter 1 – Basic Design Creation Concepts

Welcome to the world of design creation! Congratulations on making the decision to use the most versatile and easy to use embroidery design creation software package, ***4D Design Creator***.

Now, I know what many of you are saying. "Don't tell me that creating new designs is easy. I have been trying to do it for years and I just can't get the hang of it. And, not only this software but other design creation software I looked at (and maybe own) is not 'easy to use'." I know that many of you are thinking this because it's exactly what I was thinking when I first started out trying to create new designs. I'm going to try and change your mind in this chapter.

The problem that everyone faces when they first begin to use new software is that it's difficult to "get your head around" the software. By that I mean that until you have some point of reference that you are familiar with, it's difficult to get your bearings with the task at hand. Here is an example.

Think about the first time you entered a new school building. You didn't know where anything was and you felt intimidated by those who did know which way to go to get to everything. I remember this feeling quite vividly when I first went to high school. It seemed that every hallway looked the same. There were few signs, and fewer people willing to help me find anything. My friends and I used to walk the halls trying to figure the place out. Then, one day while wandering around the halls, we figured out that the school was laid out in a figure 8. The front door was at one end of the 8 and the cafeteria, gym, and bookstore were at the other end of the 8. We experienced what is known as the "Eureka" moment as it all came together and we "got our heads around" the layout of the building. This is what I hope to do with you in this chapter. Let's get started.

What is design creation?

In the simplest terms, design creation is the process of placing groups of stitches in various positions within the embroidery hoop so that a recognizable design emerges. The following definition of **What Makes A Design** comes from page 42 of the ***4D Design Creator Reference Guide***:

> **"A design in 4D Design Creator is composed of 'objects'. Stitch objects outline an area or define a line which is used to create stitches of different types and styles. The outlines and lines are defined by points, which can be moved to change the shape of the object. Command objects are instructions, such as a change of thread color, a jump across the design or a stop."**

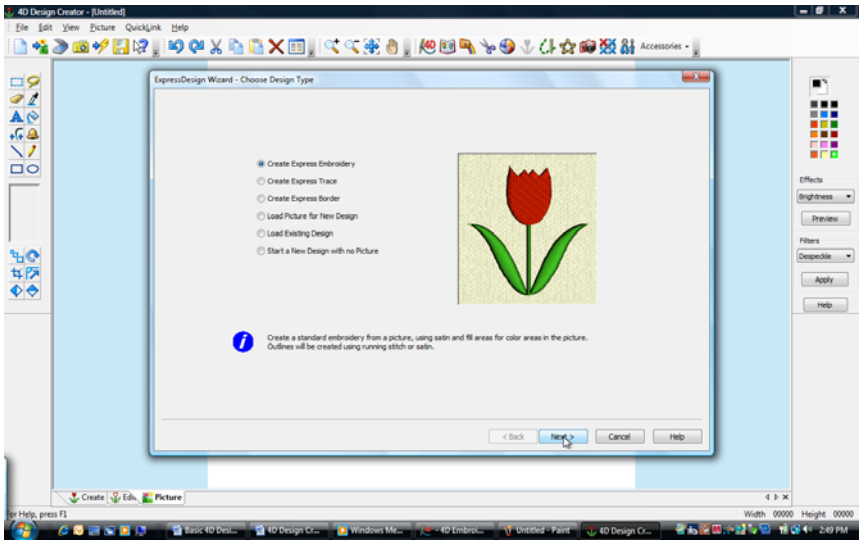
After you have finished reading this book and you complete the exercises, you will understand everything in those few sentences and know how to create your own designs. I'm going to use the terminology that appears in the Husqvarna Viking manuals so that you will not be confused when you read those manuals later to add to your understanding of the design creation process. These words have a specific meaning and they must be used in the correct context. Let's run through a quick exercise and get an overview of the design creation process.

Start 4D Design Creator

1. Before you can start the ***4D Design Creator*** software, you have to start ***4D Embroidery***. Go ahead and start ***4D Embroidery*** and look at the icons on the **toolbar**.

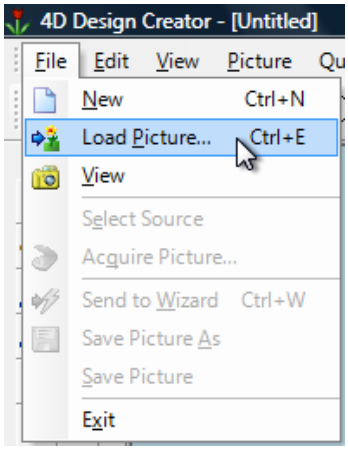
   You will see the ***4D Design Creator*** icon. Here is what it looks like: 

2. Here is what ***4D Design Creator*** looks like when it opens:



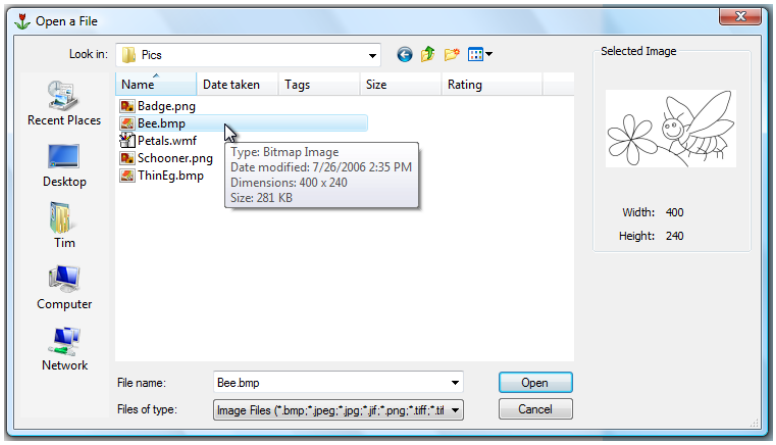
The first thing that you will see is the **ExpressDesign Wizard**. I will cover this new and exciting feature in depth in the next chapter. For now, let's just skip over it. **Left** click on the bottom radio button in the list labeled **Start a design with no Picture**. Then **left click** on the **Finish** button. You will be on the **Picture** page. Even after we shut down the **ExpressDesign Wizard** the software is guiding us in the process of design creation. Look back at the definition of what makes a design on the previous page. The first sentence says, "**A design in 4D Design Creator is composed of 'objects'.**" The first thing we have to do is to get a graphic or a picture that has well-defined color segments that the we use as a guide to convert into objects. This is done on the **Picture Page** section of ***4D Design Creator***. Here is where we will load the graphic or picture that represents the subject that we want to convert into a design. This is where we will edit the graphic or picture we want to use. There are many tools available on this page and I'll describe them later. For now, I'm just trying to help you "get your head around" the process of design creation. Let's use one of the graphics supplied with your software. I'm going to use the word graphics rather than picture because in the process of design creation a **photograph** (something that many people think about when they use the word picture) is **extremely difficult and should only be attempted by experts**. Graphics can range from very simple to very complex. We are going to start with something very simple because we are concentrating on the **process** of design creation at this point. Let's go get a graphic to use for our design creation subject.

3. **Left click** on the word **File** on the **menu bar**. It will open a **drop down menu** that looks like this:



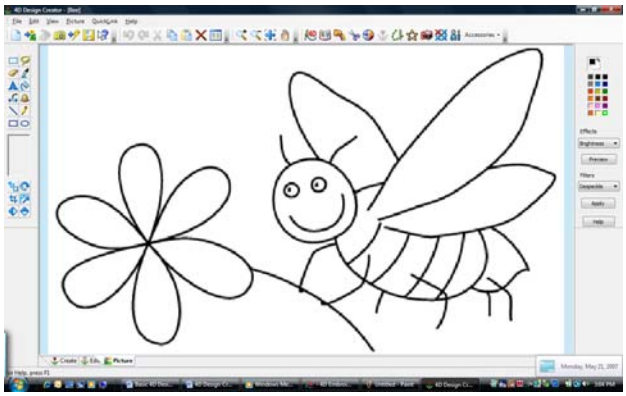
The second item from the top is **Load Picture**. This is the option we will use to find and load the graphic that is to be the subject of our design creation.

4. **Left click** on the **Load Picture** entry in the menu. Here is what your screen should look like:



You may or may not see this exact folder. The folder containing the graphics supplied with ***4D Design Creator*** is **C:\4DEmbroidery\Samples\DCreate\Pics**. If you are not looking at this folder, then **left click** on the drop down arrow at the right side of the **Look in:** text box and then navigate through the folders on your hard disk to this folder.

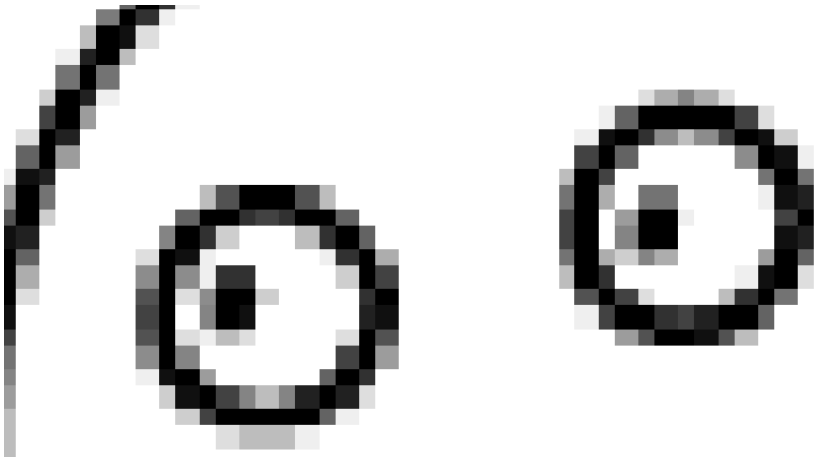
5. When you see the **C:\4DEmbroidery\Samples\DCreate\Pics** folder, there is a graphic in this folder named **Bee.bmp**. **Left click** on the name of that file, then **left click** on the **Open** command button to load the graphic onto the **Picture Window**. Here is what it looks like:



There are a few problems with this graphic that must be corrected before we use it. **Left** click on the **Zoom In** tool.

Now **left click and hold** to drag a box around the Bee's eyes.

6. Here is what the Bee looks like once you have used the **Zoom In** tool:



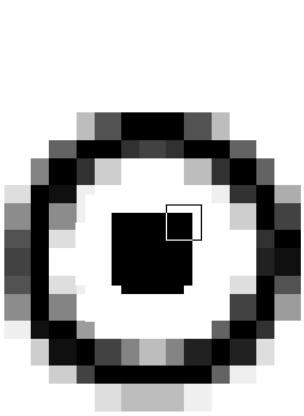
This is typical of a bitmapped graphic. The lines that make up the graphic are little squares that have varying color levels (in this case shades of black) to make up the lines. This condition is known as **aliasing** in the graphics business. When the time comes to create the stitches for the pupils of the eyes, we will have a problem because of the **aliasing** used in this graphic. The fix, in this case, is simple and fast and you will learn how to use one of the tools on the **Picture Page**.

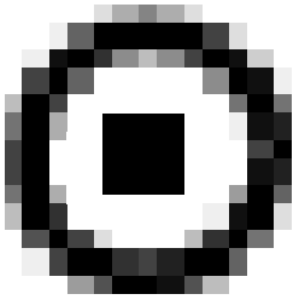
7. In the tool bar on the left side of the screen, the second tool from the top in the left column is the **Eraser** tool. **Left click** on this tool to select it.

When you select the **Eraser** tool, a little sub-menu appears beneath the tool menu buttons showing the available sizes of the point of the **Eraser** to use. **Left click** on the size that you want to use. In this case, I clicked on the smallest available eraser and the selection is highlighted by showing the size exemplar as a white box on a blue background. You should also choose this size eraser by **left clicking** on the smallest size box in this sub-menu.

Here is how the **Eraser** tool works. You position the little square that is your mouse pointer over a part of the graphic that you want to erase. Then, **left click** to erase the graphic (by placing the background color) on the screen. If you **right click** when using the **Eraser** tool, then the foreground color shown in the **Color Box** in the upper right corner of the **Control Panel** will be applied to the graphic. When you first use ***4D Design Creator*** these colors will be initially set at black for the foreground color and white for the background color. You can change them any time you wish by choosing the **Pick Color** tool.  To use **Pick Color** just move your mouse cursor to the place on the graphic that you wish to use as the **foreground** color and **left click**. To set the **background** color, move your mouse pointer to the place on the graphic that you wish to use as the **background** color and **right click**.

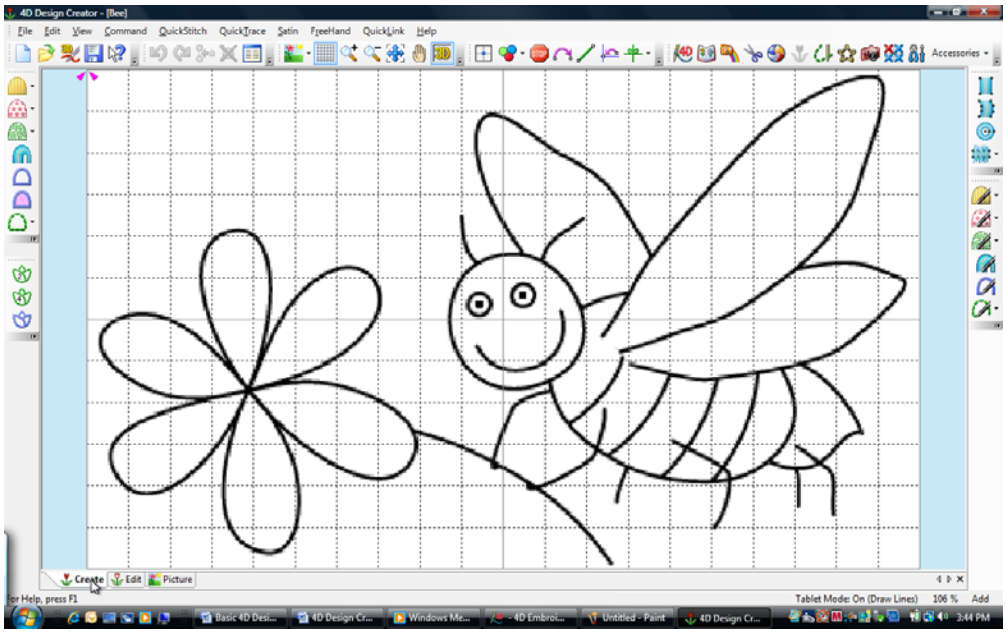
8. Place the box that represents the **Eraser** tool on one of the pupils of one of the eyes and **left click** to erase part of the pupil. Do this again until the entire pupil is erased. Then go back and place the **Eraser** tool inside of the eye and **right** click a few times to create a nice, solid, black pupil inside of each eye. When you are done the graphic should look like this:





It doesn't matter if the pupil of the eyes are not exact squares. Just make sure that they are approximately in the size shown here in this example. We want them big enough to see in the final design.
When you are finished correcting the eyes, **left click** on the **Zoom to Fit** tool  on the tool bar so that you can see the entire graphic.

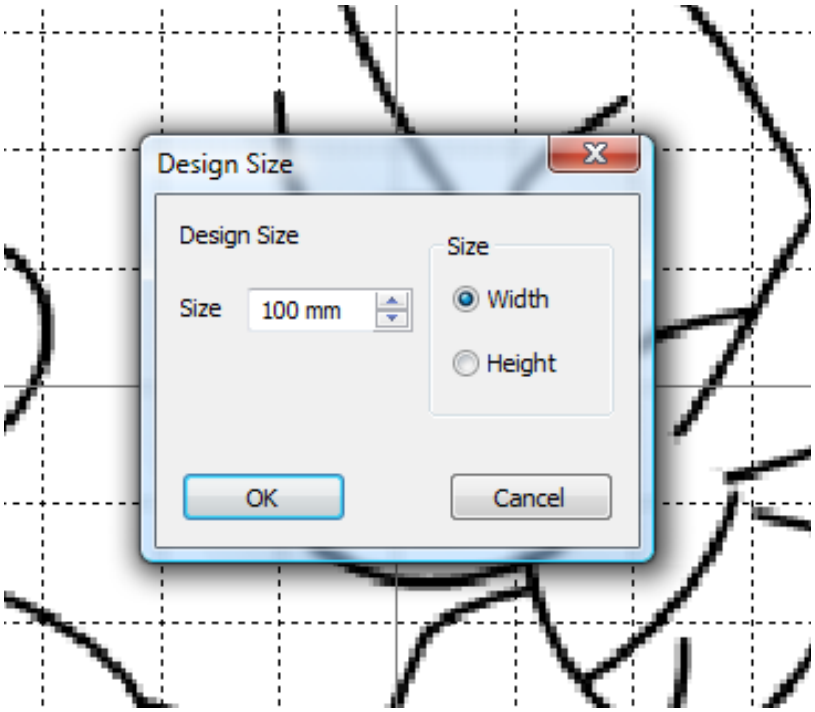
9. Now that the graphic is ready to use as a template for our design, we need to switch to the **Create Page** to begin the process of design creation. **Left click** on the **Create Tab** at the bottom of the screen. Here is what the screen looks like now. Let's begin design creation.



Look at the **Create Page** for a few seconds. All of the toolbars have changed. The **Work Area** now shows a grid. Everything looks so different. Don't worry about how it looks. We will go over every tool later. For now, let's just do some really simple design creation. Let's make this design into a redwork design. i.e. We will create a simple run of straight stitches around the design following the black line. However, because the line in the graphic is black, we will change the color of our thread to red so that we can see the stitches better.

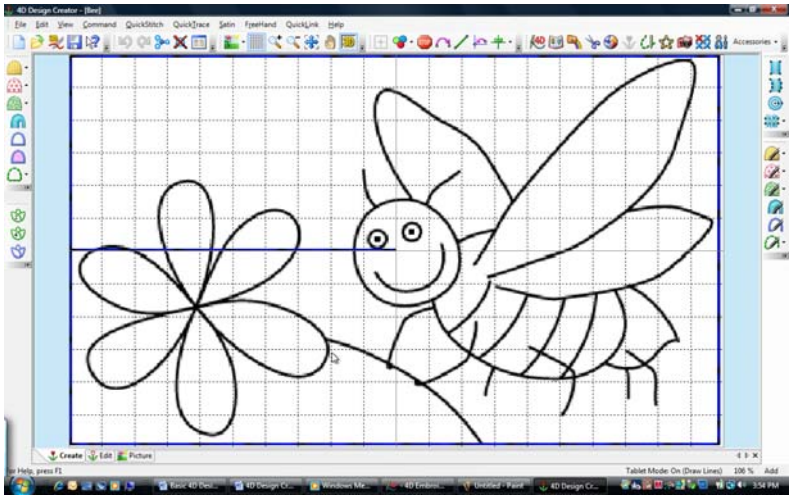
10. The first step in design creation is to determine what the final size of the design will be.

This is done by using the **Design Area** tool  which can be found by **left clicking** on the word **Command** on the **Menu Bar.** The **Design Area** tool is right at the top of the drop down menu. When you click on this tool, it appears that nothing has happened. In fact, what has happened is that you activated this tool. You use the tool by **left clicking and holding** your left mouse button as you drag a rectangle around the area of the graphic that you want to digitize. **Move** your mouse pointer to the **Work Area** of the screen to a point to **the left and above** the design. When you have the mouse pointer there, **left click and hold** the left mouse button then drag your mouse pointer until it is in the **lower right corner** of the design. As you drag, a rectangle made up of dashes will be created. Make sure that this rectangle surrounds the entire design. As soon as you have the box properly positioned around your design, **release the left mouse button** and the **Design Size** dialog will open. (**If you made a mistake** while selecting the design area, just **left click** on the Cancel button in the **Design Size** dialog and try again to select the design area.)



As soon as you release the mouse button the **Design Size** dialog will open. For now, just **left click** on the **OK** command button in the dialog and accept the size and orientation values. (I'll cover them in detail later.) If you make any mistakes while selecting the design area and need to select it again, **left click** on the **Cancel** command button when the **Design Size** dialog opens. Once you actually set the design area, there is no way to adjust the area after you left click on the **OK** button. You have to **start all over again**.

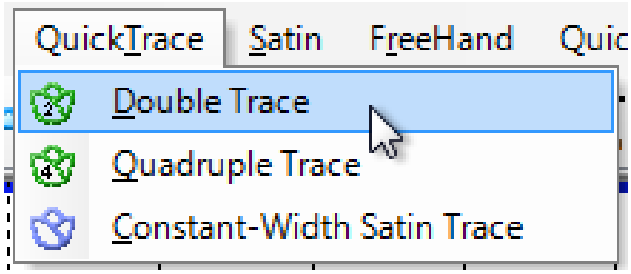
11. As soon as you click on the **OK** button, this is what your screen looks like:



The blue rectangle represents the **overall size** your design. You may also see the **needle position indicator** (the four purple triangles) in the center of the design (if you don't see it, don't worry about it. The software knows where it is and will show it in a few seconds.) **Setting the size of the design is the first thing that you must do before you begin design creation.** (This also controls the size of the hoop that you will need use to stitch out the design.) Now that we have our design area selected, we can actually begin design creation.

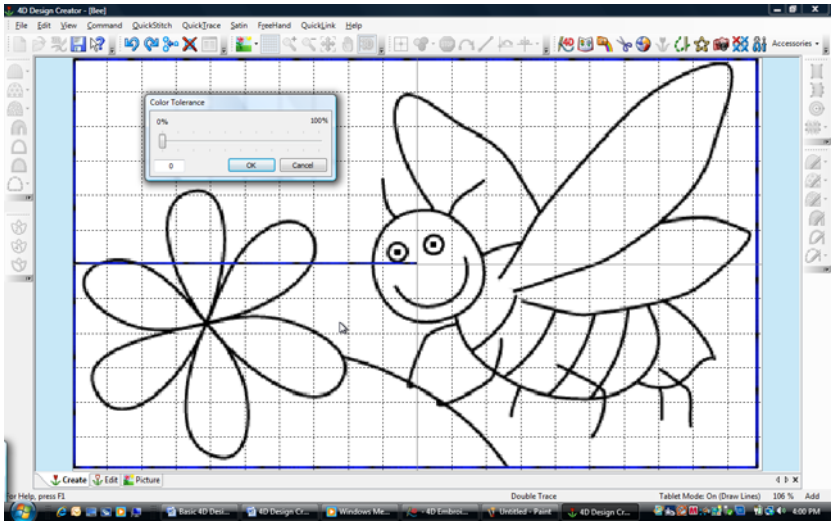
12. Let's change the color of the thread to red so that we can see the stitches better in contrast to the black graphic. **Left click** on the word **Command** on the menu bar then **left click** on the **Color Change** tool  and the **Color Select** dialog will open. You should know how to change thread colors from your experience with ***4D Embroidery***. If you wish, just **left click** on any of the red blocks in the **Quick Color** frame at the bottom of the dialog, then **left click** on the **OK** command button to close the dialog.

13. Now we have to choose the tool that will automatically trace all around the black line in our design. For now, I'll just tell you which tool to use. Later, you will learn how to make a decision on which tool to use. **Left click** on the words **QuickTrace** on the menu bar. A pop down menu will appear. It looks like this:



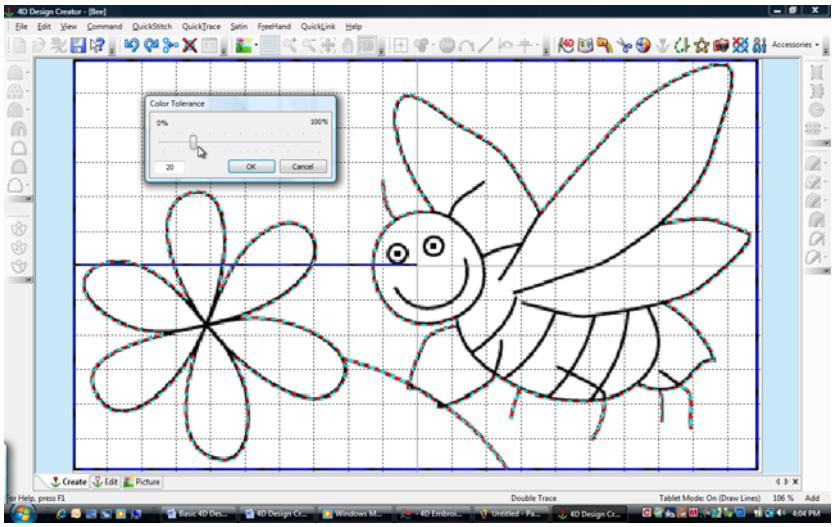
Left click on the top option in the list, **Double Trace**. Now you have the right tool. We will use this tool in the next step.

14. Zoom in on the Bee's head. **Left click** anywhere on the line forming the head of the bee. At this point one of two things will happen. If you have **Color Tolerance** turned on in **Preferences** (and it's likely that **Color Tolerance** is turned on) You will see something like this:



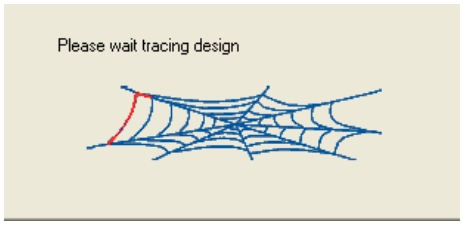
The **Color Tolerance** dialog opens and the initial setting is **zero**. There are no red and blue dashes outling the area to be traced. This is because of the fact that this design is a bitmap and contains lots of **aliasing**. We need to add some **Color Tolerance** so that the trace will work OK. Let's do that now. **Left click** to the right of the little slider in the **Color Tolerance** dialog and the slider will move to the right.

15. After you add some **Color Tolerance** your screen will look like this:



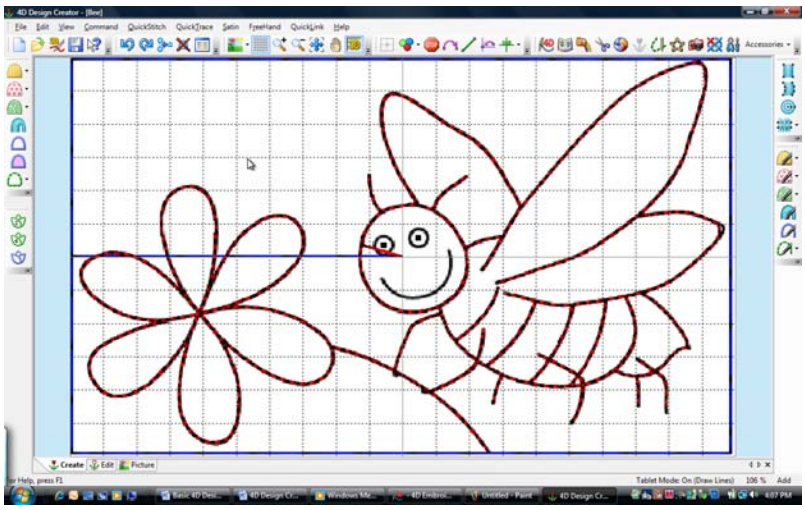
You should see some blue and red dashed lines outlining the entire bee and the flower. This shows the area we have designated for the **stitch object** to be applied. **Color Tolerance** is now set at **20** and we are ready to create our first stitch object. **Left click** on the command button labeled **OK** and watch what happens.

16. As soon as the **Color Tolerance** dialog closes, this little animation opens in the center of the screen:



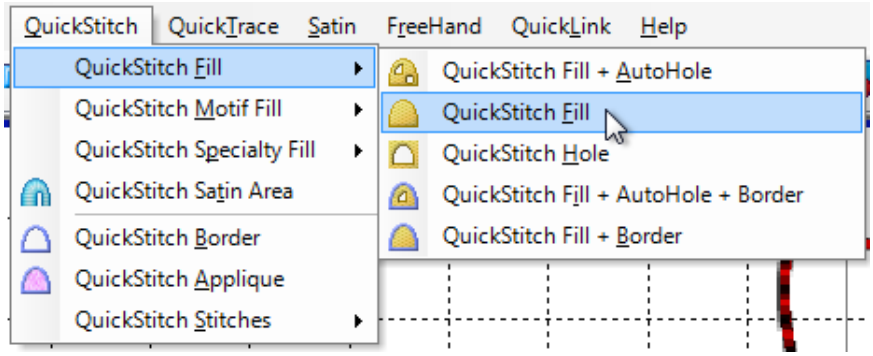
The animation runs for a few seconds and then disappears. When it disappears, the stitches you just created appear.

17. This is what your screen should look like:



It is really hard to see in this black and white book, but your can really see the stitches on your computer. Congratulations! You have just completed your first **stitch object**! But wait a second. Look at the bee's eyes and mouth. They do not have stitches on them. This is because they are not linked to any of the other lines in the graphic. We will have to create **5** more **stitch objects**: one for the mouth, one for the outside of the left eye, one for the outside of the right eye, one for the pupil of the left eye and one for the pupil of the right eye. We will use the same tool, **QuickTrace Double Trace** for the mouth and the outlines of the eyes, and **QuickStitch Fill** for the pupils of both eyes. Go back and repeat steps 13, 14, and 15 to create the mouth and outline for both eyes. Remember, in step 14 to click on the correct part of the graphic to create the stitches for that area. (Click on the mouth, set **Color Tolerance** to 20, and create the stitches. Then do the same for each eye.)

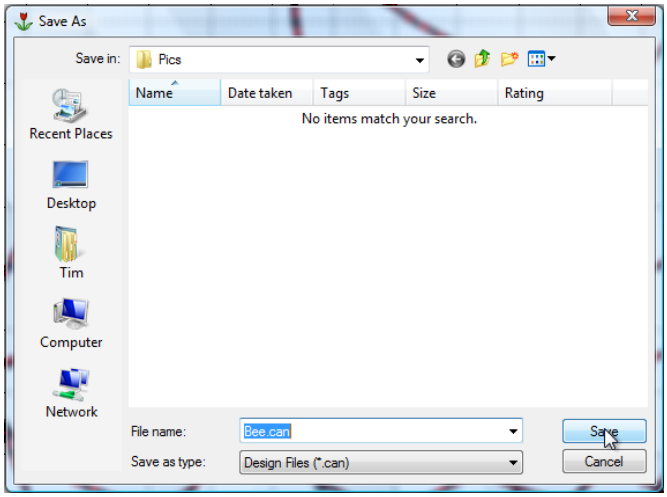
18. Now, to create the pupils of the eyes, we will select a different tool, **QuickStitch Fill. Left click** on the words **QuickStitch** on the menu bar and a drop down menu will appear. Place your mouse pointer on the words **QuickStitch Fill** and another menu will appear as shown here:



Left click on the words **QuickStitch Fill** on this new sub-sub-menu to select the tool.

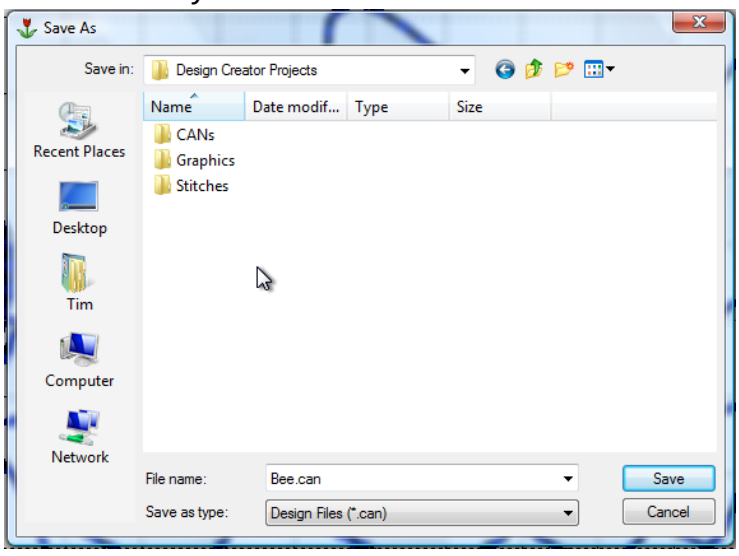
19. The menus will all close and you are now ready to create the **stitch objects** for the pupils of each eye. Move your mouse pointer to one of the pupils of one of the eyes and **left click**. The **Color Tolerance** dialog will appear. **Left click** on the **OK** button in **Color Tolerance**. The **stitch object** for that pupil will be created. (If you are having difficulty clicking on the pupil of the eye, don't forget to use the **Zoom In** tool to get a good look at what you are doing. Then use the **Zoom to Fit** tool to see the entire design.) Now, repeat this process for the other eye. After you create that **stitch object**…**YOU'RE DONE!!!** You just created your first design with two different kinds of **stitch objects**. Now, it's time to save our work.

20. Saving designs in ***4D Design Creator*** is a little more complex than saving designs in ***4D Embroidery*** and you need to understand **what** you are saving and **how** to save it. Basically, in ***4D Design Creator***, you will save your work as a **CAN** file and as a stitch file such as a **VP3, VIP, HUS, PES, PEC,** or any of the other stitch designs that ***4D Design Creator*** can create. A **CAN** file is a special kind of file. You will **always** want to save your work as a **CAN** before doing anything else. You see, a **CAN** file is an "outline" of the design. In addition to storing the various types of stitch objects, the picture that you were using as a guide for your design creation is stored along with the stitch objects. Pictures that you use in design creation cannot be saved in any other format. If you want to create a design, then do a test stitch to see how it looks (and you should always do that) and then come back and edit or add stitches to the design, you must have saved it as a **CAN** in order to modify the design. Since this is so important, we will save our work as a **CAN** first. **Left click** on the word **File** on the menu bar. Then when the drop down menu appears, **left click** on either **Save** or **Save As…** to start the **Save As…** dialog. Your screen should look like this:



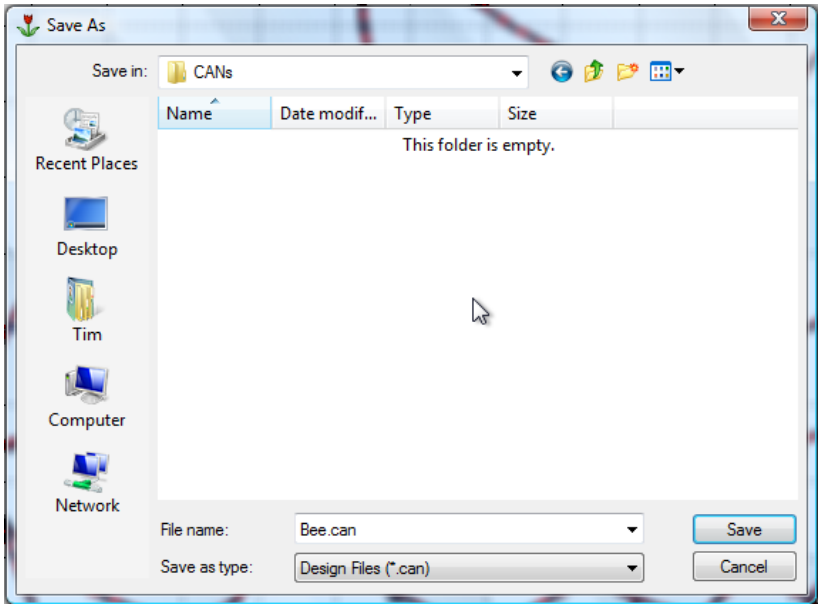
Notice that the **C:\4DEmbroidery\Samples\DCreate\Pics** folder is open. And there is a message in the main dialog area that reads "No items match your search". This is because that is the last folder we opened in ***4D Design Creator*** when we loaded the graphic and there are no **CAN** files in this folder. If you look at the **Save as type** box at the bottom of the dialog, your computer has already searched for any **CAN** files in this folder and none were found. We need to get to the **CANs** folder we created after completing the **Computer Skills** chapter.

21. **Left click** on the downward pointing arrow at the right side of the **Look in:** text box. Here is what you will see:



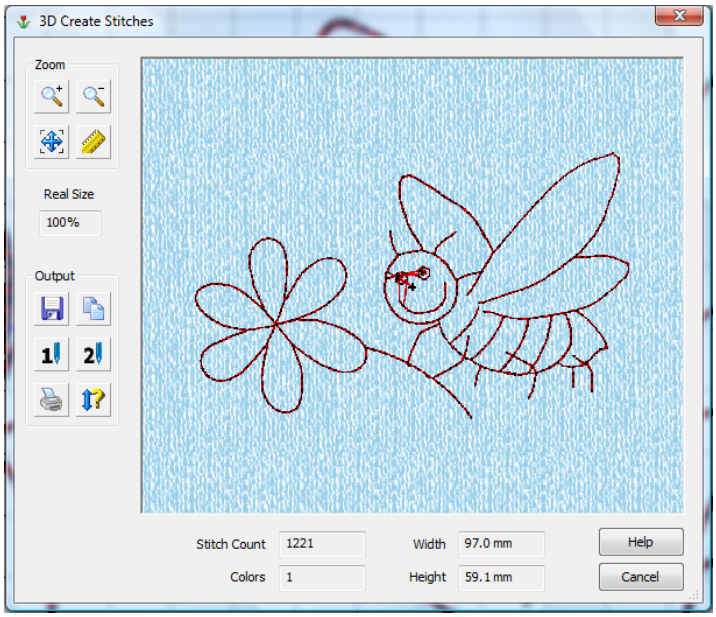
Left click on **Local Disk (C:)** and the contents of the root directory of your C: drive will appear in the **Save As** dialog. Look at the list of folders and you will find the **Design Creator Projects** folder you created earlier. **Double left click** on the name of the **Design Creator Projects** folder to open it and you will see the three sub-folders you created earlier. **Double left click** on the folder named **CANs** and that folder will open.

22. Here is what your screen should look like now:



Notice that the name of the design is listed in the **File name:** text box at the bottom of the dialog. It is, for now, **Bee.can** and the **Save as type:** text box indicates that this file will be saved as a **CAN**. This is what we want to do, but I like to go one step further. I like to change the name to something like **BeeV1.can** (where **V1** is an abbreviation for **Version 1**). This way, if I use this **CAN** file again and make changes to it, I name the next save of the **improved CAN** file as **BeeV2.can**. This way I know which is which and I can go back by one or more iterations if I want to do so. **Left click** in the **Filename:** box and change the name of your file to **BeeV1.can** to get into the habit of doing this.

23. We have now saved the CAN file. The next thing to do is to save the design in a stitch file so that we can move it to the sewing machine. **Saving your design as a stitch file is done in an entirely different manner.** Look at the tool bar at the top of the screen and find the **3D Create Stitches** tool  and **left click** on this tool. Here is what your screen looks like:



The **3D Create Stitches** dialog opens. Here, you see your design in 3D without the background picture. This tool is used to check your progress as you develop your design. There are two groups of command buttons in this dialog. At the top left side of the dialog are buttons to help you in viewing your work. They are **Zoom In**, **Zoom Out**, **Zoom to Fit,** and **Real Size**. Beneath the viewing buttons are the **Output** command buttons. They are **Save**, **Copy**, **Send 1**, **Send 2**, **Print**, and **Get Length of Area**. We will be using the **Save** button. **Left click** on the **Save** button to begin the process of saving a machine-ready copy of this stitch file.

24. The **Save As** dialog opens and the folder that opens is the same folder that you last used when you saved a stitch file. On your computer, I can't even begin to predict which folder will be open. However, as we did with the **CAN** file, you need to navigate through your hard disk to find the **C:\Design Creator Projects\Stitch** folder. When you find that folder, the dialog is already suggesting a name for the design, but, if you did as I suggested earlier and named the **CAN** file **BeeV1.can**, the computer will remember this and suggest that the design be named **BeeV1.vp3** so that it matches the name of the **CAN** file. This is great! Now, after you stitch out the design, if you want to go back and edit the design, then the **CAN** file you need is named **BeeV1.can**. This is how you keep your work in synch with itself. And it is why I suggest that you **always** include a version number in the name.

At this point you have gone through all of the steps of design creation a design. Let's review what we did in the light of the definition of a design as written in the ***4D Design Creator Reference Guide***:

> **"A design in 4D Design Creator is composed of 'objects'. Stitch objects outline an area or define a line which is used to create stitches of different types and styles. The outlines and lines are defined by points, which can be moved to change the shape of the object. Command objects are instructions, such as a change of thread color, a jump across the design or a stop."**

We got the picture we wanted (**Bee.bmp**) and corrected the defects in the picture. We created stitches on the graphic (the black line) on the **Create Page**. I did not get into the **Edit Page** yet (don't worry, I'm going to show you everything). We created the embroidery by placing an object (the **Double Trace**) stitches onto three of the segments in the **Work Area** and placed fill stitches on two other segments in the **Work Area**. And we saved the design two ways. We saved our **CAN** file so that we can go back and add or remove objects from the design. And we saved the finished design as a **stitch** file so that we can sew it out on the machine.

Types of Design Creation Tools

There are two kinds of tools in ***4D Design Creator.*** The software contains automatic punching tools and manual punching tools. The word punching is a throwback to the days when embroidery was done by hand by punching holes in the canvas and inserting the threads. It survives today as an insider word for design creation experts like you and me. So start using it and you'll automatically sound like you're in the know.

The automatic punching tools are identified in ***4D Design Creator*** by having the word **Quick** prefixed on the name of the tool. They fall into two basic categories: **QuickStitch** and **QuickTrace**. The **QuickStitch** group contains a number of tools that are used to fill an **area** of the design with stitches. The **QuickTrace** group contains a number of tools that are used to **trace outlines** in a design. We will learn how to use them all.

To successfully use the automatic punching tools, you must have a good, clean graphic that has a minimum number of different colors. For every color in a design creation graphic, there will be a color change if the stitch design is to faithfully reproduce the original graphic. Since color photographs have the potential to have more than 16,000,000 (yes, 16 **million**) colors, it's obvious that when you use a photograph as the subject of your work, you would have to make some concessions. The software that drives the automatic punching tools uses the differences in colors in the subject graphic to decide where to place the stitches.

The manual punching tools are identified in ***4D Design Creator*** in one of two ways. Either their name has the word **FreeHand** as a prefix for the tool, or the name of the tool **does not** have the word **Quick** in its name. e.g. **Straight Satin**, **Curved Satin**, **Satin Ring**. We will learn how to use them all.

When you use the manual punching tools, you are in the driver's seat. You must define the lines and areas for the software to place stitches. In fact, you could create a design without even having any graphic at all.

Steps Involved in Design Creation

There are 6 steps involved in design creation a design.

1. **Find a good subject (graphic).**
2. **Clean up the graphic** (if you are going to use the automatic punching tools.)
3. **Plan the overall stitch design** (which kind of stitch objects and colors you will use where in the design.)
4. **Plan the order of design creation based on stitch objects to be used.**
5. **Plan the order of design creation based on the color of the stitch objects.**
6. **Create the stitches that make up the design.**

You probably noticed that **50%** of the steps involve the **PLANNING** of your work. I cannot emphasize too strongly that to be successful with all but the most basic projects you have to plan **what** you are going to do, plan **how** you are going to do it, plan **when** you are going to do it, and plan which **colors** you are going to use. I don't remember who said this but I've heard it before. "**If you fail to plan, then you're planning to fail.**" This could not be truer in design creation. You will have to plan **everything** if you want to do high quality work. You will have to plan on:

- What **colors** you will use in your design
- What **level of detail** you hope to achieve
- What **type of underlay** stitches you will place in your design
- What **kind of fabric** you plan to stitch this design on
- What **direction** will the stitches in each object go
- **And more…**

Here is the bottom line. The more planning you do up front for your design, the easier it will be to place the various stitch objects on the canvas. This is the one element that is missing from the exercises in the ***4D Design Creator Reference Guide*** provided with your software. The author of each exercise has already done all of the planning and designing. All you are doing

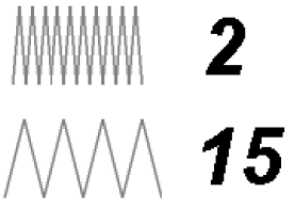
is following their instructions without understanding what planning went into the design. This is not to say that the ***4D Design Creator Reference Guide*** is not a good book. It is an ***excellent book***…for people who already know how to create designs and just need to know how to use the various tools. You should print out this book and use it whenever you have any additional questions about how a particular tool is used. The ***4D Design Creator Reference Guide*** is 225 pages long, but the time spent printing out this book will be well worth the time and effort.

Design Creation Terminology

As with any profession, design creation has its own set of vocabulary words that you must learn so that we can be sure that we understand each other. There aren't many of them. But the few that exist are important.

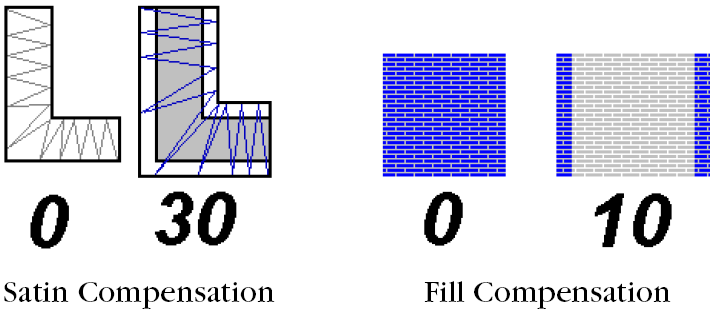
Density

This one sounds like an obvious one until you understand how it is measured. **Density** refers to how tightly packed the stitches are in the object that you are placing on the design canvas. Obviously, there are times when you will want more stitches in an area and times when you will want fewer stitches in an area to achieve a desired effect. How **density** is measured is what is important here. **Density** settings in ***4D Design Creator*** range from **2** to **15**. When I started using this software I naturally assumed that these numbers referred to the number of stitches per inch or something like that. I always thought that a setting of 15 meant there were more stitches in an area than a setting of 2. Actually **it is just the opposite**. The numbers refer to **the amount of space between the stitches**. Therefore, **the lower the number** means that there will be **less space and more stitches**. A setting of **2** results in the most stitches per square inch so to speak and a setting of **15** results in the least number of stitches per square inch. Here is an illustration of this on the bottom of page 50 of the ***4D Design Creator Reference Guide***:



Compensation

Using the **compensation** setting is easy once you understand what it means. If you are creating two fill areas (large patches of stitches) and they are adjacent to each other, you don't want any space between the two areas to allow the underlying fabric to show through. To prevent any gaps, you set the **compensation** higher so that the stitches in your design extend beyond the area that you designated when you were placing the stitch object. Here is an illustration of **compensation** from page 51 of the ***4D Design Creator Reference Guide***:



On the left side of that diagram you see what **compensation** looks like in a **Straight Satin** type of object. The range of **compensation** for **satin objetcs** goes from **0** to **30**. The range of **compensation** for **fill areas** goes from **0** to **10**. Unlike the setting for **density** where the lower number means more, when you are dealing with **compensation**, the **higher number means more compensation**. Just think of it like getting paid (compensation for your work). A higher number means you get more. **Note:** You cannot add compensation to **Satin Feather**, **Satin Border**, **Motif Fill**, or **Specialty Fill** stitch objects.

Underlay

Ever have a design stitch out and it just doesn't look right? The usual cause is that there is not enough stabilization present on the embroidery canvas. I'm not just referring to the stabilizer that you place in the hoop beneath the fabric or garment that makes up your embroidery canvas. I'm talking about a **combination** of the stabilizer **and** a series of stitches that are laid down beneath the decorative stitches that help to stabilize the embroidery canvas. Those stitches are called **underlay**.

Stitch Objects

In a nutshell, the process of design creation amounts to the process of deciding which type of stitch object is best suited to providing the visual effect we are looking for in a given part of an overall design. Before you can decide which type of stitch object to use, you have to understand what kinds of stitch objects are available in this software.

Fill Areas

When you need to cover a lot of space in your design, you will use a fill object. Fill objects come in two different varieties. One type of fill object places a large number of stitches that are closely spaced and completely cover the embroidery canvas. You may use any of the **252** available fill patterns for this type of object. Another type of fill object places motif fills over a large area. Motif fills are widely spaced stitches that do not completely cover the fabric of the embroidery canvas. Another type of object (**New in *4D Design Creator***) places **Specialty Fill** Patterns over large segments of the design. There are more than **400** different motifs you can use in your designs. See pages 181 through 183 of the ***4D Design Creator Reference Guide*** that came with your software for examples of the **252** fill patterns. This manual may be found on your hard drive as:

C:\4DEmbroidery\Guides\Reference\MainModules
4DDesignCreatorReferenceGuide.pdf

Satin Columns

Satin columns cover areas that are somewhat smaller than those covered by fill area objects. Some satin columns are straight and some are curved. Some satin columns have even sides and others may have sides that are irregular, or feathered, on just one or both sides. When you vary the density of the satin column, you can superimpose one satin column on another satin column to simulate hair or fur on animals, for example. There are 12 different fill patterns available to apply to satin column objects.

Satin Borders

Satin borders are narrow, straight or Curved Satins used to outline or accent various areas of a design. One familiar application of the satin border that everyone is familiar with is the outside border of patches found on military and police uniforms. These columns all have regular edges and are never irregular as in the Satin Feather I mentioned earlier.

Running Stitches

If you want to outline or highlight a part of your design, the running stitch is the object to use. These are the simplest of all stitch objects. They are just straight stitches of embroidery thread applied to your design. There are automatic tools that will apply a single, double, or triple line of these stitches. Running stitches are also sometimes used in place of a jump stitch to get from one place in a design to another place. Then, when the next object is put in place, the stitches that comprise that object cover the running stitches. In addition, you can use the running stitches to create custom amounts of underlay.

Jump Stitches

Normally, when you move large distances across the embroidery canvas, you will use a **jump stitch**. These are long, single stitches that you normally snip out of your design.

Satin Areas

This is a **NEW FEATURE** in ***4D Design Creator***. When you use either the **QuickStitch Satin Area** tool or the **FreeHand Satin Area** tool, you can fill an entire area with a satin stitch object. After the **Satin Area** stitch object is created, you can adjust the angle of the satin stitches on the **Edit Page**.

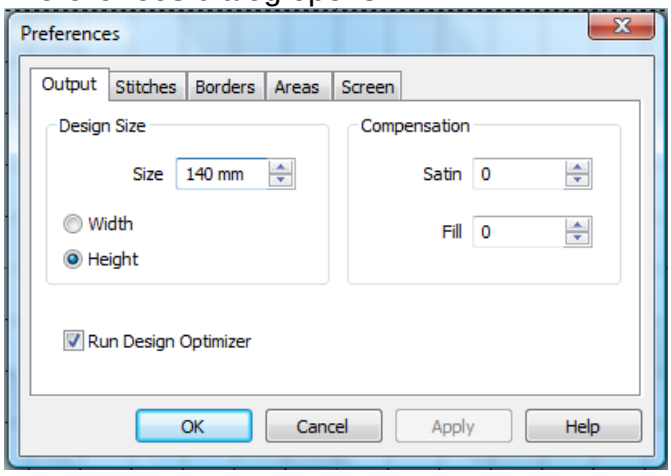
Specialty Fill Areas

This is a **NEW FEATURE** in ***4D Design Creator***. With a **Specialty Fill** you can add stitch objects with stitches in a **radial** pattern, a **spiral** pattern, a **shape** fill (with **50** different shapes), and the new **quilt stipple** fill pattern. This is one of the most exciting new features of ***4D Design Creator***.

Setting Preferences in 4D Design Creator

Do you remember the preferences settings in ***4D Embroidery***? Basically, you had the choice of setting the hoop size, hoop orientation, and the grid size on your screen. When you see the **Preferences** settings in ***4D Design Creator***, you will be surprised at the large number of settings that exist. Don't worry though, I'm going to go through each one with you and they are easy to understand.

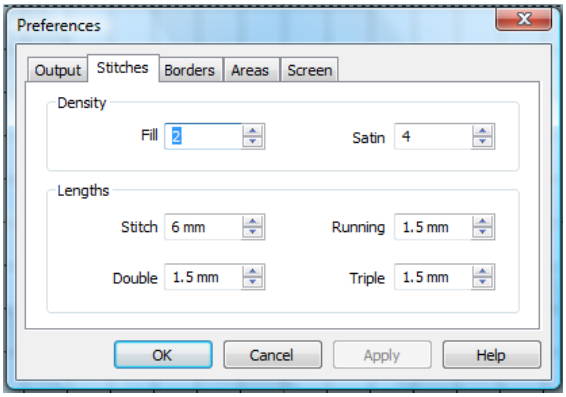
1. **Left click** on the **Preferences** tool  . Here is what it looks like when the **Preferences** dialog opens:



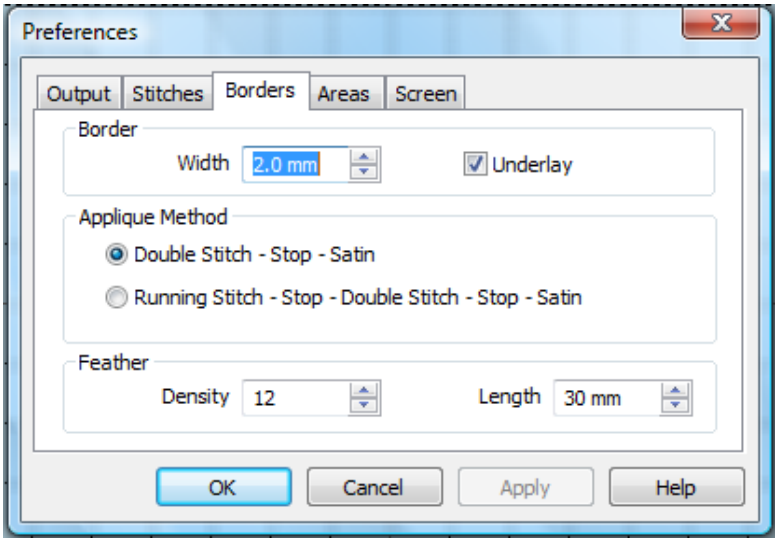
Wow! There are 5 tabs full of options. And there are some new options that were not available in previous editions of the software. On the **Output** tab alone there are 4 settings. Let's go over each setting one by one. First, let's check the **Design Size** setting. This is only an <u>initial, suggested size</u> for your designs. When you first select the part of the graphic you want to digitize, you can override this setting. The same thing applies to the next setting in the **Size** frame, when you select whether the number set in the **Design Size** applies to the **Width** or **Height** of the design. You can override it as you set the design area. **Compensation** settings are next. You can set the **Satin Compensation** and the **Fill Compensation** here. Later, using the **Edit** page, you can change these settings for any particular object that you want to change. Again, these are <u>initial settings</u>. **<u>A NEW setting</u>** is found on this tab. **<u>Run Design Optimizer</u>** is a new option. If it is selected, then ***4D Design Creator*** will check the design and remove small stitches that do not affect the look of the design and do other things that make the design easier to stitch out on your machine. I recommend that you make sure that this option is selected as shown here.

2. **Left click** on the **Stitches** tab at the top of the **Preferences** dialog. Here is what your screen looks like:

Here is where we set the <u>initial</u> **Density** settings for both **Fill** and **Satin** objects. As with the other settings, they can be changed on the **Edit** page. You may also set the initial **Lengths** for the **Single Stitch** type of object, for the **Running Stitch** type of object, for the **Double Running Stitch** type of object and for the **Triple Running Stitch** type of object. All of these settings can be changed on the **Edit** page.

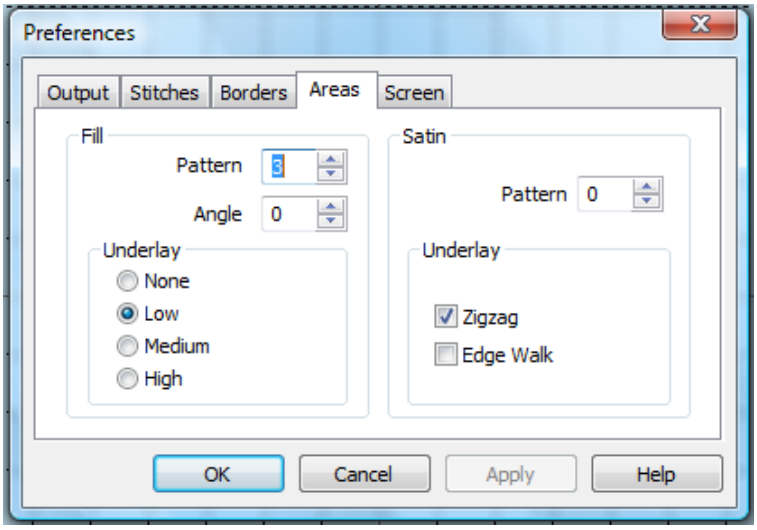


3. **Left click** on the **Borders** tab at the top of the **Preferences** dialog. Here is what your screen should look like:



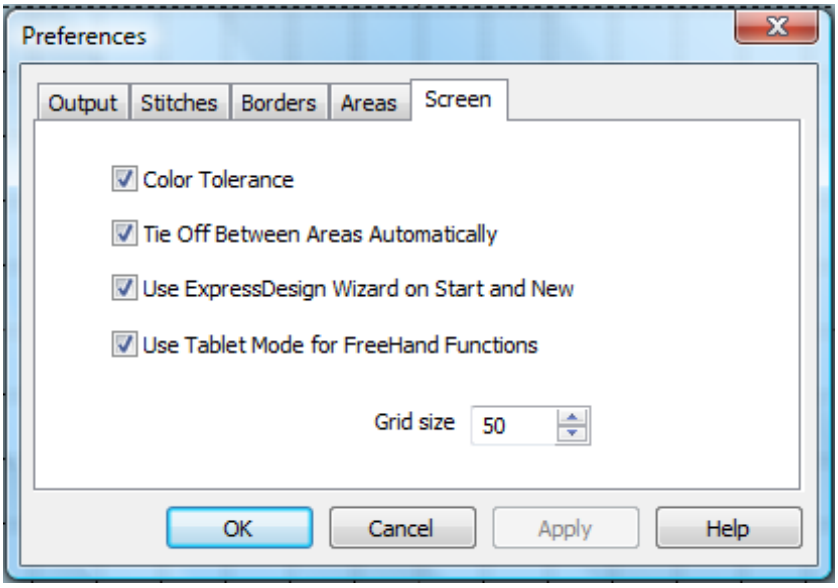
The **Border** frame contains settings for **Width** and **Underlay**. **Width** is the initial setting for all stitch objects that have a **satin** border. **Underlay** indicates whether or not there should be **Underlay** stitches placed beneath any **satin borders**. **Appliqué Method** allows you to select which set of stitches you want placed when creating an appliqué. **Feather** settings control the **Density** and the **Length** of feathering for this type of object. I describe the **Feathering Length** in the chapter on manual punching tools.

4. **Left click** on the **Areas** tab of the **Preferences** dialog. Here is what your screen should look like:



This is a big one with several important settings. In the **Fill** frame you can select the initial **Fill Pattern** number. To find out what the various fill patterns look like, check out the ***4D Design Creator Reference Guide*** I referenced earlier. You can also set an initial **Angle** for the fill pattern here. **Underlay** (for **Fill** type stitch objects) is the next option you can choose. There are four choices to select from. If you know that you will be creating a design for an extremely light fabric or if your design will have areas of light fill, you would set underlay to **None** before beginning your design creation work. This way, you would not have to change it after creating each fill area. I usually leave my setting at **Medium** and then change it as needed. The final setting on this page is for the **Satin Pattern** to be used for each application of **Satin Column** and **Curved Satin** objects. Again, you should look at the ***4D Design Creator Reference Guide*** to see what each of these satin patterns look like. The final option is **Underlay** (for **Satin** column type stitch objects). **Zig zag** puts down a broad zig zag stitch beneath the satin column and **Edge Walk** puts down a line of running stitches around the perimeter of the satin column. You can select neither of these options, either one of the options, or both of the options simultaneously.

5. **Left click** on the **Screen** tab of the **Preferences** dialog. Here is what your screen should look like:



Color Tolerance tells the software if it should allow for small differences in colors when using the automatic punching tools. I always leave this option checked. The next item is the most important setting on this page. **Tie Off Between Areas Automatically** should **always be checked**. This setting tells the software that after you place a fill area using the automatic punching tools, you want the software to automatically place a tie-off stitch for you. Tie off stitches prevent your embroidery from unraveling. **Use ExpressDesign Wizard on Start and New** tells the software if you wish to have the **ExpressDesign Wizard** available when ***4D Design Creator*** first starts and when you click on the **New** tool. Use of this option is up to you. I leave it turned on because it is so easy to bypass when the software opens. **Use Tablet Mode for Freehand Functions** enables one of the most exciting **NEW** features in ***4D Design Creator***. If you will be using a tablet to create your designs, then you want to select this option. **Grid Size** is a bit confusing. A value of 50 does not mean that there will be grid lines every 50 mm. It is a measure of the granularity of the grid that will be displayed on the screen while you are working on your project. The smaller the number, the more grid lines that will appear on the **Create** and **Edit** pages.

Chapter 2 – Using the ExpressDesign Wizard

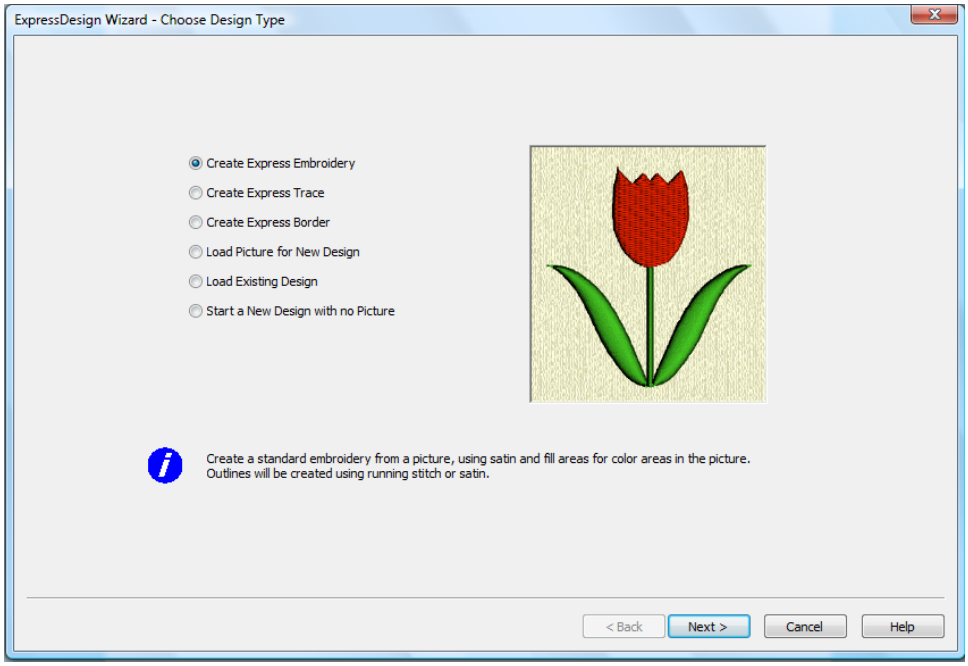
When you first start ***4D Design Creator*** you see the **ExpressDesign Wizard**. This **new feature** is one of, if not the most exciting features of ***4D Design Creator***. This chapter will cover everything you need to know when using **ExpressDesign Wizard**.

Let's take a look at the opening screen of **ExpressDesign Wizard** and I will explain each option.

The first time you open ***4D Design Creator*** (and every time you use the **New** tool to create a new design), the **ExpressDesign Wizard** opens. **Note:** You can turn this feature on and off in the **Preferences** dialog in the **Screen** tab. I recommend that you leave it **on** mainly because it is easy to bypass with two mouse clicks if you decided not to use it.

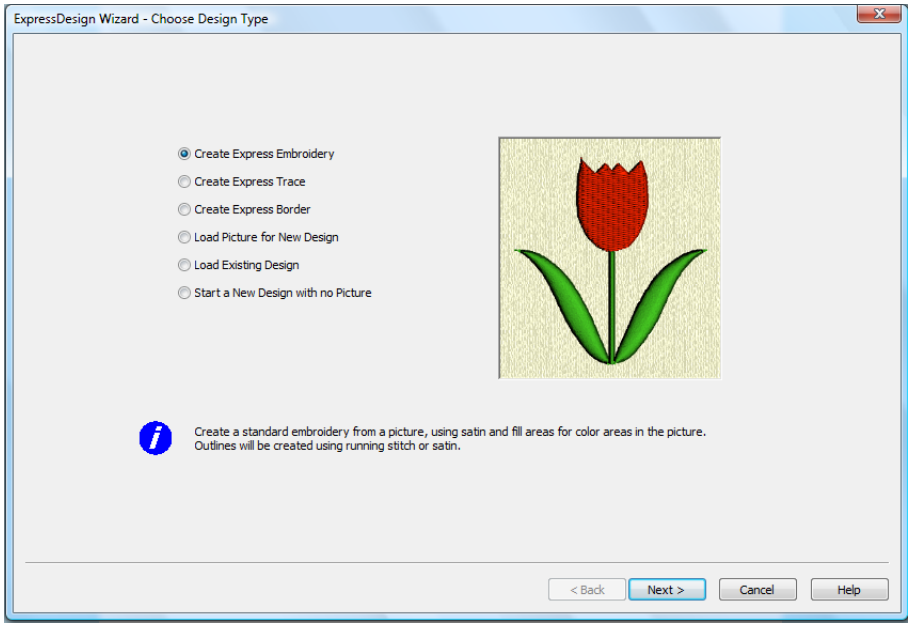
This new feature lets you to create new embroidery designs from your graphic files with just a few clicks of the mouse. While it is extremely easy to create your new designs with the **ExpressDesign Wizard**, you still have a good deal of control over the creation of the design. By the time you are finished reading this chapter, you will be creating new designs like a pro. Let's get right into the software and learn how to create a new design.

1. **Left click** on the **New** tool. The **ExpressDesign Wizard** dialog opens. Here is what the opening screen looks like:



This version of the **ExpressDesign Wizard** is a little different from the version that starts in the ***4D Embroidery Extra*** software. Here, you can see that there are **6** options available as opposed to the **3** options available in the ***4D Embroidery Extra*** version. The first three options are the same. The last three options are new. We will learn how to use all six options.

2. When the wizard opens, we have the following six options:



Create Express Embroidery will create a full design with fill and satin stitch objects.

Create Express Trace will create an outline of the design similar to red work.

Create Express Border will create a satin border of the design similar to an appliqué design.

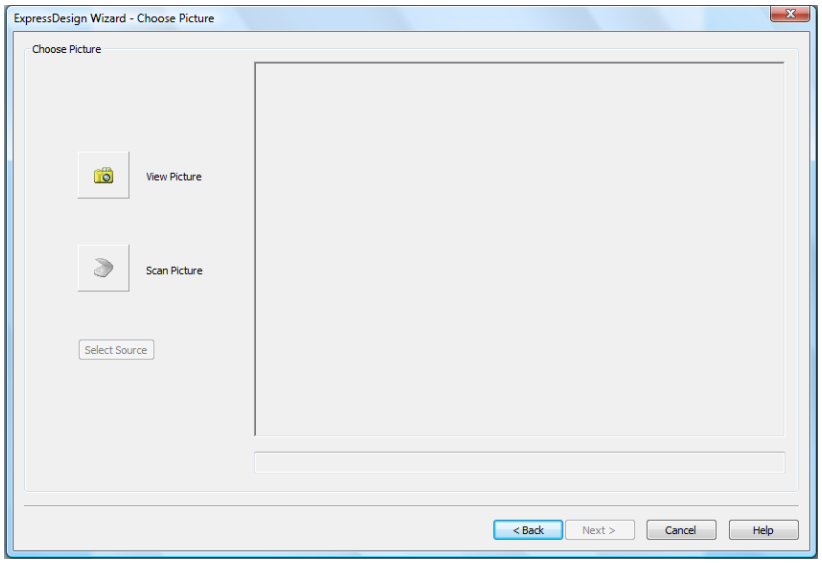
Load Picture for New Design is used when you wish to load a graphic file that you wish to use as a template for use in creating a new design. Normally you will use this option where you feel that you have a need to edit your graphic before manually creating stitch objects or before passing the graphic along to the **ExpressDesign Wizard** later for processing.

Load Existing Design is used if you have a **CAN** file that you wish to load into ***4D Design Creator*** to include in your overall design or to otherwise work on.

