

Embroidery Machine Basics

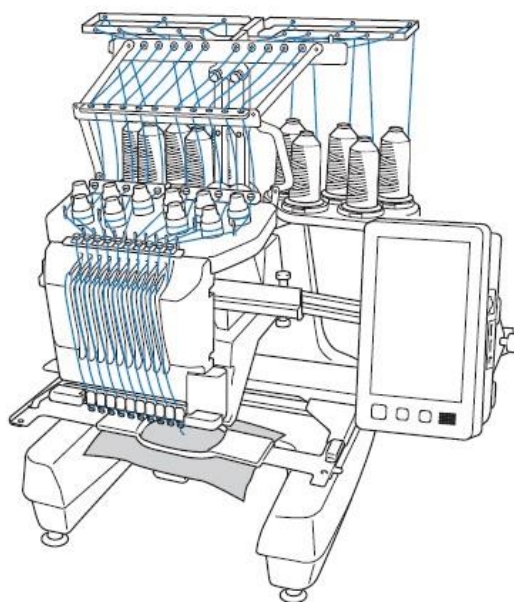
Inspiration Station: Geauga County Public Library's Maker Space Instructions

Independently explore your creativity. We'll get you started with the basics.

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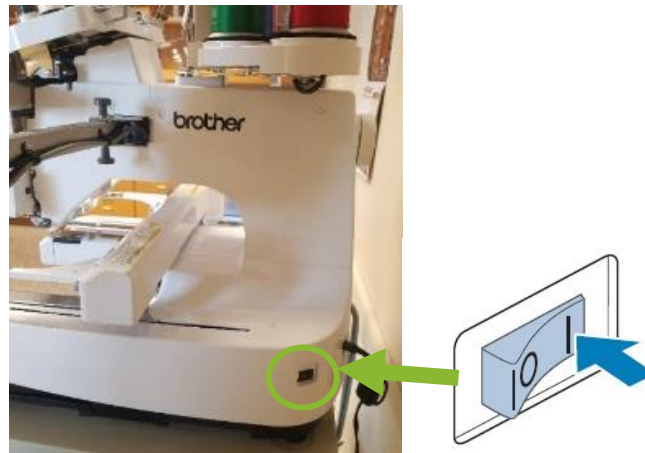
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The **Brother Entrepreneur Pro X PR1050X** Embroidery Machine can embroider complex designs on to different of types of fabrics. The machine can switch between ten (10) different colors at a time and can be programmed to use even more than ten colors for a design. It is an automatic machine for easy use and access.

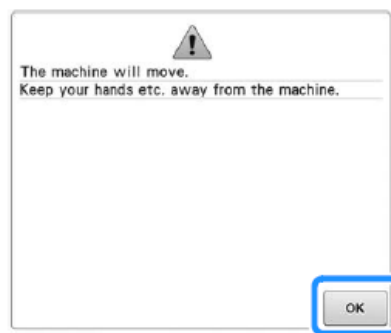


Turning on the Machine

1. Before turning on the machine, make sure it is plugged in.
2. On the back of the machine, behind the display screen, is the power switch.
3. Flip the switch to “|” to turn it on.



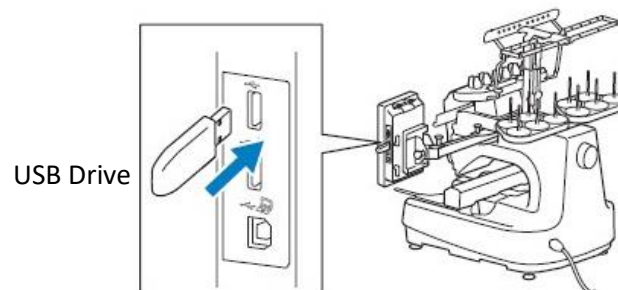
4. The screen will turn on. Touch anywhere on the screen to get started.
5. A Warning will appear. Press **OK** and then the machine will move to the start position.



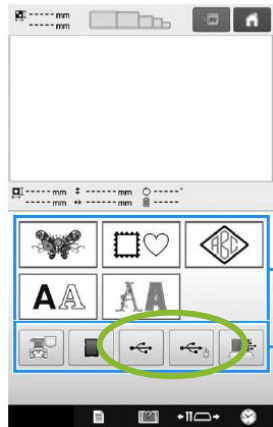
Select an Embroidery Pattern

Selecting a Saved Design – You can design a pattern in advance using the Design Software on the GCPL laptop. It must be a file format supported by the machine, such as PES. Save your design on a USB drive to transfer from the computer to the embroidery machine.

1. Plug the USB drive into the side of the display screen.



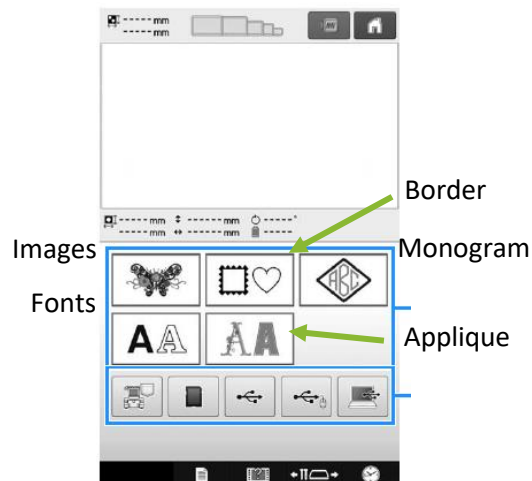
2. On the Pattern Type Selection Screen, press the **USB** button .



3. Find the file you want to upload and press it. It will appear in the Editing Screen.

Select a Built-in Pattern – the machine has certain built-in options available such as borders, monograms, fonts, and letter appliques.

1. On the Pattern Type Selection Screen, press the type of pattern to explore.



2. Press the pattern you want for your design.

- a. Change the size of the pattern or font (Large, Medium or Small) .
- b. Flip the pattern .
- c. Type in the letters for a font.



3. Press **Set**. This will add the pattern to the Editing Screen.

Editing the Embroidery Pattern

Play with the features and see what you like for your design. If something is not working, you can always delete it and start over.

1. On the Editing Screen you can:

- a. Choose the frame size.



- i. The frame being the hoop you will use to hold the fabric. Keep in mind some patterns cannot fit in the smallest hoop.

- ii. You can also see how large the pattern is in Millimeters beside the frame sizes.

- b. Move the Pattern.



- c. Rotate



- d. Change the color



or size



- e. Add or delete different patterns



- i. You can add a border, another image, or more text. If it fits within the frame, it can be embroidered.

- f. Edit Font.

- i. You will be able to type in each letter while choosing uppercase/lowercase, size, symbols, and spaces.

With the monogram feature, you can edit the left, center, and right letter to change how it slants.



2. After each edit, press **Set** to save the changes.
3. Once you edit how you want for the design, press **Edit End** to proceed to the Embroidering Screen.

Attaching the Fabric

Fabric with structure and less stretch is best for embroidery as it can handle the strain of the needle and the amount of stitches.

