Introduction to Sewing Machine Embroidery Using the Babylock Elluré ESL

TABLE OF CONTENTS

FIGURES

Introduction to Embroidery using the Babylock Elluré ESL

TABLES

Introduction to Sewing Machine Embroidery
Using the Babylock Elluré ESL

Tools and Supplies

Tools
You need:
- Small screwdriver (available in the white plastic pouch in the storage bin)
- Small scissors for cutting thread
- Scissors for cutting stabilizer fabric
- Fabric marker (erasable or disappearing) or tailor's chalk to mark location of embroidery
- Measuring tape or ruler for marking location of embroidery

Figure 1. Required Tools

Supplies
You need:
- Mid-weight cut away (permanent) stabilizer (stocked by at Dallas Makerspace)
- Bobbin Thread (stocked by Dallas Makerspace in black and white pre-wound bobbins)
- Embroidery thread (limited colors available at Dallas Makerspace for a nominal fee)
- Size 75/11 (ball point) sewing machine embroidery needle (stocked by Dallas Makerspace)
- Test/scrap fabric (optional but **strongly** recommended)
- The piece you plan to embroider

Figure 2. Required Supplies

Stabilizer

Stabilizer is placed behind the fabric and stretched taut to minimize shifting and puckering during embroidery. Many stabilizer types are available including various special-purpose stabilizers. For most purposes, a mid-weight cut-away (permanent) stabilizer is suitable. Sulky brand is available prepackaged in rolls in retail stores in the notions area. **The adequacy of your stabilizer is one of the two key contributors to the quality of your embroidery (the quality of your hooping job being the other key contributor).**

Thread

Sewing machines require thread below the work piece (bobbin thread) and above the work piece (the embroidery thread).

Bobbin thread (L-style bobbin)

You can use regular sewing thread as the bobbin thread, but you will get better results with a true bobbin thread (60 weight "lightweight" polyester or comparable). While bobbin thread is available in many colors, most people use either white or black. The bobbin thread should "coordinate with" the fabric you are embroidering onto so that if a little bobbin thread peeks through onto the top side it isn't as noticeable; i.e., white bobbin thread for light fabrics and black bobbin thread for dark fabrics. Advantages of using true bobbin thread include:

- Bobbin threads are slipperier so they don't get caught and grab while embroidering
- Bobbin threads are thinner so the back of your design isn't puffy like the front of your design
- Bobbin thread is available pre-wound onto bobbins as a time-saver (we stock white & black at DMS).

Introduction to Embroidery using the Babylock Elluré ESL

BOBBIN THREADS	
Type	60 wt. "Lightweight" Polyester
Retail brands by the spool (Jo-Ann / Hancock)	Sulky, Coats
Pre-wound bobbins (online)	L-style bobbins prewound in white or black, plus a few colors
Online sources	www.nancysnotions.com www.redrockthreads.com

Table 1. Bobbin Threads

Embroidery Thread.

The upper thread is the embroidery thread. The spool must fit onto the machine spindle. Jumbo spools (cones) of embroidery thread will not fit into the machine.

COMMON EMBROIDERY THREADS	
Type	40 wt. Rayon (silky-like)
Retail brands (Jo-Ann / Hancock)	Sulky, Mettler, Guterman
Professional brands	Madeira, Robinson-Anton
Online sources	www.redrockthreads.com www.nancysnotions.com

Table 2. Common Embroidery Threads

Needles

Use a machine-sewing needle with a flat shank (back side of the shank). This is the most common needle design.

The best choice is Schmetz Embroidery Needles, in size 75/11. These have a ball point nose that will glide smoothly through the fabric without tearing (available at retail). A standard sewing machine needle would give a lower quality stitching than embroidery needles.

Proper embroidery needles for medium weight fabric are stocked at DMS. If you stitch denim or canvas you need to buy 90/14 weight needles.

Figure 3. Embroidery Needles

Test / scrap fabric

It is **strongly** recommended that you test stitch every design before stitching it onto your "good" piece. You should bring a piece of scrap fabric at least 12" x 10" and similar to your "good" piece to test the design, such as an old T-shirt or sheet.

The project piece

You can embroider on any fabric but as with any type of sewing, some fabrics are more finicky than others. Good fabric choices include mid-weight woven or knit fabrics, hand towels, and lightweight canvas. Lightweight or heavyweight fabrics will require changes in the stabilizer and/or needle. When embroidering on denim, purchase a 90/14-size needle. Lightweight fabrics may perforate with a densely stitched design. Densely stitched designs may also pucker on knit fabrics depending on precautions the designer may or may not have taken.

If your piece is smaller than the hoop, you must attach it to a piece of stabilizer large enough to fill the hoop. It can be attached by sewing, basting, or using fabric-specific spray adhesive.

If your project piece will ultimately be washed, I recommend washing it before embroidering in case the piece shrinks (because stabilizer doesn't). Typical cotton shrinkage of 3% could later cause puckering in the design.

The Sewing Machine and Setting it up

Sewing Machine Description

The Babylock Elluré ESL is a full function sewing machine with utility and decorative stitches, as well as computer-controlled embroidery. Native embroidery designs include three text fonts, a few dozen "images" (Noah's ark, for instance), and some "frames" that can be used to create appliques. It can also accept a (proprietary format) card with purchased or user-provided designs in PES format. The machine has a single needle, and the user will manually change thread colors as required during the design stitching.

An embroidery arm slides onto the machine and the hoop gets attached to the embroidery arm. The embroidery arm moves the hoop in a computer-controlled X-Y manner while the design is being stitched. The usable space inside the hoop is approximately 4" wide x 6" tall. If your design exceeds these dimensions, the machine will not recognize the file.

CAUTIONS:
- *Do not stick your fingers in the electrical socket*
- *Do not put your fingers near the needle while it is moving*
- *Do not prevent the embroidery arm from moving*

Sewing Machine Controls

Settings and options are set on the Elluré using the touch-sensitive display panel, but the big STOP/START button above the needle controls all stop/start functions. The STOP/START button displays three operating colors:
- GREEN – the presser foot is lowered, thread is present in the tension sensor (not necessarily the needle) and the machine is ready to stitch
- RED – the machine is not ready to stitch
- YELLOW – bobbin winding operations (sensed when you engage the bobbin winder).

The presser foot must be in the down position to stitch. The mechanical lever is behind the needle shank. When you raise the presser foot, it moves to a détente position and stays up. However, if you put additional (gentle) upward pressure on the lever, the presser foot will raise another ¼" or so. This will make it easier to slide the hoop and fabric under the foot when installing or removing the hoop.

CAUTION:
- *Always raise the presser foot when you put your hands near the needle. It is very easy to accidentally touch the STOP/START button while clipping threads or threading the needle but the machine will not start if the presser foot is raised.*
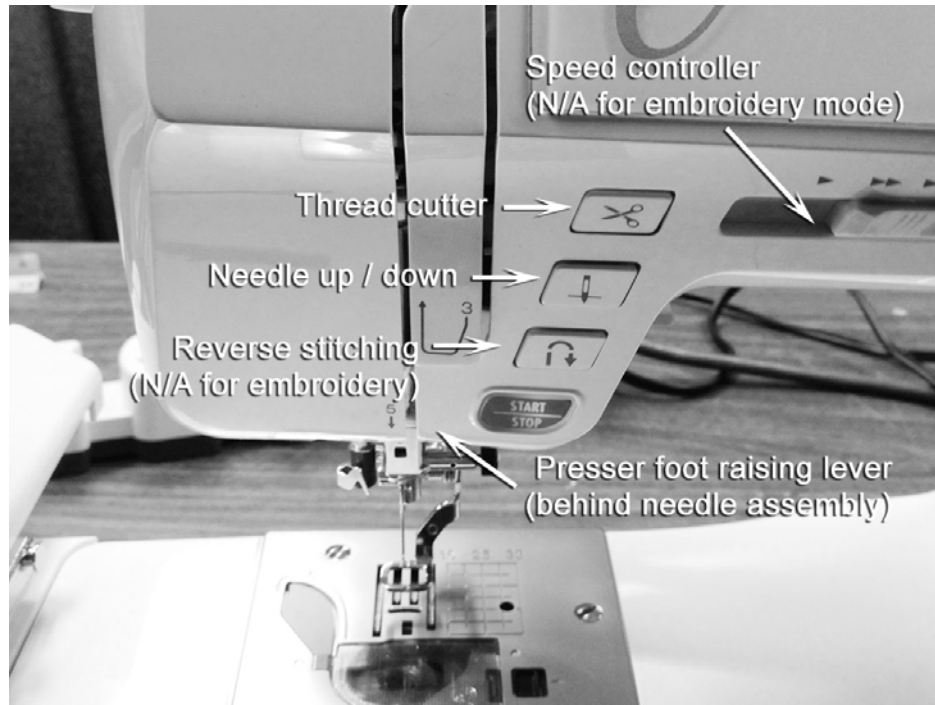
Figure 4. Machine controls

