

my

BERNINA

Embroidery Workbook



Embroidery Machine Basics

Addendum for B 880 PLUS and B 790 PLUS and
Embroidery Plus Upgrade for B 880 and B 790

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Embroidery Machine Basics



B 880 PLUS

The information in this workbook applies to current B 880 PLUS and B 790 PLUS or the B 880 and B 790 with the Embroidery Plus Upgrade installed.

Some exercises apply only to certain models equipped with the feature being highlighted.



B 790 PLUS

Congratulations on your purchase of the B 880 PLUS, B 790 PLUS or Embroidery Plus Upgrade!

This workbook is designed to be used in conjunction with the My BERNINA Classes offered at your BERNINA store, and contains a series of exercises intended to familiarize you with the embroidery features for the B 880 PLUS and B 790 PLUS as well as the features of the Embroidery Plus Upgrade.



In addition, you will learn about needles, threads, stabilizers, embroidery hoops and accessories, all of which will increase your knowledge of embroidery and assist you in achieving success in all of your embroidery endeavors.

Once you have completed the exercises designated for your BERNINA machine, keep this workbook as a reference guide as you use your machine and explore the creative possibilities it affords.

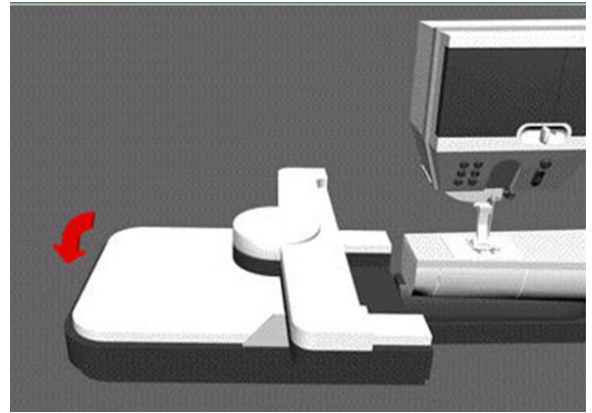
BERNINA of America strives to provide its customers not just with quality sewing machines, but with informative publications and classes. You'll find additional information on the BERNINA of America website –www.bernina.com – offering free projects and embroidery designs, inspirational stories, how-to videos, and informative eBooks.

Learn to use your BERNINA embroidery machine to its fullest extent and enjoy being creative with fabric and thread!



Embroidery Module

- Attaching the Module
 - Place the machine on a flat surface (such as a table or countertop) sturdy enough to support the weight of the machine without sagging
 - Slide the module at an angle from left to right to attach
- Removing Module
 - Detach by lifting left end and sliding to the left



BERNINA 880 PLUS & 790 PLUS Tips

- The slide-on table must not be attached while the embroidery module is being attached or removed.
- Make sure there is enough space around the machine and embroidery module to allow the unimpeded movement of the embroidery arm.
- Always separate the machine and embroidery module from one another before transporting – do not transport as a single unit.

Presser Foot

- Attach the Teardrop Embroidery Foot #26 to the machine.

Needle

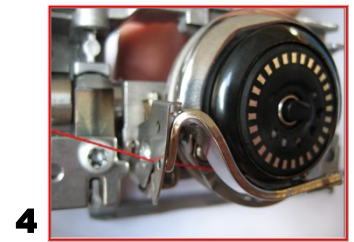
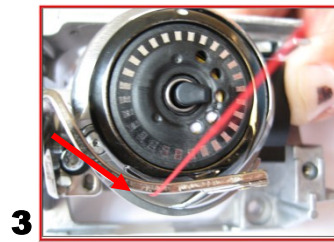
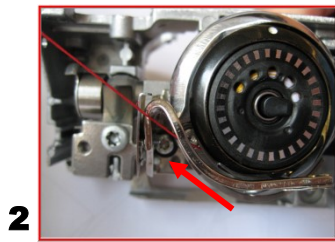
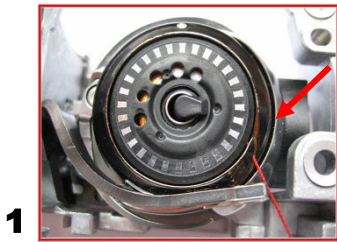
- Use the proper needle for the thread and fabric being used; insert a new needle for each project.
- Needle should be in the highest position when attaching the hoop to prevent snagging fabric and/or bending the needle.

Straight Stitch Plate

- Attach the straight stitch plate for your machine.
- Using the straight stitch plate reduces flagging of fabric, resulting in improved stitching
- It is a standard accessory for B 880 PLUS and B 790 PLUS.

Bobbin

- B 790 PLUS: The bobbin case is threaded the same way for embroidery and sewing.
- B 880 PLUS: Pull the bobbin thread clockwise, guiding it into the slit on the right hand side of the hook area as shown (1). Then up (2) and down the curve of the retaining finger (3). Bring the thread back to the left, over the thread cutter and cut the thread (4).

**Threading Tips**

- For B 790 PLUS: Thread using either the horizontal or vertical spool pin:
 - use the horizontal spool pin with cross-wound threads; match spool cap size to end of spool
 - smallest spool cap fits into the end of large cones/spools such as Isacord embroidery thread
 - use the vertical spool pin with stacked threads and for some decorative threads (metallic threads); use the foam disc under the spool to avoid extra tension on the thread.
- Use a thread net to prevent thread from forming loops which might interfere with consistent feeding.

Embroidery Thread

Most designs are digitized for 40-weight rayon or polyester thread. Both have a beautiful rich look; both are widely available. Polyester is stronger, more colorfast, and more abrasion resistant, making it especially good for embroidering children's clothing. Polyester is also usually more economical than rayon.

Select high-quality embroidery thread because bargain brands may cause excessive thread breakage while stitching, and may produce undesirable final results. Specialty threads such as metallics, acrylics, and silk may also be used, but are often employed as accents rather than for full designs.



Bobbin Thread

A 60 wt. bobbin thread will help avoid thread build-up on the bottom side of your project, keeping the design supple and avoiding a thick, hard result. Bobbin thread is designed to be strong so it will withstand the high-speed stitching of an embroidery machine. They are usually more economical than embroidery thread and will save time in thread changes if you use the same neutral-colored bobbin thread for all needle thread changes. Most thread companies offer a bobbin thread, sometimes in a wide array of colors. Because bobbin threads are so fine, your bobbin will hold more so you will be changing the bobbin less frequently than with heavier thread.



Embroidery Needles

As with all sewing projects, needle choice is determined by the fabric, thread, and application.

For most embroidery, an embroidery needle is the best choice. They are designed to withstand the faster speed of embroidery machines as well as the wear and tear of stitching through dense designs.

The size of the needle depends on the fabric you are using. Heavier fabric requires a larger needle (higher number) and finer fabrics use a smaller needle (lower number). *Note: If stitching a dense design, use a small needle so it will slide into the stitches. You also want to select a point that relates to your fabric.* For example, use a Universal for most fabrics, Ballpoint for knits, etc.



Ballpoint needles (designated by SUK) also have positive results when embroidering with metallic thread. Due to the wiry nature and memory of this type of thread, a traditional embroidery needle with a sharp point can cut the thread, causing breakage. Ballpoint needles are blunt enough to avoid this.

Titanium-coated embroidery needles are a great choice because they last three times longer than regular embroidery needles. They work well for almost any type of embroidery and are especially useful when using an adhesive-coated stabilizer. The coating on the needle helps it move in and out of the stabilizer, resisting any adhesive residue. Titanium needles are often gold-colored and should be changed after 90,000 stitches.

Change your embroidery needle every 2-3 hours or about every 50,000 stitches. This may seem frequent but remember how fast your embroidery machine runs and how many times that needle has to go through the fabric and through layers of stitches and stabilizer compared to regular sewing.

Embroidery Stabilizer

Adding stabilizer to fabric provides a foundation that will support the stitching. Without the stabilizer, there will often be puckering of fabric and tunneling of stitches, ruining the beautiful look of embellishment you desire. While there are dozens of stabilizers on the market, they are classified by how they are removed from the fabric after stitching:

TearAway Stabilizer

- Most commonly used type of stabilizer, designed to provide temporary support of stitching
- Placed on the wrong side of the project and carefully torn away once stitching is complete
- Usually available in three weights – heavy, medium, and light.
- StabilStick is a TearAway with a peel-away backing that exposes a sticky adhesive
- HydroStick is an adhesive tear away with a water-activated adhesive on one side that provides a secure bond and a high degree of stabilization for very dense and/or intricate designs.
- Available in white and black
- Available in several sizes; use one that fits the selected hoop size

CutAway Stabilizer

- Most widely used stabilizer in the commercial embroidery market.
- Does not break down under dense stitching, due to the high fiber content
- Excess stabilizer is trimmed away after stitching (leave about ¼” of stabilizer around the edges)
- Remaining stabilizer continues to support stitches throughout life of garment/project
- StabilStick is available as a CutAway stabilizer
- Available in fusible and non-fusible versions
- Available in white, black, and beige
- Available in several sizes; use one that fits the selected hoop size

Water Soluble Stabilizer

- Used for backing and topping, in single or multiple layers
- Excellent for decorative stitching and cutwork as there are no remnants of stabilizer left after removal (it dissolves)
- Aquamesh Plus is an adhesive paper backed water-soluble stabilizer
- Water-soluble toppings keep stitches from being lost in heavily napped fabrics such as velvet and corduroy

Tips and General Guidelines

Use CutAway for knit fabrics and TearAway for woven fabrics.

WashAway is great for free-standing lace and when you do not want any stabilizer to remain in the project (fabric must be able to be moistened).

Multiple lightweight layers of TearAway may be preferable to one heavy layer, as they are easier to remove.

Use PolyMesh behind lightweight or light-colored fabrics as it is designed to minimize “show-through”.

Keep a minimum of one roll or package of each of the three types so you’ll be ready for almost any stitching situation.