1. Choose the best size frame for your project.

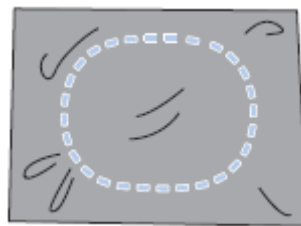


2. Loosen the screw on the outer frame.

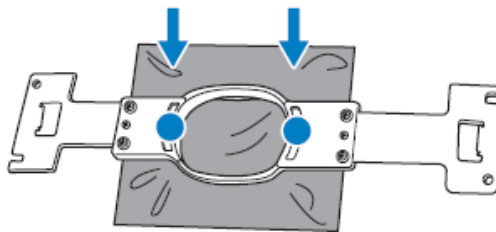


① Screw

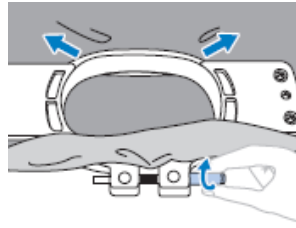
3. Place the fabric with the right side up on top of the outer frame.
 - a. The outer frame does not have a front or back side. Either can be used as the front.
 - b. To prevent shrinkage of stitching or misaligned patterns, remember to add a stabilizer (will be mentioned later)



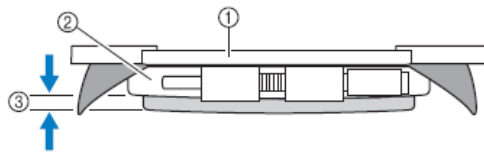
4. Press the inner frame into the outer frame.
 - a. Make sure the fabric is free of wrinkles or creases as this will mess up the embroidery.



5. Continue to push the two parts of the frame together until they will go no further.
6. Lightly tighten the screw and then pull the edges of the fabric.

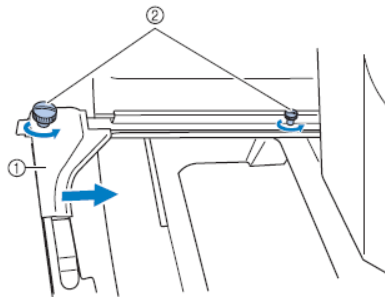


- a. Do not pull too much on the fabric as this might shift the positioning.
7. Securely tighten the screw, and then check to make sure the fabric is taut.
 - a. Lightly tapping the fabric should make a drum-like sound.
 - b. Firmly clamp together the inner and outer frames so that the bottom of the inner frame is lower than the bottom of the outer frame.

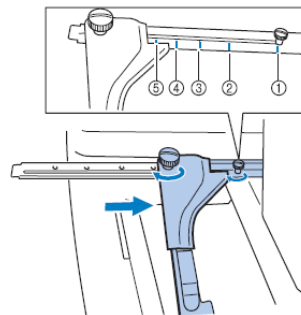


- ① Inner frame
- ② Outer frame
- ③ Bottom of inner frame

8. On the embroidery machine, make sure the arm is the right size for your hoop. To change the size, gently unscrew the two screws behind the needles.

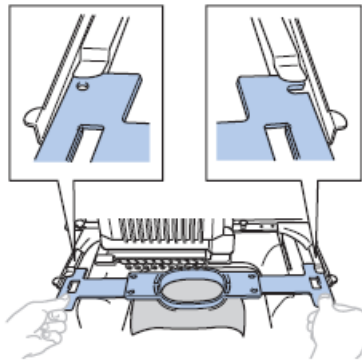


- a. Shift the left side of the arm to the right size (it will click into the locations).



- b. Tighten the screws with your fingers. **Do not use a screwdriver as this will make it too tight.**

9. Lock the frame into the embroidery machine. The metal handles slide under the clasps and then lock over the metal knob. It will click into place.

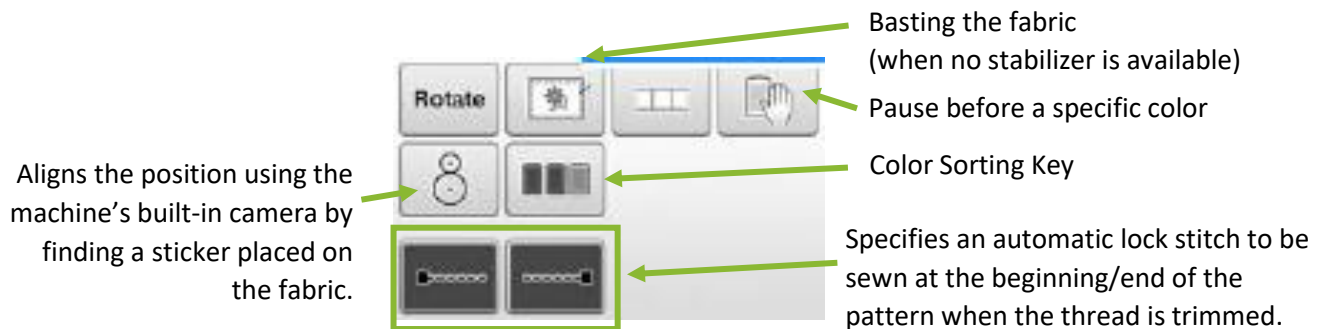


- The inner frame should be on top.

10. Place a sheet of stabilizer between the fabric in the hoop and the bobbin location of the embroidery machine. This will give you the best results with the embroidery.

Specifying Embroidery Settings

1. The first page is for more editing options.
 - a. If you want the embroidery machine to use each color one at a time (sometimes the machine will split up the colors automatically), click the **Color Sorting Key**.





- b. To manually change the order of the colors, click the **Manual Color Sequence Icon**




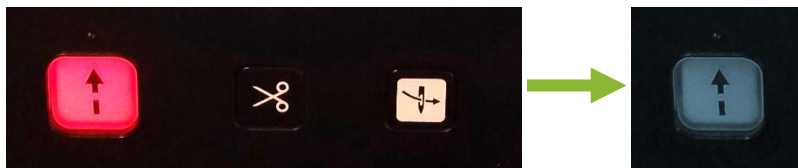
2. Press **Embroidery** when finished editing.
3. Check the thread colors. A window appears at the bottom saying, "Change thread(s), and click start button." Click **OK** to begin the changes.
 - a. Ignore the names of the colors – they do not have to match the colors you have chosen.



- b. What *does* matter is the numbers. Make sure the number for the specific area of the pattern matches the number corresponding to the color you want to use. Look at the numbers displayed in front of each spool of thread.
4. If any colors do not match, there are two (2) ways to correct this.
 - a. Switch Spool:  Press this button to switch two colors. Click **Set** to set the new order.
 - b. Temporary Needle Bar Setting:  Press this button to immediately change the color to the proper number. This is temporary in that it will revert to the original settings after this project is finished.
5. The Embroidery Screen also shows you the process of the project, number of colors, how long it will take, and how many stitches it will do.



6. If anything is amiss, press **Return** to go back to the Edit Screens.
7. When all the numbers for the pattern properly match the thread numbers, press the **Lock** button  **Lock**.
8. The **Stitch Button** will turn **Green**. Press the now green button to start embroidering.



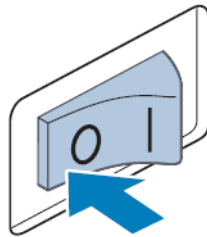
9. Wait for the embroidery machine to finish. You do not need to watch the machine while it works.
10. The machine will sing to notify when it is done. You can then remove the frame.

Remove the Frame

1. Push up on the metal handles until they are over the knobs. Then slide it away from the machine, out of the clasps.
2. Unscrew the side of the hoop and separate the two parts of the frame and the fabric can be removed.
3. To embroider another piece of fabric, repeat the “Attaching the Fabric” steps.
4. When finished, push the two hoops of the frame tightly together and twist the screw to keep them in place. Hang it back where you found it for the next user.

Turn Off the Machine

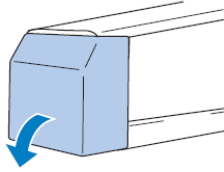
1. When finished, flip the power switch to “O”.



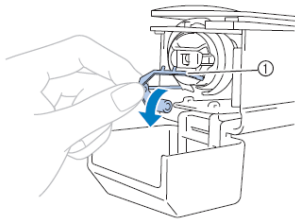
- a. If the machine is turned off while embroidering, it will remember the project and continue when turned back on.
2. Unplug the machine from the electrical outlet.