Some functions can only be performed with the needle in the up position (the display will tell you) and the needle can be raised/lowered with the needle up/down button above the START/STOP button. This will not affect the stitching pattern.

The Elluré is a smart machine with many sensors. It won't operate if there is something wrong and it will guide you with messages on the display screen, telling you if the thread is broken, the bobbin is low/empty, and various other conditions.

Sewing Machine Parts and Accessories

Required Machine parts/accessories

These items, all available at DMS, are needed:

- Sewing Machine and power cord (the foot pedal is not used for embroidery)
- Embroidery arm
- Embroidery foot, which is a specialty presser foot
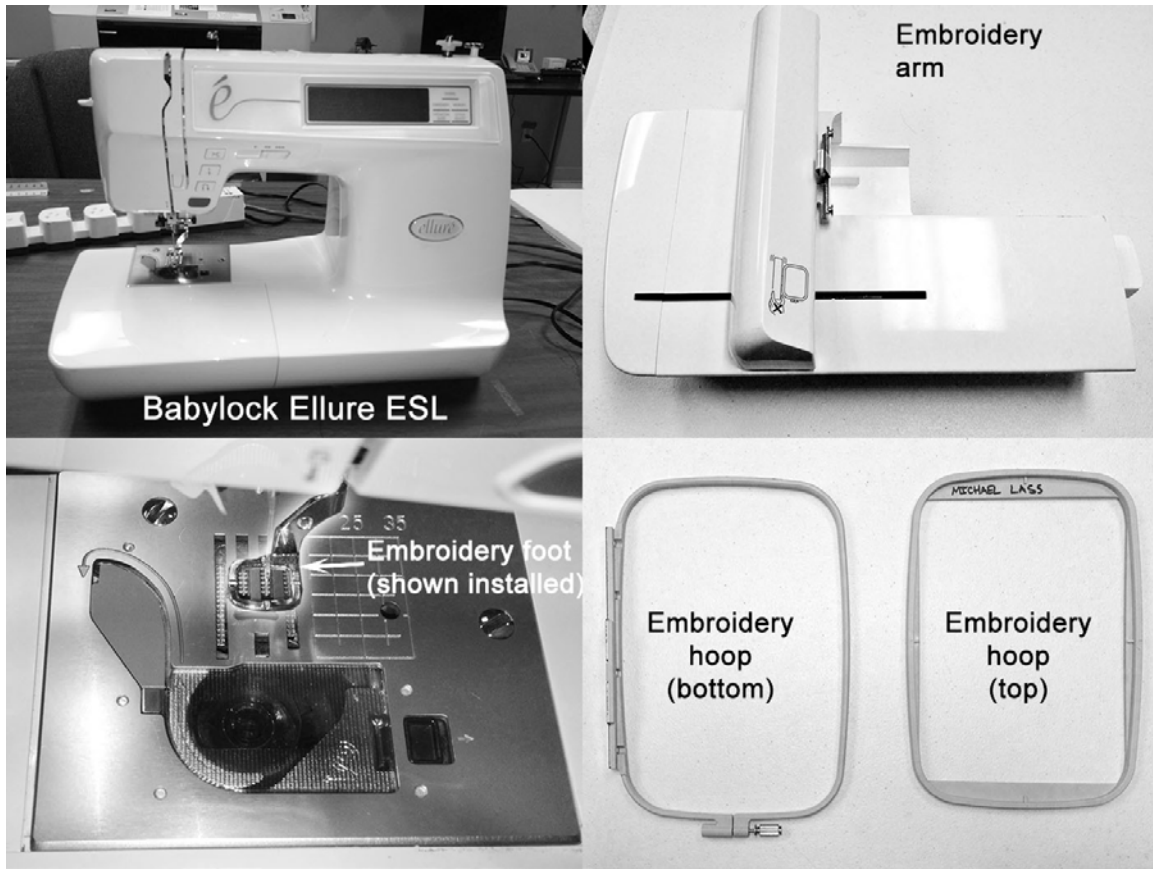- Embroidery hoop

Hoop

Hoop designation	5x7 (wide x tall) (130mm x 180mm)
Physical size (exterior)	7.4" wide x 10.6" tall (stabilizer/work piece need to span this)
Usable working space	4" wide x 6" tall (the machine needs working space around the foot to prevent crashing into the hoop)

Table 3. Hoop Specifications

Figure 5. Required Sewing Machine Accessories

Optional Machine parts/accessories

If you have your own files (in PES format) that you plan to embroider, you will need the sewing machine card and card reader. Bring along the "color chart" detailing the stitching order of the thread colors, if the designer has provided one.

The transfer software is called PED-Basic. It is installed on the computer that drives the large format printer, in the Creative Arts Room.

Figure 6. Optional Sewing Machine Accessories (Card/reader)
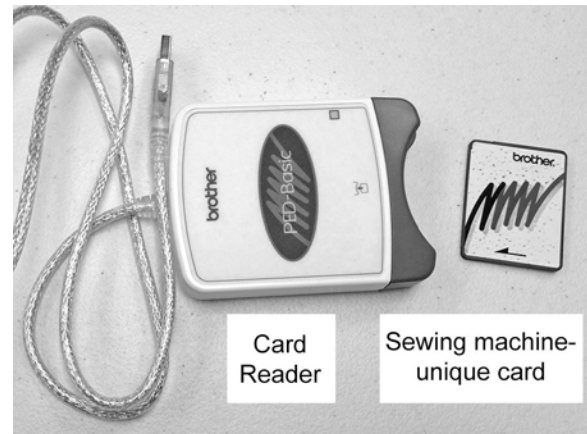
Set Up

Physical set-up

1) Set the machine on a sturdy table. Plug the power cord into the right side of the machine and into the power strip.