Small Hoop
72mm x 50mm
(approximately 2.7" x 2")



Medium Hoop
100mm x 130mm
(approximately 3.9" x 5.1")



Large Oval hoop
145mm x 255mm
(approximately 5.7" x 10")



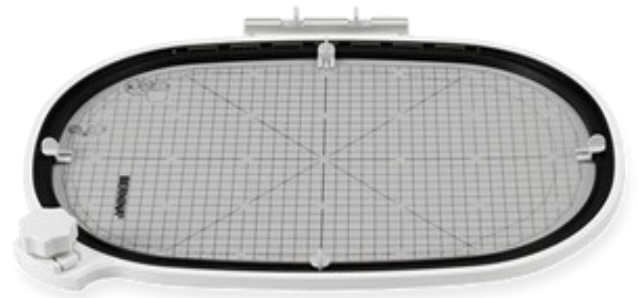
Mega Hoop
150mm x 400mm
(approximately 5.9" x 15.8")



Midi Hoop
165mm x 265mm
(approximately 6.5" x 10.4")



Maxi Hoop
210 x 400 mm
(approximately 8.3" x 15.8")



Jumbo Hoop
260mm x 400mm
(approximately 10.3" x 15.8")

B 790 PLUS Hoops

Standard: Small, Medium, Large Oval
Optional: Mega, Maxi, Midi, Jumbo (partial use)

B 880 PLUS Hoops

Standard: Small, Medium, Large Oval
Optional: Mega, Maxi, Midi, Jumbo

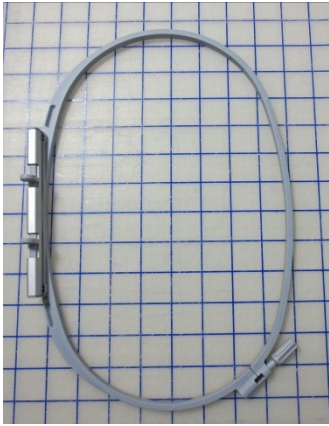
Note: All hoops come with a template for centering designs on projects.

NOTE: The Midi Hoop is included with the purchase of the Embroidery Plus Upgrade for the B 880 and B 790 and option for the B 880 PLUS and B 790 PLUS.

Attaching and Removing BERNINA Hoops

- When attaching hoops, seat the frame securely
- Release the clamp completely before removing the frame from the machine

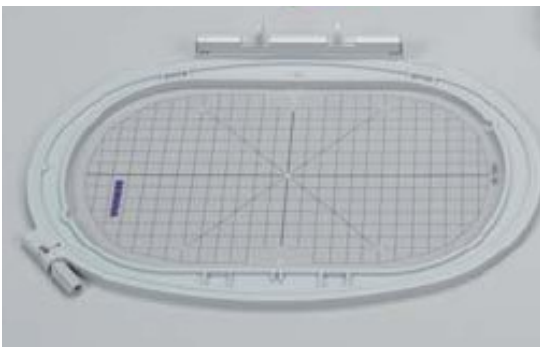




Loosen screw or knob; lay hoop on flat surface



Lay fabric on outer hoop; position inner hoop on fabric and push into place



Place template in hoop to ensure the design is centered

Hoop fabric and stabilizer in the Large Oval Hoop

- Mark the horizontal and vertical centers of a 10" x 14" piece of fabric.
- Separate the embroidery hoop sections.
 - Loosen the screw of the outer ring. It should be loose enough that fabric and stabilizer both will **EASILY** fit into the hoop.
- Secure fabric/stabilizer in the hoop.
 - Lay the outer ring of the hoop on a **HARD, FLAT** surface.
 - If desired, secure stabilizer to the back of the fabric by lightly spraying stabilizer with temporary adhesive spray (see *Hooping Tip* box below).
 - Place fabric and stabilizer on a firm surface.
 - Position the hoop's plastic template inside the inner hoop.
 - Position inner ring or the hoop over fabric, aligning markings of template with those on the fabric.
 - Grasping both inner ring of the hoop and fabric/stabilizer, insert into the outer ring of the hoop, making sure that the arrows align at the bottom of both the inner and outer hoops.
 - Hooped fabric should be taut, but not stretched or distorted. **DO NOT DISTORT THE FABRIC** when tightening the screw on the hoop as this will result in wrinkles around the design when the fabric is removed from the hoop.
 - Be sure to remove template before stitching. *Note: There are finger holes to facilitate easy removal of the small and medium hoop templates; special attachment clips are included with the Large Oval, Midi, Mega, Maxi and Jumbo hoop templates to facilitate easy removal.*

Hooping Tip

For easier hooping of the layers, adhere the stabilizer to the fabric using a temporary spray adhesive. Works well for securing "hard-to-hoop" items such as collars and cuffs to hooped stabilizer for embroidering. *Note: For best results, spray the stabilizer, not the fabric.*





The Large Oval, Mega, Maxi, Midi and Jumbo Hoops need to be calibrated when they are new to the machine and after every update. Calibration is essential because the variance of the basting box is only a couple a millimeters when selected to go around the hoop edge. This process calibrates the needle to the center of the hoop.

Adjusting the Hoop Reference Position

For the most accuracy in calibration, have fabric hooped (project or stabilizer), use the template with hoop holders attached lay the template on the 'fabric' and calibrate. *Having fabric in the hoop takes the play out of the field when using the template with nothing hooped.*

- Use the fabric and stabilizer hooped in the Large Oval Hoop from Page 9.
- Place embroidery template into the inner ring of the hoop.
- Attach the hoop to the machine.
- Touch Setup Program icon.
- Select Embroidery Setting option.
- Select Calibrate the Hoop; the machine recognizes the embroidery hoop automatically.
- Touch the Delete icon (trash can) to delete the present calibration.
- Center the needle via the arrow icons on the display.
- Confirm with the Green Check; the adjustment is saved.



Embroidery Consultant



The Embroidery Consultant provides information to help with decisions concerning embroidery projects. After entering the fabric and the desired embroidery project, suggestions for the suitable needle, presser foot, stabilizer and other pertinent information are displayed. Selecting Confirm will automatically open a design that uses that selected technique.

- While in embroidery mode, touch the Embroidery Consultant icon on the side of the screen.
- Select the embroidery technique in the window that opens.
- Select the type of fabric to be embroidered when the next window opens.
- The next window will give suggestions for successful embroidery.
- Touching the Esc icon will close the window. Selecting Confirm will open a design that uses the specific technique selected.

Note: If you have a design on the embroidery screen, a warning appears that it will be overwritten. If you wish to keep the design that you were working with, touch the x to close Embroidery Consultant.

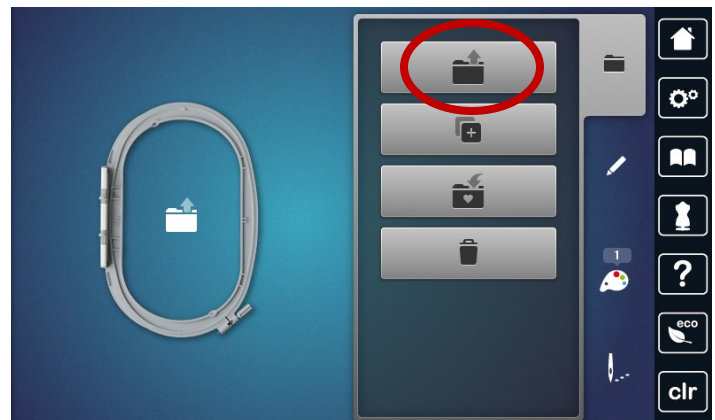
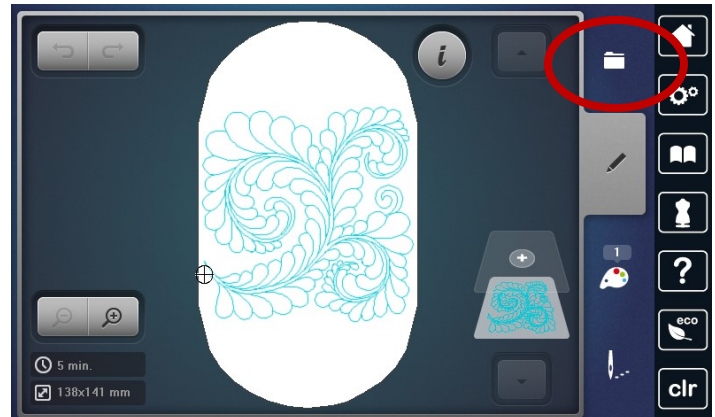




B 880 PLUS: 462 built-in motifs and 21 alphabets

B 790 PLUS: 332 built-in motifs and 18 alphabets

- As a general rule, the last design that was stitched on the machine will appear on the screen when the machine is turned on and in embroidery mode.
- To access a new design, touch the Selection (folder) icon at the upper right of the screen.
- Touch New Motif icon (folder with up arrow).
- You can then select designs from four different folders: Alphabets/Fonts, Built-in Designs, Library of all Sewing Stitches, or Personally Saved Designs (My Motifs).
- To access designs from a USB Stick inserted into the machine, touch the icon at the top of the screen and then choose the desired design.

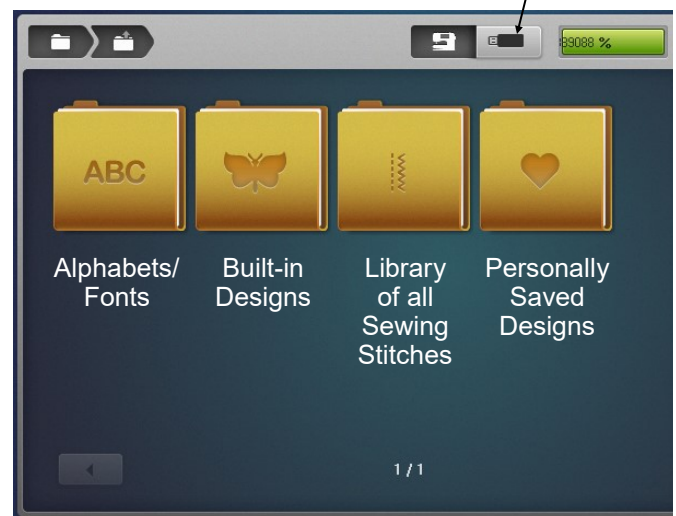


Note: B 880 PLUS and B 790 PLUS read multiple formats. The native format is the BERNINA exp format. Besides the actual embroidery file, the BERNINA .exp format also includes a .BMP file which allows a preview of the embroidery motif and the .INF file which provides the information on thread colors. If the .INF file is missing, the embroidery may not be displayed in the real color, but only in standard colors. In that case, simply follow the thread chart provided with most designs, or enter the colors manually in the color overview of the motif on the machine.

Additionally the following embroidery formats can be read by the machine: .PES, .PEC, .XXX, .PCS, .JEF, and .DST.

Note: *BERNINA International AG cannot guarantee that all embroidery motifs which have not been created or converted by the BERNINA Embroidery software will be correctly read and embroidered.*

USB Stick





Saving a Design to Machine

- In the Embroidery Selection Menu, select Save icon. The motif to be saved is displayed with a yellow border around it.
- The folder defaults to the machine's My Designs folder when saving the first design after the machine is turned on.
- In the Save screen, the Embroidery Machine icon is activated and the My Designs folder is automatically opened.
- Touch the motif to be saved or green check to confirm; the Edit screen appears again.