Changing the Bobbin

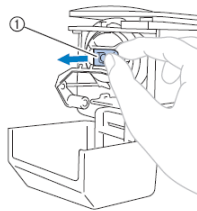
1. Open the hook cover.



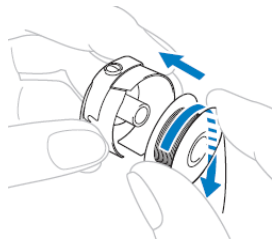
2. Pull the thread picker toward you if it was not pulled toward the front.



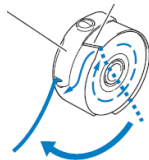
3. Grab the bobbin case latch and remove the bobbin case.



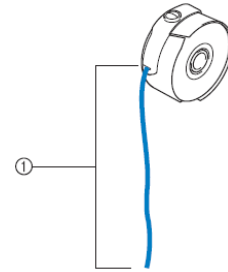
4. Insert the bobbin into the bobbin case.



5. Pass the thread through the thread slit and under the tension-adjusting spring.

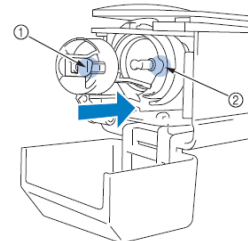


6. Pull the thread about 50 mm (2 inches) through the opening in the tension-adjusting spring.



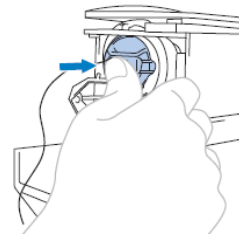
① About 50 mm (2 inches).

7. Insert the bobbin case into the hook.
 - a. Align the tab on the bobbin case with the notch in the hook as shown below.

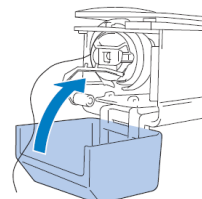


① Tab
② Notch

8. Fully insert the bobbin case until it snaps into place.



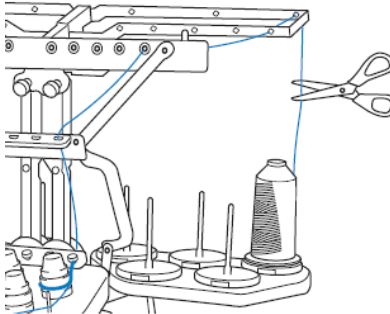
9. Close the hook cover.



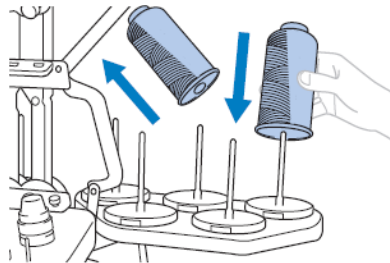
Changing the Thread

Changing the color of the upper thread.

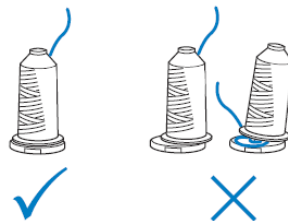
1. Cut the thread near to the spool.



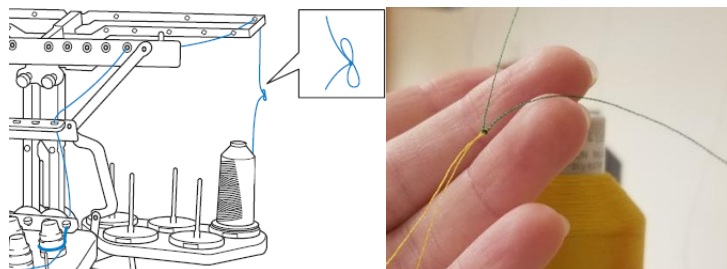
2. Remove the old spool and place the new spool in the location.



- a. Make sure the thread is not under the spool.



3. Tie a knot with the end of the old thread still threaded through the machine and the new thread.

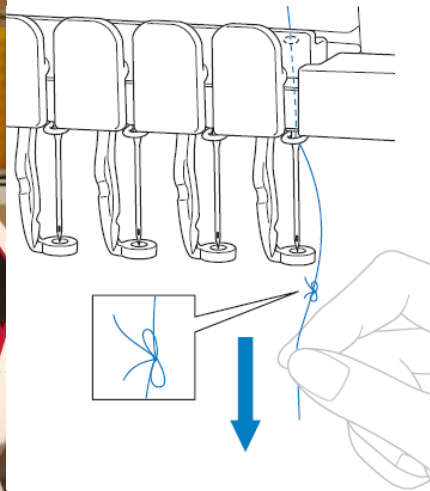


- a. Make sure the knot is **tight**. Make multiple knots if needed.

4. Go to the front of the machine and gently pull the thread out of the needle.



5. Pull on the old thread, sending the knot through the threaded system until the knot is in your hands.

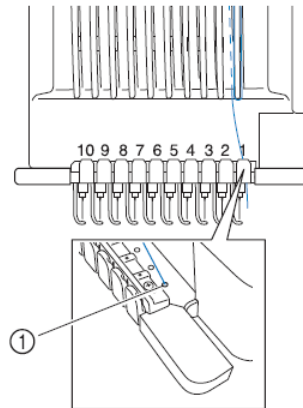


6. Cut the thread after the knot and discard the extra thread.
7. Thread the new color thread, which is now properly threaded through the machine, through the appropriate needle.

Threading a Needle

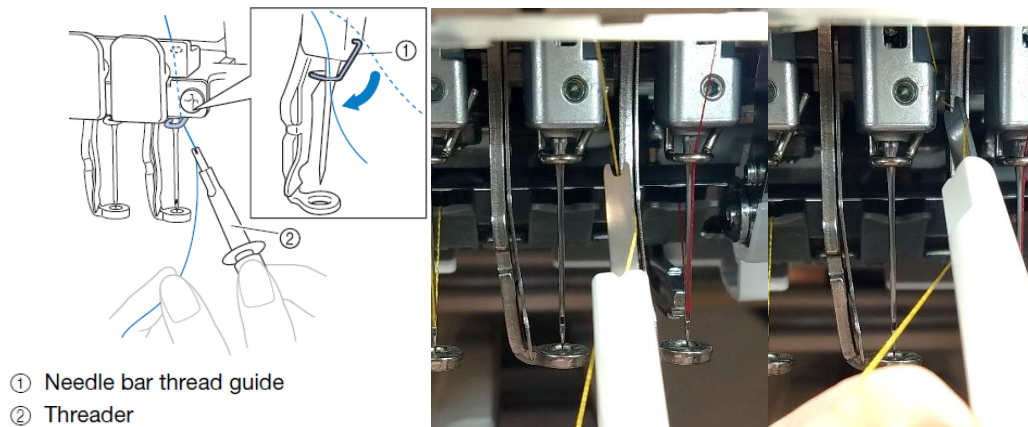
The embroidery machine has an automatic threading device but does need the thread in the correct position to grab it.