2) Install the needle. The flat portion of the needle shank faces the rear of the machine. The needle is held in place by a setscrew on the right side of the shank. **You must secure the needle very tightly with a screwdriver**. **Even if you didn't change the needle, confirm with a screwdriver that it is tight.** *Most broken needles are caused by needles vibrating out during embroidery.*

3) Install the embroidery foot. The lever of the embroidery foot rests on top of the needle setscrew (right side of the shank) so that the foot raises and lowers as the machine stitches. A setscrew (in the upper hole) on the left side of the shank secures the foot.
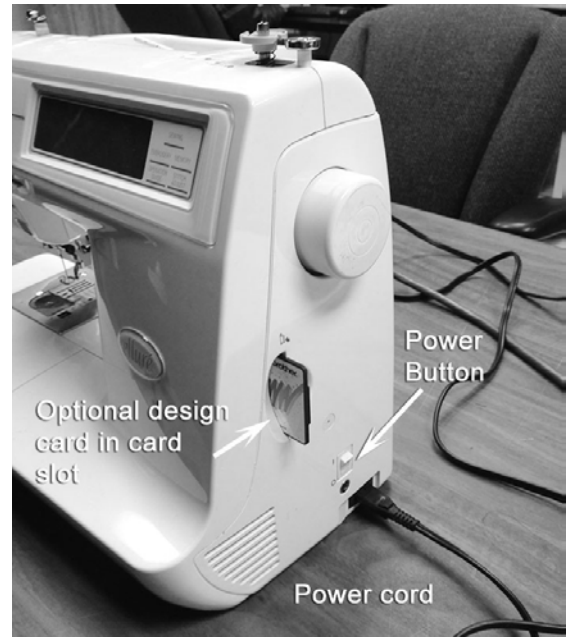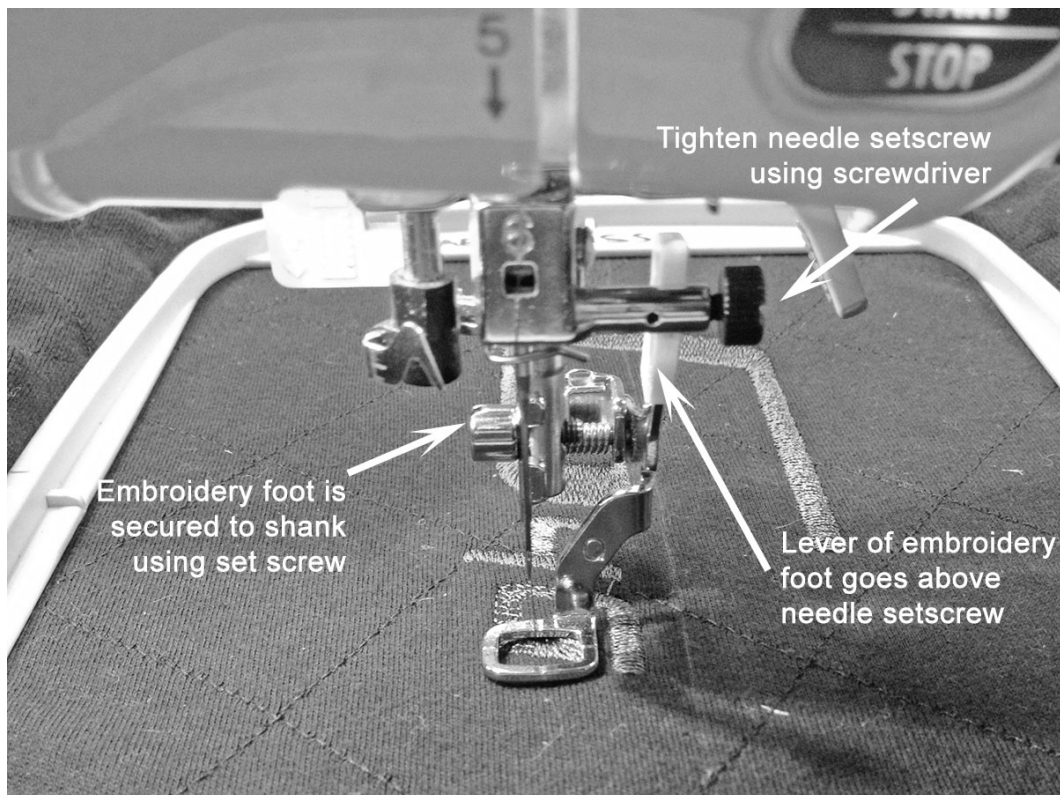

Figure 7. Power cord / control and Card slot

Embroidery arm

Install the embroidery arm. The storage compartment containing bobbins and miscellaneous presser feet adequacy of your stabilizer is removed by sliding the compartment to the left. The embroidery arm slides into this space.

After installing the arm, power on the machine. It will recognize the arm and know that you want to embroider. It will check the travel of the arm; first displaying a message and waiting for you to confirm by pressing the CHECK button on the display.

CAUTION: DO NOT INTERFERE with the motion of the arm as this could break the arm or the machine.

Remove this compartment
by sliding to the left

Slide embroidery arm
into slot

Push button
releases arm for storage

Figure 9. Embroidery arm installation

Winding and installing the bobbin

Winding the bobbin

The Elluré ESL uses plastic L-style bobbins, 0.8" in diameter (approx. the diameter of a nickel) and 0.35" high. They should be stored in the arm compartment (described above) when not in use. A motley selection of bobbins is floating around due to the variety of machines at Makerspace – if it's a metal bobbin it is NOT for this machine.
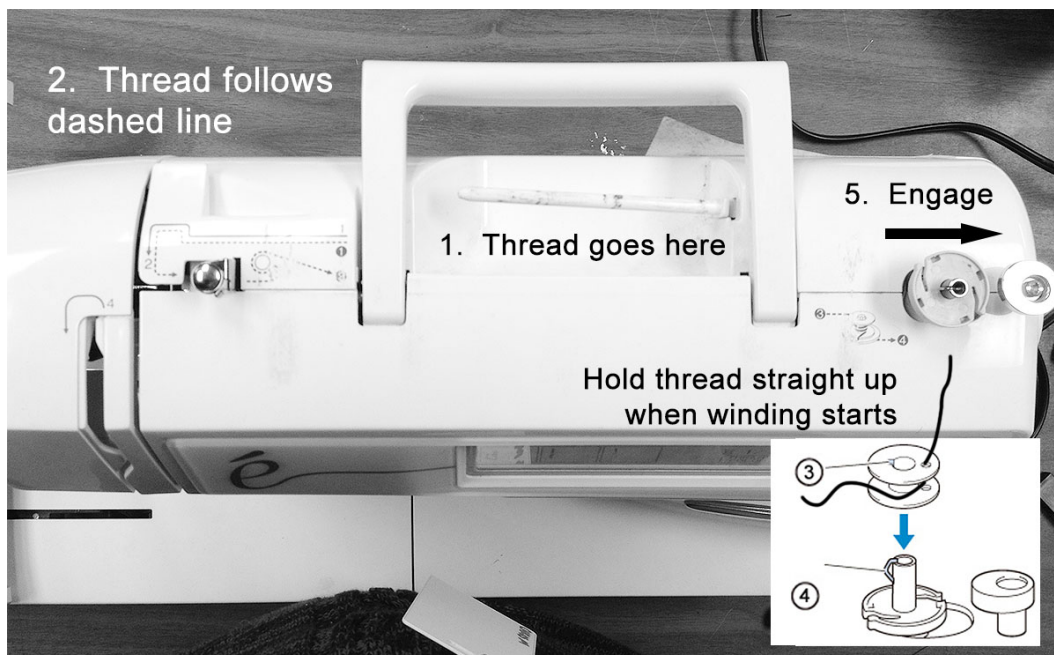
Introduction to Embroidery using the Babylock Elluré ESL

For planning purposes, a single bobbin will stitch *about* 25,000 stitches.

Steps:
1. LOAD
    a. Place the spool of bobbin thread on the horizontal spindle (spool pin). Bobbin thread should coordinate with the fabric being embroidered.
    b. Route the bobbin thread through the discs on the top of the machine, using the **DASHED line diagram** on top of the machine
    c. Run the thread through one of the small holes in the bobbin, from the center to the outside.
    d. Holding that thread up, place the bobbin on the grey bobbin-winding disc/spindle until it snaps in place
    e. Push the bobbin winding spindle to the right until it engages
2. WIND
    a. While still holding the thread end that comes out of the top of the bobbin, push the START/STOP button to begin winding the bobbin. Holding the thread prevents it from getting tangled around the spindle.
    b. Run it for a few seconds so that the thread is firmly caught on the bobbin.   STOP the winding.
    c. Clip the top of the thread coming out of the bobbin.
    d. START winding again.
    e. STOP winding when the speed slows significantly.
3. UNLOAD
    a. Cut the thread between the spool and the bobbin.
    b. Slide the bobbin-winding spindle to the left to disengage
    c. Remove the bobbin from the bobbin-winding spindle.

