BERNINA 500

made to create BERNINA

Dear BERNINA Customer,

Congratulations! You have decided on BERNINA and therefore on a product which will delight you for years. For more than 100 years our family company has attached greatest importance to satisfied customers. As for me, it is a matter of personal concern to offer you Swiss development and precision at the height of perfection, future-orientated embroidery technology and a comprehensive customer service.

The BERNINA 5-series consists of various ultramodern machines, whose development not only focused the highest demands on technique and the ease of use but also considered the design of the product. After all we sell our products to creative people like you, who do not only appreciate high quality but also form and design.

Enjoy the creative embroidering on your new BERNINA 500 E and keep informed about the various accessories at www.bernina.com. On our homepage you will also find a lot of inspiring embroidery ideas and embroidery motifs, to be downloaded for free.

Our highly trained BERNINA dealers will provide you with more information on service and maintenance offers.

I wish you lots of pleasure and many creative hours with your new BERNINA.

H.P. Ueltschi

Owner

BERNINA International AG

CH-8266 Steckborn

Edition notice

Graphics

www.sculpt.ch

Text, Setting and Layout

BERNINA International AG

Fotos

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Part number

2017/10 en 1028895.0.04

1st Edition

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IMPORTANT SAFETY INSTRUCTIONS

Please be aware of the following basic safety instructions when using your machine. Before using this machine, read instruction manual carefully.

DANGER!

To reduce the risk of electrical shock:

- Never leave the machine unattended as long as it is plugged in.
- Always unplug the machine from the electrical outlet immediately after using and before cleaning.

Protection against LED radiation:

- Do not view the LED light directly with optical instruments (e.g. magnifier). The LED light corresponds with protection class 1M.

Protection against injuries:

- Attention moving parts. To avoid injuries, switch off the machine before manipulations are carried out. Always close the cover when operating the machine.

WARNING

To reduce the risk of burns, fire, electric shock or injury to persons:

- To operate the machine always use the supplied power cable. The power cable for USA and Canada (power plug NEMA 1-15) must only be used for a power supply of maximal 150V against ground.
- Use this machine only for purposes as described in this manual.
- Do not use the machine outdoors.
- Do not use this machine as a toy. Close attention is necessary when this machine is used by or near children.
- The machine can be used by children older than 8 or by people with reduced physical, sensory or mental capabilities or if there is a lack of experience and knowledge how to operate the machine as long as they are supervised or have been given instruction concerning the responsible use of the appliance and are aware of the involved risks.
- Children are not allowed to play with this machine.
- Cleaning and maintenance work must not be carried out by children unless they are supervised.
- Never operate this machine if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped into water. Contact the nearest authorized BERNINA dealer to arrange further details.
- Only use accessories recommended by the manufacturer.
- Don't use this machine when the ventilation openings are blocked. Keep the ventilation openings free from the accumulation of lint, dust and loose cloth.
- Never insert any objects into any openings of the machine.

- Do not operate the machine where aerosol products (sprays) or oxygen are being used.
- Keep fingers away from all moving parts. Special care is required around the needle.
- Neither pull nor push the fabric while sewing. This can cause needle breakage.
- When making any adjustments in the needle area - such as threading the needle, changing the needle, threading the hook or changing the presser foot - turn the power switch to «0».
- Do not use bent needles.
- Always use the original BERNINA stitch plate. The wrong stitch plate can cause needle breakage.
- To disconnect, turn power switch to «0» and then remove the plug from the outlet. Do not unplug by pulling the cord, instead grasp the plug to pull it from the outlet.
- Always disconnect the power plug from the electrical outlet when the covers are removed or opened, when the machine is lubricated or during any other maintenance adjustments mentioned in the instruction manual.
- This machine is provided with double insulation. Use only identical replacement parts. See instructions for Servicing of double-insulated products.

Servicing of double-insulated products

In a double-insulated product two systems of insulation are provided instead of groanding. No groanding means is provided on a doubleinsulated product, nor should a means for groanding be added to the product. Servicing a double-insulated product requires extreme care and knowledge of the system and should be done only by qualified service personnel. Replacement parts for a double-insulated product must be identical to the original parts in the product. A double-insulated product is marked with the words: «Double insulation» or «double-insulated».

⧈ The symbol may also be marked on the product.

SAVE THESE INSTRUCTIONS!

Appropriate use

Your BERNINA machine is conceived and designed for private household use. It answers the purpose to embroider fabrics and other materials as it is decribed in this instruction manual. Any other use is not considered appropriate. BERNINA assumes no liability concerning consequnces resulting from an inappropriate usage.

1 My BERNINA

1.1 Introduction

Your BERNINA 500 E enables you to be endlessly creative due to the various applications. Delicate silk or satin fabrics as well as heavy-weight linen, fleece and denim can be embroidered successfully with this machine. Numerous embroidery motifs are at your disposal.

Additional to this instruction manual, subsequently listed help programs are provided which will give you useful advice and support at any time how to operate your BERNINA 500 E.

The **Tutorial** gives information and explanations concerning various aspects of embroidering.

The **Embroidery Consultant** informs you about decision support for embroidery projects. After entering the kind of fabric and the desired embroidery project, suggestions concerning the suitable needle or the appropriate embroidery foot are displayed.

The **Help Program** contains information about individual embroidery motifs, functions and applications in the User Interface.

Further information

In addition to this instruction manual of your BERNINA 500 E further information products are enclosed.

The latest version of your instruction manual as well as additional information in connection with the machine and accessories can be found on our website http://www.bernina.com

1.2 Welcome to the world of BERNINA

Made to create, this is the slogan of BERNINA. Not only our machines do support you to implement your ideas, but on top of that, our below mentioned opportunities also offer various inspirations and instructions for your future projects as well as the option to exchange ideas with other sewing and embroidering enthusiasts. We wish you lots of pleasrue doing that.

BERNINA YouTube Channel

On YouTube we offer a wide range of how-to videos and support concerning the most important functions of our machines. Detailed explanations are also provided as for the various presser feet, so that your projects will succeed completely.

http://www.youtube.com/BerninaInternational

Provided in the languages English and German.

inspiration – the sewing magazine

Are you looking for ideas, sewing patterns and instructions for great projects? In that case the BERNINA magazine «inspiration» is exactly what you need. «inspiration» offers extraordinary sewing and embroidery ideas four times a year. From seasonal fashion trends to trendy accessories and practical tips to decorate your home in an original way.

http://www.bernina.com/inspiration

The magazine is available in the languages English, German, Dutch and French. Not available in all countries.

BERNINA Blog

Fancy instructions, free sewing patterns and embroidery motifs as well as many new ideas: all this you can find in the weekly blog by BERNINA. Our experts give valuable tips and explain step by step how you can achieve the desired result. In the community you can upload your own projects and exchange experiences and ideas with other sewing and embroidering enthusiasts.

http://www.bernina.com/blog

Provided in the languages English, German and Dutch.

BERNINA Social Media

Follow us on the social networking to learn more about events, thrilling projects as well as tips and tricks all about sewing and embroidering. We will keep you informed and we are looking forward to presenting you the one or the other highlight from the world of BERNINA.

http://www.bernina.com/social-media

1.3 Key to signs

⚠ DANGER	Labels a danger with a high risk which can lead to death or severe injury unless it is avoided.
⚠ WARNING	Labels a danger with a medium risk which can lead to death or severe injury unless it is avoided.
⚠ CAUTION	Labels a danger with a low risk which can lead to light or medium injury unless it is avoided.
NOTICE	Labels a danger which can end up with damage unless it is avoided.
i	**Tips** by BERNINA **Embroidery experts** can be found next to this sign.

By means of illustration, sample pictures are used in this instruction manual. The machines as well as the accessory shown in the pictures may vary from the delivery content of your machine.

1.4 Overview Machine

Overview front controls

1	Sewing light on/off	6	Upper Multifunctional knob
2	Thread cutter	7	Lower Multifunctional knob
3	Start/Stop	8	Pinpoint placement
4	Needle up/down	9	Center of embroidery motif
5	Check embroidery motif size		

Overview front

1	Connection for embroidery module	8	Slide speed control
2	Bobbin cover	9	Thread take-up lever cover
3	Connection for accessories	10	Thread take-up lever
4	Embroidery foot	11	Thread cutter
5	Needle threader	12	Fixing screw
6	Sewing light	13	Connection for slide-on table
7	Thread cutter		

Overview sideways

1	Connection for foot control	7	Retractable spool pin
2	Feed dog up/down	8	Air vents
3	PC-connection	9	Handwheel
4	USB port	10	Power switch
5	Spool pin	11	Connection for power cable
6	Bobbin winding unit	12	Magnet holder for touchscreen pen

Overview back

1	Air vents	7	Bobbin winding unit
2	Connection for slide-on table	8	Thread pretension
3	Carrying handle	9	Thread guide
4	Spool pin	10	Presser foot lifter
5	Thread guide	11	Thread cutter
6	Retractable spool pin	12	Stitch plate

Overview Embroidery module

1	Release lever/carrying handle	4	Guide rails for the machine
2	Embroidery arm	5	Connection to the machine
3	Bracket for attaching the embroidery hoop		

1.5 Supplied accessories

Overview accessories machine

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Visit www.bernina.com for more accessory information.

Illustration	Name	Purpose
	Soft Cover with pocket	The soft cover protects the machine from dust and contamination.
	Accessory box	The accessory box serves the purpose to store the supplied accessories as well as the optional accessories.

Illustration	Name	Purpose
	3 Spool discs	Spool discs hold the thread spool in place for proper release of thread from the spool.
	4 bobbins in the accessory, whereas 1 bobbin is in the machine.	The bobbins are filled with the lower thread.
	2 Foam pads	The foam pad prevents the thread from getting hooked at the spool pin.
	Touchscreen pen	The operation of the display is more precise when using the touchscreen pen instead of the fingers.
	Seam ripper	The seam ripper is an indispensable tool to undo stitches or to cut buttonholes open.
	Screwdriver red	The red screwdriver is supplied as an all-round tool.
	Brush	The brush is used to clean the feed dog and the hook area.
	Lubricator	The lubricator is used to fill up the oil depots.
	Power cable	The power cable connects the machine with the power supply system.

Use of the power cable (only USA/Canada)

The machine has a polarized plug (one blade wider than the other). To reduce the risk of electrical shock, this plug is intended to fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not modify the plug in any way!

Foot control (only USA/Canada) (Optional accessory)

Use only foot controller type LV-1 with BERNINA 500 E.

Accessory box

All rights reserved: For technical reasons and for the purpose of product improvements, changes concerning the features of the machine can be made at any time and without advance notice. The supplied accessory can vary depending on the country of delivery.

The illustrated accessory (kind and quantity) serves as an example and doesn't have to correspond with the supplied accessory.

1	Drawer	5	Spool holder
2	Embroidery foot	6	Holder for foam pads
3	Holder for embroidery feet, 5.5 mm	7	Selection of needles
4	Holder for embroidery feet, 9.0 mm		

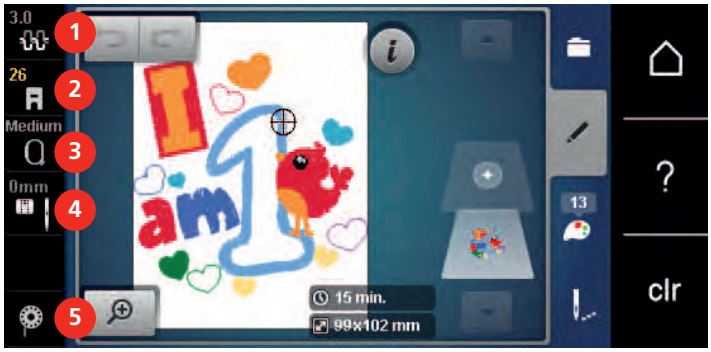
Overview Accessory Embroidery module

Illustration	Name	Purpose
	Embroidery foot No. 26	For embroidering, darning and free-motion quilting.
	Embroidery hoop oval, 145 x 255 mm with embroidery template, VAR 00	To embroider large embroidery motifs. The embroidery template serves the purpose to calibrate the embroidery hoop and to place the fabric exactly.

Illustration	Name	Purpose
	Embroidery hoop medium, 100 x 130 mm with embroidery template	To embroider medium-sized embroidery motifs. The embroidery template serves the purpose to calibrate the embroidery hoop and to place the fabric exactly.
	USB Connecting cable	The USB connecting cable serves the purpose to transfer data. When the embroidery software (optional accessory) is installed on the computer, embroidery motifs can be transferred from the computer to the machine.
	Embroidery needle assortment SUK	Various needle sizes for embroidering.
	Template holder	The template holders serve as a help when placing and removing the template in and from the embroidery hoop.
	Net for thread spool, white	The spool net provides an even unwinding of the thread when using slippery embroidery threads.

1.6 Overview User Interface

Overview functions/visual information



1	Upper thread tension	4	Stitch plate/Needle selection
2	Presser foot display/Presser foot selection	5	Filling level of bobbin thread
3	Embroidery hoop selection/Embroidery hoop display		

Overview System settings

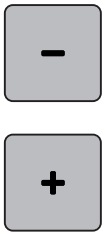
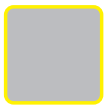
1	Embroidery mode	5	eco
2	Setup Program	6	Home
3	Tutorial	7	Help
4	Embroidery Consultant	8	Back to default setting

Overview Selection menu embroidery

1	Selection embroidery motifs	3	Color information
2	Editing embroidery motifs	4	Embroidery

Overview Icons

Icon	Name	Purpose
	i-Dialog	Touching the icon «i»-Dialog provides various functions to edit motifs.
	Close	The display is closed and the previously made adjustments are saved.

Icon	Name	Purpose
	Icons «-/+»	By touching the icons «-» and «+» the setting values are changed.
	Yellow frame around the icon	A yellow-framed icon indicates that a setting or a value in this function has been changed. By touching the yellow-framed icon, the default setting can be restored.
	Confirm	Confirms the previously adjusted alterations. The display is closed.
	Cancel	The process is canceled. The display is closed and the previously made adjustments are not saved.
	Slide	By moving the slide the setting values are changed.
	Switch	Activates or deactivates functions.
	Process navigation	With the process navigation scrolling back in the display is possible.
	Swipe function	By swiping the display using the touchscreen pen or the finger upwards or downwards, further functions can be displayed.

1.7 Needle, Thread, Fabric

In the course of time a needle wears out. Therefore it should be replaced regularly. Only a perfect point results in a good stitching result. In general it can be said: the thinner the thread, the finer the needle. The illustrated needles are either standard or optional accessory, depending on the machine.

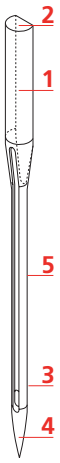
- Needle sizes 70, 75: for thin fabrics.
- Needle sizes 80, 90: for medium fabrics.
- Needle sizes 100, 110 and 120: for heavy fabrics.

Overview needles

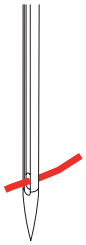
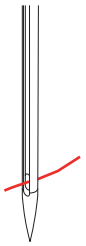
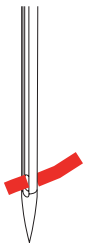
Illustration	Needle name	Needle description	Purpose
	Jersey/Embroidery needle 130/705 H SUK 60-100	Medium ball point	Knitware, embroidery.
	Embroidery needle 130/705 H-E 75, 90	Small ball point, especially large needle eye and wide thread groove	Embroidery on all natural and synthetic fabrics.
	Fine material needle 130/705 H SES 70, 90	Fine ball point	Fine knitware, embroidering fine, delicate fabrics.
	Metafil needle 130/705 H METAFIL 80	Long needle eye (2 mm) in all needle sizes	Sewing projects with metallic threads.
	Felt needle PUNCH	Needle with barbed hook	Felt work.

Example for needle description

The 130/705 system, which is the most common for household machines, is explained by the following picture of a Jersey/Stretch needle.

	**130/705 H-S/70** **130** = Shank length (1) **705** = Flat shank (2) **H** = Needle scarf (3) **S** = Needle point (here medium ball point) (4) **70** = Needle size 0.7 mm (5)

Needle/thread combination

	The needle/thread combination is correct, when the thread fits perfectly into the long groove and goes easily through the needle eye. The thread can be optimally sewn.
	The thread can break and skipped stitches can occur when there is too much clearance in the long groove and the needle eye.
	The thread can break and get stuck when the thread scrapes against the edge of the long groove not fit well into the needle eye optimally.

Upper thread

A good quality thread (brand manufacturer) is essential for embroidery so that the embroidery is not affected negatively because of poor thread or thread breakage.

Embroidery is particularly effective if you use 40wt glossy rayon or polyester embroidery threads as upper threads. They are available in a wide range of colors for beautiful embroidery.

- Glossy polyester with a brilliant sheen is a hard wearing, colorfast thread and has a high tensile strength which is suitable for all types of embroidery.
- Rayon is a soft viscose fiber with a brilliant sheen and suitable for fine, delicate embroidery, or items that will not receive excessive wear and tear.
- Metallic thread is a light to medium-weight thread suitable for special effects in embroidery.
- When working with metallic threads, the automatic bobbin thread cutter should be deactivated. The other thread cutters shouldn't be used either because the knives are likely to wear off very quickly.
- When using metallic threads, the speed and the upper thread tension should be reduced.

Bobbin thread

In most cases black or white bobbin thread is used for embroidering. When both sides should have the same look, it is recommended to use the same color for bobbin and upper thread.

- Bobbin Fill is an especially soft and light polyster thread which is suited well to be used as bobbin thread. This special bobbin thread ensures a steady thread tension and an optimal intertwining of the upper and bobbin thread.
- Darning and embroidery threads are fine mercerized cotton threads which are suitable for embroidery on cotton.