Start a New Design with no Picture is used to simply bypass the **ExpressDesign Wizard** altogether and go right into the ***4D Design Creator*** software.

You don't have to remember what these options do because as you click on each of the six radio buttons on the left, the little exemplar screen changes to remind you of what kind of design will be created. Go ahead and click on each of the options and watch what happens to the design. Also look at the text shown next to the  at the bottom of the dialog. The text changes with each option and tells you what that option is used for. When you are done viewing each option, **left click** on the **Create Express Embroidery** option and then **left click** on the **Next** button at the bottom of the wizard.

3. Here we enter the **Choose Picture** phase of the **ExpressDesign** Wizard:



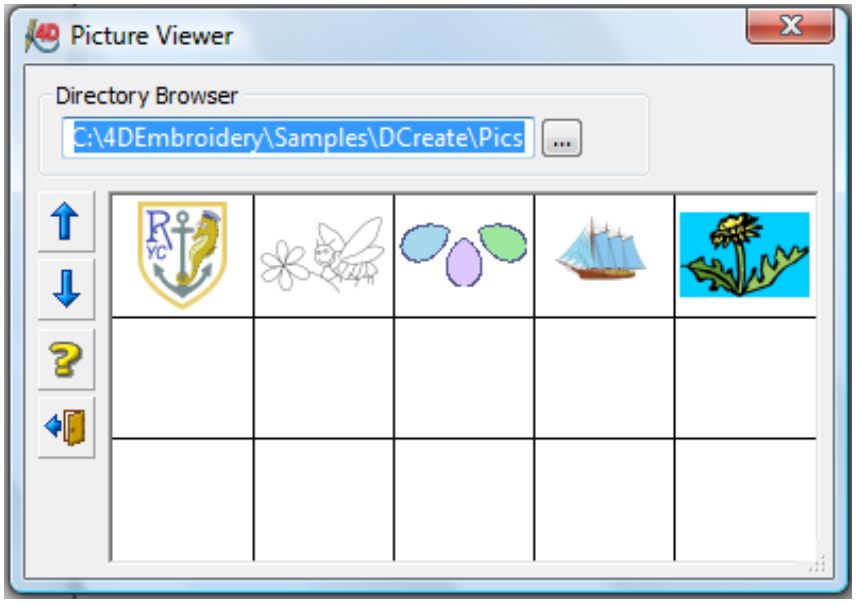
Here there are two options.

View Picture is used to select a graphic from your hard drive or other memory device on your computer.

Scan Picture is used to activate your scanner software so that you can obtain a picture from your TWAIN – compatible scanner.

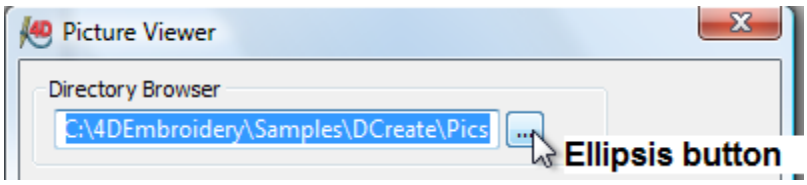
I don't have the space in this book to discuss how to operate your scanner. If you have any questions about this option, feel free to contact me through my web site and I'll be happy to help you. For now, let's **left click** on the **View Picture** option.

4. Here is what the next screen looks like:



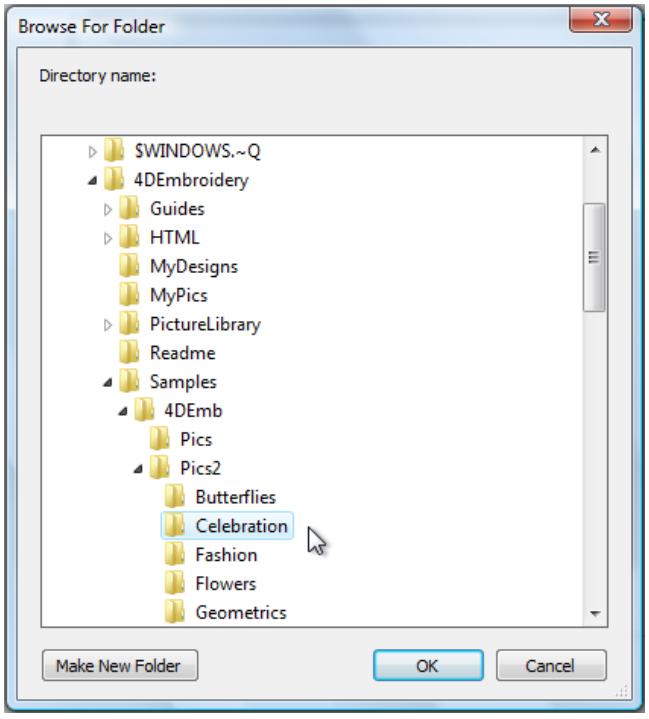
Here is where your computer navigation skills come into play. You can search through your hard disk to find a folder containing graphics to use when creating your design. We will use the graphics that were installed with your software. ***4D Design*** Creator will load any graphics file in the following formats: **BMP**, **JPG**, **JIF**, **JPEG**, **PNG**, **TIFF**, **TIF**, **WMF**, **EMF**, or **ICO.** You can use any graphic files that you have on your computer with any of those file extensions.

5. **Left click** on the ellipsis button as shown here:



This button will open the **Browse for Folder** dialog and allow you to search for the folder that contains the graphic that you wish to use in your design.

6. Here is what the **Browse for Folder** dialog looks like:

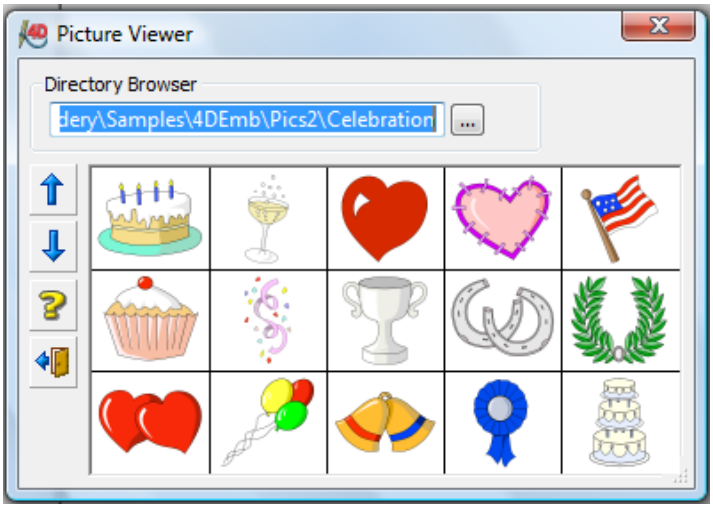


You can see that I have already drilled down to this folder: **C:\4DEmbroidery\Samples\4DEmb\Pics2\Celebration**

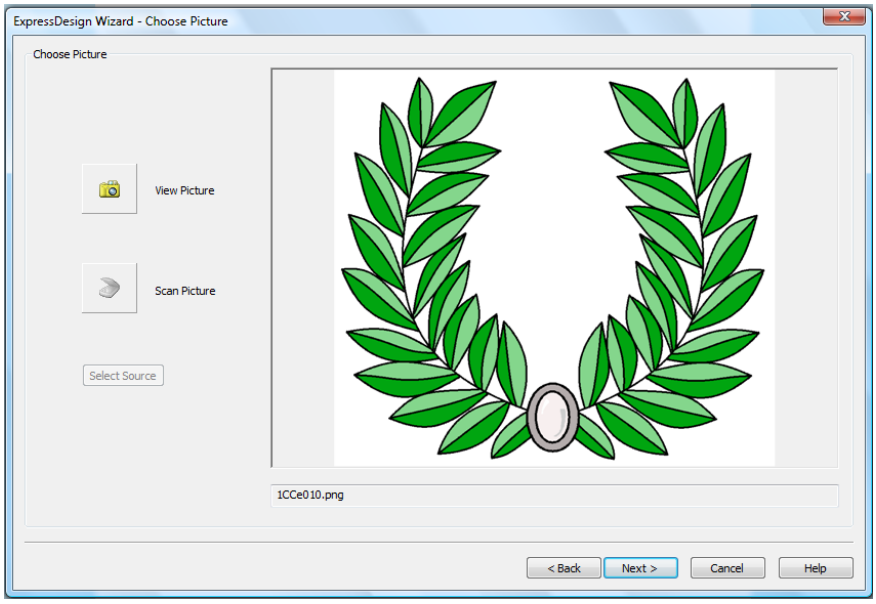
When you find this folder, **left click** on the **OK** button**,** to close the **Browse For Folder** dialog and open the **Picture Viewer** dialog.

7. Here is what you will see next:

We will select the wreath on the right side of the screen in the second row. **Left click** on the wreath to select it and close the **Picture Viewer** dialog.



8. We return to the **ExpressDesign Wizard** and our next option. Here is what the screen should look like:



There is our graphic. If you made a mistake and chose the wrong graphic, just left click on the **View Picture** button to go re-open the **Picture Viewer** dialog and select another picture.

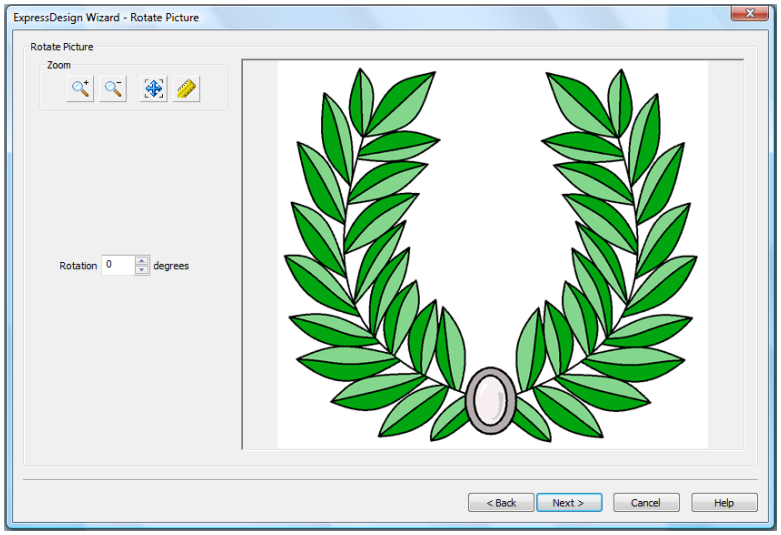
Since this is what we want, we could **left click** on the **Next** button to move on to the next phase of creating our design.

Before we move on, I will explain what the other controls on this page of the dialog mean.

Right beneath the **View Picture** button is another button labeled **Scan Picture**. If you have a scanner attached to your computer, and if that scanner is **TWAIN** compliant, you can use your scanner to bring a graphic into ***4D Design Creator*** for use as a template. You will have to check the documentation that came with your scanner to determine if it is **TWAIN** compliant. (As a side note, there has been a lot of discussion about what TWAIN stands for. One story goes that it is an acronym for **T**echnology **W**ithout **A**n **I**nteresting **N**ame. The **TWAIN Working Group's** web site says that it came from an excerpt from Rudyard Kipling's work ***The Ballad of East and West*** where he writes, "…and never the twain shall meet…". In the early days of computing when interfaces between various pieces of hardware were not standardized, it was often difficult to get scanners to work without a lot of tinkering.) If you have questions about using your scanner, I highly recommend the web site **www.scantips.com**.

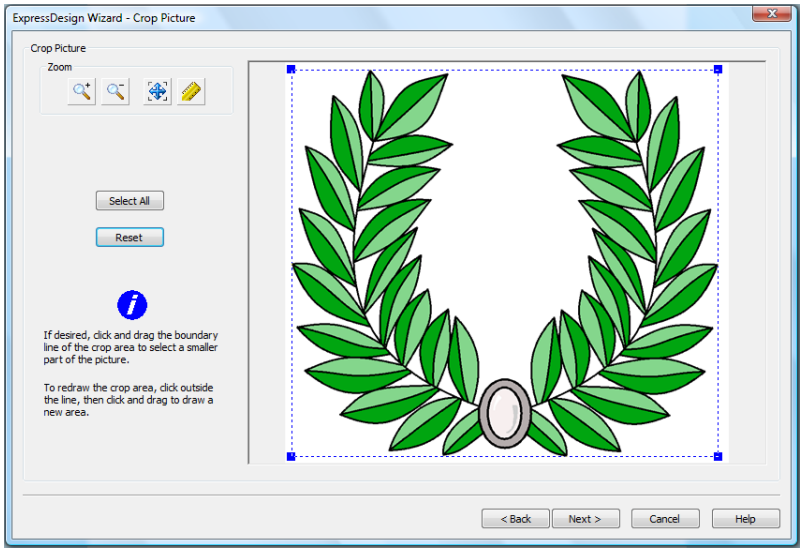
Select Source is the final button on this page. If you have any other **TWAIN** compliant devices, such as a digital camera, connected to your computer, then this button will be available. If you left click on this button, the **Select Source** dialog will open and display the names of the hardware and software available on your computer that will allow you to bring in a new graphic or photograph.

9. Here is what the next phase of the **ExpressDesign Wizard** looks like:



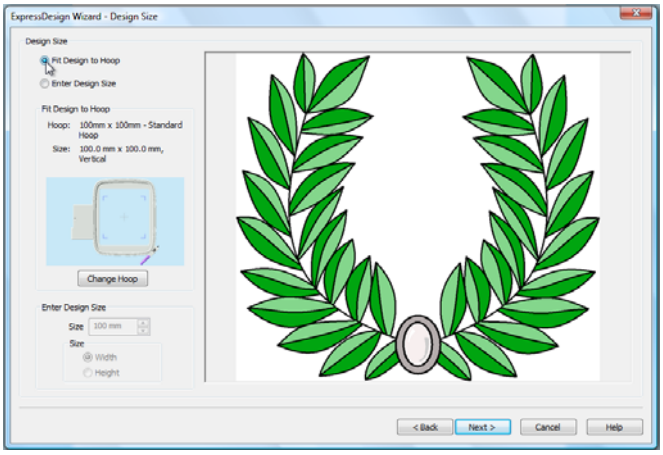
This is the **Rotate Picture** phase of the wizard. You can set the amount of rotation for the design. Let's try this out. **Left click** in the **Rotation** box and type in **45**. Notice that the design rotates and appears to be smaller. In truth, the design will only be made as small as required to still fit it inside of the hoop size or design size depending on the option you chose in a later step. The graphic appears smaller so that it can fit in this window. When you are done, **left click** on the **Rotation** box and type a **0** into it. Note: You **cannot** use the **Undo** tool when you are using the **ExpressDesign Wizard**. Nor can you use the **Cancel** button to undo any changes. If you do click on the **Cancel** button, then the **ExpressDesign Wizard** will immediately shut down and you will lose any changes you have made up to this point. You can use the **Back** button to return to an earlier phase and undo your changes that way. Let's **left click** on the **Next** button to move on.

10. This is the **Crop Picture** phase of the **ExpressDesign Wizard**:

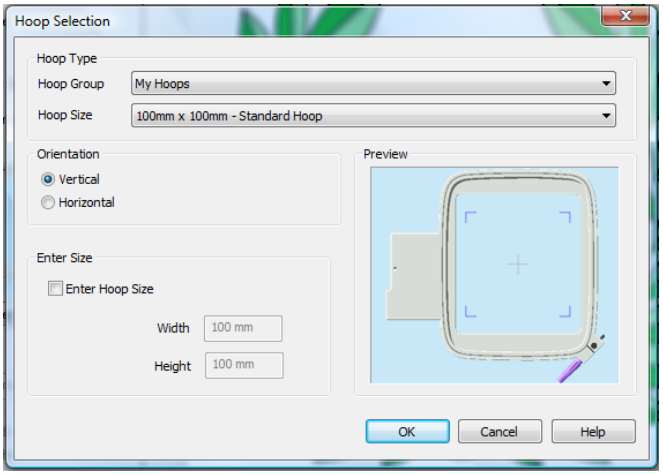


If you want to pick only part of the design to use in your embroidery, you can crop the picture here by using the left click and hold technique to drag any (or all of) the blue corners on the graphic to zero in and select part of the design. If you click on the **Select All** button, then the selection area will expand to the entire visible area of the graphic. You would use this option if you wanted a design that has a large area giving you room to put additional design elements on the **Work Area**. If you click on the **Reset** button, the selection area is confined to a rectangle that encloses only the graphic itself. Give it a try now. **Left click** on the **Select All** button and see how the selection area expands. Then **left click** on the **Reset** button to see how the selection returns to the initial setting. After you experiment with those two buttons **left click** on the **Next** button.

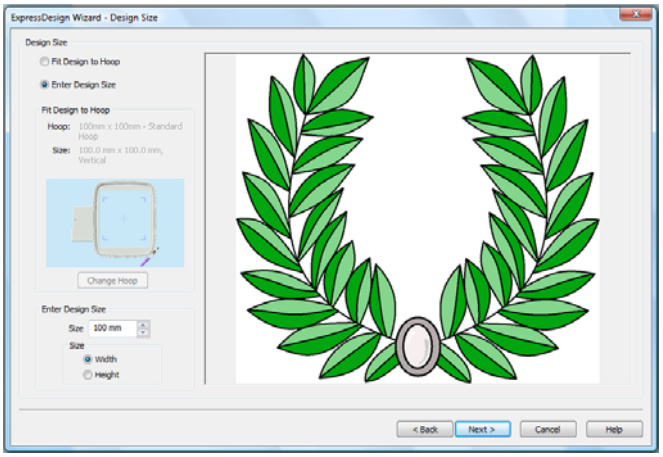
11. The next phase of processing in the **ExpressDesign Wizard** is new and different from the version available in ***4D Embroidery Extra***. This is the **Design Size** phase of processing. This is what the screen looks like:



There are two options you have to choose from here. Either you want the software to make the new design fit within a given **hoop size**, or you want to tell the software to create the design and you will tell the software the **design size** that you want it to create. This option is set at the top left corner of this screen. **Left click** click on the radio button next to **Fit Design to Hoop** then you will be given the chance to select the hoop size you wish to use. You can see that the **Change Hoop** button is now available. **Left click** on the **Change Hoop** button and this is what you will see:



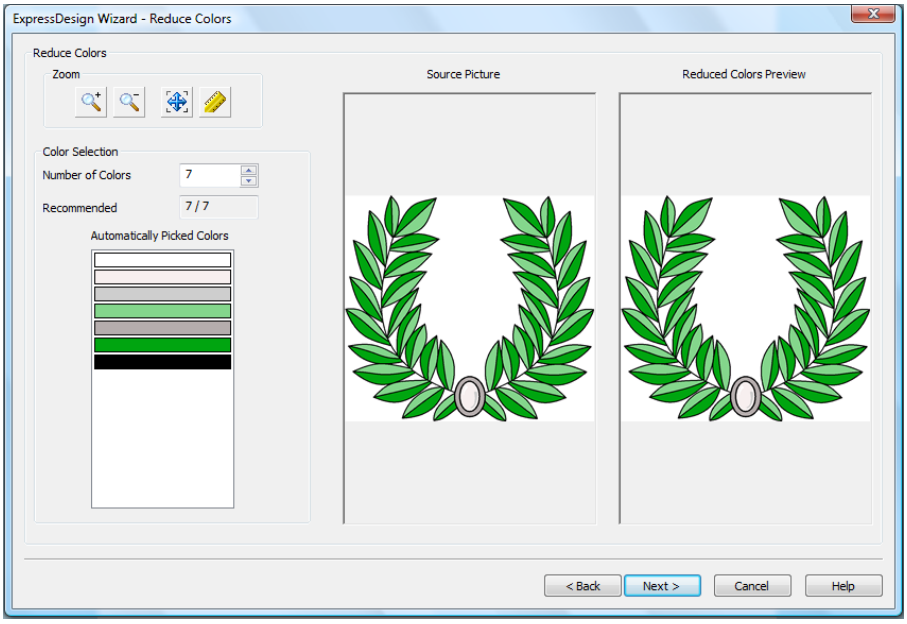
This is the same **Hoop Selection** dialog you saw in ***4D Embroidery Extra***. You can select the **Hoop Group** and then the **Hoop Size** within that **Hoop Group**. You can also select the **Orientation** of the hoop and, if you wish to select a custom hoop size by clicking on the **Enter Hoop Size** check box, type in the **Width** and **Height** of the custom hoop. **Left click** on the **Cancel** button to close this part of the dialog.



We will use the **Enter Design Size** option. **Left click** on the radio button to the left of **Enter Design Size**. You can see that the **Change Hoop** button is now grayed out and not available. But the **Size** text box is available. Type **100** in the **Size** text box. In the **Size** frame (just beneath the **Size** text box) you have two options. **Width** or **Height**. Here you will be selecting if you want the 100 mm size to be the height or width of the design. **Left click** on the **Width** radio button to select it.

Then, **left click** on the **Next** button.

12. We are now in the **Reduce Colors** phase of the wizard:



Let's go over this screen for a minute. In the **Color Selection** frame we see the **Number of Colors** box. It contains a **7**, telling us that the original graphic has 7 colors in it. In the **Recommended** box we see **7/7** meaning that the software recommends that we use 7 out of the 7 colors that are in the original graphic.

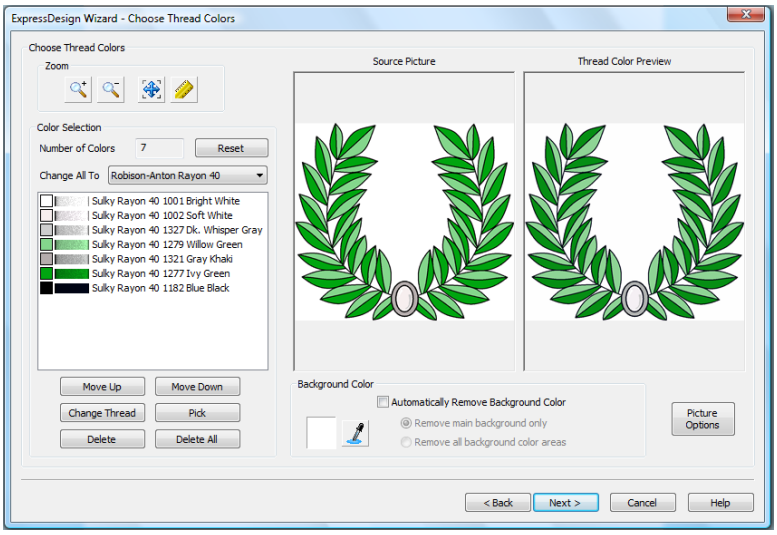
Note: The topmost color is the color assigned to the **background** color for this graphic. This will become important in the next step of processing. The **Automatically Picked Colors** show us what those colors are. Here is where this phase of the wizard becomes important. And it illustrates a dilemma that faces anyone who creates embroidery designs.

Rather than choose a good, clean **vector** graphic that is made up of solid colors, we could have chosen a **raster** graphic (a BMP, GIF, JPG, etc.) file that is made up of hundreds or thousands of colors. We could even choose a photograph. A photograph can have more than **16,000,000** colors (yes, 16 **million**). This software can handle photographs. The problem though is that at this point, we have the option of reducing the number of colors in our design. The more we reduce the number of colors, the less detail appears in the final product. Suppose that rather than millions or even thousands of colors, we reduced the number of colors to **256**. Would you want to stitch out a design that has **256** color changes in it? This is the reason that it is important to have realistic expectations of what the software can do and what you are willing to do at the sewing machine. I have worked with 4 different embroidery software programs and **they all have this same limitation**.

Let's see what happens when we reduce the number of colors.

13. **Left click** in the **Number of Colors** box. Change the number to **3** and look at the result. Look in the **Reduced Colors** pane. The background changed from white to light green. The medallion at the bottom of the wreath is now all light green. Yet the design is still recognizable as a wreath. If you had changed the number of colors to 5 or 6, there would be changes, but they would be more subtle and, perhaps, hard to see. For now, **left click** in the **Number of Colors** box and change it back to 7. **Left click** on the **Next** button to move on to the next phase of the wizard.

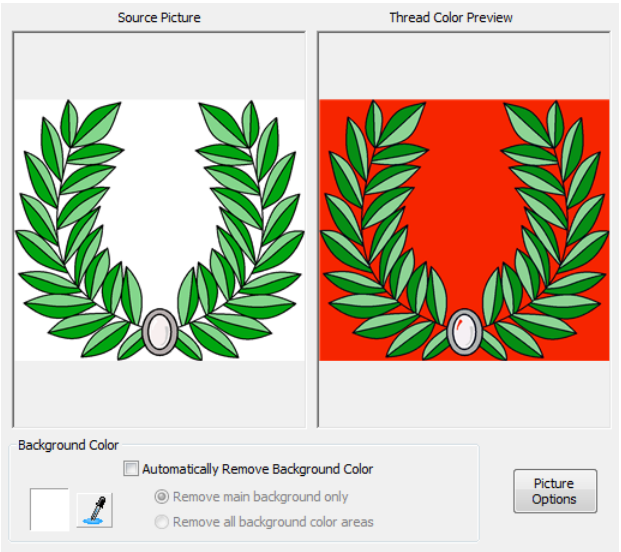
14. Next up is the **Choose Thread Colors** phase of the wizard. Here is what it looks like:



The colors shown in the **Color Selection** frame are shown from top to bottom in the order in which they will stitch out. i.e. The blue black stitches for the outline will stitch out last. You have to examine this list of colors closely. Notice that the darker colors stitch out last. If, for some reason, you wanted the 6th color to stitch out before the 4th color stitches out, then this is the time to use the **Move Up** or **Move Down** buttons to control the color order because moving all of the **stitch objects** generated after the design is complete is a daunting task as you will see in the chapter on editing.

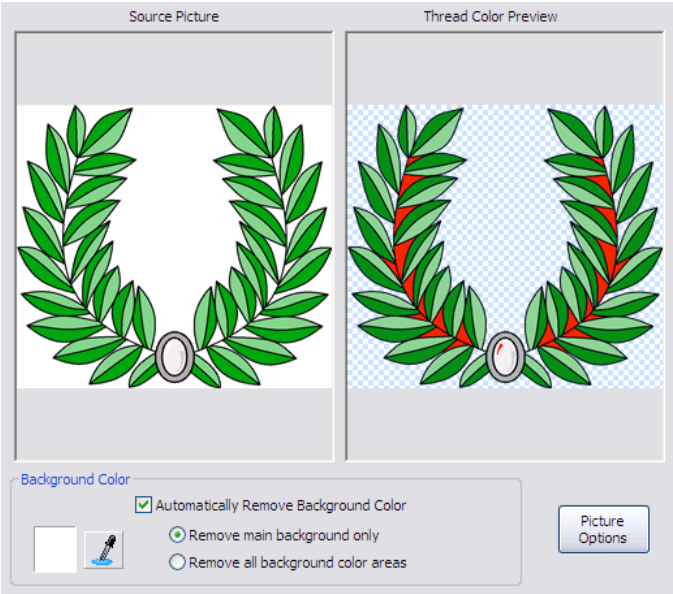
The **Change Thread** button will open the **Color Selection** dialog allowing you to change the color of the selected thread. Let's see how this works.

15. **Left click** on the top color in the list Sulky Rayon 40 1001 Bright White to select it. Remember, this is the **background** color set by your software. Now, **left click** on the **Change Thread** button. When the **Color Selection** dialog opens, **left click** in the **Quick Colors** frame on the color chip in the middle row, 4th from the left (deep orange) to select this color. **Left click** on the **OK** button. Here is what your screen should look like now:



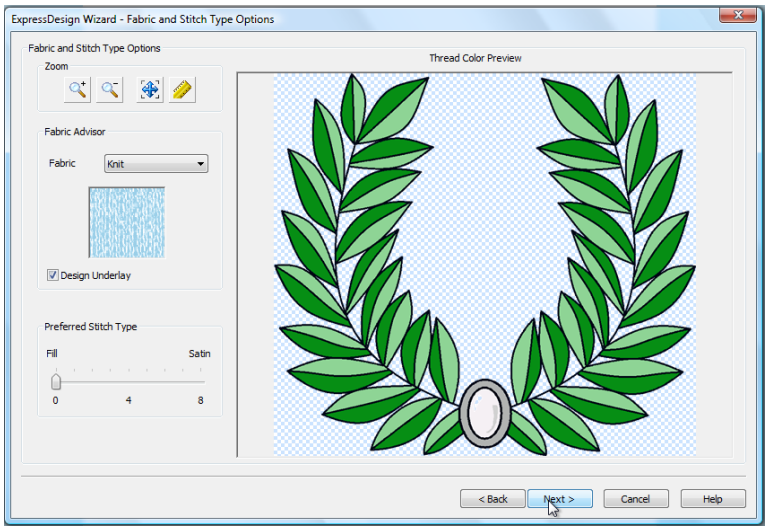
I wanted you to see everywhere that this color is located in the picture. It is the background color. But it is also found in between the leaves and there is even a little sliver of it inside of the medallion at the bottom of the design. I want you to see this because we are going to use another option to remove the stitches from this area. There in the **Background Color** frame there is a checkbox labeled **Automatically Remove Background Color.** If you check this box, then there will be no stitches placed wherever the orange color appears in the **Thread Color Preview** frame. Unfortunately, there also will be no stitches on that little section of the medallion, but I'll show you how to fix that later in this process. **Left click** in the **Automatically Remove Background Color** stitches check box.

16. Here is what your screen will look like now:



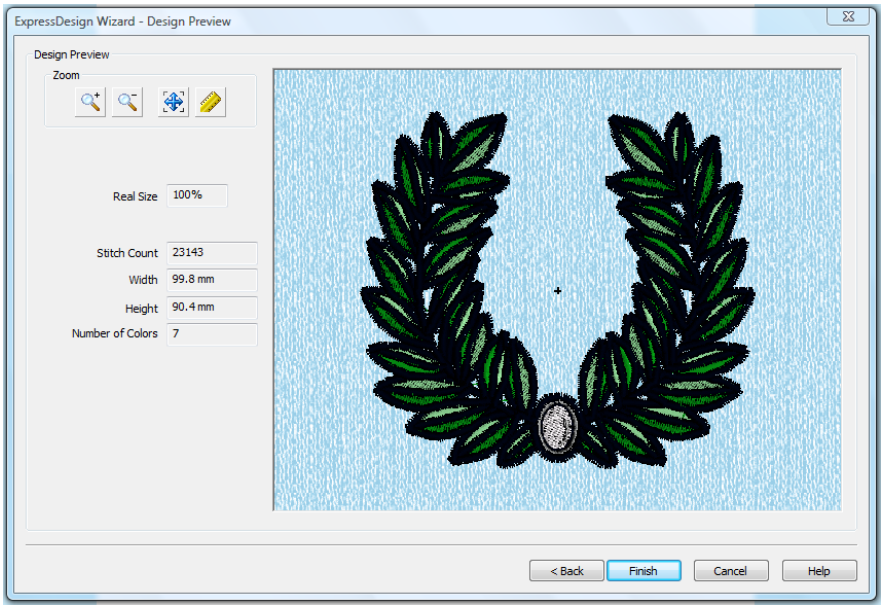
You can see that the background stitches are removed (the orange color is gone and it has been replaced by a light blue and white plaid pattern). However, there are still areas of orange in between the leaves and in the medallion. Beneath the **Automatically Remove Background Color** check box there are two radio buttons that are now available. The top radio button **Remove main background only** is automatically selected. **Left click** on the bottom radio button **Remove all background color areas** and all of the remaining orange color will be removed. When you do this, take note of the area(s) such as the stitches within the medallion that we will have to do something about later. There is one more button on this page. The **Picture Options** button is shown here beneath the **Thread Color Preview** box. We'll come back to that in a moment. First, I want you to see what happens when we don't use one of the options in that part of the **ExpressDesign Wizard**.

17. **Left click** on the **Next** button. Here is what you will see:



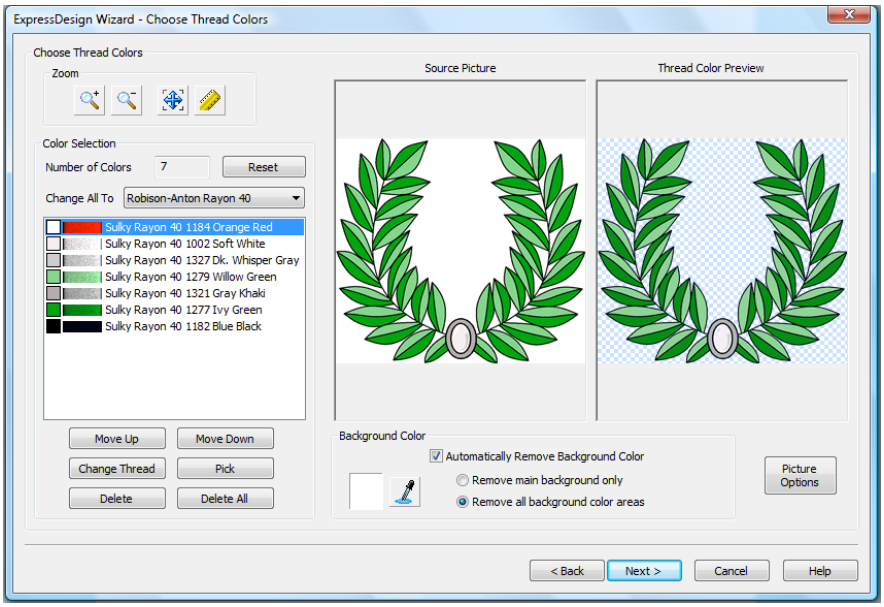
We are now in the **Fabric and Stitch Type Options** phase of design creation. Here you will select the type of fabric in the **Fabric Advisor** frame that best fits the type of fabric that your design will be applied to. This option generates the correct amount of pull compensation and underlay (those are both digitizing concepts) based on the design and amount of stretch in the proposed fabric. **Left click** on the drop down arrow on the right of the **Fabric** combo box to see the 5 options you have to choose from. For our purposes, just leave this option set on **Knit**. Also, **left click** on the **Design Underlay** check box to turn underlay off. Underlay stitches further stabilize your embroidery project. But in this project, because the design has a number of thin lines and open areas, it will look better with no **Underlay** stitches. Of most interest on this page is the **Preferred Stitch Type** frame and the slider setting that it contains. Right now, the default setting is set at **Fill**. Let's leave the setting there and then **left click** on the **Next** button to see what happens.

18. Here is what you should now see:



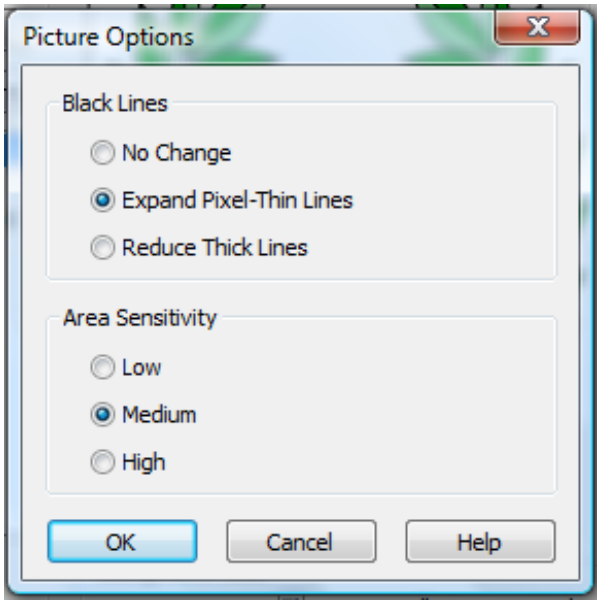
Hmmm…I don't know about you, but I don't like what I'm seeing here. The outline stitching is way too wide and it appears that all of the leaves consist of fill stitches. I had hoped that they would be satin stitches. Well, there is an easy way to fix both of these problems. Look at the bottom of the screen. There is a command button labeled **Back**. If you **left click** on the **Back** button, you can move backwards through each screen of the **ExpressDesign Wizard**. In fact, you could go all the way back to the very first screen if you wanted to do so. We don't need to go that far back to correct these problems. **Note:** When you are trying to correct several problems, you should always work on **fixing one problem at a time**. If you change too many things at once, then you will never learn what each option does for you. We have two things to change here. First, make the outline stitches narrower and second, change the stitches on the leaves from **Fill** stitches to **Satin** stitches. Left **click** on the **Back** button to go back to the previous phase (**Fabric and Stitch Type Options**) and then **left click** on the **Back** button again to go back to the **Choose Thread Colors** phase.

19. Here is what your screen should look like:



On the right side of the dialog, beneath the **Thread Color Preview** frame, there is a button labeled **Picture Options**. Let's **left click** on that button and take a look at the choices that are present there.

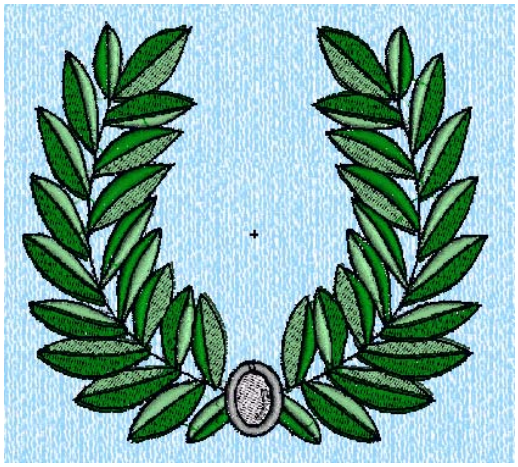
20. Here is what the **Picture Options** dialog looks like:



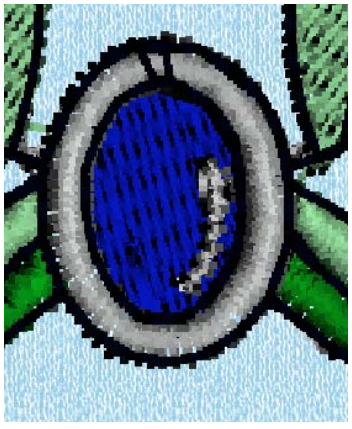
Inside of the **Black Lines** frame there are three options: **No Change**, **Expand Pixel-Thin Lines**, and **Reduce Thick Lines**. We need to **left click** on **Reduce Thick Lines**.

Inside of the second frame, **Area Sensitivity**, there are also three settings. **Medium** is selected now and that is OK for this design. What **Area Sensitivity** does is to control the amount of details that are put into the embroidery design. **High** puts in more details, and therefore, more color changes. **Low** puts in fewer details and fewer color changes. For now, just leave this set on **Medium. Left click** on the **OK** button.

21. Let's see what the results are so far. **Left click** on the **Next** button to move to the **Fabric and Stitch Type Options** and then **left click** on the **Next** button to move to the **Design Preview** (the last phase) of processing. Here is what you will see:

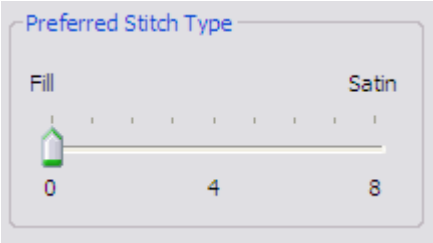


This certainly looks a lot better than it did before. But if you look closely at the leaves, you will see that some of them are fill stitches and some of them are satin stitches. While we are here, let's use the **Zoom In** tool to take a close look at the oval-shaped medallion at the bottom of the wreath. Remember that earlier, I mentioned that a small sliver of this medallion would be missing from the final product because it contained an area made up of the **background** color (which we removed earlier). When you look closely at the medallion, here is what you will see:



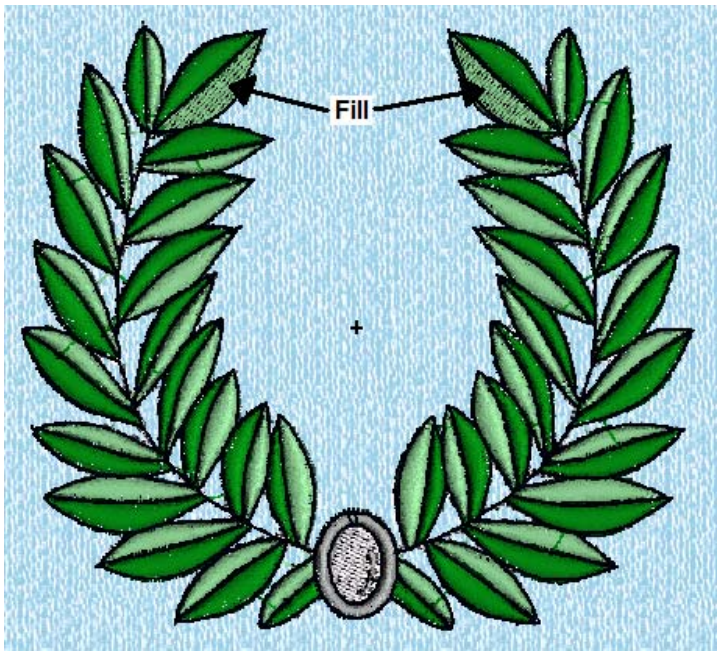
(I changed the color of the medallion stitches show it would show up better in this book.) Notice that the missing stitches in the upper left part of the medallion are now covered with fill stitches. I think that this is a good result that I want to keep. However, almost all of the leaves are fill stitches too and I wanted all of them to be satin stitches. Now I will show you how to correct that. Once again, we have to use the **Back** button to return to an earlier phase of processing. **Left click** on the **Back** button once to return to the **Fabric and Stitch Type Options**.

22. Find the **Preferred Stitch Type** frame on this screen in the lower left corner:



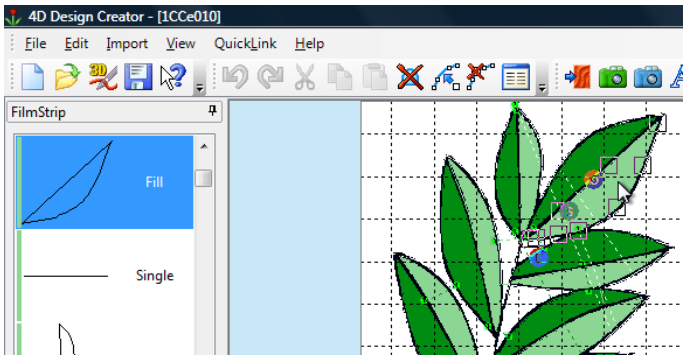
Here you can see that the **Fill** option is selected. There is a range from **0 – 8**. When you move the slider across the range, it means that you want the software to **tend more** towards that type of stitch object. Here, we indicated that we want **most** stitches to be **Fill stitches**. I actually want to tend more toward **Satin stitches**. **Left click and hold** on the slider and move it to one position to the right of the number 0 so that the pointer is pointing to the second tick mark or a value of **1**. Now, **left click** on the **Next** button to see the results.

23. Here is what you should see:



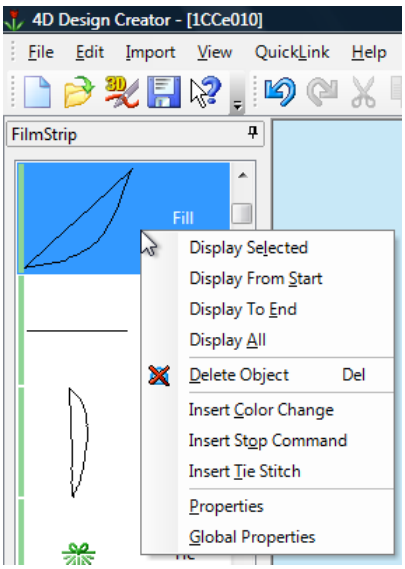
Almost all of the leaves are now satin stitches except for the two noted here. Take a few minutes to play around with this option. Use the **Back** button to go back to the previous page and set the **Preferred Stitch Type** to 3, then **left click** on **Next** to come back here and review the results. Notice that when the setting is at **2** or higher, all of the leaves are **Satin** but so is the medallion…and the medallion has a hole in it when it is set in **Satin.** I'm going to give you a little preview of how we can easily change to type of stitch object on the **Edit** page. Go to the **Fabric and Stitch Type Options** part of the **ExpressDesign Wizard** and make sure that the **Preferred Stitch Type** slider is set at position **1. Left click** on the **Next** button on the **Fabric and Stitch Type Options** page and then **left click** on the **Finish** button on the **Design Preview** page to end the **ExpressDesign Wizard**.

24. When the **ExpressDesign Wizard** ends, you will be on the **Edit** page. **Left click** inside of the lower part of the leaf on the left side of the design that consists of **Fill** stitches. Here is what your screen should look like:



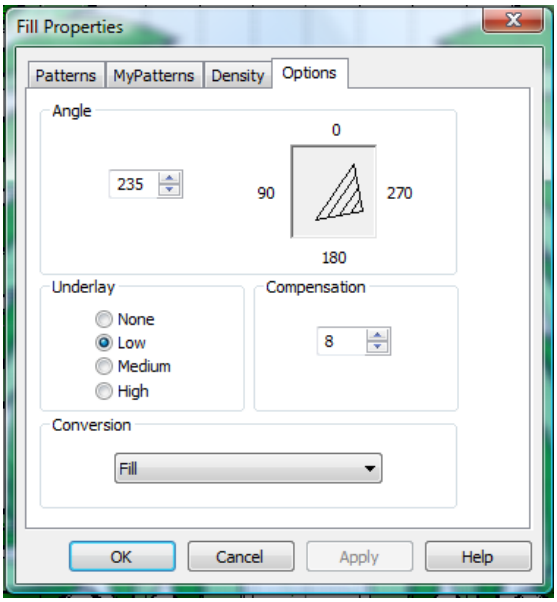
Make sure that the segment in the **FilmStrip** on the left is a **Fill** object. We will now use a powerful **NEW OPTION** available in ***4D Design Creator***.

25. **Right click** on the blue area of the **FilmStrip** and another menu will appear as shown here:



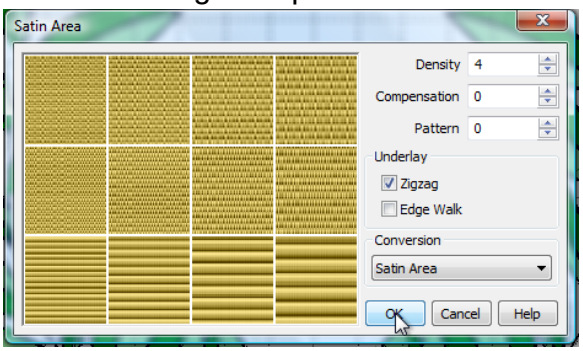
I will explain what each of these options mean later. For now, **left click** on the **Properties** option located second from the bottom.

26. When the **Fill Properties** dialog opens, **left click** on the **Options** tab at the top of the dialog. Here is what your screen should look like now:



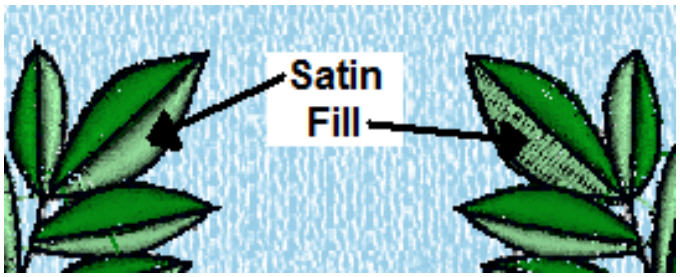
Look at the bottom of this part of the **Fill Properties** dialog. The **Conversion** frame is located there with an option list available. **Left click** on the downward pointing arrow to the right of the word **Fill** and a list of stitch object types will appear. This is how you can instantly convert the object type from **Fill** to **Satin Area. Left click** on the words **Satin Area** in this list. Then **left click** on the button labeled **OK**.

27. Another dialog will open. Here is what it looks like:



Make sure that the **Pattern** box contains a value of **0**. Once you verify this value, **left click** on the **OK** button.

28. The **Satin** Area dialog box closes. Look in the **FilmStrip** and notice that the segment of the design that is highlighted is now listed as being a **Satin Area** type of stitch object. Let's take a look at what our design looks like now. **Left click** on the **3D Create Stitches** tool on the toolbar. Here is what the design looks like now:



Now, go back and repeat steps 24 through 27 to convert the other remaining **Fill** stitches to a **Satin Area**.

Creating an Express Trace

Another option you can use when you create a design using the **ExpressDesign Wizard** is to select **Create Express**. This option will take your initial picture and create a line trace of the design. The resulting design will not only be an outline of the original picture, but it will include internal tracing of areas that contain different colors. There are a few new tools and concepts that you need to learn to successfully use this option. Clear all designs from your **Work Area** and we will learn about this option with a short exercise.

1. **Left click** on the **ExpressDesign Wizard** to begin the design creation process. When the first screen appears, **left click** on the second option from the top of the list, **Create Express Trace.**

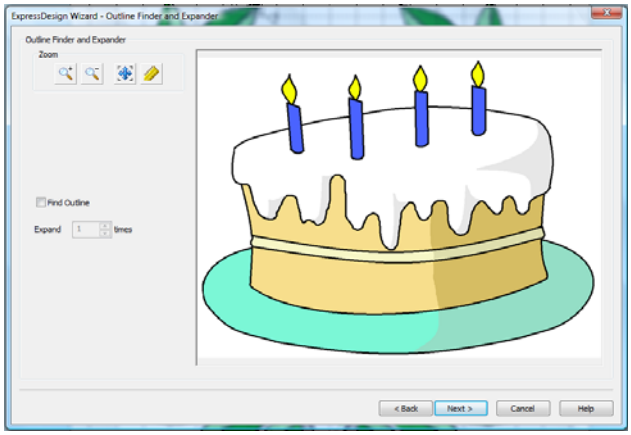
2. The next screen to appear is the **Choose Picture** phase. This is the same screen we saw when we were using the **Create Express Embroidery**. For this project, select the birthday cake that appears on the top row at the extreme left of the display for the **C:\4DEmbroidery\Samples\4DEmb\Pics2\Celebration** folder Here is what it looks like:

I want you to notice a couple of things about this design. Even though there are areas of shading on the icing at the top of the cake and a shadow shown on the right side of the cake, these will not be picked up in our design. But when you think about it, would you really want them outlined?

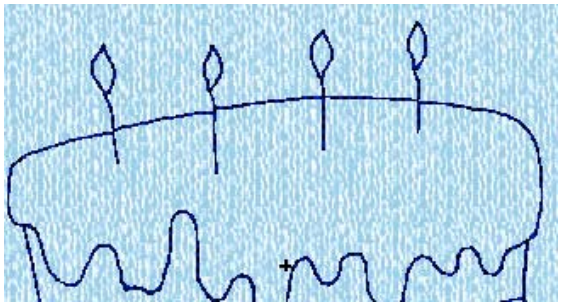
Left click on the cake to select it. Then, **left click** on the **Next** button to move to the next phase of processing.

3. Next up is the **Rotate Picture** phase. We'll just leave the picture as is and **left click** on the **Next** button.

4. The next phase of processing is new to the **Create Express Trace** process. This is the **Outline Finder and Expander** phase of processing. Here is what this new screen looks like:



On the left side of the screen you can see a check box labeled **Find Outline**. When you turn on **Find Outline** a line **1 pixel** wide is drawn around the inside of each segment of the graphic. You can increase the width of the found outline to **5 pixels** in the **Expand** box. **Find Outline** is unchecked by default. We want to **left click** on the **Find Outline** box to turn it on. Here is what checking the box will do for us. If you do not check the box, then some small details, like the body of the candles, will not be traced correctly later. Rather than showing up as a box, they will show up as a single set of running stitches. Here is what the top of the cake will look like if you **do not** check this option:



This is **not** something that we want in our design. We want the candles to look like rectangles beneath the candle flames, not just bare wicks.

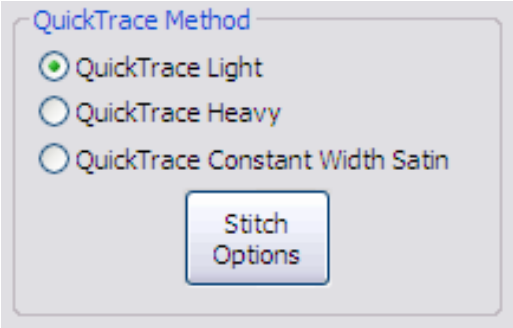
With almost any design, you will find that you need to go through the wizard with and without turning on various options to see how they come out in the end. If you do not like what you see, you can always use the **Back** button to return to an earlier stage of processing and change things with a click of your mouse. As soon as you turn on the **Find Outline** option, **left click** on the **Next** button. Remember, only make one change at a time to see how that change affects the design.

5. Setting the **Monochrome Threshold** is the next phase of processing. There is only one option on this screen. Beneath the picture we see a scrolling arrow and a text box to the left of the arrow. The default value setting of **127** is set. This value can range from **0** to **255**. The purpose of this screen is to allow you to either pick up, or loose, details in the picture. Try an experiment. **Left click** on the number **127** and change it to the maximum value of **255**. The entire screen turns black. This is because by setting the value this high, the computer picked up every pixel as a detail and turned it to black. **Left click** on the value **255** and change it to **233**. Now you can see that the shadows and shading I talked about in step 2 are now picked up. I don't think I want them to be part of my trace. **Left click** on the number and change it to **0**. Hmmm…the picture doesn't look much different than it did at 127. **Left click** on the number and change it back to **127**. Now, **left click**, on the **Next** button.

6. Next up is the **Crop Picture** option. Since we want to use this entire picture, we will just leave this setting alone. If you wanted to crop the picture, you could click on any of the corners and drag them into the picture to select an area to crop. **Left click** on the **Next** button.

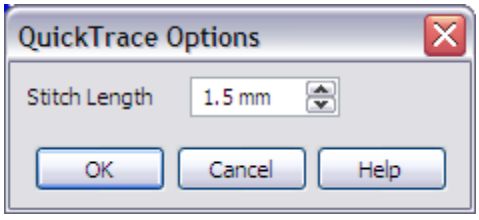
7. The next phase of processing is the **Design Size** screen. The options shown here are the same ones I described back on page 31. **Left click** on **Fit Design to Hoop** and select the 100 mm by 100 mm standard hoop. **Left click** on the **Next** button.

8. Now we are on the **Express Trace Options** phase of processing. There are four options here. One of which we already learned about in the previous project using **Create Express Embroidery.** That option is the **Picture Options** where we set the **Area Sensitivity**. When using the **Create Express Trace** this is not usually a consideration so I won't review it here. The more important of the options can be found in the **Quick Trace Method** frame. Here is what it looks like:



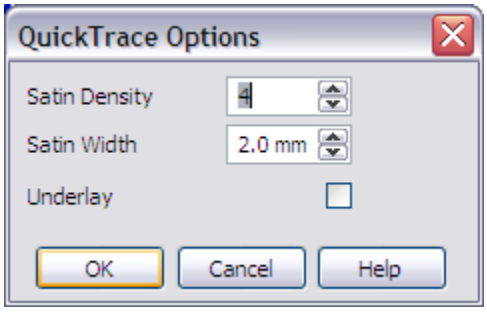
Here is what these options mean. **QuickTrace Light** creates a design that is made of a single running stitch. **QuickTrace Heavy** creates a design that is made of a triple running stitch. **QuickTrace Constant Width Satin** creates a design made up of a satin border similar to one created for an appliqué. A command button labeled **Stitch Options** gives you different options based on the **QuickTrace Method** that you choose.

If you choose either of the first two trace options, then the **Stitch Options** dialog looks like this:



You can adjust the length of the stitches but there is little else to change here. A stitch length of 1.5 mm is a good length for most designs created with the **QuickTrace Light** or **Heavy** option.

If you choose **QuickTrace Constant Width Satin**, then these are the **Stitch Options** you have:



Here you have three choices. The **Satin Density** ranges from **2** (highest density with the most stitches) to **15** (lowest density with the fewest stitches). By the way, that's not a typo. It is the actual way that density is set and refers to the amount of **space** between the stitches and **not** the number of stitches/mm. **Satin Width** establishes the overall width of the satin column. **Underlay** is either on or off depending on whether or not you think you will need underlay stitches to stabilize your design. When I use the **Constant Width Satin** option, I always turn **Underlay** on.

Left click on **QuickTrace Light** to select that option and then **left click** on the **Next** button.

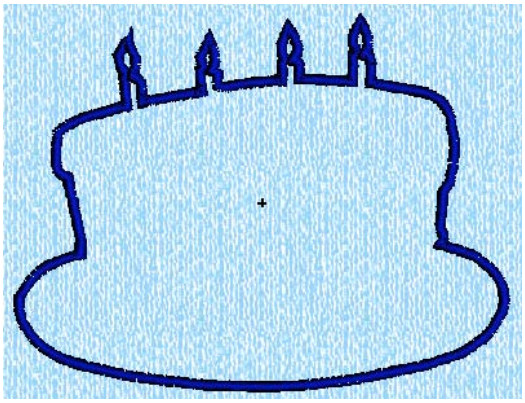
And just like that…there is our design. If you like what you see, then **left click** on the **Finish** button and your work will be placed into the hoop.

Creating an Express Border Design

This is the third option available in the **ExpressDesign Wizard**. You can use the **Express Border Design** option to create a number of different designs. However, there is one thing that you need to understand with this option. When you use the **Express Border Design** option, the tool only places stitches around the **outside** of the design. None of the internal lines in the design are traced. Here is the design that you can create with the **QuickTrace Constant Width Satin** option of the **Create Express Trace** part of the wizard:

Here, all of the lines are traced both inside of and outside of the perimeter of the design. Let's see what happens when we use the **Create Express Border** option of the **ExpressDesign Wizard** and use the same picture of the birthday cake.

Taking all of the default values, here is what I arrived at:



Here, you can see that all we got was a satin border design. None of the internal lines were included in the final product. And this is not just because I set certain options a certain way. It's because this is the way this option works. But there are many more options available here, including one to instantly create an appliqué. Let's take a look at all the options with a short exercise.

Begin by clearing any designs that you have on your **Work Area**.

1. **Left click** on the **ExpressDesign Wizard.** When the wizard opens, **left click** on the **Create Express Border** option. Now, **left click** on the **Next** button.

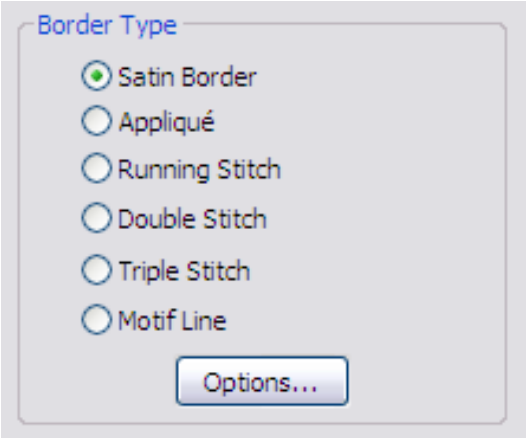
2. **Left click** on the **View Picture** button and then select the same graphic of a birthday cake we selected in the previous exercise. **Left click** on the **Next** button. The next phase of processing will appear, the **Rotate Picture** phase. **Left click** on the **Next** button and move to the next phase of processing.

3. The **Monochrome Threshold** phase of processing appears next. It works the same way here as I previously explained in the **Create Express Trace** option on page 40. Just **left click** on the **Next** button.

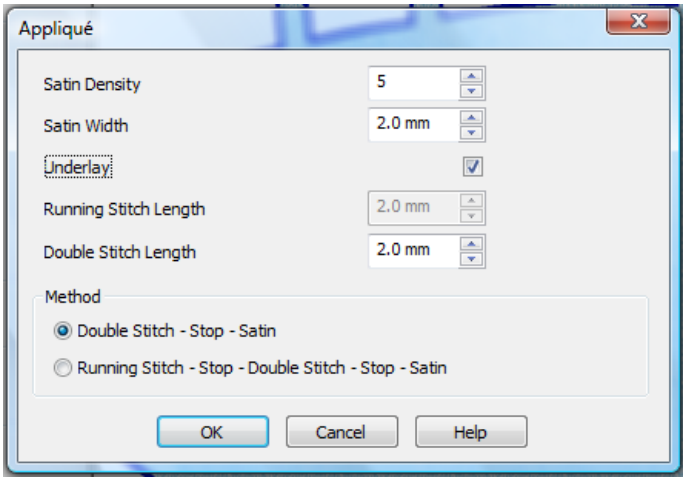
4. The **Crop Picture** phase of processing appears next. It works the same way here as I previously explained in the other two options of **ExpressDesign Wizard**. Just **left click** on the **Next** button.

5. Next up is the **Design Size** phase of processing. This screen and its options are the same as I described previously. Make sure that you select **Fit Design to Hoop** and select the 100 mm by 100 mm standard hoop. **Left click** on the **Next** button.

6. Finally, we get to the **Express Border Options** phase of the wizard. The default setting is **Satin Border** and you can see in the window on the right side of this phase of processing that the result will be an **outline** of the graphic. There are 6 different options available here. You have already seen the options for **Satin Border**, **Running Stitch**, **Double Stitch**, and **Triple Stitch**. The options for **Appliqué,** and **Motif Line** are new. We will go over each of them here. Let's begin with **Appliqué**. **Left click** on the radio button to the left of the word **Appliqué**. Then, **left click** on the **Options…** button.

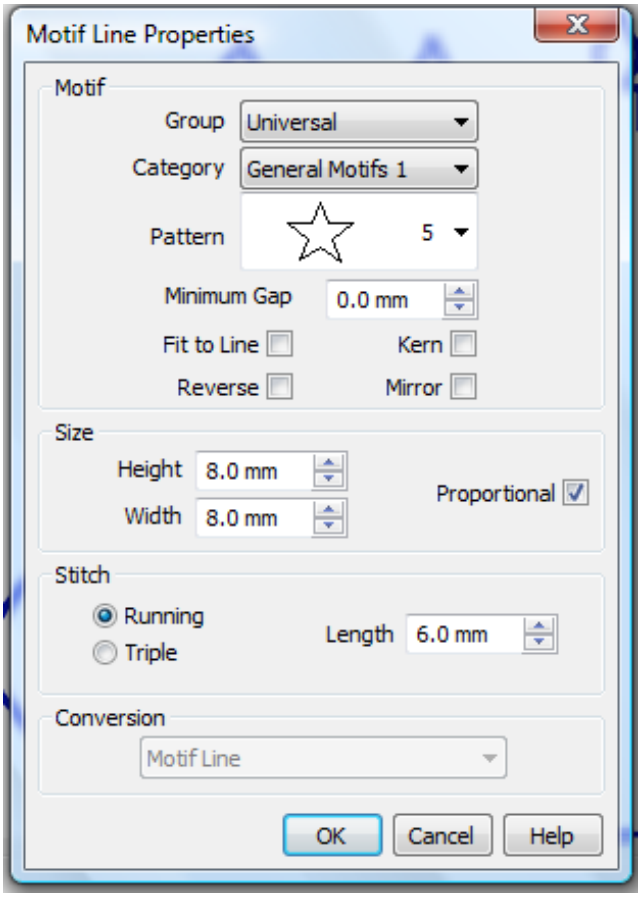


7. Here is what the **Appliqué** options look like:



There are either 6 or 7 options to choose from here depending upon which one of the radio buttons in the **Method** frame is checked. If the top **Method** is chosen, then you will not be able to set the **Running Stitch Length** because that **Method** does not use the **Running Stitch**. All of the other options are self explanatory. As I described earlier, the first option **Satin Density** determines how much space there is between stitches with the lower values making the stitching dense and the higher values making the stitches more open. **Left click** on the **Cancel** button to close the **Appliqué** dialog.

8. **Left click** on the **Motif Line** option. Then, **left click** on the **Options…** button. Here is what you will see:



Inside of the **Motif** frame, if you **left click** on the drop down arrow in the **Group** combo box you will see all of the various groups of motifs that are available in your software. If you selected a **Husqvarna Viking** machine in the **Machine Manager** option in ***4D Configure***, then you will also have a group of **Husqvarna Viking** motifs. If you selected a **Pfaff** machine in the **Machine Manager** option in ***4D Configure***, then you will also have a group of **Pfaff** motifs.

If you **left click** on the drop down arrow in the **Category** combo box, you will see all of the various **Categories** of motifs in the **Group** that you first chose.

If you **left click** on the drop down arrow in the **Pattern** combo box, you will see the actual stitches for each motif **Pattern**.

The **Minimum Gap** setting will determine how much space there will be between each occurrence of each motif **Pattern** on a given line.

Fit to Line, when checked, automatically rotates the motif pattern so that it follows the curvature of a line in the graphic.

Kern, when checked, will fit motif patterns as closely as possible while ensuring that none of the patterns overlaps with another pattern on the same line.

Reverse flips the motif on a vertical axis. i.e. If the motif pattern was a train that appears to be going from right to left, **Reverse** changes the pattern so that the train now appears to be going from left to right.

Mirror flips the motif pattern on a horizontal axis. e.g. The same train that was upright, going from right to left will now be upside down still going from right to left.

In the **Size** frame, **Height** and **Width** control the size of the motif pattern. If the **Proportional** box is checked, then when **either** the **Height** or **Width** is changed, the other value will automatically change to maintain the aspect ratio of the **Pattern**.

In the **Stitch** frame, you can select from **Running** for a single running stitch or **Triple** for a triple running stitch. You can also set the **Stitch Length** here.

Special Note About the Conversion Option

At the bottom of the **Options** dialogs for the **Satin Border**, **Running Stitch**, **Triple Stitch**, and the **Motif Line** there is a frame labeled **Conversion** and it is grayed out in each of these dialogs. This is because the **ExpressDesign Wizard** uses computer programming code that is common to the ***4D Design Creator*** module. At this point, you have not created any objects that could be converted, so this option is temporarily unavailable. After you have finished creating the design, you will have the capability of changing the stitch object type on the **Edit** page.

Load Picture for New Design

This is the fourth option in the **ExpressDesign Wizard** and it is the first of the 3 options that bypass the **stitch object creation** phase of the **ExpressDesign Wizard**. When you use this option, you still go through the following phases of processing:

Choose Picture – described on page 27
Rotate Picture – described on page 30
Crop Picture – described on page 30
Design Size – described on page 31
Reduce Colors – described on page 32

As soon as you complete the **Reduce Colors** phase of processing, your picture will appear on the **Create** page, ready for you to begin creating stitch objects. If you need to review what to do in each of these steps, refer back to the pages listed above.

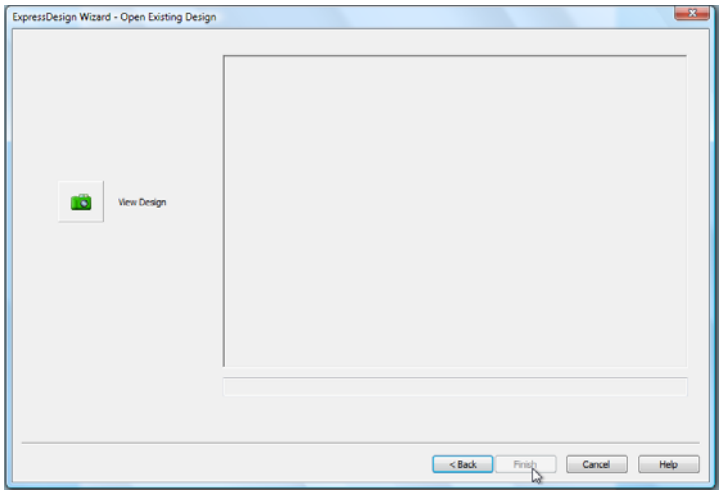
Load Existing Design

Do you remember saving your designs as **CAN** files? The **CAN** file is a blueprint for the embroidery stitch file that you use in your machine. If you have been saving your designs as **CAN**s as I suggested, then you can quickly and easily bring them back into ***4D Design Creator*** by using this option. Let's see how this works by loading one of the **CAN** files provided with your software.

1. **Left click** on the **NEW** tool  on your tool bar. This action will start the **ExpressDesign Wizard** again.