CAUTION: The sewing machine handle tends to pinch (and break) thread coming off the spool pin. Putting the thread above the handle remedies this problem.

<div align="center">**Figure 10. Bobbin winding**</div>

Installing the bobbin
1.   OPEN. Slide the bobbin cover latch to the right and remove the bobbin cover
2.   LOAD. Hold the bobbin with your right hand and hold the end of the thread with your left. Insert the bobbin into the bobbin case so that the thread unrolls to the left.
3.   SNIP. Snip the end of the bobbin thread by pulling it against the top end of the slot.
4.   CLOSE.   Reattach the bobbin cover. Insert the tab in the lower left corner of the bobbin cover and gently press on the right side until it snaps closed.

At this point the bobbin thread is fully loaded. Unlike other common sewing machines, you do not need to pull the bobbin thread through to the top or perform any other preparations.
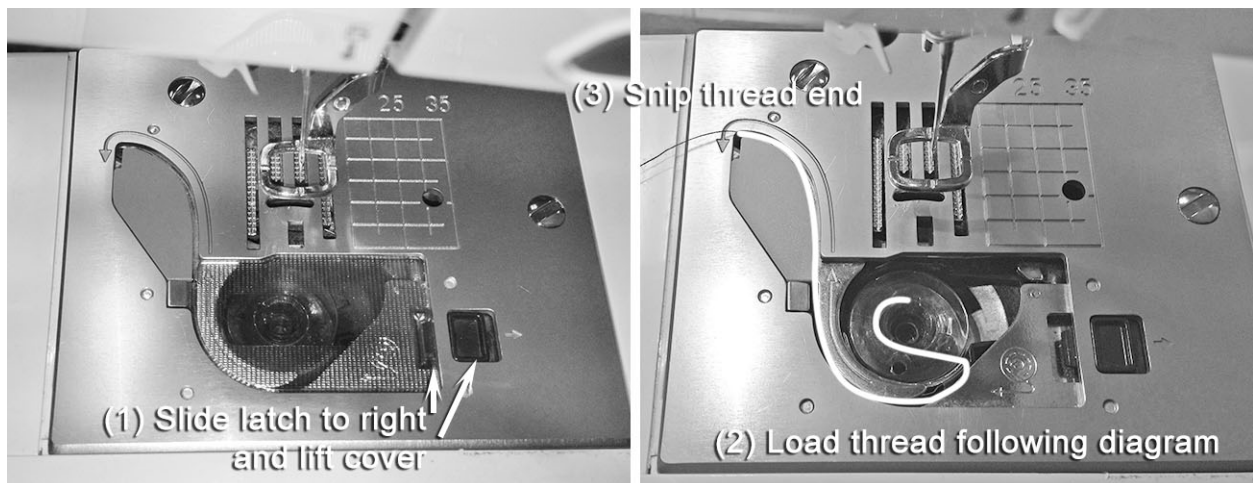

<div align="center">**Figure 11. Installing the bobbin**</div>

Threading the machine
A.   Raise the presser foot using the lever behind the needle. This will release all the tension on the thread.
>   (You must also raise the presser foot to remove thread from the machine).
B.   Place the thread on the horizontal spindle (spool pin) on top of the machine.
C.   (Not shown) Spool caps prevent the spool from sliding off the spindle. The spool cap should be roughly the same size as the spool of thread.
D.   Slide the thread into the marked areas following the **SOLID LINE** diagram on the machine.
   •   Locations 1-2 are on top of the machine
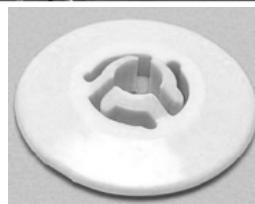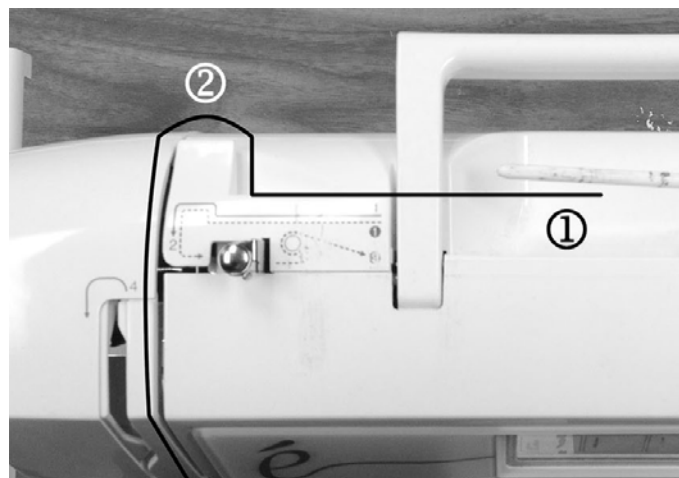
Spool cap

- Locations 3-5 are on the front of the machine
E. Location 6 is the needle eye. The thread passes through the eye from the front to the back of the machine
F. Leave about 3" of thread behind the needle.
  - The thread will likely pull to the underside of the work piece when you start stitching (this is a good thing). If you're unsure, a little long is better than a little short.
  - You do **NOT** need to pull up the bobbin thread.

Figure 12. Threading the machine

Designs

The Babylock can stitch user-provided designs in PES format, text/designs that are native on the machine, or a combination of these. When the machine is powered on with the embroidery arm attached, the display/control panel shows icons for four options:

- Native on machine:
  - Text
  - Hollow frames for creating appliques (icon shows a heart outline)
  - Native designs (icon says NOAH's ARK)
- User-provided designs on the card (icon shows a data card
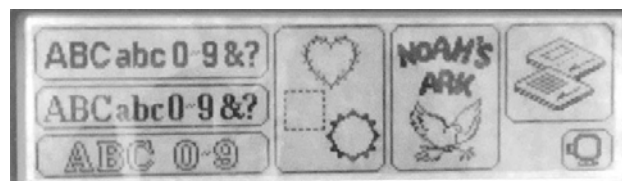
Figure 13. Design selecting menu

We will focus on user-provided designs.
Requirements:
- PES format file
- Fits inside the hoop's usable area (i.e., 4" w x 6" tall) in its **unrotated** (portrait) orientation

There are many sources on the Internet for free or low-cost digital designs. One good source is www.embroiderydesigns.com but there are many others. There are also online sources that will digitize your own personal design.

Programming your own design is beyond the scope of this manual. DMS Creative Arts owns the SewArt64 programming software. Tutorials are listed in Appendix 2, Online Resources.

Transferring your design

After you have your PES file, you need to transfer it to the Brother sewing machine card. Detailed screen shots and menus are shown in the appendix.

Transfer design to card
1) Plug in
   - Insert the card into the reader
   - Plug the reader's USB card into the Arts Room computer located to the right of the large format printer, and plug in your thumb drive
2) Launch the PED-Basic software on the computer (icon is blue square with zig-zag "stitches")
3) Select the correct hoop size (130 x 180mm)
4) Select files
   - Using the folder icon, select the location of the files
   - Highlight the pattern(s) you want
   - Use the center arrow to direct the pattern(s) to the card
   - Use the right angle arrow to write the patterns to the card. This will erase all data on the card
5) Unplug from computer
   - Remove the card reader, then the card (it is not necessary to eject)
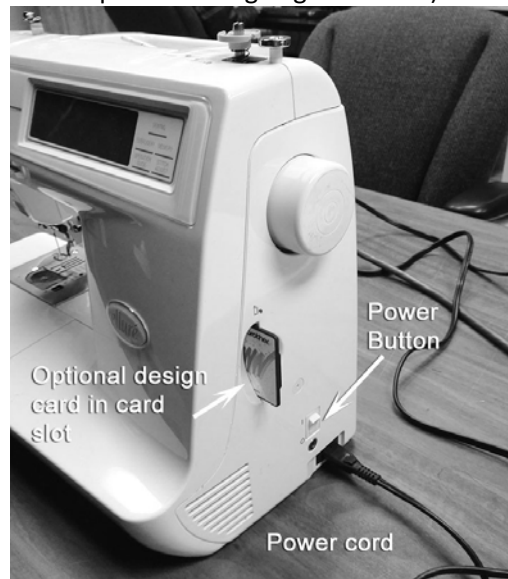   - Eject your thumb drive

Transfer design to machine
6) Insert Brother card into card slot on right side of Babylock machine with the thick portion facing the rear of machine *(preferably with the machine turned off)*. The card only fits in one direction.