Saving a Design to a USB Stick

- In the Embroidery Selection Menu, select Save icon.
- The motif to be saved is displayed with a yellow border around it.
- Insert the USB stick; touch USB Stick icon in the Save screen.
- Touch the motif to be saved or the green check to confirm; the embroidery motif is saved on the USB stick; the Edit screen appears again.

Deleting a Design

- In the Embroidery Selection Menu, select the Delete icon (trashcan).
- Select the USB Stick icon or Embroidery Machine/My Designs folder.
- Select the motif to be deleted in the opened screen.
- In the Delete screen, select the Green Check to confirm; the motif is deleted.
- Touch the Selection icon to return to embroidery.

Retrieving a Saved Design

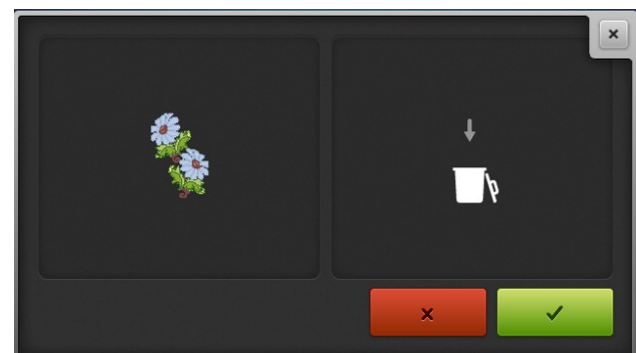
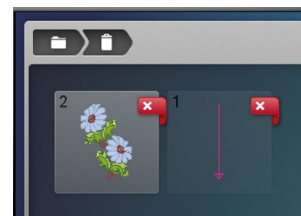
- In the Embroidery Selection Menu, select the Open New Motif icon and select the USB Stick icon or Embroidery Machine/My Designs folder.
- Select design of choice and the Embroidery Edit screen appears with the selected design.



SAVING DESIGNS



DELETING DESIGNS





The goal of Absolute Check is to check the points and boundaries of the design so that they embroider exactly where you want. You can also check the location of any single stitch in even the most complex design.



- Hoop fabric & stabilizer in the Large Oval Hoop; attach hoop to machine.

- Select the design listed below:

- B 880 PLUS: Folder 3, Design 1



- B 790 PLUS : Folder 2, Design 4



The Virtual Positioning default setting is active; therefore, when the motif is on the embroidery edit screen, reference points can be selected and checked for perfect placement. Touch any point on the design and the needle will move to that location on the hooped fabric.

Continue selecting points along the edge or within the design. To fine tune placement, use the Move function ("i" > Move motif).

Note: Motif Center must be deactivated to use Virtual Positioning.

Motif Center



Center

First Stitch

- Select the appropriate design below:
 - B 880 PLUS: Folder 11, Design 4
 - B 790 PLUS: Select Folder 15, Design 4
- Touch the Hoop Indicator/Select Hoop icon.
- Touch the Motif Center icon. The exact motif center is denoted by crosshairs at the center of the motif and the embroidery hoop moves to position the needle exactly over the center of the motif.*
- Touch the icon again and the first stitch of the embroidery design is marked in the display again.

*If you wish to align the design center with the marked center on a hooped piece of fabric, touch the Motif Center icon and close the Hoop Indicator screen. Use the Multifunction knobs (Width and Length Knobs) to move the needle to the desired position.)



Check

Check confirms the stitching field of the motif.

Select the appropriate design listed below:

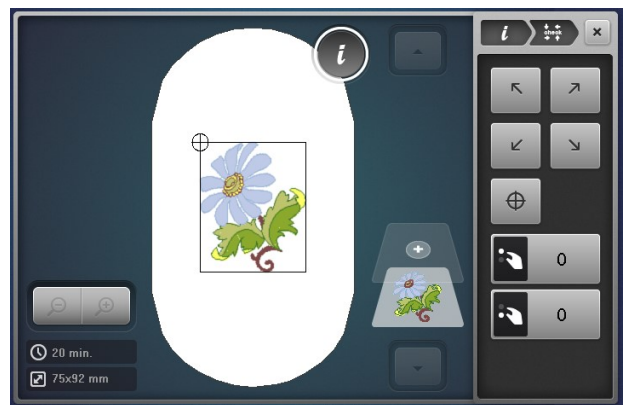
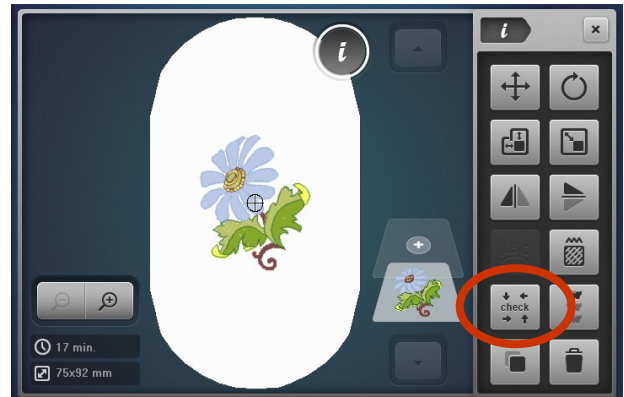
B 880 PLUS: Folder 8, Subfolder 4, Design 1

B 790 PLUS: Folder 5, Design 13

After the design is selected, touch “i”. Touch Check.

Select each corner arrow to move the needle to trace around the perimeter of the design in a box fashion. This provides a method to verify placement of the embroidery motif on a project. Use the Multifunction knobs to fine tune placement.

Touch the Centering the Embroidery Motif icon and the needle will move to the center of the design. Use the Multifunction knobs to fine tune placement or to align the center needle position with marked center lines on the fabric.



Off-center Positioning

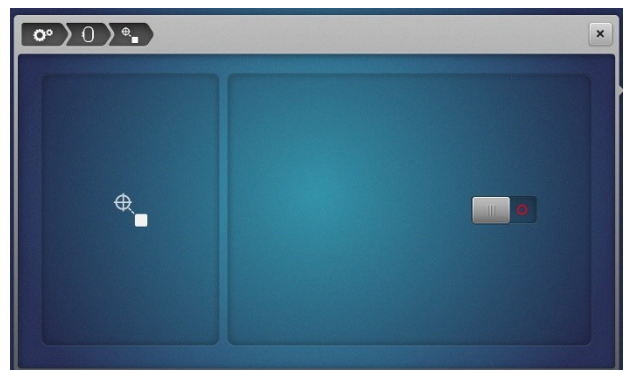


When the embroidery motif is opened on the machine, it is always centered to the embroidery hoop. If you want the embroidery motif to be opened in its original off-center position as created in BERNINA Embroidery Software 8 DesignerPlus, the function must be activated.

Off-center Positioning

To activate off-center positioning:

- Select the Setup Program icon.
- Touch the Center the Embroidery Motif icon.
- Press the switch in the right section of the screen.
 - If the switch is red, the design will open centered in the screen.
 - If the switch is green, a previously moved embroidery motif which has been saved in the new position is opened in its off-center position after selecting the design.





Customize embroidery designs using functions found on your embroidery machine. Take an existing design and make changes to suit your personal tastes, the sewing situation, or the demands of your current project. With so many functions available on the various BERNINA embroidery machines, it is easy for anyone, no matter what skill level, to adapt a design for embroidering on garments, craft projects, and items for your home. Use the functions shown below to customize designs on your embroidery machine.

	B 880 PLUS and B 790 PLUS
Rotate	
Move	
Mirror Image: Right/Left	
Mirror Image: Up/ Down	
Duplicate	
Resize/ Rescale *see note below	
Resequence**	

**Select the Altering the Size Icon. If the Maintaining Proportions (lock) icon in the center is outlined in white, sizing changes will be made proportionately. Touch the Maintaining Proportions icon (the lock) and the outline will disappear. If there is no outline, the design can be resized disproportionately by using either the Upper (to change width) or Lower (to change height) Multifunction knobs.*

***When designs are duplicated, it causes duplicated color stops. After selecting the sewout option, select the Resequence Icon to group like color changes and consolidate the number of repeated color changes. The Resequence function only groups colors if it does not interfere with the artistic order of color arrangement.*

Single Color Embroidery



To stitch a multi-colored design in one single color, set your machine to bypass color changes.

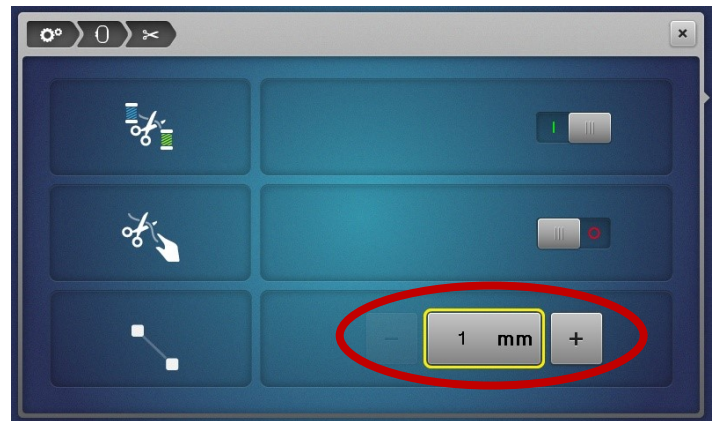
- Touch the single/multi-color symbol in the Embroidery menu.
- If the symbol is active (surrounded with yellow outline), the machine will not stop at the color changes and the entire motif will be stitched in one color.
- If the symbol is inactive (not surrounded in yellow), the machine will stop at color changes for thread to be changed.



The Jump Stitch Cut Length can be programmed B 880 PLUS and B 790 PLUS machines. The default on these machines is 6 mm which means that the machine will cut threads jumps that are 6 mm or longer. The Jump Stitch Length can be adjusted between 1 and 15 mm. Setting this to 1 means that there will be few, if any, jump stitches to cut on the top side of the project after the embroidery has been completed.

To change length for thread cut of the connecting stitches:

- Touch the Setup Program icon.
- Select Embroidery Settings (hoop icon).
- Select the Automatic cut/Jump stitch length (scissors) icon.
- Touch the icons (- or +) to adjust the cut length of the connecting stitches. Change the cut length to a 1.
- Close the Setup program with the “x” in the upper right corner of the screen.



Note: Jump stitch cutting is subject to design properties.