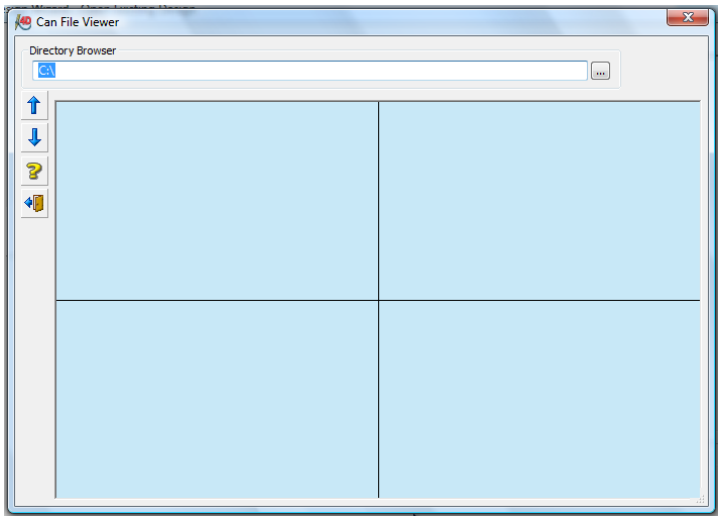
2. **Left click** on the **Load Existing Design** radio button. **Left click** on the **Next** button.

3. This is what your screen will look like:



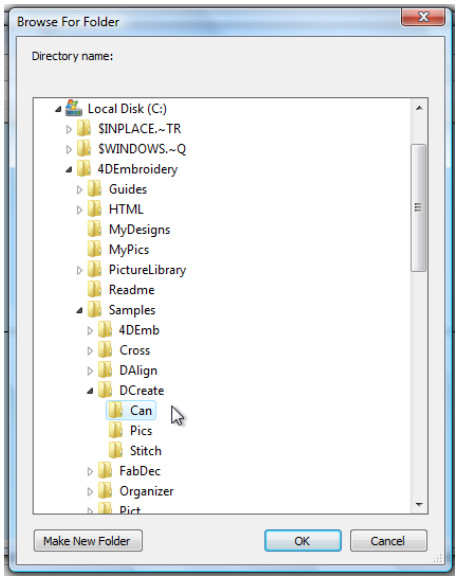
You can see that there is only one option available, **View Design**. If you look at the bottom of the dialog, you can see that the **Finish** button is also present on this page meaning that it looks like this will be a one-step process. **Left click** on the **View Design** button.

4. Here is what the next screen looks like:



This is the **CAN File Viewer**. Again, the software is reminding us that we can only open a **CAN** file when we use this option. **Left click** on the ellipsis button at the right of the **Directory Browser** combo box.

5. Here is what you screen should look like:

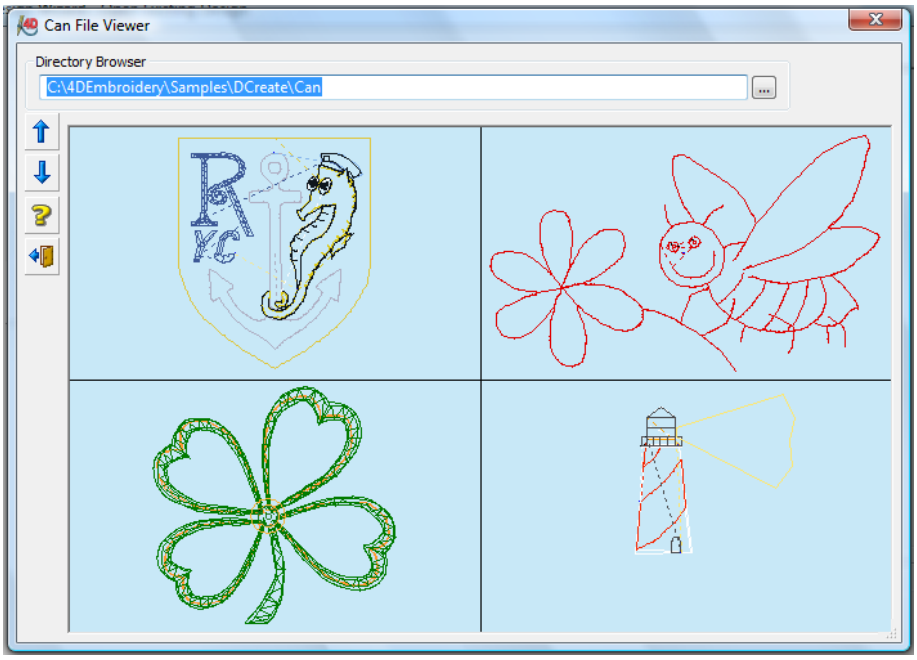


Now, use your computer skills to navigate to this folder:

C:\4DEmbroidery\Samples\DCreate\CAN

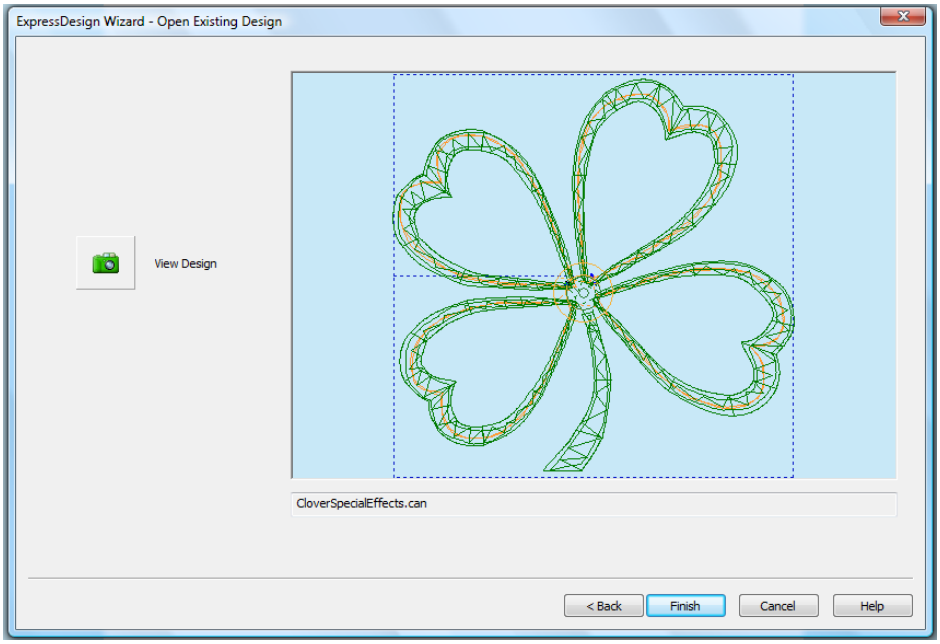
Left click on the **OK** button.

6. This is what your screen should look like:



If you had a number of **CAN**s, you can use the blue arrow buttons on the left of the dialog to scroll up and down through the various **CAN**s to view them all. For now, **left click** on the four-leafed clover shown here in the lower left corner.

7. Here is what your screen will look like:



All that remains to do now is to **left click** on the **Finish** button. As soon as you click on the **Finish** button, you will be placed on the **Edit** page of ***4D Design Creator*** so that you can resume working on this design.

Start a Design With No Picture

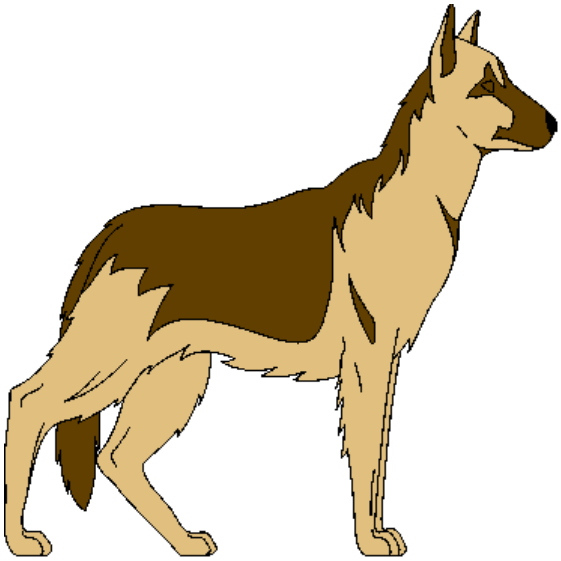
This option is the simplest of all. If you use this option, then as soon as you **left click** on the **Finish** button, the **ExpressDesign Wizard** closes and you find yourself on the **Picture** page.

Chapter 3 – Graphics and Design Creation

Now that you understand some of the basic terminology of design creation, and you completed your first small design creation project, we will cover the basis of the entire design creation process, setting up the graphic to be used as the subject of the design.

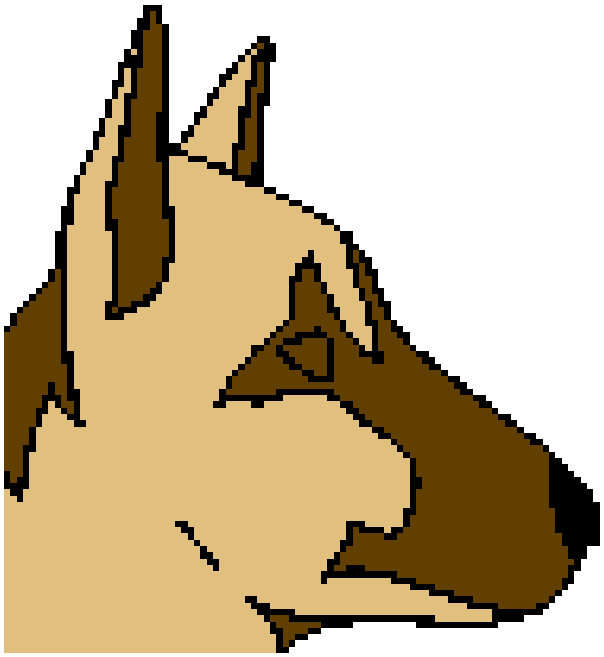
Graphic Types

Graphics fall into two categories, **raster** and **vector** graphics. The way to tell them apart is by looking at their file extensions (the part of the file name that comes after the period at the end of the file name.) **Raster** graphics consist of little squares of color. Here is what a **raster** graphic looks like:



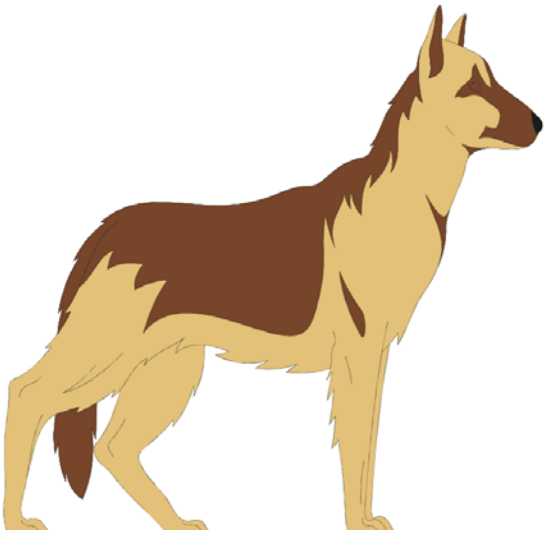
Looks pretty good and in many cases, this is good enough for design creation. This graphic, as all **raster** graphics, is composed of different **pixels** (that is a computer geek word for **pic**ture **el**ement or **pixel**). However, **raster** graphics lose a lot when they are enlarged or reduced in size.

Let's take a closer look at this graphic under a little magnification.

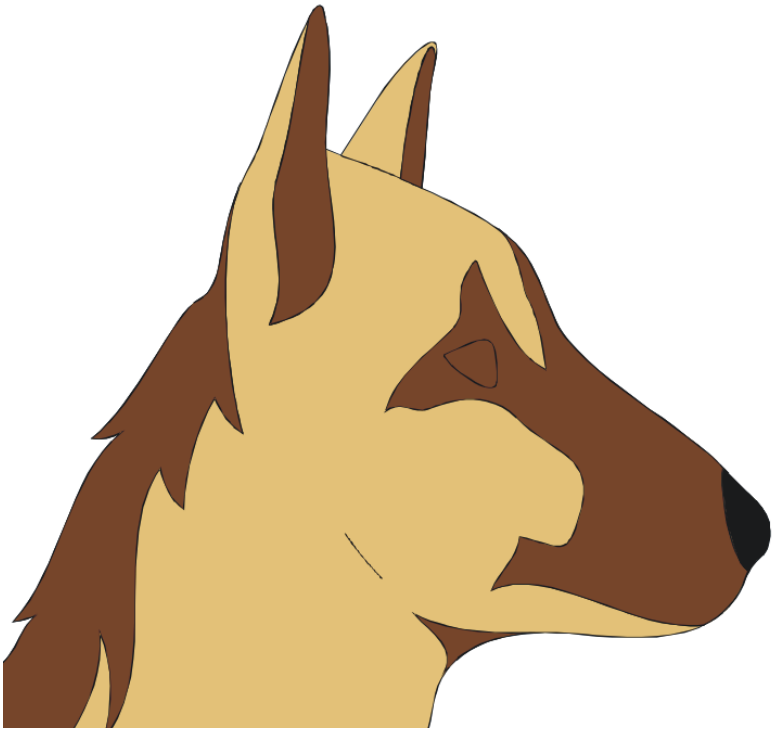


When you look closer at this design, you can see even more **pixilation**. That's another geek term for a loss of resolution. You can really see it on the diagonal lines. Look at the bridge of the dog's nose. It looks like little steps. Look at the back of its ears. If the outline of the graphic is thin, then the automatic tools may not work as well as you hoped.

Let's take a look at the same graphic in **vector** format.



This is the same graphic in **vector** format. It looks a little different (the colors are a little lighter). But at this resolution, it looks like the same graphic. Let's take a closer look under some magnification.



Look at how much smoother the lines are on this graphic. This is because the **vector** graphic consists of mathematical formulas to describe where the lines are drawn. Then, then you resize the image, it retains its smooth shape. Look at the bridge of the dog's nose now. Look at the back of its ears. No **pixilation** is present because the picture is not composed of pixels.

If you can find a **vector** graphic version of the subject you want to use, then select it rather than a raster version.

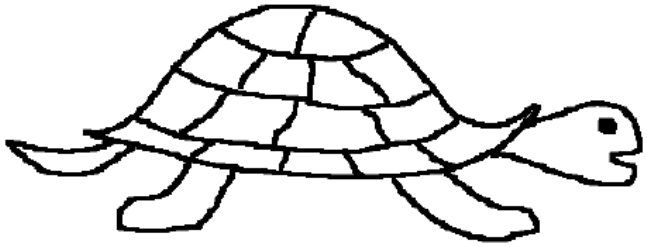
According to the ***4D Design Creator Reference Guide***:

> "4D Design Creator can load any of the following picture file formats: Windows or OS2 Bitmap (.bmp), JPEG-JFIF Compliant (.jpg, .jif, .jpeg), Portable Network Graphics (.png), Tagged Image File Format uncompressed (.tiff, .tif), Windows Meta File (.wmf), Windows Enhanced Meta File (.emf) and Windows Icon (.ico)."

Files with .WMF and .EMF extensions are **vector** graphics. All of the others are **raster** graphics. All of the information in the parentheses is the **file extension** for these files.

Colors

Unless you are able to work with high quality, vector graphics, the next best thing to have is a graphic that has the minimum number of colors in it. And the colors should have the highest amount of contrast between them. Here is an example of one I created on the **Picture** page. (You can tell from this graphic that I'm not a great artist.)



In case you are wondering, I was trying to draw a turtle. I think that we know that we would digitize this with various colors (lighter green at the top, a little darker green at the bottom, dark green or black for the outlines). We don't need to have those colors there to know what we want to use. In this case, we can use all of the automatic punching tools and they will place our stitch objects exactly and precisely where we want them to be. If the graphic were in color, it could be more difficult for the software to tell where one color ends and the next color begins. This leads me to the next point.

Why photographs are difficult to digitize

Photographs (and **raster graphics**) may contain up to 16,535,000 colors. This is why they have the depth of resolution that makes them look so nice. It is also why they are so difficult to use as a template for a project. Here is a photograph I would like to use as a guide for a project.

This is a high quality digital photograph of my dog Torgo. It contains more than 5,000,000 pixels (picture elements) and may contain 16,000,000 colors. I have two choices when using this picture as a template, both of them bad options. I either have to just use it as a background guide and use all of the manual punching tools to place the stitches. (This will take a lot of planning, skill, and artistry to do the picture justice.) The second option I have is equally bad. I would have to bring the picture into ***4D Design Creator*** on the **Picture** page and draw a series of lines on the picture to create something that looks like a paint by numbers outline of the picture. Then, I would have to erase all of the colored parts of the picture before creating my stitch objects. Even then, if I used only the automatic punching tools, I could only place fill stitch objects on the design and the result would look like a cartoon rather than a beautiful German Shepherd dog.

I have a special announcement to make here. I have developed my own software that will automatically create beautiful, true to life designs from photographs. Because you purchased this book, I will give you a special price for this software…$10.00. All you have to do is load your photograph into the software, do **one left click** and the design is created in 5 seconds!! All that you have to do now is be prepared to make 16,000,000 color changes as you stitch the design out. Does that sound like too many changes? Then you can, with a single click, reduce the number of changes by a factor of 100 to only 16,000 color changes! Is this still too many color changes? Then you can easily reduce the number of color changes to 1,600. Still too many color changes? How about 160 color changes? You say that 160 color changes is more than you have ever seen in **any** embroidery design? I think that you are correct. The most color changes I have ever seen is 32 and I thought **that** was an enormous number of color changes. I guess that my software isn't going to be a big seller.

The point here is simply this. ***There is no easy way to create a beautiful design from a photograph.*** Unless you are willing to spend hours and hours planning, creating stitch objects, editing, stitching out test runs, and then start the entire process over again, you will not be pleased with the results. I would estimate that for me to digitize this photograph, it would take approximately 200-300 hours of work. That is if you wish to produce the level of quality I refer to as **wearable art**. You will understand why this is so difficult after you understand how the **Color Tolerance** feature of the software works.

How Color Tolerance Works

Graphics are composed of pixels. Each pixel contains numerical information that describes the color values of the pixel. These values range from 0 to 255 for the colors **Red**, **Blue**, and **Green**. Here is what a greatly magnified view of just 5 pixels for three straight lines.

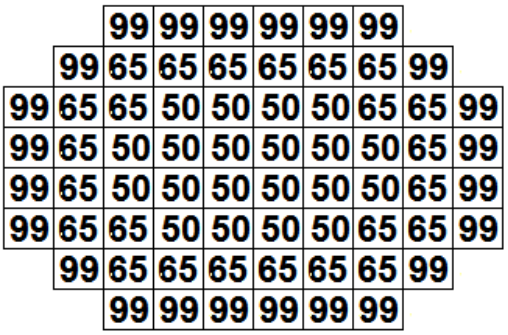
Red Line	255 Red 000 Green 000 Blue	255 Red 000 Green 000 Blue	255 Red 000 Green 000 Blue	255 Red 000 Green 000 Blue	255 Red 000 Green 000 Blue
Green Line	000 Red 255 Green 000 Blue	000 Red 255 Green 000 Blue	000 Red 255 Green 000 Blue	000 Red 255 Green 000 Blue	000 Red 255 Green 000 Blue
Blue Line	000 Red 000 Green 255 Blue	000 Red 000 Green 255 Blue	000 Red 000 Green 255 Blue	000 Red 000 Green 255 Blue	000 Red 000 Green 255 Blue

You can see that the value for each of these primary colors is 255 and 0 for the other two colors. If you do some mathematics you can see that the number of color combinations for a single pixel can be as high as 255 X 255 X 255 or 16,581,375. Let's pretend that we could represent each color by one number rather than three. Suppose we decided that **Red** is represented as the numbers from 1 to 256. **Green** is represented as the numbers 257 to 512. And **Blue** is represented as the numbers 512 to 768. Then a pixel with a color of pink (light red) would be calculated as follows:

Red value = 50
Green value = 0
Blue value = 0

Total numeric value of this pixel = 50 which translates as pink on your computer.

If we had a graphic that represented the center of a flower where the center was pink and the successive areas around the flower turned darker pink moving towards a red color, the pixels (with their numeric values) would look like this:



All of the pixels in the center of the design have a value of **50**. They are surrounded with a layer of pixels with values of **65** (a little darker pink). Finally, they are surrounded with a layer of pixels having a value of **99** (medium red).

If you use one of the automatic punching tools and click on one of the pixels with a value of **50**, the computer will begin to look at each adjacent pixel and check its value. If the value is the same as the pixel you clicked on, then that pixel will be added to the area of the generated stitch object. However, once the first pixel with a value of **65** is found, the computer will draw a border at than point and that pixel will **not** be included in the proposed stitch object. As soon as the software finds the boundaries of the stitch object, it stops the search process and displays a red and blue dashed line around the area it found. It also opens the **Color Tolerance** dialog and sets the initial value of **Color Tolerance** to zero. You have the option of increasing the value of the **Color Tolerance**. When you increase the value of **Color Tolerance** a little, the computer will then include the pixels that have a value of **65** in the proposed stitch object and it will display an enlarged area bounded by the red and blue dashed line. If you increase the value of **Color Tolerance** even more, then the pixels having a value of **99** will be included and so on. If you increase the value of **Color Tolerance** too much, then the entire graphic will be included and all you will end up with is a huge square of fill area bounded by the edge of the **Design Area**.

Using Color Tolerance

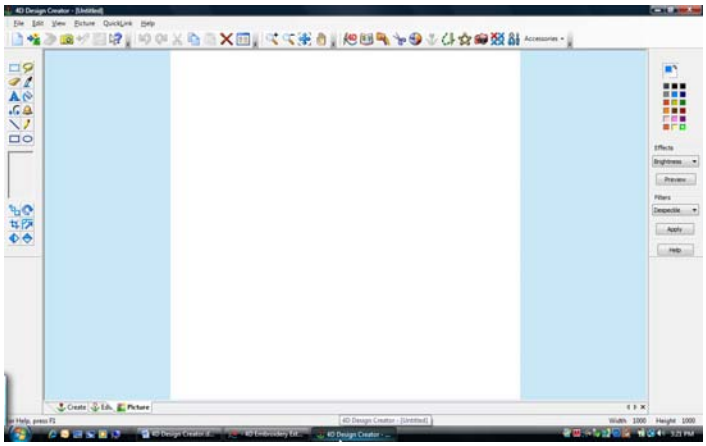
You can increase the amount of **Color Tolerance** two ways. One way is to **left click** to the right of the little slider in the **Color Tolerance** dialog to **increase** the amount of **Color Tolerance**. If you want to **decrease** the amount of **Color Tolerance**, then **left click** to the left of the little slider in the **Color Tolerance** dialog. The second way to set **Color Tolerance** is to simply change the number in the text box in the **Color Tolerance** dialog. To do this, **left click** on the number to place your insertion point in the text box, and then change the value directly. You may have to use this technique to fine tune the **Color Tolerance** setting because using the first method I described changes the value of **Color Tolerance** by **20** with each click.

Now, keep in mind that the picture of my dog had 5,000,000 pixels in it (**5 Mega Pixels** in camera terms) and single numeric values for each pixel ranging from **1** to **16,581,375.** All of these various values are scattered throughout the photograph (in some cases only 2 or 3 adjacent pixels have the same value). This is why it is so incredibly difficult to digitize photographs.

Chapter 4 – Using the Picture Window

Whether you plan to create your own graphic images to use as a template, or even if you are going to use an image that you loaded from another source such as a CD or your scanner, it's important to know how to use the tools on the **Picture** page of your software. If you have used a simple painting program such as Microsoft Paint (it is included with all of the Windows operating systems), then most of these tools will be familiar to you. Even if you've never used Microsoft Paint or any other drawing software, you'll find that using the tools on the **Picture** page will come easily once we run through a short exercise to create our own graphic.

When you start ***4D Design Creator*** and select the bottom option in the **ExpressDesign Wizard**, the **Picture** page is where the process begins. Here is what it looks like:



The main part of the screen represents a blank sheet of paper that you can draw on. There is a menu bar and a tool bar at the top of the screen. The various drawing tools are on the left side of the screen. Beneath a small option window, there are a number of image manipulation tools. On the right side of the screen at the top is the color selection palette. Beneath that palette are the **Effects** and **Filters** frames with a drop down box each one of which contains several tools.

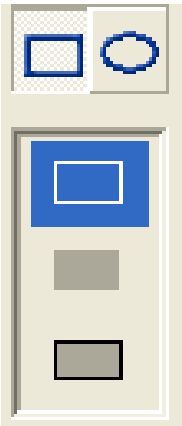
Let's create a graphic to use in our design creation projects. This graphic will incorporate all of the various kinds of objects that we can use in ***4D Design Creator*** with both the automatic and manual punching tools. And I will show you how you can create and/or edit a graphic here, and then send that graphic to the **ExpressDesign Wizard** to create your final product.

We will create a picture of a house with some shrubbery in front of it. It will be a simple drawing, but even in its simplicity, you will learn how to use most of the tools on the **Picture** tab and pick up some shortcuts towards creating your own graphics in the future. Let's get started.

1. We are going to first draw the main body of the house. We will use the **Rectangle Draw** tool  to do this. Before you do anything else, look at the box beneath this tool right now, it looks like this:

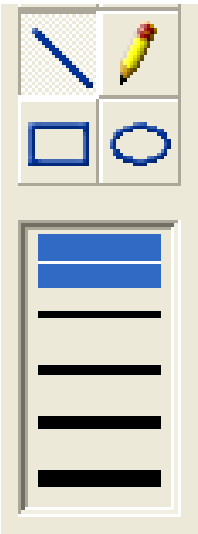
There is the **Rectangle Draw** tool and the empty box beneath it. **Left click** now on the **Rectangle Draw** tool. As soon as you click, on the **Draw Rectangle** tool the contents of the frame change.

2. Here is what the frame looks like at this point:



These are the **options** for the **Rectangle Draw** tool. This is what they mean. When you draw a rectangle, there are **two** colors used, a **foreground** color and a **background** color. When you draw a rectangle with this tool you can choose to draw only the **outline** in the foreground color (the top option shown selected here), only the **inside** (drawn in the **background** color), or **both** the **outline** and the **inside** colors (the bottom option). **Left click** on the top option to draw the **outline** only.

3. We're not ready to draw yet. We still have to activate the **line width** options so that we can make the outline of the rectangle wide enough to see. There are two tools that activate the **line width** options. They are the **Line**  and the **Freehand Draw**  . For now **left click** on the **Line** tool. Here is what the options look like now:

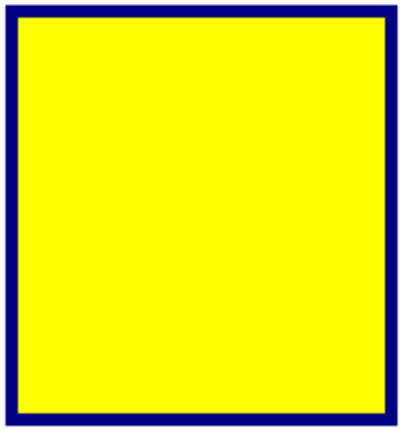


The options change to 5 different lines with differing widths. At first, the thinnest line at the top is selected. When you make your selection here, it applies to the **Rectangle Draw**, the **Ellipse Draw**, the **Line**, and the **Freehand Draw** tools. We want to select a line width that is easily seen but not too wide. **Left click** on the third line from the top to select it.

4. We have one more option to set before we go on. Earlier, I mentioned the **foreground** and **background** colors. Let's take a few seconds and see how they work and how to set them. Look at the **upper right corner** of the screen. Here is what it looks like:

The two squares in the little frame at the top of the tool show the colors presently in effect for the **foreground** and **background** colors. The **foreground** color box is <u>on top of</u> the **background** box. Beneath these squares are 18 color boxes to select from. For now, **left click** on the light blue box. Then, **right click** on the red box. Notice that the **foreground** box is now blue, and the **background** box is now red. With these options set, let's do a trial drawing.

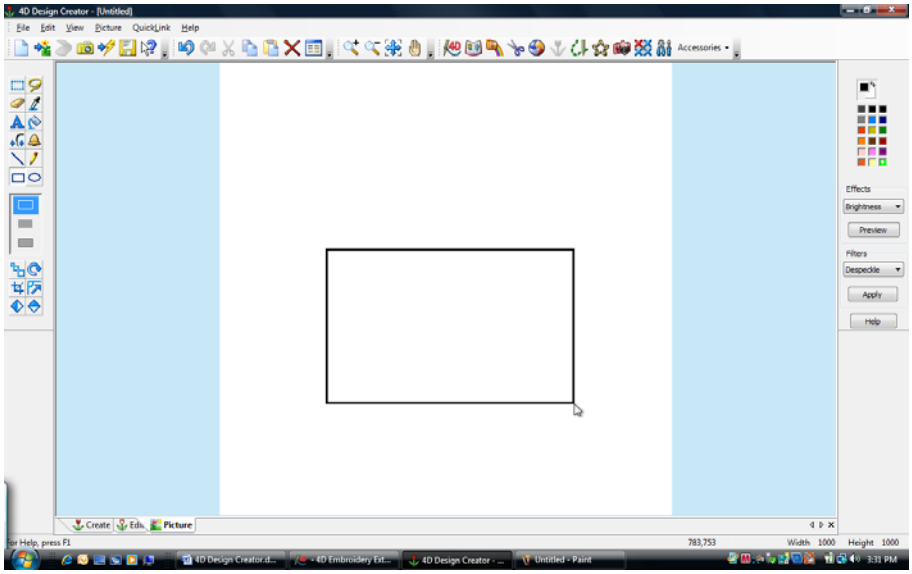
5. **Left click** on the **Draw Rectangle** tool, and then **left click** on the bottom option**.** This option will show the outline and the inside of the box. We already set the line width before. Let's draw a rectangle. Move your mouse pointer to a point on the left side of the blank area in the center of the screen. **Left click and hold** then drag to the right and down to draw a rectangle. It should look like this:



You should have a red inside and a blue line around the perimeter of the box. I had you change colors so that you can see the **foreground** and the **background** coloring in effect. If we had done this as black and white, you would not see the **background** color because it matched the color of the white paper on the screen. Now that you see how this works, switch the colors back to black for the **foreground** color (left click on the black color square) and white to the **background** color (right click on the white color square).

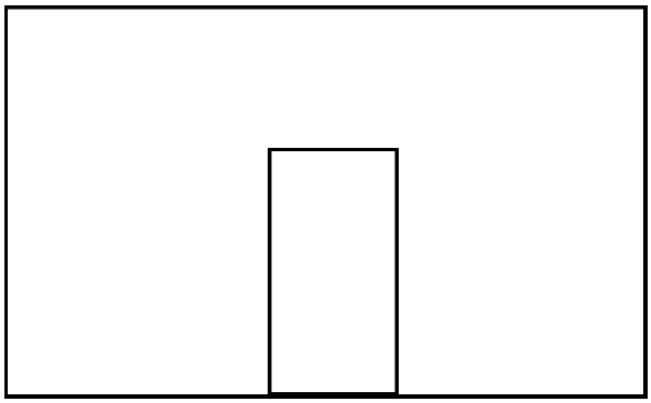
6. Let's draw the house. **Left click** on the **New** tool  on the toolbar to clear the screen. When you do this, the **ExpressDesign Wizard** will start. Once again, **left click** on the bottom option in the list **Start a New Design with no Picture** and then **left click** on the **Finish** button in the **ExpressDesign Wizard**.

7. **Left click** on the **Draw Rectangle** tool. When the options appear, **left click** on the top option that shows the **outline only**. Now, using the **left click and hold** technique, draw a rectangle on your screen that is placed like this on the screen:



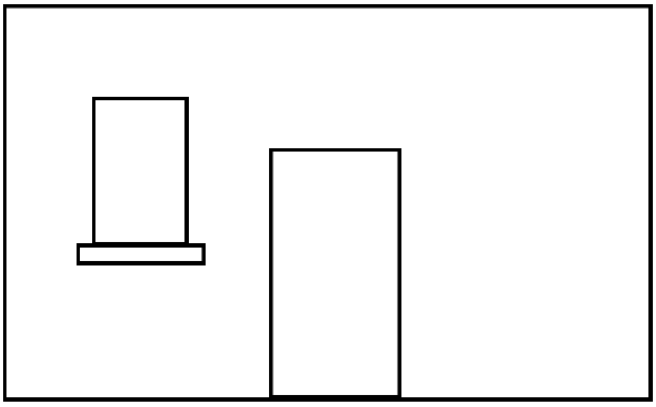
If you make a mistake while drawing, or just don't like what you see, you can undo the drawing by **left clicking** on the **Undo** tool  on the main tool bar.

8. Now, let's put the front door onto the drawing. Move your mouse pointer to the bottom of the rectangle you just drew and **left click and hold** as you drag another rectangle to make a front door. It should look like this:



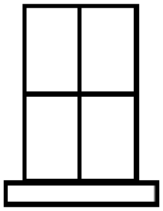
As you can see, this is going to be a one story house. As before, if you don't like the way your door looks, just left click on the **Undo** button and try again.

9. As long as we are using the **Draw Rectangle** tool, let's draw the windows and window sills. Draw a rectangle on the left side of the front door. Then draw a small rectangle at the bottom of the window. You house should look like this:



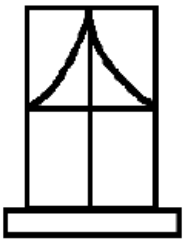
Let's switch to another tool, the **Line** tool and draw some panes into the window. Then, when we are finished, we can copy and paste it to the right side of the door.

10. **Left click** on the **Line** tool to select it. The way the **Line** tool works is that you **left click and hold** where you want the line to begin and then move your mouse pointer to the place where you want the line to end and **release the left mouse button** there to complete the line. Use this technique to draw a vertical and a horizontal line to divide the window into 4 panes. Your window should look like this:



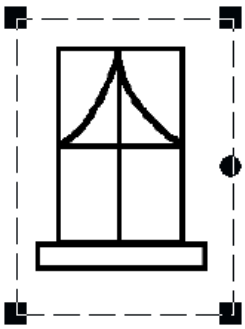
The next thing we are going to do is to put some curtains in the windows.

11. Now it's time to switch to another tool. **Left click** on the **Freehand Draw** tool. Before you begin to draw, notice that the same line thickness option is chosen. You could choose a new thickness now before you begin drawing. Let's keep the same thickness that we used on all of the other parts of our graphic. Draw some curves inside of your windows so they look like this:



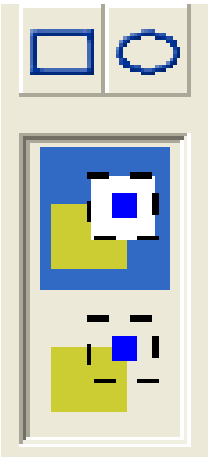
Before you draw the curtains, you might want to use the **Zoom In** tool  to get a better look at what you are doing. If you do use the **Zoom In** tool to draw the curtains, when you are done use the **Zoom To Fit** tool  to return to a full screen view.

12. Now that we have a good window drawn on our graphic, we can select the window and then copy and paste it onto our design. Before we copy anything we first have to select the window. This can be done with the **Box Select** tool  or the **Freehand Select** tool  . Let's use the **Box Select** tool. **Left click** on the **Box Select** tool and then **left click and hold** to drag a selection box around the left window, then **release** the left mouse button. Your screen should look like this:



There is a selection box around the area you chose. We aren't going to do this here, but you could left click and hold on any of the squares at the corners of the selection box and then drag to resize the selection. You could also left click and hold on the round dot on the right side of the selection box and then hold and drag it to rotate the graphic. What we are going to do is to **left click** on the **Copy** tool  on the main tool bar. Before we do any pasting, we have to look at something else.

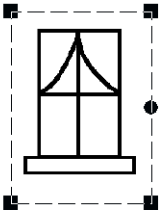
13. Look at the option box on the left side of the screen. Here is what it looks like and what the options mean:



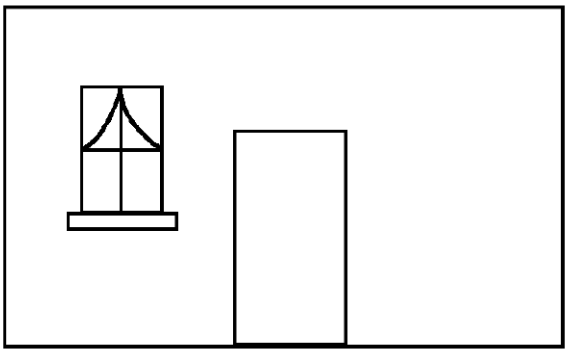
Notice that the top option looks like a blue square inside of a white background being pasted over a yellow square. On the bottom, if looks like a blue square sitting on a piece of clear plastic being placed over a yellow square. These are the two options you have. If you use the bottom option, then it doesn't matter if you copy a bit of background along with the object you really wish to copy, in this case, the window. You will see the difference in a few seconds. Leave the top option checked.

14. **Left click** on the **Paste** tool  .

15. Here is what your screen will look like after pasting a copy of the window:

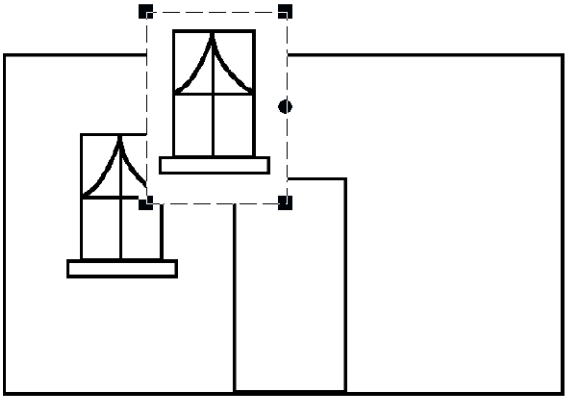


Move your mouse pointer to anywhere within the newly pasted window. The pointer will change from an arrow head to a four-pointed arrow. This means that you can **left click and hold** on the object and then drag it to its new place.



As you drag the window toward the right side of the house, stop when the selection is on top of any of the lines not selected. You'll notice that the non-selected lines are covered with a white background. Stop there for a second.

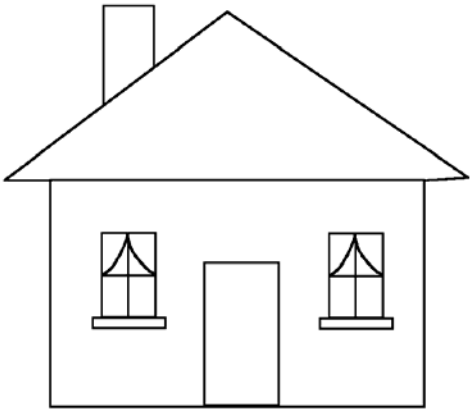
16. Here is what your screen should look like:



While the selection is here, **left click** on the bottom option and you will see that the background of the selection becomes transparent. This is what I always use because it makes it easier to place copied objects on the screen. Now, move the window to the right side of the screen to its proper position.

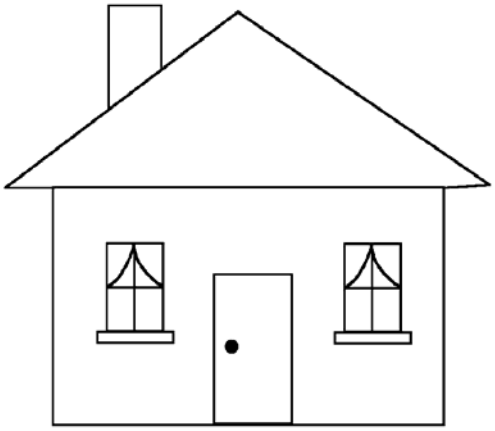
17. Let's draw the roof and chimney now. **Left click** on the **Line** tool. Remember how the line tool works. Left click and hold to fasten down one end of the line, then move your cursor to the next position and left click and hold to fasten down the other end of the line. Draw a roof and chimney on your house.

18. Here is what your drawing should look like now:



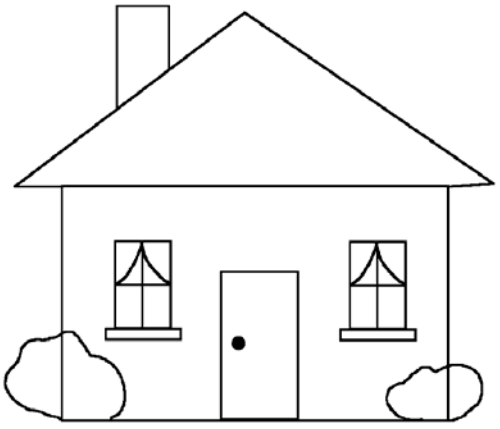
Now we will use the **Ellipse Draw** tool to put in a door knob. **Left click** on the **Ellipse Draw** tool to select it. **Left click** on the middle option so that you can draw the background color. Now **right click and hold** near where the door knob should be and drag a small circle to represent the door knob. When you **right click** while using the **Ellipse Draw** or **Rectangle Draw** tools, the color background/foreground options switch places. This causes the black color to show as the background color when using the **Ellipse Draw** tool giving us a black ellipse.

19. Here is what your drawing should look like now:



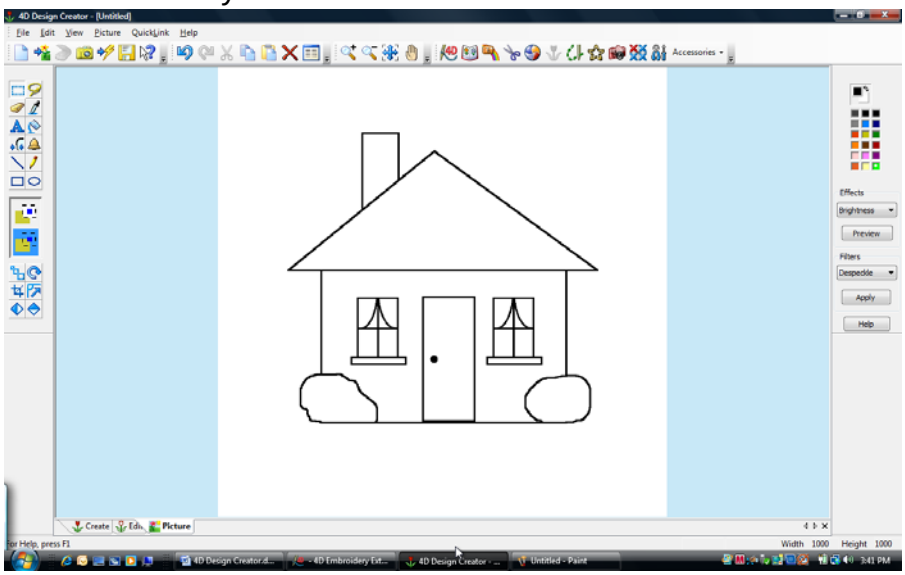
We are almost done. **Left click** on the **Freehand Draw** tool to select it and draw some shrubbery near both corners of the house.

20. Here is what your drawing should look like now:



There is one final tool to use to erase the straight lines inside of the bushes. **Left click** on the **Eraser** tool  . When you select it, the options box shows some squares of various sizes. **Left click** on the middle square, then move your mouse pointer to the screen to erase the lines. Put the box on top of the area to be erased and **left click and hold** while dragging the box to erase the lines. Remember to use the **Zoom In** tool first to get a good look at what you are doing.

21. This should be your final result:

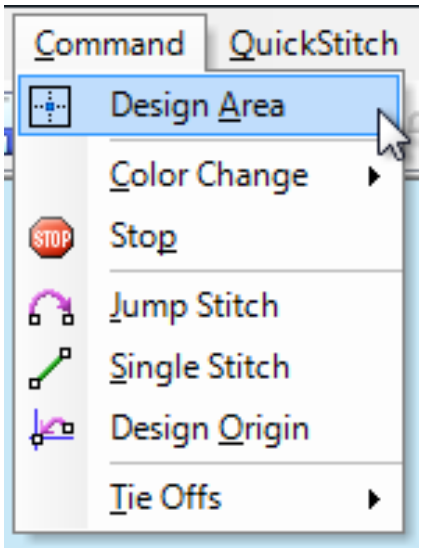


Now we are ready to save our work as a **CAN** file so that we can come back to it later if we want to.

22. **Left click** on the **Create** tab.

Before we save this file as a CAN, we have to do one more thing. We have to take the first step in design creation and use the **Design Area** tool  to select the part of the design that we are going to digitize. You could select only a part of the design to digitize, but in most cases, such as this, we will select the entire design. The **Design Area** tool is available on both the tool bar (right about in the middle) or you can find it by using the menu bar. Until you learn the meaning of the various tools by sight, I recommend that you use the menu bar to find them. This is the technique that I will use throughout the remainder of this book. **Left click** on the word **Command** on the menu bar.

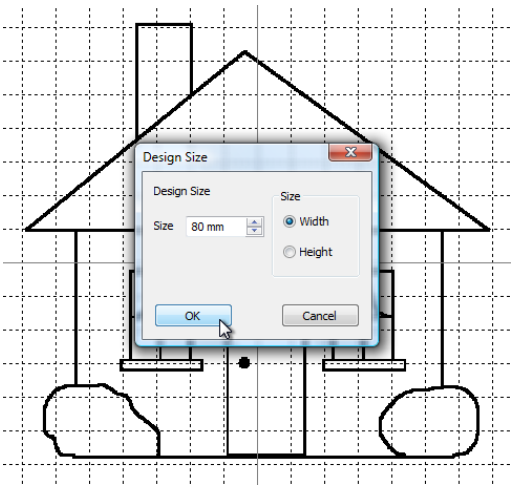
23. Here is what the drop down menu will look like:



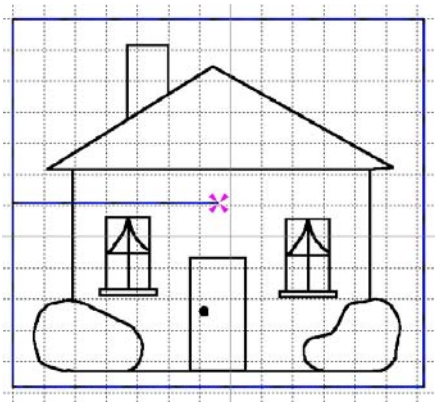
The first tool in the list at the top of the list is the **Design Area** tool. This is a handy hint to remind you that the **first command** you must use when design creation is the **Design Area** tool. We will come back to this menu later and I'll explain the use of all the other tools. For now, **left click** on the **Design Area** tool to choose it. As soon as you do that the menu will disappear and you are ready to use the **Design Area** tool.

24. All you have to do is create a rectangle around the area of the graphic that you want to digitize. You can do this by **left clicking and hold**, then drag your mouse pointer to the opposite corner of the design area to draw your selection box. i.e. If you begin in the upper left corner of the design, then drag in the direction of the lower right corner. If you begin in the lower left corner, then drag towards the upper right corner. As soon as you have drawn the selection box, the **Design Size** dialog will open. It looks like this:

Remember when I went through all of the various **Preferences** and said that you could override them later? This is where you get the chance to override or accept the **Design Size** setting. You can change anything here that you wish to change. I'm going to leave the **Size** setting at **80 mm** and the other setting on **Width**. This design will fit inside of a 100 mm x 100 mm standard hoop. When you have these settings selected, **left click** on the command button labeled **OK**.



25. Here is what your screen should look like now:



A blue box appears around the area you selected with another blue line going to the center of the design. These graphic elements show you the size of the design area you selected earlier. We have done a lot of work to this point and I **always** save my work at this point.

26. **Left click** on **File** on the menu bar and **Save As…** on the drop down menu. When the **Save As dialog** opens, save the design in **C:\Design Creation Projects\CANs** with a file name of **HouseWithNoStitchesBW.CAN**. (The BW stands for black and white.)

27. Before we leave this chapter, let's do one more thing and look at another one of the **NEW FEATURES** of ***4D Design Creator***. **Left click** on the **Picture** tab to return to the **Picture** page. Once there, use the **Flood Fill** tool shown here:

What you are going to do is use **Flood Fill** to color in all of the segments of the graphic.

28. To select a color for **Flood Fill**, just move your mouse pointer to the color selection grid in the upper right corner of the **Picture** page and **left click** on the color you want to use. We will just use simple colors in this simple design.

29. **Left click** on the **red** color tile. Now, move the tip of the paint dripping from the paint can that is now your mouse pointer to the place that you want to fill with color. Make the chimney, and the front of the house but not the attic, both red.

30. **Left click** on the **green** color tile. (This is **not** the color tile in the bottom row on the third column. That's something special that we will talk about later.) Make the attic and both bushes green.

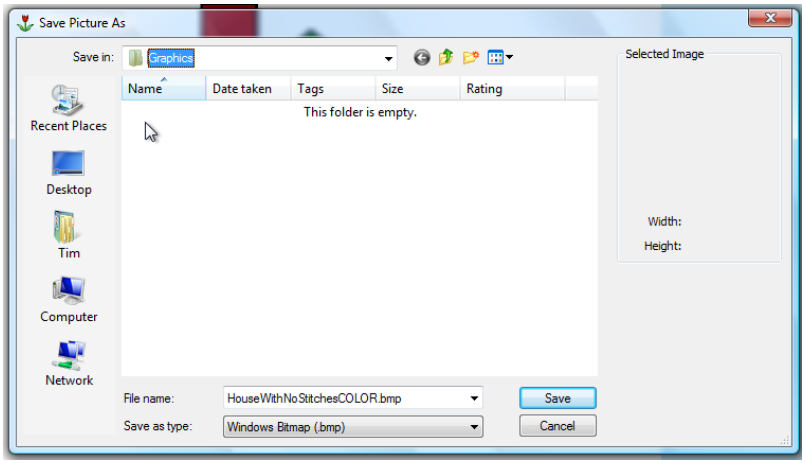
31. **Left click** on the **brown** color tile (left column, 3rd from the top). Make the front door and both window sills brown.

32. **Left click** on the **yellow** color tile (middle column, 3rd from the top). Make the segments inside of both windows yellow. Leave the curtains (the upper left and upper right segments of both windows) white. Now we are ready to save our work as a **CAN** file.

33. **Left click** on the **Create** tab. **Left click** on **File** on the menu bar and **Save As…** on the drop down menu. When the **Save As dialog** opens, save the design in **C:\Design Creation Projects\CANs** with a file name of **HouseWithNoStitchesCOLOR.CAN**.

34. Now I'll show you another exciting change in ***4D Design Creator.*** We are going to use another **NEW FEATURE**. We can now save just the graphic to a graphic file in ***4D Design Creator***. All you have to do is to **left click** on the **Save Picture As** tool  .

35. After you click on the **Save Picture As** tool, the **Save Picture As** dialog opens. Here is what it looks like:



Use your computer skills to save the graphic as

C:\Design Creator Projects \Graphics \HouseColor.bmp

Now we have a graphic that we can open in ***4D Design Creator.***

And, how is this for a surprise, you could, at this time, left click on **another new tool Send to Wizard**  **.** This will immediately open the **ExpressDesign Wizard** and let you create a design with this graphic.

Chapter 5 – Using the Automatic Punching Tools

4D Design Creator has a number of automatic punching tools for you to use. We will go over each one of them so that you can understand how they work and when to use each one. Before we start looking at the tools, you must understand one thing. The automatic punching tools work best when you are using a clean, well-defined graphic to begin with. They do not work well with photographs (which can contain more than 16 million colors) or with graphics that are not very clean and contain a lot of **aliasing**. Here is an example of a graphic subject that contains aliasing:

This is a really great picture of a chipmunk. I think they are really beautifully colored not to mention that they are among the cutest animals on earth. This graphic looks pretty good…at this resolution. It appears as though it only has about 16 colors, at most. But let's take a closer look at it.

Here is what it looks like when I use Microsoft Paint to zoom in to a part of the picture at 8X magnification:

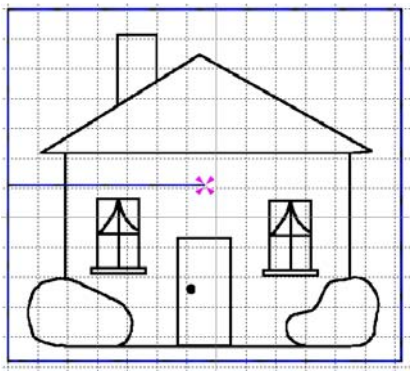
Even though you are looking at this in grayscale, you can see that the colors are applied in various areas and are not discrete. That is to say there are no single areas that appear as light brown, medium brown, white, black, grey, etc. Instead, the colors are blended to give an overall appearance of multi-colored fur. It is possible to obtain this kind of effect with the tools in ***4D Design Creator***, but not with the automatic punching tools. You can use multi-colored thread, but the final effect will still not give you the look of wearable art that I look for in design creation of such color-variable areas as animal fur. We will cover this in the next chapter on using the manual punching tools.

Let's begin working with the automatic punching tools and you will see how you can use them to create a variety of beautiful designs. So that we can use a good, clean graphic, we will digitize the house we created earlier. So let's get started.

Using QuickStitch Fill Tools

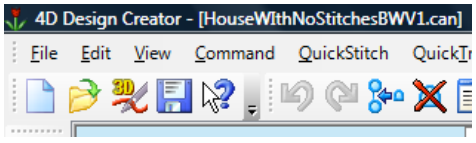
1. The first thing we are going to do is to clear your **Work Area** and bypass the **ExpressDesign Wizard** by choosing the last option **Start a New Design with no Picture**. **Left** click on the **Create** tab and then click on **File > Open**. When the **Open** dialog begins, use your computer skills to find the CAN you saved in Chapter 4, **C:\Design Creator Projects\CANs\HouseWithNoStitchesBW.CAN**.

2. As soon as you open this file, here is what your screen will look like:

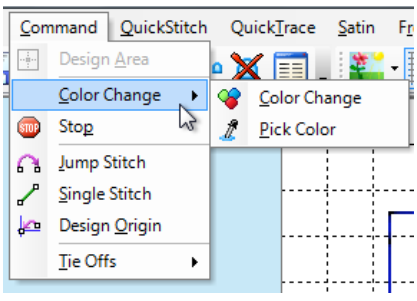


Good thing that we saved that CAN file earlier, otherwise, we would have had to recreate the graphic. At this point we are ready to begin selecting the various stitch objects that we will use to create this design. But before you create any stitch objects, let's use the **Save As…** tool to save this design with a different name. That way, if we ever want to go back and start over with the original design, it will be there waiting for us.

Left click on **File** on the menu bar. **Left click** on **Save As…** on the drop down menu. When the **Save As…** dialog opens, navigate to the folder with the name **C:\Design Creator Projects\CANs** and save the file with a name of **HouseV1.can.** You will see the new file name on the title bar as shown here.



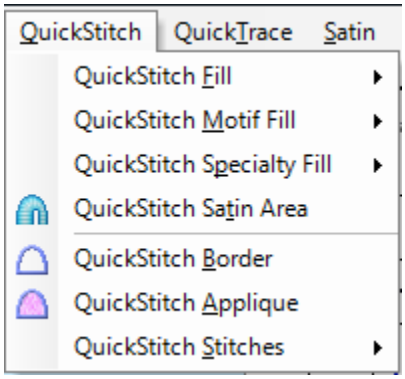
3. Before we begin to place stitch objects into our design we should change the color of our thread. Right now, the default thread color of blue is being used. The first design segment I want to create is going to be the chimney and I want it to be done in red. So let's change to that color now. Following what I said earlier, let's use the **Command** drop down menu. **Left click** on the word **Command** on the menu bar. Here is what we will see:



The first thing you should notice is that the **Design Area** tool is grayed out. You can't use this tool more than once in a project. That's why it is grayed out. The next thing to notice is that the **Color Change** tool is the next tool down on the list. I like to think that it was placed there because it is normally the next thing you would do right after using the **Design Area** tool. i.e. Change colors to the first color that you want to use to digitize. Let's do that now. **Left click** on the **Color Change** tool to open the little sub-menu. We are going to **left** click on the **Color Change** option. The **Pick Color** option is used when you have a color graphic on your **Work Area** and you want to have the software find a thread color that most closely matches the color of the graphic. When the **Color Selection** dialog opens, choose the dark red color in

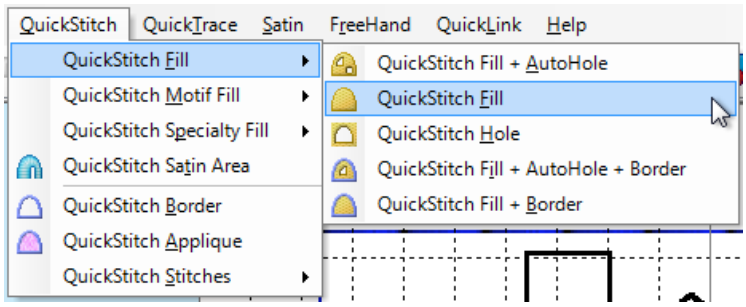
Quick Colors at the bottom of the dialog (top row, fourth from the left.) Then **left click** on the **OK** button to close the **Color Change** dialog.

4. Now, we are ready to add our first stitch object. Once again, we are going to use the tools as they appear on the menu bar. **Left click** on the words **QuickStitch** on the menu bar. Here is what the pop down menu looks like:



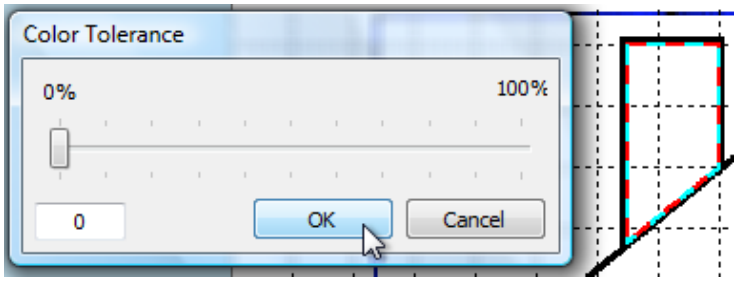
Four options **QuickStitch Fill**, **QuickStitch Motif Fill**, **a NEW Option QuickStitch Specialty Fill,** and **QuickStitch Stitches**, have an arrow pointing to the right. This means that there are sub-menus for these options. Three options a **NEW feature, QuickStitch Satin Area, QuickStitch Border**, and **QuickStitch Applique**, have an icon to their left. This means that if you click on either of these options, then that tool is active **immediately** and there are no sub-options for this type of stitch object. For now, we are going to use one of the **QuickStitch Fill** options.

5. To activate the sub-menu for **QuickStitch Fill**, just **move your mouse pointer to that option** and the sub-menu will open. Here is what the sub-menu looks like:



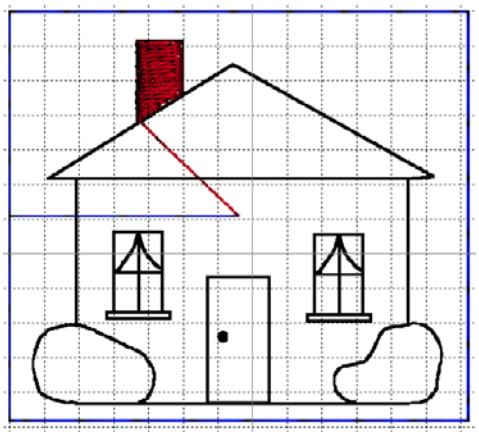
There are 5 tools available on the **QuickStitch Fill** sub-menu. I will go into the exact operation of each. For now, let's begin with the simplest one and **left click** on the second one down from the top, **QuickStitch Fill**. When you click on the tool, it seems as though all that happened was that the sub-menu went away. In reality, what you did was to select this tool. The tool will remain selected until you put it down. This is a very important concept when using ***4D Design Creator***. Imagine that you are painting a picture with a paint brush and you can only use one hand at a time. As soon as you pick up a brush, you have to either use that brush or put it down before you choose another brush. The way you know that you are holding a tool in ***4D Design Creator*** is to look at the colors of the various icons on the tool bar on the left side, the right side, and the top of the screen. Notice that almost all of the tools are grayed out. Let's try putting down the **QuickStitch Fill** tool. **Right click** anywhere in the **Work Area** and you will see that all of the icons that were grayed out are now in color. This tells you that you can now choose a different tool. If you ever try to do anything in ***4D Design Creator*** and the software does not seem to be responding, check the color of the tools on the screen. If they are grayed out, then this is the problem. You must **right click** to make them available again. Now that you have seen this process, go ahead and **left click** on the words **QuickStitch** on the menu bar and then open the **QuickStitch Fill** sub-menu and **left click** on the **QuickStitch Fill** tool.

6. Let's begin by creating a stitch object for the chimney. Before we do, let's do a quick review. We chose the color we want to use (red). We chose the type of stitch object we want to use (fill stitches). And we chose the tool we want to use to insert this stitch object (**QuickStitch Fill**). Move your mouse pointer to the inside of the chimney and **left click**. Here is what you should see:



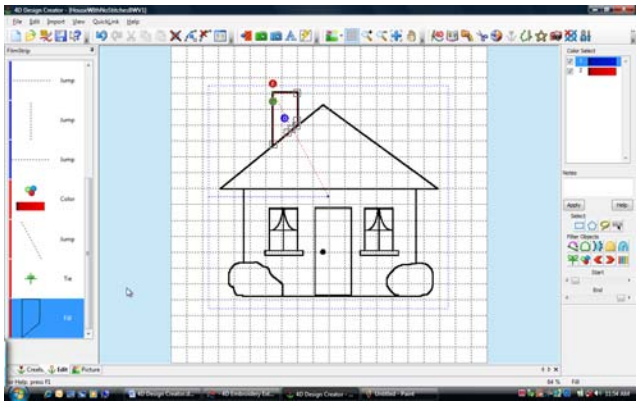
There are two things notable here. First, look at the dashed line inside the chimney. This tells you where the software is going to place the stitches. The second thing is the **Color Tolerance** dialog. For now, just **left click** on the **OK** button in **Color Tolerance.**

As soon as you click on **OK** in **Color Tolerance**, after a short delay, your screen will look like this:



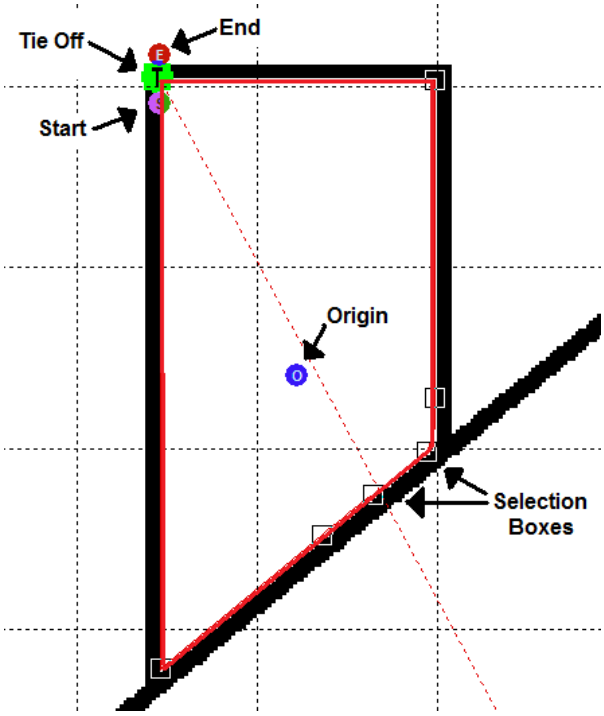
Amazing! Here is what happened with that one click. (If your stitches don't look like this, but instead look like thin little stitches, then you do not have the **3D View** feature turned on. **Left click** on the **3D View** tool  on the tool bar and turn the **3D View** on and off to see the difference. Make sure that it is **on** when you are done.) The software put in a **Jump Stitch** to the bottom of the chimney. It checked the graphic and determined the extent of where the stitches should go. The stitches were put in place and a **Tie Off** was automatically generated at the start and end of this stitch object. It looks pretty good. But we can make it look better. Let's change the **Fill Pattern** in this object to one that resembles bricks. We will do that on the **Edit** page. **Left click** on the **Edit** tab at the bottom of the screen.

7. Here is what you should see now:



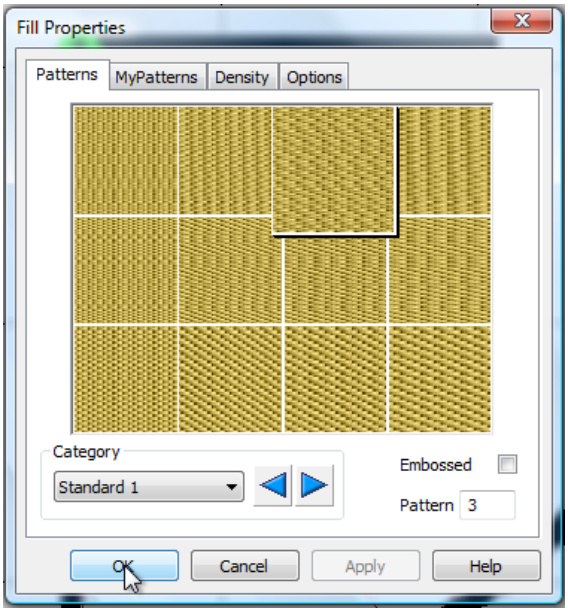
What happened to your stitches? They are still there and they are currently selected. The most important principle of editing is that you must **select** the object(s) that you wish to edit, before you can work with the **Properties** of a given object(s). The **easiest** way to select **stitch objects** is to use the **NEW FilmStrip** on the left side of the screen. Here, you can see that the **Fill** object for the chimney is in selection mode. To select an object with the **FilmStrip** all you have to do is **left click** on the object. Let's take a close look at the selected object and you will see more **NEW features** found in ***4D Design Creator***.

8. Here is what the selected object (the fill stitches for the chimney) looks like close up:



The little squares are the **Selection Boxes** and they show us which object is currently in selection mode. All of the other different colored dots are part of the selected object. In this case the **Start** position is noted (the place where the beginning of the **Fill** stitches begins), the **End** position is noted (the place where the **Fill** stitches ends), the **Tie Off** location, and a **NEW** feature, the **Origin** (the center location of the **Fill** stitch object). All of these objects can be moved by **left clicking and holding** on the object and then dragging it to a new location on the **stitch object** then **releasing** the **left mouse button**. **NOTE:** You cannot move the **Tie Off** by itself. Because this **Tie Off** is made at the **Start** of the **Fill** object, when you move the **Start** property, the **Tie Off** will move with it. Placement of the **Origin** is not important at this point. But when we examine the properties of the **Specialty Fill** objects you will see the effect of moving the **Origin**. You can also move the **Selection Boxes** using the same drag and drop technique I described for moving the **Start**, **End**, and **Origin** properties. Go ahead and try moving some of these boxes for practice. After moving one or two of them around, **left click** on the **Undo** button to remove these changes. Let's look at the rest of the **Fill Properties** now.

9. With the chimney in selection mode, **right click** in the **Work Area**. Here is what you will see:

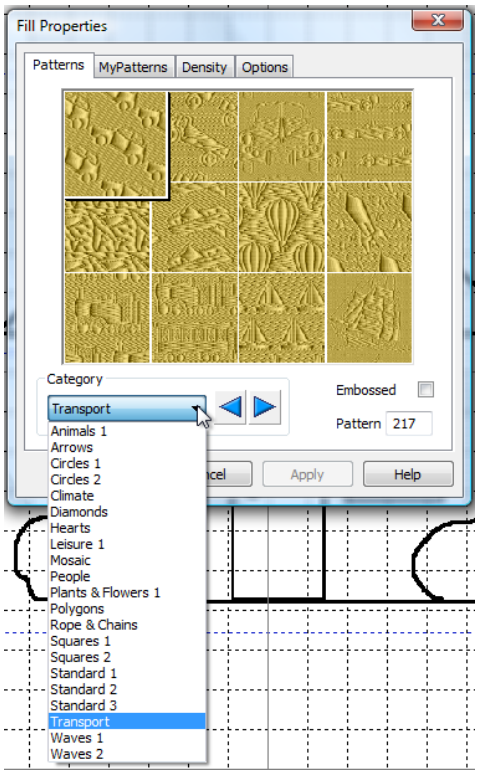


This is the **Fill Properties** dialog. There are four tabs full of options for fill stitch objects. This dialog allows you to modify all of them. For now, we are just going to change the fill pattern. You can see that pattern number 3 is selected in the text box in the lower right corner. You can **left click** on either of the two buttons with the blue arrowheads on them to move through the **21** different categories of **Fill Patterns**. Or, you can **left click** on the drop down arrow in the **Category** combo box to see a list of the categories. There are now **252 Fill Patterns** grouped by theme. You can see them all in the ***4D Design Creator Stitch Guide***.

