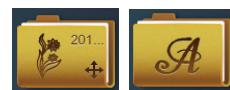


SIDEWAYS MOTION PATTERNS



B 880 PLUS, 790 PLUS Only

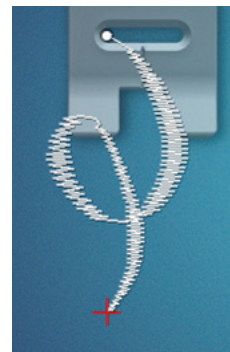
The B 880 PLUS and B 790 PLUS have built-in Sideways Motion Patterns. These are found in Menus 201, 501, 801, 1001, 1201 and 1601 and are indicated by a directional symbol on the menu. A large monogram directional alphabet can be found in the Alphabet menu.

***or use
Classroom
Sampler Fabric**




Sideways Motion Scenarios

- Sideways Motion Stitches used in Combinations.
- Sideways Motion Stitches created in Stitch Designer.
- Using Drag & Drop to join stitch patterns in combi-mode frequently produces a Sideways Motion situation.
- Sewing with Distortion engaged (B 880 PLUS). 
- Engaging the Multi-Directional Sewing Icon. 



Sideways Motion Information

- Sideways Motion Stitches vary in size. When selected, the display on screen is in relation to the presser foot, so the entire view of the stitch may not be visible. If this is the case and you wish to see the entire view of the stitch, select the Fit to Window icon. 
- The white dot indicates the start point of the pattern, the red mark indicates the endpoint of the pattern.

Tips for Stitching Sideways Motion Stitches

- Always use Foot #40C for sideways motion sewing – no other foot is designed to stitch sideways successfully.
- Sideways motion stitches cannot be sewn with Dual Feed.
- Determine stabilizer needs based on fabric choice and stitch selections. Light-weight tear away stabilizer or starch may be needed.
- In Sideways Motion Stitching, the feed dogs move the fabric in multiple directions, including sideways, forward and backward to stitch the pattern.
- Only fingertip guiding (a very light touch) is recommended to allow the machine to make the angled movements at the pace required.
- Drawing parallel lines ½" apart on the fabric provides visual guidelines to keep the fabric straight and parallel to the foot.
- Sewing at a consistent medium speed is preferred in order to give the machine time to move the fabric for stitch formation. Setting the slide speed control will control an even speed.
- Engaging Pattern End (programmed as Pattern End only) provides a stopping point to check the sewing.



Do you know:

- **How to identify Sideways Motions Folders?**
- **Which foot to use for Sideways Motion Stitches?**

Sew HOW

MULTI-DIRECTIONAL STITCHING

B 880 PLUS, 790 PLUS Only

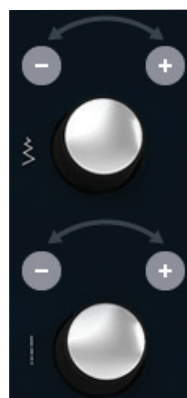
The B 880 PLUS and B 790 PLUS can sew Multi-directional stitches and stitch combinations in 360°. This allows angled sewing without angling the fabric. Use Sideways Motion Foot #40C for all multi-directional sewing.



- Select the stitch, then Information ("i"), then the multi-directional icon.
- Rotate the selected stitch in 45° increments by touching one of the direct-selection nodes on the screen (indicated by the yellow outlines in the graphics below).
- Rotate in 0.5° increments by turning the stitch width knob.
- Rotate in 1° increments by turning the stitch length knob.
- The Stitch Altering Area indicates the sewing direction of the stitch and the Start (•) and Stop (+) points of the selected stitch.
- The Multi-directional function only appears in the "i" menu when the selected stitch can be sewn in multiple directions.

Keys to Successful Multi-Directional Stitching

- Support fabric with stabilizer.
- Attach Slide-on Table.
- Draw parallel guidelines to aid in visually keeping the fabric straight.
- Use fingertip guiding (lightly holding the fabric without inhibiting or helping it).
- Attach Sideways Motion Foot #40C.



Stitch width
knob--0.5°
increments

Stitch length
knob--1°
increments







Sew HOW

Do you know:

- How to guide the fabric for Sideways Motion?
- Three ways to set the angle?

MULTI-DIRECTIONAL STITCHES

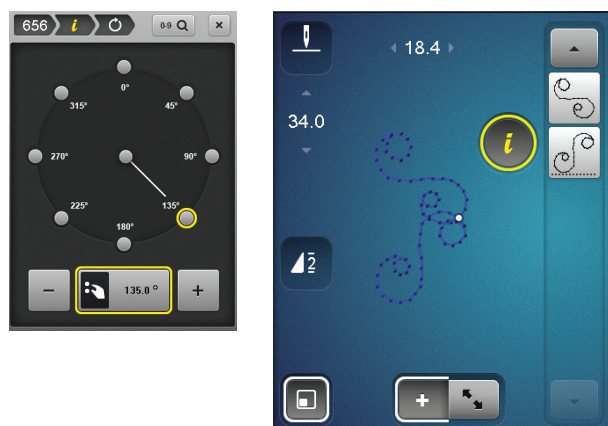
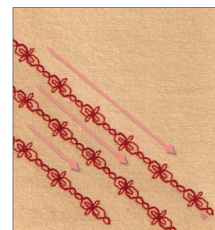
B 880 PLUS, 790 PLUS Only

-  Firm woven fabric, 10" x 10"
-  Heavyweight tear-away stabilizer 10" x 10"
-  80/12 Universal
-  Polyester or cotton embroidery thread
-  Default
-  Sideways Motion Foot 40C



DIRECTIONAL SEWING-Single Mode, Single Direction

1. Select Stitch #644. Select the "i" menu.
2. Select the Multi-Directional Sewing icon; set the angle to 135°.
3. When sewing this stitch, let the feed dogs move the fabric sideways to stitch the programmed pattern.
4. Select Pattern End to finish.



Directional Sewing-Programmed Combi (see sample on Page 43)

1. Open Combi Mode; use 0-9 and input 656 and Check.
2. Select 0-9 to close. Add a second copy of 656.
3. Select "i"; select pattern 1.
4. Select the Multi-directional icon and set the angle to 135°.
5. Select pattern 2. Select the Multi-directional icon; set angle to 225°.
6. Select the "i" breadcrumb.
7. Select All (Edit the Complete Combination icon).
8. Set Pattern Repeat to 2 and stitch. (Selecting Modify Screen provides a preview of the stitch).
9. Select Modify Screen to exit.



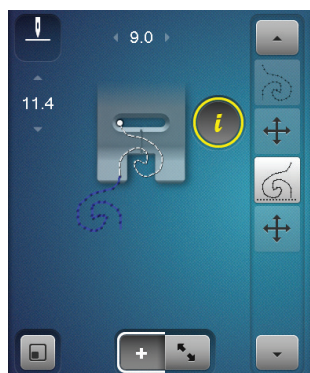
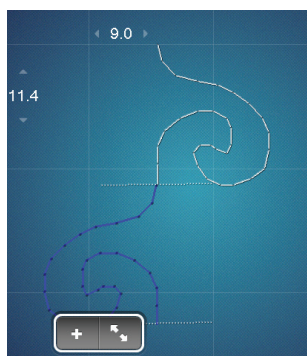
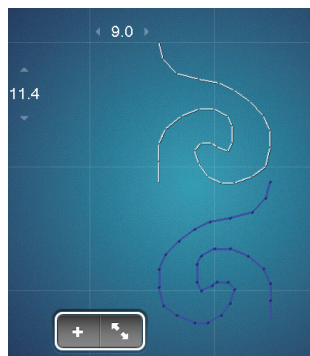
Applying Multi-Direction to a Combination

1. Open Combi Mode. Select one of the saved combinations from Personal Program or create a new combination. If needed, delete the current combination following Page 33 instructions.
 - Use 0-9 to add stitches #751 and #749, selecting check after each entry.
 - Select 0-9 to close.
2. Select "i"; select All (Edit the Complete Combination icon).
3. Select the Multi-directional icon and turn the knobs to set the sewing angle.
4. If no presser foot is selected (yellow setting), Sideways Motion Foot #40 becomes the recommended foot.