1.8 Important Embroidery information

Selecting the embroidery file format

In order that embroidery motifs can be read by the BERNINA embroidery machine, they have to be created by the BERNINA Embroidery software and exported as .EXP file. Besides the actual embroidery file, a .BMP file and an .INF file are generated additionally. The .BMP file allows a preview of the embroidery motif and the
.INF file provides the information on the thread colors. **Please note:** If the .INF file is missing, the embroidery motif cannot be displayed in the real color but only in standard colors. In this case, the colors can be entered manually in the color overview of the motif on the machine.

Additionally, following embroidery formats can be read by the machine: .PES, .PEC, .XXX, .PCS, .JEF and .DST. BERNINA International AG doesn't warrant that embroidery motifs which have not been created or converted by the BERNINA Embroidery software can be correctly read and embroidered.

Simple motifs with a low stitch count are suitable for embroidery on fine material. Densely embroidered motifs, e. g. embroidered motifs with multiple color and embroidery direction changes, are suitable for medium and heavy-weight material.

Embroidery test

For the embroidery test, always use the original material reinforced with the same stabilizer as will be used later. For the embroidery test it is recommended to use the same colors, threads and needles which are planned to be used for the embroidery project.

The size of the embroidery motif

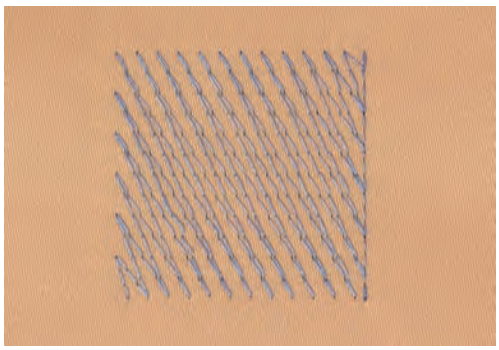
Embroidery motifs can be enlarged or downsized on the embroidery machine or on the PC using the BERNINA Embroidery software (optional accessory). Enlargements or reductions up to 20% achieve the best results.

Embroidering motifs by third-party providers

BERNINA recommends to upload embroidery motifs of any file format via the free program «ART-Link» to the machine or a USB stick. Using «ART-Link» ensures that the embroidery motif can be read and embroidered correctly. «ART-Link» can be downloaded for free at www.bernina.com.

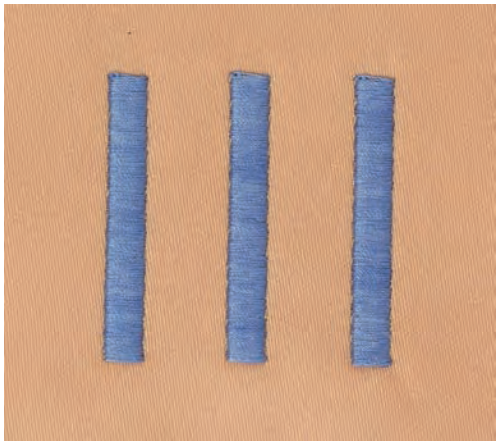
Underlay stitches

Underlay stitches are the foundation of a motif and are used to stabilize the base material and hold it in shape. They also prevent the covering stitches of the motif from sinking into the knit or the nap of the material.



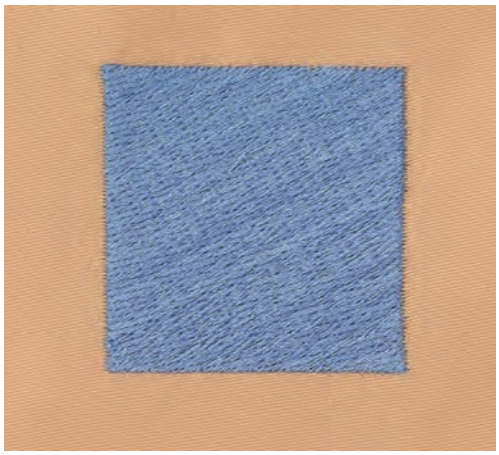
Satin stitch

The needle moves left to right and vice versa. The result is a very dense, covering zig zag stitching to fill the shape. Satin stitching fills are ideal for narrow and small shapes. Satin stitching is, however, not suitable for larger areas, since wide stitches are too loose and do not cover the fabric properly. In addition there is the risk that with too long stitches the threads could catch on something which would damage the embroidery.



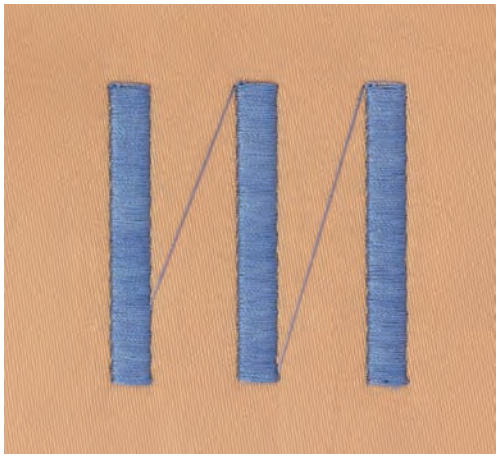
Step stitch

Many short, equally long stitches are embroidered in offset rows closely next to each other which results in a densesly filled area.



Connecting stitches

Long stitches which are used to get from one part of the motif to the next. Before and after the connecting stitch securing stitches are sewn. Connecting stitches are trimmed.



2 Embroidery preparation

2.1 Accessory box

Removing and attaching the accessory box

The accessory box is fixed to the machine by means of four magnets. When attaching, the drawer has to be integrated in the accessory box.

> Turn the carrying handle up and hold it in place.
> Tilt the accessory box slightly to the front and pull off.

> Close the doors of the accessory box.
> Attach the accessory box to the machine, having the back towards the machine.

Storing accessories

NOTICE

Incorrect sorting of the bobbin

The silvery sensor surface can get scratched.

> Make sure that the silvery sensor surfaces are on the right side when sorting the bobbins into the accessory box.

> Insert the holders (1) for bobbins, feet and needles.
> Store the small parts, e.g. lubricator etc., in the drawer (2).
> Insert the bobbins into the compartment (3) of the accessory box so that the silvery sensor surfaces are on the right side.
> To remove a bobbin, press the compartment holder down.
> Place the small and the medium thread disc on the pin (4).
> Store the foam pads in the compartment (5).
> Store the provided needle package in the special compartment (6).
> Store the embroidery feet in the holders (1) (5.5 mm or 9.0 mm).

2.2 Connection and Switching on

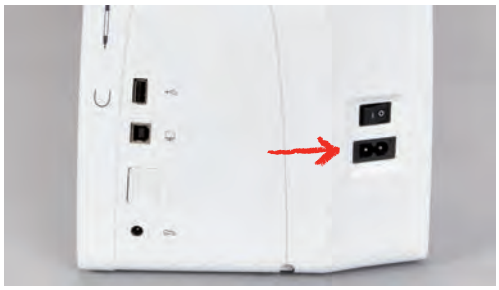
Connecting the foot control (Optional accessory)

> Unwind the cable of the foot control to the desired length.

> Insert the cable of the foot control into the foot control connection.

Connecting the machine

> Insert the power cable into the power cord connection.



> Insert the plug of the power cable into the electrical outlet.

Fixing the touchscreen pen

> Store the touchscreen pen at the magnet holder.

Switching the machine on

> Switch on the machine at the main switch to «I».

Switching on the sewing light

Prerequisite:

- The sewing light has to be activated in the Setup Program.

> Push the button «Sewing light» to switch the sewing light off.
> Push the button «Sewing light» again to switch the sewing light on.
  – The sewing light can also be switched on and off in the Setup Program (see page 60).

2.3 Foot control (Optional accessory)

Regulating the speed via the foot control

Via the foot control the speed can be adjusted steplessly.

> Press the foot control down carefully to start the machine.
> To embroider faster, press the foot control harder.
> Release the foot control to stop the machine.

Raising/Lowering the needle

> Sink the heel back on the foot control to raise/lower the needle.

2.4 Spool pin

Retractable spool pin

Lift the spool pin

With metallic or other special threads, it is recommend to use the retractable spool pin.

The retractable spool pin is used when special threads are embroidered and it can also be used for bobbin winding while embroidering.

> Press on the retractable spool pin with the finger and let go.
  – The retractable spool pin appears automatically.

Inserting foam pad and thread spool

The foam pad prevents the thread from getting hooked at the retractable spool pin.

> Place the foam pad on the retractable spool pin.

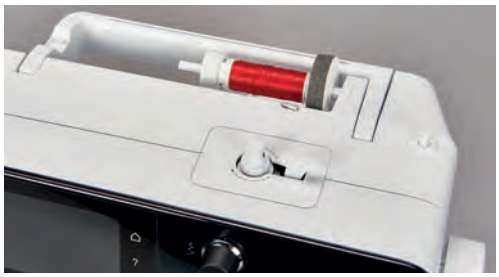
> Place the thread spool on the spool pin.

Horizontal spool pin

Placing the foam pad, the thread spool and the thread disc

Spool discs hold the thread spool in place for proper release of thread from the spool. The thread disc is only used with the horizontal spool holder.

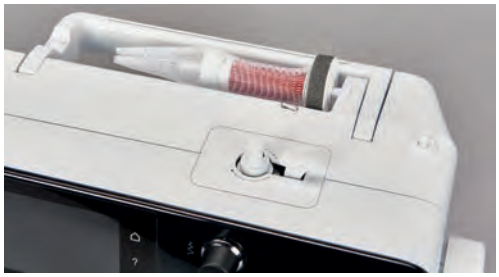
> Place the foam pad on the spool holder.
> Place the thread spool on the spool holder.
> Position the appropriate spool disc on the spool holder so that there is no space between the spool disc and the thread spool.



Using a spool net

The spool net provides an even unwinding of the thread from the thread spool and prevents the thread from knotting and breaking.

> Pull the spool net over the thread spool.



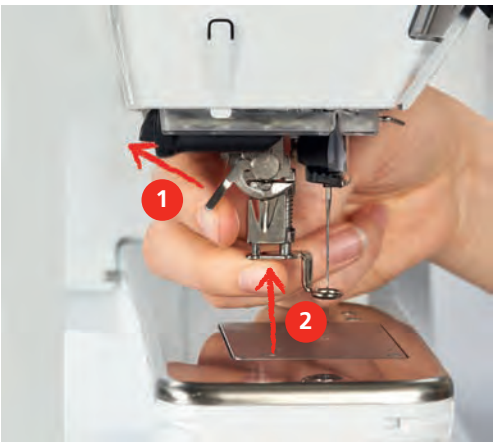
2.5 Free arm

The BERNINA 500 E provides a solidly designed free arm which offers a lot of space for large project on the right of the needle.

2.6 Embroidery foot

Attaching the embroidery foot

> Raise the needle.
> Switch the machine off and disconnect it from the power supply system.
> Push the clamping lever up (1).
> Guide the embroidery foot upwards over the cone (2).



> Press the clamping lever down.

Selecting the embroidery foot in the User Interface

After the embroidery foot (Embroidery foot No. 26, supplied accessory with the embroidery module) has been attached, it can be selected and saved on the machine. In addition to that, alternative presser feet are displayed which are available for the currently selected embroidery motif.

> Switch the machine on.
> Select an embroidery motif.

> Touch the icon «Presser foot display/Presser foot selection».

2.7 Needle and stitch plate

Inserting the embroidery needle

Embroidery needles of the type 130/705 H-SUK provide a larger eye and are slightly rounded. This avoids thread abrasion when using Rayon- and cotton embroidery thread. Depending on the embroidery thread use a size No. 70-SUK to No. 90-SUK needle.

> Raise the needle.
> Switch the machine off and disconnect it from the power supply system.
> Remove the attached foot.
> Loosen the fixing screw manually.

> Pull the needle down.
> Hold the new needle with the flat side to the back.
> Insert the needle as far as it will go.
> Tighten the fixing screw manually.

Selecting the embroidery needle in the User Interface

After having changed the needle, it can be checked whether or not it is suitable to be used together with the selected stitch plate.

> Touch the icon «Needle/Stitch plate selection».

> Select the attached needle.

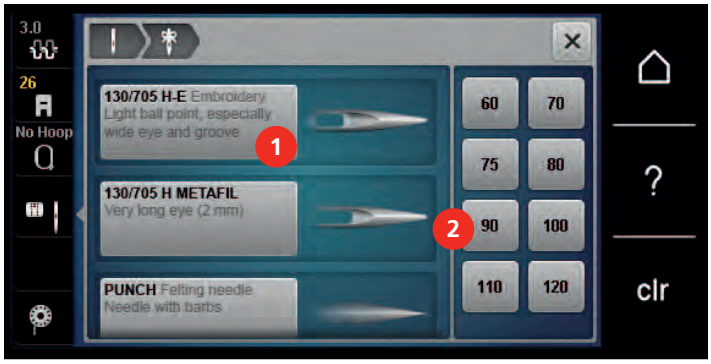
– If the selected needle is suitable in combination with the stitch plate, sewing can be started.
– If the selected needle is not suitable in combination with the stitch plate, starting the machine is automatically prevented.

Selecting the needle type and the needle size

Convenient memory function: To prevent a loss of information, the needle type and the needle size can be saved additionally on the machine. The saved needle type and the saved needle size can be checked at any time.

> Touch the icon «Stitch plate/Needle selection».

> Touch the icon «Needle type/Needle size».
> Select the needle type (1) of the inserted needle.
> Select the needle size (2) of the inserted needle.



Attaching the stitch plate

The stitch plate has a small hole in the needle insertion area. The thread is pulled in and knotted optimally which results in an optimized stitching result.

Prerequisite:

- The machine is switched off and disconnected from the power supply system.
- The foot and the needle are removed.

> Press the stitch plate down at the mark back right until it flips up.

> Remove the stitch plate.
> Place the openings of the stitch plate (PunchWork, Optional accessory) above the corresponding guide pins and press down until it clicks into place.

Selecting the stitch plate in the User Interface

After having replaced the stitch plate, it can be checked whether it can be used together with the selected needle.

> Touch the icon «Stitch plate selection».
> Select the attached stitch plate (PunchWork, optional accessory).

– If the selected needle is suitable in combination with the stitch plate, embroidering can be started
– If the selected needle is not suitable in combination with the stitch plate, starting the machine is automatically prevented

2.8 Threading

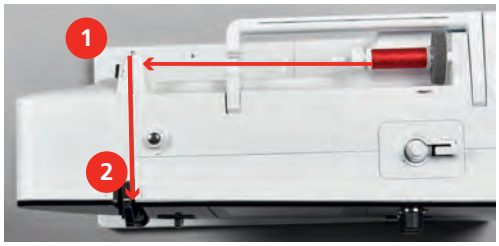
Threading the upper thread

Prerequisite:

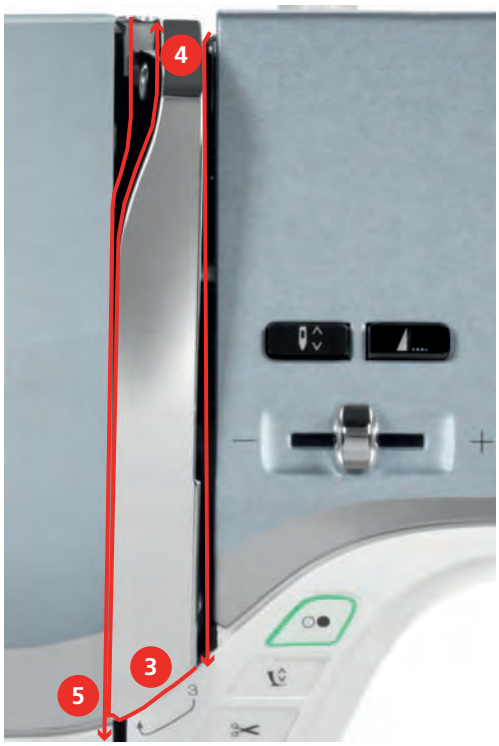
- The needle and the foot are raised.
- The machine is switched off and disconnected from the power supply system.

> Place the foam pad on the spool pin.
> Place the thread spool on the spool pin so that the thread is unwound clockwise.
> Add the appropriate spool disc.
> Guide the thread in direction of the arrow through the rear thread guide (1) and hold the thread with the hands so that it is taut and can be inserted into the thread tension.

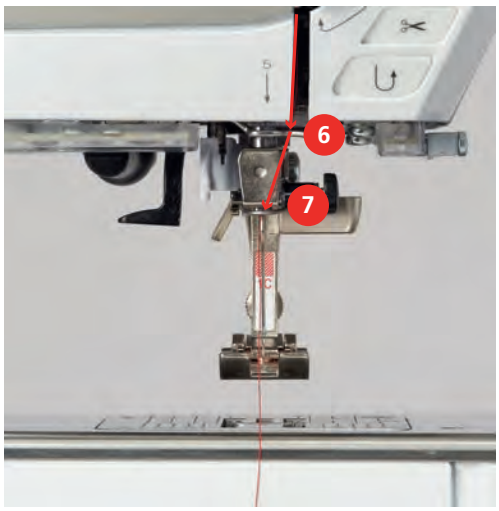
> Guide the thread in direction of the arrow through the thread tension (2).



> Guide the thread downwards around the thread take-up lever cover (3).
> Guide the thread upwards and insert into the thread take-up lever (4).

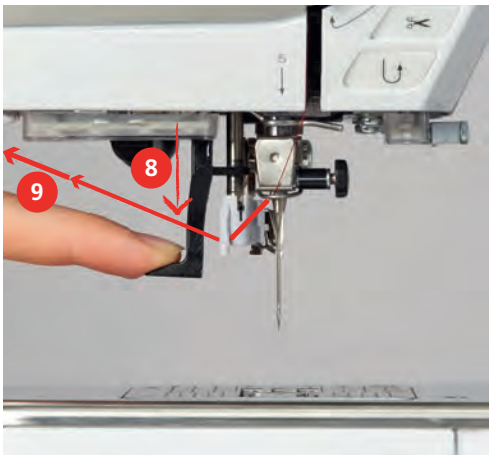


> Guide the thread downwards again (5).
> Guide the thread through the guides (6/7) above the foot.