Figure 14. Card slot location

The software gives an option to resize the design (+20%, -10%), but the same resizing can be done on the Babylock machine. Resizing does not change the stitch count – the design becomes a little more or less dense.

Preparing to embroider

"Hooping" the fabric

The stitching location is planned from the center of the design. The fabric and stabilizer must be stretched in the hoop with the design center positioned so that the design fits fully within the hoop. **The quality of your hooping job is one of the two key contributors to the quality of your embroidery** (the adequacy of your stabilizer is the other key contributor).

The hoop is comprised of two pieces, a lower (split) piece with tensioning screw and a top solid piece. When installed on the machine, the tensioning screw is closest to the user.

1) Turn the screw on the bottom frame to widen the aperture. The fabric/stabilizer should fit easily but not loosely into the frame.
2) Cut a 12" long piece of stabilizer
3) Using your fabric marker, mark where you want the center of your design to be relative to your work piece. When centering and/or alignment are critical, I find it helpful to mark long (8" to 10") crosshairs on my fabric to make sure my fabric is square in the frame.
4) Set the hoop bottom on the table, with the metal mounting strip on the left and the tensioning screw closest to you.
5) Lay the stabilizer on top of the hoop bottom, then your fabric, and then the hoop top. Position the center point of your design within the working area of the hoop (i.e., so the design does not spill off the edge). The hoop top has centering marks on the frame to help you.
6) If you have excess fabric, it should overhang the hoop at the left (connector) side of the hoop to avoid bunching up in the throat of the machine. Be careful that this fabric overhang doesn't catch on anything while embroidering.
7) Press down on the top hoop to secure the stabilizer/fabric sandwich into the bottom hoop.
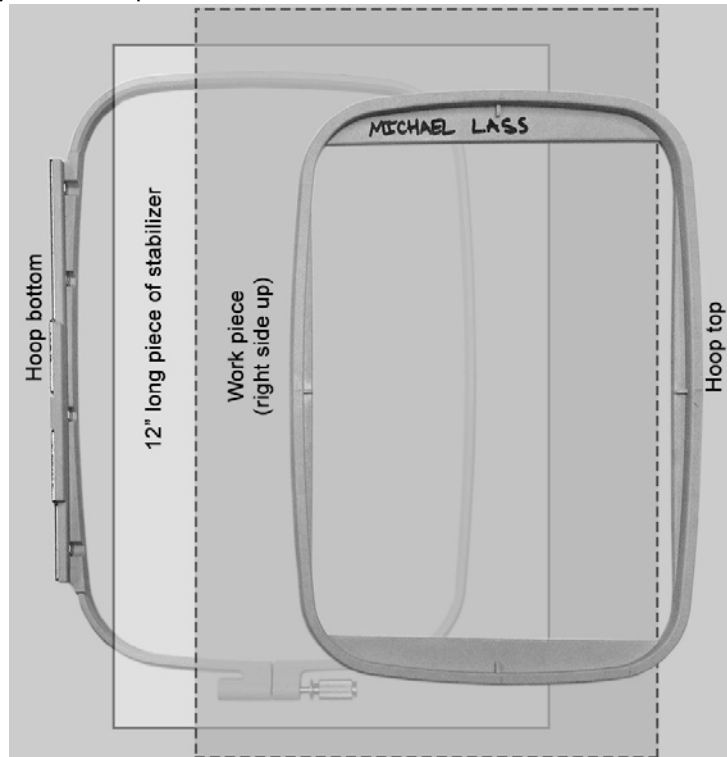

Figure 15. Fabric sandwich in hoop

The fabric sandwich should be taut in the hoop (should not ripple when you run your finger across it). You may have to iteratively pull on the fabric or stabilizer to tighten or smooth it. Tighter is better! The top and bottom frames must be align and be flat on the bottom face.
8) Tighten the tensioning screw on the bottom frame. Use a screwdriver if necessary.

Installing / removing the hoop

After the hoop is assembled, raise the presser foot to slide the hoop under the needle. The presser foot can be raised an additional ¼" or so with additional (gentle) upward pressure on the presser foot lever, after it has reached the "up" position. The bottom hoop slides over two mounting pins to attach to the embroidery arm, snapping into place. If it doesn't snap into place easily, it isn't hooped correctly. Remove it from the machine and check to ensure that the top and bottom of the hoop are perfectly flat on the bottom. The hoop can be released by pressing the hoop removal catch to the left.
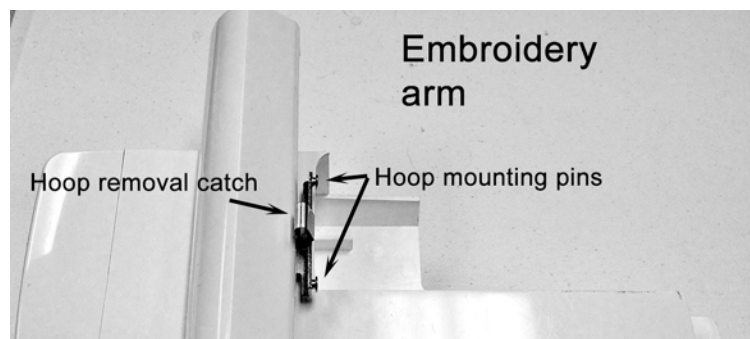

Figure 16. Embroidery arm mounting

Special case – T-shirts

Marking the location on T-shirts

Position your design and mark its center as shown in the diagram. Dimensions are for a typical adult T-shirt. It helps to have a scaled printout of the design.

The horizontal centerline of the design should be about 7.5" below where the collar intersects the shoulder. The left edge of the design is about 7.5" left of the seam between the sleeve and shirt.

Mark the CENTER OF THE DESIGN after placing the design.

Figure 17. T-shirt design location

Hooping T-shirts for Embroidery

Shirts that are constructed as a tube (T-shirts, for instance) present a special case when hooping for embroidery.
1. Place the bottom hoop inside the shirt, in the orientation shown in the photo.
2. Rotate the design in the control panel before stitching.
3. When placing the shirt into the machine, bunch up the back of the shirt and feed the shirt/neck under the needle **so that you are embroidering through only one side of the shirt**!