CONNECTING STITCHES

B 880 PLUS, 790 PLUS Only



Using Drag & Drop with Combinations

1. Open Combi-Mode and delete by swiping any stitches that are present.
2. Select Decorative Stitches; select Menu 701. Select Stitch 767 two times.
3. Select 'i' and engage Mirror Image Left/Right on the second pattern. The needle stop and start points are not the same for the 2 stitches, and a jump stitch will be sewn joining them.
4. Select Overview Combi Mode to create a continuous stitch. Move (Drag & Drop) the second pattern (blue) to line up with the first one as shown. Use the stylus and 'drag & drop' on screen or use the Stitch Width multi-function knob.
5. The new combi shows as a continuous stitch in the preview.
6. Select Overview Combi Mode to return to the stitch out screen. The combination will display the sideways motion icon between the stitches. This indicates the machine calculation of the move motion required to stitch what was drawn on the previous screen.
7. To stitch, attach Foot #40C (as recommended by the presser foot recommendation icon if there is not a foot set previously). Use the fabric swatch from previous page.
8. Close "i".
9. To Save the combination, select Personal Program. Select Save and select the highlighted combination.
10. To delete the entire combination from the screen view with a single command, select 'i', and select all (Editing the Complete Combination) and Delete (trashcan). Confirm and close the menu.
11. Try the same exercise with Sideways Motion Stitch #237.

Sew HOW

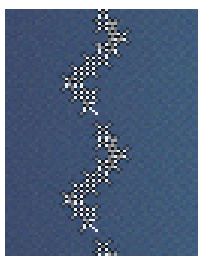
Do you know how to:

- Eliminate jump stitches between patterns?
- See a preview of the combination?

CONNECTING STITCHES AND MOVE MULTIPLES

B 880 PLUS, 790 PLUS Only

When stitches are moved to connect up, it can cause the overall pattern to have a gap, particularly if the stitches are moved to overlap. To achieve a continuously stitched pattern, use Move Multiples.



Using Move Multiples to Close the Gap in a Combination







1. Open Combi-Mode and delete by swiping any stitches that are present.
2. Input stitch #376 two times.
3. Select the Overview Combi Mode.
4. Select 'i'.
5. Engage Mirror Image Left/Right on the second stitch.
6. Drag and Drop (with the stylus or finger) to move the stitches to connect as shown. To fine tune the placement, use the multi-function knobs if necessary.
7. Looking at the preview on the side of the screen, the patterns do not connect.
8. Select the first motif in the combi.
9. Select the Move Multiples Icon.
10. Use the Stitch Length knob to close the gap watching the preview area.
11. Select Overview Combi Mode to return to the main sew out screen.
12. Pattern may be stitched and/or saved through Personal Program.
13. Try the same exercise with Sideways Motion Stitch #237.

Floral Combi

1. Open Combi-Mode and delete by swiping any stitches that are present.
2. Select 0-9 and input stitch #244 and #238.
3. Select Modify Screen.
4. Select 'i' and mirror image Left/Right second pattern. If Mirror Image is not available, deselect Move Multiples.
5. Drag and Drop to connect the stitches. To fine tune the placement, use the multi-function knobs if necessary.



ALL-OVER DIRECTIONAL STITCHING

-  Firm woven fabric, 6" x 6"
-  Heavyweight tear-away stabilizer 6" x 6"
-  80/12 Universal
-  Polyester or cotton embroidery thread
-  Default
-  Sideways Motion Foot 40C

Notes:

- Some adjustments may be necessary depending on the fabric, thread, and stabilizer used to create the stitch sample.
- This technique can also be created by importing sewing machine stitches into Embroidery, which will be covered in BERNINA Embroidery Machine Workbook.



FOR B 880 PLUS AND B 790 PLUS ONLY

This exercise features an all-over design created by selecting one stitch (#656 is shown in the sample) and changing directions as you sew.

1. Place stabilizer behind fabric.
2. Mark parallel guide lines about 1" apart on the fabric as a reference for guiding during the stitching process.
3. Select "i"; select Multi-Directional Sewing. Select 225° on the compass.
5. Select the "i" in the breadcrumb; Pattern Repeat 1x. Ensure that Needle Stop Down is set.
6. Stitch one stitch pattern and stop; do not remove the fabric.
7. Select Multi-directional Stitching; select 135° on the compass, leaving Pattern Repeat 1x and Needle Stop Down engaged.
8. Stitch one stitch pattern and stop; do not remove the fabric.
9. Stitch from one end of the fabric to the other, guiding fabric so that the "+" stays parallel and perpendicular to the presser foot.
10. Stitch additional rows of this stitch combination, covering the surface of the fabric.



Optional:

Create a 4-sided motif by selecting 315° and 45° as the third and fourth sides.

Sew HOW

Do you know how to:

- Change directions in 45° increments when Multi-Directional stitching?

STITCH DESIGNER OVERVIEW

B 880 PLUS, 790 PLUS Only

Stitch Designer has the ability to create entirely new stitches or to modify new ones. Stitches can be created by tapping points or free-hand draw with the stylus or fingertip. Variable sizes of stitches are possible.



Stitch Designer Tips

- 20 levels of UNDO.
- Created patterns are limited to 2,000 stitches each.
- Each grid equals 1 mm.
- The line in the middle of the stitch designer drawing area represents the center needle position.
- Use Snap to Grid for precise placement.
- Created stitches are sewn only from the sew out screen after confirming with the check in Stitch Designer.
- Created stitches can be 1) saved to the machine memory through Personal Program, 2) imported into embroidery and embroidered, or 3) saved to a USB stick for swapping or imported into the BERNINA Embroidery Software.
- Stitches from the BERNINA Embroidery Software can be imported into the B 880 PLUS/790 PLUS via a USB Stick and Personal Program. This includes stitches not found on the machine such as candlewicking or blackwork stitches, as well as any stitches designed in the software.

STITCH DESIGNER

B 880 PLUS AND B 790 PLUS ONLY

Creating New Stitches-Free-hand Drawing

1. Select the Stitch Designer icon from the sewing screen.
2. Touch the New icon to get a fresh page. The Pencil is the default when entering Stitch Designer.
3. With your fingertip or stylus, free-hand draw on the screen to fill the 9 mm boundary. Begin and end on the same or approximate vertical grid line for a seamless look.
4. Select New or Undo until pleased with the stitch.

Note: The highlighted area is 9 mm wide. The 9 mm lock icon is activated by default. If you wish to design a stitch wider than 9 mm, deselect the 9 mm lock.