There are two ways to select a **Fill Pattern**. You can scroll through the **Categories** of **Fill Patterns** by left clicking on either of the two blue arrowheads next to the **Category** combo box until you see something you like. When you see the **Fill Pattern** you like, you simply **left click** on that **Fill Pattern** to select it. Or, if you can remember the number of the fill pattern (or if you look it up in the ***4D Design Creator Stitch Guide***) you can **left click** on the number shown in the **Pattern** text box and type in the number that you wish to use. **SPECIAL NOTE FOR *3D Digitizing* USERS:** Virtually **all** of the pattern numbers have changed in ***4D Design Creator***. For example, pattern number **66** used to be a brick pattern. Pattern **66** is now in the **Circles** category and it doesn't resemble bricks at all. The old pattern **66** is now pattern **138**. Therefore, if you have a CAN file that you created using the old pattern **66**, you will now find that the **new** pattern **66** will be in your design. You will have to manually change your CAN file to use the new pattern **138** to retain the same look in your design. **IMPORTANT SPECIAL NOTE FOR *3D Digitizing* USERS:** If, like me, you used the old **Fill Pattern** number **108** (the one that simulates a **Satin** fill), the new fill pattern number to use is **36**.

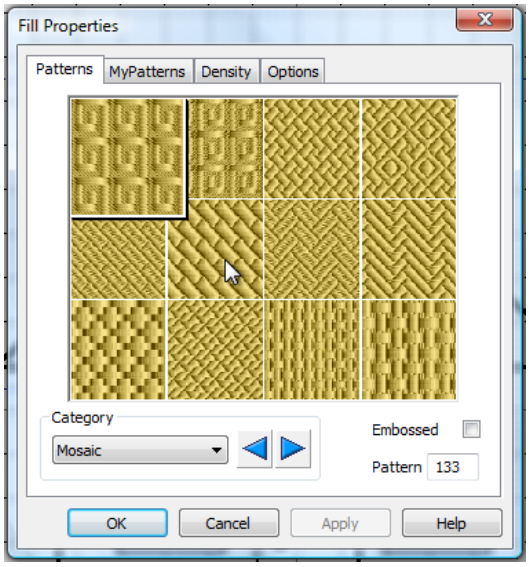
10. Let's take a few seconds to relax and look at some of the great fill patterns that are available. **Left click** on the arrowhead that points to the right in the **Category** frame. You will see that all 12 of the **Fill Patterns** change to the next category, **Standard 2**. **Left click** again on the same arrowhead and look at the next category, **Standard 3**. Here, in the lower right corner of the dialog, you will see **Fill Pattern** number **36** (the simulated satin stitch pattern). **Left click** again on the same arrowhead and move on to the next category, **Transport**. These are all great **Fill Patterns** and I never tire of looking at them. However, let's look at a faster way to get to the pattern we want.

11. **Left click** on the drop down arrow on the right side of the **Category** combo box. Here is what your screen should look like:



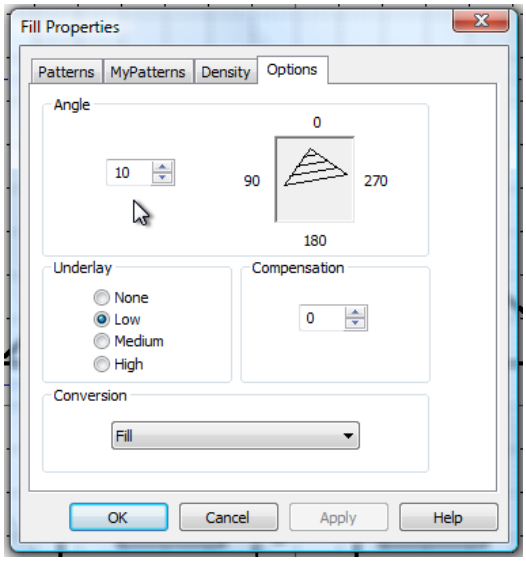
Now you can see all of the various **Categories** of **Fill Patterns**. The name of each **Category** will help you find the kind of **Fill Pattern** you are looking for. I want to find a pattern that looks like a set of bricks to use in the chimney. As you look down the list, it's easy to reject a number of the various **Categories**. As I scan the list I see a **Category** named **Mosaic**. Let's take a look at the patterns available in that **Category**. To do this, **left click** on the word **Mosaic** in the list. The list will close and you will see the new set of **Fill Patterns**.

12. Here is what the **Fill Properties** dialog looks like now:



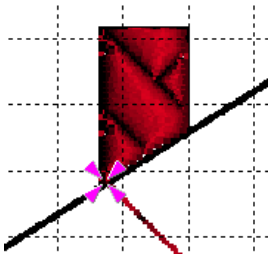
Look at the second row of patterns and the second pattern from the left. It looks just like bricks (but set on an angle). Let's select that pattern for the chimney. **Left click** on that pattern and you'll see that the number in the **Pattern** text box changes from 133 to 138. I've never seen a chimney with the bricks set on an angle, so let's change that too. We can do that right now by **left clicking** on the **Options** tab at the top of the **Fill Properties** dialog.

13. Here is what the **Fill Properties** dialog looks like now:



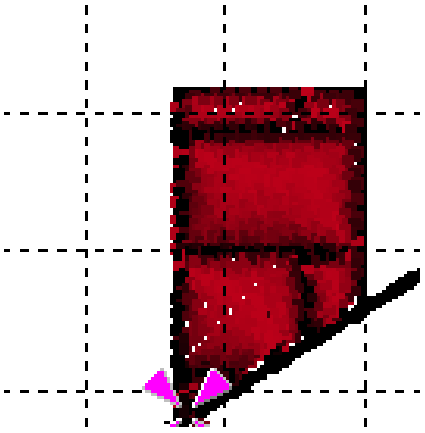
You can see that we can set the **angle**, the amount of **underlay**, and the **fill compensation** here. Remember, all of these were settings that we saw earlier in **Preferences**. We can change each of them here and they will apply to this **one stitch object only**. For now, let's just change the **angle** value to **0**. You can either type in the value in the scroll box, click on the up or down arrow in the box to watch the numbers go up or down, and watch the angle of the triangle exemplar in the box on the right. Values can range from 0 to 360. So, if you want the pattern tilted 10° to the right, you have to go all the way around to a setting of 350°. You cannot enter negative numbers. Now that you completed changing the angle, **left click** on the command button labeled **OK**. This will return you to the **Edit** page. You have to **left click** on the **Create** tab to see the results of this change.

14. When you view the results…SURPRISE! The bricks look like this:



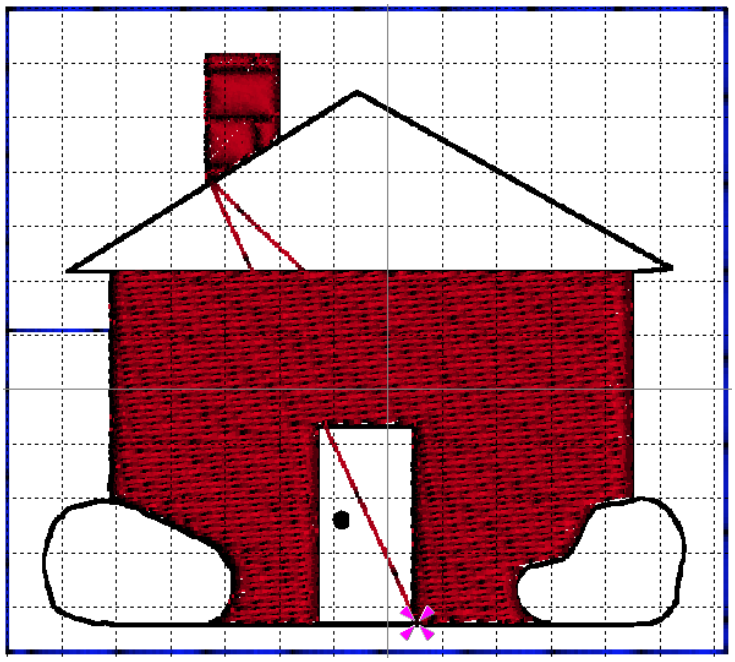
The bricks are not horizontal! We did set the **angle** to 0°. Here is the story. Some of the fill patterns are designed on an angle and then turned to 10°. This means that you have to play around with the angle to get it right. Follow the instructions in steps 12 and 13 above, but this time change the angle to **45**°.

15. When you return to the **Create** page, this will be the result:



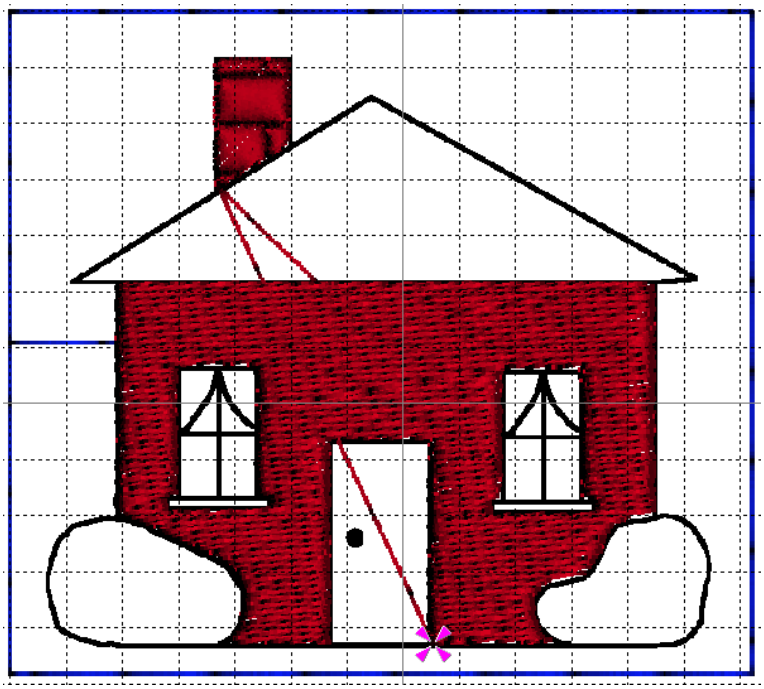
You can see that the bricks are now horizontal. I can't explain why you have to set the angle at 45°. And that value may not work for other fill patterns. You just have to experiment with the angle until you get the effect you want. Let's go on to the next automatic punching tool.

16. Look at the color of the tools on the right side of the screen. They are all available again and we did not have to do a right click as I described earlier. This is what happens when you stop and use the **Edit** page. Let's create a stitch object for the main body of the house now. Pick the **QuickStitch Fill** tool as we did earlier. If you forgot how to pick the tool, take a look at steps **4** and **5** above. We will leave the color as red because we are going to use the same fill pattern to put bricks on the front of the house. Now that you have the **QuickStitch Fill** tool chosen, **left click** anywhere on the front of the house where bricks should be seen (like right above the door). When the **Color Tolerance** dialog opens, just **left click** on the **OK** button. Here is what happens:



Whoops! What happened to the windows? The windows are covered with stitches. This is definitely **not** what we wanted. This happened because we used the wrong automatic punching tool. We should have used the **QuickStitch Fill + AutoHole** tool. Since we know that we made a mistake we should correct it before we proceed. **Right click** to put down the tool we are using. **Left click** on the **Undo** tool  . The stitches in the fill area on the front of the house will disappear. Just like we did in steps **4** and **5** above, we are going to choose another **QuickStitch** tool, but this time we will select the **QuickStitch Fill + AutoHole** tool. Here is how this tool works. After you click in the area where you wish to place your stitch object, the software searches the graphic in all directions until it finds a color change in the graphic. These color changes are saved as "holes" in the design. Now that we chose the right tool for the job, you'll see the difference.

17. **Left click** in the same spot above the door and look at the difference in the result:



You can see here that the windows are now visible. When we create stitch objects for them later, there will be no other stitches beneath them to show through. However, look at the fill pattern in the front of the house. It does not look like bricks. Try your newly acquired skills at using the **Edit** page and change the fill pattern and angle like we did in steps **9**, **10**, **11**, **12**, **13** and **14** above. But now, there will be a new challenge. You might not select the correct object. Here is what I mean.

18. When you left click on the same area above the door, you may or may not see a series of clear blocks around the perimeter of the design. This is because you might accidentally select the **Color Change** command in the center of the design. Earlier, I said that we had to pay close attention to the object name in the lower right corner of the **Edit** screen. Now is as good a time as any to explain this **extremely important concept**.

Finding A Specific Object On The Edit Page

As you create objects, they are placed onto the canvas by you and some objects are created by the software itself (especially when you are using the automatic punching tools). Even though we have only created objects for two areas of the canvas, there are actually **16** objects in this design right now. Here they are along in the order in which they were placed in the design: **Color command, Jump Stitch, Jump Stitch, Jump Stitch, Jump Stitch, Jump Stitch, Jump Stitch, Jump Stitch, Color Command, Jump Stitch, Fill Area, Tie Stitch, Jump Stitch, Tie Stitch, Fill Area, Tie Stitch**. Here is how these objects break down.

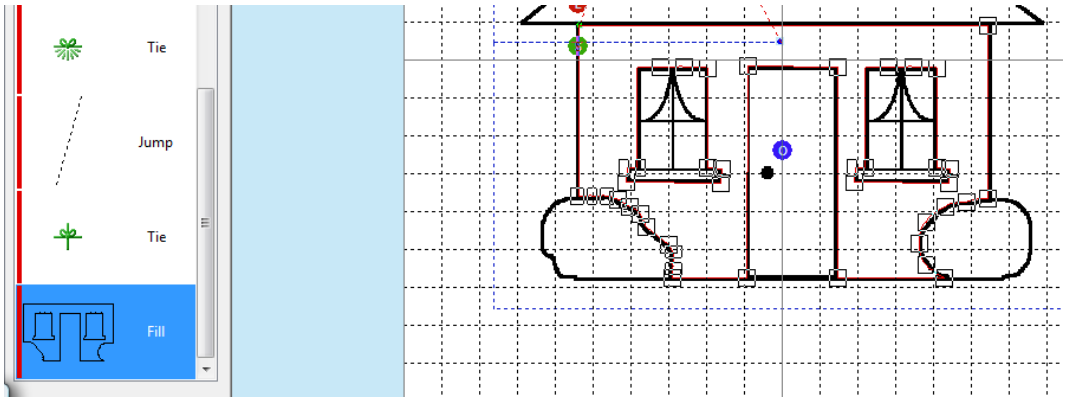
The first **Color Command** and the following seven **Jump Stitches** were all put in by the software when the overall size of the design was set when you used the **Design Area** tool. (You didn't know that you did all of that did you?) The second **Color Command** is the one you actually did when you selected the color red with the **Color Change** tool. The next **Jump Stitch** was automatically generated when you used the **QuickStitch Fill** tool to create the chimney stitches. Those stitches were the first **Fill Area**. The **Tie Off** was automatically generated at the end of the first **Fill Area**. The next Jump Stitch was automatically generated when you used the **QuickStitch Fill + AutoHole** tool to create the stitch object for the front of the house. Another **Tie Off** was generated by the software when we created the second **Fill Area**. The second **Fill Area** was generated by you when you used the **QuickStitch Fill +**

AutoHole tool. The final object, the **Tie Off** was generated automatically by the software as the result of your use of the **QuickStitch Fill + AutoHole** tool.

If you click on the design on the **Edit** page and discover that you are on the wrong object, you can either click in a new area and try to select it or you can press the **left** and **right** arrow keys on your keyboard to move through the objects. Try that now.

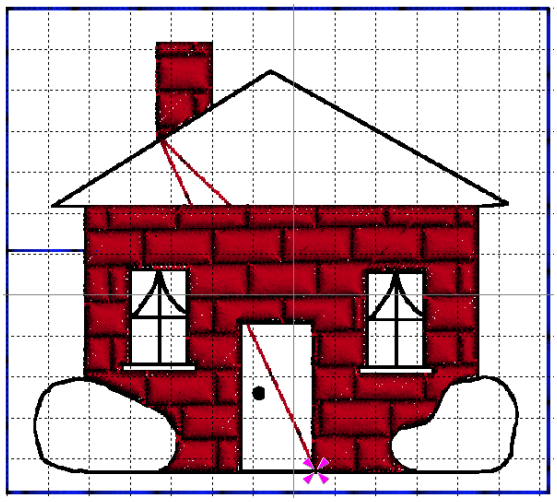
This process of using the left and right arrow keys used to be the only way to accurately find an object. But, with the release of ***4D Design Creator***, we now have one of the best tools available to use when editing our design and that tool is the **FilmStrip**. I will cover the **FilmStrip** in **Chapter 7 – Basic Editing**. Now, let's get back to our project.

19. **Left click** on the front of the house. Check the name of the object you selected in the lower right corner of the screen. If it says **Fill Area** and there are a series of clear squares around the house then you are ready for the next step. If you do not see **Fill Area** then you have to use the **left arrow key** and/or the **right arrow key** to find the **second Fill Area** object. You should also see, on the **FilmStrip**, that a **Fill** object is selected and the shape of the object resembles the front of the house. Here is what your screen should look like:



You can see the selected object on the **FilmStrip** and it looks like the front of the house. (You can also select this object by **left clicking** on the object in the **FilmStrip**.) Now you can **right click** on the **Work Area** and change the **Properties** of the **Fill Area** to use the brick-shaped pattern as we did in the chimney.

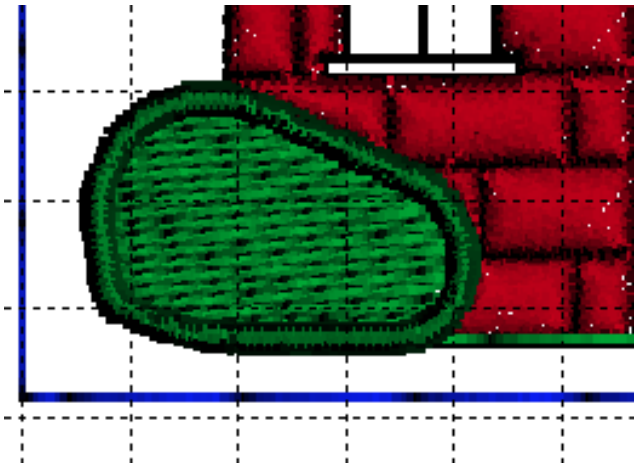
When you are done, this should be the result:



Looks great so far. Now, let's change colors again and create stitch objects for the bushes.

20. **Left click** on the **Create** tab. **Left click** on the word **Command** on the menu bar. When the drop down menu appears, **left click** on the **Color Change** tool (second from the top). The **Color Selection** dialog opens. Look at the **Quick Colors** frame at the bottom of the **Color Selection** dialog. **Left click** on the dark green color block (top row, third from the left). **Left click** on the **OK** command button.

21. Let's pick a different automatic punching tool. **Left click** on the word **QuickStitch** on the menu bar. Point to the option **QuickStitch Fill** and another menu will open. This time we will choose the bottom option on this menu. **Left click** on the option **QuickStitch Fill + Border**. We are now ready to create the next **stitch object**. **Left click** inside of the left bush at the bottom of the house. When you see the **Color Tolerance** dialog, just **left click** on the **OK** button. Here is the result:



This tool places a satin border around the outside of the fill area. I wouldn't normally use this tool for this design, but this is practice only. Let's take a few minutes to check out the **Properties** of this stitch object on the **Edit** page and see what we can do with it.

22. **Left click** on the **Edit** tab. Look in the lower right corner of the screen. The object we are pointing to is the **Color Change** command and the word in the status bar is **Color**. **Press** the **left arrow** key one time. The object we are pointing to now is a **Tie Off.** Notice that the selected object on the **FilmStrip** moved **up** one level. **Press** the **left** arrow key once more. Now we are on the **Satin Border**. Look at the main part of the screen and you will see a series of clear boxes around the edge of the bush. These are the points that describe where the satin border will be placed. **Press** the **left arrow** key one more time. Now the object name is **Color Change**! I'll tell you about that in a minute. **Press** the **left arrow** key one more time. Now it reads **Tie Stitch**. **Press** the **left arrow** key one more time. Now we are pointing to the **Fill Area** object. **Press** the **left arrow** key one more time. We are now on the **Tie Off** that will stitch before beginning the entire **Fill Area with Satin Border** object. **Press** the **left arrow** key one more time. Now we are pointing to the **Jump Stitch** that took us from the end of the previous **Fill Area** to the start of the new **Fill Area**.

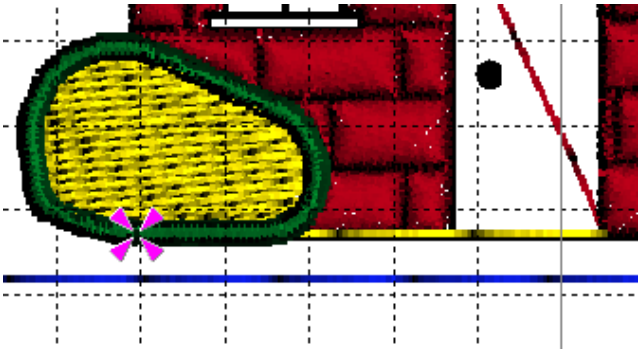
This object is a little more complex than the object created by the **QuickStitch Fill** tool. As is usual with an object created by an automatic punching tool, a number of objects are actually created. Here is what they are and the order in which they are created:

Jump Stitch	This gets us to the start of the new stitch object.
Tie Off	This secures the thread to the canvas at the start of the object.
Fill Area	This defines the placement and size of the **Fill Stitches** and gives us access to the **Properties** of the **Fill Stitches**.
Tie Off	This secures the thread to the canvas at the end of the **Fill Area**.
Color Change	This allows us to change the color of the **Satin Border** to be stitched out around the **Fill Area**.
Satin Border	This defines the placement and size of the **Satin Border** and gives us access to the **Properties** of the **Satin Border**.
Tie Off	This secures the thread to the canvas at the end of the **Satin Border**.
Color Change	This controls the color of the **next stitch object**. The presumption is that even if you change the color of the **Satin Border**, you will want to begin the **next stitch object** with the same color you were using when you first created this **stitch object**, i.e. **Fill with Satin Border**.

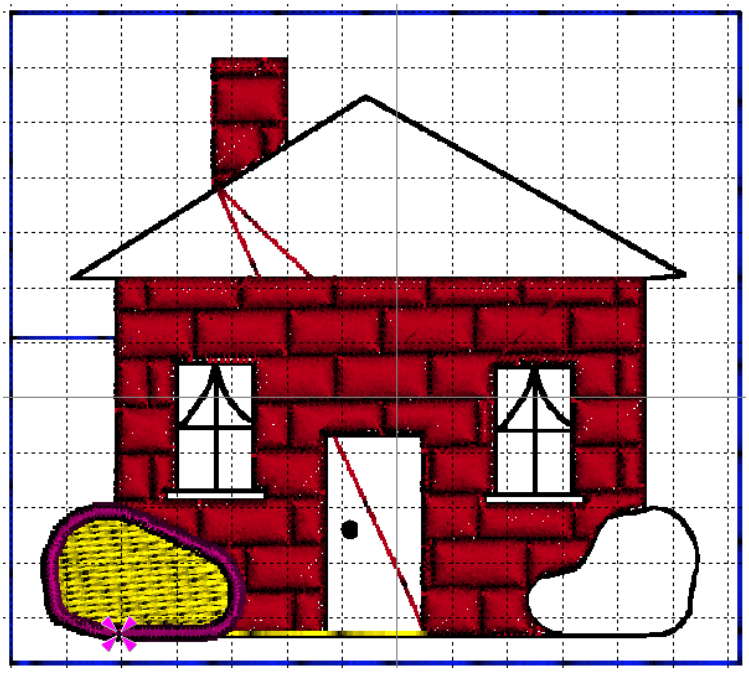
You can change the color of the **Fill Area** or the **Satin Border** separately from each other. You can also change the location of the edges of the **Fill Area** and the **Satin Border** separately. Let's continue now on the **Edit** page and make some changes.

23. Look at the **Color Select** tool on the upper right corner of the screen. There are **5** color blocks in it. Reading from the top they are: Blue (the default thread color), Red (the color of the chimney and front of the house), Green (the next **3** blocks). The first of the green blocks controls the color of the **Fill Area**. The way we know that this is true is that the **Fill Area** must be stitched out first so that then the **Satin Border** stitches out, it will **cover** the edge of the **Fill Area** stitches. The second **Color Change** command controls the color of the **Satin Border**. Let's change the colors of these objects. **Left click** on the third color down (the top green color). The **Color Selection** dialog opens. **Left click** on one of the **Yellow** blocks in **Quick Colors** at the bottom of the dialog. **Left click** on the **OK** button to close the **Color Selection** dialog. **Left click** on the **Create** tab to see the change. Here is what you will see:

You can see that the color of the **Jump Stitch** to the **Fill Area** and the **Fill Area** stitches changed. The color of the **Satin Border** remains unchanged. Let's change the color of the **Satin Border** now.

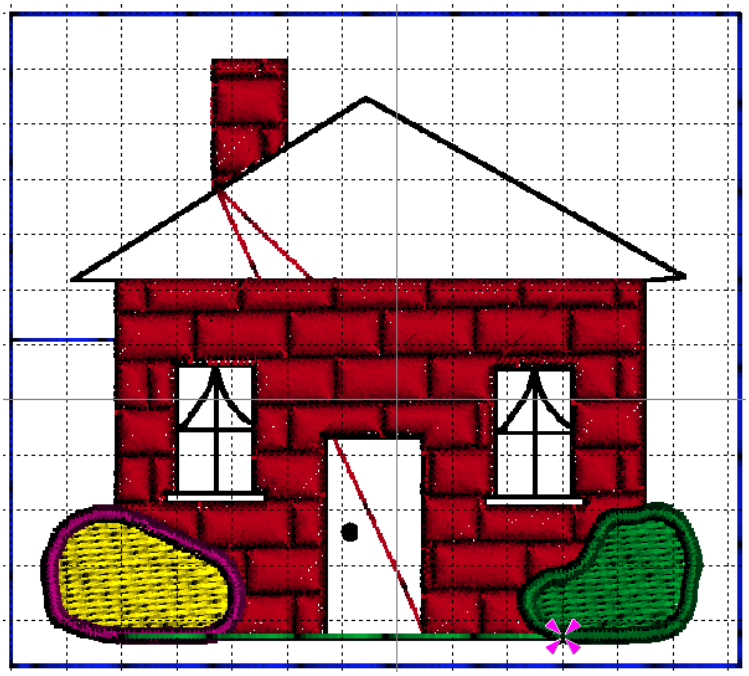


24. **Left click** on the **Edit** tab to return to the **Edit** page. Now, **left click** on the fourth color block from the top to open the **Color Selection** dialog. In the **Color Selection** dialog **left click** on the fifth color from the left in the middle row of the **Quick Colors** frame (hot pink) to select it and then **left click** on the **OK** button. **Left click** on the **Create** tab to see the results. Here is what you should see:



All of the stitches look the same, as far as placement goes. But now, there is a hot pink satin border around the fill pattern. Now that you changed these colors, let's choose the same tool **QuickStitch Fill + Border**. If you need help on picking the tool, refer back to step **21**. As soon as you choose the tool, **Left click** inside of the bush on the **right** side of the house. Before you create these stitches, can you guess what color they will be? Think about it for a second. Will all of the stitches be yellow? With they be hot pink? Or, will the stitches be some other color?

25. **Left click** on the right bush, **left click** on the **OK** button in the **Color Tolerance** dialog, and the stitches are…**GREEN**! How did that happen? Let me explain it to you.

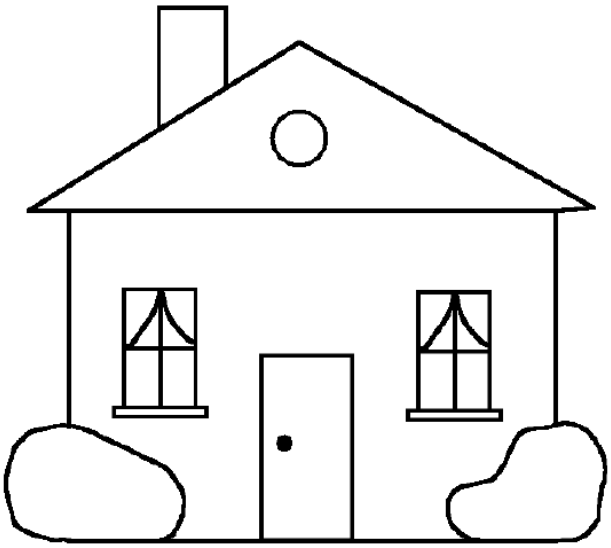


Remember what I said earlier when I described the **8** objects that were created when we used the **QuickStitch Fill + Border**. There is a final color change that returns the color in use to the color first selected when you created the **Fill Area**.
As an exercise in what you've learned so far, why don't you go back and change the colors of the first bush so that they are both green.

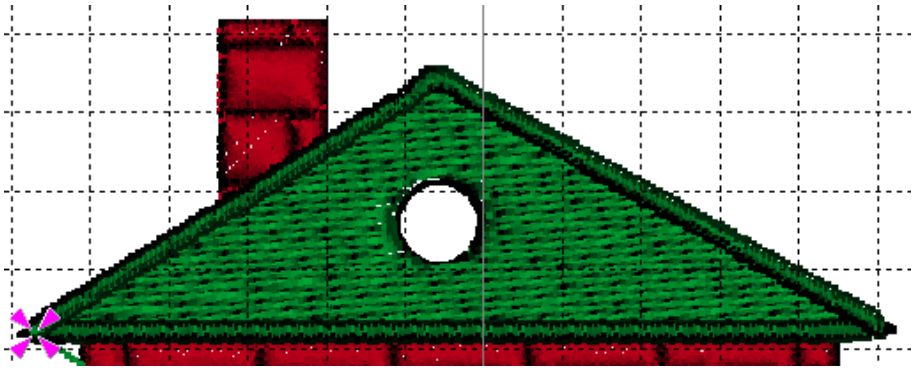
Let's move on and learn how to use the next automatic punching tool.

26. Before we proceed with our project, let's make a change to the graphic. Yes, you can change the graphic while you are working with your design. You just have to make sure that any changes you make to the graphic remain **within the design area** that you created as the first step of design creation. Here's how to do it. **Left click** on the **Picture** tab. You can see that all of the stitches are taken off of the graphic when we return to the **Picture** page. Let's draw a round window in the top of the house. **Left click** on the **Line** tool and then **left click** on the third line thickness from the top of the sun-menu to select it. **Left click** on the **Ellipse Draw** tool  and **left click** on the top option on the little sub-menu so that you only draw the outside perimeter of the ellipse. Now, **left click and hold** then drag the mouse cursor to draw a circle in the attic portion of the house. Your graphic should now look like this:

It's OK if your circle isn't placed exactly in the attic. I just wanted to show you that you can modify the graphic while design creation and I need that little circle to make a point about one of the other automatic punching tools we are going to use. Let's return to the **Create** page by **left clicking** on the **Create** tab.

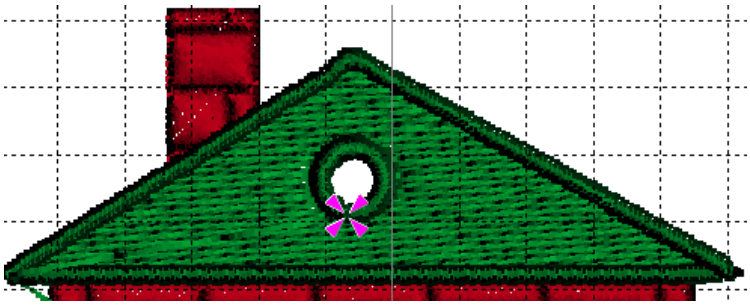


27. **Left click** on the **QuickStitch** option on the menu bar. When the drop down menu opens, **place your mouse pointer** on the **QuickStitch Fill** option. When the sub-menu for **QuickStitch Fill** opens, **left click** on the **QuickStitch + AutoHole + Border** option. Let's create the **stitch object** for the attic portion of the design. **Left click** anywhere in the attic as long as it is **outside of** the little circle we just drew. When the **Color Tolerance** dialog opens, **left click** on the **OK** button. Here is the result:



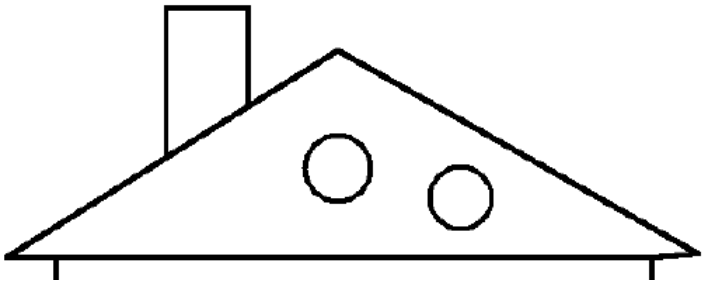
Notice that we have a satin border around the outside of the attic only. There is no satin border around the inside of the little circle. We have a different tool to use to place a satin border there and I'll show it to you now.

28. **Right click** to put down the **QuickStitch Fill + AutoHole + Border** tool. **Left click** on the **QuickStitch** item on the menu bar. When the drop down menu appears, **left click** on the fifth item down, **QuickStitch Border** tool  to select it. Once you selected the **QuickStitch Border** tool, **left click** inside of the little circle in the attic and then **left click** on the **OK** command button in the **Color Tolerance** dialog and this is what you will see:



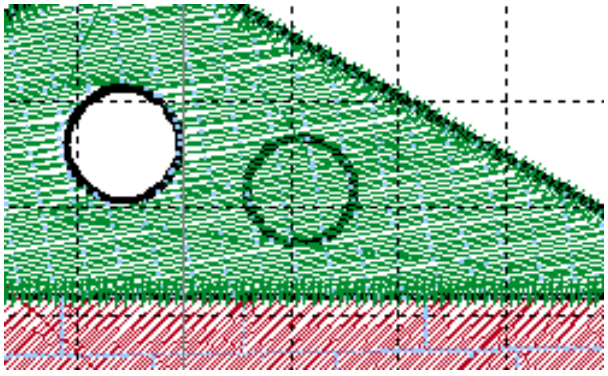
There are the border stitches around the inside of the circular window in the attic.

29. We have one more tool to look at on the **QuickStitch Fill** menu. Before we can use it, we have to make a small change to the graphic. **Left click** on the **Picture** tab and return to that page. Now, refer back to step **26** and add a second, round window to the attic. Your graphic should now look like this:



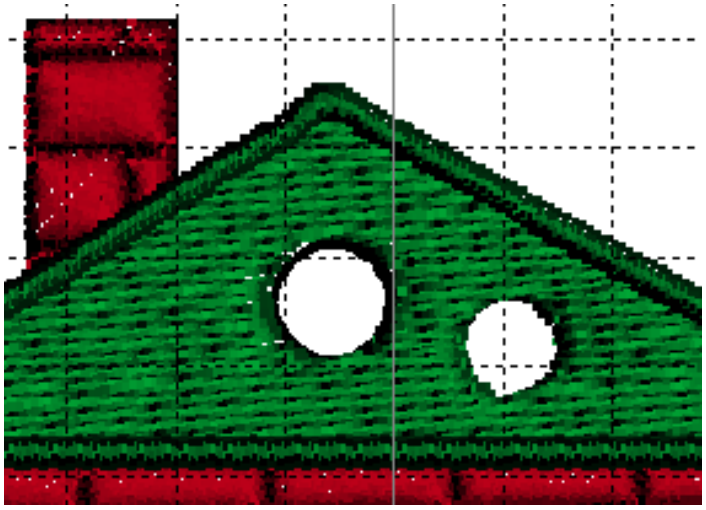
Left click on the **Create** tab to return to the **Create** page. Notice that you can no longer see the second circle because it is hidden by stitches. I want to remove the stitches that are covering the second circle. Before we can see where the stitches are to be removed, we need a way to see through the stitches that are already there. The simplest way to make the second circle visible is to change from **3D View** to **2D View** by clicking on the **3D View** tool  .

30. Here is what your screen should look like:



It's like having x-ray vision. You can see right through the stitches and see the second circle beneath the other stitches. Now we are ready to use final tool on the **QuickStitch Fill** menu, **QuickStitch Hole**.

31. **Left click** on the **QuickStitch** option on the menu bar. When the drop down menu appears, position your mouse pointer over the **QuickStitch Fill** menu option and another menu will appear. **Left click** on the option **QuickStitch Hole**. Now that the tool is selected, then **left click** inside of the circle that is presently covered by stitches. When the **Color Tolerance** dialog opens, **left click** on the **OK** button. **Right click** to put the **QuickStitch Hole** tool down. To see the results of this tool, **left click** on the **3D View** tool. Here is the result:

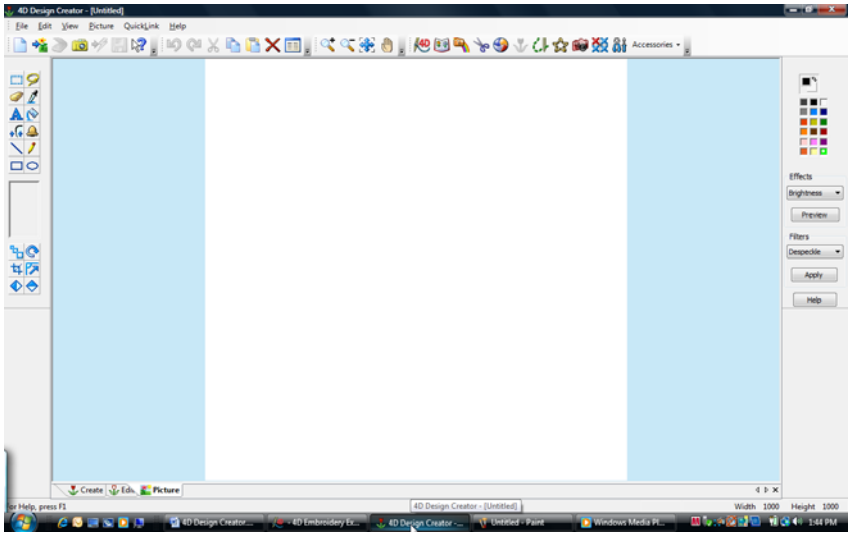


The stitches that were covering the circle on the right are removed. You could now insert any stitches you wish into that area.

Before we move on, **left click** on the word **File** on the Menu bar, then **left click** on the word **New** on the drop down menu. When you are asked if you want to save your work, you can either save it or not, as you wish. We will **not** be using it later.

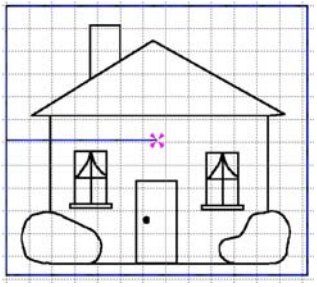
Using QuickStitch MotifFill Tools

1. The first thing we are going to do is to load the graphic we created earlier. (I'm presuming that you have already started ***4D Design Creator,*** selected **Start a New Design with No Picture** (the bottom option in the **ExpressDesign Wizard** and the **Picture** page is open.) Your screen should look like this:



Left click on the **Create** tab. Normally, you would load a graphic here on the **Picture** page, but we already created a graphic of the house earlier and then saved it as a CAN file. Here on the **Picture** page, you can only open graphic files. To open a CAN file you have to be on the **Create** page. So we have to go there now.

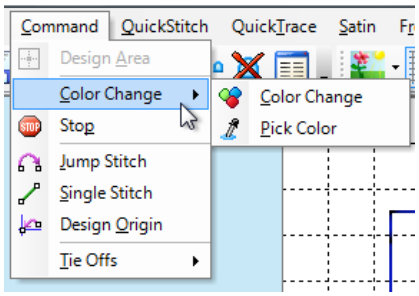
2. Now that we are on the **Create** page, we can open the CAN file that we saved earlier. **Left click** on the word **File** on the menu bar. Then, when the pop down menu appears, **left click** on the word **Open**. When you do this, the **Open** dialog appears. You will have to use your folder navigation skills to find the folder that you used to save your CAN file that we created in Chapter 3. If you followed my instructions, it will be in the folder **C:\Design Creator Projects\CANs\HouseWithNoStitchesBW.can** waiting for you. As soon as you open this file, here is what your screen will look like:



Good thing that we saved that CAN file. The fact that we have a CAN file makes it easy to begin our work immediately. **Note**: There is now a way to save a graphic in ***4D Design Creator*** even if it has not been saved with the **Design Area** chosen and saved on the **Create** page. If you want to save a project that is only a graphic, you would use the **NEW Save Picture As** tool on the **Picture** page. This tool looks like a **yellow** floppy diskette on the toolsbar. At this point we are ready to begin selecting the various stitch objects that we will use to create this design. But before you create any stitch objects, let's use the **Save As…** tool to save this design with a different name. That way, if we ever want to go back and start over with the original design, it will be there waiting for us.

Left click on **File** on the menu bar. **Left click** on **Save As…** on the drop down menu. When the **Save As…** dialog opens, navigate to the **C:\Design creation Projects\CANs** and save the file with a name of **HouseMotifV1.can.** You will see the new file name on the title bar as shown here:

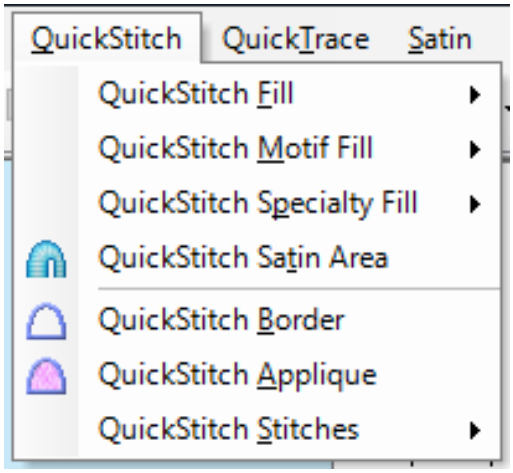
3. Before we begin to place objects into our design we have to change the color of our thread. Right now, the default color of blue is being used. The first **stitch object** I want to create is going to be the chimney and I want it to be done in red. So let's change to that color now. Following what I said earlier, let's use the **Command** drop down menu. **Left click** on the word **Command** on the menu bar. Here is what we will see:



The first thing you should notice is that the **Design Area** tool is grayed out. You can't use this tool more than once in a project. That's why it is grayed out. The next thing to notice is that the **Color Change** tool is the next tool down on the list. I like to think that it was placed there because it is normally the next thing you would do right after using the **Design Area** tool. i.e. Change colors to the first color that you want to use when you create this **stitch object**. Let's do that now. **Left click** on the **Color Change** tool to activate it. When the **Color Selection** dialog opens, choose the dark red color in **Quick Colors** at the bottom of the

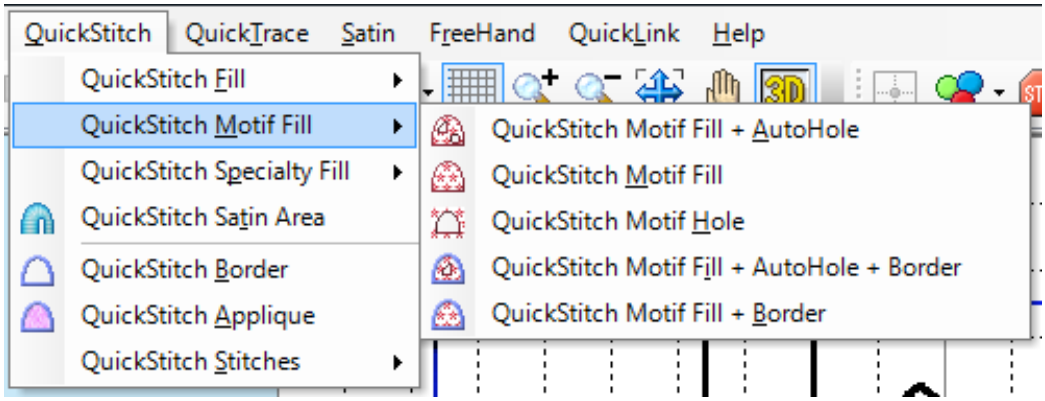
dialog (top row, fourth from the left.) Then **left click** on the **OK** button to close the **Color Change** dialog.

4. Now, we are ready to add our first stitch object. Once again, we are going to use the tools as they appear on the menu bar. **Left click** on the words **QuickStitch** on the menu bar. Here is what the pop down menu looks like:



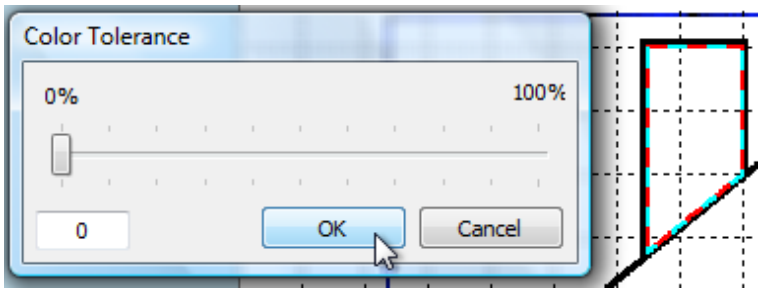
Four options **QuickStitch Fill**, **QuickStitch Motif Fill**, **QuickStitch Speciality Fill,** and **QuickStitch Stitches**, have an arrow pointing to the right. This means that there are sub-menus for these options. Three options **QuickStitch Satin Area, QuickStitch Border**, and **QuickStitch Appliqué**, have an icon to their left. This means that if you click on any of these options, then the tool is active **immediately** and there are no sub-options for this type of stitch object. For now, we are going to use one of the **QuickStitch MotifFill** options.

5. To activate the sub-menu for **QuickStitch MotifFill**, just **move your mouse pointer to that option** and the sub-menu will open. Here is what it looks like:



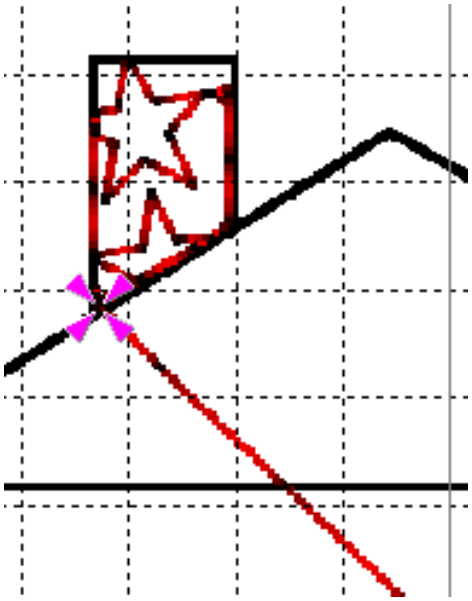
Here are the tools available as **QuickStitch MotifFill** tools. Do they look familiar? They should because they work exactly the same way that the **QuickStitch Fill** tools work except they place a **Motif** into the design rather than a **Fill Pattern**. Take a second and flip pack to page **65** and look at the name of the tools shown on that sub-menu. Except for the word **Motif** being present on this set of tools, **they are the exact, same tools with the exact, same functions and characteristics**. e.g. **QuickStitch MotifFill** will fill an area with motif stitches (and will cover over any internal graphic objects just like **QuickStitch Fill** did when we covered over the little circle in the attic.) The characteristics and properties of each tool are only slightly different when using a **MotifFill** tool. So this project will be shorter than the previous project (and I will be able to include some good stuff in this book rather than repeating the exact same project while only changing the **name** of the tool. If you want to re-work the previous project, just add the word **Motif** into each tool name and everything will work the same. But now, let's check out some exciting features of using **Motif** fills.

6. Let's begin by design creation the chimney. Before we do, let's do a quick review. We chose the color we want to use (red). We chose the type of stitch object we want to use (Motif Fill stitches). And we chose the tool we want to use to insert this stitch object (**QuickStitch Motif Fill**). Move your mouse pointer to the inside of the chimney and **left click**. Here is what you should see:



There are two things notable here. First, look at the dashed line inside the chimney. This tells you where the software is going to place the stitches. The second thing is the **Color Tolerance** dialog. For now, just **left click** on the **OK** button in **Color Tolerance**. I'll explain **Color Tolerance** later.

7. Here is what the design looks like now:



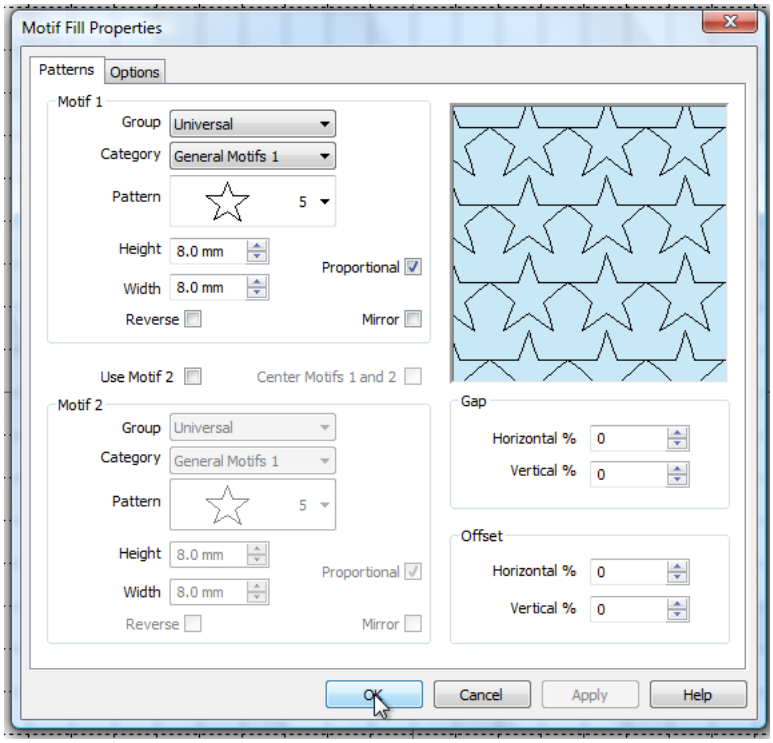
Instead of a fill pattern, a **Motif** fill is present. The default motif pattern is the **star**. Unfortunately, it is not possible to change the default fill pattern for motif fills. Remember, when we went over the **Preferences** settings, we could set the default **Fill Pattern** to any one of the 252 fill patterns. Here, we must accept the default of the stars. Fortunately, changing the motif pattern is easy and you will have many more options for this type of fill than the 252 options available in **QuickStitch Fill** objects. Let's take a look at our options and how to set them now.

8. **Left click** on the **Edit** tab. Once on the **Edit** page, check to ensure that the **Motif Fill** object is selected. (Remember to look in the lower right corner of the screen to ensure that you have selected the correct object, or look in the **FilmStrip** and see which object is selected. If you need help with this, go back to page **154** and read the procedure ***Using the FilmStrip.***) As soon as you have the **Motif Fill** object selected, **right click** anywhere in the **Work Area** to open the **Motif Fill Properties** dialog.

Using the Motif Fill Properties

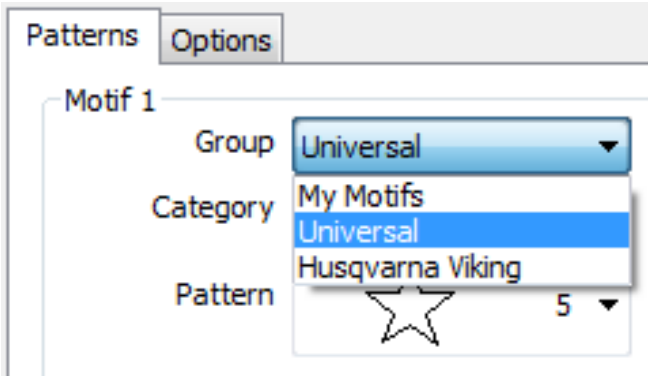
9. Let's take an in-depth look at the **Motif Fill Properties** dialog:

Here is an overview. On the **Patterns** tab, you can select to use either 1 or 2 different motifs. The frames to select them are on the left side of the dialog. On the top right is a preview of the motif(s). Beneath the preview are tools to set the **Gap** and the **Offset** of the motif(s).



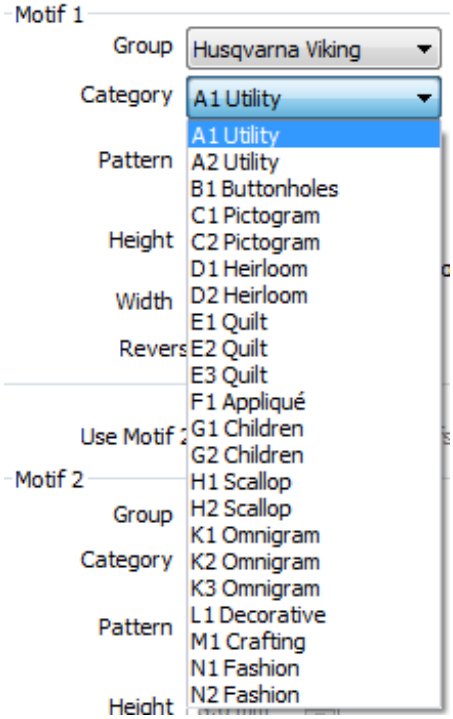
Let's look at how many motifs there are.

10. The first thing to do when selecting a **Motif Fill** is to select the **Group** you wish to use. **Left click** on the drop down arrow on the **Group** combo box. Here is what you will see:



There are three groups of motifs to select from. **My Motifs, Universal** (the default)**,** and **Husqvarna Viking** are shown as your options. The Husqvarna Viking option is shown here because I originally selected a Husqvarna Viking machine when I used the **Machine Manager** feature of **4D Configure**. **Left click** on the line **Husqvarna Viking**.

11. Now that you chose the **Group** Motifs that you wish to use, you can select the **Category** of Motif to use. **Left click** on the drop down arrow at the right of the **Category** combo box in the **Motif 1** frame. Here is what you will see:

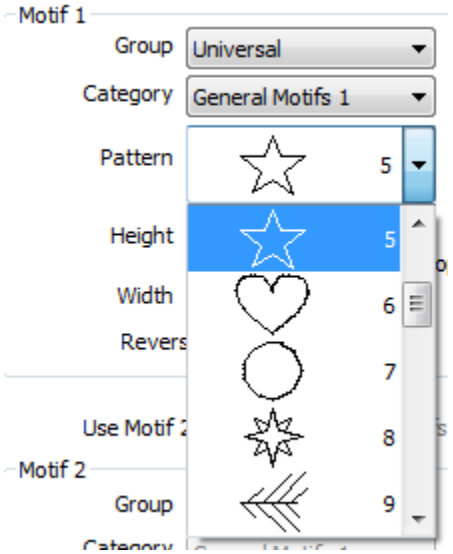


If you do not have the ***4D Professional*** system, you may not have all of these categories. You can see here that the category **A1 Utility** is the default category here and is selected. If you wanted to select another category, all you would have to do is to left click on the name of that category.

You have a 2 books on your hard drive that contains examples of all of the various motifs. I recommend that you print it out both and keep them handy when creating a new design. The first book is 4 pages long and the second book is 12 pages long. They can be found in this place on your hard disk:

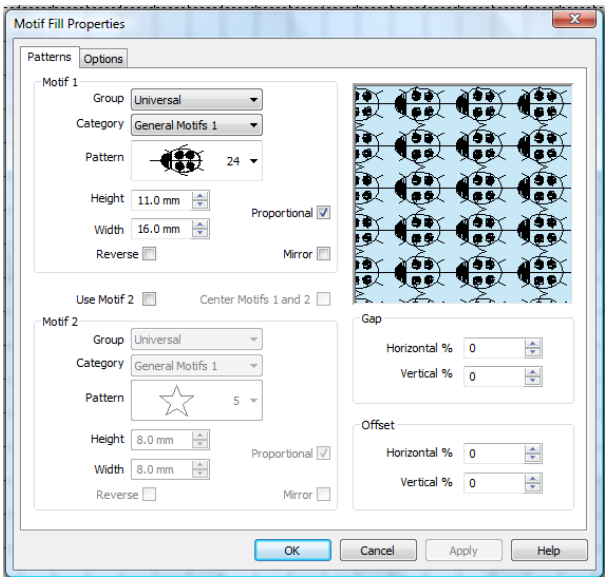
C:\4DEmbroidery\Guides\Sample\Fonts&Shapes\MachineFontGuides_U.pdf
C:\4DEmbroidery\Guides\Sample\Fonts&Shapes\MachineFontGuides_H.pdf

12. While we are here, let's examine this dialog thoroughly. The first control you just looked at allowed you to select the **Group** and then the **Category** of motifs that you want to use. Now, let's look at the actual motifs in the default **Group** and **Category**. Right below the **Category** control is the **Pattern** control. **Left click** on the downward pointing arrow to open the selection box. Here is what you will see:



The default **Pattern** is number **5** the five-pointed star. Just below it, the next pattern, number **6** is a heart. If you **left click and hold** on the elevator in the vertical scroll bar, you can drag the elevator up and down to see all of the **Patterns** available in this **Category**. Scroll down and pick **Pattern** number **24** which is a ladybug. We will need to have this pattern in place to understand how the next few controls operate. Once you scroll down and see the ladybug, **left click** on it and the drop down menu will close as the **Pattern** is selected and placed into the design.

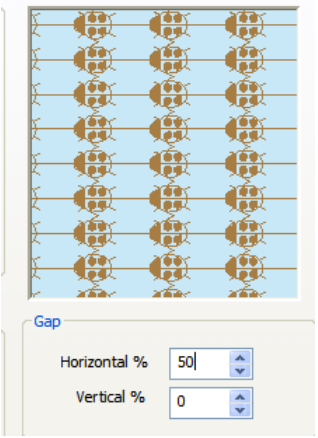
13. Your screen should look like this now:



The ladybug pattern is now selected. The next two controls down are used to set the size of the selected **Pattern**. The sizes for each **Pattern** are unique to that **Pattern**. The ladybug starts off at 11.0 mm high and 16.0 mm wide. Let's change the **Height** value to 8.0 mm. (This is the **minimum** size for this motif.) **Left click** in the **Height** box and type in 8.0. Notice that as soon as you type in this value, the value of **Width** automatically changes to **12.0** mm. This is because the next control down, the **Proportional** box is checked. When this box is checked, the software will automatically change either the **Height** or the **Width** (depending on which one you are changing) to maintain the **aspect ratio** or overall proportions of the **Pattern.** You can turn this feature off by **left clicking** on the **Proportional** check box to remove the check mark. Experiment with changing these values. You will see that the software will not allow you to make them too large or too small. Try changing the height to 25 mm. Try changing the width to 30 mm. Notice that the number and size of the ladybugs changes as soon as you change these values. When you are finished experimenting with the sizes, **left click** in the **Height** box and change that number back to **11.0** mm (and make sure that you have the **Proportional** box checked).

14. **Left click** on the next control down, the **Reverse** check box. The ladybugs that were marching across the screen to the left, are now marching across the screen to the right. This is why I selected the ladybugs for the pattern. If we did this with the default pattern of the five-pointed star you would never see the change because that pattern is vertically symmetrical.

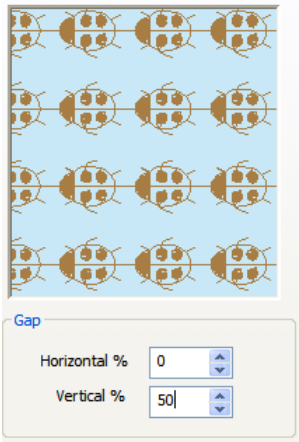
15. Let's go to the **Gap** frame next, in the lower right corner of the dialog. There are two controls in this frame that control the percentage of **Gap** present in the **Horizontal** and **Vertical** gaps. **Left click** in the **Horizontal** control and change the value to **50**. Here is the result:



The horizontal spacing between the ladybugs is increased. It also appears that the size of the ladybugs has changed, but it hasn't. The software just reduces the size of the ladybugs in the example to let you see the increased gap effect. If you look at the **Height** and **Width** controls, they are still set at 11.0 mm and 16.0 mm respectively.

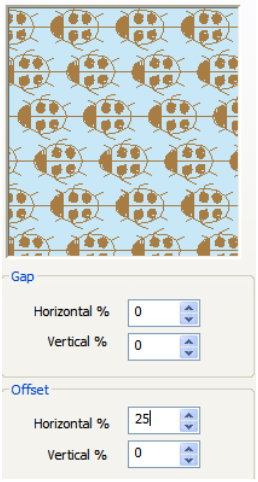
Left click on the **Horizontal** gap control and change it back to a value of **0**.

16. **Left click** in the **Vertical** gap setting box. Change the value to **50**. Here is the result:



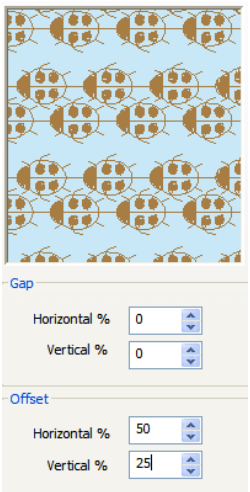
Now, there are fewer rows of ladybugs in a given area. This is a result of changing the **Vertical** gap. Try changing **both** the **Horizontal** and **Vertical** gap settings and watch what happens. When you are finished experimenting, return the values of both **Gap** settings to **0**.

17. Let's move on to the controls in the **Offset** frame. The effects you can achieve here are really exciting. **Left click** in the **Horizontal %** tool text box and change the value to **25**. Here is the result:



What happened is that each successive row of ladybugs begins stitching 25% further back the length of each ladybug. Since the ladybugs are 16 mm long, that means that each one is offset by 4 mm. You can set this value between 0% and 50%. The reason for this is that after you offset by more than 50%, you are actually moving towards **realigning** the pattern components and that doesn't make much sense. **Left click** in the **Horizontal %** text box and set the value to **50**. The individual ladybugs are now offset to the maximum. This setting will help you see the results of varying the next control.

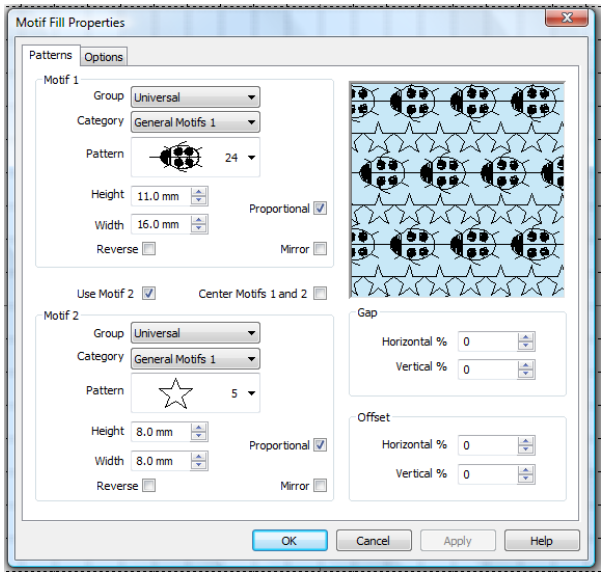
18. **Left click** in the **Vertical %** tool text box in the **Offset** frame and change the value from **0** to **25**. Here is what your screen should look like:



The ladybugs have gotten a bit chummier with each other. It looks like they are marching a lot closer. You can, actually, change the **Vertical** offset too much. Change the value of **Vertical Offset** to 50. That's too close for me. And it begins to actually disrupt the look of the pattern.

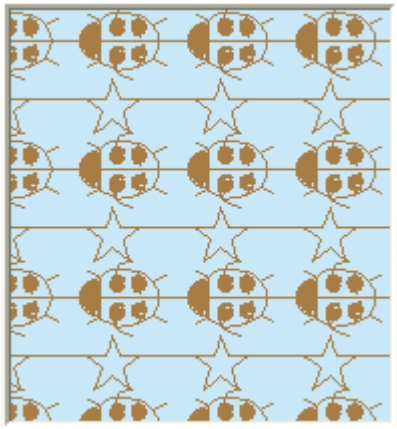
Now, we are going to learn how to use the second motif pattern and really get creative.

19. Before we go on, make sure that you have the following settings in the **Motif Fill Properties** dialog. Set the **Gap** settings both to **0**. Set the **Offset** settings both to **0**. The **Height** setting for the ladybug pattern should be **11.0** mm. The **Width** setting for the ladybug pattern should be **16.0**. Now we are going to use a second motif at the same time. **Left click** in the check box labeled **Use Motif 2** halfway down the left side of the dialog. Here is what your screen will look like:



Notice that the same default pattern is selected to begin with. There are now one line of ladybugs and one line of five-pointed stars. Before we change anything else, let's look at the effects of the checkbox immediately to the right of the **Use Motif 2** control. **Left click** on the **Center motifs 1 and 2** checkbox and watch what happens.

20. This is the result of selecting the **Center motifs 1 and 2** checkbox:

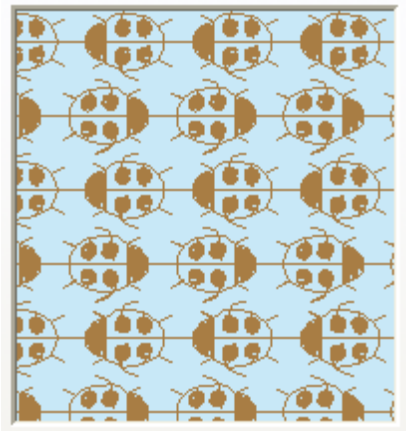


This control causes each motif to be centered on every other motif regardless of the sizes of the various motifs. Remember that the ladybugs are 16 mm wide. The stars are 8 mm wide. This is why there is a gap between the stars at this point. This is also the only way you could center the designs on each other. The reason for this is that when you set the **Horizontal Gap** setting, it applies to **both motifs simultaneously**. You could never achieve this look by using **Horizontal Gap**. The patterns would never line up. Let's change the **Pattern** for motif 2 to something more interesting.

21. **Left click** on the **Pattern** control for **Motif 2** and select pattern number **10**. Here is the result:

This looks really nice. But to get your creative juices flowing, think about how you would do this. I would like to have all ladybugs in the design and I want one row of them facing to the left and another line of them facing to the right. How would you do that? Look at the next page for the solution.

22. The solution is easy. You simply select the ladybug **Pattern** for both motifs (I never said that you couldn't do that). In the second (or the first) motif, left click on the **Reverse** check box. Here is the result:



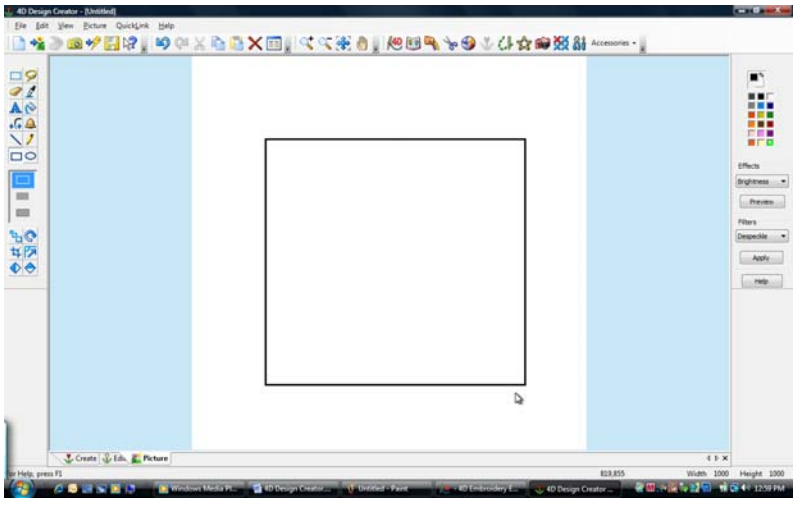
Isn't that neat? Feel free to make all kinds of changes in this dialog to achieve the look that you want. Because no matter what you do, if you don't like what the motifs look like now, just **left click** on the command button labeled **Cancel**. Or, if you already applied these changes, there is always the **Undo** command.