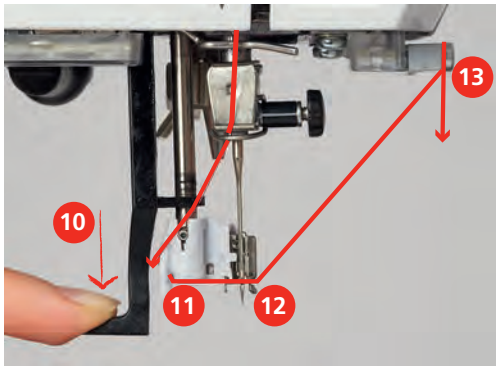


> Switch the machine on.

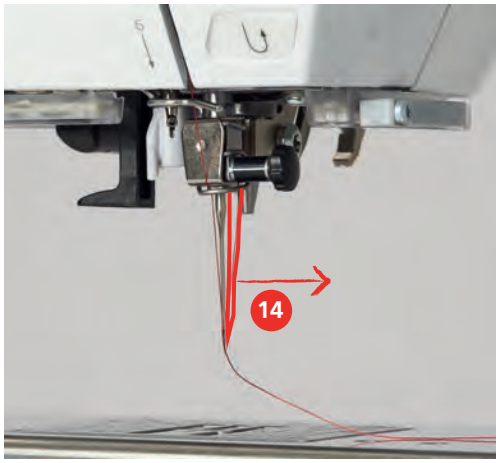
> Press the semi-automatic threader lever (8) slightly down, keep pressed and pull the thread to the left beneath the gray threader hook (9).



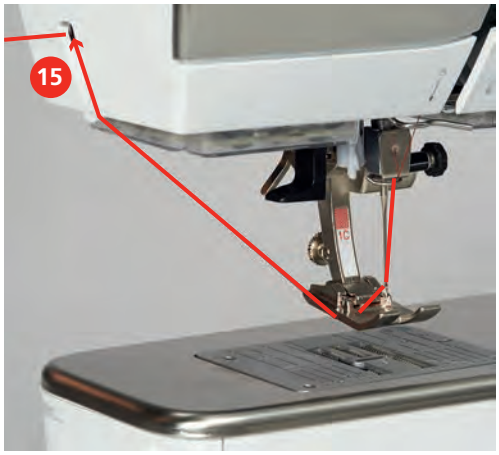
> Guide the thread around the gray threader hook from the left to the right (11).
> Press the threader lever down as far as it will go (10) and then pull the thread from the left to the right (11) through the threader slot (12) until it hooks into the small wire hook.
> Pull the thread over the thread cutter (13) from the back and cut.



> Release the lever to thread.
> Pull the thread loop (14) to the back.



> Pull the thread beneath the attached foot over the thread cutter (15) and cut.



Winding the bobbin thread

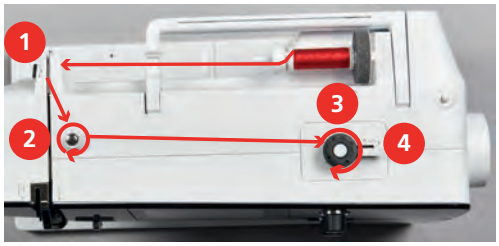
The bobbin thread can be wound while embroidering if the retractable spool pin is used for winding.

Prerequisite:

- The foam pad, the thread spool and the appropriate thread disc are positioned.

> Attach the empty bobbin on the winding unit so that the silvery sensor surface is down.

> Guide the thread to the left into the rear thread guide (1).
> Guide the thread around the thread pretension clockwise (2).
> Wind the thread clockwise 2 to 3 times around the empty bobbin (3).
> Pull the thread over the thread cutter at the engaging lever (4) and cut.



> Push the engaging lever (5) towards the bobbin.

– The machine winds and the display to wind the bobbin appears.

> Move the slide on the display using the touchscreen pen or the finger to adjust the winding speed.

> To stop the winding process, the engaging lever must the pressed to the right.

> Push the engaging lever towards the bobbin again to continue the winding process.

– As soon as the bobbin is full, the machine stops the winding process automatically.

> Remove the bobbin and cut the thread using the thread cutter at the engaging lever.

Threading the bobbin thread

Prerequisite:

- The needle is raised.
- The machine is switched off and the bobbin cover is opened.

> Press the bobbin case release at the bobbin case (1).

> Remove the boobin case.

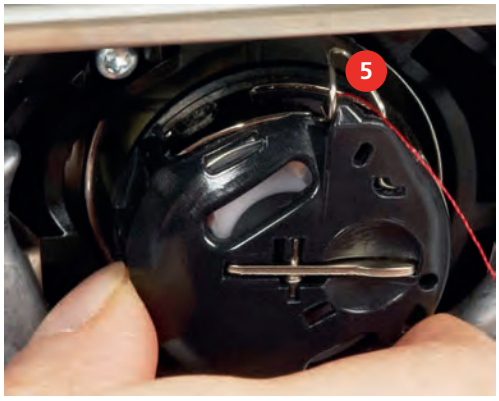
> Remove the bobbin from the bobbin case.

> Insert the new bobbin so that the silvery sensor surface is facing the back of the bobbin case.

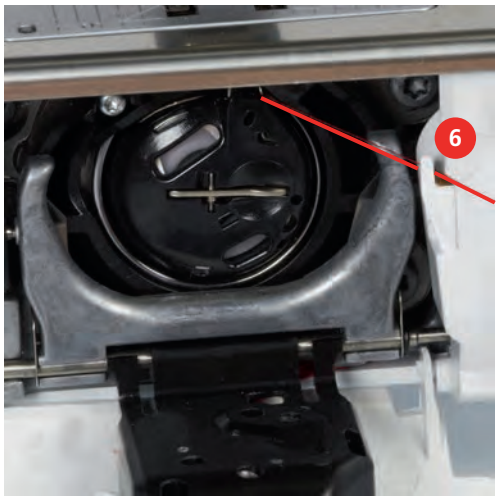
> Pull the thread into the slot (2) from the left.

> Pull the thread to the right under the spring (3), then lead the thread under the two thread guides (4) and pull upwards.

> When inserting into the machine, hold the bobbin case so the the thread guide (5) points upwards.



> Insert the bobbin case.
> Press onto the center of the bobbin case until it engages.
> Pull the thread through the thread cutter (6) and cut.



> Close the bobbin cover.

Thread-up command

The machine must be ready for embroidery to bring up the bobbin thread.The bobbin thread can be brought up in one step for a manual knotting. If no securing stitches are wanted, it is recommended to deactivate the securing stitches in the Setup.

> Hold the upper thread.
> Press the button «Needle up/down».
  – The bobbin thread is brought up automatically.

Indicating fill level of bobbin thread

As soon as the fill level of the bobbin thread is low, an animation, which indicates that the bobbin thread is running out, appears in the icon «Bobbin thread fill level».

> Touch the icon «Bobbin thread fill level» to thread the bobbin thread according to the animation.

2.9 Attaching the Module

NOTICE

Transporting the embroidery module

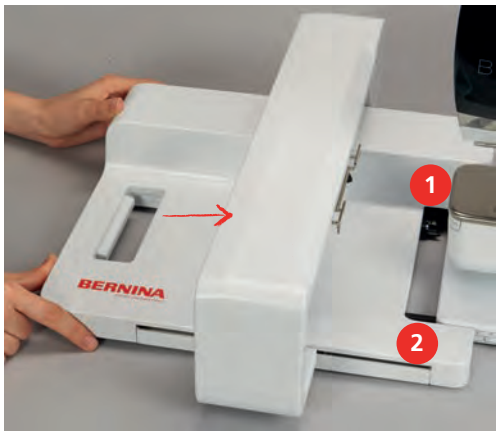
Damage to the embroidery module connection and machine.

> Remove the embroidery module before transporting the machine.

Prerequisite:

- The slide-on table must not be attached.

> Make sure that the module and the machine are placed on a stable, even surface.
> Make sure that there is enough space around to allow the unimpeded movement of the embroidery arm.
> Carefully push the embroidery module from left to right into the embroidery module connection of the machine (1) and the guide rail (2).



2.10 Removing the embroidery module

> Push the release lever (1) at the carrying handle of the embroidery module, keep it pressed and at the same time, move the embroidery module carefully to the left.

2.11 Selecting the embroidery motif

All embroidery motifs can either be embroidered as-is or changed using the various functions offered by the machine. All embroidery motifs can be found in the attachment (see page 168). In addition to that, embroidery motifs from the personal memory or from the BERNINA USB stick (optional accessory) can be loaded.

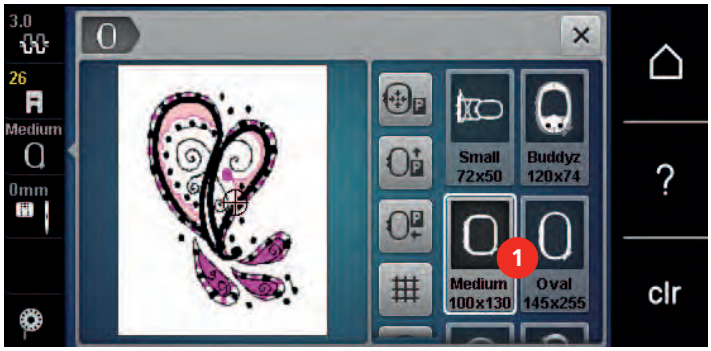
Prerequisite:

- The Embroidery foot No. 26 is attached.

> Select an alphabet, embroidery motif or a personal embroidery motif from a file.

2.12 Embroidery hoop

Overview Embroidery hoop selection



1 Hoop selection

Selecting the embroidery hoop

The best embroidery result is achieved when the smallest possible embroidery hoop for the embroidery motif is selected.

The embroidery motif has a pre-set size which is displayed.

Prerequisite:

- The embroidery motif is selected.

> Touch the icon «Hoop selection».
  - The machine selects the optimal embroidery hoop according to the size of the embroidery motif automatically. If the pre-set embroidery hoop would not be available, another desired embroidery hoop can be selected. When an embroidery hoop is attached which does not correspond with the selected one, the attached hoop is considered active and the embroidery motif area is displayed accordingly.

> Select the desired embroidery hoop.

Tear-away stabilizers

Using a stabilizer ensures more stability of the embroidery project. A tear-away stabilizer suits all woven and non-stretch materials. 1 – 2 layers can be used. Stabilizers are available in different weights. With larger embroidered areas the stabilizer will remain under the embroidery thread. The stabilizer is applied to the wrong side of the fabric with temporary adhesive spray. Carefully tear away excess stabilizer after embroidering.

Cut-away stabilizers

Using a stabilizer ensure more stability of the embroidery project. A cut-away stabilizer suits all elastic materials. 1 – 2 layers can be used. Stabilizers are available in different weights. With larger areas to be embroidered the stabilizer will remain under the embroidery thread. The stabilizer is applied to the wrong side of the fabric with temporary adhesive spray. Carefully cut away excess stabilizer after embroidering.

Using adhesive spray

The application of spray adhesive is recommended for stretch and smooth materials and knitware. It prevents the fabric from losing shape and slipping. Appliqués can be exactly positioned with spray adhesive. The spray adhesive shouldn't be used near the machine to avoid contamination.

> Use the adhesive spray carefully at a distance 25 – 30 cm (9 – 12 inch) when spraying the stabilizer.
> Adhere the sprayed stabilizer to the wrong side of the fabric carefully, smoothing material so there are no puckers.
> Position smaller parts such as pocket flaps or collars on the stabilizer.
> To avoid the possibility of getting hoop marks when working with napped materials or fleece, don't hoop the parts but spray the stabilizer and hoop it.
> Adhere the fabric to be embroidered.
> Remove any adhesive residue before starting the machine.

Using spray starch

Spray starch is ideal for additional stiffening fine, loosely woven materials. Always use an additional stabilizer on the wrong side of the material.

> Spray the area to be embroidered.
> Let it dry or press gently with a warm iron if necessary.

Using iron-on interfacing

Iron-on interfacings are available in a variety of weights. It is recommended to use an iron-on interfacing which is easily removable from the basic fabric. An Iron-on interfacing suits all materials that are easily distorted like stretch fabric such as tricot and jersey.

> Iron-on interfacings are ironed to the wrong side of the material using a warm iron.

Using paper-backed adhesive stabilizer

Paper-backed adhesive stabilizers are intended to be used for fabrics such as jersey and silk as well as for embroidery projects which are not suited to be hooped in the embroidery hoop.

> Place the stabilizer in the hoop, so that the paper side is up.
> Use a a pair of scissors to score the paper and remove paper in the hoop area.
> Position the fabric to be embroidered on the stabilizer and press it on place.
> Remove any adhesive residue before starting the machine.

Using water-soluble stabilizer

For lace embroidery it is recommended to hoop 1 – 3 layers of water-soluble stabilizer in the embroidery hoop. As the embroidery motif is not embroidered on the fabric, only the thread embroidered motif is left. The embroidery motifs should be combined with short stitches otherwise the individual motifs may fall out.

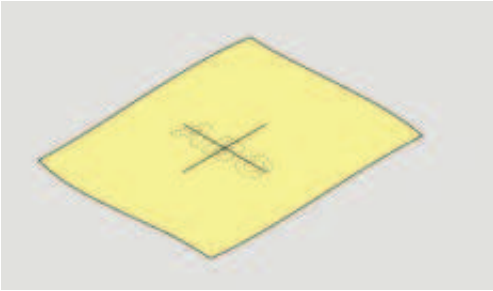
The stabilizer dissolves in water. Water-soluble stabilizers are an ideal protection for looped pile fabrics preventing the loops from being damaged! It prevents threads from sinking into the material and keeps the fabric pile from poking though the embroidery. Water-soluble stabilizers are ideal for fine, sheer fabrics where other stabilizers may show through the embroidery stitches as well as for lace embroidery.

> Place the stabilizer on top of the material.
> Place all the layers together into the embroidery hoop.
> Use adhesive spray to adhere stabilizer if necessary.
> For material with a pile, reinforce with additional, suitable stabilizer on the wrong side. In addition to that a water-soluble stabilizer can be placed on top of the material and fixed with basting stitches.
> After dissolving, lay the motif down flat and let dry.

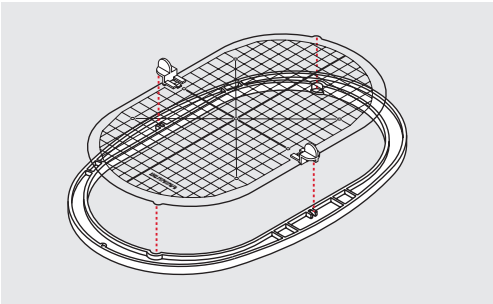
Preparing the embroidery hoop

The embroidery hoop consists of an outer and an inner hoop. There is a corresponding template for every hoop. The area to be embroidered is marked in 1 cm (0.39 inch) squares. The center and corner points are marked with holes. The required marks can be transferred to the material.

> Mark the center of an embroidery motif on the fabric, using a water-soluble pen.

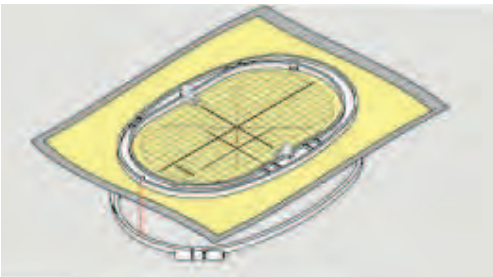


> Loosen the screw on the outer hoop.
> Remove the inner hoop.
> Make sure that the arrows marks of both hoops match.
> Attach the template holder.
> Place the template in the inner hoop, so the BERNINA logo is at the front edge at the arrow mark until it clicks into place.



> Place the material under the inner hoop.
> Line up the marked center point on the center of the template.

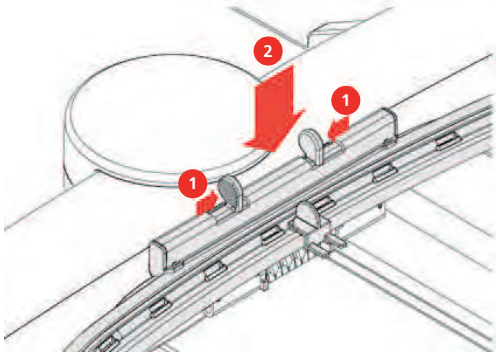
> Place the material and the inner hoop on the outer hoop so that the arrows of both hoops match.



> Fit the hoops into each other; ensure that the material does not move.
> Hoop the fabric to be embroidered tightly.
> Tighten the screw.
> Remove the template from the hoop by using the template holder.

Attaching the hoop

> Raise the needle.
> Raise the embroidery foot.
> Hold the hoop with the right side of the fabric up with the attaching mechanism to the left.
> Position the hoop under the embroidery foot.
> Press both attaching mechanisms (1) of the hoop towards each other.
> Position the embroidery hoop (2) above the bracket of the embroidery arm.
> Press the hoop down until it clicks in position.
> Release the attaching mechanism (1).



> Press the attaching mechanisms of the hoop towards each other to remove the hoop.
> Remove the hoop.

Overview embroidery functions

1	Centering the embroidery hoop to the needle	4	Grid on/off
2	Moving the embroidery hoop to the back	5	Embroidery motif center
3	Moving the embroidery arm to the left	6	Virtual positioning (appears by scrolling)

Center the needle to the embroidery hoop

Relocating the embroidery hoop facilitates threading when the needle is close to the embroidery hoop.