Creating New Stitches-Snap to Grid

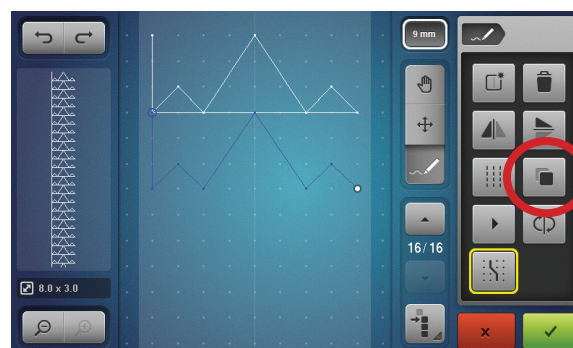
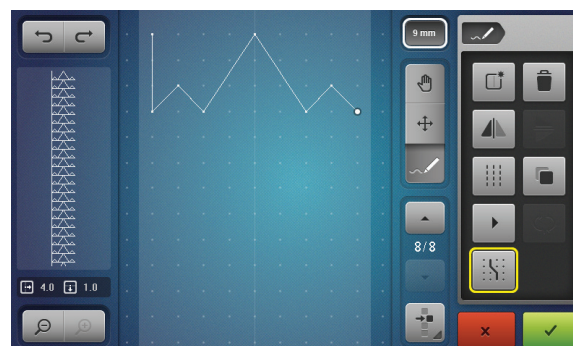
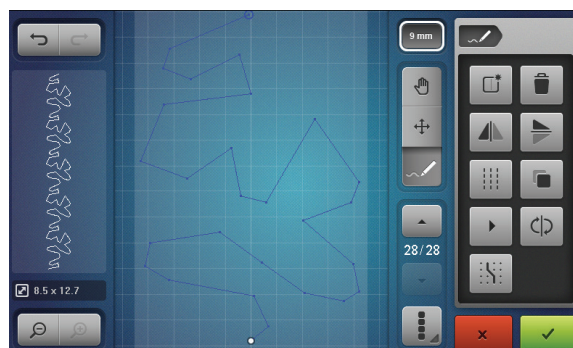
1. Touch the New icon to start another stitch.
2. Select snap to grid icon. Snap to Grid makes it easy to align points as stitch points will only fall on a dot (note the grid changed to dots).
3. Select the Pencil tool.
4. Design stitch by setting points:
 - Click 1: to begin stitch
 - Click 2: 3 grids down
 - Click 3: diagonal line 1 grid up and 1 grid over
 - Click 4: diagonal line 1 grid down and 1 grid over
 - Click 5: diagonal line 3 grids up and 2 grids over
 - Click 6: diagonal line 3 grids down and 2 grids over
 - Click 7: diagonal line 1 grid up and 1 grid over
 - Click 8: diagonal line 1 grid down and 1 grid over
 - Stop
5. Touch the Select All icon. Selected stitches are blue, and the Selection Icon changes to the selected choice.



6. Select Duplicate; the duplicate is added after the original pattern.

Notes:

The Delete icon (Trash Can) deletes whatever is selected--a single point, all or partial-whatever is blue is selected.



STITCH DESIGNER

Creating New Stitches--Snap to Grid (cont.)

7. Select Mirror Image Up/Down.



Note: The preview window shows what the design will look like when it is stitched.

8. Deselect Snap to Grid. With the duplicated part of the design still selected, select the Move Icon.



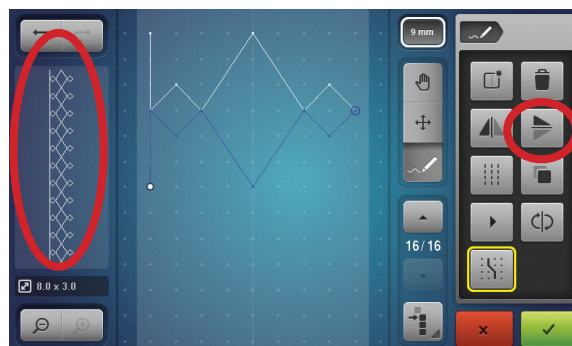
- Use the Stitch Length knob to move the design to overlap the first part of the design.
- The Stitch Width knob may also be used to move the design left and right if desired.

9. Play Stitch Preview (acts like Slow Redraw).



10. Touch the green check box to confirm the stitch pattern and return to the sewing screen.

11. Stitch out the new stitch if desired.



Save the New Stitch to Personal Program

1. From the Sewing Screen, select the Personal Program icon to save the custom stitch pattern.
2. Select the Save icon, and choose one of the 4 yellow folders.
3. Save the stitch by touching the new stitch (outlined in yellow), or by touching the green check box.



Sew HOW

Do you know how to:

- Freehand draw a new stitch?
- Create a stitch by tapping points?

STITCH DESIGNER

Editing an Existing Stitch (B 880 PLUS/790 PLUS Only)

1. From the Sewing screen, select menu 700 and stitch 736.
2. Select the Stitch Designer icon.
3. To move through a design, locate the current stitch point (indicated by the largest dot, and exact stitch number is noted in Active Stitch/# of stitches).
4. The up and down arrows allow you to move through the stitch pattern point by point.* Touch the up arrow to move to position 8 / 27.
5. Select the Move icon.
6. Drag the point in toward the center, or use the stitch length knob to move the point.
7. Repeat this operation on the two remaining sides.
8. Select the green check box to confirm; sew out or save to Personal Program.

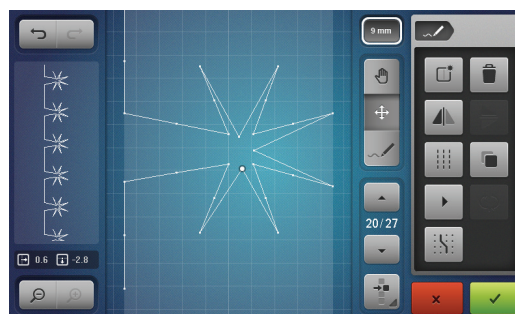
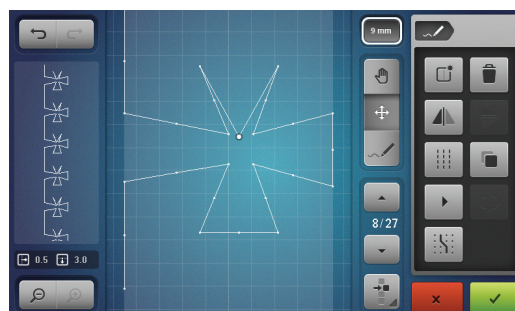
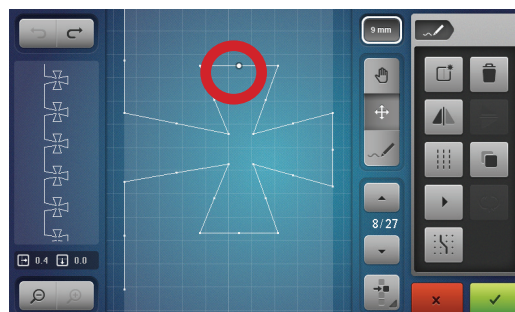
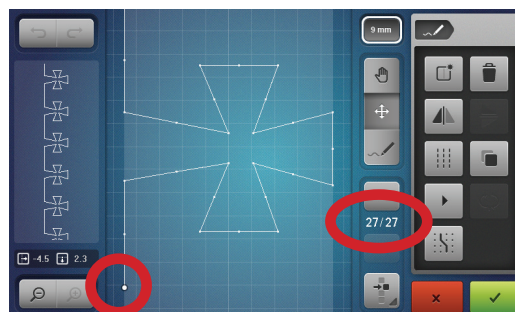
*Alternate method of selecting points: Select Move; touch the stitch point you wish to move.