Thread Away

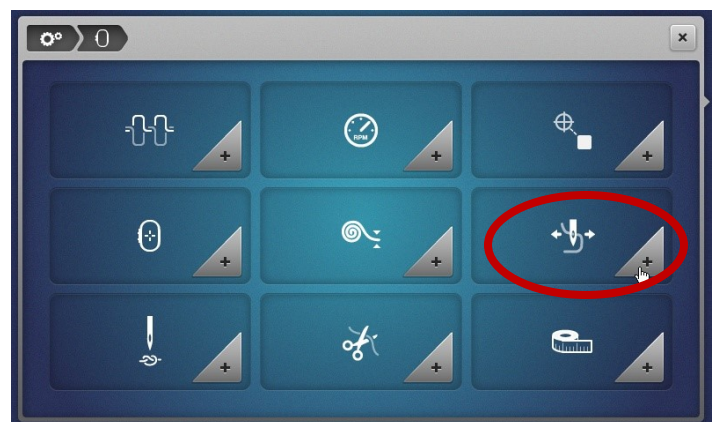


Thread Away Mode is a swift movement of the hoop after a thread has been cut that pulls the top thread up out of the fabric and brings it out of the way so the embroidery on the top of the project will be clean with no threads to clip.

Thread Away Mode is turned off by default.

To activate this feature:

- Select the Setup icon > Embroidery Settings > Thread Away
- Touch the slider to so the green line is showing to activate the feature.
- Touch the slider again so the red circle is showing to deactivate the feature.

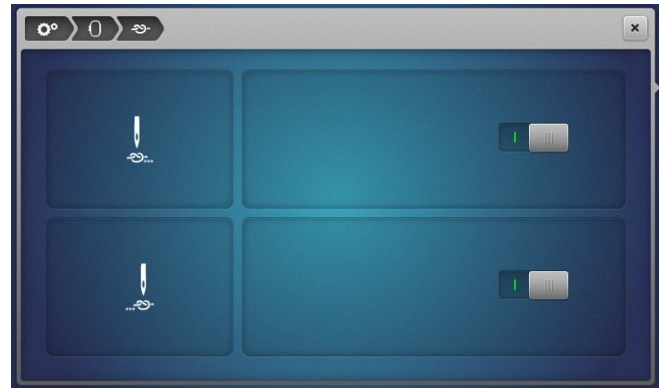




Embroidery motifs are programmed either with or without securing stitches. Smart Secure adds tie-on/off stitches to a design, if none are preset. If securing stitches are not wanted, they can be deactivated.

To change the setting for securing stitches (Smart Secure):

- Touch the Setup Programs icon.
- Select Embroidery Settings (hoop icon).
- Touch the Securing Stitches on/off icon.
- Press the switch in the upper right section to deactivate the securing stitches at the start.
 - If the embroidery motif has programmed securing stitches, they will be embroidered.
 - If the embroidery motif doesn't have any programmed securing stitches, none are embroidered.
- Press the switch again to activate the securing stitches at the start.
 - If the embroidery motif has programmed securing stitches, they will be embroidered.
 - If the embroidery motif doesn't have any programmed securing stitches, the securing stitches are added and will be embroidered.
- To change the settings for securing stitches at the end, repeat the process using the switch at the lower right.



Changing the Unit of Measurement



The unit of measurement can be changed from mm to inches in embroidery mode. The default setting is in mm's. The unit of measurement will be reflected in the design size that appears on the screen when a design is opened, and in the hoop size in the Hoop menu.

To change the measuring unit:

- Select the Setup Program icon.
- Touch Embroidery settings.
- Touch the Changing Unit of Measurement icon.
- Touch the slider to set the unit of measurement.
- The active unit of measurement will appear darker.

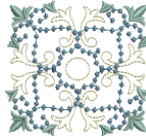




Pinpoint Placement is a new feature for easy positioning, resizing and aligning of embroidery designs. Selecting two dots and aligning them with two marks on fabric can compensate for incorrect hooping. Select the Grid option for linear motifs and select 'Position dots as desired' when the motif baseline is not straight.

B 880 PLUS: Folder 8, Subfolder 1, Design 1
B 790 PLUS: Folder 1, Design 13

78 mm x 78 mm



- Mark center vertical and horizontal lines on a piece of fabric.
- Hoop fabric and stabilizer crooked in the Large Oval hoop. Do not try to hoop perfectly. The Pinpoint Placement feature will compensate for hooping errors.
- In the Embroidery Menu, select the design shown at upper right.
- Select “i” and touch the Pinpoint Placement icon.
- Select the Grid icon.
- Touch the center dot. Use a stylus to ensure that you touch the correct dot. The dot will turn dark grey when selected. The needle will move to the corresponding point on the hooped fabric.
- Use the Upper (Width) and/or Lower (Length) Multifunction knob to move the needle position to the marked center on the fabric.
- Touch Set to confirm placement. The dot is now outlined in yellow.
- Touch the center right dot. The dot will turn dark grey.
- Use only the Lower (Length) Multifunction knob to move the needle position to the horizontal line marked on the fabric.
- Touch Set to confirm placement. The dot is now outlined in yellow.
- Close the Pinpoint Placement Screen.
- Close the Information Screen.
- Follow instructions on the next page to stitch out the design.



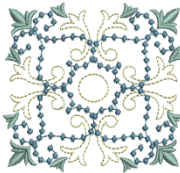
Note:

When selecting the first dot, you can use either/or the Upper (Width) Multifunction knob or the Lower (Length) Multifunction knob to move to the selected position.

When selecting the second dot, use only ONE Multifunction knob. Use the Upper (Width) Multifunction knob if aligning to a vertical line on the hooped fabric. Use the Lower (Length) Knob if aligning to a horizontal line marked on the fabric. Using a combination of the two will re-size the design.

B 880 PLUS: Folder 8, Subfolder 1, Design 1
B 790 PLUS: Folder 1, Design 13

3-color design
78mm x 78mm



- To stitch out a design after opening and editing a design as desired, touch the OK (needle) icon to go to the Embroidery screen.
- If you wish to stitch a basting box around the design or around the perimeter of the hoop, follow the instructions on the next page.
- If you wish to bring the bobbin thread tail to the top of the project to manually secure, follow instructions on page 20.
- Press the Start/Stop button to begin stitching.

*Note: A stop to cut the thread after the start of embroidery is disabled as default, since there is rarely a need to trim the thread tail. However, the machine can be set to stop in the Setup, if desired. See *To change the default for Thread cut after starting of embroidery below.*

- Change thread colors as prompted onscreen.
- Should a thread break, or if you run out of bobbin thread, refer to page 20.
- When the motif is complete, touch the Checkered Flag.



The B 880 PLUS will automatically lower the Feed Dogs for embroidery.

Lower the Feed Dogs for embroidery on the B 790 PLUS.

Changing Default for Thread Cut After Embroidery



To change the default for Thread Cut after Starting of Embroidery

- Select the Setup Program.
- Touch Embroidery Settings (hoop icon).
- Touch Automatic cut/Jump stitch length (scissors icon).
- Touch the switch (green) so that the machine will stop after about 7 stitches so that any remaining thread tail can be cut manually.
- Touch the switch again (red) and the machine will not stop for a manual thread cut. Leave the setting off (default setting) for these lessons.





Pre-programmed basting outlines stitch along the inside of the hoop or around a selected design. This serves as an additional anchoring to hold the fabric and stabilizer together.

Basting Boxes

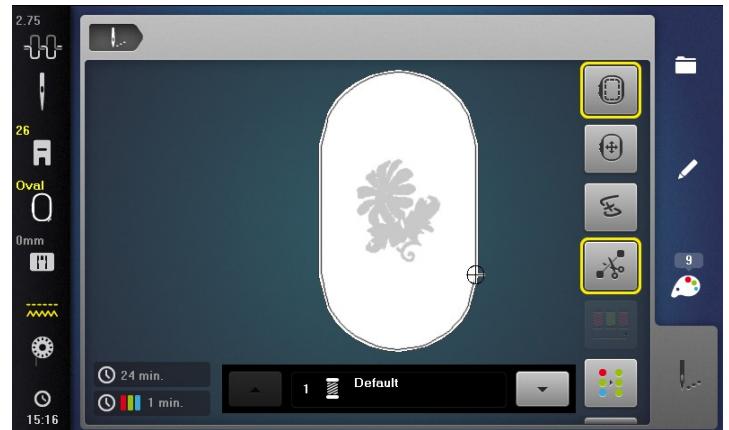
Touch OK (needle icon) to go to the stitching screen.

Touch the Basting Box icon.

Toggle the icon between the choice of basting:

- No basting
- Basting around the design
- Basting around the hoop

A yellow outline indicates basting is activated.



Thread-up Command



If you wish, you can bring the bobbin thread to the top to secure it manually with just one step. This feature is particularly useful when quilting in-the-hoop to prevent the bobbin thread tail from being caught in the stitches on the wrong side of the project.

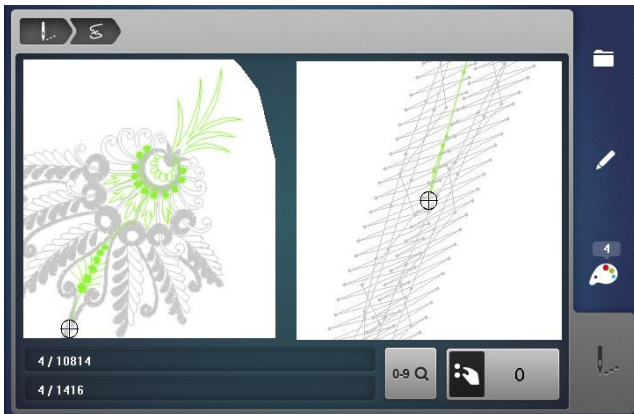
Thread-up Command

To bring the tail to the top, the machine must be in the stitching screen ready for embroidery.

- Hold the upper thread.
- Push the Bobbin Thread Up button on the head frame of the machine.
- Pull the bobbin thread to the top and secure.



The Embroidery Sequence Control is used to move forward and/or backward in the design. If the needle or bobbin thread should run out or break, using this feature will easily get you to the spot in the design where the error occurred.

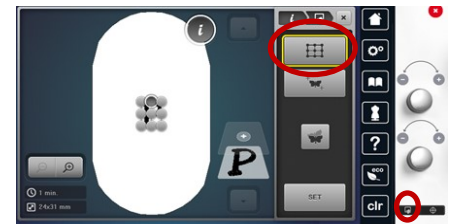
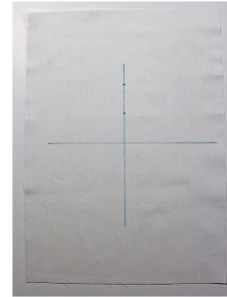


- Touch the Embroidery Sequence Control icon; the motif is enlarged for a better view of the exact place of the thread breakage and an Information Area appears.
Note: if the machine senses that either the needle thread or the bobbin thread has broken, the Embroidery Sequence Control screen will be automatically visible.
- Turn the stitch width knob counter clockwise (or clockwise) to move the embroidery hoop backward (or forward) in the embroidery sequence.
 - Turn the stitch width knob slowly to move the hoop stitch by stitch.
 - Go back stitch by stitch to a position several stitches before thread breakage occurred to resume stitching.
- To resume stitching, touch the Start/Stop button on head frame and the Embroidery screen reappears.