> Touch the icon «Embroidery hoop display/Embroidery hoop selection».

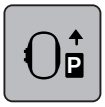
> Touch the icon «Center the needle to the embroidery hoop».
> Threading the upper thread.

> Push the button «Start/Stop» to move the embroidery hoop back to the last position.

Moving the hoop to the back

To facilitate changing the bobbin, it is recommended to move the hoop to the back before threading. This makes it easier to open the bobbin cover.

> Touch the icon «Embroidery hoop display/Embroidery hoop selection».



> Touch the icon «Move the hoop to the back».
> Thread the bobbin thread (see page 43).

> Push the button «Start/Stop» to move the embroidery hoop back to the last position. Pull the upper thread back if necessary.

Moving the embroidery arm to the left

> Touch the icon «Embroidery hoop display/Embroidery hoop selection».
> Remove the hoop.

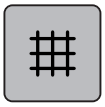
> Touch the icon «Move the embroidery arm to the left».
  – An animation «Remove the embroidery hoop» appears.

> Touch the icon «Confirm» to bring the embroidery hoop to the left into the parking position.

Grid on/off

When the center of the hoop and the grid are displayed, the embroidery motif can be positioned more exactly.

> Touch the icon «Embroidery hoop display/Embroidery hoop selection».



> Touch the icon «Grid on/off» to display the center of the hoop on the display.
> Touch the icon «Grid on/off» again to display the grid.
> Touch the icon «Grid on/off» again so that the center of the hoop and the grid disappear.

Locating the center of the embroidery motif

The embroidery hoop is positioned so that the needle is exactly above the center of the embroidery motif or the motif begin.

> Touch the icon «Embroidery hoop display/Embroidery hoop selection».

> Touch the icon «Center of embroidery motif» or

> push the button «Center of embroidery motif» to position the embroidery hoop so that the needle is exactly above the center of the embroidery motif.
> Touch the icon «Center of embroidery motif» again or
> push the button «Center of embroidery motif» again to position the embroidery hoop so that the needle is exactly above the pattern begin.

Virtual positioning of the embroidery hoop

The embroidery hoop is automatically moved to the new position as soon as the embroidery motif is repositioned. Therefore the icon «Virtual positioning» is activated automatically and outlined in yellow when an embroidery hoop is attached.

Prerequisite:

- The hoop is attached.

> Touch the icon «Embroidery hoop display/Embroidery hoop selection».

> Touch the icon «Virtual positioning» to deactivate the automatic movement of the hoop when having repositioned the embroidery motif.
> Touch the icon «Virtual positioning» again to activate the automatic movement of the hoop when having repositioned the embroidery motif.

3 Setup Program

3.1 Embroidery settings

Adjusting the upper thread tension

Alterations of the upper thread tension in the Setup Program affect all embroidery motifs. The settings in the Setup Program remain active even after switching the machine off.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Embroidery settings».

> Touch the icon «Alter the upper thread tension».
> Move the slide using the touchscreen pen/finger or touch the icons «+» or «-» to alter the upper thread tension.
> Touch the yellow-framed icon to reset the alterations to default setting.

Adjusting the maximum embroidering speed

By using this function, the maximum speed can be reduced.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Embroidery settings».

> Touch the icon «Alter the maximum speed».
> Move the slide using the touchscreen pen/finger or touch the icons «+» or «-» to alter the maximum speed.
> Touch the yellow-framed icon to reset the alteration to default setting.

Centering the embroidery motif or opening in original position

When the embroidery motif is openend on the machine, it is always centered to the embroidery hoop. If you want the embroidery motif to be opened in its original position (defined by the BERNINA embroidery software), the function «Center the embroidery motif» must be activated.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Embroidery settings».

> Touch the icon «Center the embroidery motif».

> Press the switch in the right section.
  – A previously moved embroidery motif which has been saved in the new position is opened in the saved position after selecting.
> Press the switch in the right section again.
  – The embroidery motif is centered to the embroidery hoop.

Calibrating the hoop

The calibration of the embroidery hoop is the coordination of the needle to the center of the embroidery hoop.

Prerequisite:

- The embroidery module is connected and the embroidery hoop with the appropriate embroidery template is attached.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Embroidery settings».

> Touch the icon «Calibrate the hoop».
> Center the needle via the arrow icons on the display.

Entering the fabric thickness

If the fabric thickness, as for e.g. toweling is more than 4 mm (0.15 inch) it is recommended to select 7.5 mm (0.29 inch) or 10 mm (0.39 inch). The thicker the fabric, the slower the embroidery speed of the machine. When the machine is switched off, the alterations are reset to the default setting 4 mm (0.15 inch).

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Embroidery settings».

> Touch the icon «Select fabric thickness».
> Select fabric thickness.

Function thread away on/off

The thread end is pulled out of the fabric after being cut.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Embroidery settings».

> Touch the icon «Thread away».

> Touch the switch using the touchscreen pen/finger to deactivate the function thread away.
> Touch the switch using the touchscreen pen/finger again to activate the function thread away.

Programming securing stitches (Smart Secure)

Embroidery motifs are programmed either with or without securing stitches. The machine recognizes when no securing stitches are programmed and adds some.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Embroidery settings».

> Touch the icon «Securing stitches on/off».

> 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.
> Press the switch in the lower right section to deactivate the securing stitches at the end.
  - 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 end.
  - 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.

Adjusting the thread cut

The settings for the thread cut can be customized. Deactivate the thread cut after a color change (1) or adjust the length of the connecting stitch (3). The machine does the cutting of the connecting threads at the determined length for you. Please adjust the length first from where the connecting stitches are to be cut. Then select the embroidery motif.

The length of the connecting thread can be adjusted between 1 mm and 15 mm, the default setting is 6 mm. This means that all connecting stitches longer than 6 mm are cut automatically. If the value is reduced to 1 mm, more thread cuts are carried out, it takes longer to embroider and more loose thread ends can be seen on the wrong side of the fabric, especially when the function ‘Thread-away’ is activated too. On the right side of the fabric there will be practically none or merely very short connecting stitches which results in a wonderful stitch formation. Reducing the length of the thread cut to 1 mm is particularly of advantage when embroidering texts where usually many short connecting threads occur. As for other embroidery motifs (specifically when both sides of the embroidery motifs are visible) it may be reasonable to not reduce the length of the thread cut so much so that there won’t be too many loose thread ends on the wrong side of the fabric. These loose ends get sewn over and can hardly be removed afterwards.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Embroidery settings».

> Touch the icon «Thread cut settings».

> Touch the switch in the upper portion of the display (1) to deactivate the automatic thread cut after the thread has been changed.
> Touch the switch in the upper portion of the display (1) again to activate the automatic thread cut after the thread has been changed.

> Touch the switch in the middle section of the display (2) so that the machine will stop after about 7 stitches and the remaining thread can be cut manually.
> Touch the switch in the middle section of the display (2) again and the machine won't stop for a manual thread cut.
> Touch the icons «-» or «+» (3) to adjust the length from where the connecting stitches are cut.

> Touch the yellow-framed icon on the left side to reset the alteration to default setting.

Changing the measuring unit

The measuring unit in the embroidery mode can be changed from mm to inch. The standard setting is in mm.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Embroidery settings».

> Touch the icon «Change measuring unit».
> Touch the icon «Inch» (1) to change the measuring unit in the embroidery mode to inch.
> Touch the icon «mm» (2) to change the measuring unit in the embroidery mode to mm.

3.2 Selecting personal settings

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Personal settings».
> Select the desired color of the display and the background.
> Touch the text box above the color settings.

> Enter the welcome text.
> Touch the icon «ABC» (standard setting) to use upper-case letters.
> Touch the icon «abc» to use lower-case letters.
> Touch the icon «123» to use figures and mathematical symbols.
> Touch the icon «@&!» to use special characters.
> Touch the text box above the keyboard to delete the entered text completely.

> Touch the icon «DEL» to delete individual characters of the entered text.

> Touch the icon «Confirm».

3.3 Monitoring functions

Activating the bobbin thread indicator

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Monitoring settings».

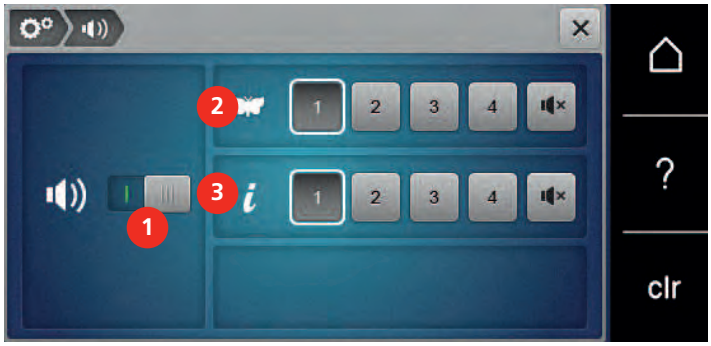
> Touch the switch in the lower portion of the display to deactivate the bobbin thread indicator.
> Touch the switch again to activate the bobbin thread indicator.

3.4 Activating the audio signals

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Audio signals».
> Touch the switch (1) to deactivate any audio signals in general.
> Touch the switch (1) again to activate any audio signals in general.
> In the section (2) touch the icons «1 – 4» to set up the desired signal for the selection of an embroidery motif.
> In the section (2) touch the icon «Loudspeaker» to deactivate the signal for the selection of an embroidery motif.
> In the section (3) touch the icons «1 – 4» to activate the signal for the selection of functions.
> In the section (3) touch the icon «Loudspeaker» to deactivate the signal for the selection of functions.



3.5 Machine settings

Selecting a language

The User Interface can be programmed in different languages according to the customer's wish because BERNINA provides a wide range of international languages for the customers. Via firmware updates new languages are provided for the User Interface as appropriate.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Language selection».
> Select a language.

Adjusting the brightness of the display

The brightness of the display can be adjusted corresponding to the personal preferences.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Adjust the brightness».
> Move the slide in the upper portion of the display using the touchscreen pen/finger or touch the icons «+» or «-» to alter the brightness of the display.

Adjusting the sewing light

The brightness of the sewing light can be adjusted corresponding to the personal preferences.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Adjust the brightness».
> Move the slide in the upper portion of the display using the touchscreen pen/finger or touch the icons «+» or «-» to alter the brightness of the sewing light.

> Touch the switch to switch the sewing light off.
> Touch the switch again to switch the sewing light on.

Checking the firmware version

Both the firmware and the hardware version of the machine and the attached embroidery module are displayed.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Information».

> Touch the icon «Firmware and Hardware Information».

Reviewing the total number of stitches

The total number of stitches of the machine as well as the number of stitches since the last service carried out by the specialized BERNINA dealer are displayed.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Information».

> Touch the icon «Firmware and Hardware Information».

Registering details of the dealer

The contact details of your specialized BERNINA dealer can be registered.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Information».

> Touch the icon «Dealer details» to enter the information of the specialized dealer.

> Touch the icon «Name of the shop» to enter the name of the specialized BERNINA dealer.

> Touch the icon «Address» to enter the address of the specialized BERNINA dealer.

> Touch the icon «Phone» to enter the telephone number of the specialized BERNINA dealer.

> Touch the icon «Internet» to enter the Internet homepage or the email address of the specialized BERNINA dealer.

Saving Service data

Service data concerning the status quo of the machine can be saved on a BERNINA USB stick (optional accessory) and then given to the BERNINA dealer.

> Insert a BERNINA USB stick (Optional accessory) which provides enough free memory space into the USB port.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Information».

> Touch the icon «Service data».
> Touch the icon «LOG».
  – The icon «LOG» is outlined in white.
> Only when the icon is not outlined in white anymore, remove the BERNINA USB Stick (optional accessory).

Back to basic setting

ATTENTION: Using this function will delete all individually made settings.

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Basic settings».

> Touch the icon «Basic setting Embroidering».

> Touch the icon «Confirm» to restore basic settings for the embroidery settings.

Deleting user data

Motifs which are not needed anymore can be deleted so that there will be more capacity for new motifs.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Default settings».

> Touch the icon «Delete personal embroidery motifs».

> Touch the icon «Confirm» to delete all embroidery motifs from the personal memory.

Deleting motifs on the BERNINA USB Stick

When motifs which won't be needed anymore are saved on the BERNINA USB Stick (Optional accessory), the stick can be connected to the machine and the data can be deleted.

> Insert the BERNINA USB Stick (Optional accessory) into the den USB port of the machine.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Default settings».

> Touch the icon «Delete data from USB Stick».

> Touch the icon «Confirm» to delete all data on the BERNINA USB Stick (optional accessory).

Updating the machine Firmware

NOTICE

BERNINA USB stick (optional accessory) has been removed too early

Firmware has not been updated and the machine cannot be used.

> Remove the BERNINA USB stick (optional accessory) only after the update has been completed successfully.

The latest firmware of the machine and a detailed step-by-step instruction for updating processes can be downloaded at www.bernina.com. In general, personal data and settings are automatically transferred during a firmware update. For reasons of safety, it is also recommended to save data and settings on a BERNINA USB stick (optional accessory) before the firmware update is started. If personal data and settings should get lost during a firmware update, they can be transferred to the machine again afterwards.

> Insert the BERNINA USB Stick (optional accessory), FAT32 formatted, providing the latest software into the port.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Maintenance/Update».

> Touch the icon «Update the machine».

> Touch the icon «Save data on USB Stick».
  – The icon is checkmarked in green.

> Touch the icon «Update» to start the update of the firmware.

Recovering saved data

NOTICE

The BERNINA USB stick (optional accessory) has been removed too early.

Saved data cannot be transferred and the machine cannot be used.

> Remove the BERNINA USB stick (optional accessory) only after the saved data has been transferred successfully.

If personal data and settings after a software update are not available anymore, they can be transfered to the machine again afterwards.

> Insert the BERNINA USB stick (Optional accessory) providing the saved data and settings into the USB port of the machine.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Maintenance/Update».

> Touch the icon «Update the machine».

> Touch the icon «Transfer saved data to machine».
  – The icon is checkmarked in green.

Cleaning the thread catcher

In chapter «Maintenance and cleaning» there are additional illustrated step-by-step instructions.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Maintenance/Update».

> Touch the icon «Clean the thread catcher».
> Clean the thread catcher according to the instructions on the display.

Lubricating the machine

CAUTION

Electronically driven components

Risk of injury near the needle and the hook.

> Switch the machine off and disconnect it from the power supply system.

NOTICE

Lubricating the hook

Too much oil can pollute the fabric and the thread.

> Always sew/embroider a test sample first.

In the Setup Program, animations show how to lubricate the machine. In chapter «Maintencance and cleaning», there are further illustrated step-by-step instructionsLubricating the machine. Always use BERNINA oil to lubricate.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Maintenance/Update».

> Touch the icon «Lubricate the machine».
> Lubricate the machine according to the instructions on the display.

Packing the embroidery module

To pack the embroidery module into the original packaging without moving the embroidery arm manually, the embroidery arm needs to be brought to its packing position.

Prerequisite:

- The embroidery module is connected with the machine.

> Touch the icon «Home».

> Touch the icon «Setup Program».

> Touch the icon «Machine settings».

> Touch the icon «Maintenance/Update».

> Touch the icon «Packing position for embroidery module».
> Follow the instructions on the display.

4 System settings

4.1 Calling up the Tutorial

The Tutorial provides information and explanations on different sections concerning embroidering.

> Touch the icon «Home».

> Touch the icon «Tutorial».
> Select the desired topic to get information.

4.2 Calling up the embroidery consultant

The Embroidery Consultant provides information about decision support concerning embroidery projects. After entering the fabric and the desired embroidery project, suggestions for the suitable needle and the suitable embroidery foot are displayed.

Prerequisite:

- Embroidery mode is active.

> Touch the icon «Home».

> Touch the icon «Embroidery Consultant».
> Select the embroidery project.
> Select the fabric which is to be embroidered.
> Touch the icon «Confirm».
  – If the embroidery motif has already been selected, a warning appears that it will be overwritten.

4.3 Using eco mode

During a longer interruption of work the machine can be set into a power save mode. The power save mode also serves as a child safety feature. Nothing can be selected in the display and the machine cannot be started.

> Touch the icon «Home».

> Touch the icon «eco-Modus».
  – The display goes to sleep. The power consumption is reduced and the sewing light is off.
> Touch «eco».
  – The machine is ready for use.

4.4 Calling up the Help

> Touch the window in the display where help is needed.
> Touch the icon «Help» to start the help mode.
> Touch the icon in the display where help is needed.
  – Assistance concerning the selected icon is displayed.

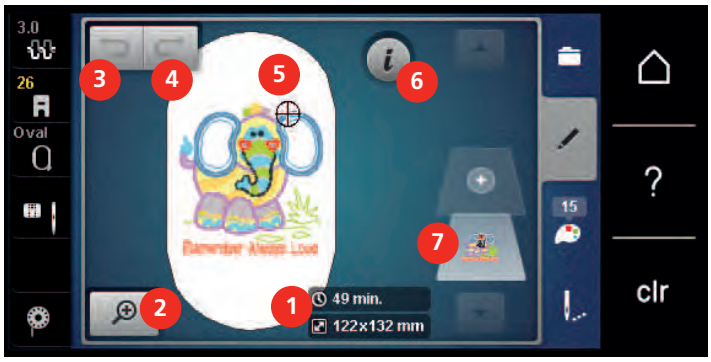
4.5 Cancelling any alterations with «clr»

Any alterations to motifs can be reset to default setting. Exceptions are saved motifs which have been filed in the personal memory and monitoring functions.

> Touch the icon «clr».

5 Creative embroidering

5.1 Overview embroidering



1	Embroidery time/Embroidery motif size in mm or inch	5	Area to be embroidered
2	Scaling up, downsizing and moving the embroidery motif view	6	«i»-Dialog
3	Undoing entries	7	Embroidery motif layers
4	Redoing entries		

5.2 Selecting and changing the embroidery motif

> Touch the icon «Selection».