Adding a Stitch Point

1. Select Move and touch the stitch point just before the position you would like to add a new stitch point. (Or use the Up/Down arrows to scroll to the stitch point just before the position you would like to add the new stitch point.)
2. Select the Draw (pencil) icon and tap on line where you would like the new stitch point to be added.
 - A new large dot appears indicating the location of the new stitch point.
 - If the stitch does not go where you want it to, touch the Undo icon to remove it.
3. Select the Draw (pencil) icon and touch a point after the selected stitch point where you would like the new stitch point to be added.
4. Select the Move icon and move the new stitch point as desired.

Change a Single Stitch to a Triple Stitch

1. From the sewing screen, select any single stitch design (try #613).
2. Touch the Selection icon; touch Select All.
3. Select the Triple Stitch icon.
4. Select the green check box to return to the Sewing Screen; sew out or save to Personal Program.



Sew HOW

Do you know how to:

- Move through the design two ways?
- Use Undo?

SAVING A STITCH DESIGNER STITCH TO A USB STICK

B 880 PLUS, 790 PLUS Only

Once a stitch created in Stitch Designer has been confirmed and appears on the sew out screen, it can be saved to the machine's memory or to a USB Stick that has been inserted in the machine.

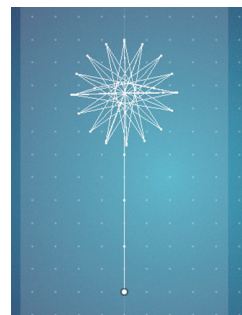


1. While the created stitch is on the screen, select the Personal Program icon.
2. Select Save.
3. Open the Transition screen. Only at the Full View (transition) is the USB option visible.
4. Select the USB Stick.
5. Select the highlighted stitch and the stitch is saved to the USB Stick.

Note: To retrieve a stitch from a USB Stick, use the transition to access the USB; select Retrieve.

IMPORTED STITCHES FROM BERNINA SOFTWARE







1. In the BERNINA Embroidery Software, get one repeat of a stitch on the screen such as one candlewicking knot.
 - Select the Machine Write icon; select the USB option.
2. Put the USB stick in the B 880 PLUS/790 PLUS.
3. Select Personal Program; select File Retrieve (arrow out of folder).
4. Select the transition icon; then the USB icon. Select the stitch.
 - The imported stitch is only the candlewicking dot and has no travel stitches, so the stitch will stitch on top of itself.
5. Open the Stitch Designer. The active dot indicates the last needlepoint in the stitch.
6. Select Snap to Grid.
7. Select the Draw icon (pencil) and draw 5 stitches to create travel stitches. As the stitch changes, the Preview shows the overall impact to the stitch. When the desired spacing is achieved, touch the green check box to confirm.
8. Save the stitch to the machine's Personal Program and stitch a test using the Open Embroidery Foot #20.



Note: Use BERNINA Embroidery Software to design stitches as well. Writing a script name using the open freehand tool may be easier on the computer than on the machine.

- Resize the stitch as desired using the tool options; rotate 90°.
- Select Write to Machine and select USB.
- Once the stitch is on the USB stick, it can be opened via Personal Program.

DISTORTION

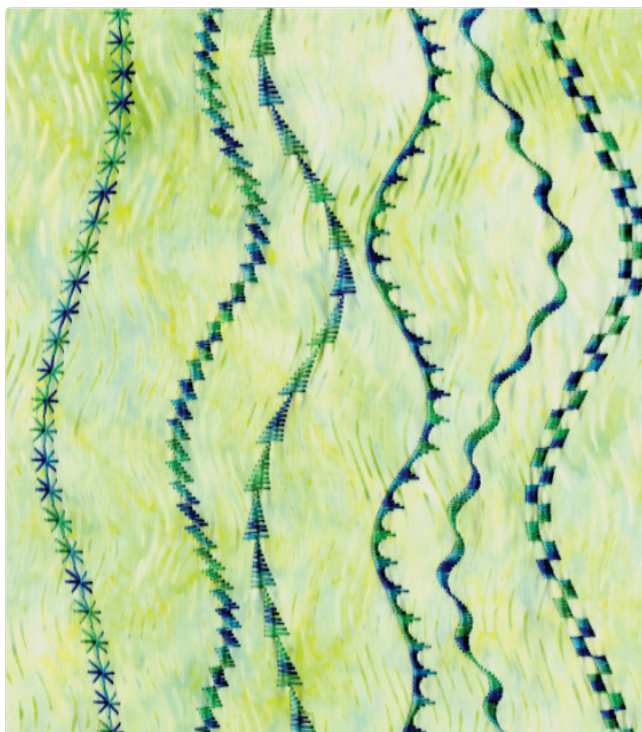
-  Firm woven fabric, 10" x 10"
-  Heavyweight tear-away stabilizer 10" x 10"
-  80/12 Universal
-  Polyester or cotton embroidery thread
-  Default
-  Sideways Motion Foot 40C **MUST** be used



B 880 PLUS Only

Distortion (Distorting Stitch Patterns) is a fun way to play with decorative stitches. The Sideways Motion Foot 40C **MUST** be used because of the sideways movement of the feed dogs. Distortion may **NEVER** be sewn with Dual Feed engaged. Dual Feed can not be used with Sideways Motion stitching.

1. Attach Sideways Motion Foot 40C; place heavyweight tear-away stabilizer behind fabric.
2. Select Menu 401 and select from the assortment of compact satin stitches.
 - Try stitches such as 401, 402, 405, 406, 414, 415, 427, 429.
 - Compact Satin 9 mm stitches may offer the most dramatic results, but try others, such as #711 (pictured on far left).
3. Attach Sideways Motion Foot #40C.
4. Select Distortion from the "i" menu.
5. Begin sewing on 10" square piece of fabric backed with lightweight stabilizer.
6. Turn the Stitch Width knob to the right and left while sewing. This creates wavy baselines for extraordinary creative effects.



Sew HOW

Do you know how to:

- Adjust the Distortion function as you sew?

REFERENCE - BERNINA PRESSER FEET



BERNINA PRESSER FEET

- are engineered for specific functions
- are Swiss-engineered for the highest quality
- are one-piece metal feet, making them sturdy and durable
- are easy to change with one hand, requiring no special tools
- have a white shank, making it easier to see the eye of the needle, resulting in easier threading
- are, in some cases, modeled after commercial feet used in factories to increase speed and production with professional results
- do the job intended in relation to all types of sewing (example: quilting, garment-making, home dec, etc.)
- are supported by the best and most complete educational materials in the industry, including reference books detailing each foot and its uses.

Understanding the Numbers/Letters

BERNINA presser feet are numbered and may have one or two additional versions with a letter that follows the number, such as Edgestitch Foot #10C or Jeans Foot #8D.

Number Only

- The number without a letter refers to a foot engineered for BERNINA models that have a CB Hook and a maximum stitch width of 5.5mm.
- These feet may also be compatible with models that have a 9mm width when a 9mm width is not desired, such as when making pintucks with feet #30, 31, 32, or 33.

The Letter "C"

- When a foot number is followed by a "C", it indicates a version of the foot made for models with a maximum stitch width of 9mm.
- The "C" stands for "coded", and refers to the sensor on the foot that works with the electronics of the machine to engage the wider stitch width.
- The sole of the "C" foot is usually larger to fit the wider feed dogs.
- Exceptions: Overlock Foot #2/2A: 2A is larger to fit the wider feed dogs, but does not have a sensor for a wider stitch because the overlock stitches are not used at wide widths. Extra Wide Gathering Foot #16C: 16C is larger to fit the wider feed dog but does not have a sensor for a wider stitch width.