1. Pass the thread down through the slot to the lower thread guide.

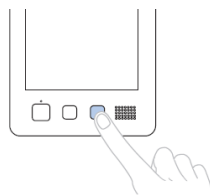


① Hole in lower thread guide

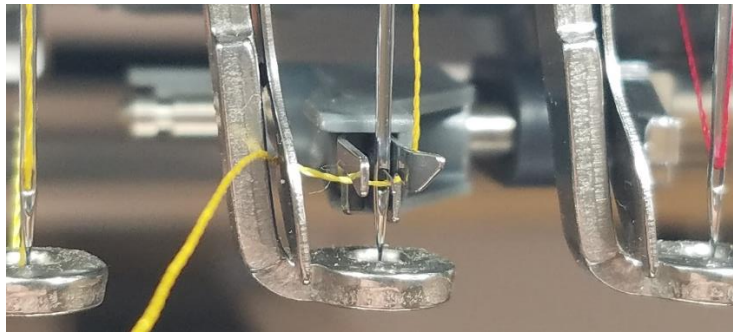
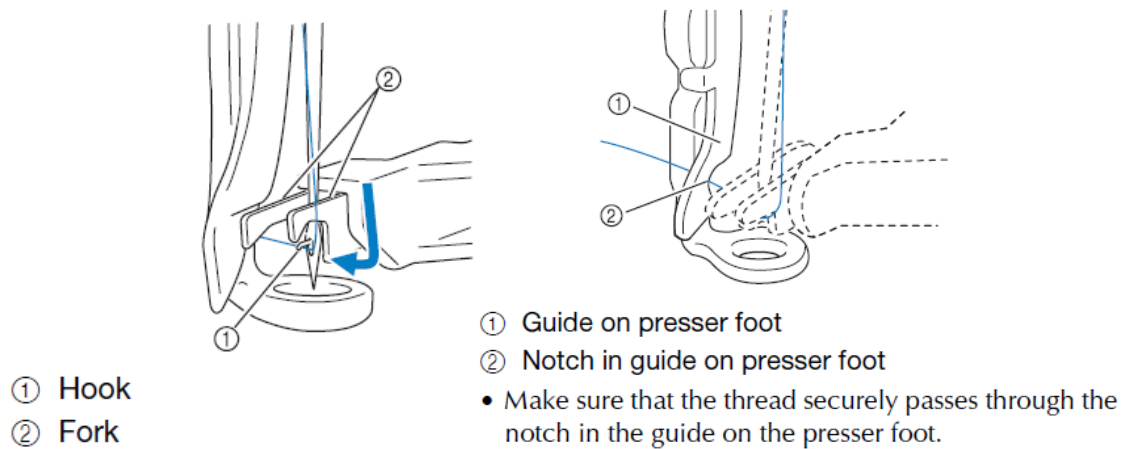
2. Use the white threader to pass the thread through the needle bar.



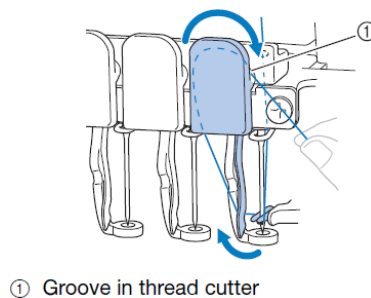
3. Make sure the machine is focused on the right needle. To choose the right needle, click the **Needle bar/Frame move key**  and press the number needle. The machine will move to the correct position.
4. Press the automatic needle-threading button. The hook on the automatic needle-threading mechanism passes through the eye of the needle.
 - a. Be careful with the hook through the needle as it can be easily bent and ruined.



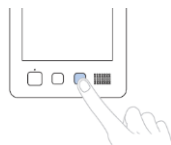
5. Pull out about 150 mm (6 inches) of thread. Allow the thread to relax
6. Use the gray threader to hook the thread around the metal automatic mechanism and up through the hook.



7. Securely pass the thread through the groove in the thread cutter, and then lightly pull the thread to cut it.




8. Press the automatic needle-threading button
 - a. The mechanism moves back away from the needle. The thread is pulled through the needle eye as the mechanism returns to its home position.



9. The needle is now threaded.

Fixing a Broken Thread

Occasionally, the tension will become too tight on the thread and it will break while the embroidery machine is running. It realizes the thread is broken and an error message will appear.

1. First rethread the needle
 - a. Refer to the Threading a Needle on page 12.
2. The pattern moved ahead before realizing the thread broke. You must manually move the machine back stitches.
3. Press the **Forward/Backward Stitch Key** .
4. You can now add or subtract stitches in sets of 10.
 - a. Check the main display on the screen to see where the needle is and compare it to where the embroidery is on the fabric.
5. Overlap the stitches (go back farther than you think) just in case to avoid any gaps.

Lock the machine and press the green **Stitch Button** to start embroiderin

Embroidery Design Basics

Inspiration Station: Geauga County Public Library's Maker Space Instructions

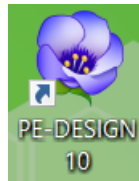
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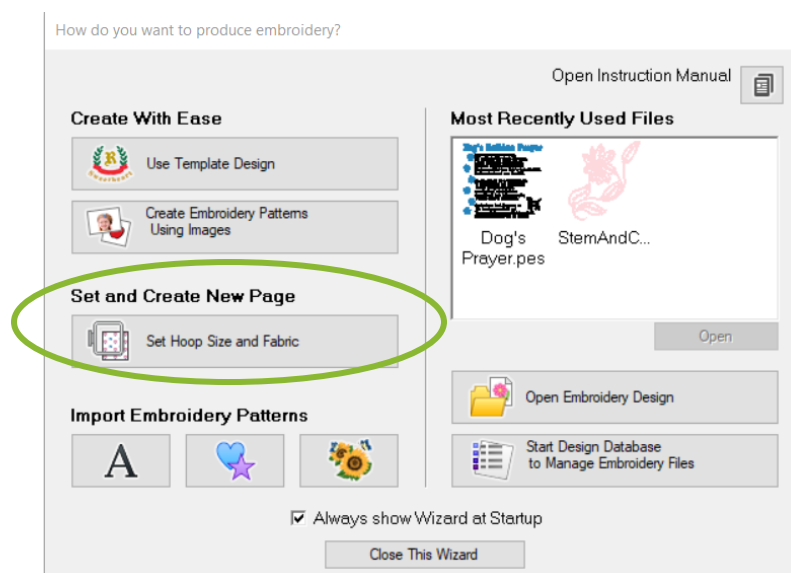
Create a New Design

Upload and create your own designs to embroider.

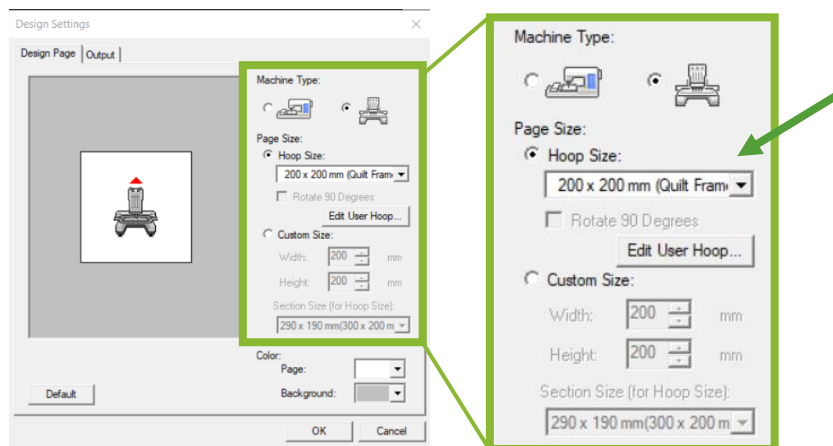
1. Double-click the **PE-DESIGN 10** on the desktop to open the software.



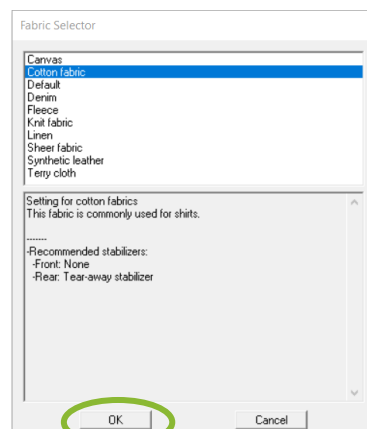
2. Set and Create a New Page
 - a. Click on **Set Hoop Size and Fabric**.