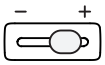
> Touch the icon «Upload embroidery motif».
> Select a new embroidery motif.

5.3 Checking the embroidery time and the embroidery motif size

In the display «Editing» at lower right (1), the estimated embroidery time is indicated in minutes and the width and height of the embroidery motif is indicated in millimeters.

5.4 Regulating the speed

The speed is infinitely variable with the slide-speed control.



> Move the slide-speed control to the left to reduce the speed.
> Move the slide-speed control to the right to increase the speed.

5.5 Editing the embroidery motif

Overview Editing embroidery motif

1	Zoom out	10	Mirror image up/down
2	Zoom in	11	Duplicating
3	Moving the view	12	Endless Embroidery
4	Moving the motif	13	Deleting (appears by scrolling)
5	Moving the motif	14	Check embroidery motif size (appears by scrolling))
6	Rotating the embroidery motif	15	Bending text (only when an alphabet is selected, appears by scrolling)
7	Altering the size	16	Grouping embroidery motifs (appears by scrolling)
8	Pinpoint placement	17	Changing the sequence within an embroidery motif combination (appears by scrolling)
9	Mirror image left/right	18	Altering the stitch type/stitch density (appears by scrolling)

Scaling up the embroidery motif view

The view of the embroidery motif can be scaled up. In addition to that, the view can be adjusted with or without changing the embroidery position.

> Select an embroidery motif.

> Touch the icon «Zoom in» to edit the view of the embroidery motif.

> Touch the icon «Zoom in» 1 – 4 times to enlarge the view of the embroidery motif gradually.

> Touch the icon «Zoom out» 1 – 5 times to get back to the Edit Mode.

Downsizing the embroidery motif view

The view of the embroidery motif can be downsized. In addition to that, the view can be adjusted with or without changing the embroidery position.

> Select the embroidery motif.

> Touch the icon «Zoom in» to edit the view of the embroidery motif view.

> Touch the icon «Zoom in» 1 to 4 times to downsize the view of the enlarged embroidery motif gradually.

Moving the embroidery motif view

The view of the embroidery motif can be moved. In addition to that, the view can be adjusted with or without changing the embroidery position.

> Select an embroidery motif.

> Touch the icon «Zoom in» to activate the icon «Move the view».

> Touch the icon «Move the view».
  – The icon turns dark gray.

> Move the view of the embroidery motif using the touchscreen pen/finger.
  – The embroidery position is not altered.

> Touch the icon «Zoom out» to go back to the Edit Mode.

Moving the embroidery motif in enlarged view

The view of the embroidery motif can be moved. In addition to that, the view can be adjusted with or without changing the embroidery position.

> Select an embroidery motif.

> Touch the icon «Zoom in» to activate the icon «Move the motif».

> Touch the icon «Move the stitch pattern».

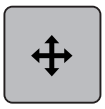
> Move the view of the embroidery motif using the touchscreen pen/finger.
  – The embroidery position is altered.

> Touch the icon «Zoom out» to go back to the Edit Mode.

Moving the embroidery motif

> Select an embroidery motif.

> Touch the icon «i»-Dialog.



> Touch the icon «Move the stitch pattern».

> Turn the «Upper Multifunction knob» to move the embroidery motif horizontally in 1/10-mm steps.

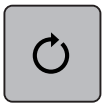
> Turn the «Lower Multifunction knob» to move the embroidery motif vertically in 1/10-mm steps or

> touch the embroidery motif, keep it pressed and move it as you like.
  – The relocation is indicated in the yellow-framed icons.

> Touch the icon «Center of the embroidery motif».
  – The embroidery motif is repositioned in the center of the embroidery hoop.

Rotating motif

> Select an embroidery motif.
> Touch the icon «i»-Dialog.



> Touch the icon «Rotate the motif».
> Turn the «Upper Multifunctional knob» or the «Lower Multifunctional knob» to the right to rotate the embroidery motif clockwise.
> Turn the «Upper Multifunctional knob» or the «Lower Multifunctional knob» to the left to rotate the embroidery motif counter-clockwise.

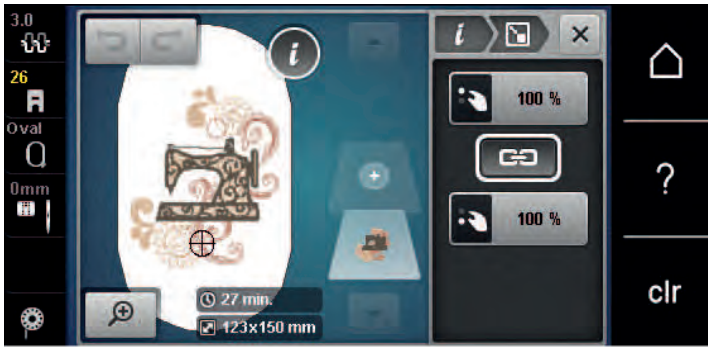
> Touch the icon «Rotate the motif +90°» to rotate the embroidery motif in 90°-steps.

Altering the embroidery motif size proportionally

If the icon «Retain the proportions» is framed in white, the embroidery motif is altered proportionally.

> Select an embroidery motif.
> Touch the icon «i»-Dialog.

> Touch the icon «Alter the embroidery size».
> Turn the «Upper/Lower Multifunctional knob» to the right to scale up the embroidery motif proportionally.
> Turn the «Upper/Lower Multifunctional knob» to the left to downsize the embroidery motif proportionally.



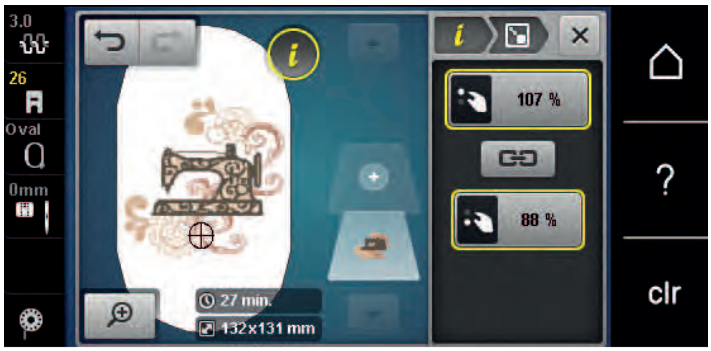
Altering the embroidery motif size disproportionally

If the icon «Retain the proportions» is **not** outlined in white, the embroidery motif is altered disproportionally.

> Select an embroidery motif.
> Touch the icon «i»-Dialog.

> Touch the icon «Alter the embroidery motif size» to alter the embroidery motif width and height independent on each other.

> Touch the icon «Retain the proportions».
> Turn the «Upper Multifunctional knob» to alter the embroidery motif horizontally.
> Turn the «Lower Multifunctional knob» to alter the embroidery motif vertically.
  – The embroidery motif is **not** scaled up or downsized proportionally.



Mirroring embroidery motifs

Embroidery motifs can be mirror-imaged both vertically and horizontally.

> Select an embroidery motif.
> Touch the icon «i»-Dialog.

> Touch the icon «Mirror image left/right» to mirror the embroidery motif vertically.

> Touch the icon «Mirror image up/down» to mirror the embroidery motif horizontally.

Bending the text

Texts can be arranged and designed arc-shaped.

> Create an alphabet embroidery motif.
> Touch the icon «i»-Dialog.

> Touch the icon «Bend text».
> Turn the «Upper Multifunctional knob» to alter the distance between the characters in millimeter-steps.
> Turn the «Lower Multifunctional knob» to the left or to the right to bend the lettering upwards or downwards.

Changing the stitch type

If the satin stitches are too long, they can be changed to step stitches.

> Select an embroidery motif.
> Touch the icon «i»-Dialog.

> Touch the icon «Change the stitch type».
> Touch the switch in the upper section of the display (1) to change the satin stitch to the step stitch.

> Adjust the desired stitch length (2) with the icons «-» or «+».

Altering the stitch density

If the satin stitches are embroidered too densely, the stitch density can be adjusted.

> Select an embroidery motif.

> Touch the icon «i»-Dialog.

> Touch the icon «Change the stitch type».

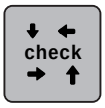
> Adjust the desired stitch density (1) with the icons «-» or «+».

Checking the embroidery motif size and position

It can be checked whether or not the embroidery motif matches the designated position/location on the fabric. Points which are beyond the embroidery hoop are not traveled to.

> Select the embroidery motif.

> Touch the icon «i»-Dialog.

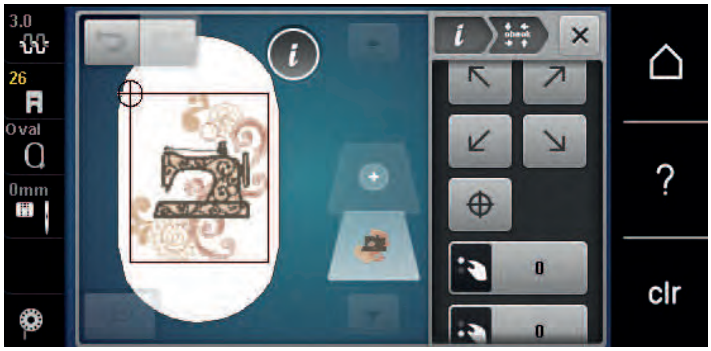


> Touch the icon «Check the embroidery motif size» or

> push the button «Check the embroidery motif size».
  – The embroidery hoop travels all the way until the needle is at the position as it is indicated in the display.

> Touch the icon «Corner top left» to select the top left corner of the embroidery motif.
  – The embroidery hoop travels all the way until the needle is at the position as it is indicated in the display.

> Touch the icon «Corner top right» to select the top right corner of the embroidery motif.
  – The embroidery hoop travels all the way until the needle is at the position as it is indicated in the display.
> Touch the icon «Corner bottom left» to select the bottom left corner of the embroidery motif.
  – The embroidery hoop travels all the way until the needle is at the position as it is indicated in the display.
> Touch the icon «Corner bottom right» to select the bottom right corner of the embroidery motif.
  – The embroidery hoop travels all the way until the needle is at the position as it is indicated in the display. If the embroidery motif hasn't been positioned correctly yet, the position can be altered via the «Upper/Lower Multifunctional knobs» and the complete embroidery positions can be checked again.



> Touch the icon «Center of the embroidery motif» or

> push the button «Center of the embroidery motif» to bring the needle to the center of the embroidery motif.
> Turn the «Upper Multifunctional knob» to move the embroidery motif horizontally.
> Turn the «Lower Multifunctional knob» to move the embroidery motif vertically.

Endless embroidery

When embroidering a border, it is advantageous to use the «Mega-Hoop» (optional accessory). The embroidery project requires less rehooping. We recommend marking reference lines on the fabric, and using the template when hooping and rehooping. Here, the reference lines must run parallel to the lines on the template. In the following example, the supplied «Oval-Hoop» is used.

> Select an embroidery motif.

> Touch the icon «i»-Dialog.

> Touch the icon «Endless Embroidery».
  – The embroidery motif will be duplicated as many times as possible to fill the hoop.
  – The reference points, which are necessary when rehooping the fabric, are added.
> Add further reference points, if necessary, using the arrow icons (1).
> Turn the «Upper Multifunctional knob» or
> touch the icons «-/+» (2) to enter the number of embroidery motifs.
> Turn the «Lower Multifunctional knob» or
> touch the icons «-/+» (3) to determine the distance between the embroidery motifs.

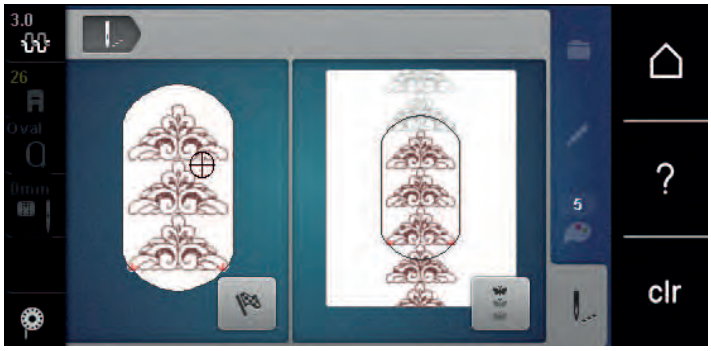
> Touch the icon «Fit to hoop» (4) to adjust the size of the motifs automatically so they all fit in the hoop.

> Touch the icon «Confirm».

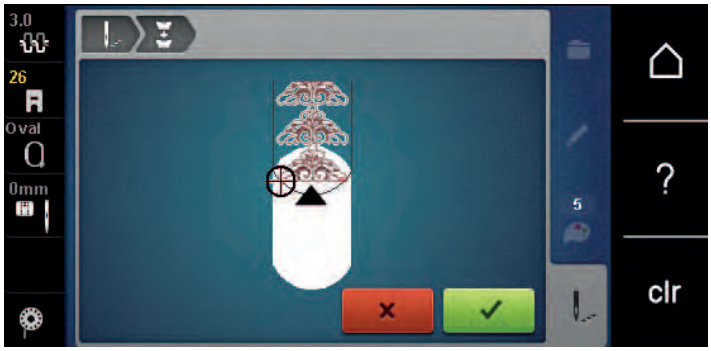
> Touch the icon «i»-Dialog.

> Touch the icon «Embroidering».

> Push the button «Start/Stop» and embroider the border.
  – The embroidery motif must be embroidered completely.



> Touch the icon «Endless Embroidery» when the reference points have been embroidered.
  – An animation indicates that the fabric must be rehooped.



> Remove the hoop and rehoop the fabric so that the stitched out reference points are in the upper part of the embroidery area and at least 3 cm (1.18 inch) from the top edge of the hoop.

> Attach the hoop.

> Touch the icon «Confirm».
  – The embroidery hoop is moved automatically close to the reference point.
  – The icon «AUTO» is activated and the hoop moves automatically near the last reference point.

> Via the arrow icons, determine on which side of the embroidered part the next reference point shall be placed.

> Turn the «Upper Multifunctional knob» or the «Lower Multifunctional knob» to position the hoop exactly.

> Touch the icon «Confirm».

> Push the button «Start/Stop» and resume embroidering.
> Repeat these steps until the desired length of the border is embroidered.

Duplicating the embroidery motif

The active embroidery motif is duplicated.

> Select an embroidery motif.
> Touch the icon «i»-Dialog.

> Touch the icon «Duplicate».

Deleting an embroidery motif

The active embroidery motif is deleted.

> Select an embroidery motif.
> Touch the icon «i»-Dialog.

> Touch the icon «Delete».

Changing the sequence within an embroidery motif combination

The sequence of the embroidery motifs within the embroidery motif combination can be changed.

Prerequisite:

- The embroidery motif combination has been created or the motif has been ungrouped.

> Select the desired embroidery motif which is to be repositioned.
> Touch the icon «i»-Dialog.

> Touch the icon «New Allocation».

> Touch the icon «Scroll up» to position the selected embroidery motif further up within the sequence.

> Touch the icon «Scroll down» to position the selected embroidery motif further down within the sequence.

Undoing entries

All entries can be undone and redone again step by step.

Prerequisite:

- An embroidery motif has been selected and alterations have been done.

> Touch the icon «Undo» to cancel the last entry.
> Touch the icon «Undo» several times to cancel the last entries step by step.

> Touch the icon «Redo» to restore the last entry.
> Touch the icon «Redo» several times to restore the last entries step by step.

Grouping embroidery motifs

Embroidery motifs can be added to a combination or removed. The grouped embroidery motifs can be edited like one single embroidery motif.

The sequence of the embroidery motifs in the combination can be changed (see page 77).

As soon as an embroidery motif has been ungrouped, in other words, it has been decomposed in different elements/colors, the colors won't be recomposed. With alphabets, the jumpstitch length needs to be adjusted to 1 in the Setup so that ungrouping will work with all the letters.

> Create an embroidery motif combination.
> Select an embroidery motif (1) within the embroidery motif combination.

> Touch the icon «i»-Dialog.

> Touch the icon «Group».

> Touch the icon «Group».
  – The embroidery motif above the selected embroidery motif is added to the embroidery motif combination.

> Select an embroidery motif combination.

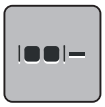
> Touch the icon «Ungroup».
  – The combination is ungrouped.

or

> Create an embroidery motif combination.
> Select all embroidery motifs (2).

> Touch the icon «i»-Dialog.

> Touch the icon «Group».
  – All embroidery motifs are added to the embroidery motif combination.
> Select an embroidery motif combination.



> Touch the icon «Ungroup».
  – The combination is ungrouped.

5.6 Pinpoint placement

Positioning of grid points

This function allows the exact positioning of the embroidery motif on the fabric in an easy way. The positioning points can be placed in the grid.

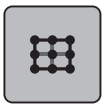
Prerequisite:

- Any two points of the embroidery motif are marked with chalk or a water-soluble pen on the fabric. The place or the location where the embroidery motif is to be positioned is clearly visible.

> Select an embroidery motif.

> Touch the icon «i»-Dialog.

> Touch the icon «Pinpoint placement».



> Touch the icon «Grid».
  – The embroidery motif is given a grid with nine different location/positioning points.
> Select the desired positioning point to which the embroidery motif is to be adjusted.
  – The point changes its color.
> Turn the «Upper Multifunctional knob» or the «Lower Multifunctional knob» to the left or to the right to position the needle above the respective mark on the fabric.

> Touch the icon «SET» to confirm the altered position.
  – The point changes its color and is defined.
> Select the second positioning point of the embroidery motif.
> Turn the «Upper Multifunctional knob» or the «Lower Multifunctional knob» to the left or to the right to position the needle above the respective mark on the fabric.