The Letter "D"

- The feet that have a number followed by a "D" are designed to work with the 8 Series and 7 Series, B 590 and 570 QE Dual Feed feature.
- After attaching the foot, the Dual Feed mechanism is positioned in the cutout on the back of the foot, engaging the BERNINA Dual Feed system.
- When using D Feet, the BERNINA Dual Feed System **MUST** be engaged. Using Dual Feed Feet without engaging the Dual Feed yields an incomplete sole and sacrifices control over the fabric.



REFERENCE - SEWING MACHINE NEEDLES

Needle "Secret" Code

- DRI = Triple
- E = Embroidery
- J = Jeans
- L, LL, R = Leather
- M = Microtex
- MET = Metallic
- N = Topstitching/
Cordonnet
- Q = Quilting
- S = Stretch
- SUK = Fine Ball Point
- SES = Medium Ball Point
- WING = Wing
- ZWI = Double
- ZWI = Double
- ZWIHO = Double Wing

Needle Size Conversion

Regardless of the system, the greater the number, the larger the diameter of the needle.

European vs. Domestic

60=8	90=14
70=10	100=16
75=11	110=18
80=12	120=19

Needle Size for Fabrics

60 – very fine batiste
70 – shirt-weight
80 – medium-weight
90 – denim and twill
100/110/120 – canvas

General Information

Along with thread, needles are very important to stitch formation. Many "mechanical" problems and damage to fabrics can be traced to a bent, damaged, or incorrect size or type needle.

When selecting the correct needle, consider the following:

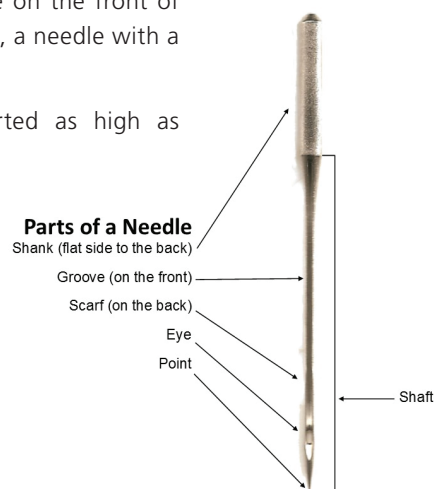
- Needle system – 130/705H
- Needle point – assures proper stitch formation; avoids fabric damage
- Needle size – smaller for lightweight fabrics; larger for heavier fabrics

If the needle is:

- Too small – the thread can't stay in the groove to form a loop to be picked up by the hook point
- Bent – the thread loop forms too far away from hook point and the hook can't enter the loop to form a stitch
- Blunt – the needle won't pierce fabric, so no thread loop forms to make a stitch

Need to Know

- Needles should be changed after every 8 hours of stitching, or earlier if stitches are looking bad. The needle is the most inexpensive part in your sewing machine, but it is crucial for getting good results and keeping your machine running well. Don't let false economy keep you from doing what is best for your sewing projects and your machine.
- The selected thread should fit in the groove on the front of the needle. If it isn't protected by the groove, a needle with a larger groove should be used.
- Always make sure needles are fully inserted as high as possible, with the flat side to the back.



Sew HOW

Do you know how to:

- Use Creative Consultant for needle recommendations?

Utilize the needle minder?

REFERENCE - SEWING MACHINE NEEDLES

TYPE	SIZES	DESCRIPTION
Ballpoint	60 – 100	Has a rounded point. Size 70 for lingerie, nylon, jersey; 80 for t-shirt; 90 for sweatshirt fleece.
Stretch	70 – 90	A Stretch needle has a more rounded point than a Ballpoint, and a blue anti-cling coating which helps to prevent skipped stitches in knits and elastic. Sometimes used on Ultrasuede, vinyl, and plastic.
Universal	60 – 120	A compromise between a Sharp and a Ballpoint; used on both wovens and knits.
Double	1.6/70 – 8.0/100	Two needles attached to one shank. For pintucks, hems, and decorative work. Available in Universal, Stretch, Jeans, Metallic, and Embroidery needles.
Triple	2.5/90 – 3.0/90	Three needles attached to one shank. Used to create mock smocking and other decorative effects.
Jeans	70 – 110	Has a sharp point and a shaft that is less prone to flex. The sharpness of the needle is better for use on denim and woven fabrics.
Leather	80 – 100	Point is a sharp cutting wedge. Used for leather only. Not for vinyl or simulated leathers.
Microtex / Sharp	60 – 90	Sharp point; thin shaft. Specially designed for microfiber fabrics.
Quilting	75 and 90	Thin, tapered point eliminates potential damage to fabric when seaming and cross-seaming.
Topstitch	70 – 100	A sharp point with a large eye and deep groove. For use with heavier fabrics – the large groove cradles heavier threads.
Embroidery	75 and 90	Sharp needle with large eye and groove; has a coating and a larger scarf. Prevents shredding of rayon or metallic threads. Two threads may be used through the eye.
Metafil	80	Similar to Embroidery needle with large eye and deep groove. Made of a heat-resistant alloy with a friction-reducing coating. Suitable for manufactured fibers such as polyester, acrylic, and nylon.
Wing	100 and 110	Sharp-pointed needle with a non-cutting metal wedge on each side. Makes a hole without cutting the threads of the fabric. Used for decorative and heirloom work, such as hemstitching.
Double Wing	100	One Universal needle and one Wing needle attached to a single shank.
Metallic	70 – 100	Designed for metallic threads; has a large eye and deep groove.

REFERENCE - THREADS

To achieve quality stitches, a sewing machine needs three things: suitable thread, correct size needle, and properly adjusted thread tensions. Poor quality or the wrong type of thread can cause inferior stitches on any machine. Inferior thread results in crooked and looped stitches, puckered seams, frayed thread, and/or needle breakage. Did you know that thread passes through the eye of the needle approximately 37 times in a “seesaw” action before it forms a single stitch?

Long staple threads are stronger and smoother than short staple threads. (Staple refers to the length of fibers twisted together to form a single ply). Most bargain-priced threads are usually short staple and will deposit more lint and fuzz into your sewing machine, potentially causing tension inconsistencies and possibly even damage to your machine over the long term. Using long staple threads also result in less snagging and fraying as you sew.

Ply refers to the number of strands twisted together to make a single thread. The number of plies is usually indicated by a number after the weight of the thread such as 50/3, which means a 3-ply, 50-wt. thread. The lower the weight, the heavier the thread; conversely, higher numbers indicate fine or lightweight thread.

Guidelines for Thread Weights

- 12 wt.— Couching, bobbinwork
- 30 wt.— Embroidery, bobbinwork
- 40 wt.— General construction, quilting, embroidery
- 50 wt.— General construction, piecing, bobbin thread, quilting
- 60 wt.— Lingerie, heirloom, appliqué, bobbin thread, quilting
- 80 wt.— Extra-fine lingerie, heirloom

Fibers

Fiber refers to the type of material used to produce the thread.

Polyester

Good for clothing construction on man-made, natural or blended fabrics. Tolerates high temperatures. Polyester embroidery thread has a high sheen; excellent for embroidery, very abrasion resistant, and will not fade.