Using QuickStitch Specialty Fill Tools

Once again, the software developers at Husqvarna Viking have outdone themselves. They have given us a **NEW** set of automatic punching tools that will help you to create stitch objects like you have never been able to create before. We can now create fill objects that have **spiral fills**, **radial fills**, **shape fills**, and, please make sure that you are sitting down before reading this next item…***quilt stippling fills!*** Whenever I demonstrate how to use that tool it literally takes the breath away from the people watching me. So let's get started and I'll show you how to use this new set of tools.

1. Begin by clearing your **Work Area**. **Left click** on the **New** tool, then select the bottom option in the **ExpressDesign Wizard.** We will draw a very simple graphic on the **Picture** page to use for our design.

2. **Left click** on the **Line** tool on the **Picture** page and make sure that you **left click** on the middle line thickness from the sub-menu. Then **left click** on the **Rectangle Draw** tool and draw a large rectangle on the **Work Area**. Your rectangle should look something like this:

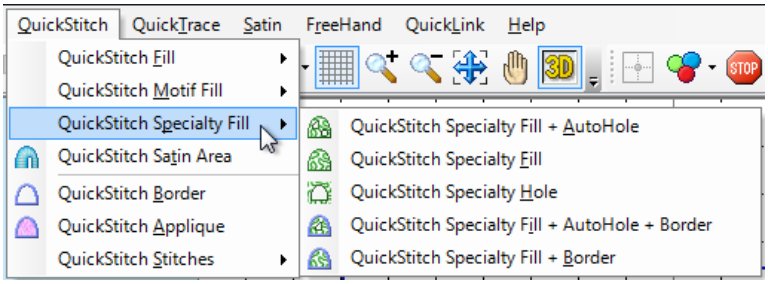


This rectangle must be large so that you can see the effect of the various options in this **exciting, new stitch object.**

3. **Left click** on the **Create** tab. Once you are on the **Create** page, **left click** on the word **Command** on the **Menu Bar**. When the drop down menu appears, **left click** on the **Design Area** tool to select it. Using the **Design Area** tool, select the entire rectangle plus a little area outside of it for your design. When the **Design Size** dialog appears, change the number in the size box to **100** and **left click** on **OK.** (It doesn't matter if you select **Width** or **Height** for this exercise.

4. If you wish to do so, go ahead and change the color of your stitches to anything that pleases you.

5. Now, for the good part. **Left click** on the **QuickStitch** option on the **Menu Bar**. When the **QuickStitch** menu appears, place your mouse pointer on the **QuickStitch Specialty Fill** option on the popup menu. Here is what your screen should look like:

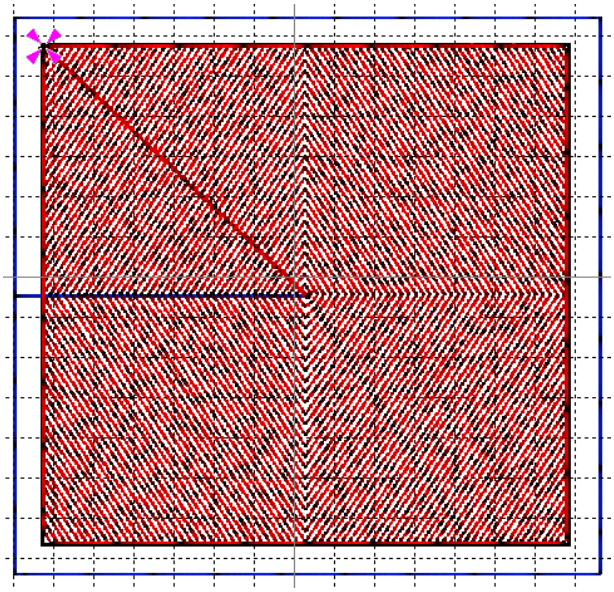


This should look familiar to you by now. Both the **QuickStitch Fill** and the **QuickStitch Motif Fill** options present an identical list of tools. They all work the same. **QuickStitch Fill** tools create **Fill Stitch** objects. **QuickStitch Motif Fill** tools create **Motif Fill** objects. **QuickStitch Specialty Fill** tools create **Specialty Fill** ojects. All you need to learn now are the options for **Specialty Fill** objects.

The Shape Fill

6. **Left click** on **QuickStitch Specialty Fill** on the menu on the right to select the tool.

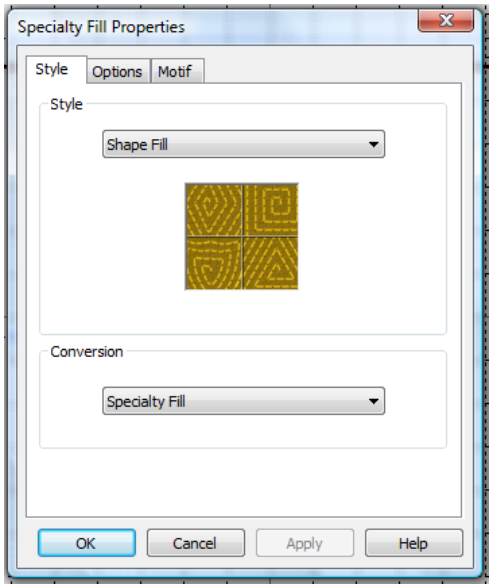
7. **Left click** inside of the rectangle on your **Work Area.** When the **Color Tolerance** box appears, just **left click** on the **OK** button. Here is what you will see:



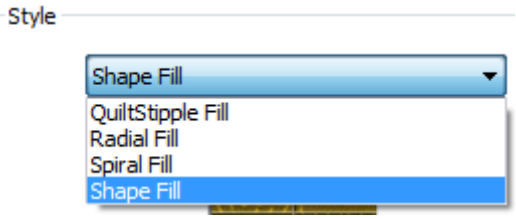
This is the **default** object for the **Specialty Fill**. It looks like a set of concentric diamonds that grow smaller as they near the center of the design. This, in itself, is a pretty neat object, but there is much, much more to this type of **stitch object**. To see what our options are, we have to go to the **Edit** page and look at the **Properties** of this object.

Left click on the **Edit** tab.

8. Look at the **FilmStrip** and the **status bar** in the lower right corner of your screen. Both should indicate that we have a **Specialty Fill** object currently selected. **Right click** on the **Work Area** to open the **Specialty Fill Properties** dialog. Here is what it looks like: There are three tabs at the top of this dialog, **Style**, **Options**, and **Motif**. This is because the default **Style** of **Shape Fill** is currently selected. If you select any of the other **Styles**, only the **Style** and **Options** tab will be available.

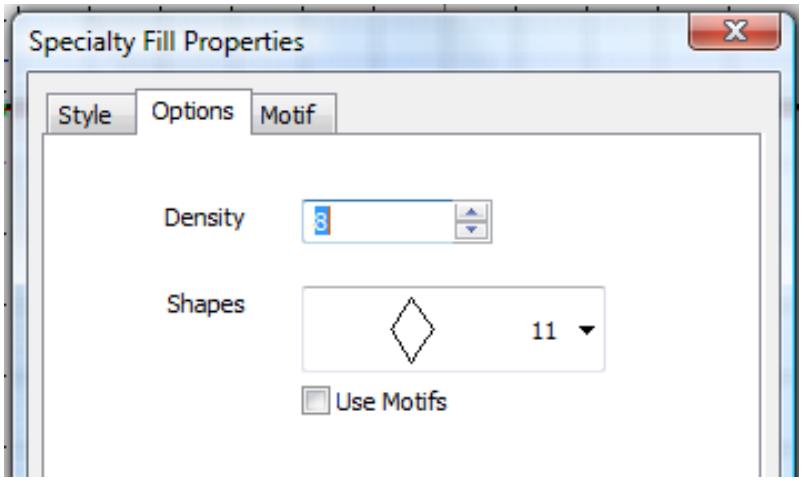


Left click on the downward pointing arrow in the **Style** combo box. This list of **Styles** is shown:



There are **four** choices here. We will look at them all. For now, let's look at **Shape Fill**. **Left click** outside of the list of **Styles** to leave **Shape Fill** selected.

9. **Left** click on the **Options** tab. Here is what your screen should look like now:

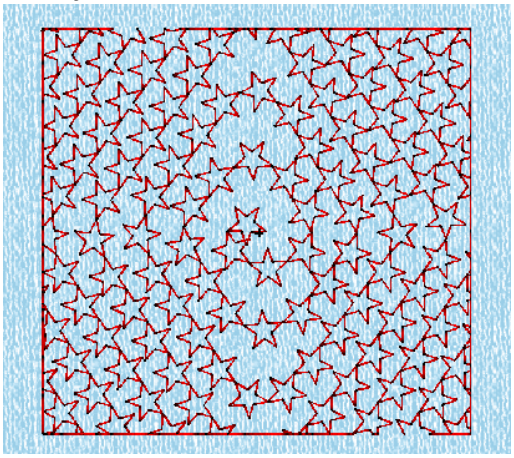


Density is the first option. It ranges from a value of **2** to **40**. The number relates to the **amount of space** between the lines of stitches. Therefore, a setting of **2** means that there is **very little** space between the lines of stitches. A setting of **40** means that there is **a lot** of space between lines of stitches.

Shapes to be selected is the next option on this part of the dialog. **Left click** on the downward pointing arrow to the right of the number **11** and a list of **Shapes** appears. There are **50** different **Shapes** in the list to choose from. Scroll up and down in the list to look at the options, but when you are finished looking at them, be sure that option **11** is chosen.

Use Motifs is the final option on this part of the dialog. Here is the meaning of having this checkbox marked. If the **Use Motifs** checkbox is **not checked**, then the **Shape** you selected will be traced in **straight stitches** (as it was here in the default). If the **Use Motifs** checkbox **is checked**, then rather than using **straight stitches** to trace the **Shape** selected, a line of **Motifs** will be stitched instead. **Left click** on the **Use Motifs** checkbox and we'll see how this looks.

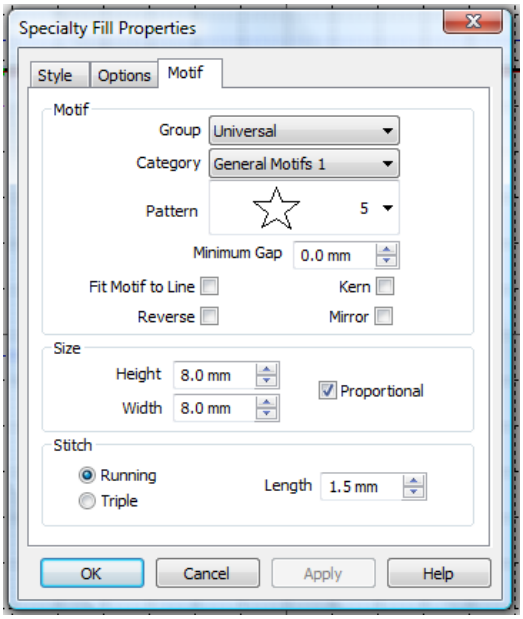
10. **Left click** on the **OK** button to close the **Specialty Fill Properties** dialog. Now, **left click** on the **3D Create Stitches** tool (the third tool from the left on the tool bar). Here is what you should see:



It's a little hard to see what's going on here. **Left click** on the **Cancel** button in the **3D Create Stitches** dialog.

Left click on the **Edit** tab. Once you are on the **Edit** page, **right click** in the **Work Area** to open the **Specialty Fill Properties** dialog. Let's pick a different **Motif** so that we can see what's really going on here. **Left click** on the **Motif** tab.

11. Here is what you should see:



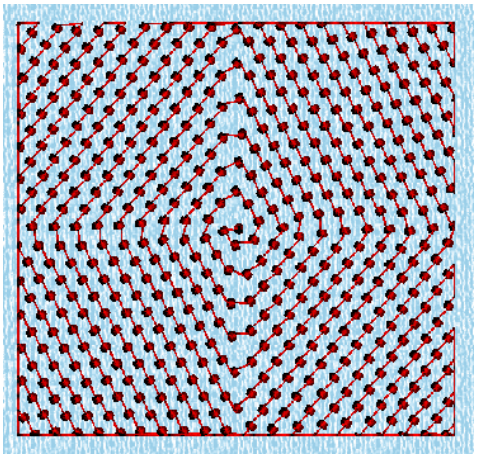
This looks very much like the other **Motif Fill** dialog we saw. All of the controls work the same way and have the same meaning. **Left click** on the downward pointing arrow in the **Category** combo box. When the list of categories appears, **left click** on **Candlewicking 1** to select it.

Left click on the **Options** tab and change the **Density** setting to **20.**

Left click on the **OK** button to close the dialog.

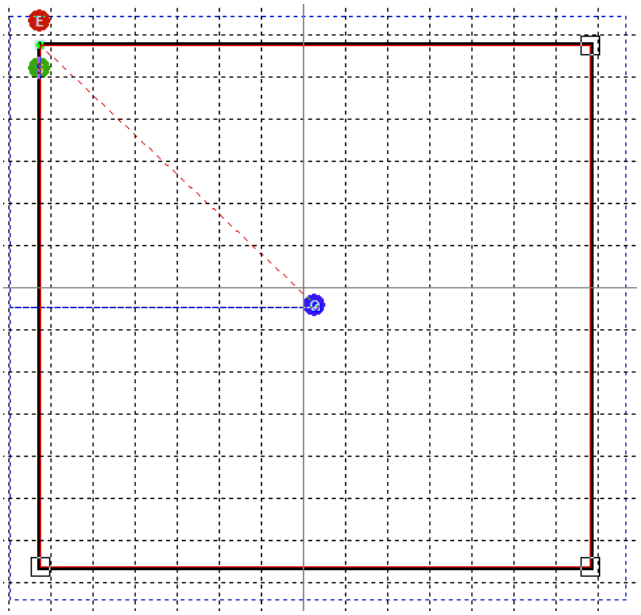
Left click on the **3D Create Stitches** tool.

12. Here is what you should see:



Here it is clear that the straight stitches have been replaced by a line of **Candlewicking** stitches that follow the initial **Shape** chosen on the **Options** tab of the **Specialty Fill Properties** dialog. **Left click** on the Cancel button in 3D Create Stitches to return to the Edit page.

13. While we are here on the Edit page, I want to show you something about the Specialty Fill object. Here is what your screen should look like:



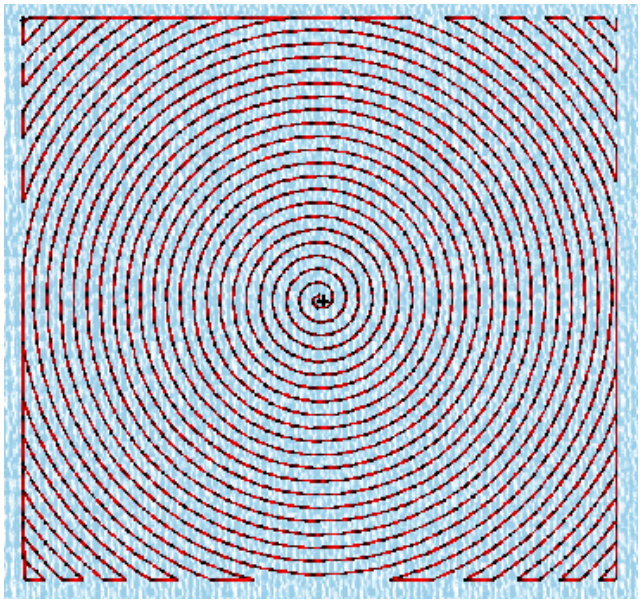
Remember earlier I mentioned the **Origin command object**? It's that blue dot in the center of the **stitch object** on your screen. **Left click and hold** on the **Origin** and drag it to somewhere within (or outside of) the **Specialty Fill** stitch object then **release** the left mouse button.

Left click on **3D Create Stitches** to see what happened. The center (or **origin**) of the **Specialty Fill** stitch object **moved** with it. Is that a neat feature or what?

When you are finished looking at the changed design, **left click** on the **Undo** tool to return the **Origin** to the center of the stitch object.

The Spiral Fill

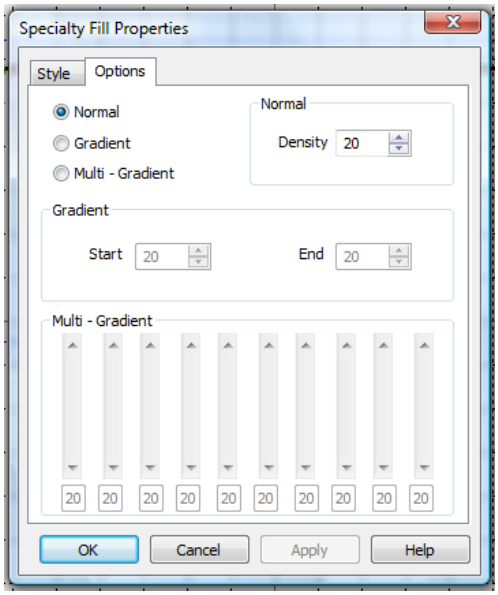
14. Let's look at another **Specialty Fill Style**. **Right click** on the **Work Area** to open the **Specialty Fill Properties** dialog. **Left click** in the **Style** combo box on the downward pointing arrow so that you can see the list of **Specialty Fill Styles**. **Left click** on the **Spiral Fill** option. Let's see what the default look of this **Style** is. **Left click** on the **OK** button to close the **Specialty Fill Properties** dialog. Now, **left click** on the **3D Create Stitches** tool to see your work. Here is what it looks like:



The new stitch object is a set of **<u>evenly spaced</u>** running stitches in a spiral design. In itself, this is pretty neat. But let's go back to the **Specialty Fill Properties** dialog and see how we can modify this stitch object.

Left click on the **Cancel** button to close the **3D Create Stitches** dialog.

15. **Right click** in the **Work Area** to open the **Specialty Fill Properties** dialog. Now, **left click** on the **Options** tab. Here is what it looks like:



There are **3** options on this tab. They are named **Normal**, **Gradient**, and **Multi-Gradient**. Each is selected by **left clicking** on the radio button to the left of each option. As you click on a given option, the choices in the **frame** that matches the name of the option selected become available. Give it a try. **Left click** on the **Gradient** radio button and the **Start** and **End** options in the **Gradient** frame are now available while the other options are now grayed out. **Left click** on the **Multi-Gradient** radio button and all ten of the sliders settings in the **Multi-Gradient** frame become available. Here is how each option works.

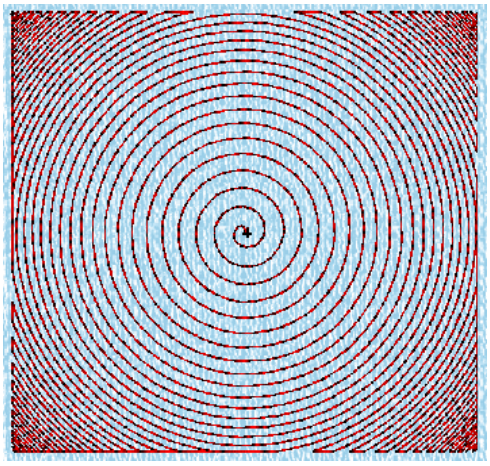
The **Normal** setting allows you to set **one Density** to be used for the entire design.

The **Gradient** setting allows you to set one **Density** that will be used at the **Start** of the design and gradually change to the value set for the **Density** at the **End** of the design.

The **Multi-Gradient** setting allows you to make **10** changes in **Density** that can both **increase** and **decrease** as the object is stitched out.

Let's take a look at each setting.

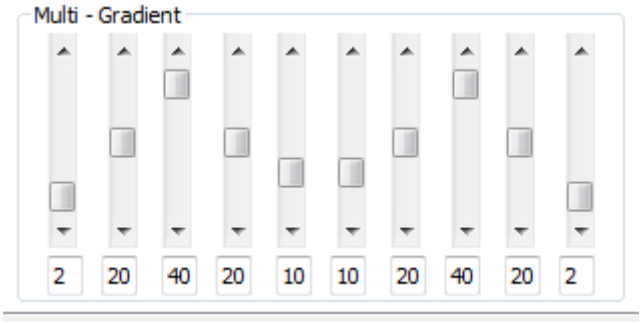
16. You have already seen what happens when the **Density** is changed in the **Shape Specialty Fill**. It works the same way when you select the **Normal** setting here and then vary the **Density** value. Let's take a look at how the **Gradient** setting works. **Left click** on the **Gradient** radio button. Now, **left click** on the value in the **Start** box and change it to **40** and then **left click** in the **End** box and change it to **4**. **Left click** on the **OK** button to close the **Specialty Fill Properties** dialog, then **left click** on the **3D Create Stitches** tool. Here is what you should see:



I think it gives the object a three-dimensional, spherical shape to it. The object looks to me like it is projecting up, out of the page towards me. Reversing the values (**Start** = 4, **End** = 40) makes the design look like it is projecting into the page to me. Just think what you can do with this option alone!

Left click on **Cancel** to close the **3D Create Stitches** dialog.

17. But there is more. **Right click** to re-open the **Properties** of this object. **Left click** on the **Multi-Gradient** radio button. Change the settings of the sliders so that they match the values shown here:

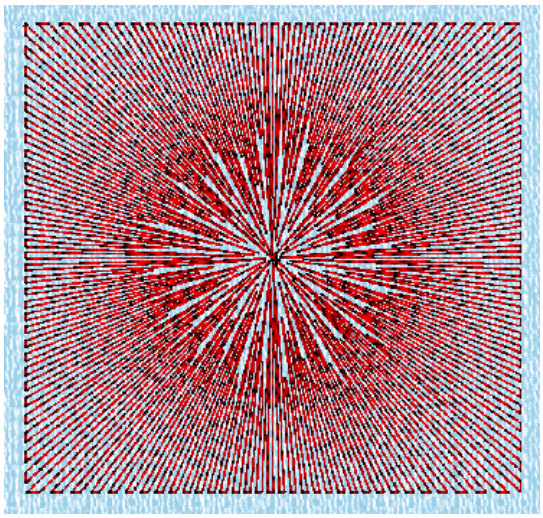


Now, **left click** on the **OK** button to close the **Specialty Fill Properties** dialog and then **left click** on the **3D Create Stitches** tool to see the result. Now, **left click** on your **IMAGINATION** and think about what you can do with this option in your designs.

The Radial Fill

18. Let's take a look at the next type of **Specialty Fill**, the **Radial Fill**. **Right click** on the **Work Area** to open the **Specialty Fill Properties** dialog.

19. **Left click** on the downward pointing arrow on the combo box in the **Style** frame to see a list of the **Specialty Fills**. **Left click** on the word **Radial** in the list. While we are here in the **Specialty Fills Properties** dialog, **left click** on the **Options** tab at the top of the dialog and when that page opens, set the **Density** to **8. Left click** on the **OK** button to close the **Specialty Fills Dialog**. **Left click** on **3D Create Stitches** to see the results. Your screen should look like this:



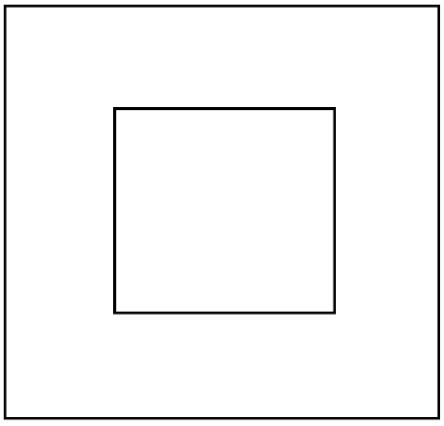
You can see how all of the stitches radiate from a single point. The point from which they radiate is the **Origin** that I mentioned earlier. If you wish, experiment with **left clicking** on the **Origin** and dragging it to a new location within the design. Then use **3D Create Stitches** tool to see the result.

Left click on **Cancel** to close the **3D Create Stitches** dialog.

The Quilt Stipple Fill

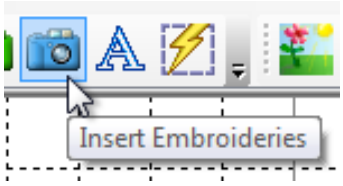
I have saved the most exciting **Specialty Fill** for last. This new type of fill allows you to place stippling anywhere in your design. However, to do this right it's going to take a little work and you will learn how to use a new tool. We are going to take a completed embroidery and put quilt stippling all around it to make a little quilt square.

20. First we are going to change the graphic on our design. **Left click** on the **Picture** tab. Once you are on the **Picture** page, use the **Rectangle Draw** tool to create a square within the first square. Your graphic should look like this now:



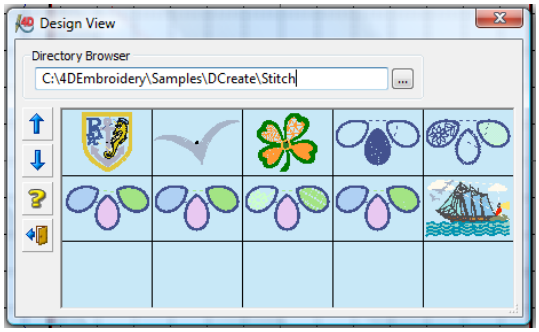
We are also going to remove the **Specialty Fill** object from the design before we proceed. **Left click** on the **Edit** tab. The **Specialty Fill** object we were using is currently selected, so all we have to do is to **left click** on the **Delete Object** tool  .

21. Here, on the **Edit** page, we will use another tool. **Left click** on the **Insert Embroideries** tool as shown here:



This tool looks like the blue camera on your tool bar.

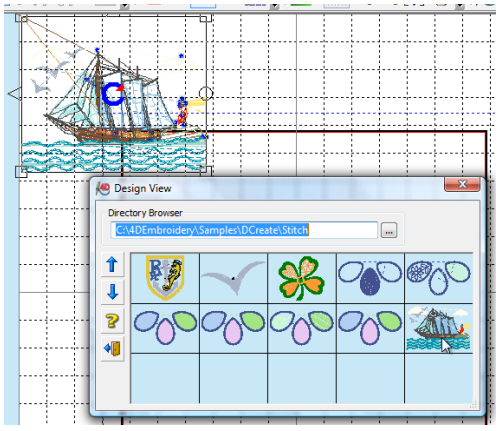
22. When you click on this tool the **Design View** dialog opens. It looks like this:



Left click on the **ellipsis** button at the right of the **Directory Browser** text box and navigate through your hard drive until you come to the folder **C:\4DEmbroidery\Samples\DCreate\Stitch**

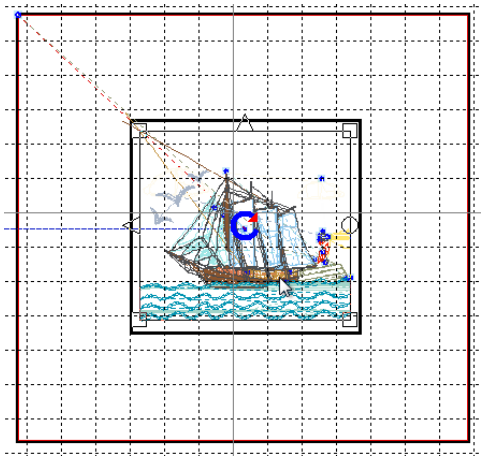
You should see the sailboat somewhere in your display. In my case it is on the second line at the right. **Left click** on the sailboat.

23. This is what you should see:



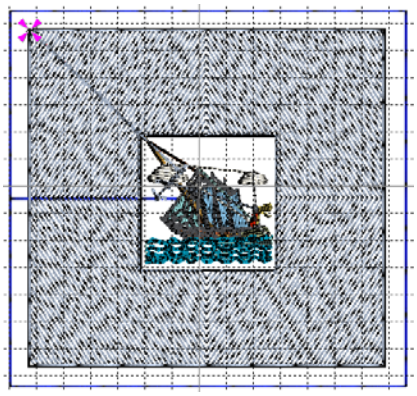
Left click on the **X** in the upper right corner of the **Design View** dialog to close it. You now have a competed embroidery on the **Work Area** that you can drag and resize. **Left click and hold** on the new embroidery anywhere inside of the selection box and drag the design so that it is located inside of the new square you just created. You might also have to resize the design by dragging the corner handle(s) to make the design fit inside of the inner square.

24. Your screen should look like this:



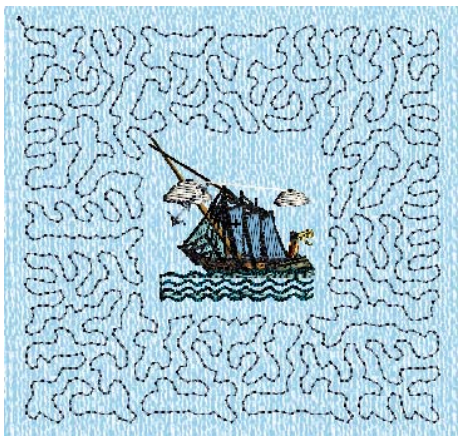
What we just did when we created the internal square was to create a new **segment** inside of the graphic. The new **segment** (shaped like a square frame) will now have a new **stitch object** placed in it. That new **stitch object** will use the **NEW Quilt Stipple Specialty Fill**.

25. **Left click** on the **Create** tab. Now, **left click** on the word **QuickStitch** on the **Menu Bar**, then **left click** on the **QuickStitch Specialty Fill** option on the pop down menu, then **left click** on **QuickStitch Specialty Fill + AutoHole** option. This selects the tool we want to use. Now, **left click** anywhere in the area between the border of the inside and outside square. When the **Color Tolerance** dialog opens, **left click** on **OK.** This should be the result:



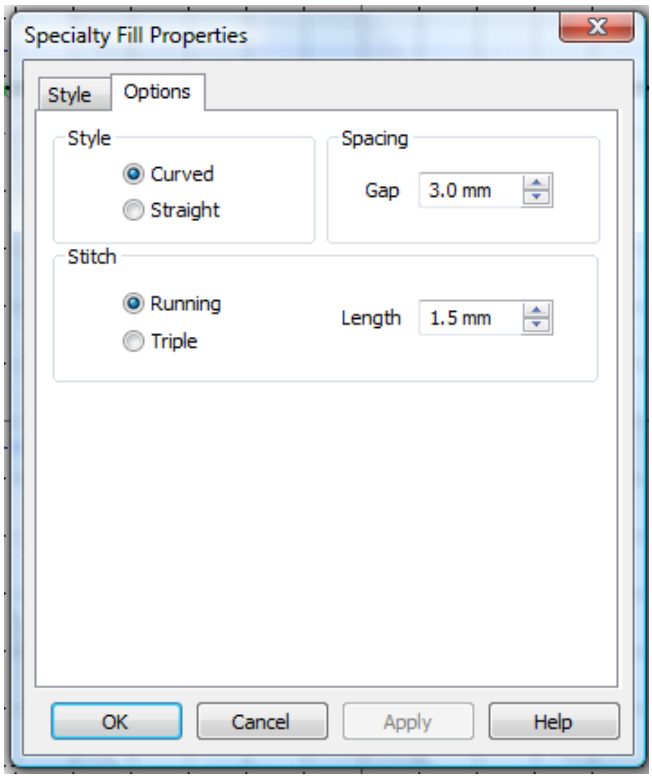
This is the default for **Specialty Fill** objects, the **Shape Fill**. We are now going to change this object to the new **Quilt Stipple Fill**. **Left click** on the **Edit** tab. When you arrive on the **Edit** page, the **Specialty Fill** object will be selected, so all you have to do is to **right click** in the **Work Area** and the **Specialty Fill Properties** dialog will open.

26. With the **Specialty Fill Properties** dialog open, **left click** on the downward pointing arrow in the **Style** combo box. Then, **left click** on the words **QuiltStipple Fill**. The little example box beneath the **Style** combo box will change to a sample of quilt stippling. **Left click** on the **OK** button in the **Specialty Fill Properties** dialog to close the dialog. Then, **left click** on the **3D Create Stitches** tool to see your work. Your screen should look like this:



Instantly, a beautiful quilt stippling object is created within the bounds of the square boundaries. Let's go back to the properties of this object to see what other options there are for this **Specialty Fill**.

27. **Left click** on the **Cancel** button in the **3D Create Stitches** dialog to close the dialog. **Right click** anywhere in the **Work Area** to open the **Specialty Fill Properties** dialog. Now, **left click** on the **Options** tab in the dialog. Here is what you will see:



First, you can choose the **Style** of the stippling. **Curved** style is the one we saw in the example we just completed. **Straight** style straightens out all the curves and leave pointy turns.

Second, you can choose the **Spacing** to appear between the various loops of the stippling. This number can be changed by tenths of a millimeter from a low value of **2.0** mm to a high value of **5.0** mm.

Third, you can choose the **Stitch Type** between single, **Running** stitches, or **Triple** running stitches to get a heavier look. The **Length** of the stitches can vary from a low of **1.0** mm to a high of **6.0** mm.

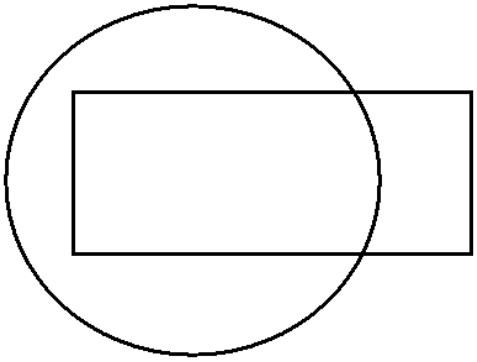
As with any of these options, I encourage you to experiment with the settings and see which ones best fit your artistic taste and look.

Using the QuickStitch Satin Area Tool

This is another **NEW** tool introduced with ***4D Design Creator***. You could create large areas of satin stitches in previous versions of this software, but this required the skillful use of the manual **Curved Satin** tool and the results were, to say the least, non-uniform and unpredictable. But now we have a new tool that will create large areas of satin stitches that have a consistent look and feel while also giving us complete creative control over the direction of the stitches on the **Edit** page. Let's take a look at this impressive tool with a short exercise.

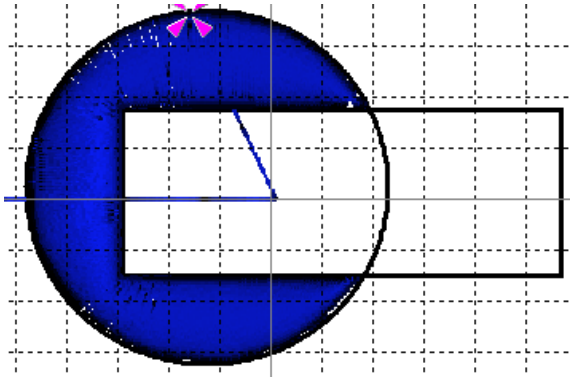
1. Clear your **Work Area** and begin a new design with the **Start a Design With No Picture** option in the **ExpressDesign Wizard.**

2. Create the following design in your **Work Area** using the **Rectangle Draw** and **Ellipse Draw** tools. Remember to check your line thickness by clicking on the **Line** tool and select the third line thickness from the top.



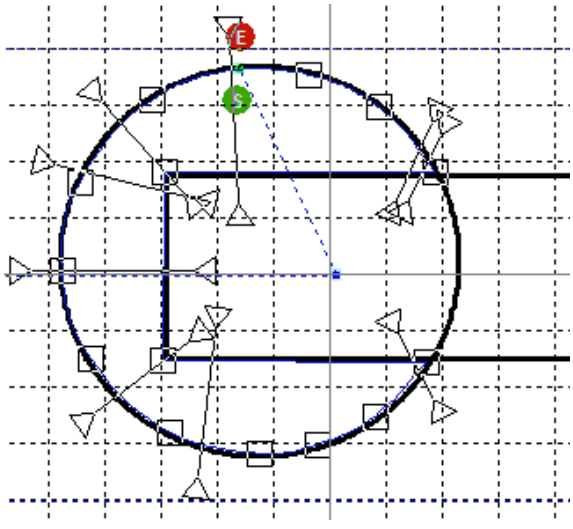
We are going to create a **Satin Area** object in the left side of the graphic. I want the stitches to wrap around the rectangle in a uniform manner. **Left click** on the **Create** tab. Once on the **Create** page, **left click** on the word **Command** on the **Menu Bar** and select the **Design Area** tool to select the entire graphic.

3. Now we are ready to put in the **Satin Area** stitch object. **Left click** on the words **QuickStitch** on the **Menu Bar**. When the drop down menu appears, the fourth option from the top will be **Satin Area**. **Left click** on the tool to select it and then **left click** in the **Work Area** anywhere inside of the circle but <u>outside</u> of the part of the rectangle that is inside of the circle. When the **Color Tolerance** dialog opens, **left click** on the **OK** button. This should be the result:



A **Satin Area** stitch object is created. This might not seem like a big thing until you try to create the same thing manually. If you use the **3D View** tool to change to a 2D view of the stitches you can see how the angle of the satin stitches remains perpendicular to the arc of the circle. Let's go to the **Edit** page to look at the properties of this stitch object.

4. **Left click** on the **Edit** tab. Here is what you should see:



Each of the lines with reverse arrowheads on them is a point on the stitch object where the angle of the stitching changes. You can change that angle by **left clicking and holding** on either arrowhead and dragging it to a new location.

Summary of QuickStitch Fill Automatic Punching Tools

Learning how to use the **Motif Fill Properties** and the **Specialty Fill Properties** is the key to using all of the **QuickStitch Motif Fill** and **QuickStitch Specialty Fill** design creation tools. There are no differences between the way that the **QuickStitch Fill,** the **QuickStitch Motif Fill,** and **QuickStitch Specialty Fill** design creation tools work. Here is a quick summary of each of these tools:

QuickStitch Fill
QuickStitch Motif Fill
QuickStitch Specialty Fill

All of these tools place their respective type of stitches inside of an area that contains pixels of a color that closely matches the color of the pixel originally clicked on to place a fill object.

QuickStitch Fill + Border
QuickStitch Motif Fill + Border
QuickStitch Specialty Fill + Border

All of these tools place their respective type of stitches inside of an area that contains pixels of a color that closely matches the color of the pixel originally clicked on to place a fill object. In addition, a satin border is placed around the edge of the selected area.

QuickStitch Fill + AutoHole
QuickStitch Motif Fill + AutoHole
QuickStitch Specialty Fill + AutoHole

All of these tools place their respective type of stitches inside of an area that contains pixels of a color that closely matches the color of the pixel originally clicked on to place a fill object. No stitches are placed within any areas of a different color found inside of the outer perimeter of the selected area.

QuickStitch Fill + AutoHole + Border
QuickStitch Motif Fill + AutoHole + Border
QuickStitch Specialty Fill + AutoHole + Border

All of these tools place their respective type of stitches inside of an area that contains pixels of a color that closely matches the color of the pixel originally clicked on to place a fill object. No stitches are placed within any areas of a different color found inside of the outer perimeter of the selected area. In addition, a satin border is placed around the edge of the selected area.

QuickStitch Hole
QuickStitch Motif Hole

If an area of a different color exists within an area of stitches, this tool can be used to remove the already placed stitches based on the size and shape of the different colored area.

QuickStitch Satin Area

This tool creates a **Large Satin Area** inside of a design segment.

QuickStitch Border

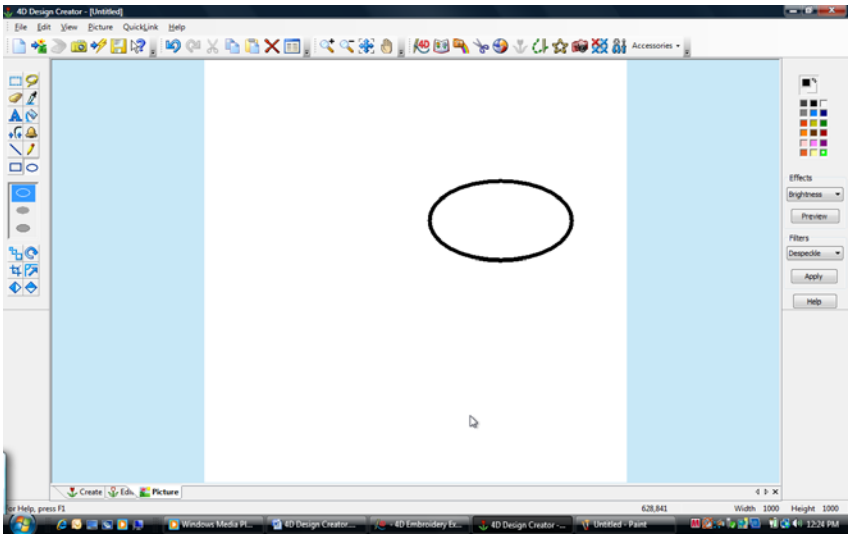
This tool creates a **Satin Border** around the perimeter of a design segment.

Using QuickStitch Stitches Tools

In addition to the **QuickStitch Fill** tools, there are several tools that are used to place lines of stitches automatically into your design. Let's take a look at them now.

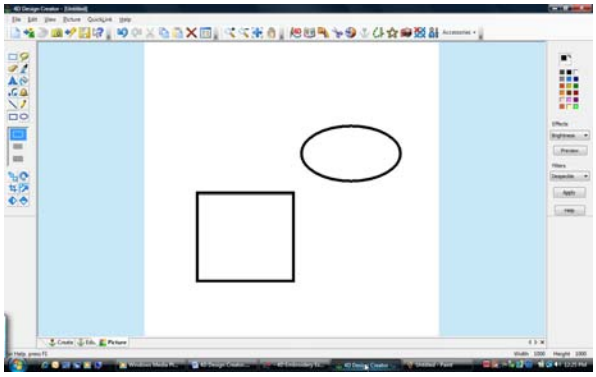
1. Let's create a new graphic that we will use with these tools and the manual punching tools that are yet to come. If you are just starting ***4D Design Creator*** then you will already be on the **Picture** page. If you have been working with ***4D Design Creator*** and are on the **Create** page, just **left click** on the **New** tool  at the left end of the tool bar. (You'll be given the opportunity to save your current design in CAN file format before the design is erased.)

2. Once you are on the **Picture** page, **left click** on the **Line** tool and then select the **<u>fourth</u>** thickness from the top for lines from the sub-menu that appears. Now, **left click** on the **Ellipse Draw** tool and select the top option from the sub-menu so that we only draw the outline of the ellipse. Now, **left click** and draw an ellipse positioned as shown here:



Place the ellipse on the right side of the screen. We are going to place some additional graphics in this design.

3. Now, **left click** on the **Rectangle Draw** tool and place a rectangle in the lower left corner of the graphic. It should look like this:

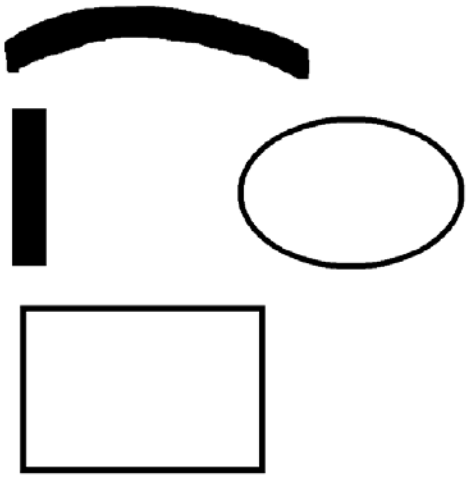


We have two more things to draw and then we will be ready to finish off the rest of the automatic punching tools.

4. **Left click** on the **Freehand Draw** tool  . When the line width sub-menu appears, select the thickest line by **left clicking** on it. Now, what I want you to draw is a thick, curved line near the top center of the page with the freehand tool. Here is what it should look like:

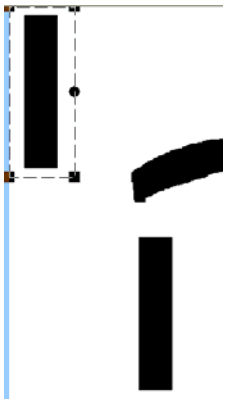
You'll have to draw this graphic with three passes of the **Freehand Draw** tool. Each time you draw it, make it a little wider. It's OK if your graphic doesn't look exactly like mine, just make **sure** that it is wide and curved rather than straight.

5. Let's put one last graphic into our design. This one will be easy to create. **Left click** on the **Rectangle Draw** tool. As soon as this tool is selected, **left click** on the **middle** option in the sub-menu that appears beneath the tool. This option allows you to draw the internal color of the rectangle without the border color. When you have these options selected, **right click and hold** on the right mouse button as you drag a long, but medium-thick rectangle as shown here:



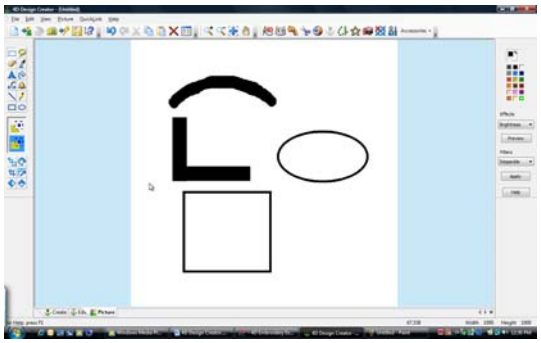
Now that we have this piece drawn, I'll show you how to use another one of the tools on the **Picture** page. **Left click** on the **Box Select** tool  . Then, **left click and hold** as you drag a selection box around the vertical bar you just created. This puts that part of the graphic into selection mode. You can tell what you selected by the presence of the selection box and handles shown around the bar. Now we are ready to **Copy** and then **Paste** this piece of the design onto the picture. **Left click** on the **Copy** tool, then **left click** on the **Paste** tool (both are on the tool bar.)

6. Here is what you screen will look like now:



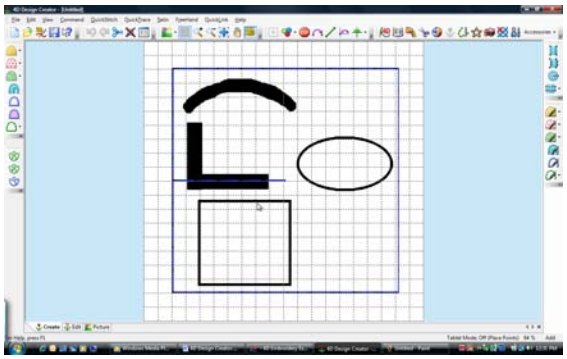
We need to rotate this piece of graphic 90°. Fortunately, we have a tool to help us do this. Look at the left side of the **Picture** page. There are 6 tools in a small group. Some of the tools are grayed out right now, but the **Rotate 90** tool  is available. **Left click** on the **Rotate 90** tool and the vertical bar will now be horizontal. Before we move it, look at the sub-menu on the left side of the screen. Make sure that the bottom option is selected by **left clicking** on it. This will make the background of the selected area transparent as we put this copy of our graphic into its new position. Now, **left click and hold** on the selected area and drag it into place so that it forms a right angle.

7. Here is what your finished graphic should look like:



We will be using this graphic for the rest of the automatic punching tools as well as using it (with some later modifications) to show you how to use the manual punching tools. As soon as your graphic looks like this, **left click** on the **Create** tab.

8. Do you remember what the first step is in design creation after we have our graphic looking the way it should look? If you forget, then **left click** on the word **Command** on the tool bar. Remember, that I said earlier that we will do the things listed in the **Command** drop down menu in that order. The first tool is the **Design Area** tool. **Left click** on **Design Area** to select that tool, then **left click and hold** in the upper left corner of the graphic then **drag** your mouse pointer to the lower right corner of the screen to create an outline box around the graphic. When you are happy with the size of the box (make sure that it includes all of the various graphic elements plus a little space around the edges), **release** the left mouse button. Set the size of the design in the **Design Size** dialog to **100 mm** and make sure that the **Width** radio button is green. Your screen should now look like this:

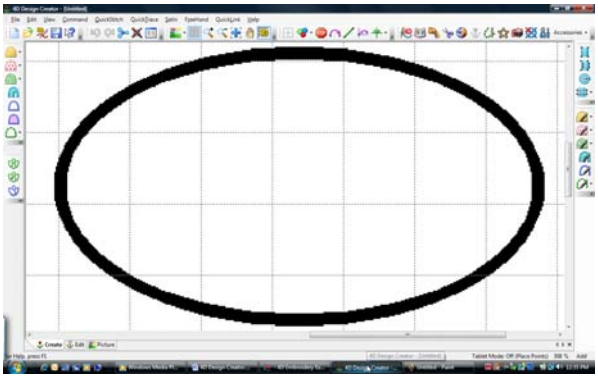


Do you remember what I said earlier about saving files as CAN files early and often? Let's save this design right now so that we can come back to it to repeat our work without needing to recreate it in this form. **Left click** on the word **File** on the menu bar, then **left click** on **Save As…** on the drop down menu. When the **Save As** dialog appears, save the file in the folder we created earlier **C:\Design Creator Projects\CANs** with a file name of **ShapesOriginal.CAN**. Now we can return to it at any time.

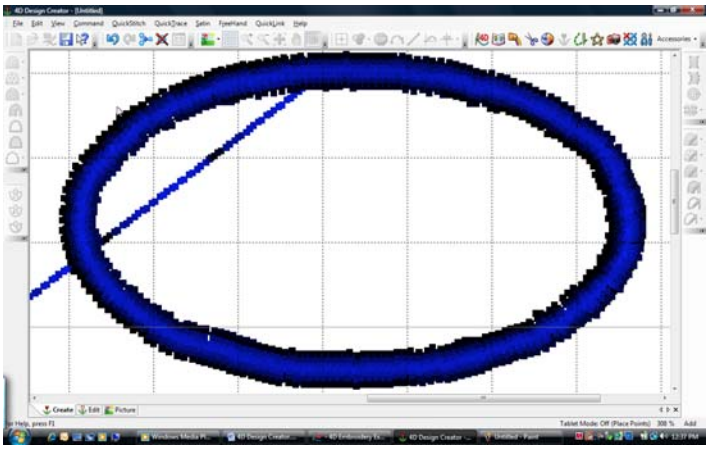
Since we are going to change it, let's save it again with the name **ShapesTest1.CAN**. This way, if you want to stop and save the file in progress, the original will remain available, unchanged. OK, now we are ready to finish learning how the rest of the automatic punching tools work. Let's begin with **QuickStitch Appliqué** . Do you remember the second step in the design creation process? **Left click** on the word **Command** on the menu bar. Notice that **Design Area** is now grayed out (we already used it). The next tool down is **Color Change.** Let's change color to yellow so that you can see the results easier against the black background of the graphics.

9. We are going to need to look closely at the results of our work from now on. So, **left click** on the **Zoom In** tool  on the tool bar and use it to select the entire ellipse shape in the graphic. Your screen should look like this:

When I said to **Zoom In** I really meant it. You will find it infinitely easier to do your work if you use the power of the computer to let you magnify the area in which you are working. You can always use the **Zoom to Fit** tool  to instantly back away and see the overall picture.



10. Now, let's pick the **QuickStitch Appliqué** tool. **Left click** on the word **QuickStitch** on the menu bar. **Left click** on the **QuickStitch Appliqué** tool to select it. As soon as the tool is selected, **left click** inside of the ellipse. You will again see the **Color Tolerance** dialog. You should see an ellipse of red and blue dashes along the inside of the ellipse. **Left click** on the **OK** button in the **Color Tolerance** dialog. This should be the result:



It looks very similar to the results we got when we used the **QuickStitch Border** tool previously. But, if you look at the properties for this stitch object on the **Edit** page, you will see that this is a very different stitch object indeed. Let's take a look at it under the microscope of the **Edit** page. **Note:** If you click **on** the line that defines your graphic, then the satin border for the appliqué will be placed on the **outside** of the graphic ellipse. This could be useful when creating your appliqué object.

11. **Left click** on the **Edit** tab to switch to the **Edit** page. There is our appliqué. Look at the lower right corner of the screen. Right now, it should read, **Satin Border**. That was the last component of the appliqué. **Tap once** on the **left arrow** key and the object we are looking at is the **Stop Command**. You can also see on the **FilmStrip** that we are moving up in the design to the objects we created earlier. **Tap once** on the **left arrow** key and the object we are looking at is the **Double Stitch**. **Tap once** on the **left arrow** key again and the object we are now looking at is the **Tie Off** created at the start of this object. One move **tap** on the **left arrow** key and we are on the **Jump Stitch** that brought us from the center of the design to the beginning of the appliqué object. You can now understand that with one click of the mouse we created the following objects:

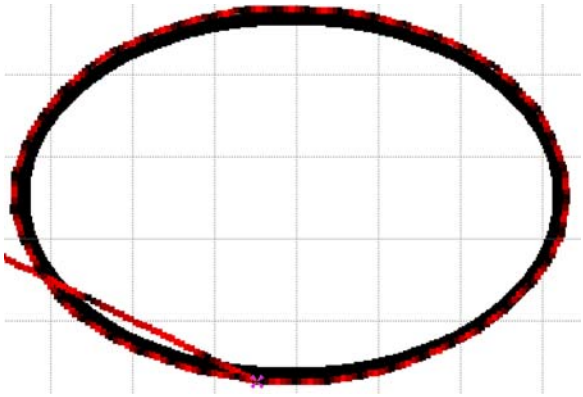
    A **Jump Stitch** to the start of the appliqué.
    A **Tie Off** to secure the thread at the beginning of the object.
    A **Double Running Stitch** for the hold down of the appliqué.
    A **Stop Command**.
    The **Satin Border** to cover the edge of the appliqué.

    You can change the width and density of the **Satin Border** object and the length of the stitches in the **Running Stitches** by selecting the various components and then **right clicking** on the **Work Area** to bring up the appropriate properties dialog.

12. For now, let's undo the application of the appliqué stitches by **left clicking** on the **Create** tab, then **left click** on the **Undo** tool.

13. **Left click** on the word **QuickStitch** on the menu bar. Place your mouse pointer on the option **QuickStitch Stitches.** When the new menu opens, **left click** on the option **QuickStitch Running** tool.

14. Let's use this tool on the ellipse. **Left click** <u>on the line</u> that makes up the ellipse. Here is what you should see:



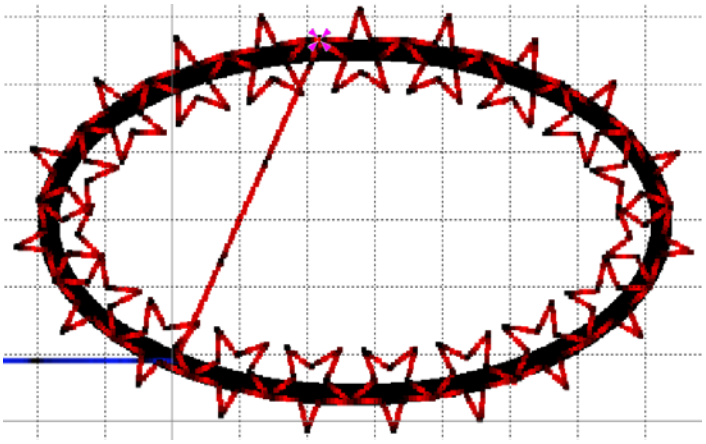
One thing you need to notice, the stitches are placed on the **<u>outside</u>** of the ellipse. They are **<u>not</u>** placed in the center of the graphic line. In this situation, you can see that the line of stitches will not cover the graphic line and a wider stitch object may be called for. Normally, the **Running** stitch object is used for highlights and outlining only and not for design coverage.

Problems Applying Stitches To Line Graphics

When you attempt to apply stitches to line graphics, sometimes the software makes a mistake and misses the line graphic. When you tried to use the **QuickStitch Running** tool in step 14, you may have seen that when the **Color Tolerance** dialog opened, the line of red and blue dashes did not appear on the outside of the ellipse. If you left clicked on the OK button at that point, and you were zoomed in on the ellipse, you would not have seen that the stitches were applied to the perimeter of the entire design rather than the perimeter of the ellipse. Sometimes this happens in ***4D Design Creator***. When you try to apply stitches and do not see the appropriate set of **Color Tolerance** dashes, then just left click on the **Cancel** button and then try to apply the stitches again, but this time, choose a new place on the outline you are trying to select. The only difference this will make is that the jump stitch to the new location will be a little longer (or shorter).

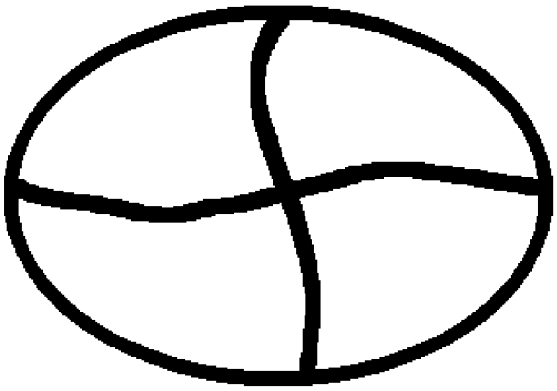
15. **Right click** anywhere in the **Work Area** to put down the **QuickStitch Running** tool. **Left click** on the **Undo** tool to remove this object from the design. If you try the next two tools in the **QuickStitch Double** tool or the **QuickStitch Triple** tool, then apply these stitches to the ellipse, you will see that the stitches appear to look the same. In fact, these stitches are a little heavier, but they are still not enough to cover much of the design and are used mainly to put details into the design. After you try out these two tools, remove the stitches before we go on to the next tool.

16. **Left click** on the **QuickStitch** option on the menu bar, then open the **QuickStitch Stitches** sub-menu and then **left click** on the **QuickStitch Motif Line** tool. Let's see how this tool looks on the ellipse. This tool works very much like the **QuickStitch Applique** tool. If you click **<u>on</u>** the line that forms the ellipse, then the motifs will be placed **<u>outside</u>** of the graphic. If you click **<u>inside</u>** of the line, then the motifs will be placed **<u>inside</u>** of the graphic. **Left click** on the **line** forming the ellipse. When the **Color Tolerance** dialog opens, notice that the dashed line is on the **outside** of the graphic. That is where the **Motif Line** will be placed. **Left click** on the **OK** button and apply the stitches. Your screen should look like this:



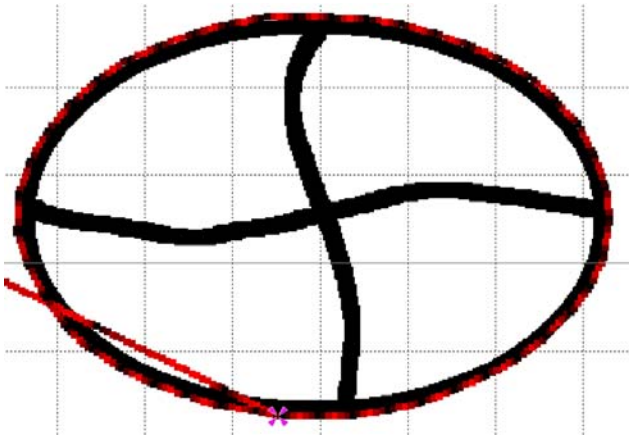
Once again, you can see that the motifs are applied to the outside of the graphic (the ellipse) and they do not provide much coverage to the design. This tool is use to provide accents to a design rather than coverage. You could change the pattern in the Motif line by going to the **Edit** page and opening the **Properties** for this stitch object. As soon as you are finished looking at these stitches, **right click** to put down the **QuickStitch Stitches** tool, then **left click** on the **Undo** tool to remove this object.

17. Before we look at more automatic punching tools, we need to make a change to our graphic. **Left click** on the **Picture** tab. When you get to the **Picture** page, use the **Freehand Draw** tool (the one that looks like a pencil) to draw two freehand lines to the inside of the ellipse so that it looks like this:



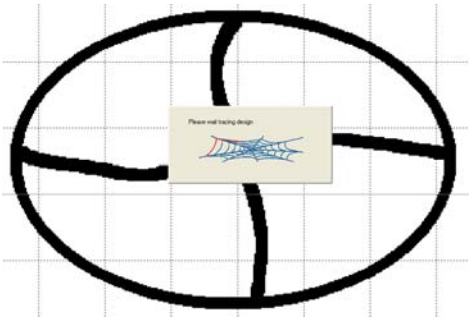
Make sure that when you select the **Freehand Draw** tool, that you use the line width that is the fourth one down from the top (the second thickest). You don't have to make the lines straight, but you can if you wish to do so. We need these lines to illustrate a point about the automatic punching tools. **Left click** on the **Create** tab to return to the **Create** page.

18. I want to place a line of stitches along all of these lines. Let's choose the **QuickStitch** option from the menu bar, then the **QuickStitch Stitches** option and then the **QuickStitch Running** tool. **Left click** on the one of the lines we just drew to apply stitches to this graphic. When the **Color Tolerance** dialog opens, **left click** on the **OK** button. Here is what you will see:



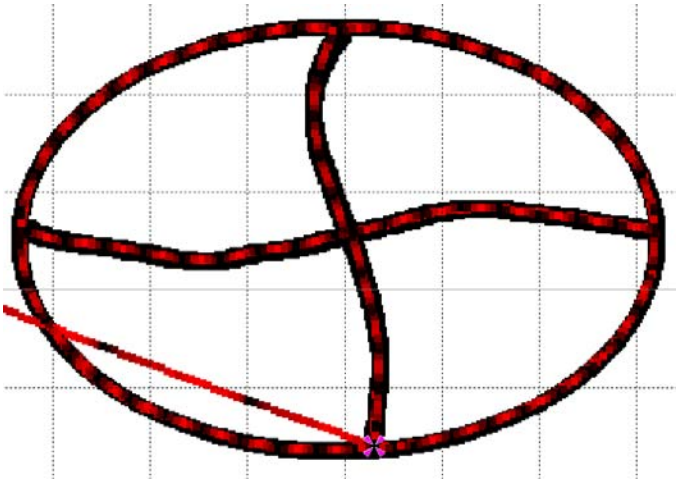
Hey, wait a minute! This is **not** what I wanted. I expected that the stitches would follow **all** of the lines and put a cross in the middle of the design. What did I do wrong? Actually, I used the wrong tool. There is another tool that will do the trick in this instance and we will look at it now. Before moving on, **right click** to put the **QuickStitch Running** tool down, then **left click** on the **Undo** tool to remove these stitches.

19. **Left click** on **QuickTrace** on the menu bar. Another sub-menu will pop down. **Left click** on the **Double Trace** tool to select it. Now, let's use this tool and see what happens. **Left click** anywhere on one of the lines in the ellipse graphic. The same oval of the **Color Tolerance** dialog appears. **Left click** on the **OK** button. Here is what the screen looks like:



The animation of a spider web being traced appears. Just like the spider goes over every line, this tool causes the software to trace every line. This will give us the results we are looking for.

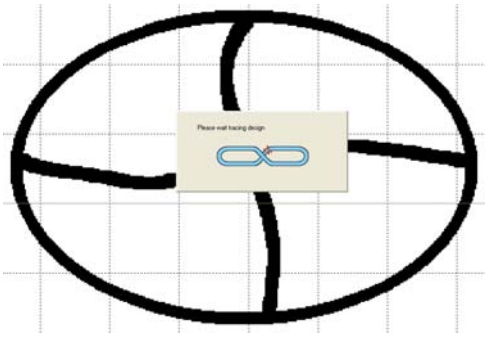
20. Here is what the screen looks like now:



Every line was traced with a double run of stitches. If you had chosen the second tool in the **QuickTrace** menu, **Quadruple Trace**, the results would be the same, with the exception that rather than 2 lines of stitching there will be 4 lines of stitching placed on the design. Before we go on, **right click** to put down this tool, then **left click** on the **Undo** tool to remove these stitches so that we can look at the last of the automatic punching tools.

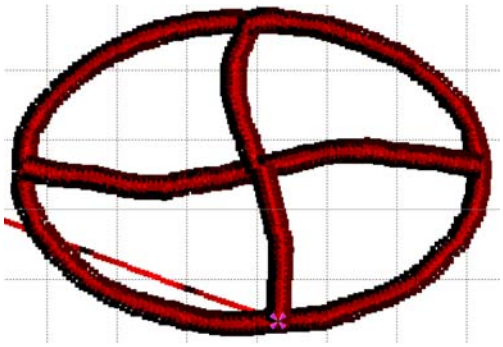
21. **Left click** on **QuickTrace** on the menu bar. When the drop down menu appears, **left click** on the **Constant-Width Satin Trace** tool. As soon as you pick this tool, **left click** anywhere on one of the lines that make up the ellipse graphic. After the **Color Tolerance** dialog opens, **left click** on the **OK** button.

22. Here is a new animation. This is the animation for the **Satin Trace** part of the software.



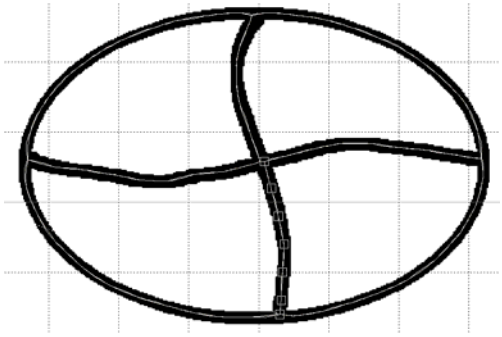
After a few seconds, the software animation wraps up and you will see the results.

23. Here are the results:



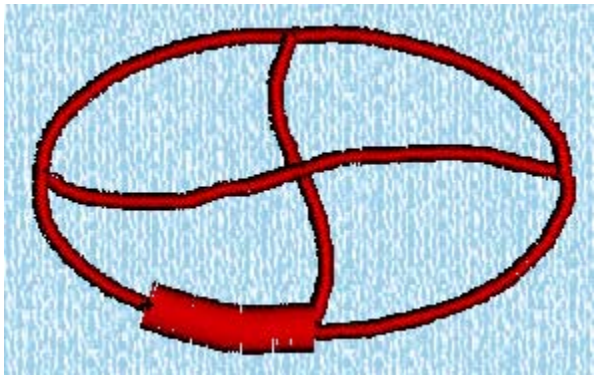
This looks great. Suppose we want to set the width of the satin trace so that it is wider. How would we do that? If you said, “Go to the **Edit** page”, you would be correct. Let’s to that now because there are a few surprises waiting for us there.

24. **Left click** on the **Edit** tab. Here is what your screen should look like:



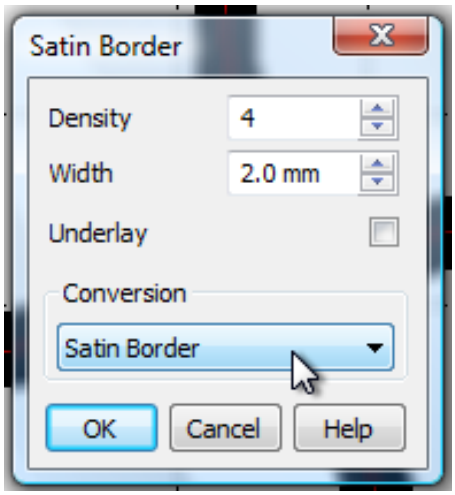
You can see that only part of the center line is selected (has the little squares on it). In the lower right corner of the **Edit** page the words **Satin Border** show that we have selected what appears to be the correct object. **Right click** in the **Work Area** to open the properties dialog. Change the value in **Width** to 6.0 then **left click** on the **OK** button. **Left click** on the **Create** tab to see the results.

25. Here is what the screen looks like:



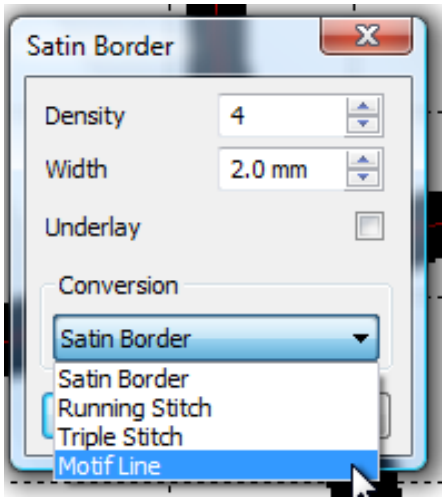
Wait a minute. Only part of the design changed. Unfortunately (or in some cases fortunately) this is the way that this tool works. If you return to the **Edit** page and look at the **FilmStrip**, you will see that the last few objects on the **FilmStrip** vary between the **Satin Border** objects and the **Running Stitch** objects that are placed automatically for you. The reason that I said earlier that it may be fortunate that you can select separate sections of the **Satin Border** is because when a **Satin Border** object is placed on various curves and lines, it is sometimes necessary to make small changes in the width of the **Satin Border** objects to make them fit in the design. I had you make a large change from 2.0 mm in the width to 6.0 mm in the width to make it stand out in the design. On the left side of this design, you can see that there is a very small area that appears to have a small gap in it. By changing the width of those two segments to maybe 1.7 mm this gap will be reduced yet the change in width will be barely perceptible in the stitched out design. In addition, there is one more thing that is **new** to ***4D Design Creator***. Let’s look at it now.