> Touch the icon «SET» to confirm the altered position.
  – The point changes its color and is defined. The embroidery motif is adjusted accordingly.

> Touch the icon «Reset Pinpoint placement» to reset the alterations to default setting.

Free point positioning

This function allows exact positioning of embroidery motifs on the fabric in an easy way. The points can be defined as you like within the embroidery motif.

Prerequisite:

- Any two points of the embroidery motif are marked with chalk or a water-soluble pen on the fabric. The place or the location where the embroidery motif is to be positioned is clearly visible.

> Select an embroidery motif.

> Touch the icon «i»-Dialog.

> Touch the icon «Pinpoint placement».

> Touch the icon «Place points as desired».
> Define a desired point within the embroidery motif.
  – The positioning point is displayed.
> Turn the «Upper Multifunctional knob» or the «Lower Multifunctional knob» to the left or to the right to position the needle above the respective mark on the fabric.

> Touch the icon «SET» to confirm the altered position.
  – The point changes its color and is defined.
> Select the second positioning point of the embroidery motif.

> Turn the «Upper Multifunctional knob» or the «Lower Multifunctional knob» to the left or to the right to position the needle above the respective mark on the fabric.

> Touch the icon «SET» again to confirm the altered position.
  – The point changes its color and is defined. The embroidery motif is adjusted accordingly.

> Touch the icon «Reset Pinpoint placement» to reset the alterations to default setting.

5.7 Combining embroidery motifs

Combining embroidery motifs

In the Combi-Mode several embroidery motifs can be combined.

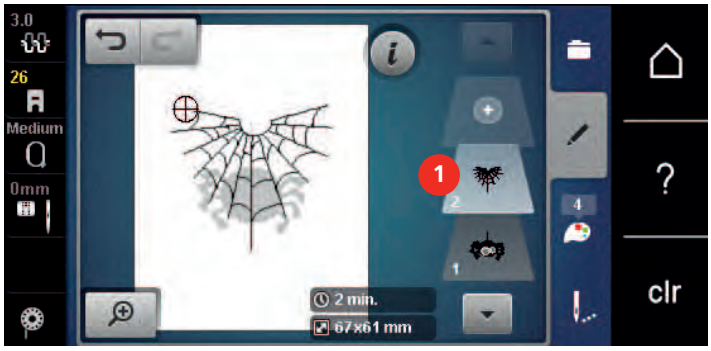
> Select an embroidery motif.
> Touch the icon «Add an embroidery motif» (1).
> Select another embroidery motif.

Deleting a single embroidery motif

Prerequisite:

- A combination of embroidery motifs has been created.

> In the section of the embroidery motif level (1) touch the desired embroidery motif with the finger, keep it pressed and move it outwards.
  – A new window opens.

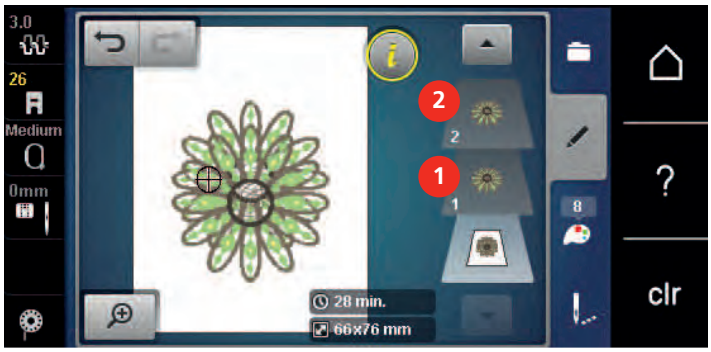


> Touch the icon «Confirm» to delete the selected embroidery motif.

Duplicating the embroidery motif

> Select an embroidery motif.
> Touch the icon «i»-Dialog.

> Touch the icon «Duplicate».
  – The embroidery motif (1) is duplicated (2).



Duplicating a combination

When a combination is duplicated, the individual embroidery motifs cannot be selected anymore.

> Select an embroidery motif.
> Touch the icon «Add an embroidery motif».
> Select another embroidery motif.
> Select the combination (1).

> Touch the icon «i»-Dialog.

> Touch the icon «Duplicate».

– The combination is duplicated (2).

5.8 Creating lettering

Overview embroidery alphabets

Embroidery motif	Name
ABC	Swiss Block
ABC	Anniversary
Abc	Guinevere
ABC	Drifter
ABC	Childs Play
АБВ	Russian Textbook
ABC	Curly
ABC	Rounded Sans

Creating words/sentences

Lettering is always embroidered in one color. To embroider single letters or single words in another color, every letter or every word has to be selected individually and placed in the area to be embroidered.

Lettering can be positioned within the hoop as you like. When the embroidery motif is positioned outside the embroidering area, the hoop is outlined in red on the display. With the hoop selection it can be checked whether or not the embroidery motif can be embroidered in another hoop. When the lettering does not fit in any hoop, two single words can be combined and positioned below each other as the following example will show.

> Select the file «Alphabets».
> Select the font.
> Enter the text «Made to».
> Touch the icon (1) (standard setting) to use upper case letters.
> Touch the icon (2) to use lower case letters.
> Touch the icon (3) to use numbers and mathematic characters.
> Touch the icon (4) to use special characters.

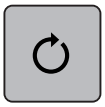
> Toucht the text box above the keyboard to delete the entered text completely.
> Touch the icon «DEL» to delete single letters of the entered text.

> Touch the icon «Confirm» to accept the text.

> Touch the icon «Embroidery hoop display/Embroidery hoop selection».
> Select the hoop.
> Touch the icon «Embroidery hoop display/Embroidery hoop selection» again to go back to the Edit Mode.

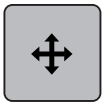
Editing words/sentences

> Touch the icon «i»-Dialog.



> Touch the icon «Rotate the motif».

> Touch the icon «+90» to rotate the text by 90°.
> Touch the icon «i» (1).

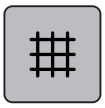


> Touch the icon «Move the stitch pattern».
> Turn the «Upper Multifunctional knob» to move the embroidery motif horizontally.

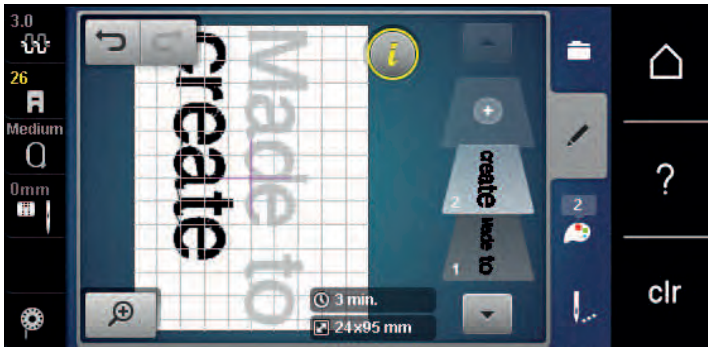
> Turn the «Lower Multifunctional knob» to move the embroidery motif vertically.

> Touch the icon «Add motif».
> Enter and also rotate the text «create».

> Touch the icon «Embroidery hoop display/Embroidery hoop selection».



> Touch the icon «Grid on/off» to position the text lines more exactly.



5.9 Changing the colors of the embroidery motif

Overview changing the color

1	Colors of embroidery motifs	4	Allocating thread brand
2	Preview for selected color	5	Altering color/brand
3	Color wheel	6	Color information

Changing the colors

Lettering is always embroidered in one color. To embroider single letters or single words in another color, every letter or every word has to be selected individually and placed in the area to be embroidered.

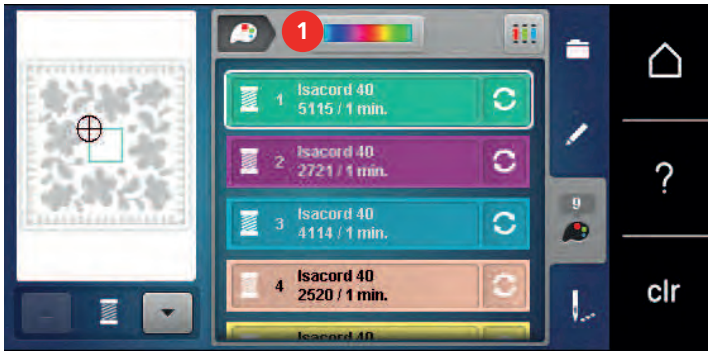
> Select the embroidery motif.
> Touch the icon «Color information».

> Touch the icon «Alter Color/Brand» next to the color which is to be changed.
> Swive upwards or downwards on the display with the touchscreen pen/finger to see more colors.

> Touch the icon «Color selection by number» to select the color by entering the color number.
> Select the desired color.
> The color selection needs to be confirmed by touching the color bar on the left side.

Altering the colors via the color wheel

> Touch the icon «Color information».
> Touch the icon «Color wheel» (1).



> Turn the round knob (2) with the the touchscreen pen/finger clockwise or counter-clockwise or turn the «Upper Multifunction knob» to alter the colors of the embroidery motif.

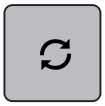
> Move the slide (3) with the the touchscreen pen/finger to alter the brightness of the colors.

> Touch the icon «Edit».
  – The embroidery motif appears in the new colors.

Changing the thread brand

> Select an embroidery motif.

> Touch the icon «Color information».



> Touch the icon «Altering color/brand».

> Touch the icon «Scroll left/right» to display other thread brands.

> Touch the icon «Allocate thread brand».
  – Any thread colors of the selected embroidery motif will be matched with the selected thread brand.

5.10 Embroidering the embroidery motif

Overview Embroidery menu

1	Basting	6	Increasing the embroidery speed (appears by scrolling)
2	Moving the hoop	7	Reducing color changes (appears by scrolling)
3	Embroidery sequence control when thread breaks	8	Endless Embroidery (appears by scrolling)
4	Cutting connecting stitches	9	Color indication
5	Multi-colored embroidery motif on/off (appears by scrolling)		

Adding basting stitches

The basting stitches can be embroidered along the embroidery hoop or along the embroidery motif. Therefore the connection between the fabric and the stabilizer can be improved.

> Select an embroidery motif.
> Touch the icon «Embroidering».

> Touch the icon «Basting» to embroider basting stitches along the embroidery motif.
> Touch the icon «Basting» again to embroider basting stitches along the embroidery hoop.
> Touch the icon «Basting» again to deactivate the basting stitches.

Moving the hoop

If the embroidery motif is so big that repeated rehooping is necessary, the embroidered motif can be moved again.

> Select an embroidery motif.
> Touch the icon «Embroidering».

> Touch the icon «Move the hoop».
> Turn the «Upper Multifunctional knob» to move the hoop horizontally.
> Turn the «Lower Multifunctional knob» to move the hoop vertically.

Embroidery sequence control when thread breaks

When the thread breaks, the needle can be repositioned in the embroidery motif by means of the embroidery sequence control.

> Select an embroidery motif.

> Touch the icon «Embroidering».

> Touch the icon «Embroidery sequence control when thread breaks».
  – In the left portion of the display a compact view of the embroidery motif is displayed. On the right side the enlarged embroidery motif is displayed.
> Select the desired position in the compact view using the touchscreen pen/finger.
> Turn the «Upper Multifunctional knob» to move the hoop stitch by stitch.
> Turn the «Lower Multifunctional knob» to move the hoop in large steps.
  – The number in the yellow-framed icon indicates the number of stitches within the embroidery sequence.

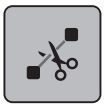
> Touch the icon «Magnifier» to select the desired stitch via entry.

Cutting connecting stitches

The function is activated by default and the connecting stitches are cut automatically. When the function is deactivated, the connecting stitches between the embroidery motifs must be cut manually.

> Select an embroidery motif.

> Touch the icon «Embroidering».



> Touch the yellow-framed icon «Cut the connecting stitches» to deactivate the function.
> Touch the yellow-framed icon «Cut the connecting stitches» again to activate the function.

Reducing color changes

When the embroidery motifs overlap, the color changes **cannot** be reduced.

> Select an embroidery motif.

> Touch the icon «Embroidering».

> Touch the icon «Reduce thread change».
  – Identical colors of the embroidery motif are collected to one color.

Multi-colored embroidery motif on/off

Multi-colored embroidery motifs can also be embroidered in one color.

> Select an embroidery motif.

> Touch the icon «Embroidering».

> Touch the icon «Multi-colored embroidery motif on/off».
  – The embroidery motif is embroidered in one color.

Endless Embroidery

Allows to resume embroidering borders which have already been started even if the machine has been switched off and on again.

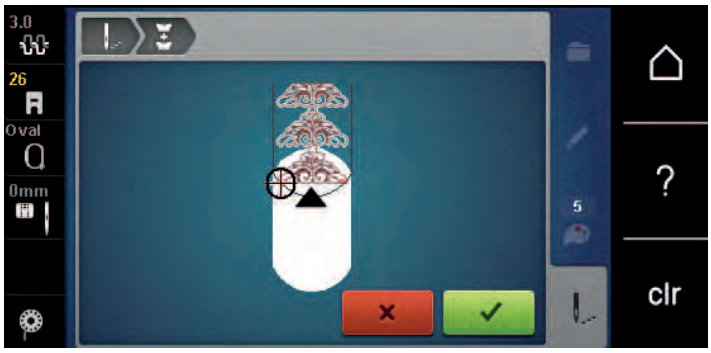
Prerequisite:

- An embroidery motif for borders must be saved in the Personal Memory. The reference points must be defined in the embroidery motif.

> Select border embroidery motif from the Personal Memory.

> Touch the icon «Embroidering».

> The icon «Endless embroidery» becomes visible in the right bar by scrolling upwards.
> Touch the icon «Endless Embroidery».



> Remove the hoop and rehoop the fabric so that the stitched out reference points are in the upper part of the embroidery area and at least 3 cm (1.18 inch) from the top edge of the hoop.
> Attach the hoop.

> Touch the icon «Confirm».
  – The hoop is moved automatically near the last stitch.
  – The icon «AUTO» is activated and the hoop moves automatically near the last reference point.
> Via the arrow icons, determine on which side of the embroidered part the next reference point shall be placed.
> Turn the «Upper Multifunctional knob» or the «Lower Multifunctional knob» to position the hoop exactly.

> Touch the icon «Confirm».

> Push the button «Start/Stop» and resume embroidering.
> Repeat these steps until the desired length of the border is embroidered.

Color indication

Every color of the embroidery motif can be selected individually. The hoop moves to the first stitch of the current color. The currently active color can be embroidered individually or in another sequence.

> Select an embroidery motif.
> Touch the icon «Embroidering».

> Touch the icon «Scroll down» to select the next color of the embroidery motif.

> Touch the icon «Scroll up» to select the previous color of the embroidery motif.

5.11 Free arm embroidering

Free arm embroidering is defined as embroidering tubular fabrics or garments which are positioned around the free arm of the embroidery machine while being embroidered. Often used with sleeves, pant legs or other narrow-tailored garments.

A tubular piece of fabric can be pulled over the free arm of the machine easily when the free arm is positioned to the left in parking position before the hoop is attached or removed. Push the button «Start/Stop» to move the embroidery hoop back to the embroidery position again.

Make sure to use a full bobbin as the embroidery hoop needs to be removed for changing the bobbin.

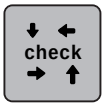
Borders can be closed to a ring easily and exactly along the edge of the tube. Before embroidering the last embroidery motif, after rehooping the fabric, activate the function «Pinpoint placement» in the edit mode. Using the subfunction «Free point positioning» align the still missing embroidery motif precisely.

The movability of the embroidery arm can be limited or impeded with very narrow tubes. Therefore please make sure that the embroidery hoop can move forwards and backwards sufficiently. An impediment of the embroidery arm caused by a tube which is too tight can result in embroidery motif offset or in damaging the fabric.

Check the movability of the free arm

Please note: With tiny fabric tubes, deactivate the thread-away in the Setup Program if necessary.

> Open the embroidery motif on the machine and edit as desired.
> Mark the embroidery motif position and the size on the fabric in a suitable way.
> Select the embroidery hoop as small as possible.
> Hoop or stick the fabric along with the appropriate stabilizer in the embroidery hoop, depending on the stabilizer.
> Pull the fabric tube carefully over the free arm of the machine and attach the embroidery hoop at the clutch of the embroidery module.
> If necessary, reposition the embroidery motif.
> Previously check whether the embroidery hoop can be moved forwards and backwards according to the embroidery motif size.

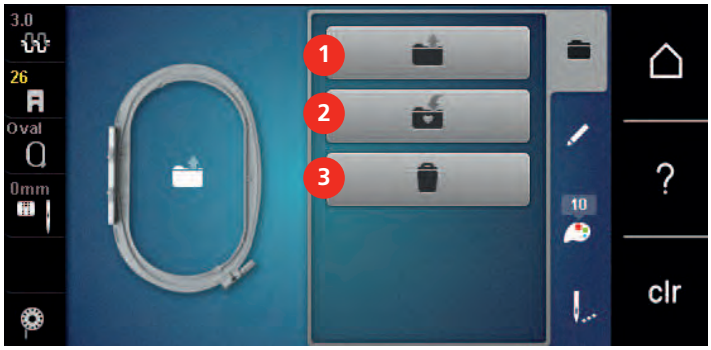


> Touch the icon «Check embroidery motif size».
> After the successful check of the embroidery motif size, start the embroidery process.

Detailed instructions about embroidery, the use of suitable materials or selecting the required embroidery settings of the machine can be found in the «Tutorial» under embroidery techniques --> Embroidering.

5.12 Administering embroidery motifs

Administering embroidery motifs



1	Loading the embroidery motif	3	Deleting
2	Saving the embroidery motif		

Saving embroidery motifs in the personal memory

In the filing system «Personal memory» any stitch patterns, also those which have been individually edited, can be saved.