Cotton

Available in a wide range of weights from 12-100, cotton thread gives a soft, full look to embroidery, appliqué, and buttonholes. It is also excellent for clothing construction on natural fibers, patchwork piecing, darning, and heirloom sewing.

Rayon

A glossy embroidery thread, rayon is not as strong as cotton and polyester fibers, making it useful for decorative work, but not for construction techniques.

Silk

Used on silk and wool fabrics, this strong, lustrous fiber is good for construction and decorative details such as buttonholes. Also used for quilting as it blends into the fabric.



REFERENCE - DECORATIVE STITCHING

As you begin to experiment with decorative stitches on your BERNINA machine, there are several things you should keep in mind:

- Type of thread you plan to use
- Presser foot you select
- How you prepare your fabric

Type of Thread

Selecting the thread for decorative stitching often comes down to a personal preference and what looks best on your project.

Cotton embroidery thread, especially in a heavier weight such as 30, gives a beautiful look to the stitches and has a nice luster to it.

If you want a high sheen, rayon or polyester embroidery thread are good choices.

Preparing the fabric

Preparing your fabric correctly can take the frustration out of your stitching, giving you a positive experience with beautiful results. The fabric needs to be stable enough to support the stitching without tunneling or puckering. This can be accomplished in several ways, sometimes with a combination of techniques:

- The fabric itself might be heavy enough to support the stitching.
- Interfacing (fusible or sew-in) can be applied to the wrong side of the fabric and left in the project.
- Stabilizers are used as a temporary form of support.

For the exercises in this class, you will be using lightweight tear away stabilizer that can be removed after stitching if desired.

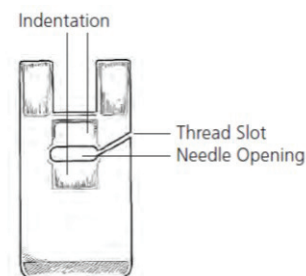
Presser Foot

The presser foot you select is critical for good results because it can affect the way the fabric feeds under the needle, influencing the stitch formation.

Usually the key to selecting the correct presser foot is the sole.

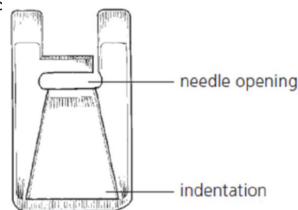
Stitches that are more open and have less thread will stitch well with an all-purpose or zigzag presser foot.

- Reverse Pattern Foot #1/1C/1D has small indentations in front of and behind the needle that allow the fabric to move in a “back and forth” manner when forming the stitches.



If you are creating heavy, satin stitched patterns, you will need a foot that is not flat on the bottom. It should have some type of indentation that allows the foot to ride over the completed stitch without dragging or inhibiting the feed of the fabric.

- Embroidery Foot #6 has a wedge-shaped indentation behind the needle, perfect for allowing heavy compact stitches to flow freely from under the back of the presser foot.



- Open Embroidery Foot #20/20C/20D and Clear Embroidery Foot #39/39C/39D both have the same shape but the Clear Embroidery Foot offers more visibility of the stitching area.

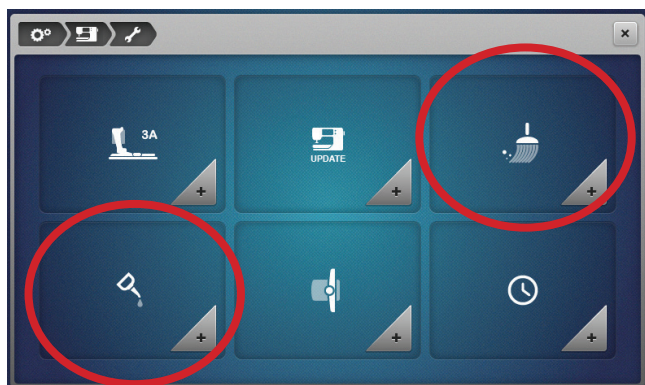
REFERENCE - CLEANING AND OILING

One of the most important parts of maintaining your machine is proper cleaning and oiling. Below are tips to follow, but more complete instructions for your specific model can be found in your machine's manual.

It is recommended that you clean and oil every other bobbin, or every 3-4 hours of actual sewing time. If you notice your machine sounding louder than usual, then it is time to clean and oil.

General Cleaning Steps

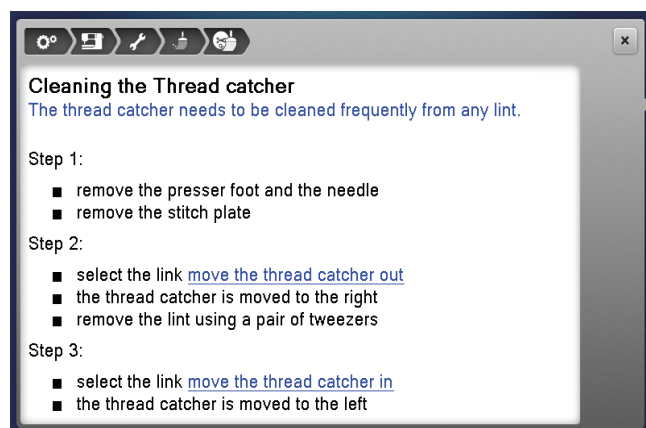
- Remove the needle. (It is recommended that you change your needle every 4-6 hours of sewing time.)
- Remove the stitch plate and remove all lint and threads, using the brush and/or the tweezers included with your machine.
- Clean the Thread Cutter (see below).
- Dust the lower thread indicator using the brush (on bobbin door).
- Remove the bobbin and clean and oil the bobbin area.



BERNINA has cleaning and oiling tutorials built into the Setup menu.

To access the tutorials, select the Setup icon > Machine Settings > Cleaning/Update.

Choose either the cleaning menu or the oiling menu and follow the steps shown. The menu may contain more than one page. Scroll with your fingertips or the stylus to access more information.



Keeping the Thread Cutter/catcher clean and free of lint and thread tails is vital to the maintenance of the machine. The Thread Cutter needs to be cleaned frequently.

The Thread Cutter menu is interactive. Selecting the ***move the thread catcher out*** link on the screen will move the cutter to the right so that lint and threads can be removed with a pair of tweezers. Selecting the ***move the thread catcher in*** link returns the cutter to its normal position.

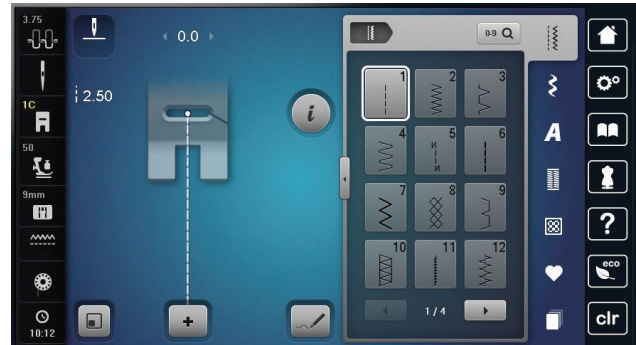
B 880 PLUS SEWING FUNCTIONS

External Buttons

1. Automatic Threading*
2. Securing Function
3. Needle Up/Down
4. Pattern End*
5. Presser Foot Up/Down
6. Auto Thread Cutter
7. Slide Speed Control
8. Start/Stop/Hover*
9. Backstepping/Quick Reverse