Figure 18. Hooping a T-shirt
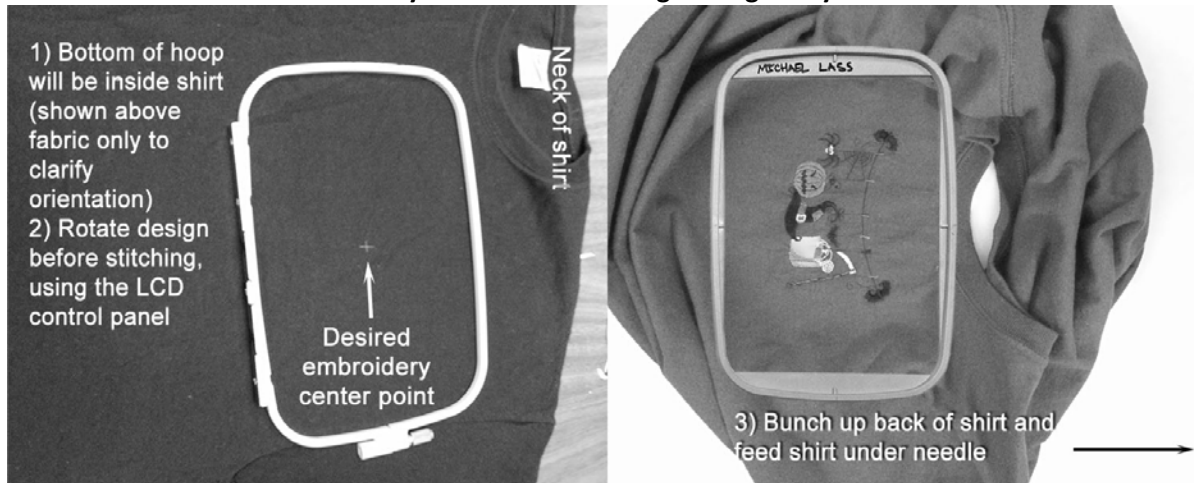
Special case – Patches

Embroidering a patch will be easier if you use a "patch blank". There is a simple tutorial on how to stabilize and stitch patches using patch blanks at: http://www.allstitch.net/content/how-to-embroider-on-blank-patches-1058.cfm   . Here is an alternate method to use if you have an irregularly shaped patch: https://www.youtube.com/watch?v=bHdeFWNVqmk

Selecting and positioning the design

Select the design
- Select the icon representing the source of your design (native text, frame, image; or data card).
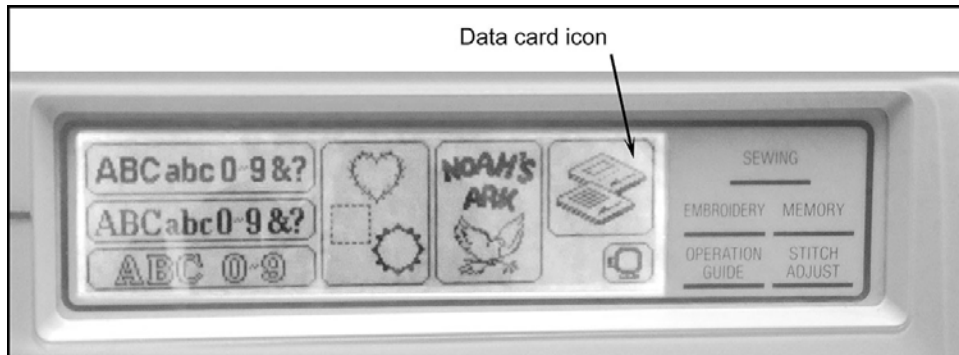- Press the data card button and choose your image from the designs shown on your card.
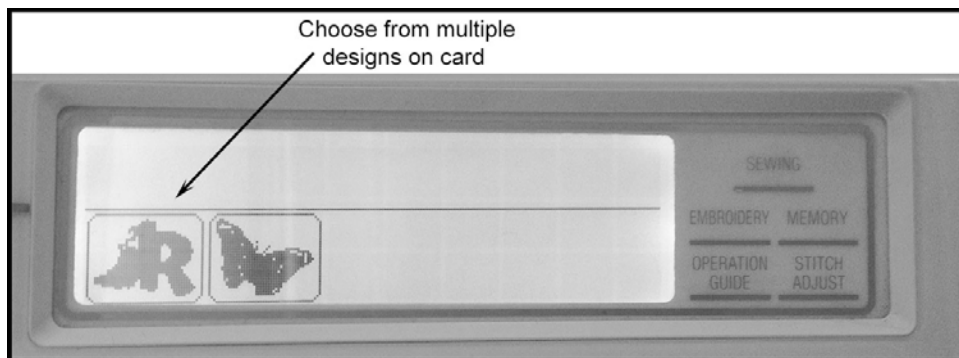

Figure 19. Selecting data card

Figure 20. Select from multiple designs

Layout and Positioning
The design location is planned from the center of the design. The default starting location is with the design's center located in the center of the embroidery hoop, with the top of the design facing away from the user.

1) Make sure the presser foot is up to prevent inadvertently starting the stitching
2) A design can contain multiple layers – one for each color. The stitching layers of the design will be displayed.
   a) Press the SET button, which will bring up the menu.
   b) The LAYOUT screen has an option for the Babylock to automatically clip top/bobbin threads at the end of each layer. Most people use this option; it is selected when the scissors button shows dark.
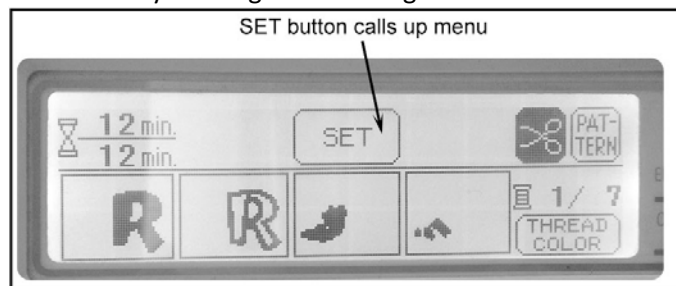

Figure 21. SET button

3) First select ENLARGE/REDUCE if desired. This order is recommended because the sizing can affect the layout.
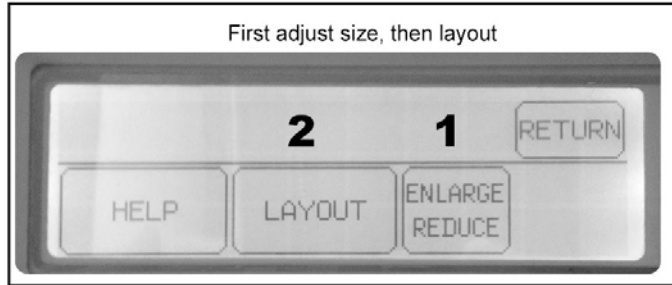

Figure 22. Display Menu

4) ENLARGE OR REDUCE the design. It can be enlarged 20% or reduced 10% but the stitch count is unchanged. Press the SET button to return to the menu.
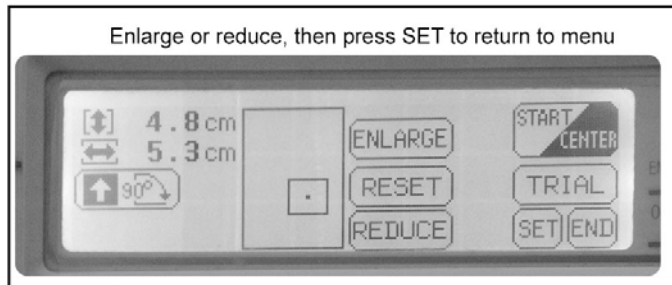

Figure 23. Enlarge/Reduce menu

5) Select LAYOUT.
6) Orient then position the center of the design using the Layout menu.
   a) Select mirror image if desired (the two-faced giraffe icon).
   b) Rotate the design (if desired). The arrow shows where the top of the design will stitch.
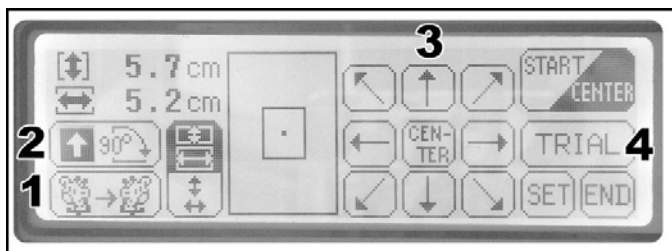
Figure 24. Layout menu

   c) Use the arrow buttons to position your desired center mark under the needle. The embroidery foot has crosshairs on the frame to help you position this.
7) Press the TRIAL button to traverse the rectangular perimeter of the design
8) Lower the presser foot, **move your hands out of the way** and you are ready to start stitching. The START/STOP button turns green.