> Select an embroidery motif.
> Edit the embroidery motif.
> Touch the icon «Selection».

> Touch the icon «Save the motif».
  – The embroidery motif to be saved is outlined in yellow.

  – The icon «Embroidery machine» is activated.

> Touch the icon «Confirm».

Saving the embroidery motif on the BERNINA USB stick

> Select an embroidery motif.
> Edit the embroidery motif.
> Touch the icon «Selection».

> Touch the icon «Save the motif».
  – The embroidery motif to be saved is outlined in yellow.
> Insert the BERNINA USB stick into the USB port of the machine.

> Touch the icon «USB stick».

> Touch the icon «Confirm».

Overwriting the embroidery motif in the personal memory

> Select an embroidery motif.

> Edit the embroidery motif.
> Touch the icon «Selection».

> Touch the icon «Save the motif».
  – The embroidery motif to be saved is outlined in yellow.

  – Touch the icon «Embroidery machine» is activated.
> Select the embroidery motif which is to be overwritten.

> Touch the icon «Confirm».

Overwriting the embroidery motif on the BERNINA USB stick

> Select an embroidery motif.
> Edit the embroidery motif.

> Touch the icon «Selection».

> Touch the icon «Save the motif».
  – The embroidery motif to be saved is outlined in yellow.
> Insert the BERNINA USB stick into the USB port of the machine.

> Touch the icon «USB stick».
> Select the embroidery motif which is to be overwritten.

> Touch the icon «Confirm».

Loading an embroidery motif from the personal memory

> Touch the icon «Selection».

> Touch the icon «Upload embroidery motif».

> Select the file «Personal embroidery motifs».
> Select an embroidery motif.

Loading an embroidery motif from the BERNINA USB stick

> Touch the icon «Selection».
> Insert the BERNINA USB stick into the USB port of the machine.

> Touch the icon «USB stick».
> Select a personal embroidery motif.

Deleting an embroidery motif from the personal memory

The embroidery motifs which are saved in the personal memory can be deleted individually. In the Setup Program all your personal embroidery motifs can be deleted.

> Touch the icon «Selection».

> Touch the icon «Delete».

– Touch the icon «Embroidery machine» is activated.

> Select the embroidery motif which is to be deleted.

> Touch the icon «Confirm».

Deleting an embroidery motif from the BERNINA USB stick

> Touch the icon «Selection».

> Touch the icon «Delete».

> Insert the BERNINA USB stick into the USB port of the machine.

> Touch the icon «USB stick».

> Select the embroidery motif which is to be deleted.

> Touch the icon «Confirm».

6 Embroidery

6.1 Embroidering via the button «Start/Stop»

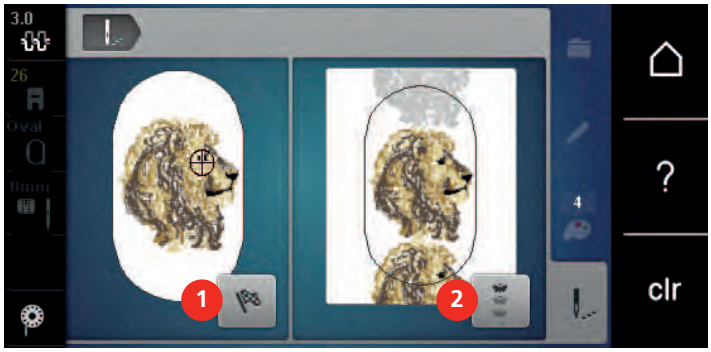
In case of a power cut the embroidery process is interrupted. After the restart the machine goes to the position which was embroidered last.

> Push the button «Start/Stop» to start the embroidery machine.
  - All parts of the motif being in the current color are embroidered.
  - The embroidery machine stops automatically at the end.
  - Both threads are cut automatically.
  - The embroidery machine switches to the next color automatically.

> Change the upper thread.

> Push the button «Start/Stop» to embroider the new color.

> After completing the embroidery motif, finish the embroidering process by touching the icon «Finishing the embroidering process» (1) or embroider the motif again by touching the icon «Endless embroidery»(2).



6.2 Increasing the embroidery speed

To ensure the best embroidery quality, the speed when embroidering is reduced depending on the embroidery position. Choose between the two options to either embroider at optimal or maximum speed. Standard = optimal speed. It has to be considered that the quality of the embroidered embroidery motif at maximum speed cannot be ensured.

By switching the machine off and on, the optimal embroidery speed is activated.

Prerequisite:

- The embroidery motif has been selected and the embroidering has started.

> Touch the icon «Embroidery speed».
  - The maximum speed is activated.

> Touch the icon «Embroidery speed» again.
  - The optimal speed is activated.

6.3 Adjusting the upper thread tension

The default setting of the upper thread tension is determined automatically after an embroidery motif is selected.

The upper thread tension is set optimally at the BERNINA factory and the machine has been tested. Metrosene-/Seralon thread size 100/2 (Company Mettler, Switzerland) is used for upper and bobbin thread.

When of using other types of embroidery threads, the optimal tension may vary. Therefore it may be necessary to adjust the upper thread tension according to the embroidering project as well as the desired embroidery motif individually.

The higher the upper thread tension, the tighter the upper thread which means that the bobbin thread is pulled up to the top of the fabric. When the upper thread tension is low, the upper thread is less tightened which means that the bobbin thread is pulled up less.

Alteration of the upper thread tension affect all embroidery motifs.Permanent alterations of the upper thread tension can be made in the Setup Program (see page 53).

> Touch the icon «Upper thread tension».
> Move the slide using the touchscreen pen/finger to increase or reduce the upper thread tension.

> Touch the yellow-framed icon on the right to reset the alterations to default setting.
> If the upper thread tension had been changed in the Setup Program, touch the yellow-framed icon on the left to reset the alterations to default setting in the **Setup Program**.

6.4 Embroidering via the foot control (Optional accessory)

Embroidering via the foot control is recommended when only a short sequence has to be embroidered. While embroidering, the foot control must be pressed down all the time.

> Press the foot control to start embroidering.

7 Attachment

7.1 Cleaning the display

> Clean the display when it is switched off with a soft slightly damp microfiber cloth.

7.2 Removing thread remnants under the stitch plate

⚠ CAUTION

Electronically driven components

Risk of injury near the needle and the hook.

> Switch the machine off and disconnect it from the power supply system.

Remove the thread remnants under the stitch plate regularly.

> Remove the presser foot and the needle.
> Remove the stitch plate.

> Remove the thread remnants under the stitch plate.

7.3 Cleaning the hook

⚠ CAUTION

Electronically driven components

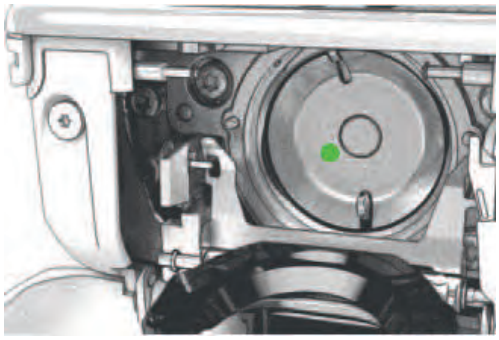
Risk of injury near the needle and the hook.

> Switch the machine off and disconnect it from the power supply system.

> Open the bobbin cover.
> Remove the boobin case.
> Push the fastening bracket to the left.

> Flap down the fastening bracket along with the black hook race cover.

> Remove the hook.



> Clean the hook race with a brush; do not use any pointed objects.
> Hold the hook at the pin in the center with two fingers.
> Lead the hook, lower edge ahead, angular top-down behind the hook race cover.
> Position the hook with the two lugs meeting the openings in the hook, the colored mark on the hook driver should be visible through the hole in the hook.
> Insert the hook.
  – The hook is magnetic and therefore fastened to the correct position.
> Close the hook race cover and the fastening bracket until the release bracket engages.
> As a check, turn the handwheel.
> Insert the bobbin case.

7.4 Lubricating the hook

⚠ CAUTION

Electronically driven components

Risk of injury near the needle and the hook.

> Switch the machine off and disconnect it from the power supply system.

NOTICE

Lubricating the hook

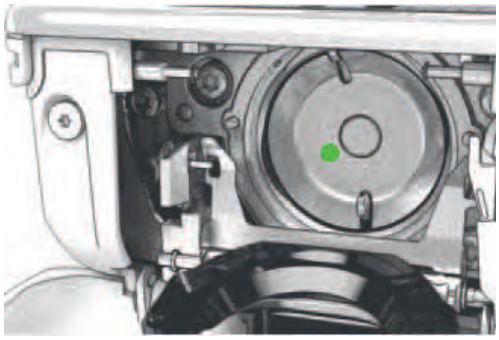
Too much oil can pollute the fabric and the thread.

> Always embroider a test piece first.

> Remove the bobbin case.
> Press the release lever to the left.

> Flap down the fastening bracket along with the black hook race cover.

> Remove the hook.



> Give one drop of BERNINA oil down in the hook race.

> Give one drop of oil in each of the two oil depots so that the felts are damp and make sure that the red-marked surface of the hook sleeve remains free of oil.

> Hold the hook at the pin in the center with two fingers.
> Lead the hook, lower edge ahead, angular top-down behind the hook race cover.
> Position the hook with the two lugs meeting the openings in the hook, the colored mark on the hook driver should be visible through the hole in the hook.
> Insert the hook.
  – The hook is magnetic and therefore fastened to the correct position.
> Close the hook race cover and the fastening bracket until the release bracket engages.
> As a check, turn the handwheel.
> Insert the bobbin case.

7.5 Troubleshooting

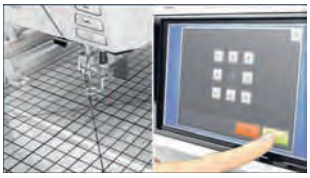
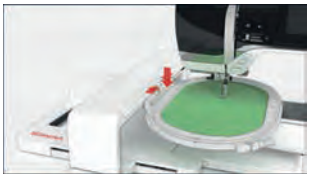
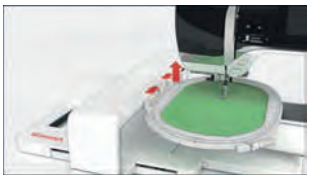
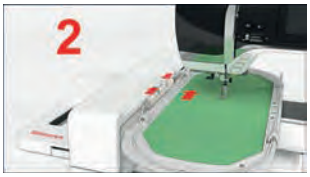
Fault	Cause	Repair
Uneven stitch formation	Upper thread too tight or too loose.	> Adjust upper thread tension.
	Needle blunt or bent.	> Replace the needle, make sure that a new BERNINA quality needle is used.
	Poor quality needle.	> Use a new BERNINA quality needle.
	Poor quality thread.	> Use quality thread.
	Incorrect needle/thread combination.	> Match the needle with the thread size.
	Incorrectly threaded.	> Rethread.
Uneven stitch formation	Incorrect bobbin case is used.	> Use the supplied bobbin case marked with the triangle.
Skipped stitches	Incorrect needle.	> Use the needle system 130/705H.
	Needle blunt or bent.	> Replace the needle.
	Poor quality needle.	> Use a new BERNINA quality needle.
	The needle is incorrectly inserted.	> Insert the needle with the flat side to the back as far up as it will go into the needle holder and tighten the screw.
	Incorrect needle point.	> Match the needle point to the texture of the material.
Uneven stitching	Thread remnants between the thread tension discs.	> Fold a piece of thin material and slide the folded edge (not the raw edges) between the thread tension discs.
	Incorrectly threaded.	> Rethread.
	Thread remnants below the bobbin case spring.	> Remove the thread remnants under the spring.

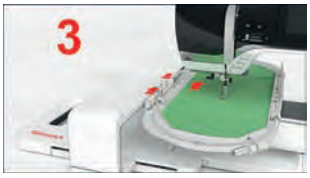
Fault	Cause	Repair
Upper thread breaks	Incorrect needle/thread combination.	> Match the needle with the thread size.
	Upper thread is too tight.	> Reduce the upper thread tension.
	Incorrectly threaded.	> Rethread.
	Poor quality thread.	> Use quality thread.
	The stitch plate or the hook tip is damaged.	> Contact the nearest specialized BERNINA dealer to have the damages repaired. > Replace the stitch plate.
	The thread is caught in the area of the thread take-up lever. 	> Slide the headframe (1) to the left, then remove it. > Remove the thread remnants. > Insert the 4 knobs of the headframe into the provided notches and slide the headframe to the right.
Lower thread breaks	The bobbin case is damaged.	> Replace the bobbin case.
	The stitch hole in the stitch plate is damaged.	> Contact the nearest specialized BERNINA dealer to have the damages repaired. > Replace the stitch plate.
	Needle blunt or bent.	> Replace the needle.
Needle breaks	The needle is incorrectly inserted.	> Insert the needle with the flat side to the back as far up as it will go into the needle holder and tighten the screw.
	Knotted thread.	> Use quality thread.
Speed too low	Unfavorable room temperature.	> Place the machine in a warm room one hour before use.
	Settings in the Setup Program.	> Adjust the sewing speed in the Setup Program. > Adjust the slide.
The machine doesn't start	Unfavorable room temperature.	> Place the machine in a warm room one hour before use. > Connect the machine and switch it on.
	The machine is damaged.	> Contact the specialized BERNINA dealer.
Neither the sewing light nor the light on the free arm lights up	Settings in the Setup Program.	> Activate it in the Setup Program.
	The sewing light is defect.	> Contact the specialized BERNINA dealer.

Fault	Cause	Repair
Upper thread indicator doesn't react	Settings in the Setup Program.	> Activate it in the Setup Program.
	The upper thread indicator is defect.	> Contact the specialized BERNINA dealer.
Bobbin thread indicator doesn't react	Settings in the Setup Program.	> Activate it in the Setup Program.
	The bobbin thread indicator is defect.	> Contact the specialized BERNINA dealer.
Error during software update	USB stick is not recognized.	> Use a BERNINA USB stick.
	The update process is blocked and the hourglass on the display is inactive.	> Remove the USB stick. > Switch the machine off. > Switch the machine on. > Follow the instruction on the display.
	Date of the software update cannot be found.	> Unzip the update data. > Save data of the software update directly on the data medium and not in a file on the USB stick.

7.6 Error messages

Message on the display	Cause	Repair
	The selected needle and stitch plate cannot be used in combination.	> Replace the needle. > Replace the stitch plate.
	The needle is not at its top end.	> Adjust the needle position via the handwheel.
	The upper thread is used up.	> Rethread.
	The upper thread has broken.	> Rethread.
	The bobbin thread is used up.	> Rethread.
	The bobbin thread has broken.	> Clean the hook. > Rethread.
	The main motor isn't running.	> Turn the handwheel clockwise until the needle is at its top position. > Remove the stitch plate. > Remove the thread remnants. > Clean the hook. > Remove the hook and make sure that there are no pieces of broken neelde points on the magnetic back of the hook.
	The contact between the machine and the embroidery module is interrupted due to vibrations.	> Make sure that the module and the machine are standing on a stable, even surface. > Connect the embroidery module to the machine.

Message on the display	Cause	Repair
	The needle position doesn't correspond with the center of the hoop.	> Calibrate the hoop.
	The embroidery module is not attached.	> Connect the embroidery module to the machine. > Contact the specialized BERNINA dealer to have the machine checked.
	The hoop is not attached.	> Attach the hoop.
	The hoop is attached.	> Remove the hoop.
	The movement of the hoop follows.	> Touch the icon «Confirm».
	Mega Hoop top.	> Bring the Mega Hoop to the top position.
	Mega Hoop center.	> Bring the Mega Hoop to the center position.

Message on the display	Cause	Repair
	Mega Hoop bottom.	> Bring the Mega Hoop to the lower position.
	The embroidery motif is partly outside the hoop.	> Reposition the embroidery motif and start embroidering it again.
	The embroidery motif is too large.	> Reduce the size of the embroidery motif. > Attach a bigger hoop.
Too less free capacity on the BERNINA USB stick (optional accessory).	Not enough free capacity on the BERNINA USB stick (optional accessory).	> Make sure that the BERNINA USB stick (optional accessory) is used. > Delete data from the BERNINA USB stick (optional accessory).
No personal data on the BERNINA USB stick (optional accessory).	No personal data for recovery available on the BERNINA USB stick (optional accessory).	> Make sure that the data and settings have been saved on the BERNINA USB stick (optional accessory).
The recovery of personal data has failed.	The software update has been successful but the personal data couldn't be recovered.	> Make sure that the data and settings have been saved on the BERNINA USB stick (optional accessory). > Transfer saved data to the machine.
No BERNINA USB stick is inserted. Make sure that during the complete automatic update always the same BERNINA USB stick remains inserted.	The BERNINA USB stick (optional accessory) is not inserted.	> Use a BERNINA USB stick (optional accessory) providing enough free capacity.
The update of the software has failed.	The latest software version cannot be found on the USB stick.	> Make sure that the data for the software update has been unzipped. > Check whether the data for the software update are saved directly on the data medium and not in a file on the USB stick. > Update the software.

Message on the display	Cause	Repair
 	The machine needs cleaning/ lubricating.	> Clean the machine. > Lubricate the hook. **Important information on lubricating:** Too much oil can pollute the fabric and the thread. > After lubricating, embroider a test piece first.
It is time for the regular maintenance. Please contact your specialzed BERNINA dealer to make an appointment.	The machine needs maintenance. The message appears after the programmed service interval has expired. **Important information:** Having your machine cleaned and serviced properly at the appropriate times ensures its proper functioning and a long service life. Failure to do so may adversely affect service life and limit the guarantee. The charge for servicing is nationally regulated – consult your dealer or servicing shop for more details.	> Contact the specialized BERNINA dealer. > Delete the message temporarily by touching the icon «ESC». Having cleared the message three times, the message will appear as recently as the next service interval has been completed.