26. **Right click** on the **Work Area** to open the **Properties** dialog for this object. Here is what it looks like:



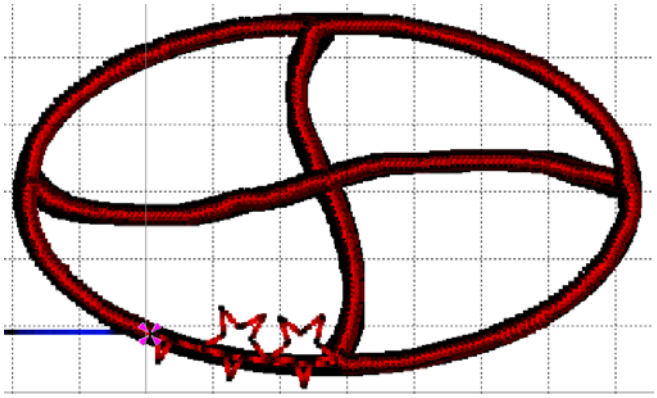
Look at the **Conversion** frame. There is a combo box with a drop down menu in it. Right now it says **Satin Border**. Let's **left click** on the drop down arrow and see what **new** and **exciting** options await us.

27. Here is a list of the options:



Left click on **Motif Line** (the bottom option in the list). After you click, the list will go away. **Left click** on the **OK** button and the **Motif Line Properties** dialog will open. We won't make any changes to this dialog. Just **left click** on the **OK** button. After this dialog closes, **left click** on the **Create** tab and look at the results.

28. This is what you should see:



The part of the **Satin Border** that was in selection mode at the time we did our editing was converted to a **Motif Line**. Just think of all the creative ways you could use this option.

This completes our look at the automatic punching tools. In the next chapter, we will look at how to use the manual punching tools when we need to have more control over the application of stitches to our design.

Chapter 6 – Using the Manual Punching Tools

Before we look at the individual manual punching tools, I want to give you an overall concept of how they work, I think that once you understand what is going on “behind the scenes” so to speak, that it will be easier to use each of the manual tools.

Area Filling Tools

Just like with the automatic punching tools, we have several tools that can be used to fill large areas of the design with many stitches. The areas can be filled with any of the **252** fill stitch patterns, or any of the motif fill patterns. Before the software can fill in any of the areas, it has to either decide for itself (with an automatic punching tool) where the limits of the fill area are, or you have to decide for the software (with a manual punching tool) where the limits of the fill area are.

You set the limits for fill areas when using manual punching tools by clicking at least 3 times in various areas of the design to place the points that make up the enclosed area and then right click to tell the software that you are ready for it to detect the limits of that area and then fill it in with stitches.

The more points that you designate in an area, the smoother the curvature of the area will be because the software will have more information to work with. If you wish to have a sharp corner in your fill area, we have a special technique that will generate sharp corners for you. As we go over the manual punching tools that fill areas, I will show you how to make sharp corners.

Line Tracing and Accent Tools

For the most part, these tools will be used to place stitch objects in a line to accentuate and set off areas of your design. They work just like the area filling tools in that they follow a series of points that you designate by left clicking on your design. The difference is that if you click points around a circle, these tools will not fill in the center of the circle. If you used an area filling tool and clicked around the circumference of the circle, the software would fill in the circle with stitches.

Special Effects Tools

There are several tools that allow your creativity to really take off. They produce stitch objects that are not available in the automatic punching tool set. You can use these tools to produce designs that truly are wearable art. And the good news is that this is not all that hard to do…once you know the secret of how to use these tools.

Tablet Mode

This option is one of the most exciting things about ***4D Design Creator***. Earlier versions of the software had the capability of allowing you to create **Freehand** stitch objects. The way those tools worked (and continue to work if you turn off **Tablet Mode** in the **Preferences** dialog) is that after selecting the freehand tool, you have to make a series of clicks with your mouse to define either a line of points (if you are creating a linear object like a line of **Running Stitches**) or a series of points to outline an area (if you are creating a large, shaped object like a **Fill Area**). You can still use this technique in ***4D Design Creator*** if you wish. Or you can choose to use the **NEW Tablet Mode** with your software. When you are in **Tablet Mode** you can use the pen that comes with your tablet to simply draw a line or area on your design and, when you lift your pen from the tablet surface, the stitch object is instantly created. I have to be honest with you. Using **Tablet Mode** does take some getting used to especially if, like me, you are used to "doing it the old way." But give it a chance and try **Tablet Mode**. I think that once you try it, you'll wonder how you ever got along without it. The first thing I'm going to show you is how to turn **Tablet Mode** on and off.

Activating Tablet Mode

Turning **Tablet Mode** on and off is easy. **Left click** on the **Preferences** tool  . When the **Preferences** dialog opens, **left click** on the **Screen** tab. When you arrive at the **Screen** page, there are four checkboxes to choose from. The bottom checkbox is labeled **Use Tablet Mode for Freehand Options**. **Left click** in that checkbox to ensure that there is a check mark in the box.

If you do not have a tablet, don't worry. I'm still going to show you how to work without one. For those of you who do have a tablet, I'll include instructions on how to use the tablet.

Enough reading! Let's get started learning how to use the manual punching tools with another exercise.

Once again we will be using the basic shapes that we created on the **Picture** page. We will be doing a lot of work creating the stitch objects and then discussing how to modify them on the **Edit** page so that they fit our design exactly the way we want.

1. If you are just starting ***4D Design Creator***, then **left click** on the **Create** tab so that we can load the file **C:\Design Creator Projects\CANs\ShapesOriginal.can**. If you are already in ***4D Design Creator***, then **left click** on the **New** tool to clear your design area, then load the **ShapesOriginal.can** file.

2. Now that we have that CAN file loaded, let's immediately use the **Save As…** tool to save it with a different name so that if you decide to save along the way you will not overlay the original file. **Left click** on the word **File** on the menu bar, then **left click** on the **Save As…** tool and when the **Save As** dialog starts, save the file with a file name of **ShapesManual.can**.

3. Now we are ready to begin. However, at this point I want to remind you about the work that the automatic punching tools did for us and what the extra steps are that we have to take when we decide to use manual punching tools.

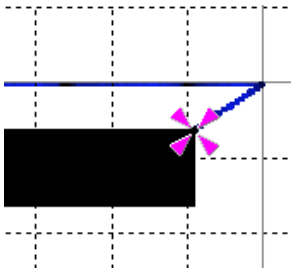
   Remember when we first used the automatic tools to create our first stitch object and I showed you on the **Edit** page that even though we only created one object, the automatic tool put in a **Color Change** command, then a **Tie Off**, then our fill stitches, then another **Tie Off** command? Well, we are going to have to remember to do all of those steps ourselves. Here, then, is a list of the steps that you will have to take when using **any** of the manual punching tools.

   Color Change (if needed)
   Jump Stitch to new area (if needed)
   Tie Off in the correct direction
   Create the appropriate stitch object
   Tie Off in the correct direction

Using the Straight Satin Tool

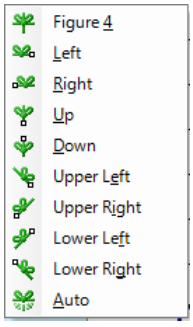
4. Following the steps outlined above, the first thing we have to do is to use the **Color Change** tool (if we wish to change colors for this stitch object.)

5. The next thing we must do as outlined in the steps listed above, is to use the **Jump Stitch** command to move to the beginning of the stitch object we are going to create. **Left click** on the word **Command** on the menu bar, then **left click** on the **Jump Stitch** tool on the drop down menu. Then **left click** on the upper corner of the horizontal of the **L** shaped graphic. Your screen should look like this:



   There is the **Jump Stitch**. We are finished with the **Jump Stitch** tool, so **right click** to drop that tool. It is important to note that the destination of this **Jump Stitch** will also be the beginning of our **Straight Satin** object. However, we have one more **very important** thing to do before we insert the **Straight Satin** object. We have to put in a **Tie Off** stitch.

6. **Left click** on the word **Command** on the menu bar. When the drop down menu appears, look at the bottom of the menu and the **Tie Offs** option appears. Place your mouse on the words **Tie Offs** and this sub menu will appear:

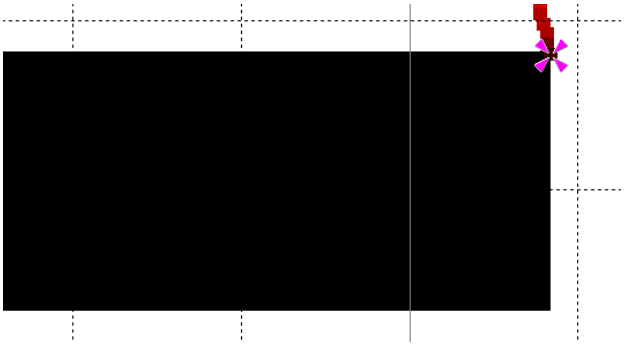


   There are **10** different **Tie Offs**! How do you know which one to use? Here's how to decide. Look at each example of the **Tie Offs**. Each has a small, black square and then some green lines. The black square is where the **Tie Off** begins and the green lines are the secondary stitches that make up the **Tie Off** itself. **You select your Tie Off based upon the direction that the rest of your stitches are going to be made so that the following stitches will cover up the Tie Off stitches**. The **Figure 4 Tie Off** should only be used at the start of a large **Fill** or **Satin Area** object where the **Tie Off** would be completely covered with stitches.

The **Auto Tie Off** may be used when you want the software to determine the best kind of **Tie Off** to create. In this case, because we will be stitching down and to the left, we could select either the **Down Tie Off**, or the **Lower Left Tie Off** since either one would be covered by the rest of the stitches we are about to put into place. **Left click** on the **Lower Left** option in this list. After you click, it appears that nothing happened. None of the tools are grayed out and there are no visible changes to the design. However, the **Tie Off** is there. This may seem like a tedious step, but it is absolutely necessary. Remember, you are going to snip off that **Jump Stitch**. Unless the stitches are tied off at the beginning of the **Straight Satin** object these stitches would begin to unravel. **Always put in a tie off at the beginning and end of any manually created object.** The automatic punching tools do this for you automatically. But since you are taking full control of the process, **you must remember to do this yourself**. Here is an easy rule to follow: **When in doubt, put in a Tie Off**. It's better to have a **Tie Off** and not need one than to need a **Tie Off** and not have one in place. Before we move on, **left click** on the word **Command** on the menu bar, then **left click** on the **Jump Stitch** option. We need to jump to the top of the **horizontal** part of the **L** to begin working with our next tool. **Right click** to put down the **Jump Stitch** tool. **Don't forget to put in a Tie Off after the jump stitch**.

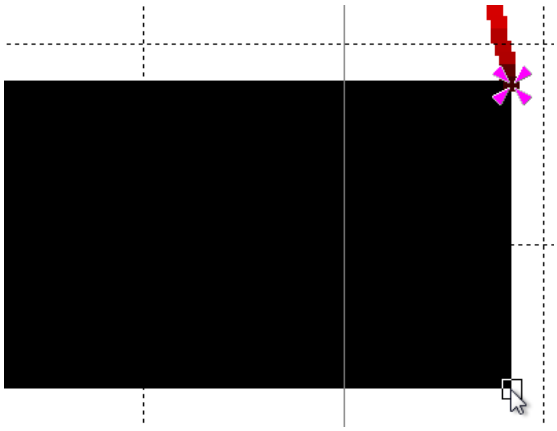
7. The first tool we will learn how to use is the **Straight Satin**. This tool is used to make a stitch object of what are, essentially, zig zag stitches. These stitches may be exactly horizontal, exactly vertical, or set at any angle. The stitches may also change in angle inside of the stitch object. You can also change the density of the stitches in a **Satin Column** on the **Edit** page. It is an extremely versatile tool. **Left click** on the word **Satin** on the menu bar. A drop down menu will appear. The first item in that menu is the **Straight Satin** tool  on the tool bar. **Left click** on this tool to select it. We are now going to place a set of stitches over the horizontal part of the large "L" on our design.

8. As soon as you clicked on the **Straight Satin** tool, the needle position indicator (the purple triangles) is at the start of this object You screen should look like this:



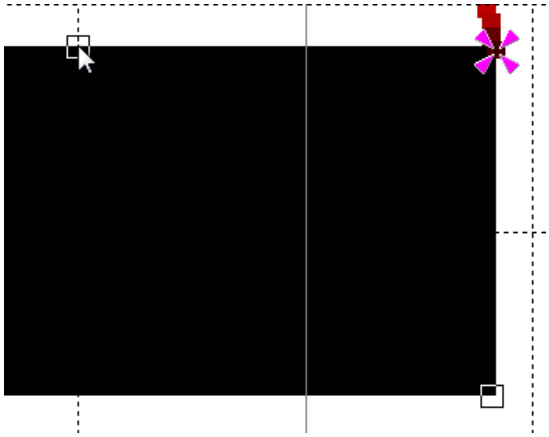
This is the first of **four points** that you will have to designate so that the software knows where to put your stitches. You are going to click **three more times** to outline the area of the **Straight Satin** object. Where you place these stitches will decide not only the width if the stitches, but the angle of the stitching as well. I want the stitches to run vertically across the black part of the graphic. So, the next point we will click on is the lower right corner of the graphic directly below the needle position indicator.

9. **Left click** on the bottom corner of the **L**. Here is what you will see:



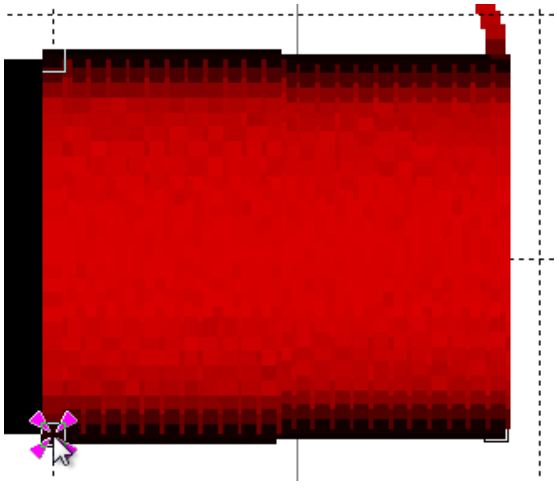
So far, these two clicks told the software how wide the stitches should be <u>at this point</u> and which angle the stitches should be <u>at this point</u>. The reason I emphasize <u>at this point</u> is because when you put in the final two clicks, they might possibly be spaced differently than these points and they may tell the software to stitch at a different angle. More on that later. Let's stay with the basics for now.

10. **Left click** on the **<u>top</u>** of the graphic right where the one of the **Grid Lines** intersect with the top of the graphic as shown here:



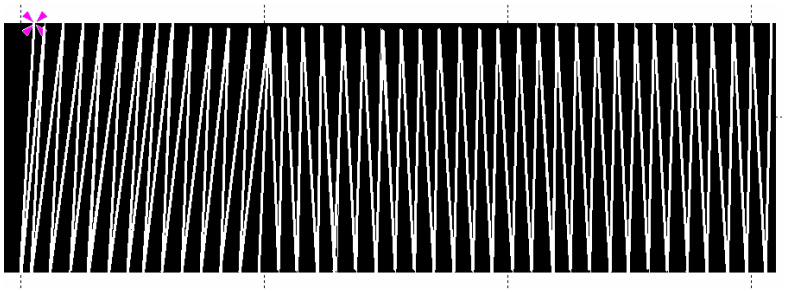
One more click and we will complete the placement of this object. All we have left to do is to **left click** directly below the upper click on the bottom of the graphic.

11. **Left click** on the intersection of the **Grid Line** and the graphic directly below the third little square. When you do this, the stitches will be put in place as shown here:



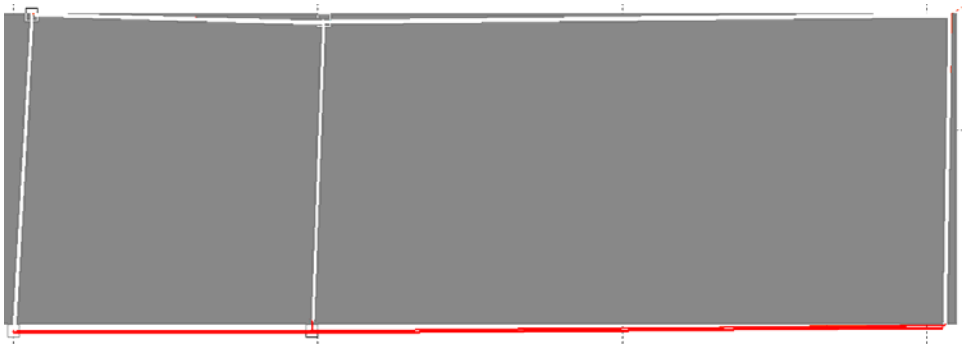
The stitches are put in place and yet there are still two little squares shown! This is because the software has re-numbered the clicks you put into place. Here is what happened. Click 1 was on the upper right. Click 2 was on the lower right. Click 3 was on the upper left. Click 4 was on the lower left. The software put in the stitches that were bounded by these 4 clicks. Then, thinking that you wished to continue putting in another section of **Straight Satin**, click 4 became click 1, click 3 became click 2. This was done to ensure that the next segment of the **Straight Satin** would be <u>exactly the same width</u> and <u>butted up against the end of the first segment</u> of the **Straight Satin**. Therefore, to place the next segment of **Straight Satin** requires only **<u>2 additional clicks</u>**.

12. **Left click** on the **<u>top</u>** of the graphic to place click number 3, and then **left click** on the bottom of the graphic to place click 4. Another segment is put into place. **Right click** to put down the **Straight Satin** tool. Let's turn off the **3D View** to see the direction of the stitches. If you **Zoom In** on the stitch object here is what you will see:



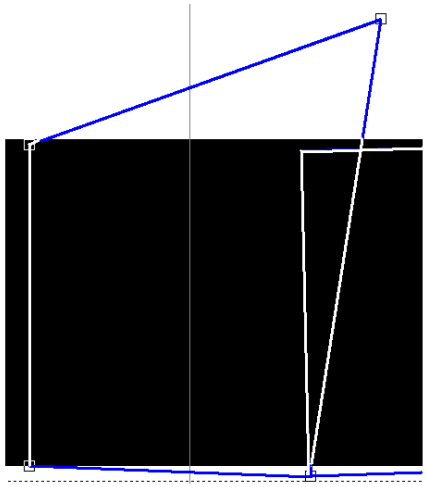
You can clearly see the direction of the stitching. In the case of my stitches, you can also see a slight change in stitch direction between the two segments. The stitches on the left side of the object are slightly canted to the right. I'll show you how to correct this in a minute. What I want you to see here is that the stitches look just like zig zag stitches. The diagonal stitches are covered by the stitches that go straight across the column. And, I wanted you to see that it is easy to make a mistake with this tool if you break up your **Straight Satin** object into small segments. If I wanted to create an object for this graphic, I would have done the entire horizontal component in one large **Straight Satin** object. But if I had done that, you would not have learned from my mistake or how to correct it. I always tell my students that the reason I know more about the software than they do is because I have made more mistakes than they have made, and I learned how to either correct them or avoid making them again in the future. I will make lots of mistakes in this book (intentionally, of course) and lead you into making the same mistakes so that you too can learn how to correct them. Let's take a look at this object on the **Edit** page.

13. **Left click** on the **Edit** tab. Use the **Zoom In** tool to get a good look at the graphic in the area in which we digitized. Unless you clicked the points **<u>exactly</u>** on the same line, you should see something like this:

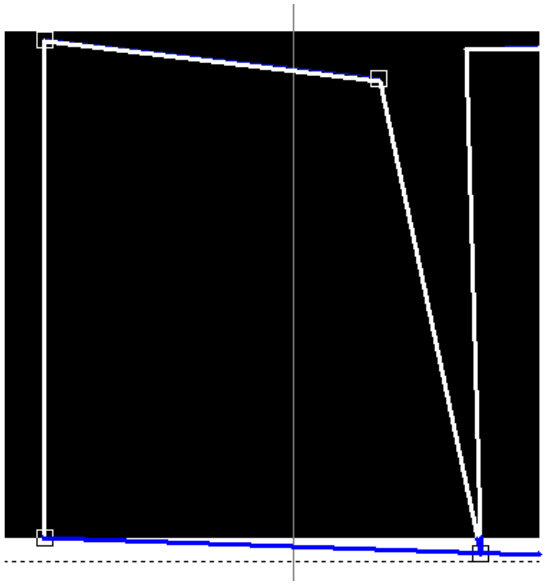


You may not be able to see it well on this page because the picture is in black and white, but you should see it well on your screen once you use the **Zoom In** tool to select this part of the graphic. The first thing you should notice is that the last object added to the design is in selection mode. Here there are 4 little squares at the corners of the segment we just created (the left end of the **Straight Satin**). Your "mistake" will probably look different than mine. Don't worry, we are going to make another "mistake" to see how this stitch object really works, and then we will correct the "mistake".

14. **Left click and hold** on the **<u>top right</u>** square of the selected object. This should be right about in the middle of the **Satin Column**. While holding down the mouse button, drag the square to the upper right, outside of the black graphic. When you have the square placed like mine looks below, release the mouse button. This is clearly a mistake. But it is one that you should see. **Left click** on the **Create** tab and look at the results. You can see that this segment of the **Satin Column** is wider than the first segment we created. Let's correct this "mistake" and make another "mistake" in the process. **Note:** If this was truly a mistake and we wanted to reset the location of the stitches, we could just click on the **Undo** tool to instantly go back to what we had before. I don't want you to do that. I want to make another "mistake" and correct it manually.

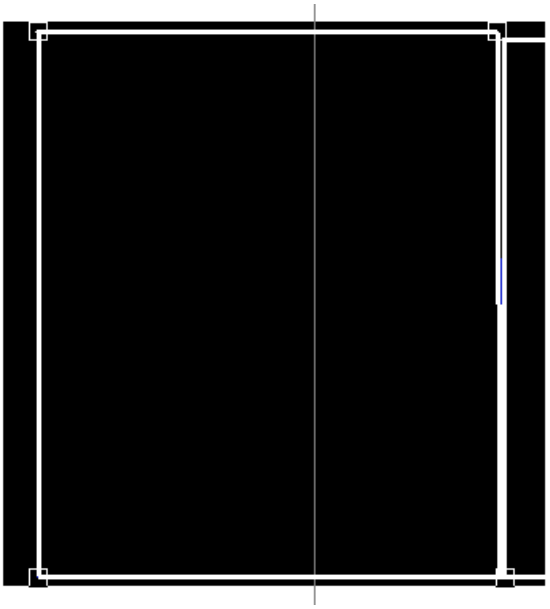


15. **Left click** on the **Edit** tab to go back to the **Edit** Page. The same selection boxes are there on this segment. We will use the same procedure we used before in step 14. **Left click and hold** on the upper right corner of the segment and drag it down "too far" into the graphic so that your design looks like this:



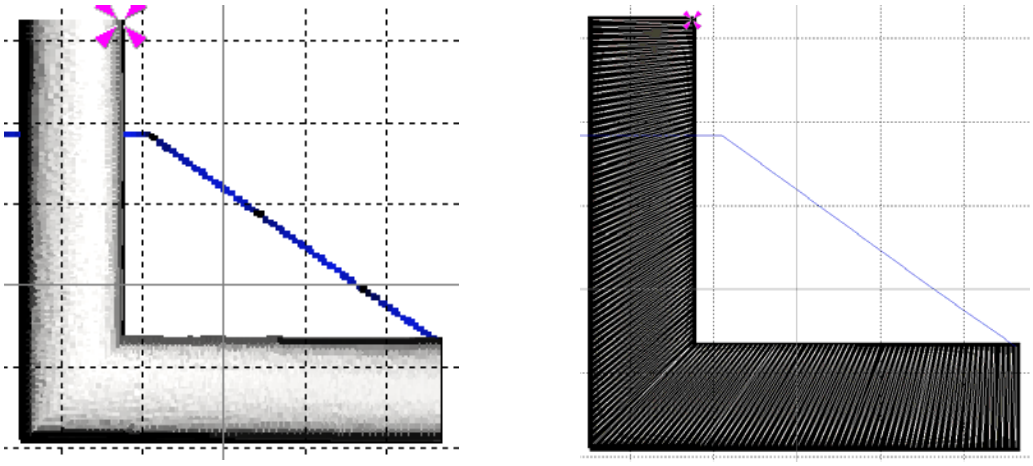
I moved the square too far into the graphic. **Left click** on the **Create** tab to see what our design looks like now. It doesn't look too good. You can now see the underlying graphic. There is also a gap now in the **Satin Column**. There are also other problems in this part of the design. Let's fix them all.

16. Use the **Zoom In** tool so that you can see just this segment of the **Satin Column**. **Left click and hold** on each square and drag it so that the lines that outline the segment are all aligned to the graphic. It should look like this:



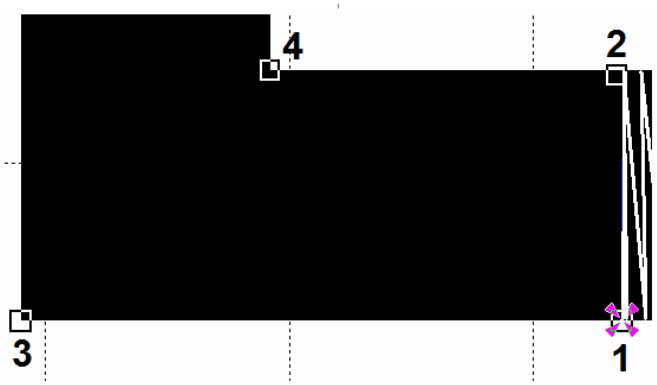
You can see that the vertical lines in this object are perpendicular to the sides of the graphic. You can also see that I still have a problem on the right side of the object. There will be a small, but probably noticeable, gap in this **Straight Satin** object. This means that I have to correct the problem in the segment on the right. To gain access to that segment, I will tap once on the **left arrow** on my keyboard to move **backwards** in the list of design creation objects (Remember, the list of objects is just like a sentence. Right now we are on the last word in the sentence. To go back towards the beginning of the sentence, we have to move to the **left**. After you tap the **left arrow** key, you will see that the squares that make up the corners of the first **Straight Satin** segment are now selected. Look in the **lower right** corner of your screen and the name of the currently selected object should read "**Straight Satin**". Go ahead and correct any problems with your design at this point. The result should look like one, continuous, **Straight Satin** object. The next challenge will be getting a mitered corner on the design.

17. Now, I want to turn the corner on this frame. Here is the effect I'm looking for looks like in 3D and 2D:



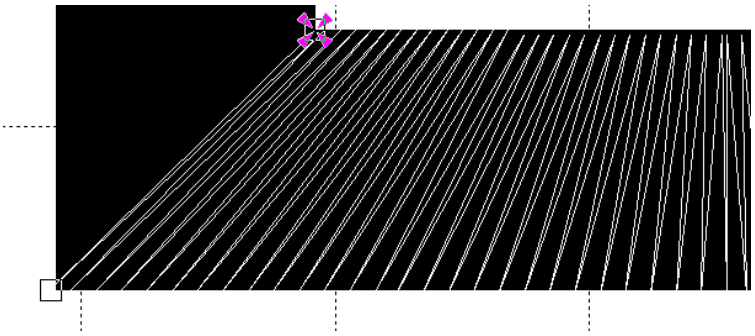
Here is how to get this effect and get it perfect.

18. **Left click** on the **Straight Satin** tool to select it. A small square will appear at one of the corners of your design marking the beginning of the four-point extent of the **Straight Satin** we are about to create. **Left click** on the opposite side of the graphic to place point 2. Then **left click** on one corner of the **L**. Finally, **left click** on the opposite corner of the **L** and the first group of stitches will be put in place. You will have clicked in this order:



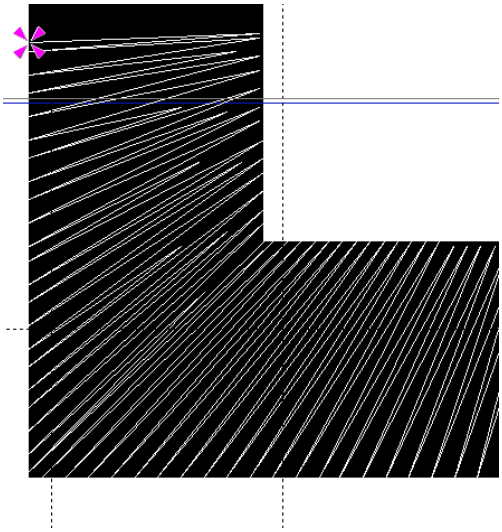
If your purple needle indicator was at the top of the horizontal piece of the graphic to begin with, then clicks 1 and 2 would be transposed as would clicks 3 and 4. Either way, the resultant stitches would come out the same.

19. Of course you won't see the numbers I show above, and as soon as you place the 4th click in place here is what you will see:



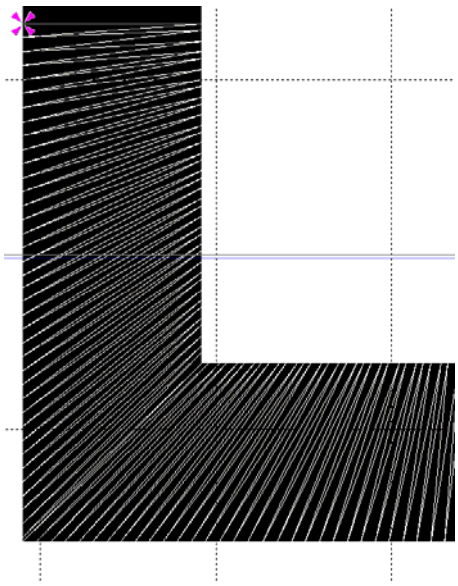
The stitches begin to slant from the original position of clicks 1 and 2 and reach their maximum amount of slant at the locations of clicks 3 and 4. In addition, clicks 3 and 4 are instantly reset to clicks 1 and 2. The next 2 clicks you place will generate another segment. Do that now. **Left click** on the side of the graphic opposite from where your needle indicator is to place click 3, then **left click** on the opposite side of the graphic to place click 4.

20. Here is the result:



Hmm…compare the stitches on the bottom of the design with the stitches on the left side of the design. There is a noticeable difference in the evenness of the stitches. If you turn the 3D feature on, it is also quite obvious. I know that you are thinking that there must be a way around this…and there is. When you make clicks 3 and 4 to place the second segment, make sure that they are not too close to the corner of the graphic or this will be the result.

21. Now we will do this the right way. **Right click** on the **Work Area** to put down the **Straight Satin** tool. **Left click** on the **Undo** tool to get rid of this stitch object. Now go back to step 18 and place the same stitches in the same way. Now, repeat the instructions in step 19 to place the second set of stitches but make sure that clicks 3 and 4 are further up the vertical part of the column. Now, **right click** to put down the **Straight Satin** tool. Here is what you should see:



This is what the corner should look like. In fact, If I were going to create a **Straight Satin** object for this part of the graphic, I would have done it in six total clicks. Clicks 1, 2, 3, and 4 would place the entire horizontal part of the design, then clicks 5 and 6 (which would actually be the 3rd and 4th clicks of the second **Straight Satin** segment) would finish off the vertical component of the design.

22. Since we are creating a design with manual tools and we are done with this component of the design, we need to use the **Tie Off** tool to place a tie off at the end of this part of the design. **Left click** on the word **Command** on the menu bar, then touch the **Tie Off** tool to display the tie off menu. Select the tie off that will place the tie off stitches in line with the horizontal stitches of the design. **If your needle point is on the left of the design, then select the Right Tie Off from the menu of Tie Off stitches.** If you needle point is on the **right** of the design, then select the **Left Tie Off** from the menu of **Tie Off** stitches. Remember, **you must place a tie off stitch at the end of all manually created objects**

Saving Your Work

Whether you are a beginner, or a veteran, there are times when you feel like you cannot maintain the high level of concentration that design creation requires. You need to stop and take a break, but you don't want to lose your work. And, after you gain some experience with design creation, you might want to stop and stitch out your yet-to-be-completed work to see if a particular technique is producing the look that you want. You might want to go back to an earlier version of your work. Here is how you should do it.

So far, we have been working with the original CAN file we created right after we used the **Design Area** tool. The name of that CAN file should be **ShapesManual.can**. Before we go on to the next tool, let's save what we have done so far. Here's how to do it.

1. **Left click** on the word **File** on the menu bar.

2. **Left click** on the word **Save As…** on the drop down menu.

3. When the **Save As** dialog opens, navigate to the folder you created earlier named **C:\Design creationProjects\CANs** and look at the **File Name** text box at the bottom of the dialog. It should have the name of the file you are working with at the time, **ShapesManual.can**. We want the name of the new CAN file to be similar to, but different from, the name of the original file. In addition, it would be nice if the name of the new CAN file told us which design was done in which order.

4. As you look at the file name you will notice that it is highlighted (white letters on a blue background). **Left click** on the file name in the **File Name** text box. When you do that click, the overall selection will turn off and the insertion point (a vertical bar that looks like this |) will appear in the name. Use the arrow keys on your keyboard to move the insertion point to the end of the file name so that it looks like this: **ShapesManual|.can**. Now, type in **V1** so that the new file name reads: **ShapesManualV1|.can** (don't worry, the insertion point will not be included in the file name).

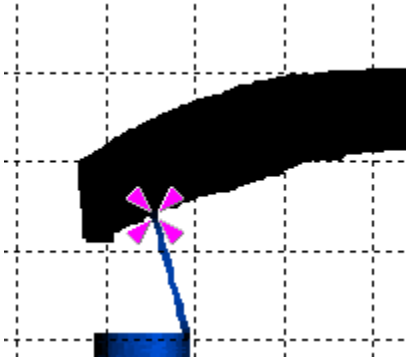
5. **Left click** on the command button labeled **OK**.

The next time you save this file, change the number from **V1** to **V2**. And each time you save your file, increase the number so that you know what order in which the files were created. I do this with every design I work on. I strongly recommend that you do the same thing. The reason for this is that by changing the name of the file, you prevent the possibility of ever losing any of the work you have done while preserving your ability to go back to an earlier version of your work if something doesn't work out.

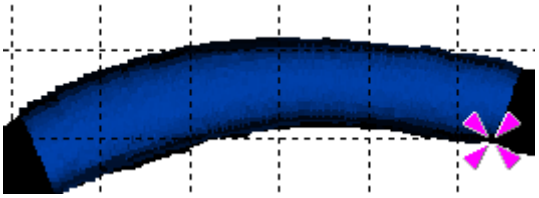
Using the Curved Satin Tool

Creating curved satin columns with the **Curved Satin** tool is very similar to the technique we learned for creating straight satin columns with the **Straight Satin** tool. The main difference is that rather than placing 4 points to outline the area of the stitch object, you will be placing 8 points to outline the area of the stitch object. Let's do a short exercise to learn how to use this powerful tool.

1. The first thing we need to do is to **left click** on the **Jump Stitch** tool to begin using it. As soon as this tool is active, **left click** near the lower left corner of the curved arc on the design on your **Work Area**. Here is what you should see:



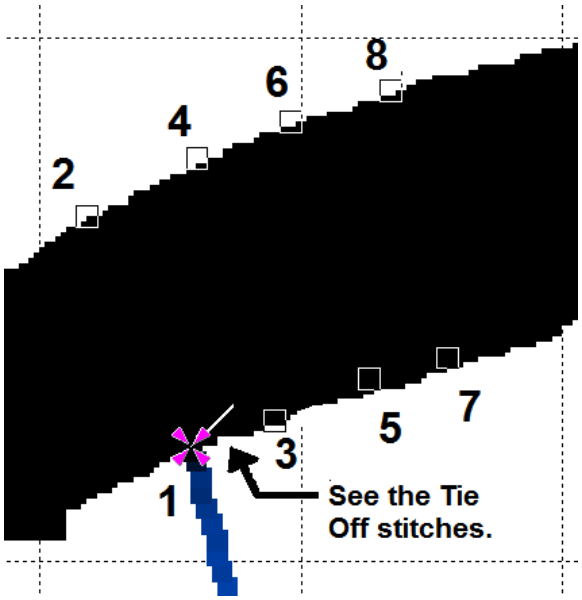
Don't worry about covering that section of the arc to the left. I want you to see something else about how this tool works. I want to create something that resembles this:



2. **Right click** to put down the **Jump Stitch** tool. Now, as with all manual design creation, we have to put down a tie off stitch. **Left click** on the word **Command** on the menu bar and then touch the words **Tie Offs** with your mouse pointer and the full list **Tie Offs** sub-menu will appear. Because our new stitches will completely cover this tie off, we can select the **Up**, **Upper Left**, or the **Upper Right** option. **Left click** on one of these options to put in the tie off stitch. I'm going to say this again because it is easy to forget. **Always put in a tie off at the beginning and end of any object that you create manually.** The automatic punching tools do this for you automatically. But since you are taking full control of the process, **you must remember to do this yourself**.

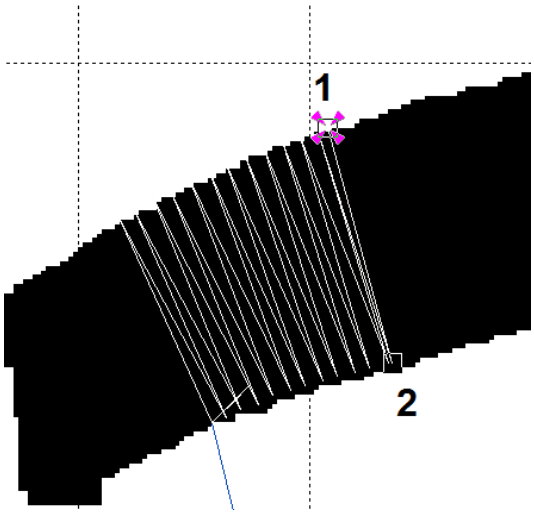
3. Now we are ready to begin using the **Curved Satin** tool. **Left click** on the word **Satin** on the menu bar. A drop down menu will appear. The second item in that menu is the **Curved Satin** tool  on the tool bar. **Left click** on the **Curved Satin** tool to select it.

4. Placing these stitches will be very similar to placing stitches with the **Straight Satin** tool, except that rather than placing 4 clicks to outline an area, we will have to place **8** clicks to place an area of stitches. Let's put down the first segment of stitches. As you left click on the graphic, try to place the clicks directly across from each other. Since the radius of the bottom of the arc is smaller than the radius of the top of the arc, your clicks along the bottom will, necessarily, be a little closer together. Just like with the **Straight Satin** tool, the first point of the 8 points is already in place (where the purple needle location indicator is). You will be putting points 2-8 into place before the stitches will be generated. Look at where I clicked in the graphic below, and then put your points in place:



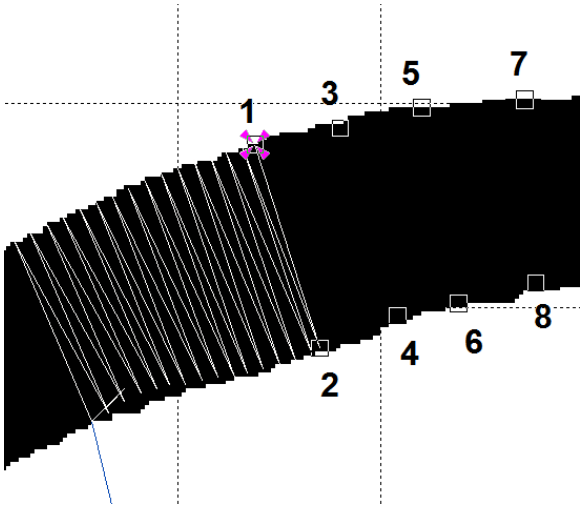
Naturally, the numbers will not appear on your screen. I just put them in place to illustrate the order of clicking. Additionally, when you click on the 8th point, the stitches are immediately placed on the design.

5. Here is what the stitches will look like in 2D on your screen:



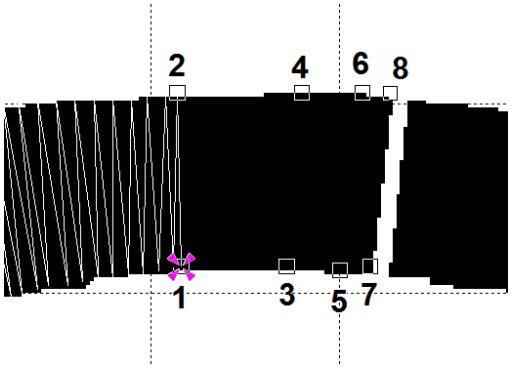
The first segment of stitches is in place. In addition, the old point numbers have been "renumbered" automatically by the software. Point number **8** (the last place you clicked) was renumbered to point number **1** (the start of a new segment). Point number **7** (the second to last place you clicked) was renumbered to point number **2**. The reason this was done is to ensure that the beginning of each subsequent segments you put into place is placed **precisely** against the end of the **previous** segment. This saves a lot of time in editing. Now, since the first two points are already in place, you will click **6 times** to outline the extent of the second segment. Let's go ahead and put that second segment in place. Remember the order of numbering of these segments. You will be clicking on the **same side** as the side where the purple needle insertion point is located.

6. Here is where I put my clicks number **3** through **8**:



I actually count along as I place these points. From the start of the **Curved Satin** I count, "2, 3, 4, 5, 6, 7, 8, 3, 4, 5, 6, 7, 8, 3, 4, 5, 6, 7, 8…" and so on until I am finished. This way, I know how far from the placement of stitches I am located. I never have to count 1 because the software always places point number 1 and, if I continue placing segments with the **Curved Satin** tool, the software places the first two points in those subsequent segments.

7. This brings up another point to consider. What if you are clicking along and you run out of space on the graphic before you arrive at click number 8? The answer is…**don't worry about it**. It doesn't matter how close together the clicks are, only the placement of them across from each other. I'm going to modify my graphic by adding a line across it to simulate the end of the design. Look at how I place my points (you can do the same without drawing a line) and look at the result:



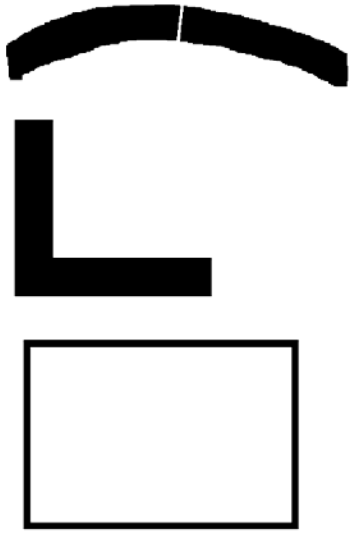
Even though the points are not evenly distributed, the **Density** of the stitches **<u>will not</u>** change. I could have even placed the final two points, the final 4 points, or even the final 6 points almost on top of each other and the results would be the same. However, if you count along like I do, then you can begin to space the initial points of that last segment closer together so that they are evenly spaced making it a little easier on yourself while you place these points.

Before we move on to the next tool, the **Satin Feather**, we have to make a change to our graphic. When we make this change to the graphic, I will show you how to use a couple of the tools on the **Picture** page that I did not show you earlier.

1. **Left click** on the **Picture** tab to switch to the **Picture** page.

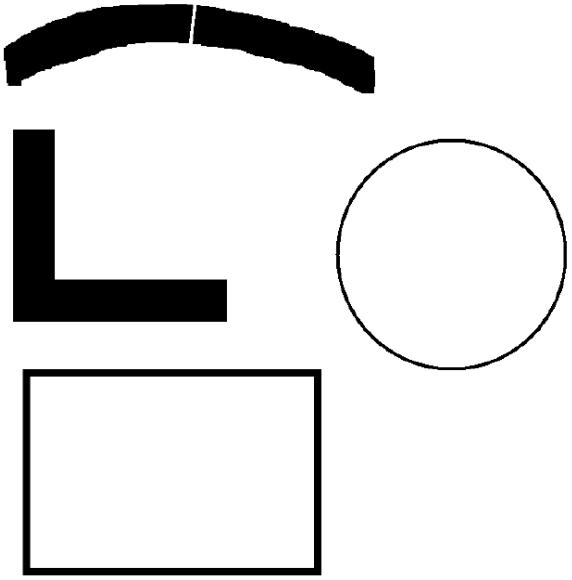
2. What we are going to do is to remove the ellipse from the right side of the graphic and replace it with a large, thick circle. The first thing to do is to choose the **Flood Fill** tool  . As soon as you choose this tool, **right click** on the ellipse, and it should disappear.

3. Your graphic should now look like this:



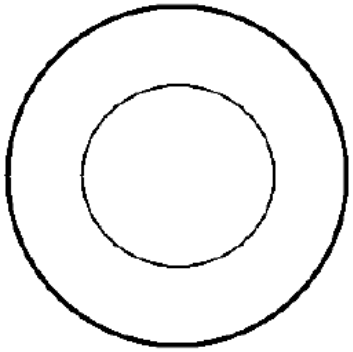
We are now going to place a circle on the right side of the graphic. **Left click** on the **Ellipse Draw** tool to select it. Remember, the way this tool works is that you **left click and hold** then drag your mouse pointer to draw the graphic. Before you drag to draw the ellipse, **hold down the CTRL** key as you drag and you will draw a perfect circle. Go ahead and draw this first circle. Make it kind of large like I did in the graphic in the next step.

4. Here is what your graphic should look like:



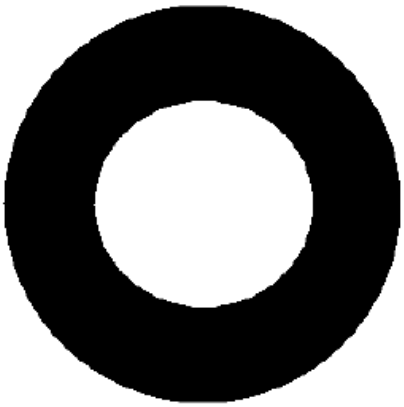
I want another circle inside of the first circle. The graphic is getting crowded. So let's **left click** on the **Freehand Select** tool  and then **left click and hold** as you draw a selection line around the circle**.** When you complete the selection, release the left mouse button and a selection box will be drawn around the circle. Now you can **left click** on the **Copy** tool on the menu bar to copy this selection to the clipboard. **Left click** on the **Paste** tool on the tool bar to paste the selection onto the drawing area. When you paste the selection, part of the background may cover the graphic in the upper left corner of the screen. If this happens, it means that the opaque background setting is in effect. Look at the little submenu on the left side of the screen. If the top option has a blue background, then you need to **left click** on the bottom option to make the background transparent. As soon as the background is transparent, **left click and hold** on one of the square **Resizing Handles** on one of the corners of the new selection. Hold down the **CTRL** key on your keyboard and drag the corner you clicked on towards the corner that is diagonally across from it to resize the graphic. After you resize the graphic, release the **CTRL** key and the **left mouse button**.

5. **Left click and hold** anywhere inside of the selection box containing the smaller circle, and drag the smaller circle until it is inside of and centered on the larger circle. Your graphic should look like this:



Let's fill in the space between the two circles. **Left click** on the **Flood Fill** tool and then move the cursor into the area between the two circles and **left click** to fill in the area. **Note:** Do you see the little tip of the paint that is pouring out of the can on the **Flood Fill** tool? The place where that little tip is located is where the filling will take place.

6. Your graphic should now look like this:



We will be using this graphic for the **Satin Feather**, and the **Satin Ring** tools. We will still need the other graphic (the thin ellipse) for other tools, so now is the time to save a new CAN file. I suggest that you do this now. I would save this CAN with the name **ShapesManualV2.can**.

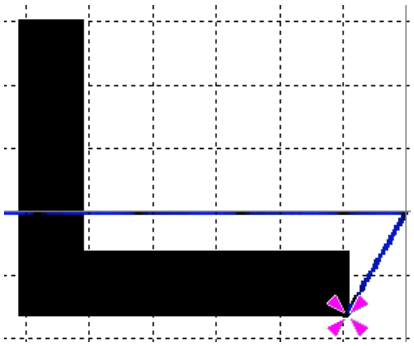
Using the Satin Feather Tool

If you plan to create a design containing a subject that has hair or fur, then this is the tool that you must master. The **Satin Feather** stitch object is, basically, the same object as the **Straight Satin** or the **Curved Satin** except that the edges of the stitches put in place may be irregular and of random length on one or both sides of the column. This irregular pattern of stitches, along with you controlling the **Density** of the stitches will allow you to create beautiful, blended colors that closely resemble objects found in nature. This tool is the one that you will want to master if you wish to create wearable art. It is not a difficult tool to use and I will go over all of the features with you. It is my favorite tool.

1. Let's begin with a simple exercise in editing. **Left click** on the **Edit** tab at the bottom of the screen. I want to remove the stitches that are covering the **L** shaped graphic. Before you can delete these stitches, you must first **select** them. **Left click** on the horizontal part of the **L**. How can we be sure that we selected the correct object to delete? Look in the **lower right corner** of the screen. The name of the object currently selected is listed there. It should read **Straight Satin**. If this is not the object that you selected, then either **left click** in a new place on the horizontal part of the **L** or, better yet, tap on the arrow keys to move backward or forward through the design until the

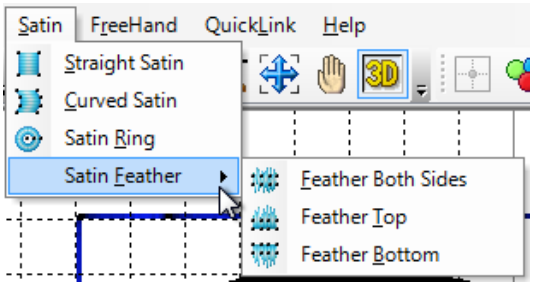
correct object is selected. When the correct object is selected, you should see the little squares around the object. If you get lost in the design then do what I do. **Press down the left arrow key and hold it** until the object names do not change and you see **Color** as the object name. You are now at the first object in the design. Now, tap the **right arrow** key to step through the design towards the end. When you locate the correct object, **left click** on the **Delete Object** tool  . Repeat this procedure as many times as necessary until all of the objects that make up the **Straight Satin** and the **Curved Satin** are removed from the design. Note: Along the way you will also be removing some **Tie Stitch** objects. That's OK. I want you to get back to the point that all you have on your design are the **Color Changes** and **Jump Stitches** that make up the size of the design area of the design.

2. The **Feathered Satin** tool, like the **Curved Satin** tool, can be used to create columns that are nearly straight, or curved to almost any radius. Let's begin with trying to create a more or less straight, satin column that is feathered on both sides. We'll use the **horizontal** part of the **L** in our graphic as a guide. But, before we begin laying down our Satin Feather stitches, we have to do something first. Do you remember what that is? If you forget, then **left click** on the word **Command** on the menu bar. We use the tools on this list from top to bottom. We are not going to make a color change at this time, so it should be obvious that the first thing we have to do is to insert a **Jump Stitch** to the area where our stitch object will begin. **Left click** on **Jump Stitch** to activate that tool, then **left click** on the **lower right** corner of the **L**. Your screen should look like this:



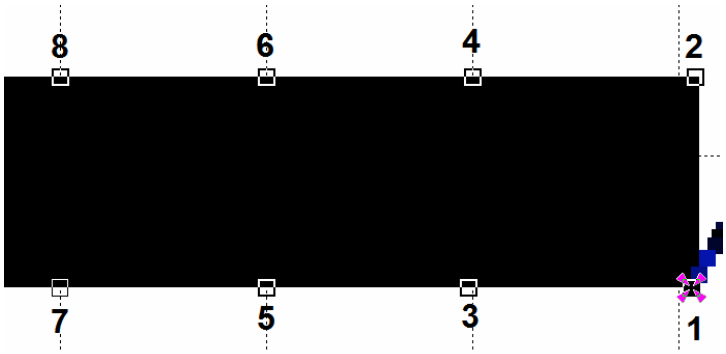
Now that we are where we want to begin our next stitch object, the first thing we have to do is…put in a **Tie Stitch**. (Remember, always put a **Tie Stitch** at the beginning and end of every manually punched object). Select the **Up** tie stitch for this **Tie Off**.

3. **Left click** on the word **Satin** on the menu bar. Then, rest your mouse pointer on the words **Feathered Satin**. A sub-menu will appear and your screen should look like this:



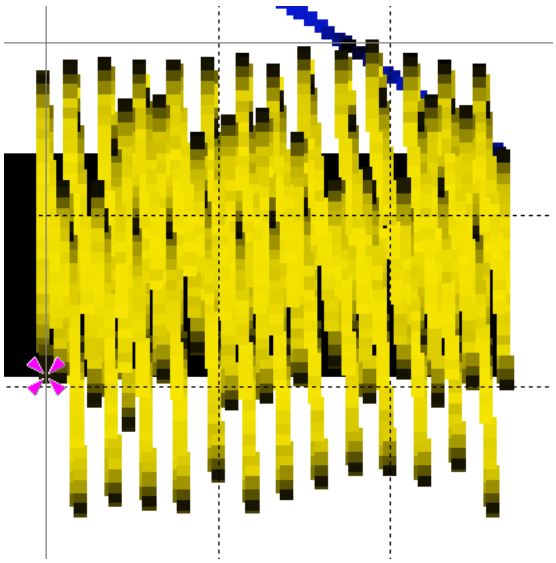
There are three types of **Satin Feather** objects. We will cover each one of them in turn. For now, **left click** on **Feather Both Sides** to activate that tool.

4. Just like the **Curved Satin**, the **Feather Satin** objects are all created by clicking on the **Work Area 7** times, then **6** times. (The first click is done automatically for you when you select the **any one of the tools** from the **Feather Satin** menu.) Just like the **Curved Satin**, you must click on alternating sides of the graphic that you wish to cover with stitches. Let's go ahead and put in our first **Feather Both Sides** stitch object. Place your clicks as I did in this graphic:



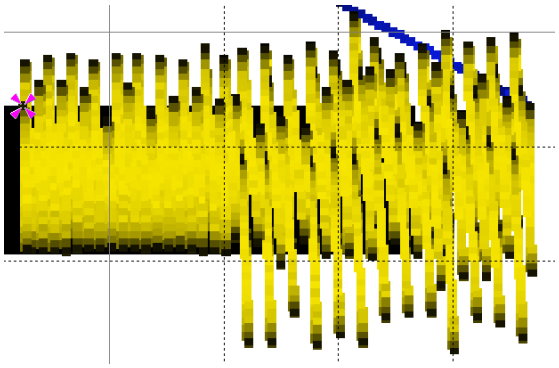
You will begin clicking on point number **2** and keep going until you reach point **8**. Naturally, you will not see the numbers and upon placing click number **8**, your stitches will appear.

5. Here is what you should see on your screen:



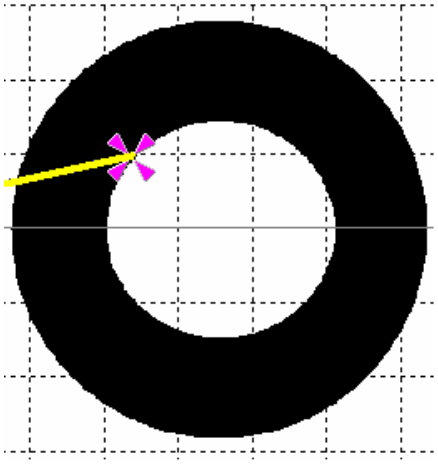
You can see that the edges of the stitching are irregular on both sides, just as we planned. The amount of feathering is set by the software and cannot be changed. Essentially, if you consider the distance (vertical in this case) between the sides of the graphic you clicked on to be equal to 1 unit, then the feathering will be 2 to 2.5 units wide. You can change the **Density** of the feathered stitches and that will definitely affect the look of the stitch object, but not the width or amount of feathering. You can also see on this graphic that the old point number **8** became the new point number **1**, and the old point number **7** became the new point **2**. This is exactly the way the **Curved Satin** works. If you wish to practice, go ahead and put in the next **6** points and generate another segment of stitches**.** (Remember how I told you to count, when putting in these stitch objects? Count 2, 3, 4, 5, 6, 7, 8…3, 4, 5, 6, 7, 8…etc.) Another thing about the **Satin Feather** object is that you can control the angle of the stitching by **not** placing the points exactly opposite each other on the new stitch object. Refer back to the graphic in step 17. If point number 2 were placed to the left of point number 1 (on the upper side of the graphic of course), and so on across the object, then the feathered stitches would slant to the left. This is just the beginning of what you can do with this fantastic tool.

6. Use the **Undo** tool (just left click on it) to remove the last few objects that are on your design until you only have the first set of stitches in the **Feather Satin** on the screen. **Right click** anywhere in the **Work Area** to deactivate and tools that might presently be active. Now we are going to pick a different **Feather Satin** object to use. **Left click** on the word **Satin** on the menu bar, then rest your mouse pointer on the **Feather Satin** object. When the sub-menu appears, **left click** on the **Feather Top** option to select that tool. We are going to put another **Feather Satin** stitch object on the **L** just to the left of the one that is feathered on both sides. Begin placing your stitch points on the **L** just as you did for the **Feather Both Sides** object. When you are done, this is the result:



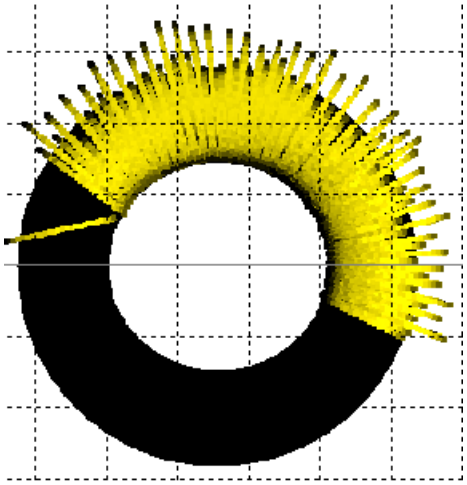
You can see that the feathering is only on the top, just as we expected it to be. If we had selected the **Feather Bottom** tool, then the feathering would have been only on the bottom. Now, let's try something in a curved design. We will pretend now that we are creating an entire design. The next set of stitches I want you to place will be on the thick doughnut on the right side of the graphic. Because we are moving to a new area of the design we have to do the following: Put in a **Tie Stitch**, put in a **Jump Stitch** to the place where the new object will begin, and then put in another **Tie Stitch** before we begin putting in the stitches for the next object. You should know how to do all of these things now without my help. If it takes a few minutes to look up the instructions in my book, that's OK, because it will re-enforce the learning process.

7. Place a **Jump Stitch** to the **10 O'Clock** position on the inside of the thick doughnut so that your stitching begins as shown in this graphic:



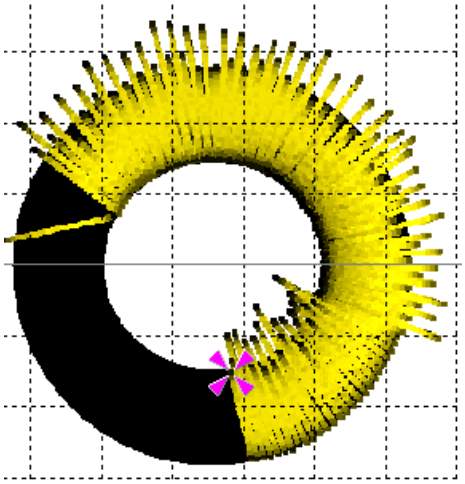
Here is what I have in mind. I want to make this part of the design look like the sun. This means that I want the feathered part of the stitches to be feathered to the <u>outside</u> of the design all the way around the circle. Let's use the **Feather Top** tool to place stitches in a curved, Satin Feather all the way around the design. We are going to have to place a number of segments in the design to accomplish this part of the design creation. Let's get started.

8. **Left click** on the word **Satin** on the menu bar. Then rest your mouse on the words **Feather Satin** on the drop down menu to make the sub-menu appear. **Left click** on the **Feather Top** tool to select it. Just like we placed the **Curved Satin** object before, we will have to place **7** points to outline the **Feather Top** object, then **6** more points to place each subsequent segment until we get back to the starting point. Let's do this now. **Note:** If anything unexpected happens as you complete this work, don't stop. Just go on with your work. You'll see what I mean in a few seconds. Here is what my first three segments look like:



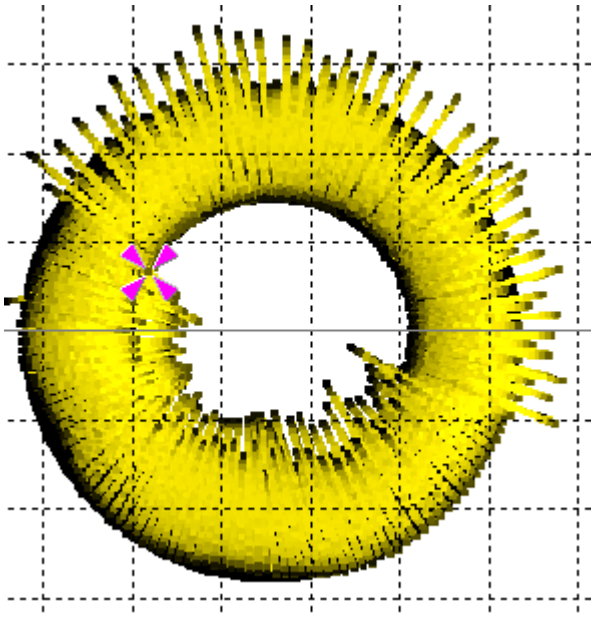
All of the stitches are even along the inside of the design and feathered at the top. Let's continue placing the stitches and see what happens.

9. Continue placing segments around the design. Everything goes well until this happens:

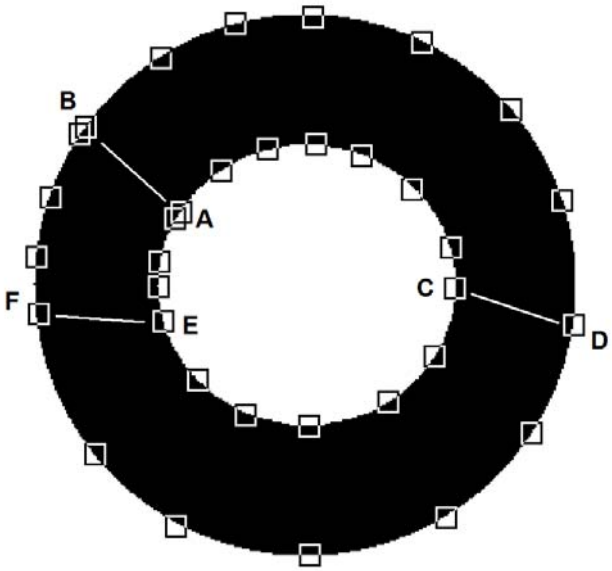


Wait a minute! What happened here? I was still using the **Feather Top** tool when all of a sudden it seemed to change to the **Feather Bottom**. The feathering of stitches is now towards the **inside** of the circle. Hmm…let's just continue on and finish off the stitches all the way until we get back to the starting point. **Remember**, as you get close to the end, it's OK to place the last few points very close together.

10. Here is what my finished design looks like:

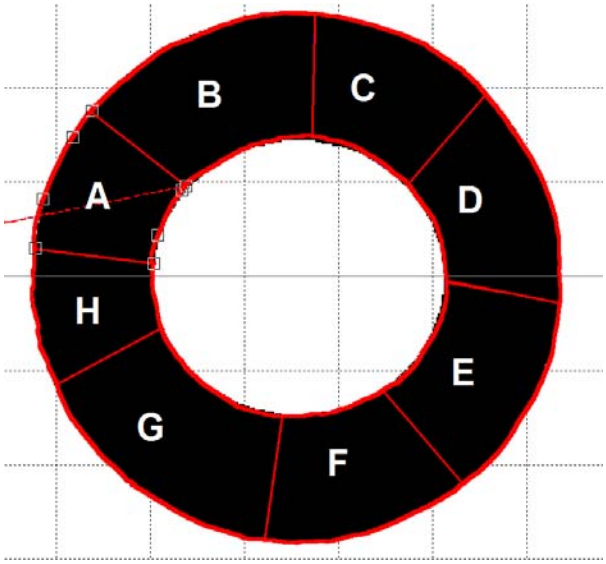


Now this is <u>really</u> confusing! At first I had the feathering to the outside of the circle, then it switched, seemingly on its own, to the inside of the circle, then in my last segment, the stitches switched again to the outside of the circle! In fact, nothing is wrong. As you look at the design, you can see that in every instance the stitches **<u>are</u>** feathered to the top. It's just that I have been using the words **<u>inside</u>** and **<u>outside</u>** to confuse you a little. But I want to bring up an important point about using this tool. The reason I wanted you to begin at the **10 O'clock** position is that I wanted to be **<u>first two</u>** clicks to be in the right **<u>relative</u>** position to each other. Here is how this tool works. <u>If you are using the **Feather Top** tool, the feathering is placed in the direction of the **higher** of the first two points that you click.</u> Think back to the first two points you placed. Here is where they were placed:



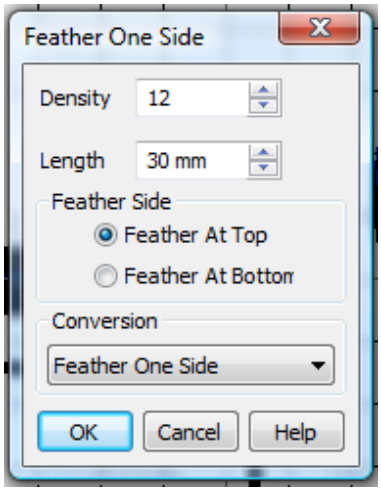
Points **A** and **B** were the first two points you placed. Since point **B** is **<u>higher</u>** than point **A**, the feathering is done towards point **B**, the **<u>outside</u>** of the circle. You put in a second segment and then came around to point **C**. When you clicked on point **D** (**C** and **D** are the <u>first two</u> points in this segment)point **D** (the second point of this segment) was <u>lower</u> than point **C**, so the feathering switched towards the **<u>inside</u>** of the circle. This is still **Feather Top** because the **<u>outside</u>** of the circle became the **<u>bottom</u>** of the segment being created. You continue until you begin the final segment. Since point **E** is **<u>lower</u>** than point **F** (the <u>second of the first two points in this segment</u>), the feathering switches again to the **<u>outside</u>** of the circle. Does this confuse you? I know that it confuses me. And I don't like the idea of having to switch from the **Top Feathered** tool, to the **Bottom Feathered** tool, and then remember to switch back to the **Top Feathered** tool. Let's fix this on the **Edit** page.

11. **Left click** on the **Edit** tab. Except for the lettering, here is what your screen should look like:



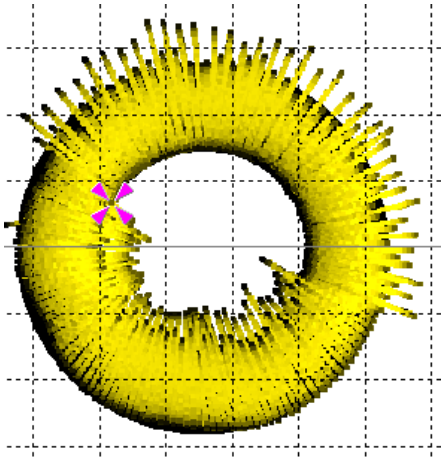
Segments **A**, **B**, **C**, and **D** all have the feathering in the right direction (towards the **outside** of the circle). Segment **E** is the first segment that we have to edit. The selection boxes are shown here around segment **A**. We need to select segment **E**. Remember what I said earlier about using the arrow keys to move backwards and forwards through the various segments of the design. Tap the **left** and/or **right** arrow keys until the first segment that must be edited (in this case, segment **E**) is in selection mode (has a group of little squares around it.) When you select the correct segment, **right click** on the **Work Area** to bring up the **Properties** of this segment.