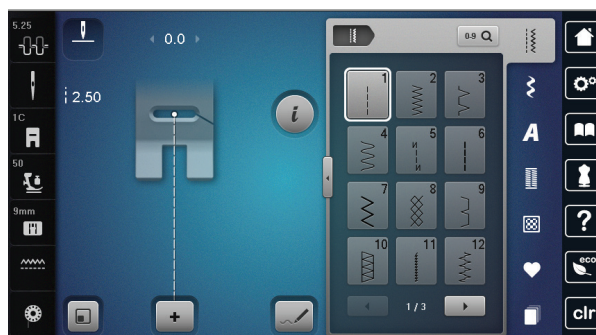
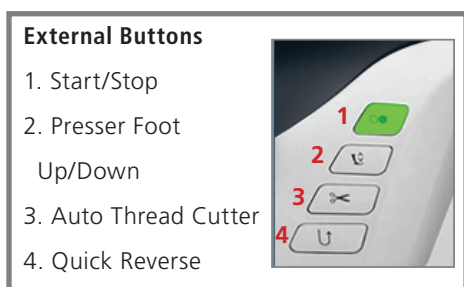


* Illuminated Buttons



SEWING FUNCTIONS					
	Upper Thread Tension		Practical Stitches		Stitch Selection by Number
	Needle Selection Needle minder		Decorative Stitches		Pattern Repeat
	Presser Foot Selection/ Presser Foot Display		Alphabets		Mirror Image (Left/Right)
	Presser Foot Pressure		Buttonholes		Mirror Image (Up/Down)
	Stitch Plate Security		Quilting Stitches		Balance
	Feed Dog Up/Down		Personal Program/Memory		Pattern Extend
	Bobbin filling with low level status indicator		History Stitches		Pattern Extend Adjust Stitch Density
	Clock/Alarm		Needle Stop Up/Down - Permanent		Long Stitch
	Home		Pattern Begin		Multi-directional Sewing
	Setup		Programmable Pattern End /Securing		Distortion
	Tutorial		Securing		Balance Dual Feed
	Creative Consultant		Fit to Screen		Save Stitch Settings
	Help		Combi-Mode		Restore Stitch Default
	Eco (press long for slide show)		Overview Combi-Mode		Continuous Reverse
	Back to basic setting		Retrieve Saved Stitch		Backstepping
	Change Needle Position		Retrieve Combi		Use Top Multifunction knob for adjustment
	Information i-dialog		Save to Personal Program		Use Lower Multifunction knob for adjustment
	Cancel		Delete from Personal Program		Use either Multifunction knob for adjustment
	Confirm		ESC (escape)		Zoom In/Out 1-5x
					Undo/Redo Stitch Designer
					Duplicate Stitch Designer
					Snap to Grid Stitch Designer
					Triple Stitch Stitch Designer
					New /Clean Screen Stitch Designer
					Stitch Playback Stitch Designer

B 790 PLUS SEWING FUNCTIONS

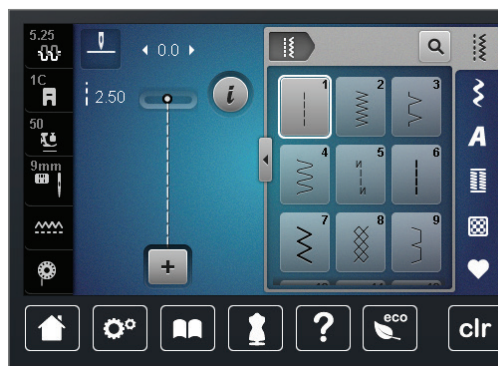
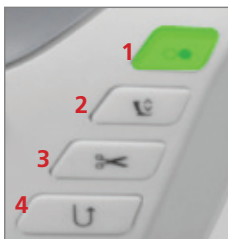


SEWING FUNCTIONS							
	Upper Thread Tension		Practical Stitches		Information i-dialog		Direct Entry Buttonhole Length
	Needle Selection Needle minder		Decorative Stitches		Stitch Selection by Number		Program Buttonhole Length
	Presser Foot Selection/ Presser Foot Display		Alphabets		Pattern Repeat		Stitch Counter Buttonhole
	Presser Foot Pressure		Buttonholes		Mirror Image (Left/Right)		Manual Buttonhole
	Stitch Plate Security		Quilting Stitches		Mirror Image (Up/Down)		Buttonhole Slit Width
	Feed Dog Up/Down		Personal Program/Memory		Balance		Stitch Counter
	Bobbin filling with low level status indicator		History Stitches		Pattern Extend		Edit the Complete Combination
	Home		Needle Stop Up/Down - Permanent		Pattern Extend Adjust Stitch Density		Edit Combination at Cursor Position
	Setup		Pattern Begin		Long Stitch		Font Size in Alphabet
	Tutorial		Programmable Pattern End /Securing		Multi-directional Sewing		Monogram Size
	Creative Consultant		Securing		Save Stitch Settings		Tapering
	Help		Fit to Screen		Restore Stitch Default		Stitch Designer
	Eco (press long for slide show)		Combi-Mode		Continuous Reverse		Move Needlepoint Stitch Designer
	Back to basic setting		Overview Combi-Mode		Backstepping		Undo/Redo Stitch Designer
	Change Needle Position		Retrieve Saved Stitch		Use Top Multifunction knob for adjustment		Duplicate Stitch Designer
	Cancel		Retrieve Combi		Use Lower Multifunction knob for adjustment		Snap to Grid Stitch Designer
	Confirm		Save to Personal Program		Use either Multifunction knob for adjustment		Triple Stitch Stitch Designer
	ESC (escape)		Delete from Personal Program		Zoom In/Out 1-5x		New /Clean Screen Stitch Designer
							Stitch Playback Stitch Designer

B 770 QE SEWING FUNCTIONS

External Buttons

1. Start/Stop
2. Presser Foot Up/Down
3. Auto Thread Cutter
4. Quick Reverse

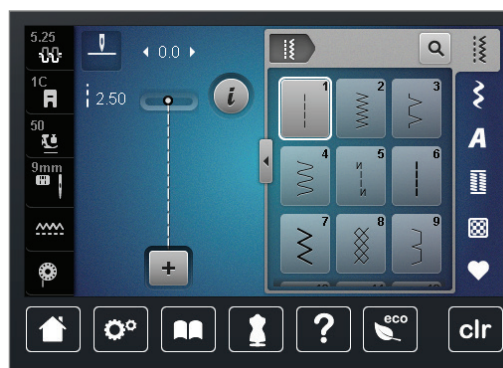


SEWING FUNCTIONS							
	Home		Stitch Selection by Number		Upper Thread Tension		Pattern Repeat
	Setup Program		Practical Stitches		Presser Foot Indicator/Presser Foot Selection		Alter Pattern Length
	Tutorial		Decorative Stitches		Presser Foot Pressure		Mirror Image (Left/Right)
	Creative Consultant		Alphabets		Security Program - Stitch Plate & Needle		Mirror Image (Up/Down)
	Help		Quilting Stitches		Needle Minder		Combi-Mode
	Eco		Personal Program/Memory		Feed Dog Up/Down		Edit the Complete Combination
	Clear Settings		Buttonholes		Filling of Bobbin		Edit Combination at Cursor Position
	Information		Direct Entry Buttonhole Length		Needle Stop Up/Down - Permanent		Combination Sub-divider (1)
	Close		Buttonhole Slit Width		Needle Stop Up/Down - Temporary		Combination Sub-divider (2)
	Confirm		Stitch Counter Buttonhole		Needle Position		Font Size in Alphabet
	Cancel		Manual Buttonhole		Securing		Long Stitch
	Delete		Continuous Reverse Sewing		Programmable Pattern End /Securing		Stitch Counter
	Save Altered Stitch Pattern Setting		Backstepping		Pattern Begin		Balance
	Back to Basic Stitch Setting						