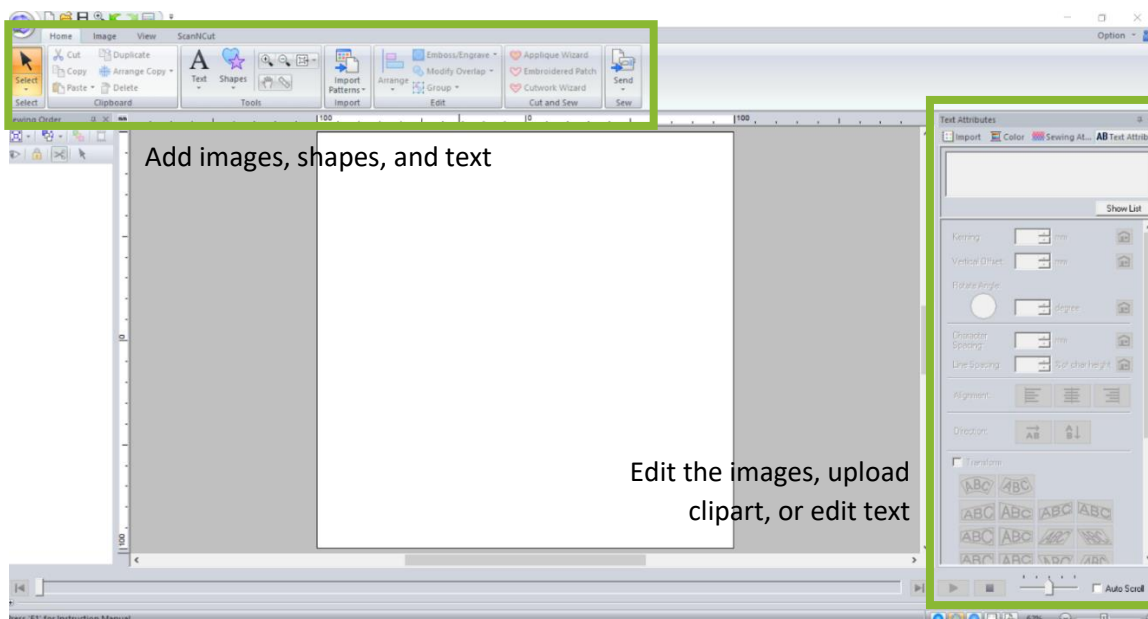
3. Choose Hoop Size and click **OK**.