Stitching

Embroidering is done in layers. Each layer corresponds to a single color. A coarse representation of each layer is shown in the machine display. After each layer the machine will stop to allow you to change thread. Solid color fill layers tend to be stitched first with details, highlights, and outlines done in the later (i.e., upper) layers.

The Babylock can toggle to a display that shows thread colors; however, the Babylock may not recognize the thread numbers of the thread brand your designer used.

Stitching Process

1. With the presser foot lowered, press the (now green) START/STOP button and stitching will begin.
2. You can STOP the stitching to clip the thread ends. **Raise the presser foot,** clip the thread ends, lower the presser foot, and START the stitching.
3. The machine will stop after each layer to allow you to change colors.
   - Raise the presser foot to release the tension on the thread
   - Remove the upper thread
   - Rethread
   - Lower the presser foot
   - START the machine

Special Notes

Bobbin Thread.

Bobbin thread can be stressful. You can't see it because it is buried under the hoop and the project. For planning purposes, a single bobbin will stitch about 25,000 stitches. The Babylock will warn you (several times) as the bobbin thread starts to get low. The first warning occurs when there is about 1/3 of the bobbin thread left. You can uninstall the hoop from the embroidery arm to change the bobbin thread, and reinstall it with good (but not always perfect) precision (perhaps 1mm). Consequently, bobbin thread changes are best done between layers, but can be done at any time.

Timing of bobbin changes:
- Between layers without a tight spatial relationship (for example a design with unattached text)   **BEST**
- Between dependent layers (for instance outlining of prior solid areas)   **OK**
- In the middle of a solid fill layer   **Not desirable**.

Remember to use the BACK button on the HELP menu to back up the machine to any stitches it may have missed.

This is a tough balance –you don't want to yank out the bobbin and waste the remaining thread if there is a lot of thread left but you don't want the thread to run out in the middle of a layer.

Adding text to a design

It is easy to add custom text to a design, especially if you have planned for this when you hooped up your work piece. It is helpful to test stitch your text on a scrap fabric in order to plan your spacing.

After stitching the first design, return to the PATTERN menu. Raise the presser foot. Select text, and type in the text you want. Go to the LAYOUT menu and position the text relative to your first design. (Change the bobbin thread if you are low!). Lower the presser foot and stitch the text the same way you stitched the design.

Advanced manipulations and OOPS! (HELP menu)

The SET button will get you to the HELP button which will bring up a display that allows moving forward or backward by layers or stitches.

FORWARD SEARCH and REVERSE SEARCH

FORWARD SEARCH and REVERSE SEARCH move to the next/prior layer in the stitching order. The layer display shown immediately below those buttons changes with the selection.

FORWARD and BACK (e.g., thread breaks)

The FORWARD and BACK buttons move the program to the next/prior stitch within the same layer. The embroidery arm moves the work piece as you press this button but the display does not change.

Figure 25. Help menu

Common problems and OOPS!

You want to stitch a partial design

The FORWARD SEARCH and REVERSE SEARCH buttons make it easy (easier) to stitch only partial designs by selecting only the relevant layers. Let's say you download a great design but it has unwanted text. If you're lucky and the text is a different color, you can use the FORWARD SEARCH and REVERSE SEARCH buttons to move past the undesired layers.

Thread breaks (upper or bobbin)

The Babylock senses when the upper thread is broken, and the bobbin thread is low/missing. However, the machine stitches quickly and the sensor is most likely to sense this problem many stitches after the break.

1. Raise the presser foot
2. Rethread the offending thread (cut the top thread, remove and replace the hoop if you are replacing the bobbin thread)
3. Bring up the HELP menu
4. Press the BACK button about 10 times
5. Lower the presser foot
6. Press the START/STOP button to resume stitching

Now you're finished

Removing the hoop
- Lift the presser foot to prevent accidentally restarting the design.
- Push the hoop release lever on the embroidery arm to the left to release the hoop.
- Lift the hoop off of the hoop mounting pins on the embroidery arm.
- Lift the presser foot lever slightly higher using further (gentle) upward pressure.
- Slide the hoop out from under the needle
- Lift the fabric and loosen the tensioning screw on the hoop. Slide the work piece out of the hoop.

Removing the excess stabilizer
You should remove the excess stabilizer on the back of your work piece, trimming closely (~ ¼") to the design with small, sharp scissors. If you hold only the stabilizer and let the weight of the fabric pull the work piece down while you are cutting the stabilizer, you are less likely to cut your work piece.

Cleaning up pressure marks
Sometimes the fabric that was pressed into the hoop will appear shiny/smashed after removing it from the hoop. Regular washing will restore its appearance.

Putting the machine away
1. Lift the presser foot and remove the (upper) embroidery thread. It's OK to leave bobbin thread in the machine.
2. Turn off the machine and remove the power cord.
3. Remove the embroidery arm from the machine. Press the button on the lower front face of the embroidery arm and slide left, as shown in Figure 9. Embroidery arm installation. Slide the small storage compartment onto the machine.
4. Remove the sewing machine data card and place it in the card reader.
5. Place the embroidery arm, hoop, power cord, and card/reader in the white tub.
6. Put the dust cover back on the machine.

Summary

Tools and Supplies

USER PROVIDED	
TOOLS	**SUPPLIES**
Thread scissors	Test fabric
Fabric scissors	Work piece to embroider
Fabric marker	
Measuring tape/ruler	
DMS-AVAILABLE (Consumables fee applies to supplies)	
TOOLS	**SUPPLIES**
Small screwdriver	Stabilizer
	Bobbin thread (L-style bobbins)
	Embroidery thread
	Size 75/11 ball point embroidery needle

Table 4. Summary of tools & supplies

Sewing Machine Parts and Accessories (DMS-provided)

CAUTIONS:

- *Do not put your fingers near the needle while it is moving*
- *Do not prevent the embroidery arm from moving*
- *Do not stick your fingers in the electrical socket*
- *Always raise the presser foot when you put your hands near the needle. It is easy to accidentally touch the STOP/START button but the machine will not start with the presser foot raised.*

REQUIRED PARTS	OPTIONAL ACCESSORIES
Sewing machine with power cord	Data card
Embroidery arm	Card reader
Embroidery foot	User-provided design file in PES format
5x7 embroidery hoop (4x6 usable design space)	Designer-provided "color chart"
Spool cap	

Table 5. Summary of Sewing Machine Accessories

Machine Set Up

1) Set machine on table and plug in power cord.
2) Install the needle <u>using a screwdriver</u>.
3) Install the embroidery foot with the lever resting on the needle-securing set screw.
4) Install the embroidery arm.
5) Power on the machine and check arm travel.
6) Wind and install the bobbin.
7) Thread the machine with the first color of thread.

CAUTION:

- *Needles tend to vibrate out during embroidery unless they were secured with a screwdriver.*
- *The sewing machine handle tends to pinch (and break) thread coming from the spool pin.*

Transfer your design to the sewing machine
- Requirements: PES format file, 4" wide x 6" tall in its **unrotated** (i.e., portrait) orientation
- Using PED-Basic and the card reader, transfer your files to the Brother sewing machine card
- With the power off, insert the card into the slot on the right hand side of the sewing machine.

Embroidering
1) Mark the center of your design on the work piece. Hoop the fabric, layering the bottom hoop, 12" of stabilizer, your fabric, and the top hoop. Pull fabric taut, press together and tighten the tensioning screw.
2) Raise the presser foot and install the hoop on the machine
3) Set up your design
   a) Select the data card icon
   b) Select the design
   c) Make sure the presser foot is up to avoid accidentally stitching
   d) ENLARGE/REDUCE the design if desired.
   e) Select the LAYOUT option. Select mirror image (if desired), then rotate the design (if desired), then position the design within the hoop.   Press TRIAL to audition the location.
   f) Lower the presser foot
4) Stitch!
   a) Press the START/STOP button
   b) If desired, STOP the machine to clip threads. Raise the presser foot, clip the threads, lower the presser foot, and START the machine.
   c) The machine will stop after each layer to allow changing colors.
      i) Raise the presser foot to release the tension on the thread
      ii) Remove the upper thread
      iii) Rethread
      iv) Lower the presser foot
      v) START the machine
5) Remove the hoop from the machine. Press the release catch and slide the hoop up off of the pins.
6) Remove the fabric from the hoop by loosening the tensioning screw
7) Trim excess stabilizer by holding the stabilizer and trimming about ¼" away from the fabric using small sharp scissors
8) Wash the work piece if necessary to remove any pressure marks remaining from the hoop

Bobbin Thread.
If you need more than one bobbin of bobbin thread, plan to change bobbins between layers; preferably layers *without* a tight spatial relationship to the main design.