B 740 SEWING FUNCTIONS

External Buttons

1. Start/Stop
2. Presser Foot Up/Down
3. Auto Thread Cutter
4. Quick Reverse

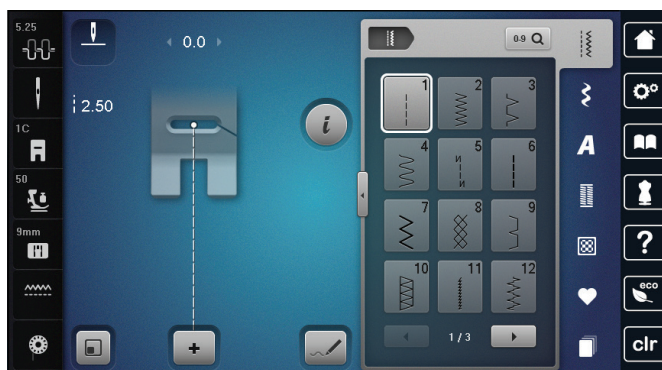




























































SEWING FUNCTIONS							
	Home		Stitch Selection by Number		Upper Thread Tension		Pattern Repeat
	Setup Program		Practical Stitches		Presser Foot Indicator/Presser Foot Selection		Alter Pattern Length
	Tutorial		Decorative Stitches		Presser Foot Pressure		Mirror Image (Left/Right)
	Creative Consultant		Alphabets		Security Program - Stitch Plate & Needle		Mirror Image (Up/Down)
	Help		Quilting Stitches		Needle Minder		Combi-Mode
	Eco		Personal Program/Memory		Feed Dog Up/Down		Edit the Complete Combination
	Clear Settings		Buttonholes		Bobbin Status		Edit Combination at Cursor Position
	Information		Direct Entry Buttonhole Length		Needle Stop Up/Down - Permanent		Combination Sub-divider (1)
	Close		Buttonhole Slit Width		Needle Stop Up/Down - Temporary		Combination Sub-divider (2)
	Confirm		Stitch Counter Buttonhole		Needle Position		Font Size in Alphabet
	Cancel		Manual Buttonhole		Securing		Continuous Reverse Sewing
	Delete		Save Altered Stitch Pattern Setting		Programmable Pattern End /Securing		Backstepping
			Back to Basic Stitch Setting		Pattern Begin		Balance

B 590 SEWING FUNCTIONS

External Buttons

1. Start/Stop
2. Presser Foot Up/Down
3. Auto Thread Cutter
4. Quick Reverse



























































SEWING FUNCTIONS							
	Home		Stitch Selection by Number		Information		Combi-Mode
	Help		Practical Stitches		Close		Edit the Complete Combination
	Clear Settings		Decorative Stitches		Pattern Repeat		Edit Combination at Cursor Position
	Upper Thread Tension		Alphabets		Extend Pattern		Combination Sub-divider (1)
	Presser Foot Indicator		Buttonholes		Stitch Density		Combination Sub-divider (2)
	Presser Foot Pressure		Quilting Stitches		Mirror Image (Left/Right)		Delete
	Needle/Stitch Plate Selection		Personal Program/Memory		Mirror Image (Up/Down)		Use Upper Multifunction knob for adjustment
	Needle Minder		Program Buttonhole Length		Triple Stitch		Use Lower Multifunction knob for adjustment
	Feed Dog Up/Down		Direct Entry Buttonhole Length		Balance		Use either Multifunction knob for adjustment
	Bobbin filling with low level status indicator		Stitch Counter Practical Stitches/Buttonhole		Long Stitch		Confirm
	Setup		Manual Buttonhole		Font Size in Alphabet		Cancel
	Tutorial		Buttonhole Slit Width		Save Altered Stitch Pattern Setting		Programmable Foot Control
	Creative Consultant		Securing		Back to Basic Stitch Setting		
	eco		Programmable Pattern End/Securing		Continuous Reverse Sewing		
	Move Needle Up/Down		Pattern Begin		Backstepping		
	Program Needle Stop Up/Down						

B 570 QE SEWING FUNCTIONS

External Buttons

1. Start/Stop
2. Presser Foot Up/Down
3. Auto Thread Cutter
4. Quick Reverse























































SEWING FUNCTIONS							
	Home		Stitch Selection by Number		Information		Combi-Mode
	Help		Practical Stitches		Close		Edit the Complete Combination
	Clear Settings		Decorative Stitches		Pattern Repeat		Edit Combination at Cursor Position
	Upper Thread Tension		Alphabets		Extend Pattern		Combination Sub-divider (1)
	Presser Foot Indicator		Buttonholes		Mirror Image (Left/Right)		Combination Sub-divider (2)
	Presser Foot Pressure		Quilting Stitches		Mirror Image (Up/Down)		Delete
	Needle/Stitch Plate Selection		Personal Program/Memory		Triple Stitch		Use Upper Multifunction knob for adjustment
	Needle Minder		Program Buttonhole Length		Balance		Use Lower Multifunction knob for adjustment
	Feed Dog Up/Down		Direct Entry Buttonhole Length		Font Size in Alphabet		Use either Multifunction knob for adjustment
	Bobbin filling with low level status indicator		Stitch Counter Practical Stitches/Buttonhole		Save Altered Stitch Pattern Setting		Confirm
	Setup		Manual Buttonhole		Back to Basic Stitch Setting		Cancel
	Tutorial		Buttonhole Slit Width		Continuous Reverse Sewing		
	Creative Consultant		Securing		Backstepping		
	eco		Programmable Pattern End/Securing				
	Move Needle Up/Down		Pattern Begin				
	Program Needle Stop Up/Down		Programmable Foot Control				

B 535 SEWING FUNCTIONS

External Buttons

1. Start/Stop
2. Securing Function
3. Auto Thread Cutter
4. Quick Reverse



SEWING FUNCTIONS							
	Home		Stitch Selection by Number		Information		Use Upper Multifunction knob for adjustment
	Help		Practical Stitches		Close		Use Lower Multifunction knob for adjustment
	Clear Settings		Decorative Stitches		Pattern Repeat		Use either Multifunction knob for adjustment
	Upper Thread Tension		Alphabets		Mirror Image (Left/Right)		Confirm
	Presser Foot Indicator		Buttonholes		Mirror Image (Up/Down)		Cancel
	Presser Foot Pressure		Quilting Stitches		Balance		
	Needle/Stitch Plate Selection		Personal Program/Memory		Save Altered Stitch Pattern Setting		
	Needle Minder		Program Buttonhole Length		Back to Basic Stitch Setting		
	Feed Dog indicator Up/Down		Direct Entry Buttonhole Length		Continuous Reverse Sewing		
	Bobbin filling No status indicator		Stitch Counter Buttonhole		Backstepping		
	Setup		Manual Buttonhole		Combi-Mode		
	Tutorial		Buttonhole Slit Width		Edit the Complete Combination		
	Creative Consultant		Securing		Edit Combination at Cursor Position		
	eco		Programmable Pattern End/Securing		Combination Sub-divider (1)		
	Move Needle Up/Down		Pattern Begin		Combination Sub-divider (2)		
	Program Needle Stop Up/Down				Delete		