4. Choose the fabric and click **OK**.

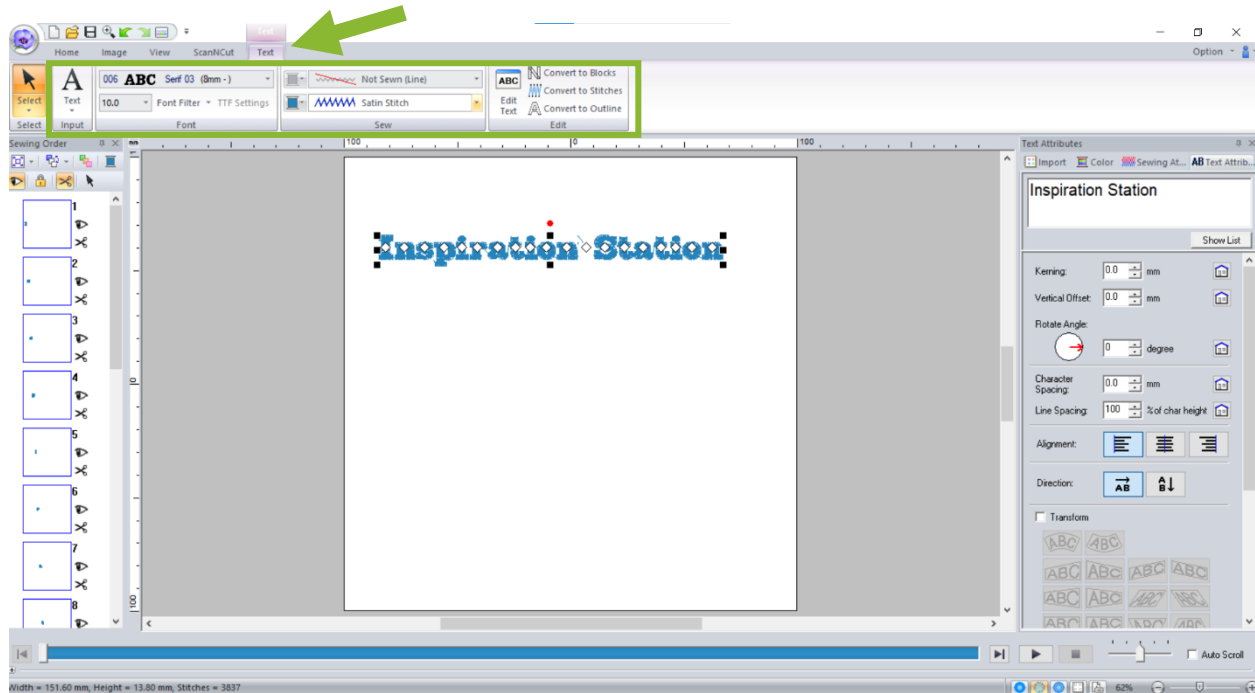


5. The design screen allows you to add images, shapes, and text.

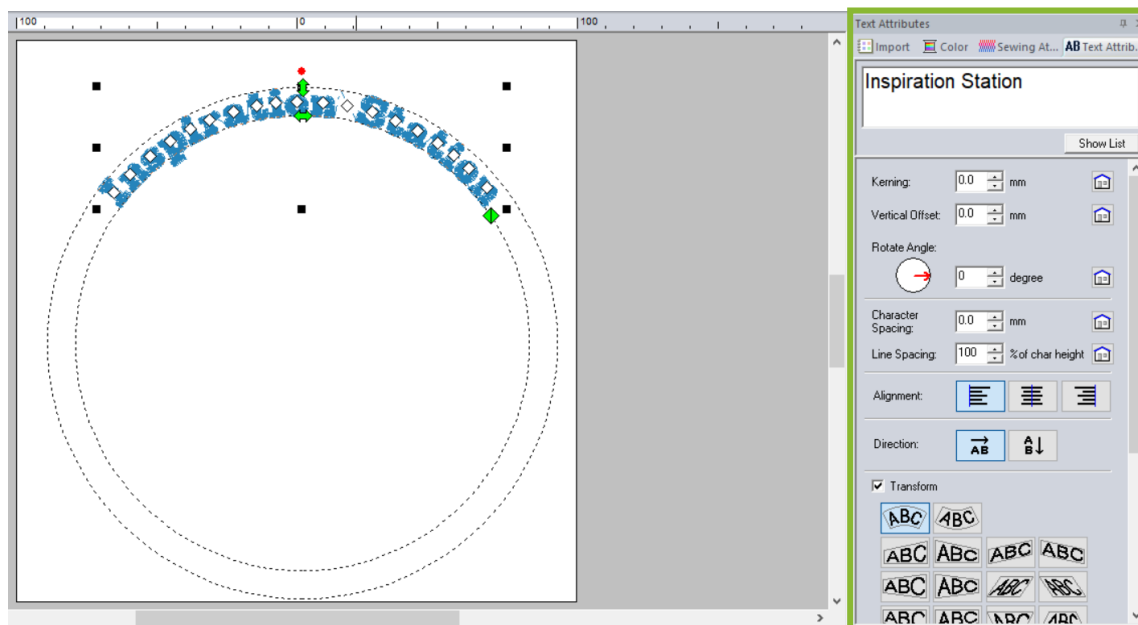


Add Text

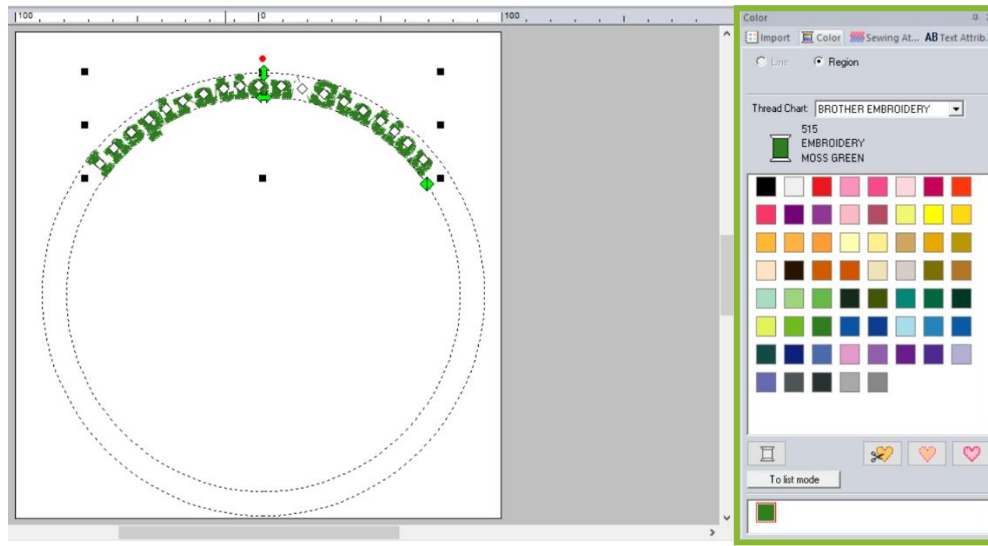
1. Click on the **Text** tab along the top and choose text, small text, or monogram. The example shows regular text.
 - a. Under the text tab includes stitch options, font, and size.
 - b. Type in your words on the right side under **Text Attributes**.



- c. Text Attributes is also where you can change the alignment, direction, and shape of the text.

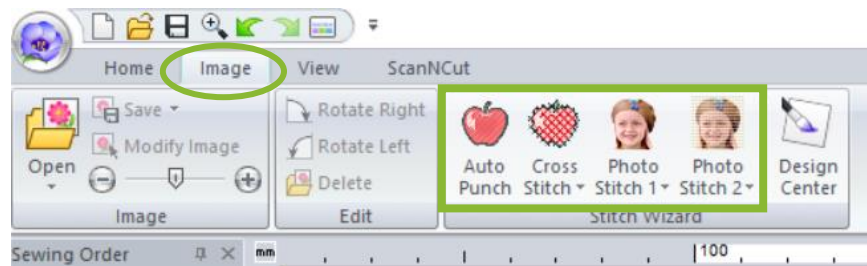


2. Change the color of the text under the Color tab along the right side.

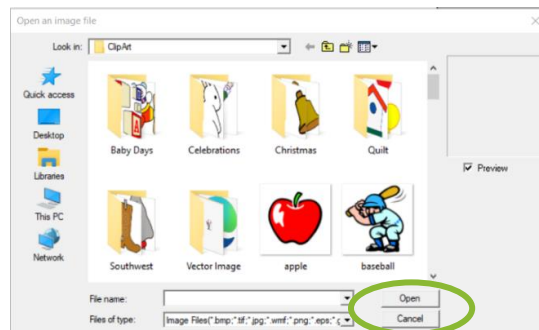


Upload an Image

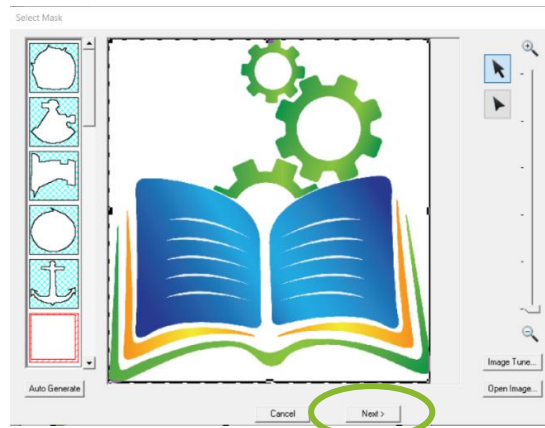
1. Click on the **Image** tab along the top.
 - a. Choose what type of embroidery you would like in the **Stitch Wizard** (Auto Punch, Cross Stitch, Photo Stitch 1, and Photo Stitch 2). Hover over the options to see which one works best for your project.
 - i. Auto Punch is best for simple logos or designs. The Photo Stitch options are two different ways to embroider photographs.



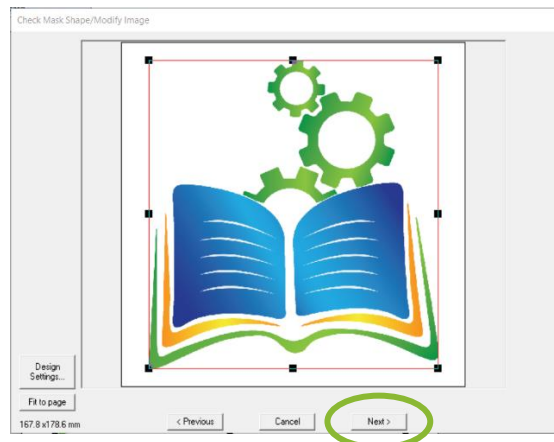
2. For this example, we clicked on **Auto Punch**. Open the file you want to add. Then click **Open**.



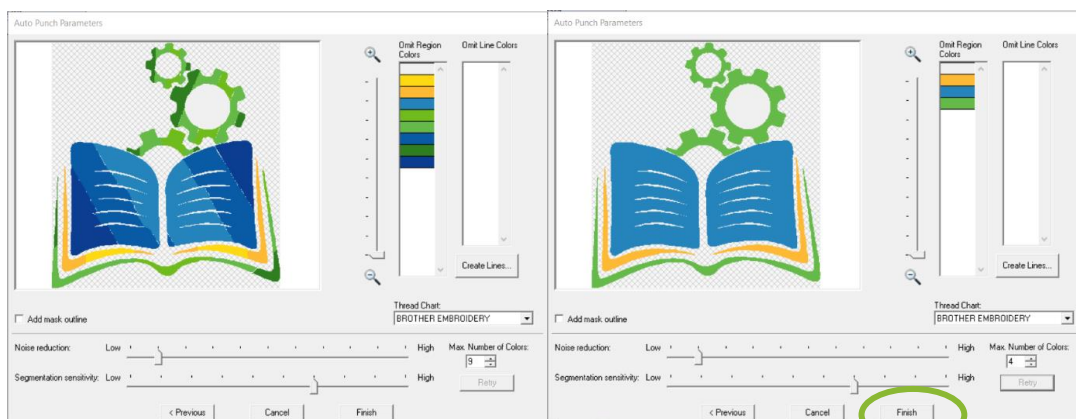
3. Select a Mask. A square works great, but it can be customized. Making a mask removes any background you do not want. Click **Next**.