Adding text to a design
You can add custom text to a design. After stitching the design, select TEXT from the PATTERN menu, position the layout to the desired center of your text, and stitch as before. Change the bobbin thread if you are low.

HELP Menu
The SET button will get you to the HELP button which will bring up a display that allows moving forward or backward by layers or stitches.
- **Partial designs.** The FORWARD SEARCH and REVERSE SEARCH buttons advance to the next/prior layer if you want to stitch only parts of the design.

- **Broken thread.** The FORWARD and BACK buttons will advance/rewind the stitching pattern one stitch. Rewind the stitching pattern about 10 stitches if the bobbin (or upper) thread break.

Finishing up

Removing the hoop
- Lift the presser foot to prevent accidentally restarting the design.
- Push the hoop release lever on the embroidery arm to the left to release the hoop.
- Lift the hoop off of the hoop mounting pins on the embroidery arm.
- Lift the presser foot lever slightly higher using further (gentle) upward pressure.
- Slide the hoop out from under the needle
- Lift the fabric and loosen the tensioning screw on the hoop. Slide the work piece out of the hoop.

Removing the excess stabilizer
You should remove the excess stabilizer on the back of your work piece, trimming closely (~ ¼") to the design with small, sharp scissors. If you hold the stabilizer and let the weight of the fabric pull the work piece down while you are cutting the stabilizer, you are less likely to cut your work piece.

Cleaning up pressure marks
Sometimes the fabric that was pressed into the hoop will appear shiny/smashed after removing it from the hoop. Regular washing will restore its appearance.

Putting the machine away
Remove the embroidery arm by pressing the release button on the lower front face and sliding it to the left. Slide the small storage compartment back onto the machine. Remove the data card. Store the embroidery arm, hoop, card reader with the card in it, and power cord in the tub. Put the hard cover on the machine.

Appendix 1 – PED-Basic File Transfer

Operating procedure

1 Start up the application.

From the desktop, double-click the icon shown at the right.

> Make sure that the USB card writer box is connected to the computer's USB port and that an original card is inserted.

2 Select the embroidery hoop size.

With the Hoop size selector, select the size of the embroidery hoop that can be used with your embroidery machine.

> Do not select a hoop size larger than the embroidery hoop that can be used with your embroidery machine. The created card will not work correctly with the embroidery machine.

130X180mm

100X100/110X110mm
130X180mm
160X260mm
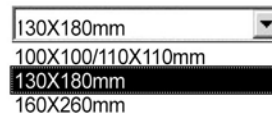
3 Select the folder.

1) Click ☐. The Folder dialog box appears. Select the folder where the pattern file (.pes) is saved, and then click [OK].

> If an original card was selected ☐, the patterns saved on the inserted card can be seen.
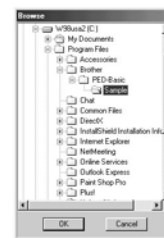
2) Images and file names for the pattern files saved in the selected folder appear in the "Available patterns list".

> If there are any patterns on the card that you do not wish to erase, be sure to add them to the "Selected patterns list". (See page 8, "Select the patterns.")
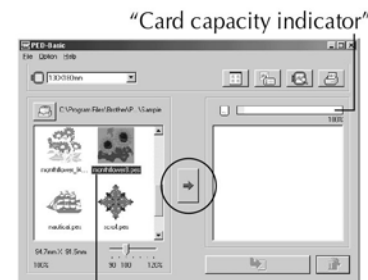
"Available patterns list"   "Selected patterns list"

4 Select the patterns.

"Card capacity indicator"

1) From the "Available patterns list", click the pattern that you want to write to the card. The highlighted pattern is selected.

2) Then, click ➡ to add the selected pattern to the "Selected patterns list".

3) Continue this operation for all patterns that you wish to write to an original card. Viewing the "Card capacity indicator" during this process will allow you to plan which designs you would like to save an original card.
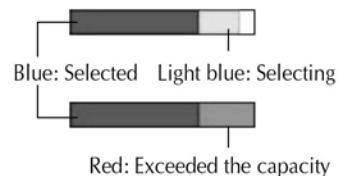
Highlighted

> • If an original card was selected ☐, the patterns saved on the inserted card can be seen.
> • If there are any patterns on the card that you do not wish to erase, be sure to add them to the "Selected patterns list".

Excerpted from the Brother PED-Basic Manual

Reading the Card capacity indicator:

The part indicating selected patterns is shown in blue, and the part indicating the pattern being selected is shown in light blue.
If the part indicating the pattern being selected appears in red, the size of the selected patterns has exceeded the capacity of an original card.

Blue: Selected   Light blue: Selecting

Red: Exceeded the capacity

5 Size the pattern.

1) To size the pattern, click the pattern in the "Available patterns list" to highlight it.
2) Use the "Pattern size slider" to change the size of the pattern, and then click →.

- The range in which the pattern can be sized is between 90% and 120%.
- In addition, the pattern cannot be sized to exceed the size of the selected embroidery hoop.

"Pattern size slider"

This function is not available if more than one pattern is selected.

6 Write the data to an original card.

After the patterns to be written to the card are selected...

1) Check that an original card is inserted into the USB card writer box.
2) Then click 🗂 to write the data to the card.
   The data is written to an original card after all data already on the card is erased.

Now sending...
Please wait for a while.

If there are any patterns on the card that you do not wish to erase, be sure to select the card in the Folder dialog box, and then add the patterns to the "Selected patterns list".

After a short while, the data is finished writing to an original card.
Now, the card containing the data can be used with the embroidery machine.

Do not remove the card or unplug the USB cable while data is being written to the card (while the LED indicator is flashing).

Selecting patterns

To select a pattern, click the image for the pattern in the "Available patterns list" or the "Selected patterns list". To select multiple patterns, hold down the Ctrl key or Shift key while clicking the patterns or use dragging operations. The various buttons that are available while the patterns are being selected appear clear; the buttons that are not available are dimmed.

Excerpted from the Brother PED-Basic Manual

Appendix 2 – Online Resources

Item	Source	Link
This guide	https://dallasmakerspace.org/wiki/File:Babylock_Embroidery_Detailed_Usage_Notes.pdf	Babylock Manual
Downloadable embroidery designs	www.embroiderydesigns.com Some for free, most for fee	EmbroideryDesigns
Bobbin or embroidery threads	www.redrockthreads.com	Red Rock Threads
Bobbin or embroidery threads	www.nancysnotions.com	Nancys Notions

Introduction to Embroidery using the Babylock Elluré ESL

Item	Source	Link
Patches: simple tutorial on how to stabilize and stitch patches using patch blanks	http://www.allstitch.net/content/how-to-embroider-on-blank-patches-1058.cfm	AllStitch.net patches
Patches: Alternate method for irregularly shaped patch	https://www.youtube.com/watch?v=bHdeFWNVqmk	Irregular patches
Programming: Excellent tutorial on using SewArt64 programming software, from Burley Sew	https://www.youtube.com/watch?v=bIy8ilc9k6E	SewArt64 Tutorial
Programming: SewArt64 tutorials from the manufacturer	http://sandscomputing.com/products-shop/sewart-embroidery-digitizer/ At the very bottom of the page	SewArt64 Manufacturer