12. Here are the properties for the **Feather One Side** stitch object:



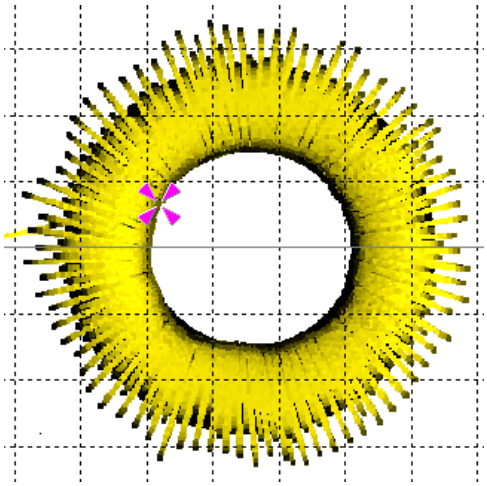
You can change the **Density** of the stitching. You can change the **Length** (but not the ratio of feathering) of the stitches. And, most importantly, you can switch the **Feather Side** from **Feather At Top** to **Feather At Bottom**. You can also use the **NEW Conversion** option to change the object to **Satin Feather** (feathered on both sides), or **Curved Satin** (no feathering at all). **Left click** on **Feather At Bottom**. Now, **left click** on the command button labeled **OK** to close this dialog and apply the change. Let's see what happened in the design.

13. **Left click** on the **Create** tab to see the results. Here is what you should see:



You can see that the stitches have changed direction. Now, as an exercise, I want you to return to the **Edit** page and correct the remaining segments.

14. When you have corrected all of the feathered segments, the result will look like this:



My suggestion for using this great tool is simply this. Choose the feathering that you think you want to use and begin to place your stitches. If the stitches are feathered in the wrong direction, just go to the **Edit** page, select the segment that you want to change, and then swap the feathering to the opposite side. It's just that easy.

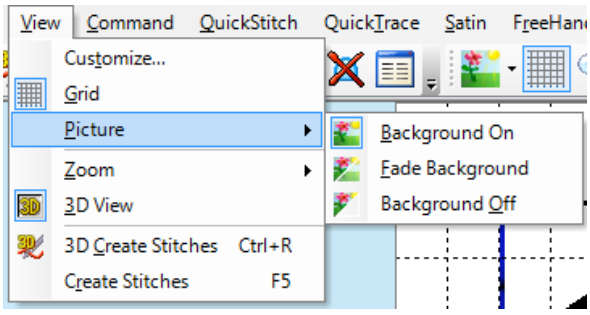
Using the Satin Ring Tool

The **Satin Ring** tool is unique to the manual punching tools. None of the automatic punching tools will easily create the stitch object available by using the **Satin Ring** tool. Another thing about this tool is that once you use it, the tool automatically de-selects itself and must be re-selected after each use.

This tool, like all of the other tools, takes a bit of getting used to because it has a few unusual quirks. Let's learn how to use the tool with a short exercise.

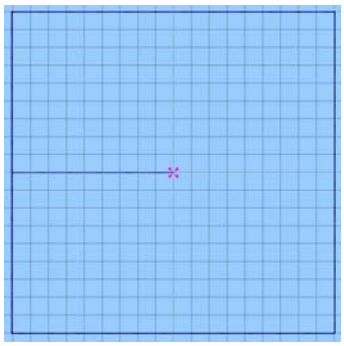
1. We won't really be using the graphics initially to learn this tool, so let me show you how to turn off the picture on your screen. Remember, to load a CAN file, you have to be on the **Create** page. Let's begin by loading our **ShapesManualV2.can** file. The only stitches that should be present on this file should be the outline of the design area that were generated when we used the **Design Area** tool.

2. The first thing I want to show you is how to turn off and turn on the graphic with the **Picture** tool. Here on the **Create** page, you can see the graphic. Let's turn off the graphic for the time being because we won't need it at first. **Left click** on the word **View** on the menu bar. This drop down menu appears:



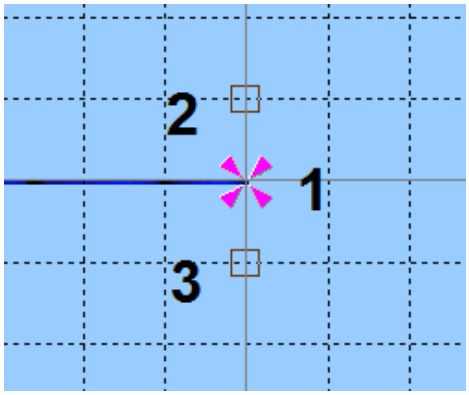
The third option down is **Picture**. **Left click** on **Picture** and you will see the three options you have. **Background On** is shown here with a blue border around the icon. The blue border means this feature is turned on. You can switch to **Fade Background** or **Background Off**. For this exercise, **left click** on **Background Off**. Similarly, **Grid** and **3D View** are turned on.

This is how your screen should look:



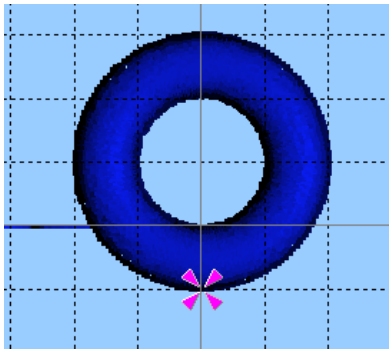
The graphic is now invisible, but the stitches are still there. You can turn this feature on and off as much as you want. Sometimes it's good to turn off the **Picture** to see how far you have progressed in your project.

3. **Left click** on the word **Satin** on the menu bar. When the drop down menu appears, **left click** on the **Satin Ring** tool. The first thing that will happen is that the inside "rim" of the ring is set where the current needle position (the purple X) is located. This is where the first of three points will be. The next click you place (point 2) will be where the **center** of the **Satin Ring** will be placed. The last click you place (point 3) will be where the **outer edge** of the **Satin Ring** will be. Since we are beginning at the center of the design, let's **left click** 1 square up from the center and then **left click** 1 square down from the center as shown here:



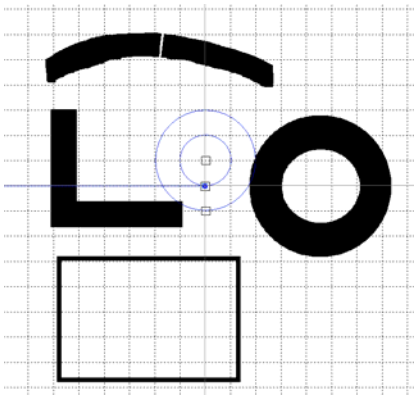
Think of it like a tire on a rim. Point number **1** will be on the **rim** of the wheel on which the tire is mounted. Point number **2** will be where the **center** of the design is placed. The distance between points **1** and **3** will set the thickness of the **tire**.

Once you place these clicks, here is what your screen will look like:



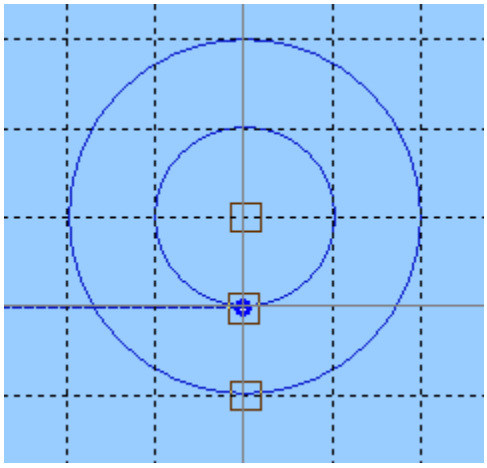
Let's take a look at this stitch object on the **Edit** page to see what happens there if we move around the various points that describe this stitch object.

4. **Left click** on the **Edit** tab. Here is what you should see:



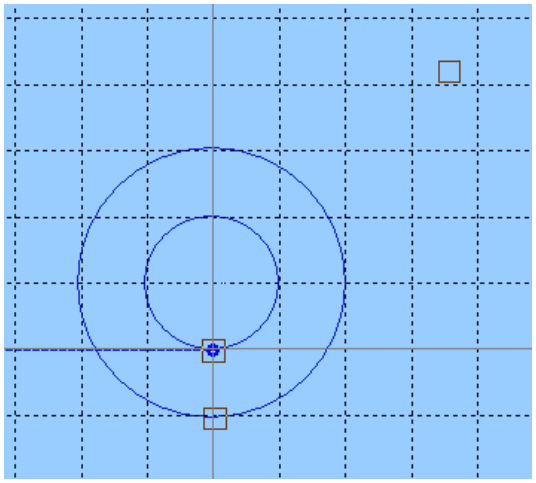
Whoops!!! Suddenly, the picture is back. I thought that we turned it off a few minutes ago. Well, we did turn it off…on the **Create** page. If you want it turned off on the **Edit** page as well, then you have to turn it off here as well. **Left click** on **View** in the menu bar, then **left click** on **Picture** on the drop down menu and then **left click** on **Background Off** and the graphic will disappear here as well.

5. This is what you should see now:



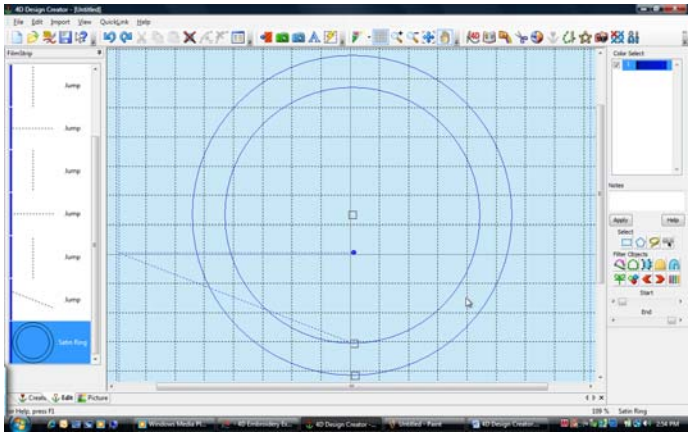
There are the three points that specify where the parts of the object go. The square in the middle is where the first click went. The square at the top (the center) is the second click. The square at the bottom is the third click and it sets the thickness of the ring or "tire". We can drag these squares around to move the object if we want. Let's have some fun and experiment with this object.

6. First, let's move the center of the object (the top square) so that it is in the upper right of the design area. **Left click and hold** on the top square and drag it to the position shown here:



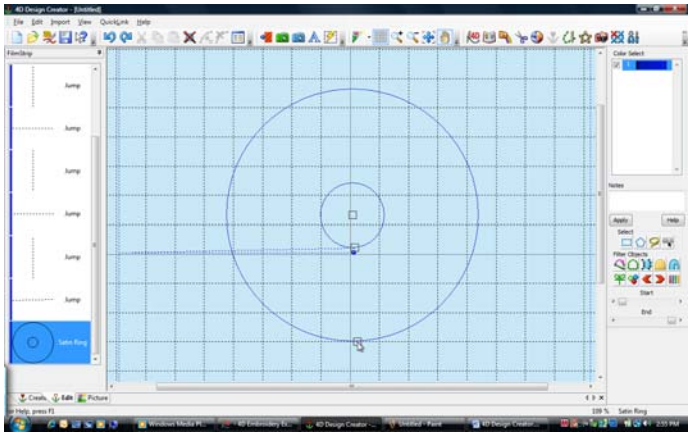
When you release the left mouse button, the design changes completely. **Left click** on the **Create** tab and see what it looks like, then **left click** on the **Edit** tab to return here.

7. Here is what your screen looks like now:



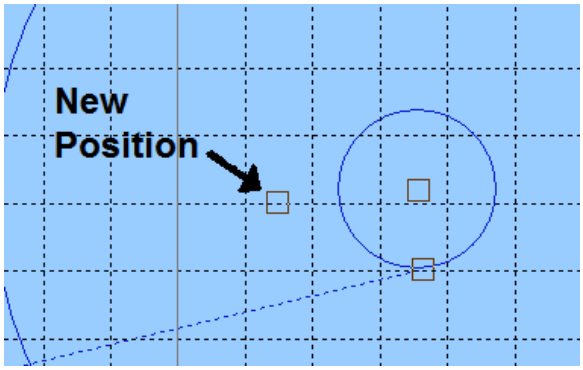
We moved the center of the ring, now let's move the "rim of the wheel", the middle square. **Left click and hold** on the center square and drag it to a position about one square beneath the first square we moved, the one that sets the center of the ring.

8. Here is what you should see now:



Left click on the **Create** tab to see the results. Wow! That's one huge **Satin Ring**. Let's get things back the way they were by moving the third square closer to the other two. But this time I want you to see something special.

9. **Left click and hold** on the bottom square and drag it to this position:



Nothing says that the squares have to be in a line. It's all about their **relative** position. Here, since the third square is about one full grid square away from the second square (as indicated by the thin blue line), the width of the ring will be approximately one grid square. This is one way to move this object, but there is an easier way as you will see in the next chapter.

10. To prepare for the next section, **left click** on the **Picture** tool on both the **Edit** and the **Create** pages to turn the graphic back on. Then, delete the **Satin Ring** you just created by **left clicking** on the **Delete Object** tool on the tool bar.

Using the FreeHand Tools

Now we are getting to the point where we are really gaining full, manual control of the software. The **FreeHand** tools allow us to pick and choose **exactly and precisely** where various stitch objects will be placed. If you want to create a design from a **photograph**, then these are the tools that you must master to complete the most difficult of all design creation projects. Using the **FreeHand** tools is, by no means, difficult. You will see that using them is practically intuitive. The difficult part is learning how to blend the colors and stitches to achieve a photographic effect. It's kind of like the difference between doing a paint-by-number project (using the automatic punching tools) and going to an art supply store and buying a blank canvas (using the **FreeHand** manual punching tools). Using a **FreeHand** tool is simple. Using the **FreeHand** tools to digitize a photograph is an art.

A **NEW** feature in ***4D Design Creator*** is the **Tablet Mode**. Earlier I told you how to turn **Tablet Mode** on and off. I like to use **Tablet Mode** when I am going to trace a design from a photograph or a graphic that I don't want to scan into my computer. I use a Wacom tablet (the one that is supplied when you purchase the image library from your **Husqvarna Viking** dealer). Or you may already have a tablet from the time that you purchased **3D or 4D Sketch** as I did. I'm going to presume that if you are using a tablet, then you already know which buttons on the pen represent the left click, right click, and double left click. If you're not sure which is which, then consult the documentation and tutorial that comes with the tablet.

Let's get started learning how to use these great tools.

We'll begin by using the **ShapesManual2.can** file. If it is not already loaded in ***4D Design Creator***, then go ahead and open this file on the **Create** page.

1. **Left click** on the word **FreeHand** on the menu bar. This drop down menu appears:

There are four categories. **FreeHand Fill** is the manual counterpart to **QuickStitch Fill**. **FreeHand Motif Fill** is the counterpart to **QuickStitch Motif Fill**. **FreeHand Specialty Fill Area** is the counterpart of **QuickStitch Specialty Fill**. **FreeHand Satin Area** is the counterpart of **QuickStitch Satin Area**. **FreeHand Border** is the counterpart to **QuickStitch Border**. **FreeHand Stitches** is the counterpart to **QuickStitch Stitches**. Each **FreeHand** tool creates the same type of object as the one created by its automatic counterpart. These are not new **stitch objects.** These tools just present a new way for you to create the **same stitch objects** but with more control, and responsibility for the location of the lines and shapes of the areas turned over to you.

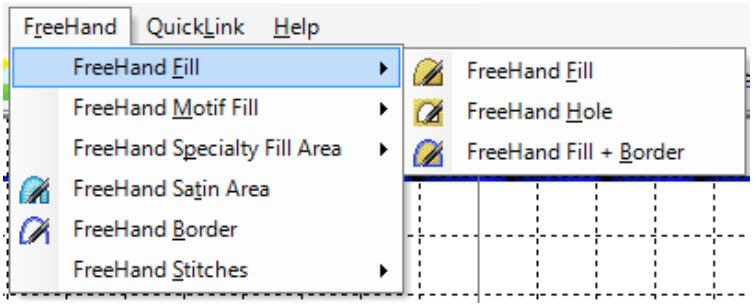
Remember what I said earlier about using the manual punching tools. There is a sequence to design creation. Let's review the sequence again.

Color Change (if necessary)
Jump Stitch to the beginning of the next stitch object.
Do a **Tie Off** stitch to secure the beginning of the new stitch object.
Create the new stitch object using the tool and method (**Tablet Mode** or not) of your choice.
Do a **Tie Off** at the end of the stitch object.

Remembering to make a **Tie Off** at the beginning and the end of each stitch object is easy to forget. Remember…**<u>when in doubt, do a Tie Off</u>.** It is better to have a **Tie Off** and not need one, than to need one and not have one. **<u>After you move on to the next stitch object, it's too late to return and insert a Tie Off</u>.**

FreeHand Fill Tool

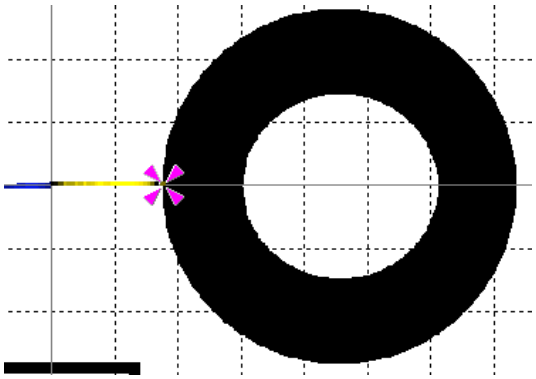
2. Point to the words **FreeHand Fill** with your mouse and the following sub-menu appears:



These are the actual tools. **FreeHand Fill** puts in an object consisting of fill stitches. **FreeHand Hole** cuts a hole in an object that consists of fill stitches. **FreeHand Fill + Border** creates an object consisting of fill stitches and then places a border of satin stitches around a fill area. You might recall that in the **QuickStitch Fill** sub-menu there were 5 options. **FreeHand Fill** corresponds to **QuickStitch Fill**. **FreeHand Fill + Border** corresponds to **QuickStitch Fill + Border**. **FreeHand Hole** corresponds to **QuickStitch Hole**. Where is the corresponding **FreeHand** tool to **QuickStitch Fill + AutoHole**? Where is the corresponding **FreeHand** tool to **QuickStitch Fill + AutoHole + Border**? The answer is…there is none. If you want to get the same effect as **QuickStitch Fill + AutoHole**, then you will have to first use **FreeHand Fill** to fill an area with fill stitches and then use **FreeHand Hole** to put in the hole. **<u>Nothing here is automatic</u>**. You have to do it yourself. If you want the same effect as **QuickStitch Fill + AutoHole + Border** then you have to use **FreeHand Fill + Border** and then use **FreeHand Hole** to cut out the hole. Let's do a quick exercise and you'll see what I mean.

3. **Left click** on **Command** on the menu bar. **Left click** on **Color Change** and then pick any light color in the **Quick Colors** area (I chose yellow.)

4. **Left click** on **Command** on the menu bar. **Left click** on **Jump Stitch** to activate that tool. **Left click** on the outermost left border of the large circle on your graphic as shown here:



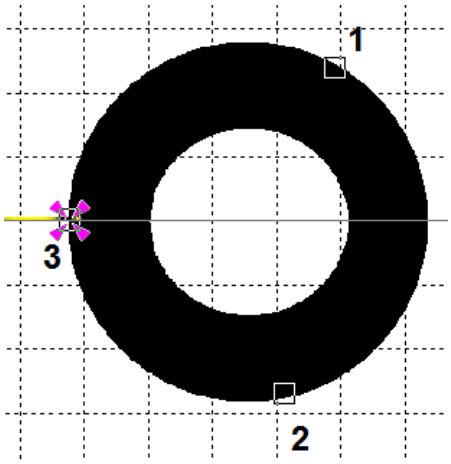
The new needle position should be at the 9 O'clock position. **Right click** to deactivate the **Jump Stitch** tool. **Pop Quiz:** What is the next thing we have to do **right now** before we do anything else? If you said **Tie Off** then you are correct. We did the **Color Change** before going to our new stitch object so that the **Tie Off** will blend in with the object. **Left click** on **Command** then **left click** on **Tie Offs** to see the **Tie Off** menu. **Left click** on the **Right** tie off option. Notice that all of the various design creation tools are available. You do not have to right click after using the **Tie Off** tool. It deactivates itself after you use it.

5. **Left click** on the word **FreeHand** on the menu bar. Rest your mouse pointer on the **FreeHand Fill** option, then **left click** on the **FreeHand Fill** tool when the sub-menu appears. We are now ready to use this tool. Here is how it is used.

FreeHand Fill When NOT using the Tablet Mode

To do this exercise, you have to make sure that **Tablet Mode** is **turned off**. **Left click** on the **Properties** tool on the toolbar and then **left click** on the **Screen** tab in the **Properties** dialog and make sure that the bottom option, **Use Tablet Mode for FreeHand Functions** is **unchecked**.

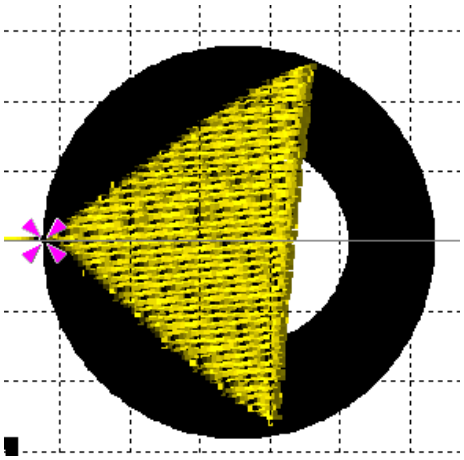
You are going to place a series of **left clicks** on the perimeter of the circle. Each click will leave a small square behind. After you place clicks all around the circle and you are happy with your work, **right click** to generate the stitch object. You don't have to place a zillion clicks to get a smooth result, but don't place too few either. Let's make a mistake first by placing too few clicks. Place only **3** clicks on the edge of the circle, like this:



Note: Even though a square appears at the needle position, it does not count. You must go all the way around and finish by clicking on the starting point to make sure that the stitch object is complete.

Right click to generate the stitches and let's see what we get.

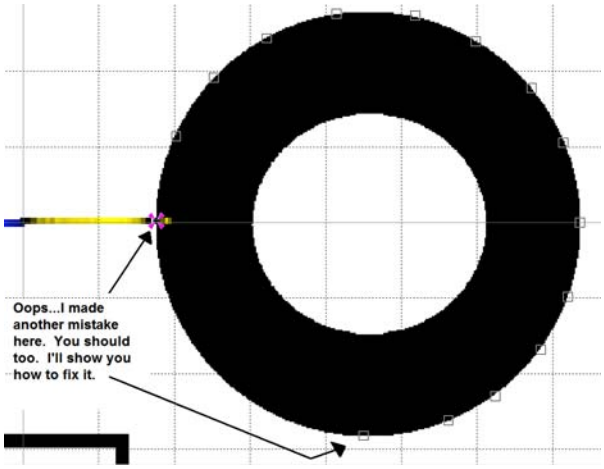
6. Here is what I ended up with:



Not exactly what I had in mind. I really wanted a circle of stitches. But, since I was in control, the software followed my instructions and filled stitches in the area I designated. I think that to get a circle, I'm going to have to put in a few more clicks with the **FreeHand Fill** tool. **Left click** on the **Undo** tool **<u>once</u>** to get rid of this stitch object and this time let's do it correctly. **<u>Do not</u>** click more than once on the **Undo** tool or the software will remove the **Tie Off** stitch we put in at the beginning of this object.

7. **Left click** on the word **FreeHand** on the menu bar, then rest your mouse pointer on **FreeHand Fill** to open the sub-menu. Then, **left click** on the **FreeHand Fill** tool to activate it.

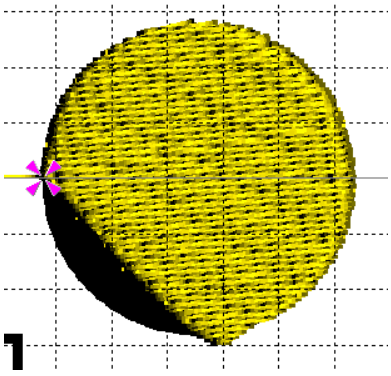
8. Now, let's place about 20 clicks around the circumference of the circle. (I like to use the **Zoom In** tool to get a good look at what I'm doing before I place the stitch object.) **Left click** around the circumference of the circle so that your clicks look like this:



I made **<u>another</u>** mistake. I got tired of clicking at around the 6 O'clock position and just finished up with another click at the 9 O'clock position. You should make the same mistake so that I can show you how to fix it on the **Edit** page.

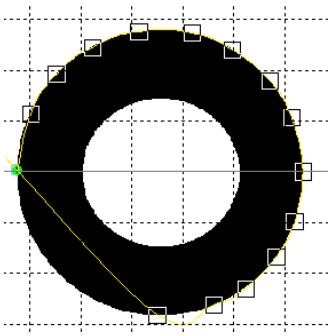
Right click to place the stitch object.

9. Here is what I ended up with:



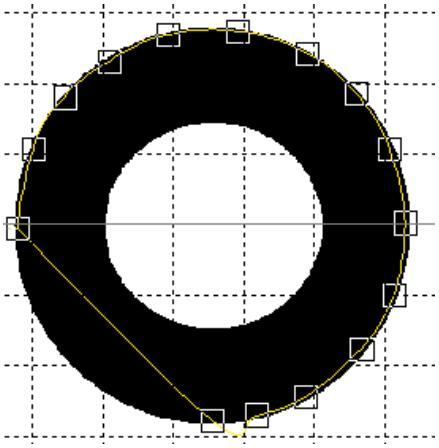
I kind of missed the lower left corner of the design. I could just click on **Undo** and re-digitize the object. Or I could correct it on the **Edit** page. Let's jump over there and fix this problem and learn to use a new tool. **Left click** on the **Edit** tab.

10. Here is what you should see:



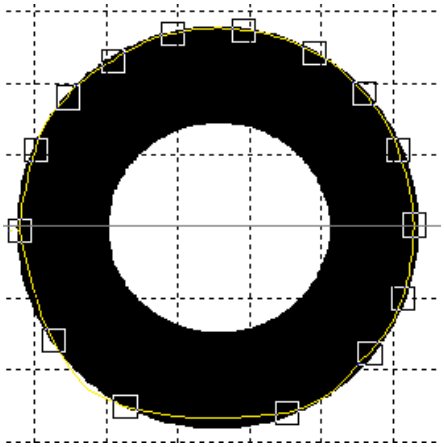
See all of the little squares you placed? We sure could use a few more in the lower left corner. There is a tool on the **Edit** page you can use to do just that.

11. Before we correct this problem, let's think for a second about what caused the problem. Obviously, the cause of the problem was that I did not put points all the way around the circle. I could use the **Undo** tool and re-digitize the stitches, but that would be too much work, and in some cases, I might not realize that I needed some extra points until I had already moved on to something else. So, we need to find a way to add some additional points. Fortunately there is just such a tool in ***4D Design Creator***. It is the **Insert Point** tool  . Here is what your screen should look like:



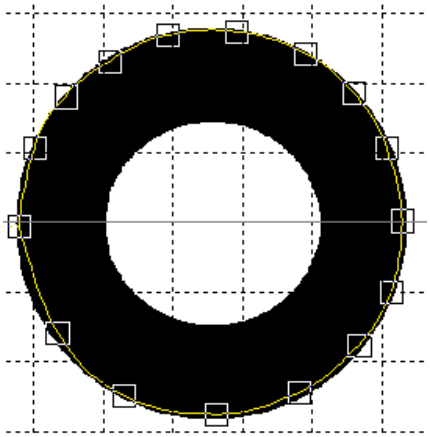
The little squares are where I clicked as I outlined the area I wanted covered with fill stitches. There are two things I'm going to do to correct this. First, I am going to **left click and hold** on the square at the bottom of the circle and drag it to a position just below the 9 o'clock position. Yes, you can drag and reposition these squares all around on the **Work Area**. It's as though they are beads on a piece of elastic cord. Wherever you drag them to, the cord stretches to reposition itself. In fact, I'm going to move the bottom three squares to new positions to correct this error.

12. Here is what the results are:



This doesn't look too bad, but I want more accuracy in my work. Notice that at around the 6 O'clock position the edge of the circle comes into the graphic a bit. The same problem exists around the 8 O'clock position. This is where we will use the **Insert Point** tool. **Left click** on the **Insert Point** tool to activate it. Notice that the icon for the **Insert Point** tool now has a blue border around it. Then move your mouse pointer to the line in between the two points at the bottom and **left click** on that line to place the point. A square is placed at the point where you clicked. Take a look at the **Insert Point** tool icon on the tool bar. The blue border is gone and the tool is deactivated. This is one of those one-shot tools that you have to activate each time you wish to use it. Leave it deactivated for now and move on to the next step.

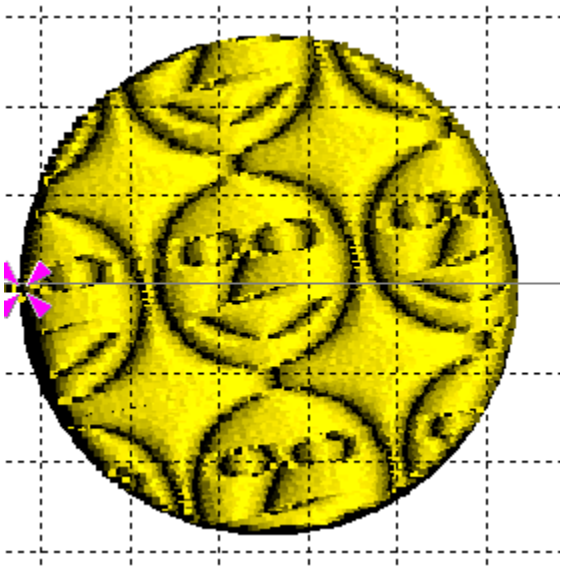
13. Now that you have this new point available, you can **left click and hold** on the point then drag it to a new position on the edge of the graphic to smooth out that line to designate the fill area. Do that now. This should be the result:



See how much better the bottom of the curve looks now? I could still use another point around the 8 O'clock position. I'll leave it up to you to put that point in place and move it around.

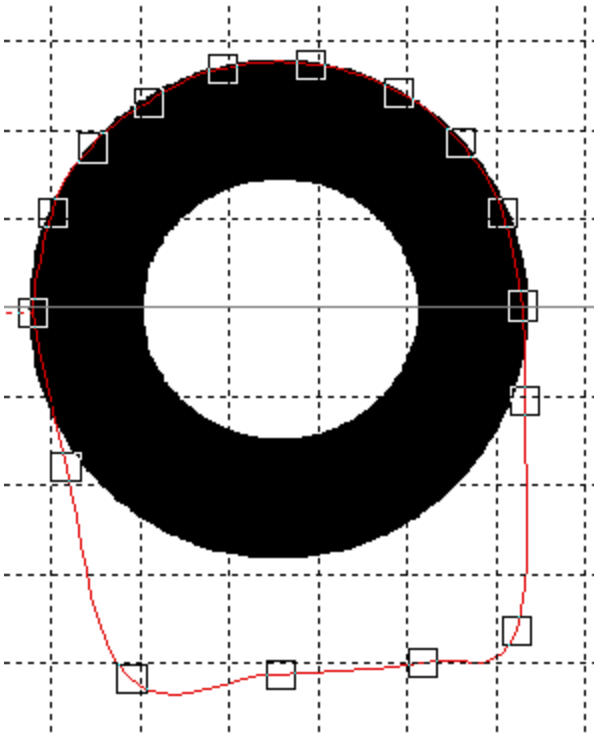
Moving these points around on the **Edit** page is extremely important. The reason that editing in ***4D Design Creator*** is so important is that the software will **preserve the fill pattern** if you edit in ***4D Design Creator***. If you think that you will wait until later and use ***4D Stitch Editor*** to make your corrections, you will be disappointed with the results. Let me show you an example.

14. While we are here, **right click** on the **Work Area** to bring up the properties of this stitch object. When the **Fill Properties** dialog comes up, left click in the **Pattern** box in the lower right corner of the dialog and type in the number **145** then **left click** on the command button labeled **OK**. Now, **left click** on the **Create** tab to see the change. It should look like this:



We replaced the plain fill pattern with one containing smiley faces. Suppose that I needed this fill object to be elongated rather than perfectly round. I would go to the **Edit** tab and drag some of the click points to my new location. Let's do that now. **Left click** on the **Edit** tab. Once you get to edit **left click and hold** on one of the bottom click points and drag it down toward the bottom of the design. Repeat this process with 3 or four more points.

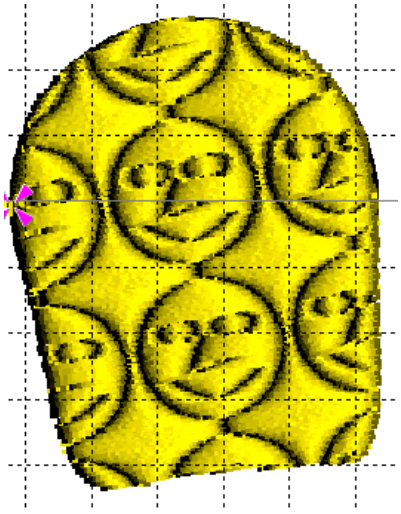
15. You screen should look something like this:



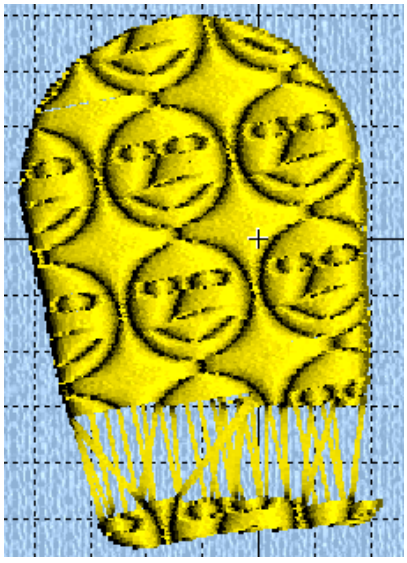
It's OK if it doesn't look exactly like my screen. And, this is not something that you would normally do with the **FreeHand Fill** tool. You would have placed the points exactly where you wanted them and not come to the **Edit** page and made such a huge change. I just want to show you the difference between the way ***4D Design Creator*** handles this edit and the way ***4D Stitch Editor*** handles the same edit.

Now that we have done this edit, let's **left click** on the **Create** tab and look at the results of our work.

16. Here is what your screen should look like:



See how the fill pattern was preserved? New parts of the smiley face were added where needed. Here is the result when you use ***4D Stitch Editor*** to try and achieve the same effect:

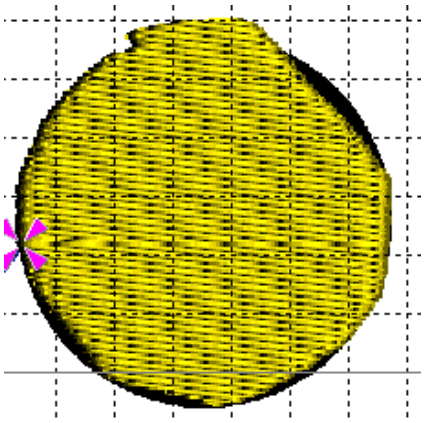


When I tried to lengthen the shape, it only stretched the bottom stitches out leaving a horrible gap. This is **NOT** what I had in mind. ***4D Stitch Editor*** is a powerful program, but you should do most of your editing for design creation right here on the **Edit** page of ***4D Design Creator.***

FreeHand Fill When Using Tablet Mode

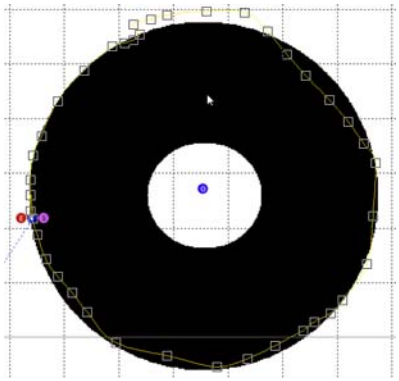
17. To do this part of the exercise, you have to make sure that **Tablet Mode** is **turned on**. Remember, you turn **Tablet Mode** on and off on the **Screen** Tab of the **Properties** dialog. You also have to get rid of the **Fill** object you just created. This is easily done by making sure that the object is selected on the **Edit** page (either **left click** on the object in the **FilmStrip** or **left click** on the object on the **Work Area**.) Once the object is selected, then **left click** on the **Delete Object** tool  .

18. Now we are going to use our pen on the tablet (or, you can use your mouse on your mouse pad) to draw an area to contain the **Fill Stitch** object. **Left click** on the words **FreeHand Fill** on the **Menu Bar** and then **left click** on the **FreeHand Fill** tool on the pop out menu to select the tool. Here is the way this tool works in **Tablet Mode**. You first move the mouse pointer to the place in the graphic where you wish to begin the **FreeHand Fill** object. Then, you **left click** (i.e. press down on the tip of your pen and hold it down on the tablet surface or, if you are using your mouse, left click and hold the mouse button). Now draw on the tablet surface or move your mouse around on your mouse pad and trace a continuous line around the edge of the graphic that you wish to enclose your stitches. Let's give it a try. Here is my first shot at drawing my circle with my pen and tablet:



Not bad, but not too good either. You can see that my hand jumped at around the 11 o'clock position and then I overcompensated at the 2 o'clock position. Let's take a look at this object on the **Edit** page. **Left click** on the **Edit** tab.

19. Here is what I see:



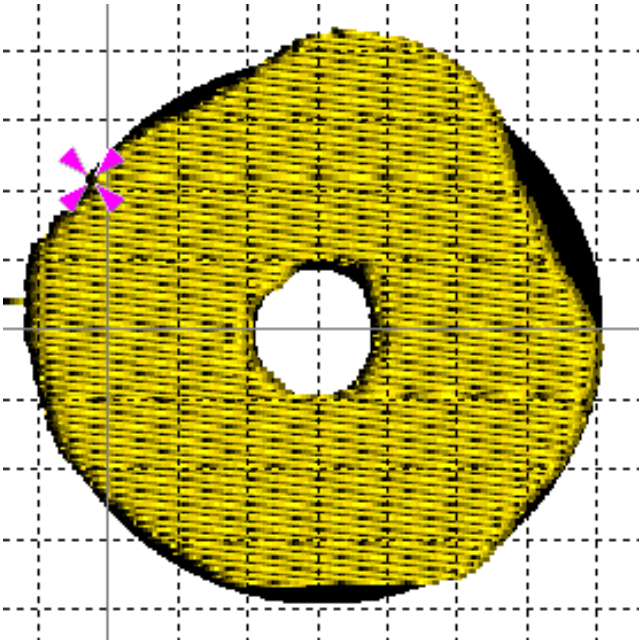
I can not only see all of the mistakes I made, but the software has also inserted a large number of points that I can use to now adjust the location of my line to compensate for my unsteady hand. And. I didn't have to click, click, click … to get the job done. Using the tablet is just a much faster, easier, and creative way to work with ***4D Design Creator***. At first, you will find it difficult to look at the screen while using your pen in your hand. But after a little practice, you'll begin to wonder how you got along without it.

FreeHand Hole Tool

Whew! We spent a lot of time on the **FreeHand Fill** tool. You might be thinking that we have a long way to go. But, in fact, all of the other tools in **FreeHand Fill,** in **FreeHand Motif Fill**, in **Freehand Specialty Fill Area**, and in **FreeHand Satin Area** work exactly the same way as the **FreeHand Fill** tool does. And they work the same way both **in Tablet Mode** and **not in Tablet Mode**. That is to say that the way they work is that you left click on a number of points to outline the area that you wish to have filled with a **Fill Stitch Object**, a **Fill Stitch Object with a Border**, a **Motif Fill Object**, a **Motif Fill Object with a Border**, or to cut a **FreeHand Hole** in an object, then right click to end the outlining process and place the object. Or, when in **Tablet Mode**, you simply draw an outline of the area for your object, then lift your pen from the tablet and the object is placed within your outline. Because of this, I am not going to repeat all of the steps in the previous exercise. I encourage you to do so, replacing the words **FreeHand Fill** with **FreeHand Fill + Border**, and again replacing the words **FreeHand Fill** with **FreeHand Motif Fill** and later with **FreeHand Motif Fill + Border**. You will see that they all work the same way.

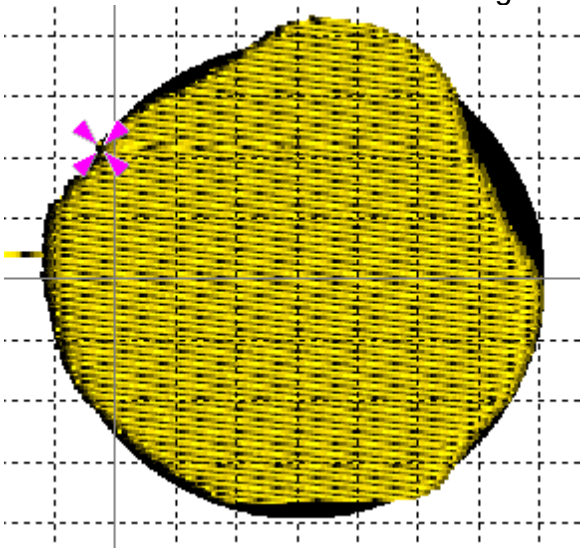
There are, however, some additional **FreeHand** tools to take a look at. In doing so, you will learn some more design creation techniques and editing tools. Let's continue with the same objects we just created.

1. If you are not already on the **Create** tab, **left click** on the **Create** tab to move to that page. We are now going to cut out a hole in the center of the elongated fill pattern we have on the **Work Area**. Remember, I said earlier that the manual punching tools do not have anything like the **QuickStitch Fill + AutoHole** tool. You can use the **QuickStitch Hole** tool to cut this hole, if your underlying graphic will support it. However, if you want a hole in the center of such a fill pattern and the underlying graphic does not have a contrasting colored shape for the automatic punching tool to follow, then you have to cut a hole out yourself. Here, then is what I want to achieve:



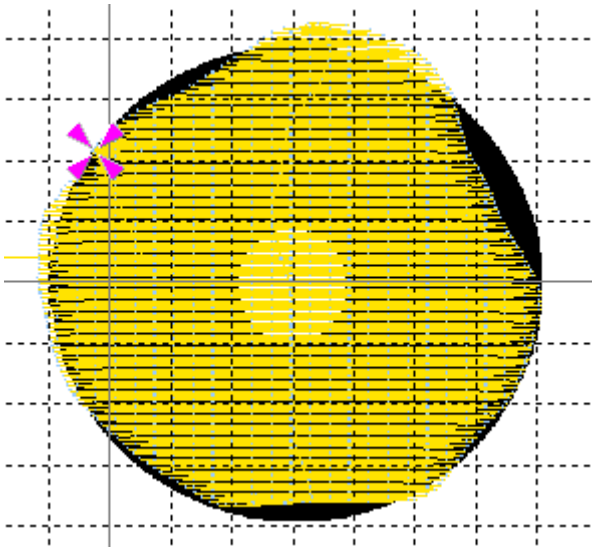
I want a more or less round hole inside of the fill stitch object. Fortunately this graphic has an area of contrasting color in the shape of the hole that I want, and I will use that as a guide. But as you look at the fill stitch object on your screen, you can't see the graphic beneath the stitches. I'm going to show you how to reveal this area of the design so that you can see what you are doing.

2. Your screen should look something like this:



We need to be able to see beneath these stitches so that we can see what we are doing when we place the various click points to define the area of the hole we wish to create. The first, and easiest way to see beneath these stitches is to simply turn off the **3D View**. You do this by **left clicking** on the **3D View** tool  on the tool bar.

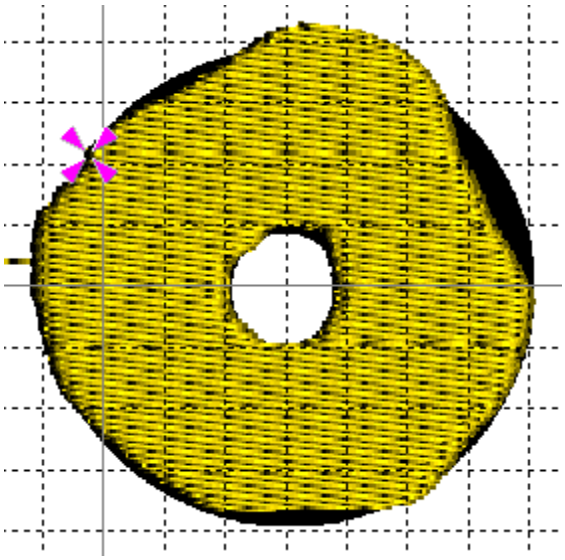
3. Once you turn off **3D View**, here is what the screen should look like:



Here you can clearly see the graphic beneath the stitches. You can also see the needle insertion points that make up the embossed fill pattern. At this point we are now ready to use the **FreeHand Hole** tool.

4. **Left click** on the word **FreeHand** on the menu bar, then put your mouse pointer on the words **FreeHand Fill**. When the sub-menu appears, **left click** on the word **FreeHand Hole** to select the tool. There is no need to place a jump stitch, tie off or anything else. If you are **not using Tablet Mode**, all you have to do with this tool is to just place the various points that outline the hole by **left clicking** on the perimeter of the hole and, when you have placed all of your clicks, **right click** to activate the tool and cut the hole. If you **are using Tablet Mode**, then all you have to do is to position your mouse pointer on the edge of the place where you wish to begin creating the hole, press down on the tablet surface, trace the outline of the hole, and lift your pen when you are finished. The software will take care of ensuring that no loose threads are left behind and there is no need to place a **Tie Off** anywhere.

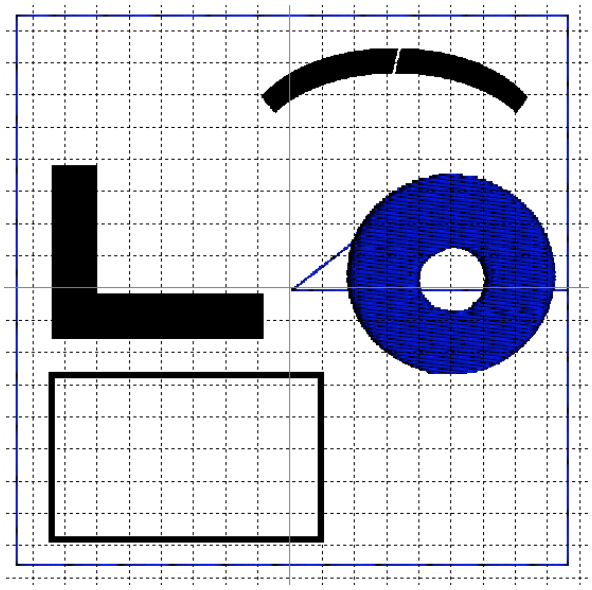
5. Here is the result:



FreeHand Border Tool

This tool is the manual punching counterpart of the **QuickStitch Border** tool. You can place satin borders, of fixed width, ranging from 1 mm to 12 mm wide. The stitch objects placed with this tool can be straight or curved. You can produce sharp corners with this tool or gently sloping corners. Let's see how it works with a short exercise.

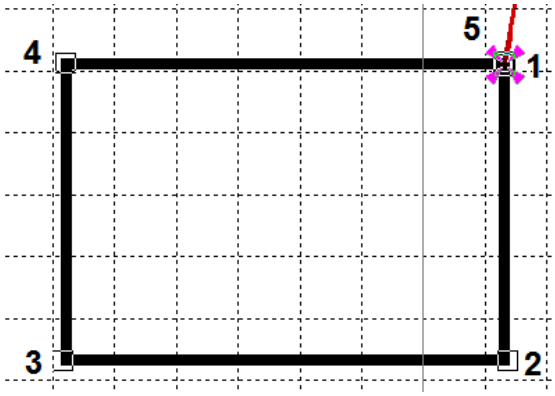
1. We will be using the same CAN file that we loaded for the previous exercise. Make sure that you have the **ShapesManualV2.can** loaded in your **Work Area**. If you are continuing from the previous exercise, then you are ready to begin. Here is what your screen should look like:



Left click on the **Jump Stitch** tool and then place a **Jump Stitch** to the **upper right** corner of the rectangular frame of the graphic. We are going to use the **FreeHand Border** tool to place a satin border on top of the rectangular frame.

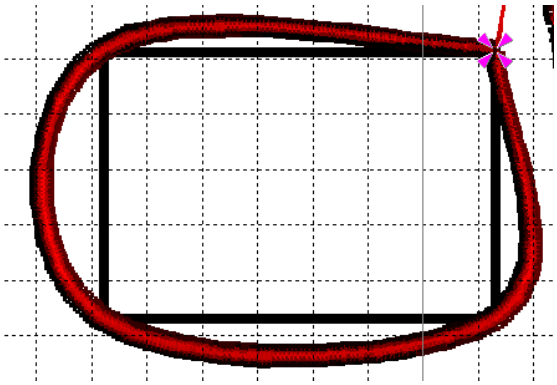
Although I did not have you place a **Tie Stitch** at the end of the stitch object we created with **FreeHand Fill** and before we placed the **Jump Stitch**, in an actual design creation situation, you will have to place a **Tie Stitch** at the end of the **FreeHand Fill** right before the **Jump Stitch**, and then place another **Tie Off** after you completed the **Jump Stitch** before placing the next stitch object. So, for practice, do that now and place a **Tie Off** here before we begin the next step. And, once again, you need to **turn off Tablet Mode** before proceeding.

2. **Left click** on the word **FreeHand** on the menu bar. When the drop down menu appears, **left click** on fifth option down, the **FreeHand Border** tool. Here is how this tool is used. You will begin placing single left clicks at various places in the **Work Area** using your graphic as a guide. The software then uses these points in connect-the-dots fashion to place the satin border. Let's begin by placing the following clicks as shown here:



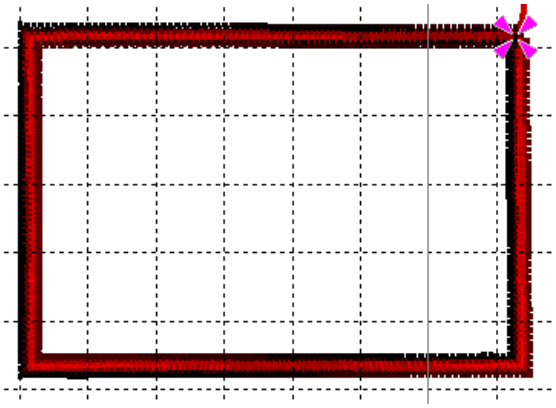
The first point was placed by the software at the location marked by the purple needle position indicator. I marked this position as **1**. I then clicked at position **2**, **3**, **4**, and position **5** to finish the frame. (The numbers will not appear on your screen.) Since I am now done, I will **right click** on the **Work Area** to generate the stitch object.

3. Here is what your screen should look like:



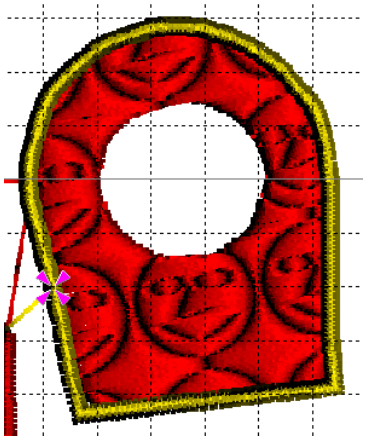
Wait a minute! What happened here? I wanted this to have straight sides and corners with a 90°, sharp corner. I know what happened. I forgot to **hold down the CTRL** key when I clicked on the corners. **Left click** on the **Undo** tool and let's try placing this object again. Re-do step 2 above, but this time press and hold down the CTRL key before you begin clicking your points.

4. Here is the result when you hold down the **CTRL** key when clicking:



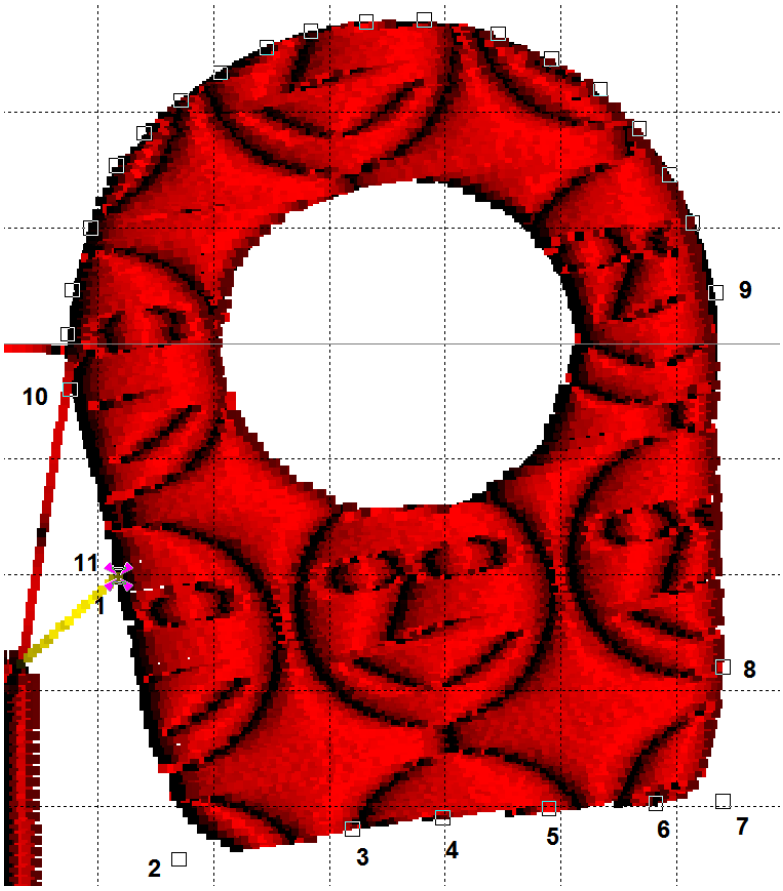
What a difference! The object now has straight sides and nice, sharp, 90° corners. Remember this well: **When you are placing any stitch object that requires only a single line of clicks, holding down the CTRL key creates straight lines and sharp corners.** In addition, you can correct the corners if you forgot to hold down the **CTRL** button by going to the **Edit** page and then hold down the **CTRL** key as you click on any of the little boxes. That will also insert the correction. Let's create another stitch object with this tool, but this time we will make the object both straight and curved.

5. Here is what I want to create:



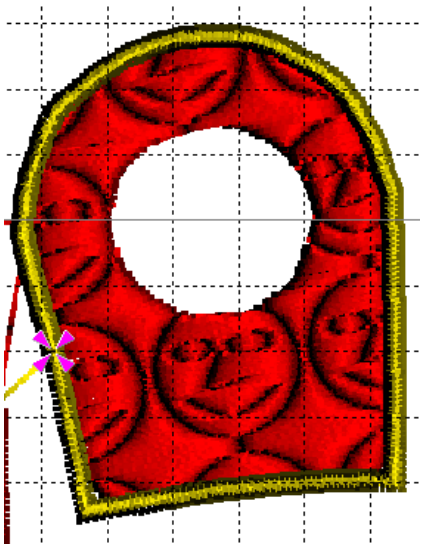
I want a different color border around the fill stitch object. (I could have done this in the first place using the **FreeHand Fill + Border** tool and then changed the color of just the border on the **Edit** page.) If you do not have this stitch object on your design, then go back to page 140, steps 13, 14, and 15 and edit the circular object so that it looks like this object (we need a flat area on the bottom of the circle.) Do you remember the sequence of steps that we have to take before we begin to create this object? Take a minute and jot down the steps that you believe that have to take before creating this object. I'll reveal them to you in the next step.

6. OK, test time. Let's see how you did. Next, you have to make the **Color Change**. Now, place a **Jump Stitch** to the left side of the fill stitch object. Follow that with a **Tie Off**. Now, you are ready to place the **FreeHand Border**. After you complete all of the above steps, **left click** on the **FreeHand Border** tool to activate it. Once activated, place your clicks as follows:



Before you begin putting in your points, here is what I did. Point number **1** was placed by the software. I held down the **CTRL** key and clicked on point **2**. I **held down the CTRL key** as I clicked on point **3**. I then **released the CTRL key** as I placed points **4**, **5**, and **6**. I then **held down the CTRL key** when I placed point **7**. While **still holding down the CTRL key**, I placed point number **8** and **9**. I then **released the CTRL key** after I placed point **9**. I then placed a number of clicks across the curved part of the top of the design. Leaving the CTRL key off causes a curved border to be placed. When I got to point **10**, I placed point **10 <u>without having the CTRL key pressed</u>**. <u>Before</u> I placed point **11**, I **pressed and held down the CTRL key**.

Here is what the result looks like:



The **FreeHand Border** tool placed a **Straight Satin** between points that are clicked while the CTRL key is being held down. This gave me the Straight Satin Border on the left side to the bottom. It also caused a sharp corner to be placed as I moved across the bottom of the design. I released the CTRL button to give a slight curve to the bottom of the design then held down the CTRL key to create the sharp corner on the right and leading up to the curved portion at the top. Leaving the CTRL key un-pressed allowed the **FreeHand Border** tool to create a curved border across the top of the design. I then held down the CTRL key to finish the straight border on the left. When I was done, I **right clicked** to generate the object.

Note on using Tablet Mode with FreeHand Border

You can use your tablet to draw a border line using this tool. When you need to use **CTRL**, hold down the **CTRL** button and a little textbox will pop up on the **Work Area** near the point of your cursor with the word **CTRL** in the text box to remind you that you are using **CTRL**.

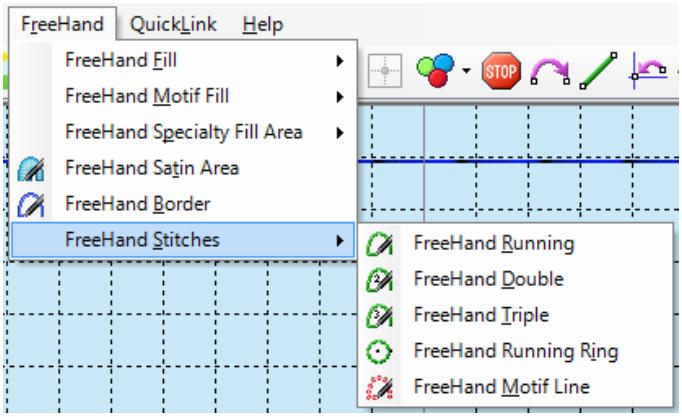
Using the FreeHand Stitches

We have one more collection of stitch objects to learn. **FreeHand Stitches** allow us to place the smallest, thinnest highlight stitches in our design. They are also used to place the outline stitches that really set off our designs and they are usually the last stitches to be placed into a design. There are 5 tools in this category. The first tool is the **FreeHand Running** tool. When this tool is used it places a line of running stitches. Sometimes you might use it to move from one area of the design to another, thus avoiding jump stitches that must be trimmed out later. You can only use this technique if you plan to cover the area later with some other stitch object. The second tool is the **FreeHand Double** tool. This tool places a **double line** of straight stitches and is used just like the **Freehand Running** tool. The third tool is the **FreeHand Triple**. It is identical to the first two tools with the exception that it places three lines of stitches along the line you specify. The **FreeHand Running Ring** places a perfect circle of single stitches into the design. Finally, the **FreeHand Motif Line** places a line of **Motif** designs along the line designated by the digitizer. Let's learn about these tools with a short exercise.

1. First, let's clear the **Work Area** by **left clicking** on the **New** tool (this is the first button on the extreme left of the tool bar.)

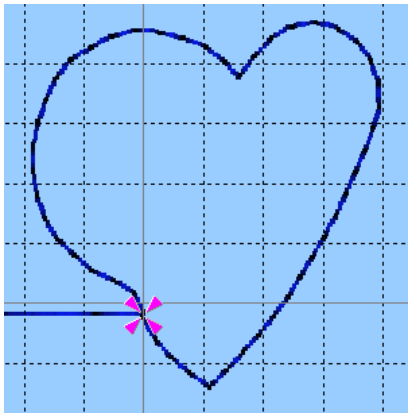
2. After you click on the **New** tool, the **ExpressDesign Wizard** will open. Select the bottom option **Start a New Design with no Picture**. **Left click** on the **Create** tab. As soon as you are on the **Create** page, **left click** on the **Design Area** tool and create a design area that covers most of the **Work Area**. When the **Design Size** dialog opens, just accept the design size by **left clicking** on the **OK** command button. You should have a design area that has no graphic on it. This is exactly what we want.

3. **Left click** on the word **FreeHand** on the menu bar. Then, rest your mouse pointer on the **FreeHand Stitches** option of the drop down menu. Here is what you should see:



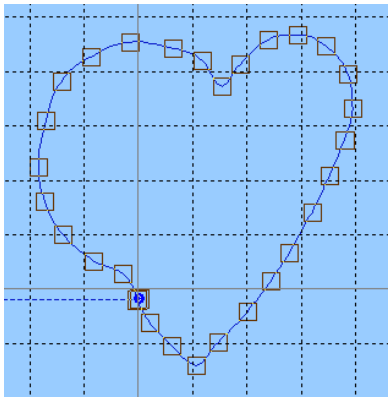
There are 5 options in the **FreeHand Stitches** sub-menu. With the exception of the **FreeHand Running Ring**, all of these tools work exactly the same way. The difference between them is the results they produce. The **FreeHand Running** stitch object simply puts in a line of running stitches from the first click you enter to the last click you enter. This object leaves the needle at the end of the stitch object at the last point you clicked. The **FreeHand Double** stitch object puts in a line of running stitches from the first click you enter to the last click you enter and then puts in another set of running stitches from the last click you entered back to the first click you entered. This object leaves the needle back at its original starting point. The **FreeHand Triple** stitch object puts in three lines of single stitches from starting point to ending point, then back to starting point, and again from starting point to ending point, leaving the needle at the last point clicked.

4. **Left click** on the first tool, the **FreeHand Running** tool to activate it. As soon as you activate this tool, the first stitch point is set at the needle position indicator. You then **left click** at the point where you wish to place the next set of stitches, and continue until you pay down a series of connect the dots positions for the sewing machine to follow. Here is what I did:



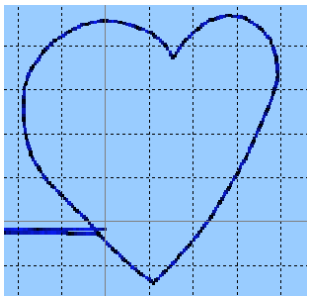
I just clicked to place stitches in the form of a heart. When I was done, I **right clicked** to generate the stitches. Just as I did with the other manual punching tools, when I want a sharp corner I held down the **CTRL** button to get the sharp points at the top and bottom of the heart. Go ahead and draw a heart to see how it works. You can see that my heart is a little uneven on the left side. I'm going to the **Edit** page to correct this.

5. **Left click** on the **Edit** tab. Your screen should look something like this:



Each square shows where I clicked as I set down my pattern for the computer to "connect the dots". All I have to do to fix the left side of the heart is to **left click and hold** on any of the squares and then drag the square to a new position. I can see the outline of the stitches so I don't need to go back to the **Create** page to see the results.

6. Here is what my heart looks like now:



It's nice and even on the left side. I could show you the same thing with the **FreeHand Double** and **FreeHand Triple** but there is nothing really new to learn. They are the same stitch objects except that they lay down two and three runs of stitches respectively.

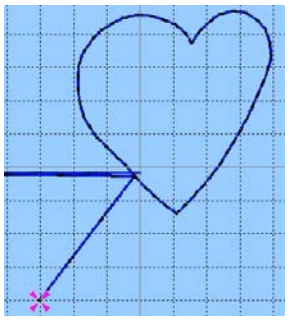
Note on using the Tablet Mode with FreeHand Stitches

When you use **Tablet Mode** all you have to do is draw the line you wish to have trace with the running stitches and when you lift your pen from the tablet, the stitches are placed on the embroidery canvas. Once again, when you turn a sharp corner, be sure to hold the **CTRL** button on down a little before your approach the sharp corner and do not release it until a little bit past the sharp corner.

Using the FreeHand Motif Line Tool

You can place a line of Motif stitches the same way that you placed a line of running stitches with the **FreeHand Motif Line** tool. It works exactly the same way as the **FreeHand Running** tool. Let's add another stitch object to our design.

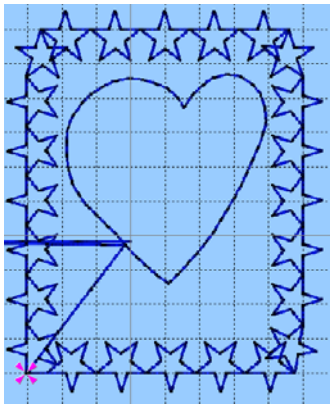
1. **Left click** on the **Create** tab. **Left click** on the **Jump Stitch** tool to activate it. Now, **left click** on your **Work Area** beneath and to the left of the heart to a position like this:



Right click to deactivate the **Jump Stitch** tool. **Left click** on the **FreeHand** option on the menu bar. When the pop down menu appears, place your mouse pointer on the **FreeHand Stitches** option to open that sub-menu. **Left click** on **FreeHand Motif Line** to activate that tool.

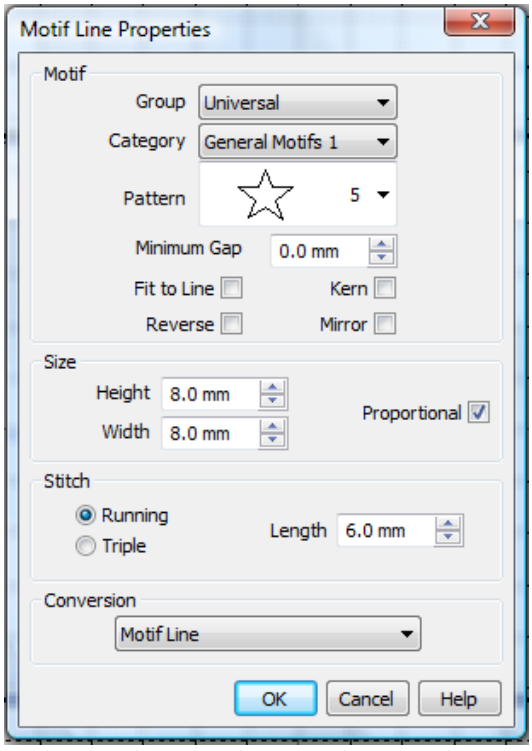
Let's create a frame around the heart. To save time, let's do it with only four clicks, one at each corner where we want to place the frame. Remember to **hold down the CTRL** key on your keyboard on each left click. Release the **CTRL** key before you **right click** to generate the stitches.

2. Here is what you should see on your screen:



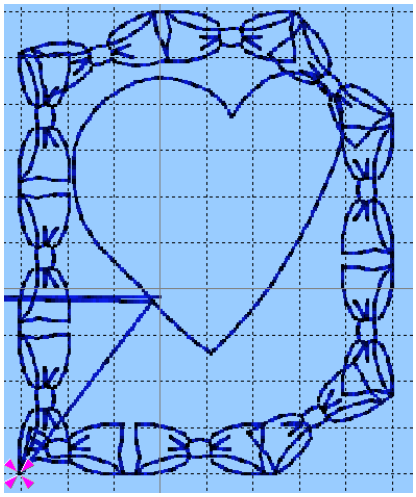
Just as when we used the **QuickStitch Motif Line** tool, the default motif is the 5 pointed star. I don't want to use this motif, so let's **left click** on the **Edit** tab and change the **Properties** of this stitch object.