4. Check the Shape. Make sure the image is how you want it to look. Click **Next**.

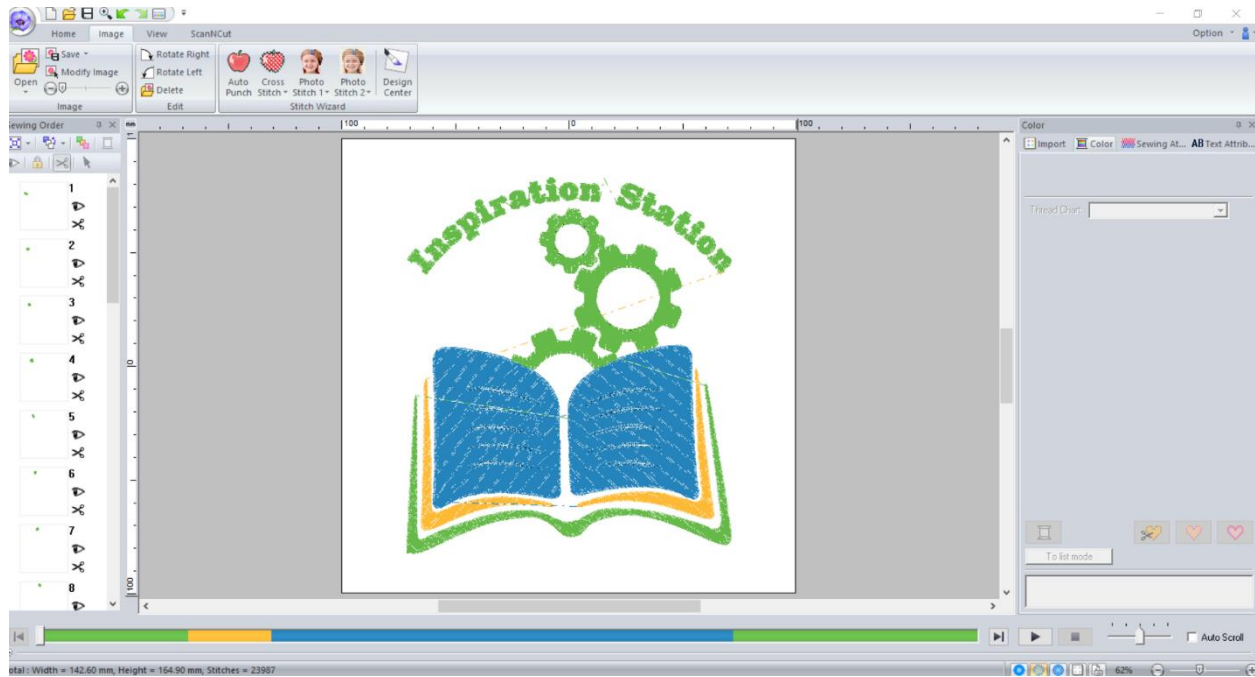


5. Edit the Auto Punch Parameters. Change how many colors or edit the noise reduction and sensitivity for the best embroidery.
 - a. Before and after --- changed the number of colors down to 4.
 - b. When satisfied, click **Finish**.



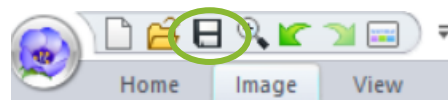
6. The image will now be in the design space. You can move it and edit its size if desired.

The final design on the design space:

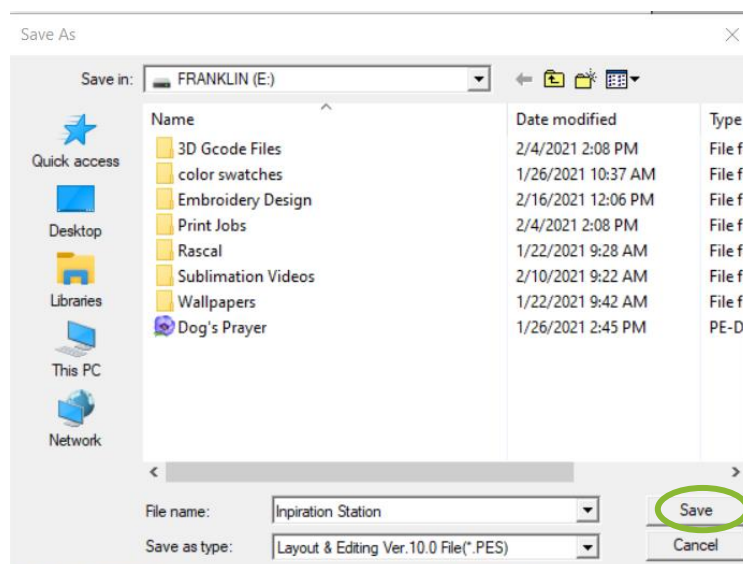


Save your Design

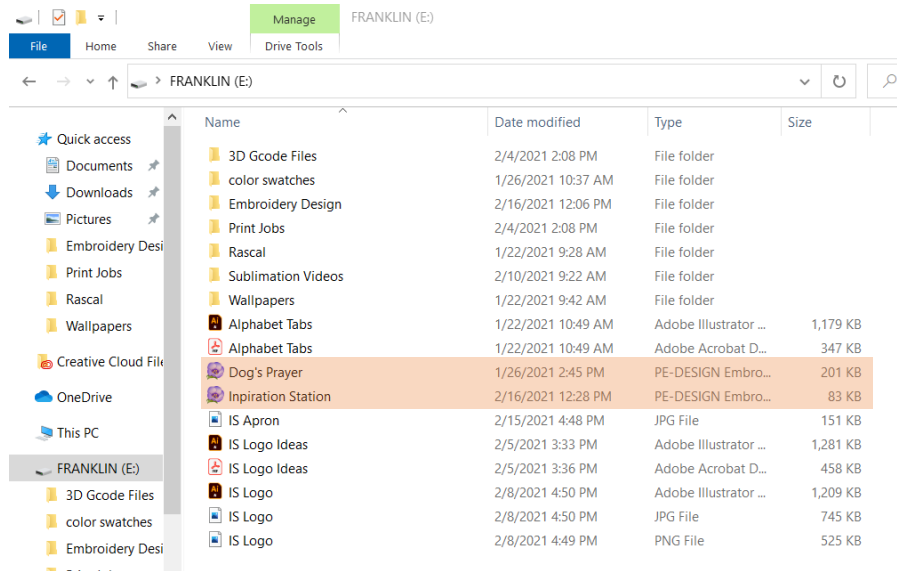
1. Click the **Save** icon.



2. Save the file on to a USB drive. This can be plugged into the embroidery machine.



3. Make sure the file is a **PES file** or marked as **PE-DESIGN Embroidery**. This is what the embroidery machine uses. If the file is not PES, the embroidery machine will not recognize it.