Pinpoint Placement can also be used to resize a design exactly between two marked points on the hooped fabric. Exercise caution when using this feature so that the design is not enlarged too much. Always do a test stitch out to ensure quality of embroidery.

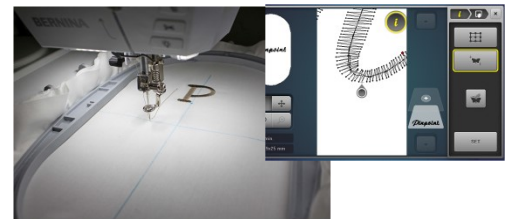
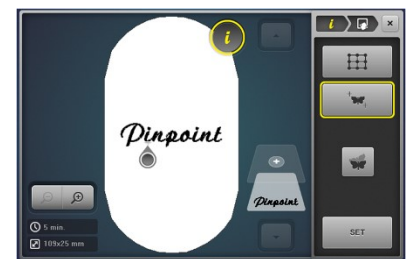
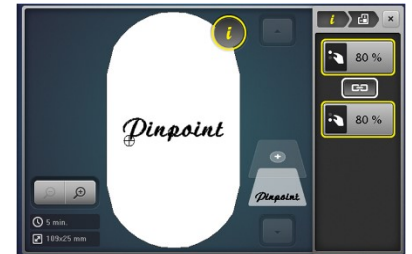
- Hoop fabric and stabilizer after marking as follows. When hooping do not try to align perfectly straight. This hooping will be used for this sample and for the free point positioning on the next page.
 - Mark the horizontal and vertical centers of a 10" x 14" rectangle of fabric.
 - Mark a dot on the vertical line 1 ½" up from the horizontal line.
 - Mark a second dot 1 ½" up from that dot.
- In the Embroidery Menu, select the Built-in Designs Folder.
 - Select Alphabet Folder.
 - Select the Happy Times Alphabet (B 880 PLUS: #31, B 790: #22).
 - Type the letter P.
 - Touch the green check mark to confirm.
- Touch the Pinpoint Placement icon in the "i" menu.
- Select the Grid icon.
- Touch the upper center dot. Use a stylus to ensure that you touch the correct dot. The dot will turn dark grey when selected.
- Use the Upper and Lower Multifunction knobs to move the needle position to the top dot marked on the fabric.
- Touch Set to confirm placement. The dot is now outlined in yellow. *(Note that the size of the design is 24x31mm.)*
- Touch the bottom center dot. The dot will turn dark grey.
- Use the Upper and Lower Multifunction knobs to move the needle position to the bottom dot marked on the fabric.
- Touch Set to confirm placement. The dot is now outlined in yellow.
- Note that the design is now approximately 30x38 mm. (The actual size will vary depending on the angle in which the fabric was hooped.) The design has now been resized proportionately to fit between the two dots and rotated to match the vertical line on the fabric.
- Close the Pinpoint Placement Screen.
- Close the Embroidery Editing Screen. Select the Embroidery icon.
- Stitch-out (needle) icon to stitch-out the letter.
- When the motif is complete, touch the Checkered Flag.



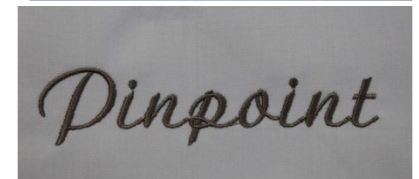
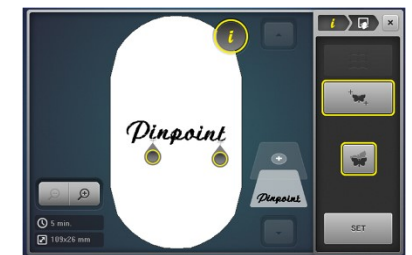
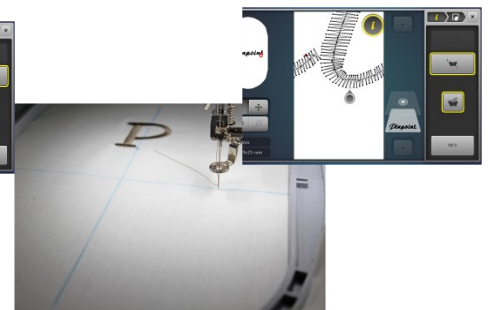


Positioning dots as desired (free point positioning) allows easy and exact positioning of embroidery motifs or lettering on the fabric. The points can be defined as you like within the embroidery motif.

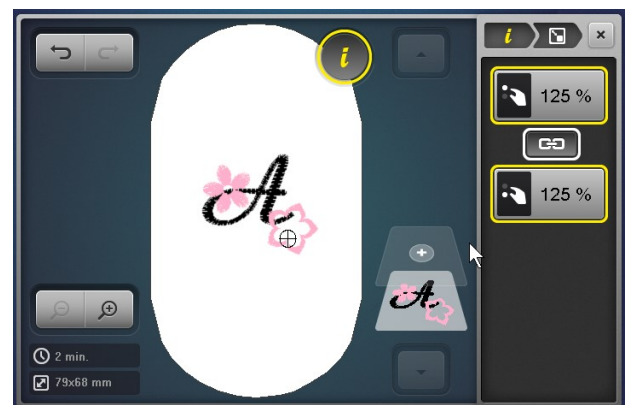
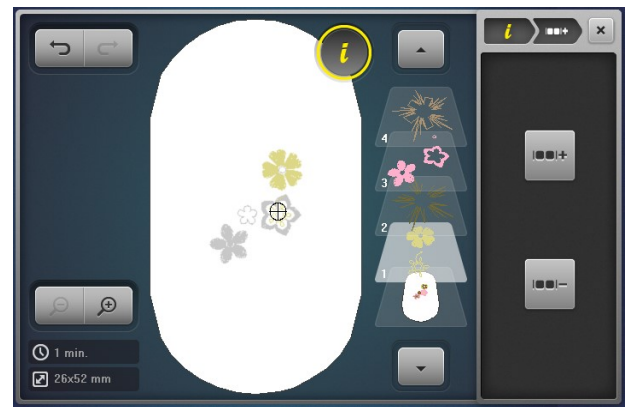
- In the Embroidery Menu, select the Built-in Designs Folder.
 - Select Alphabet Folder.
 - Select the Lisa Alphabet (B 880 PLUS #25, B 790 PLUS #16).
 - Type Pinpoint with upper case P and the rest in lower case.
 - Touch the green check mark to confirm.
- Select the Information Icon.
- Select Change Motif Size icon.
- With the Maintaining Proportions icon activated (lock outlined in white) reduce the size to 80% by using either Upper or Lower Multifunction knob.
- Touch the “i” breadcrumb.
- Select the Positioning Dots as Desired icon.
- Touch the area below the letter “i”. A teardrop shape will appear.
- To ensure accuracy, zoom in as far as possible (5 times) to confirm that the cross at the top of the teardrop is at the lowest part of the “i”. If it is not, re-touch the screen at the desired spot.
- Use ONLY the Lower Multifunction knob to align the needle with the drawn horizontal line.
- Touch Set to confirm the placement.



- Zoom out as much as possible (5 times) until you see the hoop and touch the screen below the “t”.
- Zoom in as much as possible (5 times) to confirm that the cross is at the lowest part of the letter “t”. Re-touch the screen in another spot if needed.
- Use only the Lower Multifunction knob to position the needle along the drawn line.
- Zoom back out 5 times and confirm that there are two teardrops with yellow outlines at their centers.
- Close the Pinpoint Placement Screen.
- Center the design.
 - Touch the Center/First Stitch button on the frame head. (If the crosshairs are not at the center of design, touch the button again.)
 - Use the Upper Multifunction knobs to move the needle to the marked center on the fabric.
- Close the Embroidery Editing Screen. Select the Embroidery Stitch-out (needle) icon to stitch-out.
- When the motif is complete, touch the Checkered Flag.



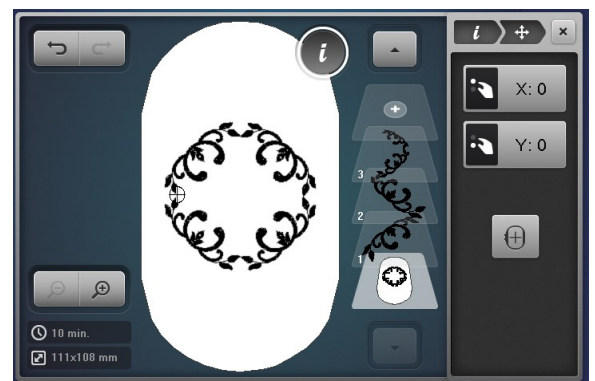
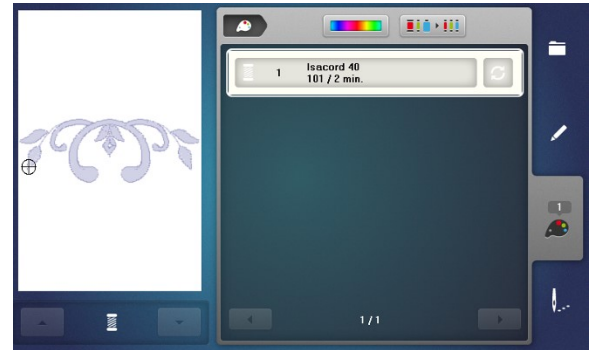
- Select Motif:
B 880 PLUS: Folder 8, Subfolder 9, Design 2
B 790 PLUS: Folder 5, Design 24
- Touch the “i”.
- Select the Group icon. Notice that there is only one layer in the layer panel.
- Select Ungroup. Notice that there are now multiple layers. The individual layers can now be edited individually.
- Swipe to delete (select the layer and slide to the right) all the layers except for the pink flowers layer.
- Select the layer and touch Group.
- Touch Ungroup. Delete the layer with the pink circle leaving only the two flowers.
- Select Add.
- Navigate to the Lisa Alphabet (B 880 PLUS: Alphabet Folder 25/B 790 PLUS: Alphabet Folder 16).
- Select the letter A or your initial. Touch the green check to confirm.
- Touch the Resize Motif icon. With the Maintaining Proportions button locked (surrounded in white), resize the design to 150%.
- Select each flower layer and move them around so they overlap the initial.
- Select the letter layer.
- Touch “i” in the breadcrumb and then touch Rearrange.
- Use the down arrow to change the stitching order so that the letter is in layer 1 and will stitch first.
- To group designs, the layers must be adjacent. The layer selected will be grouped with the layer immediately above it in the layers panel.
- Select the initial.
- Select the “i” in the breadcrumb and select the Group icon.
- Select the Group icon. The initial and one flower are grouped.
- Select Group again and all elements are grouped. Now any editing features will be applied to all units.
- Select the “i” in the breadcrumb and Resize Motif.
- Resize the entire unit to 125%.
- Select the “i” in the breadcrumb.
- Select the Move Motif icon and then Centering the Embroidery Motif.
- Close Information. Select the OK (needle) icon and stitch the design.