3. As soon as you arrive on the **Edit** page, look in the lower right corner of your screen. You should see that the selected stitch object is the **Motif Line**. **Right click** anywhere on the **Work Area** to open the **Motif Line Properties** window. Your screen should look like this:



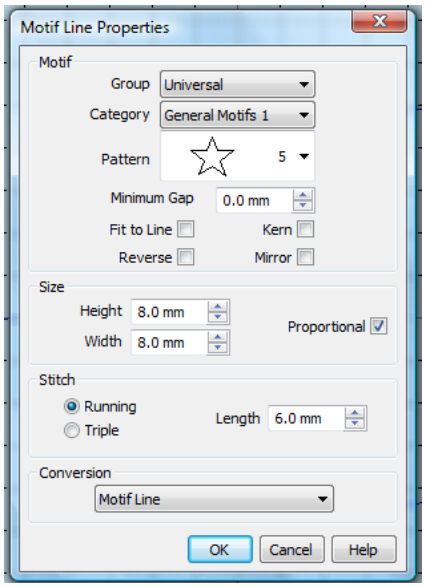
This is the same dialog we saw when we used the **QuickStitch Motif Line** tool. You first select the **Group** you wish to use. Then you select the **Category** within that **Group**. You can change the pattern to a new pattern in this **Category**. Or you can change to a different **Category** and open a whole new set of patterns. I suggest that you take a few minutes now to explore the various **Categories** and the various **Patterns** available in each **Category**. The variety of patterns is incredible. There is one option we need to discuss. The best way to see the results is to make a mistake. **Left click** on the downward pointing arrow on the right of the **Group** combo box. **Left click** on **Husqvarna Viking** to select that **Group**. **Left click** on the downward pointing arrow on the right side of the **Category** combo box. When the list opens, **left click** on the **G1 Childrens** category. After that **Category** is selected, **left click** on the downward pointing arrow on the right side of the **Pattern** combo box. When the list opens, scroll down to option **6**, a stitch pattern that looks like a bow. Make sure that the **Fit to Line** box is unchecked, the **Reverse** box is unchecked, the **Kern** box is unchecked and the **Mirror** box is unchecked. **Left click** on the command button labeled **OK**.

4. **Left click** on the **Create** tab. This should be the result:



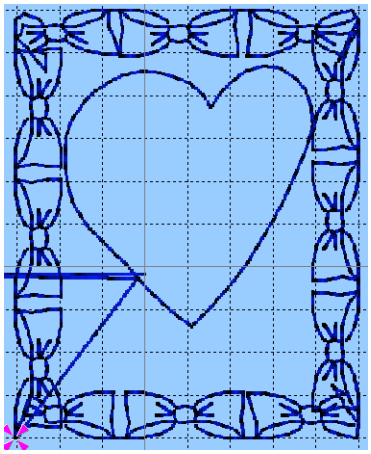
Hmmm…this doesn't look good at all. I originally had a nice square corners. This looks more like a letter D. I want the corners to be squared off and I do not want a partial pattern like you see in the lower left corner of my design. We are going to have to return to the **Motif Line Properties** dialog to correct this. **Left click** on the **Edit** tab. When you get to the **Edit** page, check the lower right corner of the screen to make sure that the **Motif Line** object is selected. Now, **right click** anywhere in the **Work Area** to open the **Motif Line Properties** dialog.

5. When the **Motif Line Properties** dialog opens it looks like this:



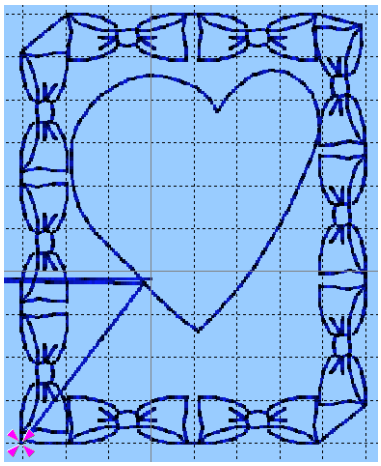
There are four options available on the check boxes just below the **Pattern** box. **Reverse** changes the **left to right** image of the pattern. **Mirror** changes the **top to bottom** image of the pattern. **Kern** turns on the kerning feature. This means that the spacing between the patterns will be changed so that they fit without overlapping on the line that you created. At first, let's leave this turned off. **Fit to Line** causes the pattern to be aligned to the actual line we created. Let's try that one first. **Left click** in the checkbox to the right of **Fit to Line** to make sure that it is checked. Then **left click** on the **OK** button to close the dialog. Now, **left click** on the **Create** tab to see the results of our work.

6. Here is what my design looks like:



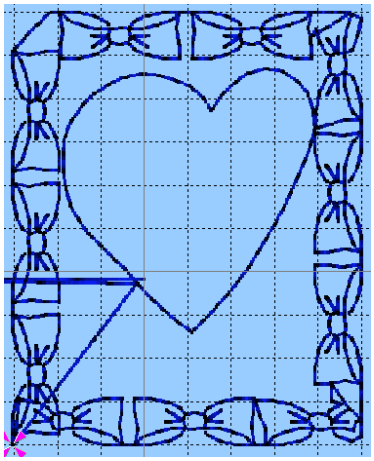
It looks a little better. The corners are square now, but some of the bows are partial bows and some of them overlap each other in the corners. Let's see if turning on the **Kern** option helps. Go back to the **Edit** page, open the **Motif Line Properties** dialog and turn on **Kern.** After you turn **Kern** on, **left click** on the checkbox next to **Fit to Line** and turn it **off**. Now, **left click** on the **Create** tab to see our work.

7. My screen looks like this:



See the effect of **Kerning**. All of the bows are complete and they do not overlap each other. I wonder what the design will look like if we turn on both **Kern** and **Fit to Line**. Go back to the **Edit** page and turn **Fit to Line** back on along with **Kern**.

8. Here is what my screen looks like after I return to the **Create** page:



This seems to have counteracted the effects of the **Kern** option. We could spend hours adjusting the **Size** options in the **Motif Line Properties** to juggle each value to get just the look we want. I'll leave this up to you as an exercise in design creation. One word of warning. Don't expect instant results and don't tear out too much of your hair. The fact is that if I wanted to put a nice frame around a design that I created, I have a secret way to do it. I'll reveal it to your now. **Do it in *4D Embroidery Extra***. That's right. Save the design you created (the heart). And then go to ***4D Embroidery Extra***, load the design you just created, and use the **Letter** page to place the same stitch on the **Work Area** from the **Machine Stitch** letter **Category**. Then use the **Encore** feature to make a frame of the bows using the **Hoop** option. You will then have a beautiful frame that fits your design **perfectly** without all of the headaches you'll have modifying the **Motif Line Properties** in ***4D Design Creator***. Remember, it's a secret, so keep it to yourself. Shhhh!.

Using the FreeHand Running Ring Tool

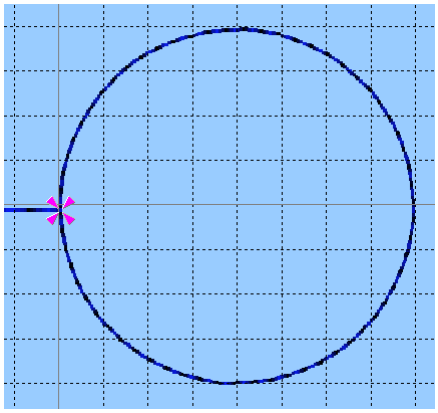
The last tool I will go over is the **FreeHand Running Ring** tool. This tool allows you to quickly and easily create a ring of running stitches in your design. All objects are perfect circles and cannot be modified into ellipses or any other shape. Let's see how this tool works with a short exercise.

1. **Left click** on the **New** tool to clear your **Work Area**.

2. **Left click** on the **Create** tab. Once you are on the **Create** page, **left click** on the **Design Area** tool to activate it and create a large area on the **Work Area** using the **Design Area** tool.

3. **Left click** on the word **FreeHand** on the menu bar. When the drop down menu appears, place your mouse pointer on the word **FreeHand Stitches** and another drop down menu will appear. **Left click** on the **FreeHand Running Ring** tool to activate it. This tool only requires one left click to draw the running ring stitch object. The edge of the stitch object will be placed wherever the needle position indicator is located (right now it is in the center of the design.) If you had wanted the edge of the running ring to be somewhere else than the center of the design, then you would have to use another tool (possibly the **Jump Stitch**) to move the needle position indicator to that new position.

4. **Left click** four grid lines to the right of the needle position and you will see the results that look something like this:



If you look at the tool bar, you will see that all of the tools are again available. The **FreeHand Running Ring** is one of those tools that de-activates itself as soon as you place the stitch object. If you go to the **Edit** page you will see that there are two boxes that describe this stitch object. One is the center of the ring and the other is on the circumference of the ring. You can **left click and hold** on either of the squares and then drag and drop them to a new location.

Note on using Tablet Mode with the FreeHand Running Ring

You can only place a **FreeHand Running Ring** when using **Tablet Mode** by placing the **click** as described above. Think about it for a minute and you'll understand why. I could never draw a perfect circle, so why try? This tool is for creating **perfect circles** of running stitches.

Chapter 7 – Basic Editing Skills

No matter how accomplished you become at creating new designs, there will be times that you find the need to modify your design. You might want to change one or more of the properties of the objects you used in your design. You might want to change the order of stitching for the objects you used. You might want to remove an object and replace it with a different object.

Some of these were difficult, if not impossible to do in other software packages. Now, in the ***4D Design Creator*** software, everything is easy to change accurately. The main reason for this is the innovative **FilmStrip** feature on the **Edit** page. Once you learn how to use the **FilmStrip**, you will wonder how anyone ever got along without it. First, we are going to learn how to use another feature of the **ExpressDesign Wizard**.

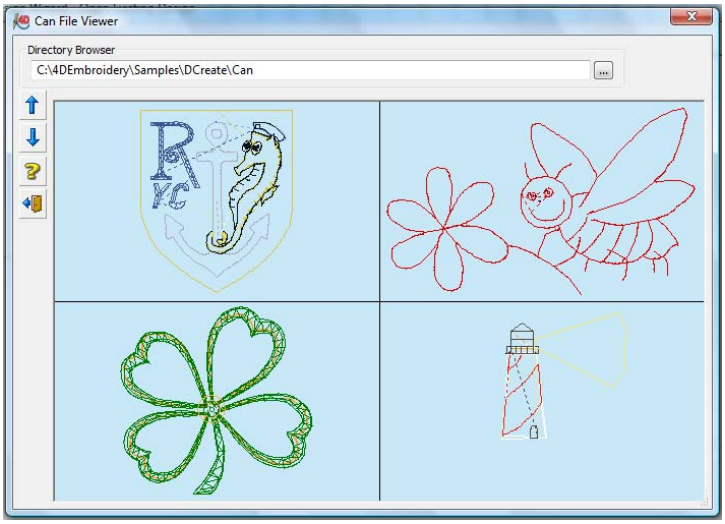
Using the Insert Designs Tool

You can add CAN files that you previously saved to your design if you wish to do so by using the **Load Existing Design** option of the **ExpressDesign Wizard**. The advantage of adding a CAN file to your present design is that it can be easily modified on the **Edit** page using the various properties of the stitch objects contained in the design.

1. **Left click** on the **New** tool. The **ExpressDesign Wizard** opens. The 5th option from the top is **Load Existing Design**. **Left click** on that option, then **left click** on the **Next** button.

2. You are now on the **Open Existing Create Page** of the **Express Design Wizard**. There is only one option here, **left click** on the green camera on the left side of the dialog.

3. The **CAN File Viewer** opens up. Here is what your screen should look like:

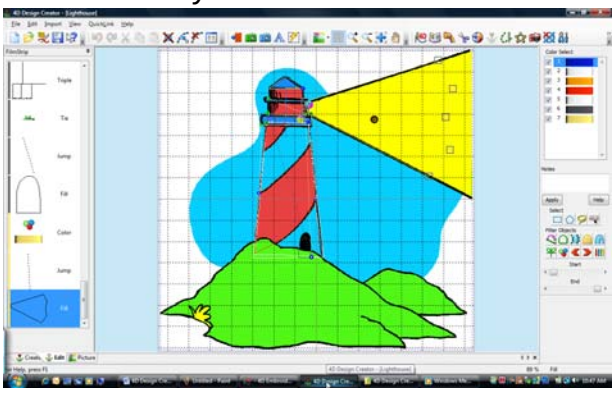


Left click on the ellipsis button on the right of the **Directory Browser** text box and navigate to the directory shown here:

C:\4DEmbroidery\Samples\DCreate\Can

The lighthouse shown in the lower right corner of my graphic is the one we are going to use. **Left click** on the lighthouse to add it to our **Work Area**.

4. **Left click** on the **Finish** button in the **ExpressDesign Wizard** to complete the job. Here is what your screen should look like:

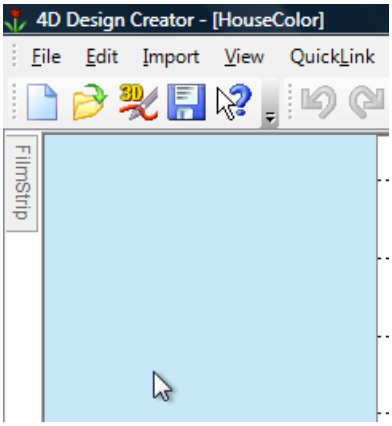


The CAN file, including the graphic used to create it, is loaded into the canvas. If you take a second and look at the design using **3D Create Stitches** you can see that the entire graphic was not used in the final design. The yellow beam of light doesn't go all the way to the edge of the page. The green hill and the blue background were not used at all in this design. Still, it is a great design. We are going to learn how to use a number of editing tools to "fix" and modify this design.

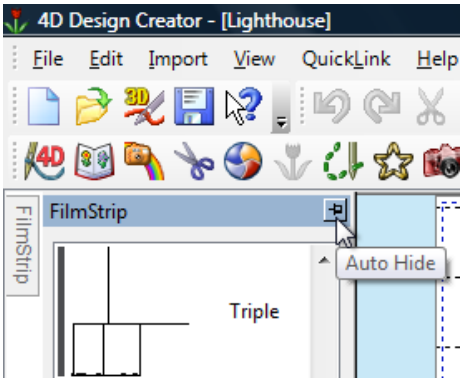
All of the changes that I am going to make using the **FilmStrip** can be made without using the **FilmStrip**. But when you use the **FilmStrip**, you will find that it is easier to locate and isolate single objects and groups of objects, and then (if you have selected multiple objects), make the **same change** to the group of objects at the same time. This cuts your work time down and ensures a consistency to your designs. Let's correct this design using the **FilmStrip** and we will see how to edit our designs from **a surprise visitor**.

Using the FilmStrip

5. **Left click** on the **Edit** tab if you are not already on the **Edit** page. You should see the **FilmStrip** on the left side of your screen. If, for some reason, you don't see the **FilmStrip** then your screen will look like this:

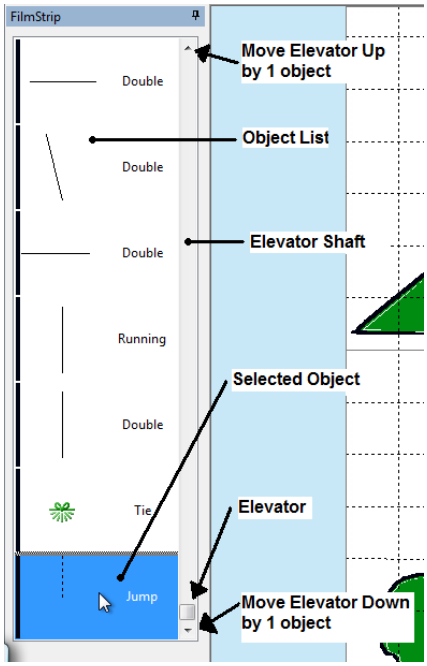


The little box with the word **FilmStrip** inside on the left means that the **FilmStrip** is minimized. **Left click** on that box and the **FilmStrip** fill appear. When the **FilmStrip** first appears, here is what it will look like:



Left click on the little **Auto Hide** button to keep the **FilmStrip** visible at all times. If you **left click** on the **Auto Hide** button when the **FilmStrip** is visible, it will be minimized and you will have to go through this little procedure to reveal it later.

6. Now that the **FilmStrip** is visible, here are some basic usage tips.



To **Select** an **object**, **left click** on the object in the **Object List**. Here, the **Jump Stitch** at the bottom is selected.

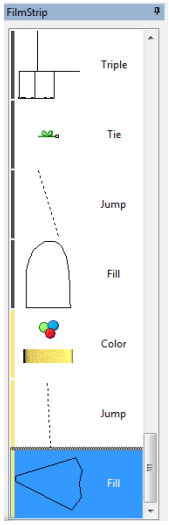
The location of the **Elevator** in the **Elevator Shaft** shows us where in the order of stitching we are. Since the **Elevator** is at the bottom of the **Elevator Shaft** this means that we are looking a the last 7 objects in this design.

If you **left click** on the top or bottom arrowheads in the **Elevator Shaft**, the **Object List** moves up or down by 1 object. **NOTE:** The **Selection** doesn't change. The **selected object**, along with all the other objects move up or down. To select another object, you must **left click** on that object.

If you **left click** inside of the **Elevator Shaft**, then the entire **Object List** moves up or down by 7 objects depending on whether you click above (**Up**) the **Elevator** or below (**Down**) the **Elevator**. On the extreme left side of the **Object List** you can see the **Color** of threads selected for each object.

7. I want to move all the way to the top of the **Object List** quickly. To do this **left click and hold** on the **Elevator**. Now, while **holding down the left mouse button**, move the mouse pointer to the top of the **Elevator Shaft**. Then, **left click and hold** on the **Elevator**. Now, while **holding down the left mouse button**, move the mouse pointer to the bottom of the **Elevator Shaft**.

8. Now, I want to find the **object** that represents the **Fill Pattern** for the little door on the front of the lighthouse. Since we are now at the bottom of the **FilmStrip**, this is what I want you to see on your **Object List**:



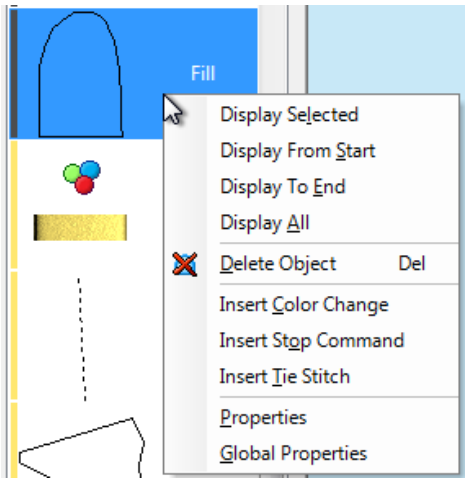
The object at the top of this list is the **Triple Running Stitch** object for part of the light on the top left part of the design. I know this because of the shape of the object and the color shown to the left of the object (Charcoal Gray). The 4th object down is the **Fill** object for the door of the lighthouse. I can tell this by the shape and the color of the thread (Charcoal Gray).

Left click on the door-shaped object to put the object into **selection** mode. You can see on the main **Edit Work Area** that the **Fill** object is selected. You know, by now, how to change the **Properties** of this **Fill** object. Back in **Chapter 5** when I showed you how to use the **Automatic Punching Tools**, we changed the **Fill Pattern** for a **Fill Object**.

Wouldn't it be nice if we could change the **Fill Properties** for all of our **Fill Objects** at the same time? Well, using the **FilmStrip**, you can do just that.

Even though this doesn't make sense to do so at this point, I want to make a mistake and show you how to correct it quickly. And show you the effects of using **Global Properties** incorrectly.

9. With the **Fill** object for the door selected, **right click** on the **selected object <u>in the FilmStrip</u>**. Here is what you should see:



Look at the option at the bottom of the menu. **Left click** on **Global Properties** and see what happens. Hmmm…the familiar **Fill Properties** dialog opens. I thought this would look different from the **Properties** dialog but it's exactly the same. **Left click** on the number **3** in the **Pattern** box at the lower right of the **Fill Properties** dialog and change it to **97**. **Left click** on the **OK** command button to close the dialog.

10. **Left click** on the **3D Create Stitches** tool 

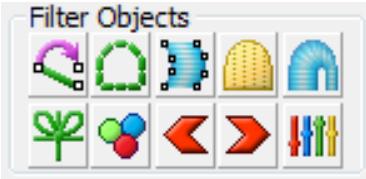
and look at the results. The selected **Fill Pattern** appeared everywhere there are **Fill Objects**. The **Fill Pattern** changed…**Globally**. Hence the name **Global Properties**. We made an intentional mistake here to show you what can happen if you are not careful. For now, just **left click** on **Undo** to remove this change.

11. While we are here, let me explain what the various choices on the pop-up menu in the **FilmStrip** will do for you. The first 4 options are use to display various part of your design. Once you **right click** on a particular object listed on the **FilmStrip**, you can choose **Display Selected** to show you only that one, selected object. If you left click on **Display From Start** then all objects that were created **<u>before</u>** the selected object and the selected object itself will be shown when you go to the **Create** page. If you left click on **Display To End**, then the selected object and all objects created **<u>after</u>** the selected object will be shown when you go to the **Create** page. If you left click on **Display All** then all objects will be shown when you go to the **Create** page.

12. There are also 4 **<u>action</u>** options on this menu. Beginning with the **Delete Object** choice. If you left click on this option, then the object that is presently selected will be removed from the design. **Note:** As of the writing of this book, there is no way to select <u>multiple objects</u> for deletion. If you have four objects in a row (e.g. a Color Change, a Tie Off, a Fill, and another Tie Off) all related to the placement of one visible stitch object on the **Work Area**, then you will have to use the **Delete Object** tool four times to remove them all.

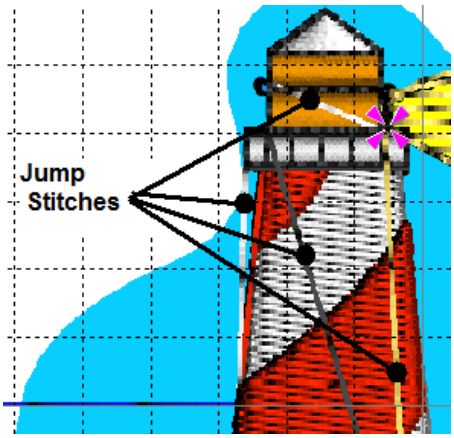
13. The **next three** commands all allow you to insert a new object. **Insert Color Change**, **Insert Stop Command**, and **Insert Tie Stitch** all insert their respective object or command **after the currently selected object**.

14. Sometimes when you are creating a design. It's easier to work with the design if you can hide certain components of the design. Fortunately, we have a number of **Filters** on the **Edit** page that allow us to do just this. Let's take a look at them now. These tools are located on the right side of the **Edit** page. Here is what they look like:



They work like push buttons. Right now none of them are depressed. When you left click on any of them, they appear to be depressed into the screen. And, when any one, or more, of them are pressed, the effect is to hide those particular type of objects from view on the **Create** page. Let's try some out and see how they work.

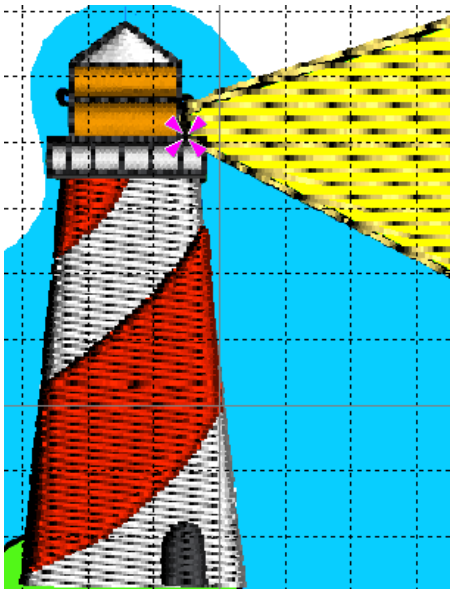
15. **Left click** on the **Create** page and look at the lighthouse design. Here is what it looks like now:



Left click on the **Edit** tab to return to the **Edit** page.

Look at the right side of the screen, near the bottom of the tool area. You see the **Filter Objects** frame and the various stitch object types there. **Left click** on the first tool on the left of the top row, **Turn Off Display of Single Stitches**  . This option turns off **Jump Stitches** and any **Single Stitches** that you may have placed in your design. Let's see what effect this has on the display of the design. **Left click** on the **Create** tab.

16. This is what you should see now:



This is much cleaner and easier to see. Here's something else. **Left click** on the **Edit** tab and scroll up and down in the object list. All of the related objects are temporarily hidden in the object list. Let's try something else. **Left click** on the next two filters, **Turn Off Display of Running Stitches**  and **Turn Off Display of Satin Stitches**  . Now, **left click** on the **Create** page. All of the satin and running stitches that make up the top of the lighthouse are hidden. Only the **Tie Offs** and **Fill** objects are left in the design. Let's try turning off one more thing and for this, you'll have to pay close attention.

17. Look closely at the buttons in the **Filter Objects** frame. Here is what they look like in magnified view:

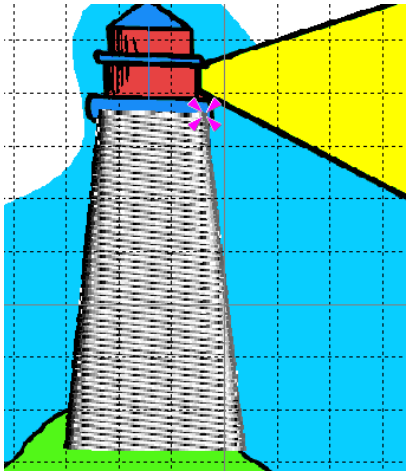
The first three buttons in the top row appear to be depressed. The next button (which we have not pressed yet) appears to be raised as does the last button in the top row. Now, look closely at your screen as you try this next step. I want you to **left click** on the **Turn Off Display of Satin Area Stitches** (the last button on the right on the top row), and watch closely what happens. Wow! Your eyes are not deceiving you and there is nothing wrong with your software. No matter how many times you **left click** on that button, it won't stay down. If you **left click** on any of the other buttons, they will stay down then pop up the next time you click on them. Go ahead and try one of the depressed buttons. **Left click** and it stays down. **Left click** on it again and it pops up. Why doesn't this last button seem to work like the others? Well, the truth is, that it will work just like the others. The problem is here that there are **no Satin Area** type of objects in this design. If there had been any **Satin Area** type objects, then this button would have worked like all the rest. The fact that it pops back up is a signal to you that there are no objects of this type in this design.

18. The first button on the second row  filters out all **Tie Off** objects. You can try it now if you like. You won't see much on the **Create** page because **Tie Offs** are hard to see. But you will notice that the length of the object list in the **FilmStrip** will grow shorter.

19. If you left click on the second button from the left on the bottom row  , then all **Color Change Commands** and **Stop Commands** will be hidden. Let's turn everything back on by **left clicking** on the last button on the second row **Display All Objects**  .

20. Before we use the next filter, I want you to look at the upper right corner of your screen at the **Color Select** frame. Notice that there is a check mark in the little box to the left of each color. We are now going to use the **Draw Next Color Block** tool  in the **Filter Objects Frame**. This tool will allow us to step through each color in the design and see all of the stitch objects created with that color. **Left click** on this tool and watch what happens to all of the check marks. They all disappear except for the first one. Look at the **FilmStrip**. It only contains those objects created with that color (the Fix Area around the design). **Left click** on this same tool again. The **single check mark** moved down one color. Look at the **FilmStrip**. There are now only 4 objects on it.

21. **Left click** on the **Create** tab. Here is what you will see:



Only the main body of the lighthouse is shown now. You can use this tool to easily step forward through the various colors using **Draw Next Color Block** or step backwards using the **Draw Previous Color Block** **.**

Chapter 8 – Advanced Design Editing

Now that you are comfortable with the basics, I can go into some, but not all, of the more advanced features and techniques of ***4D Design Creator***. Many of you will never use these techniques, at least not at first, but eventually you will find them extremely handy to have and to use when you wish to speed up your work or to put a personal touch into your work.

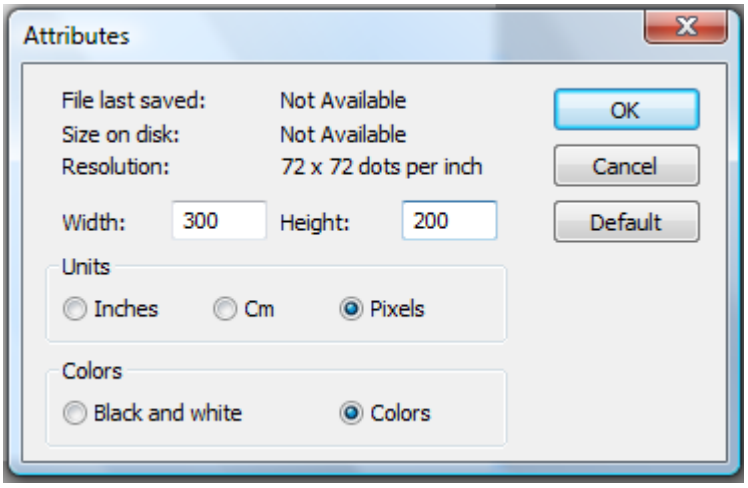
Creating and using your own fill patterns.

The folks at **Husqvarna Viking** have provided us with 252 great fill patterns. However, if you know how to create them, you can add to this list and make your own fill patterns. This will allow you to put a name, or any design that you choose, into all of your fill stitch objects.

Before we can use this option in ***4D Design Creator***, we are going to have to create a small graphic that contains the guide for the fill pattern that we want to create. I will be showing you how to use ***Microsoft Paint*** because this is the one graphic program that everyone has on their computer. You can use any software that you like that can create a **Windows BMP** file. Let's do a short exercise and learn how to create a fill pattern. By now, I should be able to abbreviate my instructions to you with a minimum number of graphics because you should be familiar with what we are doing.

1. The first thing we need to do is to start ***Microsoft Paint***. **Left click** on the **Start** button in the lower left corner of your screen. When the pop up menu appears, slide your mouse pointer to the words **All Programs** and let it rest there. Another menu will appear. Look on this menu and find the word **Accessories**. Slide your mouse pointer to that word and let it rest there. Another menu will appear and this menu will have the word **Paint** on it and a little icon that resembles a glass with some paintbrushes and pencils in it. **Left click** on the word **Paint** and ***Microsoft Paint*** will open.

2. As soon as ***Paint*** opens, **hold down the CTRL** button and then tap on the **E** button. The **Attributes** dialog will open:

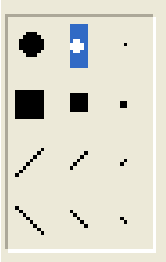


This is where we will set the size of the canvas on which we will draw our picture. Change the value in **Width** to 300. Change the value in **Height** to 200. **Left click** on the radio button to the left of the word **Pixels** so that it has a green dot in the center of it. **Left click** in the radio button to the left of the word **Colors** so that it has a green dot in the center of it. **Left click** on the command button labeled **OK** to make these options take effect and close the **Attributes** dialog.

3. When the **Attributes** dialog closes, the size of the canvas instantly changes to 300 by 200 pixels. To create a bitmap for your fill stitches, the canvas sizes must be **within 120 and 700** pixels. You choose the size of the bitmap by deciding how often you want the pattern to repeat in the design. The fill pattern that you are going to create will repeat **0.1** mm for every pixel. This means that our design of 300 by 200 pixels will repeat every **30** mm in a horizontal direction and every **20** mm in a vertical direction.

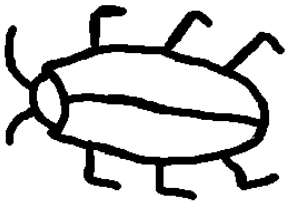
4. Next, we need to set the colors we are going to draw with. The best colors to use are black for the foreground (drawing color) and white for the background (canvas) color. Look at the bottom of the screen and you will see the **Color Palette** as a series of different colored boxes. At the left of the **Color Palette** there are two boxes, one in front of the other, that show the currently selected foreground and background colors. You select the foreground color by **left clicking** on one of the colors in the **Color Palette**. You choose the background color by **right clicking** on one of the colors on the **Color Palette**. Black is the leftmost color on the top line of the **Color Palette**. **Left click** on black. White is the leftmost color on the bottom line of the **Color Palette**. **Right click** on white.

5. Now we have to select our drawing tool. We will use the **Brush** tool (it looks like a yellow-handled paintbrush). **Left click** on the **Brush** tool and a small sub-menu opens on the left side of the screen that looks like this:



These objects allow you select the size and shape of the **Brush** tool's line. For now, just **left click** on the left dot in the top row. You can experiment with the other brush sizes/shapes later. By the way, the slanted lines allow you to create lines that look like calligraphy.

6. For now, let's just draw something that looks like a bug. Here is what I drew:



My wife thinks it looks like a cockroach. I like to think of it as a happy little beetle. You can call it what you like. I encourage you to learn how to use all of the tools in ***Microsoft Paint***. It's a nice little graphic program that will do lots of things. And, many of the tools look and work just like the tools on the **Picture** page in***4D Design Creator***.

7. Now it's time to save your work. **Left click** on the word **File** on the menu bar. When the pop down menu appears, **left click** on the words **Save As…** and this will open the **Windows Save As** dialog. Navigate through the file structure on your hard disk and save the file in the folder **C:\Design Creator Projects\Graphics** with a file name of **Beetle.bmp**. When you are naming the file in the **Save As** dialog in the **Filename** text box, be sure to select **24-bit Bitmap** in the **Save as type** text box.

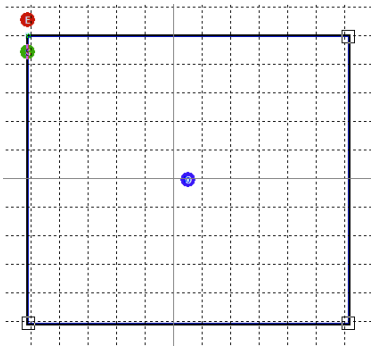
8. Now we have the graphic that ***4D Design Creator*** will use as the template for our fill pattern. If your **Work Area** in ***4D Design Creator*** is not already clear, then save anything that is on the **Work Area** that you wish to save and start a new design. While you are on the **Picture** page, **left click** on the **Line** tool and select the middle line thickness. Then **left click** on the **Rectangle Draw** tool to draw a rectangle outline on the **Work Area**.

9. **Left click** on the **Create** tab and use the **Design Area** tool to select the rectangle you just drew. When the **Design Size** dialog opens, set the size to **200** and select the **Width** option.

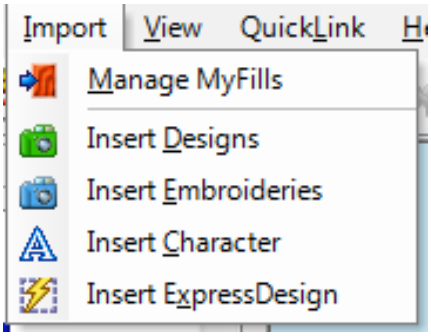
10. **Left click** on the **QuickStitch** option on the menu bar, then **left click** on **QuickStitch Fill** on the drop down menu, and once again **left click** on **QuickStitch Fill** on the final popup menu to select the tool.

11. **Left click** inside of the rectangle and accept the **Color Tolerance** area that appears. Your rectangle will fill with stitches. This is where the magic happens. We are going to apply the fill pattern that we just created in ***Paint***.

12. **Left click** on the **Edit** tab. As soon as you arrive at the **Edit** page look in the lower right corner of the screen. You should see the words **Fill** and if you look at the **Work Area** you should see a series of little, clear boxes at the corners of the rectangle. It looks like this:

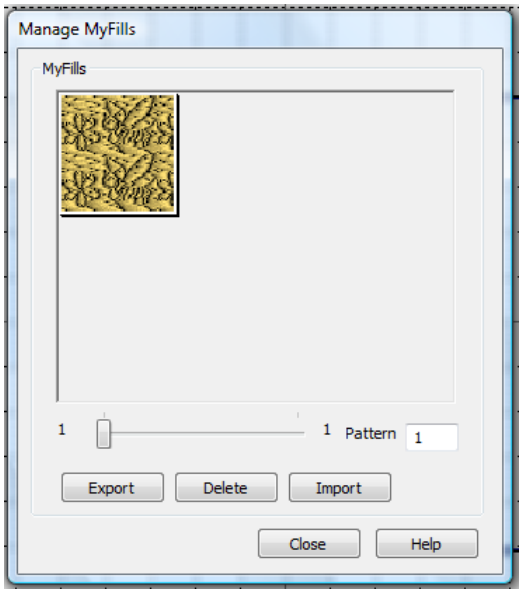


13. Before we change the fill pattern, we have to create our own fill pattern. To do this, we will use the **Manage MyFills** tool. **Left click** on the word **Import** on the menu bar and a menu will appear that looks like this:



The first option **Manage MyFills** is the one we want to use. **Left click** on **Manage MyFills** and another dialog will open.

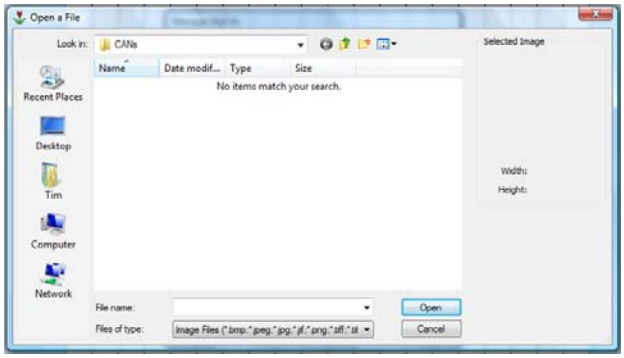
14. Here is what the **Manage MyFills** dialog looks like:



We see a new fill pattern (a flower and bee) that I made in one of the exercises in the ***4D Design Creator Reference Guide***. You may have a blank screen in this case. We are now going to add our own fill pattern based on our graphic.

Left click on the command button labeled **Import** at the bottom of the dialog.

15. The **Open a File** dialog opens and looks like this:



We have to use this dialog to navigate to the folder where we saved our graphic. It should be in

C:\Design Creator Projects\Graphics with a file name of **Beetle.bmp**.

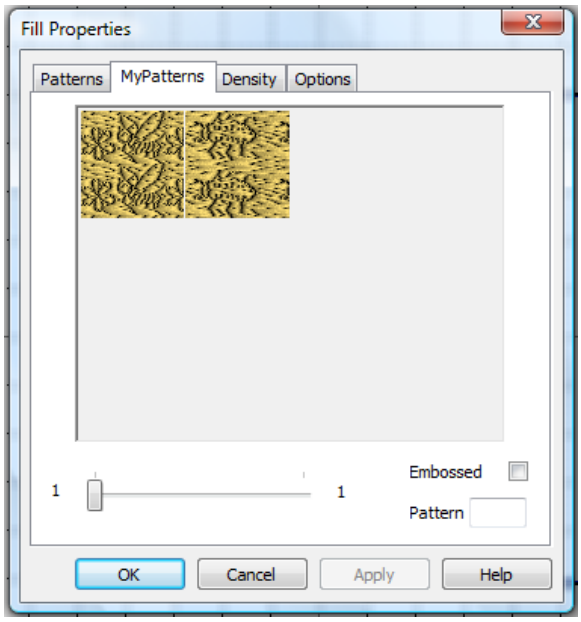
16. **Left click** on the drop down arrow in the **Look In** text box. **Left click** on **Local Disk (C:)** and the dialog will immediately show you the folders in the root directory of the C: drive. This is where the folder **Design Creator Projects** should be. **Double left click** on the **Design Creator Projects** folder and it will open and its contents displayed in the dialog window. Now you should see the three folders you created way back at the beginning of the book, **CANs**, **Stitch**, and **Graphics**. **Double left click** on the **Graphics** folder and you should see the contents of the folder on the dialog. There should be a file there named **Beetle.bmp**.

17. **Left click** on the **Beetle.bmp** file

18. **Left click** on the command button labeled **Open** and just like that, the dialog will close and you'll see your new fill pattern in the **Manage MyFills** dialog. **Left click** on the command button labeled **Close.**

19. So far, we have just created the new fill pattern. Now we need to apply it to the fill stitch object we are editing. Make sure that the **Fill** object is still selected (check the lower right corner of your screen). As soon as you verify that the **Fill** object is the stitch object selected, **right click** in the **Work Area** to open the **Fill Properties** dialog.

20. Once the **Fill Properties** dialog is open, look at the tabs at the top of the dialog. The second one from the left reads **MyPatterns**. **Left click** on the **MyPatterns** tab. Here is what you should see:



There are two fill patterns present on my screen. The first one is the flower with bee, and the second fill pattern is the one we just created. **Left click** on the pattern with the Beetle to select it, then **left click** on the command button labeled **OK.** This will close the dialog and apply the fill pattern. **Note:** You could go to the other two tabs, **Density**, and/or **Options** now, or later, to modify this fill pattern's characteristics just as you would any fill pattern.

Left click on the **Create** tab to see the effect of our new **Fill Pattern**.

Using the Insert Characters Tool

The **Insert Characters** tool is a great tool that allows you to instantly and easily add lettering to the designs you create in ***4D Design Creator***. You have full access to every stitch font that you have on your computer, even those fonts that you create in ***4D Embroidery Extra*** with the **Quick Font Wizard** and that are stored on your hard drive. Among the fonts available to you are also all of the various stitches in the **Machine Fonts** category. Many of the stitches in the **Machine Fonts** category are, themselves little embroideries shaped like hearts, leaves, etc. that can really add a great accent to your design creation projects.

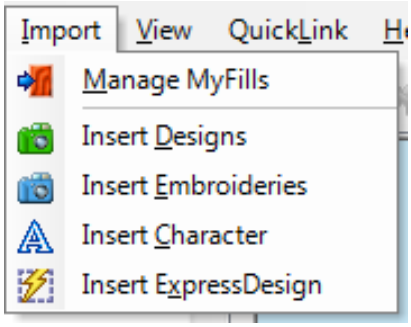
Let's do a short exercise to learn how to use this tool and then I'll show you how to find just the right character for you to use. Before starting this exercise, make sure that your **Work Area** is clear and there are no designs present.

1. **Left click** on the **Create** tab to go to the **Create** page.

2. **Left click** on the **Design Area** tool. Select a **Design Area** on the **Work Area** that is almost the full size of the **Work Area**. When the **Design Size** dialog opens, set the size of the design to 100 mm in **Width** and then close the **Design Size** dialog by **left clicking** on the command button labeled **OK**.

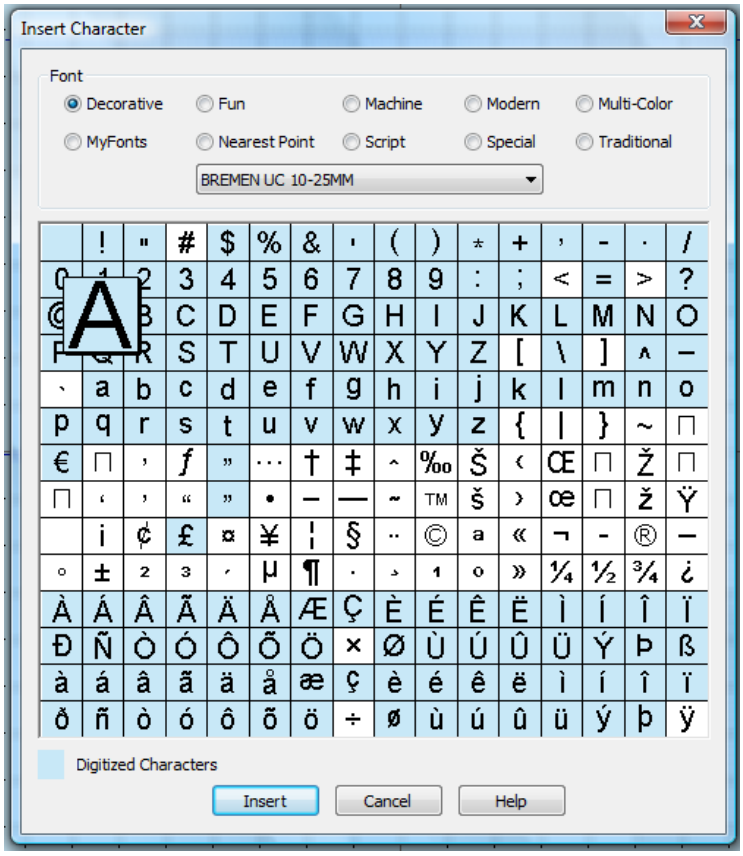
3. **Left click** on the **Edit** tab to go to the **Edit** page.

4. **Left click** on the word **Import** on the menu bar. The drop down menu opens and looks like this:



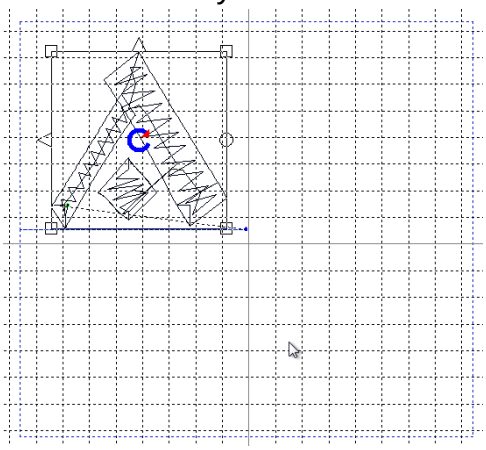
There second from the bottom of the drop down menu is the **Insert Character** tool. **Left click** on the **Insert Character** tool and the **Insert Character** dialog will open.

5. Here is what the **Insert Character** dialog looks like:



At the top of the dialog you see the various **Font Categories** that are present in ***4D Embroidery Extra***. Here, the default category is selected, **Decorative**. You can tell it is selected because of the green dot in the radio button to the left of the category name. The first font in that category, **BREMEN UC 10-25MM** is also selected. To select a different font in this **Category**, just **left click** on the downward pointing arrow at the right side of the font name text box. Beneath the font name and categories is a grid that tells us which characters were digitized when this font was created in ***4D Font Digitizing***. The characters that are available are on a light blue background. The characters that are not available are on a white background. The selected character, in this case the uppercase A is larger than the others because it is currently selected by default. To select the character to insert all you have to do is **left click** on the character to select it and then **left click** on the command button labeled **Insert**. As soon as you **left click** on **Insert** the dialog will close and place the stitches into the design. Go ahead and **left click** on **Insert** and let's take a look at the results.

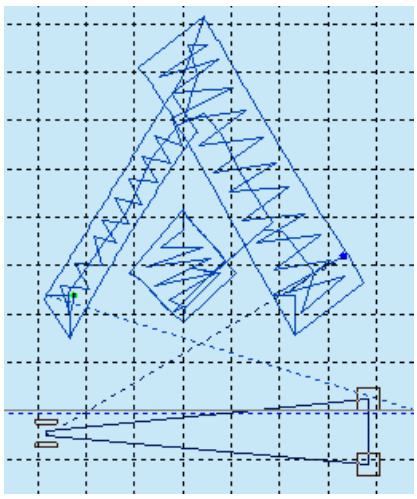
6. Here is what my screen looks like:



You can see that the character was inserted and the dialog closed. The inserted character is also automatically placed into select mode so that I can **Resize**, **Rotate**, **Flip Horizontally**, **Flip Vertically**, or drag and move the character to another location on the design. The color of the character is also brought in from the original font as it was digitized. I can, of course, change this color here on the **Edit** page using the color blocks in the **Color Select** frame on the **Control Panel** on the right side of the screen. I can also use the **Copy** tool now to place a copy of this design on the **Clipboard** so that I can easily paste multiple copies of the stitches rather than returning to the **Insert Characters** tool. Since this design is presently selected, let's **right click** now and try to bring up its **Properties** to see how we can modify it.

7. Oops…what happened? The selection box disappeared and, looking, in the lower right corner of the screen, you see that the **Single Stitch** object is selected. If you look in the **FilmStrip** you will see that this embroidery consists of a large number of objects. This character, just like all of the other characters, is a complete embroidery. It is **not** a CAN file. Therefore, our editing options will be rather limited.

8. Let's try a character in a different **Font Category**. **Left click** on the **Machine** font **Category**. The first font in this category is named **_CANDLEWICKING 1**. (That's not a typo. The first character in the name of the font is an underscore character.) **Left click** on the drop down arrow to the right of the box with the font name **_CANDLEWICKING 1**. There are a list of fonts available. Find the font named **' C PICTOGRAM** (That's not a typo. The first character of the font name is **'**.) You see that there are fewer available characters in this font. As is the case with every font, the uppercase A is selected. **Left click** on the command button labeled **Insert**. Here is what your screen should look like:



What happened here? I thought that we were going to insert an uppercase A. What happened is this. When the person who created this font with ***4D Font Digitizing***, they used each of the letters and characters shown on the grid as a **placeholder** for the little design that you are inserting into your design. You don't have to create an uppercase A, or any of the other characters when using ***4D Font Digitizing***. You create whatever you want to appear when the user inserts a particular character. The question is, how do I know what design is assigned to each character when I use one of these **Machine** fonts? I'll answer that question in the next section.

Finding the Correct Character in Machine Fonts

I'm afraid that you are going to have to do some research and, I highly recommend that you do this, printing of a few pages of information stored on your hard drive. A number of books are stored on your hard drive that contain this information. They were placed there when you installed your software. If you look in the right folder, you will find them. Let's take a look at where they are and what the information on each page means.

For this exercise, we will be using **Microsoft Windows Explorer** to find the books and the **Adobe Acrobat Reader** software to open and view the books. Don't worry about having **Adobe Acrobat Reader**. It was installed on your computer when you installed your embroidery software.

1. Here's another way to start **Windows Explorer**. **Right click** on the **Start** button in the lower left corner of your screen. When the pop up menu appears, **left click** on the word **Explore**.

2. When **Windows Explorer** opens, **left click** on the **Maximize** button (the middle button) in the upper right corner of **Windows Explorer**.

3. **Left click and hold** on the elevator (the blue bar in the vertical scroll area of the left pane of **Windows Explorer**) and drag the elevator to the top of the scroll bar.

4. On the left pane of **Windows Explorer**, you should see a folder near the top of the list of folders named **4DEmbroidery**. **Left click** on the name of the **4DEmbroidery** folder and it will automatically open. (**DO NOT** left click on the little plus sign in front of the name of the file. Left click on the folder name itself.) When you left click on the folder name, it not only opens in the left pane to show you all of the sub-folders inside of the folder, it also shows the same information inside the right pane of **Windows Explorer** showing not only the sub-folders that are in the folder just opened, it also shows any files that are inside of the folder just opened.

5. When the **4DEmbroidery** folder opens, you will see a sub-folder named **Guides**. **Left click** on the **Guides** folder in the left pane of **Windows Explorer**.

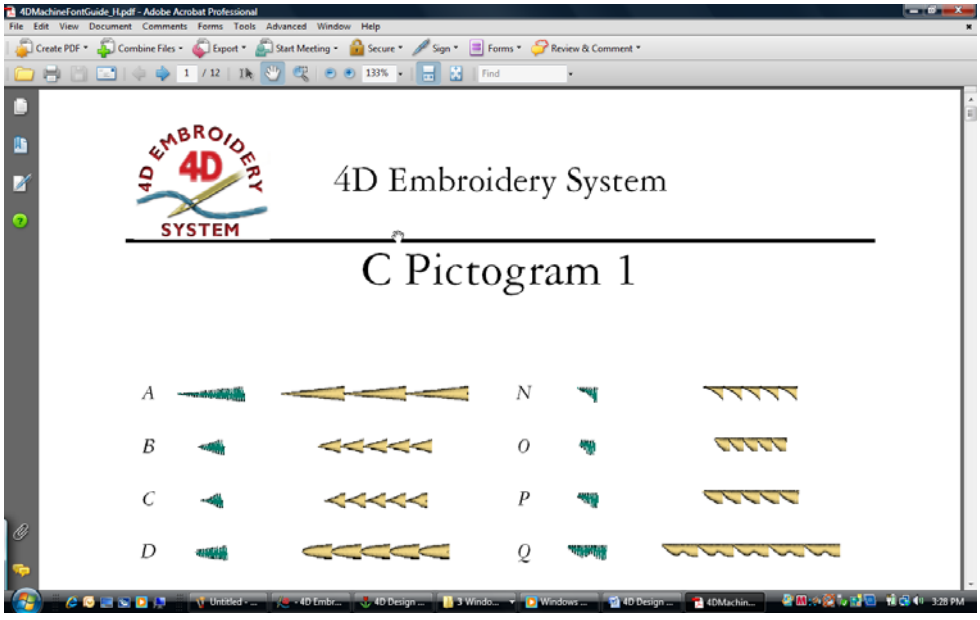
6. When the **Guides** folder opens, you see that there are two sub-folders in the **Guides** folder. One sub-folder is named **Reference,** the other sub-folder is named **Sample**. **Left click** on the name of the **Sample** folder in the left pane.

7. When the **Sample** folder opens, look in the right pane of **Windows Explorer**. There you will see seven more sub-folders. We are interested in the folder named **Fonts&Shapes**. **Double left click** on that folder and you will see a number of **Adobe Acrobat PDF** files. The PDF file you are looking for is named **4DMachineFontGuide_H.pdf**. Now we are going to open that file. **Double left click** on the **4DMachineFontGuide_H.pdf** to open it. After a few seconds **Adobe Acrobat** will start and open the file.

8. Your screen should look something like this:

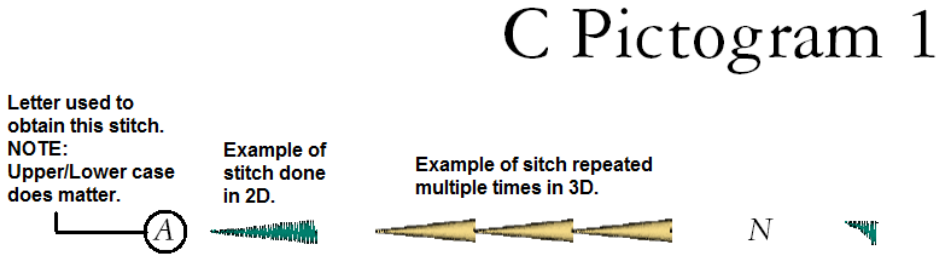
Note: Your version of **Adobe Acrobat Reader** will look a little different from my screen. I have **Adobe Acrobat Professional Edition Version 8** so that I can create and edit PDFs. The free **Adobe Acrobat Reader Version 8** has nearly the same features, look, and feel.

Here is what the first page of this sample guide looks like. You can see the entire page of the document in this view. If you look at the tool bar in **Adobe Acrobat** you will see these two tools:  If you left click on the tool with the arrows pointing to all four sides of the page, then you see the whole page as we see here. If you left click on the tool with the arrows pointing to the sides of the document, then you see this view of the document:

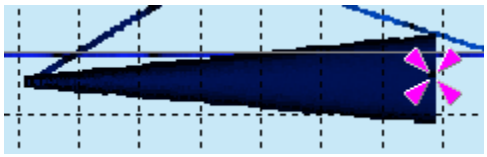


This will give you a better look at the stitches. In addition to showing you the stitches, there are instructions at the bottom of the page that contain interesting information about the various stitches. Here is what the letters beneath the stitches mean.

9. Here is an enlarged view of part of the page:



It's important to note that the case of the characters used is just as important as the character itself. Look back at the character that was inserted into our design. It looked like this:



When the person who created the **' C Pictogram 1** font they decided to place these stitches in the placeholder letter of an uppercase "A". They could have created anything they wanted to appear rather than an uppercase "A". In some fonts, there is a distinct difference between the character inserted when you use the uppercase rather than the lowercase letter and vice versa. To see an example of this, open the document:

C:\4DEmbroidery\Guides\Sample\Fonts&Shapes\4DMachineFontGuide_U.pdf

and look at the **_CANDLEWICKING 1** machine stitches. You will see that all of the lowercase letters give you an outline of the stitches and all of the uppercase letters give you a filled in, satin stitch version of the stitches.

Now you can feel free to jump into the full range of characters and letters to insert into your designs. Keep in mind though that these characters are fully completed embroideries and not CANs. You can edit them if you wish to do so, but it must be done stitch by stitch and that is quite a cumbersome way to do your work.

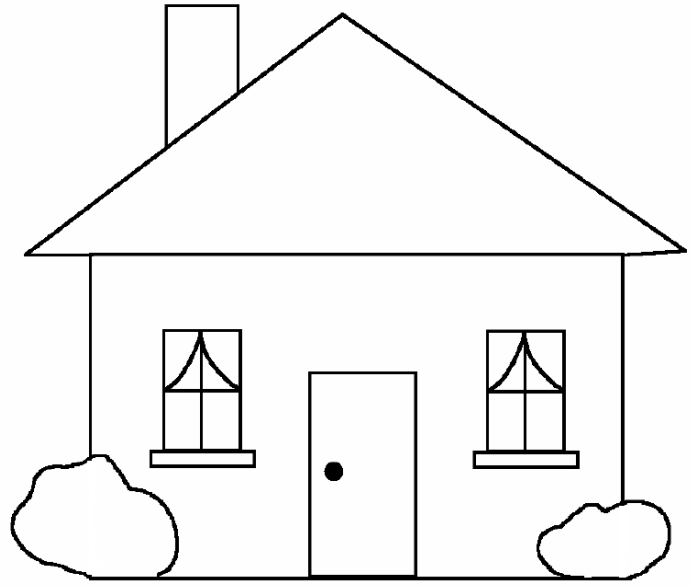
Chapter 9 – Design Creation Techniques

So far, all I have covered are how the various automatic and manual punching tools available in ***4D Design Creator*** work. I said little about the planning and use of these tools and other design considerations. I will take a little time now to go over the techniques that I use when planning and designing my projects. I'm not saying that these rules are absolute and that they must never be violated. I go outside of the rules myself when the nature of the design calls for it. Every chance I get, I read what other digitizers are doing and the techniques they use and adopt them where possible. So let me say thanks to everyone who taught me through their writing on the subject.

Planning Your Project

Way back in Chapter 1 of this book, I said that planning your project is **50%** of the work. I can't overemphasize this fact too much. Anyone who just jumps in and begins laying down stitch objects without planning will soon become frustrated with the entire process and give up altogether. I said this before but I'll repeat it here, "**Failing to plan is planning to fail.**"

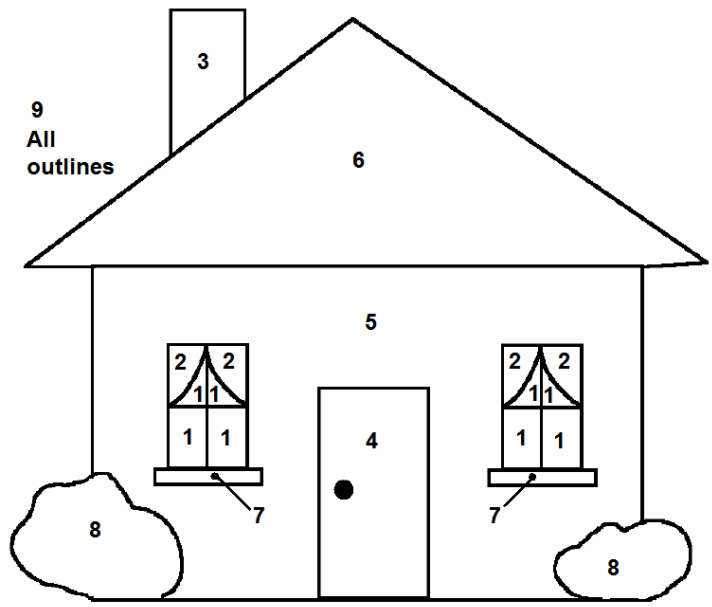
You have to look at the graphic for your project as a series of layers that are going to be laid down, one on top of the other. Think about this simple graphic project that we used earlier:



When you think about this graphic, the first thing you can see is that the bushes are in front of the house. This means that they must be the **one of the last** objects to digitize. Remember, **objects are stitched out in the order in which they are digitized**. In fact, the **very last** object to be digitized will be the borders of the graphic itself, since they are to lie on top of all of the other stitches and used to emphasize the separation of all of the other stitch objects.

When I plan a project, the first thing I do is to print out the graphic on paper. I make several copies of the design so that I can make various decisions about the project. The first thing I do is plan the **order of stitching**. Here is how I do it.

Order of Stitching



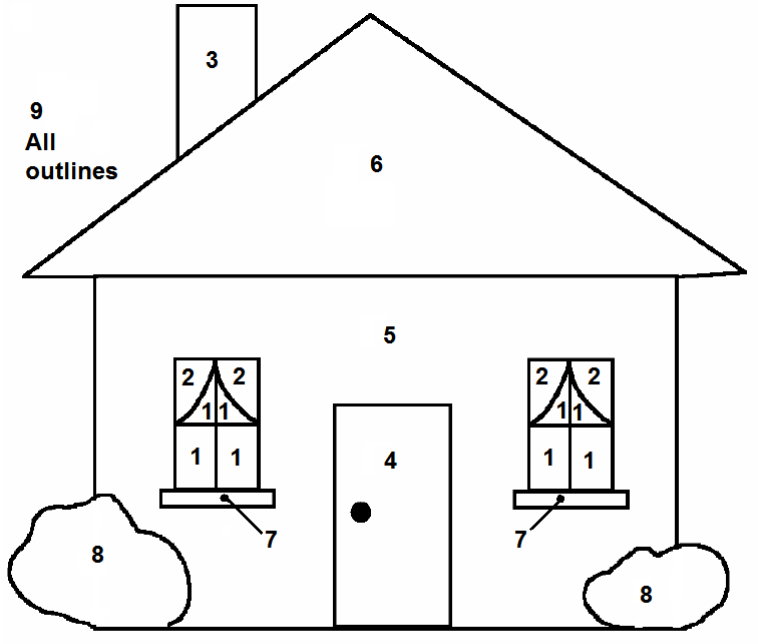
This is my **Order of Stitching** plan. I take one of the designs I printed out and put numbers in the various areas showing me the order I plan to stitch. My logic in this design is that the inside of the windows is the base layer of the design. i.e. everything else will lie on top of it. Moving away from the base layer, the curtains inside of the windows will lie on top of the inside of the house (layer 1). Layer 3 is the chimney. I want this detail next because I want the stitches from the roof to lay on top of the base of the chimney. But I don't want to stitch the roof next, because I want the eaves of the roof to be on top of the front wall of the house as well. And I also want the front of the house to lie on top of the door. So my next object to digitize is the door (number 4), then the front of the house (number 5), then the roof of the house (number 6). I want the window sills to be on top of the front of the house, so they come next (number 7). Then I put the bushes in (number 8). The last thing I do is to but the black outline stitches around everything I want to emphasize.

Once this is complete, I lay the plan aside and get a fresh copy of the design to move on to my next planning step.

Color Assignment

When I look at my project, there are certain principles that I keep in mind when selecting the colors for each of the various segments in the design. The main thing to keep in mind is that **darker colors may show through lighter colors**. For this reason I would not want to make a color assignment of **red** for the inside of the windows and **white** for the curtains because the borders of the two top segments might show through beneath the curtain stitching based on the amount of **Compensation** I put into the design at that point. (If you don't remember what **Compensation** is, go back to **Chapter 1** and re-read the section on **Design Creation Terminology**.)

What I do now is place a list of numbers on my paper design print out and put colors next to the numbers I placed on the design. Here is what my new sheet looks like:



1 - White
2 - Blue
3 - Red
4 - Light Brown
5 - Red
6 - Grey
7 - Blue
8 - Green
9 - Black

The design plan is beginning to look like a paint-by-numbers project. And, in a way, that's just what it is. At this stage we get a chance to think about what the design will look like when it is finished. And to reconsider the **Order of Stitching** plan we made. If you want the house to be white in areas 5 and 6, then you will want the chimney, area 3 to stitch out after the roof is stitched. If the door is to remain brown but now be placed on a white front, then it will have to stitch out after the front of the house is stitched out.

You can see that your choice of colors is going to affect the **Order of Stitching** and, therefore, the order that you digitize each of these areas.

Choosing the Appropriate Stitch Object

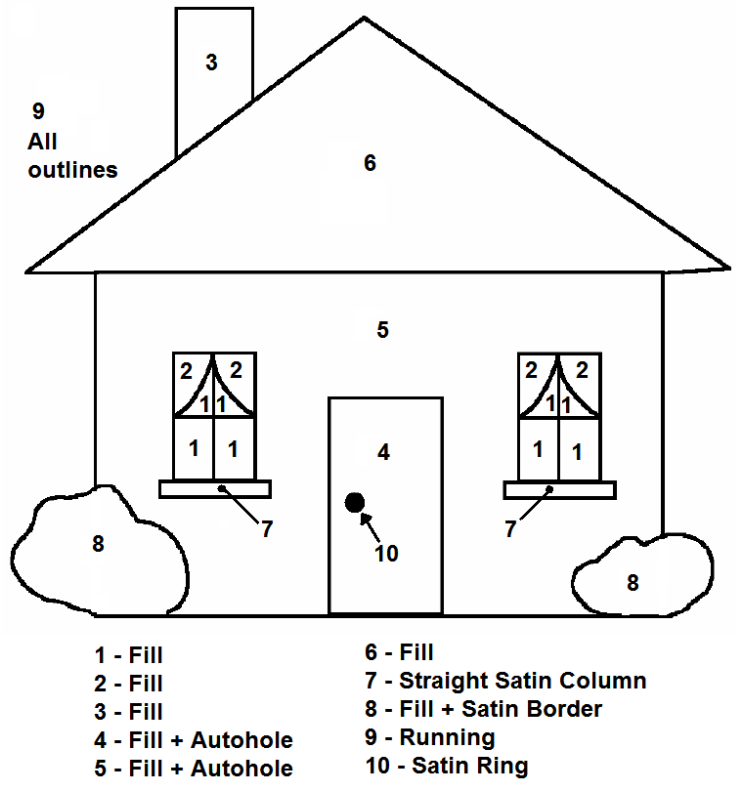
Once again, I go back to my original print of the project and look at the design again, but this time with an eye to choosing the **type of stitch object** to assign to each part of the design.

I Number each of the segments of the design so that I can designate the type of stitch object I want to use. If you need to do so, go back to chapter 1 and review the types of stitch objects. Better yet, print out the manual that came with your software that contains examples of the various stitch objects. It is contained in the following file on your computer:

C:\4DEmbroidery\Guides\Sample\Stitch\4DDesignCreatorStitchGuide.pdf

This guide is only 17 pages long and should be at your side when you begin your design creation projects.

Here is what I came up with for my design creation project and why I used each of the various stitch objects.



Most of my design will be a fill stitch object because I have a lot of area to cover. In segments 4 and 5 I chose a **QuichStitchFill + AutoHole**. This is because I don't want to overlay the stitching I did earlier in the case of segment 5. And, I wanted to leave room for the door knob in segment 4.

I'm using a straight satin column for segment 7 because I think that these areas are too small for a fill pattern to be effective. I chose a fill with satin border for the bushes because I want to make them stand out from the rest of the house.

For segment 10 (the door knob) I chose a satin ring (albeit an extremely small one) to make it stand out from the door.

This would all look pretty boring and bland without some extra details to make the design pop out. But sometimes it is impossible to put these small details into your design. But you can let the software do it for you. That's what we will do in the next step.

Selecting Fill Patterns

4D Design Creator comes with **252** fill patterns. And, as you saw earlier, you can create your own fill pattern if you want. For now, let's not do anything fancy. We'll just use some of the great fill patterns that come with the software.

What are chimneys made of? Of course, they are made of bricks. There is another document that you should print and have by your side while working. This is the fill patterns guide. It is in:

C:\4DEmbroidery\Guides\Sample\Stitch\4DFillPatternsGuide.pdf

Well, if you take a look at the fill patterns in the ***4DFillPatternsGuide***, in the **Mosaic** category, you will find that pattern number 137 and 138 you will see that they both resemble bricks.

I want the roof to look like siding. Take a look at patterns 13 through 24 in the **Standard 2** category. They all look like siding. "But they are all vertical and slanted lines," you say. Don't forget that when you select the **Properties** for your fill patterns on the **Edit** page, one of the things you can adjust is the **Angle** of the fill pattern. Change that angle and, poof, you have horizontal lines.

What about the bushes? What about the front door? I'll leave the selection of that up to you. By the way, the only way you will know if this pattern or that pattern works, is to **stitch it out** on a piece of test fabric.