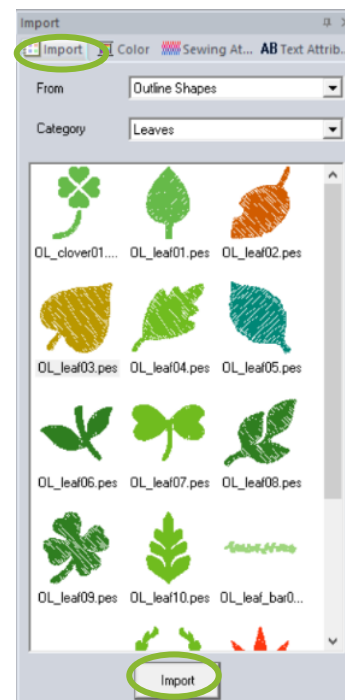


Make an Applique

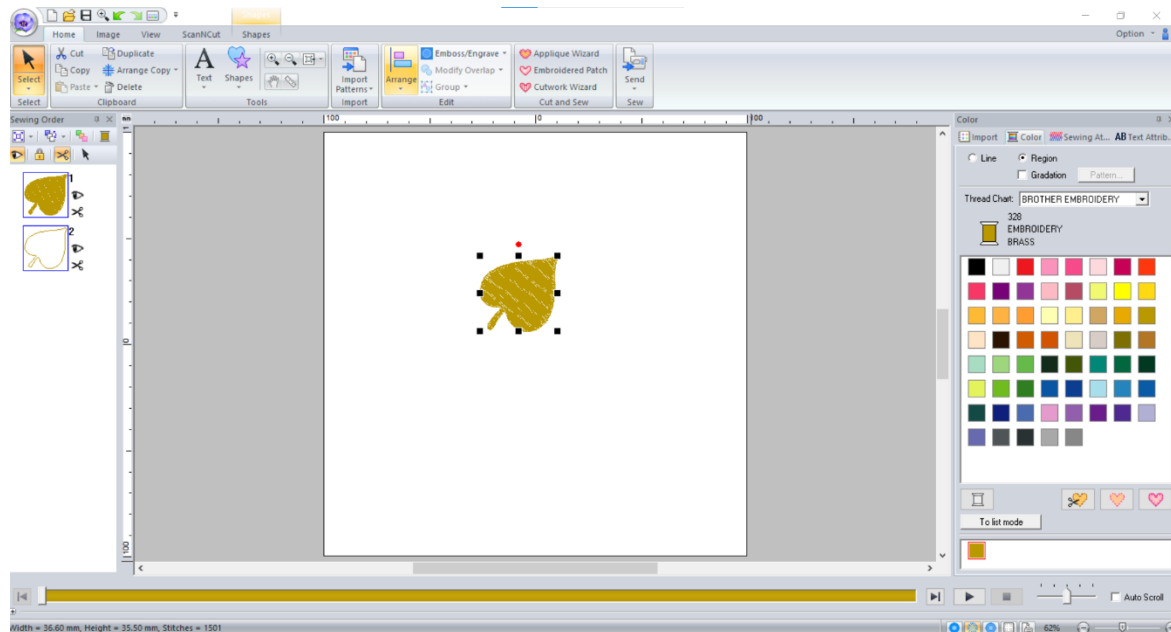


An applique is a sewing technique in which fabric patches are layered on a foundation fabric and then stitched in place. The raw edges are then covered with decorative stitching such as a satin stitch.

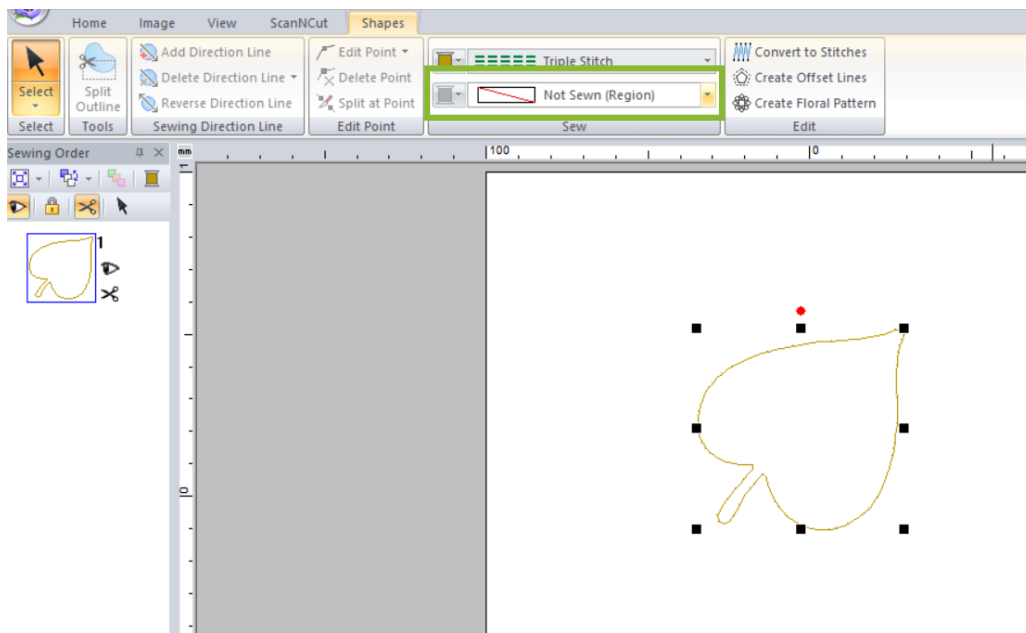
1. Choose an image under **Import** on the right-hand side. Or choose a shape along the top or upload an image as mentioned previously.
 - a. Click **Import**



2. Your chosen image will appear in the design space. Edit it as necessary in terms of color and size.



3. Remove the fill on the image by changing the stitches along the top under **Shapes**.
- a. Now there is only the outline.



4. Click on the **Applique Wizard** under **Home**.



5. Check the settings. When satisfied, click **OK**. The default is very reliable.

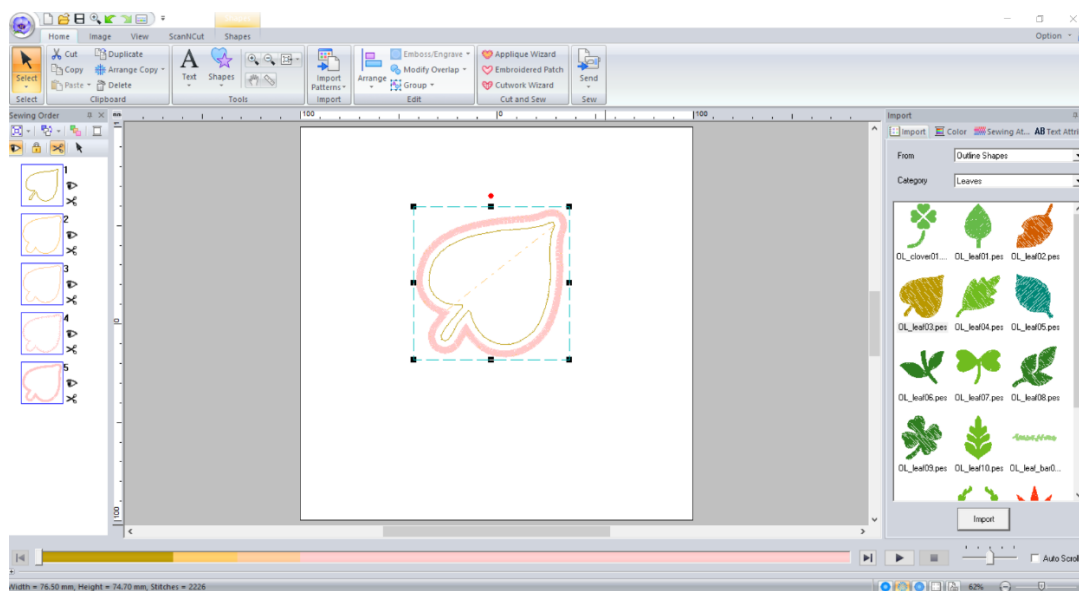
Applique Wizard

The Applique Wizard dialog box consists of five panels, each with a heart-shaped preview and a set of options:

- Applique Material:** Includes a scissors icon. Options: ☒ Yes, ☒ Running Stitch, ☐ Cutting, ☐ No.
- Applique Position:** Shows a heart outline on a light orange background.
- Tack down:** Includes a heart with a dashed outline. Options: ☒ Yes, ☐ No, and a dropdown menu set to "V Stitch".
- Covering Stitch:** Includes a heart with a solid outline. Options: A dropdown menu set to "Satin Stitch", "Width: 3.0 mm", and "Density: 4.5 line/mm".
- Output Pattern:** Includes a heart with a solid outline. Options: ☒ Add, ☐ Replace, and "Distance from original pattern: 3.0 mm".

At the bottom, there are three buttons: **OK** (circled in green), **Default**, and **Cancel**.

6. The applique is now ready. Finish your design and save it as mentioned on a USB drive to access on the embroidery machine.



- a. To embroider, first have the embroidery machine make the first outline.
- b. When the machine stops, it will prompt you to add the second layer of fabric over the outline.
- c. Once attached, cut closely to the sewn line to remove as much excess fabric as possible. Be careful not to move the fabric in the hoop.
- d. Replace the hoop in the machine and press start again. The machine will add the satin stitch, finishing the applique.