Recolor, Move, Rotate, Duplicate Rescale, Mirror Image



- Select Motif:
B 880 PLUS: Folder 10, Design 31
B 790 PLUS: Folder 14, Design 31
- Select Hoop Selection and the Large Oval hoop; Close.
- Select the Color icon.
- Touch the arrows to the side of the color bar. Make sure Isacord 40 is the thread type. (Use the left/right arrows as needed to navigate there if needed.)
- Touch the 0-9 icon and type 0020. Touch the black color bar at the bottom of the screen.
- Touch the Edit icon (pencil) to return to the editing screen.
- Select “i” and touch Change Motif Size icon.
- With the Maintaining Proportions icon engaged (surrounded by white outline, change the size to 120% using either Multifunction knob).
- Touch the design on screen and move it left of center.
- Select the “i” breadcrumb; select Rotate Motif. Rotate the design to (-)44°
- Select the “i” Up/Down. Position so that leaf tips are close but not touching. *(You may want to use Zoom (5 levels) for better visibility when aligning designs; use the multi-function knobs to fine tune placement; Un-zoom.)*
- Select the bottom-most layer to select All.
- Select Duplicate.
- Select Mirror Image left/right and move into place using the multi-function knobs (or dragging and dropping with the stylus) so that the tips of the flowers are close but not touching.
- select the lowest layer to select All.
- Touch the “i” breadcrumb; select Move and select Center to center the design in the hoop.
- Touch Needle icon and embroider.



Tip: Using the breadcrumb navigation will allow the information menu to remain available (open) for functions in the information screen during on-screen editing.



- Select the Zurich Alphabet: B 880 PLUS Alphabet Folder #26/B 790 PLUS Alphabet Font #17.
- Enter your first name, selecting upper and lower case letters as desired. Touch the green check to confirm.
- Select Hoops; select Large Oval hoop then close the window.
- Select the ADD symbol on upper layer.
- Select the Zurich font; enter your last name using upper & lower case letters as desired. Touch Green Check to confirm.
- Select “i” and the Move Icon; use the Lower Multifunction knobs to move the last name below the first name. (Or simply touch your last name on the screen or select it in the layers and drag it to the desired location.)
- Select Hoops; touch Show Grid icon 2x to activate grid.
- Close the Hoops window and Select “i”.
- Select the Move function, and use Multifunction knobs to arrange the lettering in a pleasing arrangement using the grid as a guide. The red lines denote the horizontal and vertical centers of the hoop.
- Select the lowest layer to select all motifs.
- Touch the “i” in the Breadcrumb.
- Select Move Motif; then touch Centering the embroidery motif icon to center the motif in hoop.
- If needed to fit name in the hoop, select Rotate; touch +90°.
- Close the information window.
- Touch Needle icon (OK). Stitch.





Enter single letters or words and use Rescale to change the size of the lettering object.

- In the Embroidery Selection Menu, select Open New Motif, select Alphabets folder: select Folder #1 Drifter font.
- Enter BERNINA; touch Green Check to confirm.
- Select Hoop icon and select Large Oval hoop; close screen.
- Touch “i”; select Duplicate 2x to create 3 words total.
- Move the text on screen by selecting the text on the touch screen or by selecting the layers to the right of the hoop on screen and dragging (or using Multifunction Knobs) to desired location. Arrange the text as shown.
- Select “i”; select the word at the top of the screen.
- Touch the Change Motif Size icon. Notice the white outline around the Maintaining Proportions icon. This indicates that the design will be resized proportionately. Use either the Upper or Lower Multifunction knob to reduce the size to 90%.)
- Touch the center word on the screen.
- Touch the Maintaining Proportions (lock) icon and the white outline will disappear. This indicates that the width and height can now be resized independently.
- Use the Lower Multifunction (Length) knob (to change lettering height to 70%.
- Select bottom line of text on the screen.
- The Maintaining Proportions icon will still be disabled with no white outline.
- Use the Upper Multifunction (Stitch Width) knob (Stitch Width knob) to change the lettering width to 70%.
- Select the lowest layer (there will be no number on the layer) to select all three words.
- Touch the Move Motif icon.
- Touch Centering the Embroidery Motif to center the design in the hoop.
- Close the Information box by touching the “x” in the upper right corner.
- Go to the Embroidery Menu by touching the OK (needle) icon.
- Stitch words (optional).





This exercise involves changing the spacing between individual letters within a word.

- Select Alphabets folder: select folder #1 Drifter alphabet.
- Select Letters in Lower Case. Enter **bernina**; touch Green Check to confirm.
- Touch the Hoop Icon and select Large Oval hoop; select Close.
- Select Add Motif (from the layers), select #1 Drifter alphabet and lower case. Use the Lower Multifunction (Length) Knob to move the second **bernina** below the first.
- Enter **bernina**; touch Green Check .
- Repeat the Add Motif (*do not use Duplicate) process to create the third **bernina**.



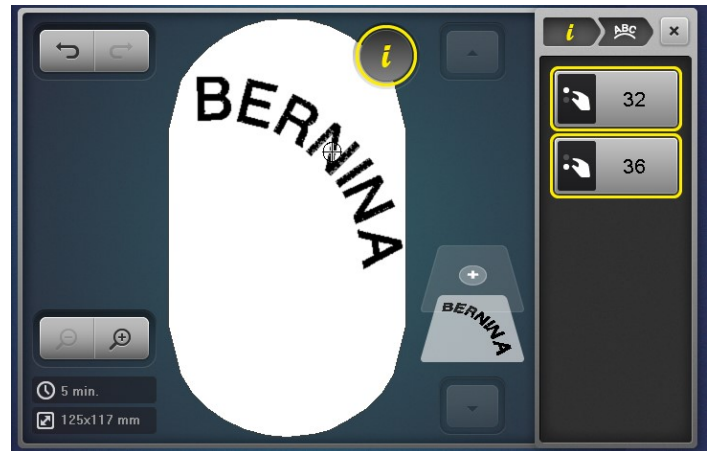
- Starting at the top make changes as follows:
select the word and touch “i”; select Letter Manipulation.
- Use the Stitch Width knob to make changes:
 - 1st **bernina** (Layer 3) Stitch Width (Upper Multifunction) knob = 0; Touch next word.
 - 2nd **bernina** (Layer 2) Stitch Width (Upper Multifunction) knob = 25; Touch next word.
 - 3rd **bernina** (Layer 3) Stitch Width (Upper Multifunction) knob = 45

**Note: Lettering that is duplicated does not retain the Letter Manipulation (Word Art) properties, each word must be added new to create the combination.*

Word Art cannot be applied after lettering has been ungrouped, even if they are grouped back together.



- Select Alphabets folder: select a desired font.
- Enter **BERNINA**; touch Green Check to confirm.
- Select Hoop icon and select Large Oval hoop, close screen.
- Touch “i”, Select the Letter Manipulation icon (ABC):
Use the *Stitch Width (Upper) Multifunction knob* to add space between each character. Use the *Stitch Length (Lower) multi-function knob* to change the baseline.
- Select the “i” in the Breadcrumb and Rotate Motif. Rotate the design approximately 41°. Position as shown in right.
- Select Add Motif and add each of the following words one at a time, selecting a desired font and using upper and lowercase choices: **Made; to; Create.**
- Select each word and manipulate the character spacing and baseline using the Letter Manipulation function. Select Rotate icon for additional changes if desired.
- To center the combined design, select the bottom grouped layer. Select the Move Icon and select the Center icon.
- Close the Information screen and select the OK (needle) icon to go to the stitch out screen.



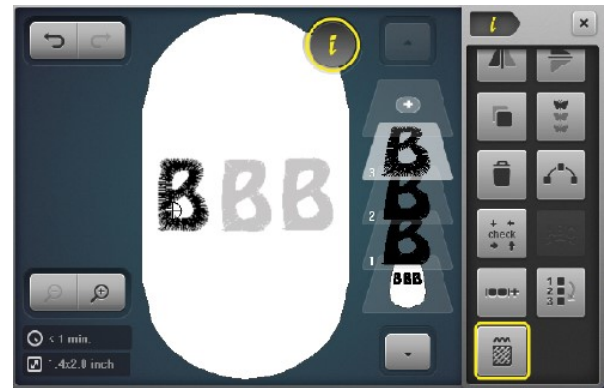
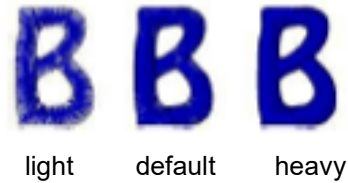
Tip: Remember if you make a change that you do not like, you can use Undo/Redo! Touch the back arrow to undo the last entry. Repeat to cancel the last entries step by step. Touch the Redo icon (forward arrow) to redo the last step. Repeat to restore the last entries step by step.

Note: If you notice jump stitches between the letters as shown in the picture to the right, decrease the Jump Stitch Length in the Setup Menu > Embroidery Settings > Automatic cut/Jump stitch length > Reducing the length for thread cut of the connecting stitches. Change the number to 1.



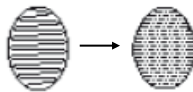


- Select the Alphabets folder: select Folder #1 Drifter font.
- Enter the letter **B**; touch the Green Check to confirm.
- Select Hoop icon and select Large Oval hoop, close screen.
- Select “i”; select the Altering the Size icon. Ensure that the Maintaining Proportions icon is outlined in yellow. Use the Upper Multifunction knob to increase the size to 200%.
- Select the “i” breadcrumb (to keep the “i” menu open).
- Duplicate design 2 times so that there are 3 **B**s on screen;
- Use the “i” breadcrumb to go back and select the Move icon; move motifs so that they are aligned left to right.
- To Center, select the bottom layer and touch the center icon within the Move icon menu. Select the “i” breadcrumb.
- Select the “i” breadcrumb. Select **B** on right or in the layer; Select Embroidery Stitch Density; alter satin density to 160%. Touch the green check mark to confirm.
- Select **B** on left or the layer. Select Embroidery Stitch Density; alter satin density to 40%. Touch the green check mark to confirm.
- Select Embroidery Menu and embroider sample, noting stitch density of each letter.



Stitch Type

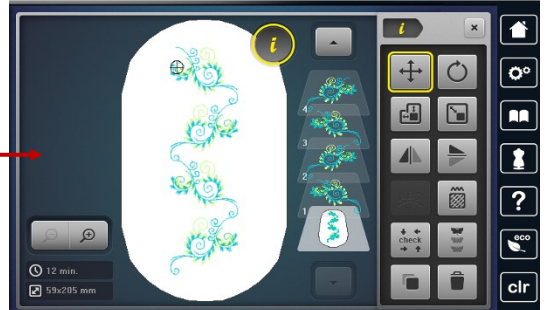
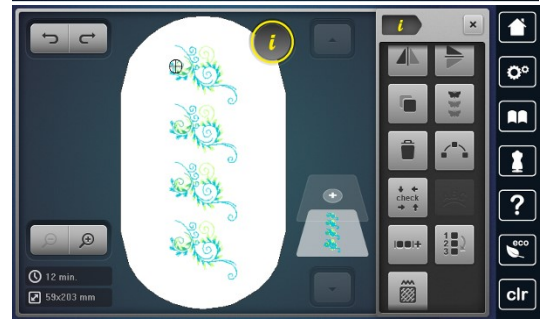
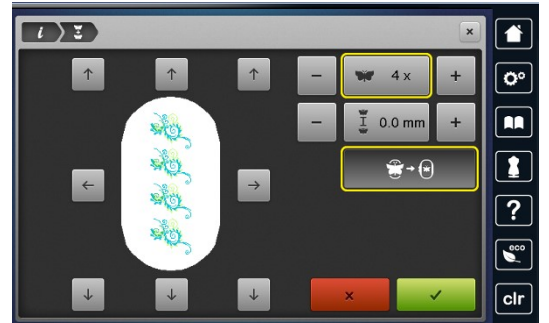
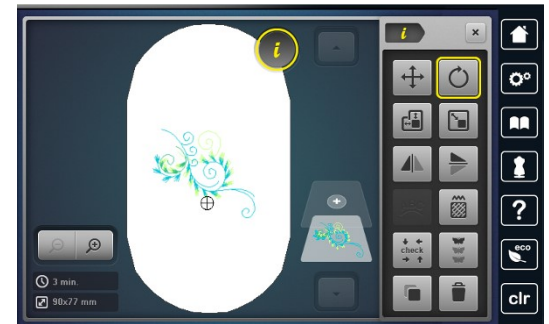
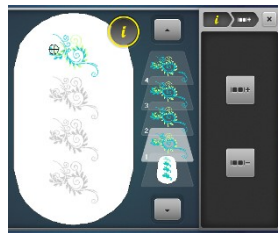
- Satin Stitching can be changed to Step Stitching in addition to changing Stitch Density.
- Step Stitch length can be increased or decreased.





Endless Embroidery helps you line up embroidery designs in a vertical orientation and indicates the most precise placement for borders and rehooping with the use of registration marks. With Endless Embroidery, you are successful every time.

- In the Embroidery Menu, select the Built-in Designs Folder.
 - *B 880 PLUS*: Select Folder 8, Subfolder 1, Design 8
 - *B 790 PLUS*: Select Folder 1, Design 21
- Select “i” and Rotate Motif; rotate +15°.
- Touch the “i” in the Breadcrumb and select Endless Embroidery.
- Set the Design Repeat to 4 and select Fit to Hoop.
- Deselect the Registration Marks.
- Select Green Check to confirm.
- *Note: Group the set of designs into one unit to edit (resizing, rotating, etc.) the entire unit as a whole.*
- To edit the designs individually, select the “i” in the Breadcrumb. Touch the Group icon, then Ungroup.
 - Select the Layer 2 motif and Mirror Image Left/Right.
 - Select the Layer 4 motif and Mirror Image Left/Right.
- Close the Embroidery Editing Screen.
- Select the Embroidery Stitch-out (needle) icon to stitch-out.
- Select the Color Resequene and Basting Box Around the Hoop.

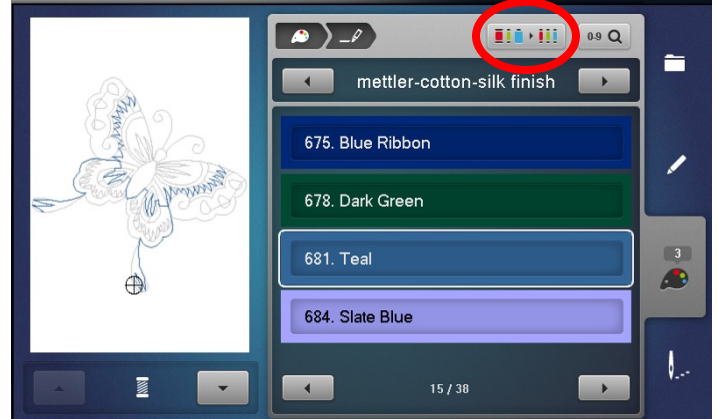
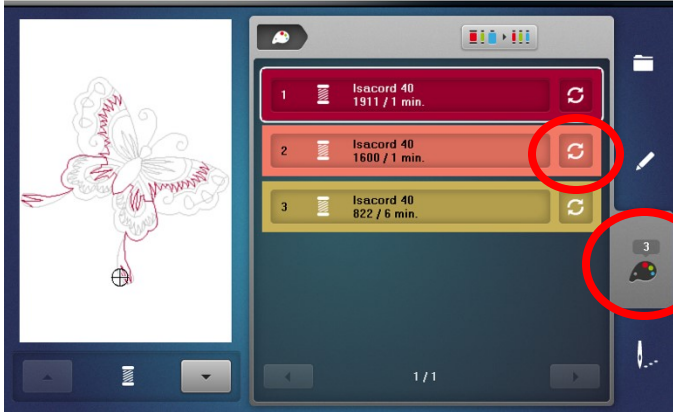


Notes: Endless Embroidery

- The embroidery motif is duplicated as many times as possible to fill the selected hoop size.
- The lower reference points are the default. Side and upper reference points can be added.
- The number of motifs can be increased or reduced via the Stitch Width knob or the + or - icons. The space between each motif can be increased or decreased via the Stitch Length knob or the + or - icons. Display is in mm.
- Should more motifs be entered manually than will fit in the hoop, the hoop appears in red. Select Fit to Hoop to automatically adjust the size of the motifs so they all fit in the hoop.
- Touch the field in the center to reset of any of these functions to default.



Individual thread colors and thread brands can be re-assigned on-screen.



Re-assigning Thread Colors

- In the Embroidery Menu, select the Built-in Designs Folder.
- Select the following design:
B 880 PLUS: Folder 8, Design 13
B 790 PLUS: Folder 9, Design 4
- Select the Colors (palette) icon.
- Touch the Thread Color icon.
- Use the arrows beneath the thread colors to scroll until the desired color appears. (Select the color).
- Thread colors can also be selected by color number via the 0-9 keyboard.
- The new color is reallocated and the altered color is displayed in the design on-screen.

Changing Thread Brand

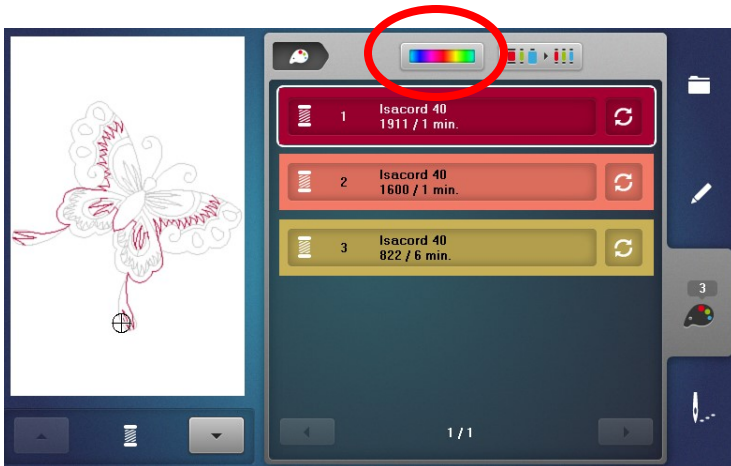
- In the Embroidery Menu, select the Built-in Designs Folder.
- Select the following design:
B 880 PLUS: Folder 8, Design 13
B 790 PLUS: Folder 9, Design 4
- In the Colors Menu, touch the Thread Color icon. Use the arrow icons above the thread colors to scroll until the desired brand appears.
- Touch the Thread Brand icon.
- The thread brand in the display changes and the new thread details appear.

Note: Different thread brands can be assigned within one design.

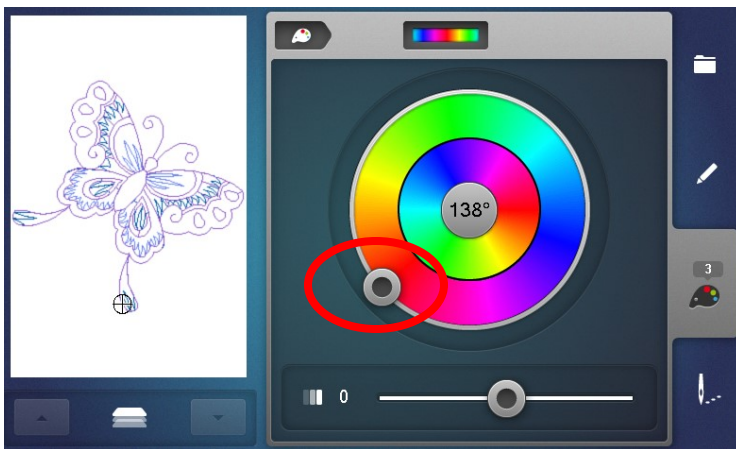
- When finished, touch the Embroidery Stitch-out (needle) tab to stitch.



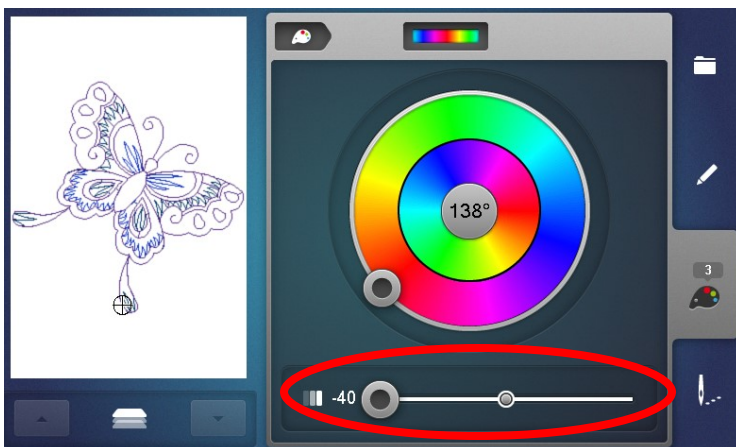
Use the Color Wheel to quickly change the colorway of your motifs on-screen; the new thread colors are automatically assigned to the motif once modified.



- Select the Color Tab.
- Select the Color Wheel icon.



- Turn the slider on the center wheel clockwise using your touch screen stylus (or rotate the Stitch Width knob) to change the color palette of the design.



- Adjust the brightness of the design by moving the slider at the bottom of the screen left or right.
- The new thread colors are automatically assigned.
- When satisfied with the new color-way, select the Embroidery Stitch-out (needle) tab to stitch.



Importing stitches into embroidery allows you to embroider backgrounds of individual stitches and stitch combinations precisely. Buttonholes and Sideways Motion stitches can be imported and embroidered with perfection as well.

- In the Embroidery Menu, select the Sewing Stitches folder.
- Select the Decorative Stitches folder > Filigree Sideways Motion Stitches Folder #1201 > Stitch #11. The stitch will then appear on the Embroidery Edit screen.
- Select the Hoop icon and select the Oval Hoop. Close to return to the Embroidery Edit Screen.
- Touch “i” and select the Endless Embroidery icon. Select Fit to Hoop and deselect the Registration Marks. Touch the Green Check to confirm.
- The entire set of stitches has been grouped.
- Touch “i” and select Duplicate, then Mirror Image Left/Right.
- Use Drop and Drag to move the second set into place.
- To center the combined design, select the bottom grouped layer. Select the Move Icon and select the Center icon.
- Close the Embroidery Editing Screen. Select the Embroidery Stitch-out (needle) icon to stitch-out.
- Select Single Color and deselect Cutting of Jump Stitches.
- Stitch Design.

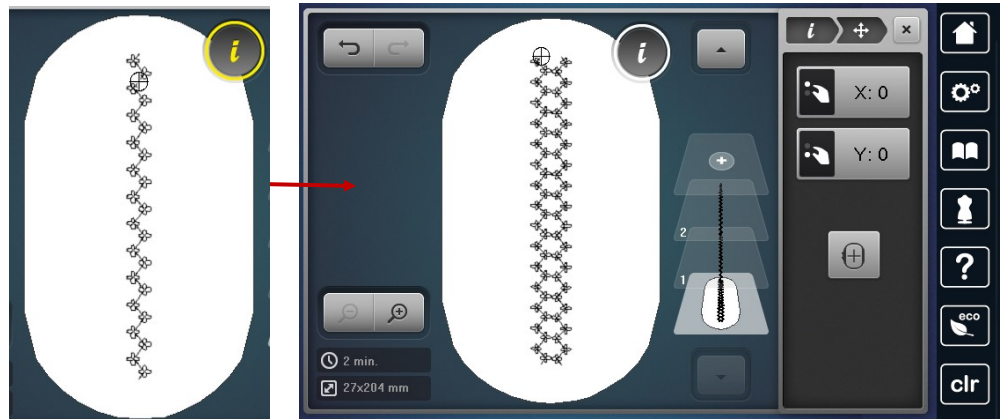


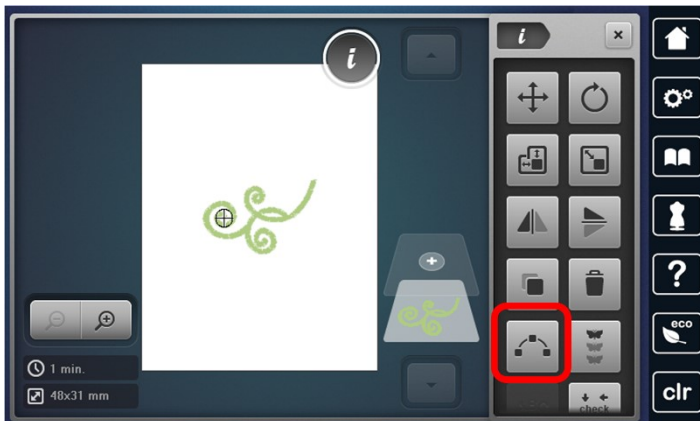
Notes: Importing Stitches

Stitches can be edited.

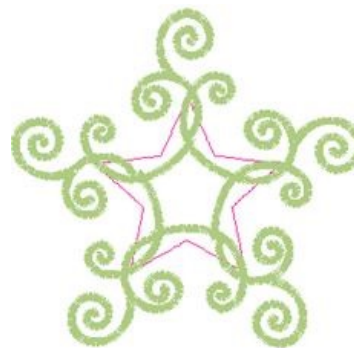
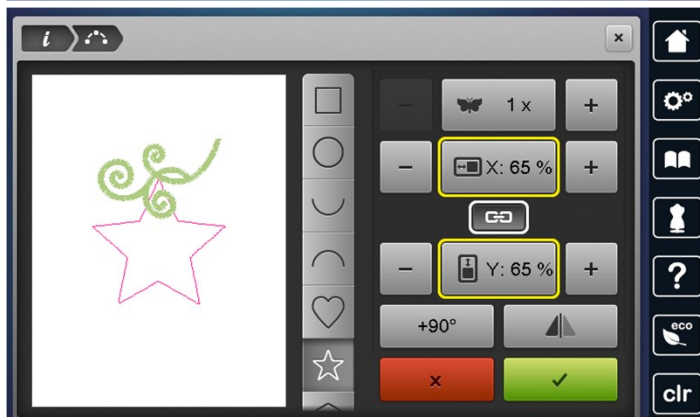
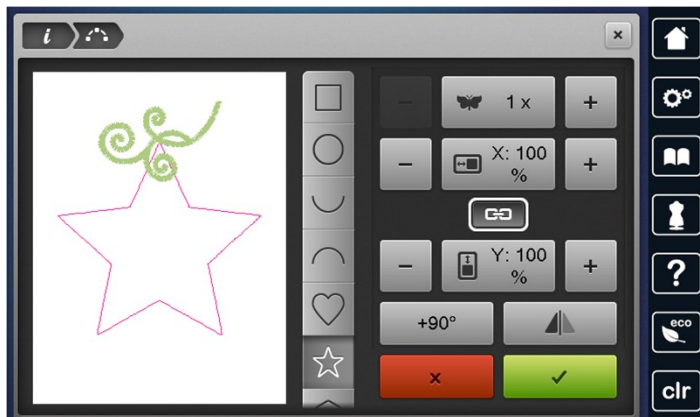
Stitches can be used as single stitches or in combinations.

In the B 880, try using stitches with the Shaping Function to create a wide variety of frames.

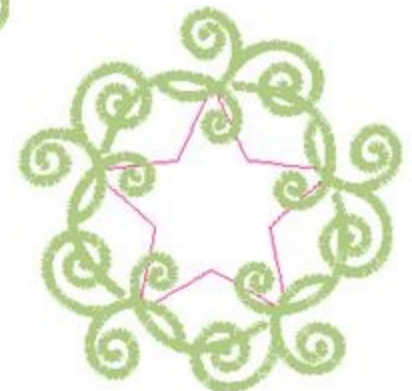


**BERNINA 880 PLUS ONLY**

- In the Embroidery Menu, select Folder 5, Design 5.
- Select the Hoop icon, and select the Medium hoop, close.
- Select “i” and the Shaping icon.
- Select the star shape.
- Change size to 65%. With the lock engaged, the shape size is changed proportionately; Unlock to change height and width independently. Changing the size of the shape can provide spacing between motifs.
- Change number of motifs to 5.
- Touch +90 one time. Rotates each design 90 degrees; selecting +90 again will provide a different arrangement.



Touch +90 once.



Touch +90 again.

**BERNINA 880 PLUS ONLY**

- Select Folder 5, Design 5.
- Select the Hoop icon, and select the Medium hoop, close.
- Select “i” and the Shaping icon.
- Select Circle, 8 motifs, Mirror Image, Deactivate +90.
- Select Square, Deactivate Mirror Image, engage +90 one time.
- Select Green Check to confirm.



BERNINA 880 PLUS and BERNINA 790 PLUS

Embroidery Functions

EMBROIDERY MOTIF SELECTION							
	Alphabet Folder		Embroidery Motifs Folder		Stitch Patterns Folder		My Designs Folder
	Open New Motif		Add Motif		Save Motif		Delete Motif
	Embroidery Computer - Select Motifs from Folders		USB Stick— Select Motifs from Stick		Confirm		Cancel
	Upper Thread Tension		Edit Embroidery Motifs		Add Motif		Virtual Positioning / Absolute Check
	Needle Selection		Undo/Redo		Word Art		Basting - Motif/Hoop
	Needleminder		Information i-dialog		Group/Ungroup		Move Hoop
	Presser Foot Selection/ Presser Foot Display		Cancel		Rearrange Stitch Order		Sequence Control
	Hoop Selection/ Hoop Display		Move Motif		Checking the Motif Size		Cut Connecting Stitches
	Stitch Plate Selection		Center the Motif		Endless Embroidery		Color Resequence
	Feed Dog Up/Down		Rotate Motif		Fit to Hoop		Single/Multi-color Motif
	Bobbin filling with low level status indicator		Altering the Size		Shaping (B 880 PLUS only)		Engage Max. Speed
	Clock/Alarm (B 880 PLUS only)		Maintaining Proportion		Altering stitch type/stitch		Embroidery Finish
	Home		Pinpoint Placement		Zoom In (1-5 times)		Motif Center
	Setup		Grid (Pinpoint Placement)		Zoom Out (1-5 times)		Move Hoop to Back
	Tutorial		Positioning dots as desired (Pinpoint Placement)		Moving the view		Move hoop to Center
	Embroidery Consultant		Reset (Pinpoint Placement)		Color Information		Centering the Embroidery Motif
	Help		Set (Pinpoint Placement)		Color Wheel		Jump Stitch Length
	Eco (press long for slide show)		Mirror Image (Left/Right)		Convert Thread Brand to Another		Thread Away On/Off
	Back to basic setting		Mirror Image (Up/Down)		Change Color / Thread Brand		Inch/mm Display
	Thread Up Command		Duplicate		Embroidery		Securing Stitches