7.7 Storage and disposal

Storing the machine

It is recommended to store the machine in the original packaging. If the machine is stored in a cold room, place it in a warm room one hour before use.

> Switch the machine off and disconnect it from the power supply system.
> Don't store the machine outdoor.
> Protect the machine against climatic influences.

Dispose of the machine

BERNINA International AG is committed to the protection of the environment. We strive to minimize the environmental impact of our products by continuously improving product design and our technology of manufacturing.

When the machine won't be used anymore, dispose this product in an environmentally responsible way according to the national directive. Do not throw away this product with your household waste. When in doubt, bring the machine to your local specialized BERNINA dealer.

> Clean the machine.
> Sort the components by their materials and dispose of them according to the local laws and regulations.

7.8 Technical data

Term	Value	Measurement unit
Maximum fabric thickness	10.5 (0,41)	mm (inch)
Sewing light	12 bis 16	LED
Maximum speed	1000	spm/rpm
Measurements without the spool pin	465/330/200 (18.30/12.99/7.87)	mm (inch)
Weight	11.5	kg
Energy consumption	90	Watt
Input voltage	100-240	Volt
Protection class (Electrical engineering)	II	
Production date: Can be seen on the type plate under «Code».		

8 Overview motifs

8.1 Overview Embroidery motifs

Editing embroidery motifs

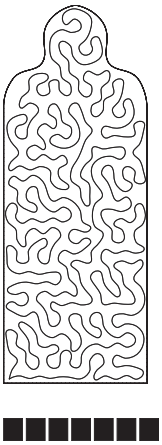
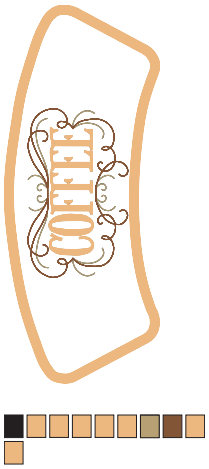
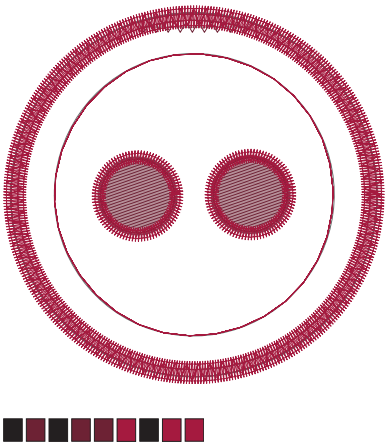
Let your creativity run free. A vast selection of embroidery motifs is at your disposal.

If you see one the following pictograms below a number of an embroidery motif, you can find additional information at
http://www.bernina.com/5series.

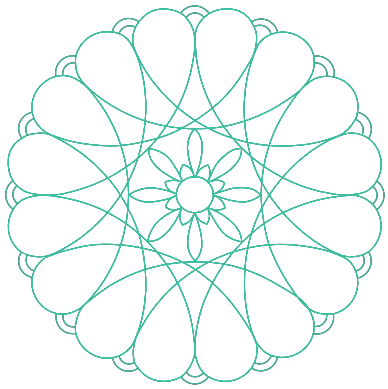
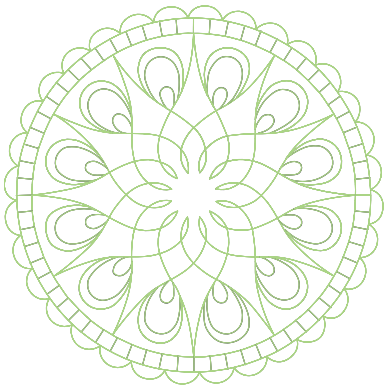
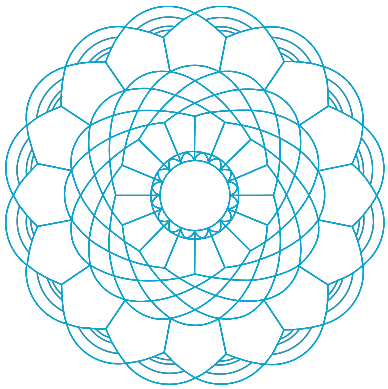
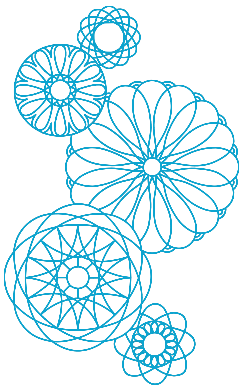
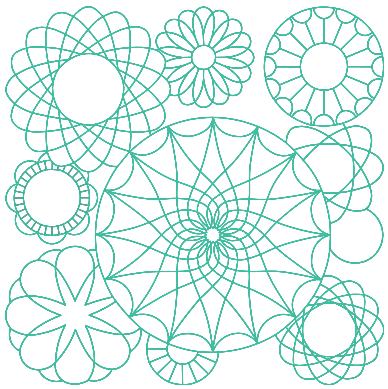
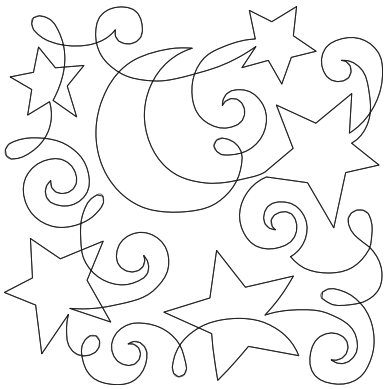
	Detached point		Punchwork Design (motifs)
	Broderie anglaise		Cord embroidery
	Fringes		Projects in the hoop
	Appliqué		Puffy lettering
	CutWork Design (motifs)		Quilting
	PaintWork Design (motifs)		Trapunto
	CrystalWork Design (motifs)		

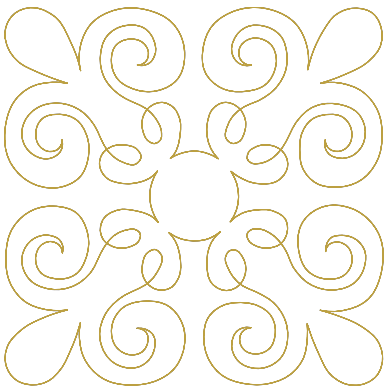
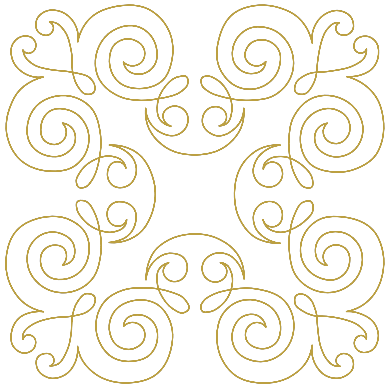
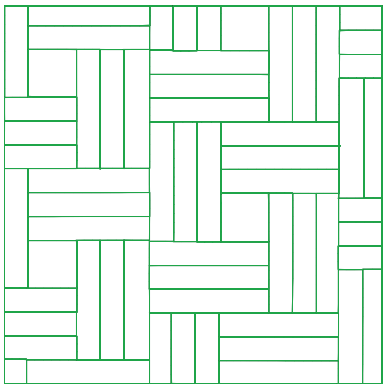
Projects

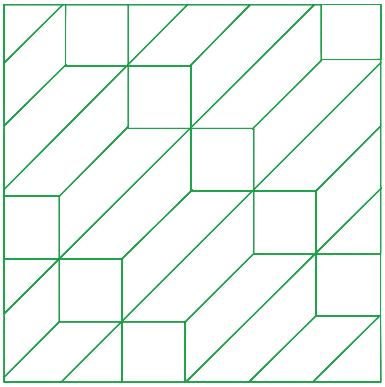
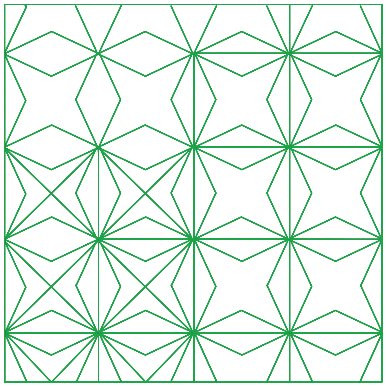
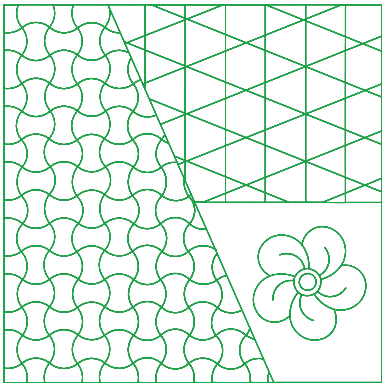
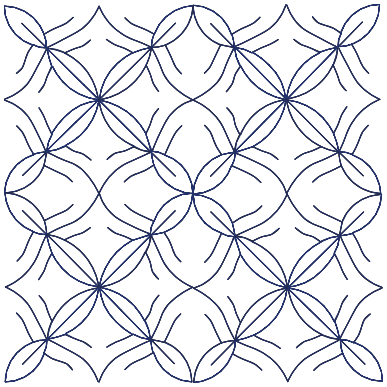
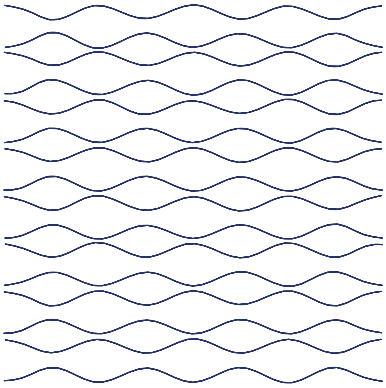
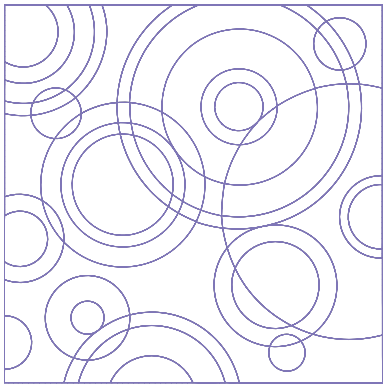
Please find the detailed embroidery instructions at www.bernina.com/500designs

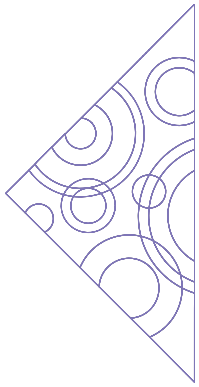
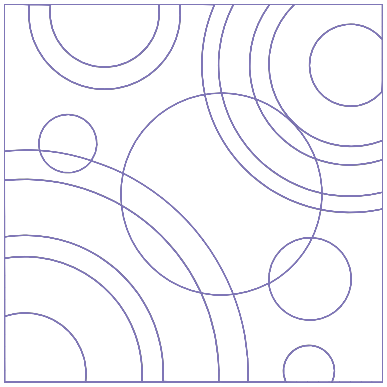
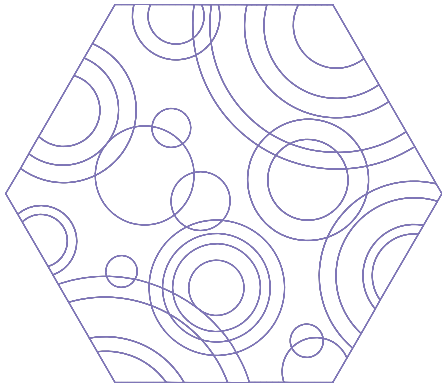
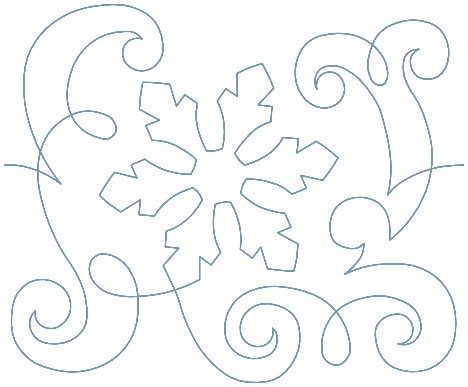
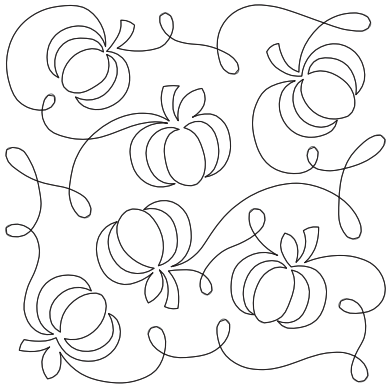
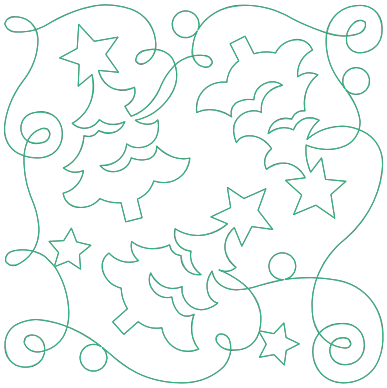
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12593-04 95.3 x 174.0 3.75 x 6.85		12536-03 112.9 x 226.1 4.44 x 8.90	
12619-04 57.8 x 57.4 2.27 x 2.25			

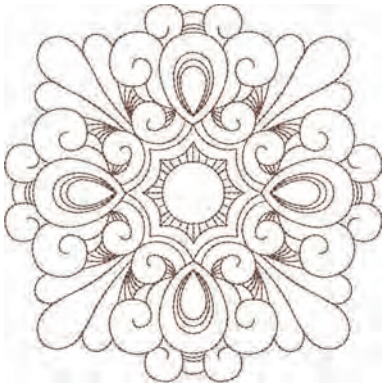
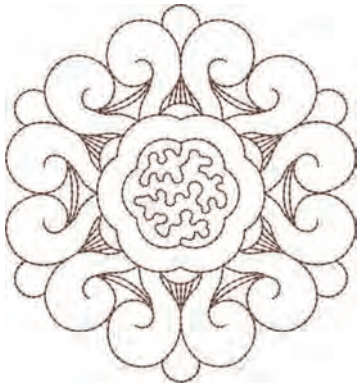
Quilt motifs

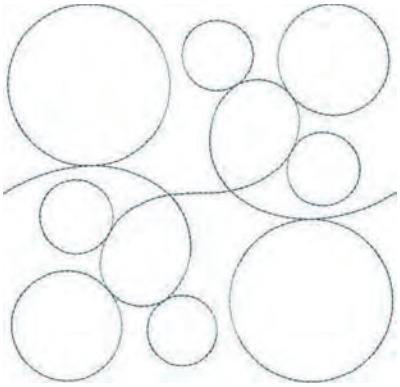
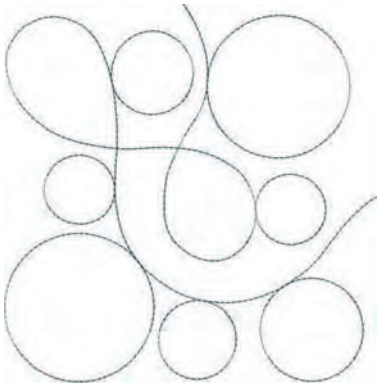
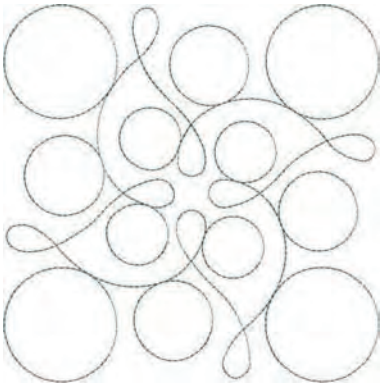
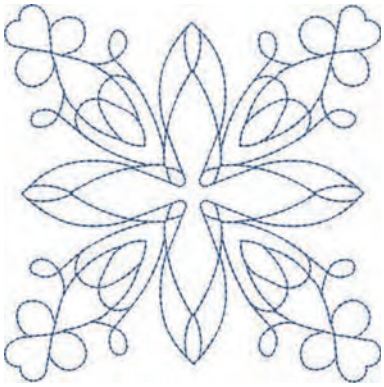
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12499-06 101.7 x 101.6 4.00 x 4.00		12499-04 123.2 x 123.0 4.85 x 4.84	
12499-05 123.3 x 123.3 4.85 x 4.85		12499-24 133.1 x 214.7 5.24 x 8.45	
12499-23 123.3 x 123.3 4.85 x 4.85		12607-20 122.4 x 122.3 4.81 x 4.81	

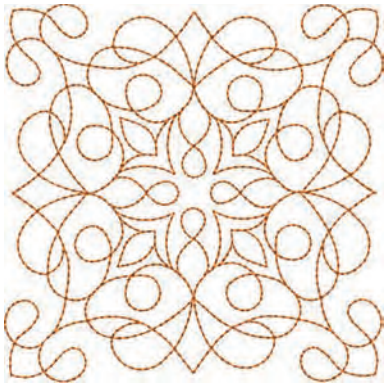
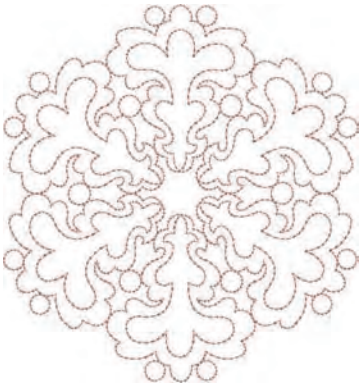
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12607-21 61.2 x 122.7 2.40 x 4.83		12416-04 89.2 x 89.1 3.51 x 3.50	
12416-03 124.0 x 124.0 4.88 x 4.88		12416-26 43.7 x 174.1 1.72 x 6.85	
12416-48 170.8 x 177.6 6.72 x 6.99		NB346-48 76.2 x 76.3 3.00 x 3.00	

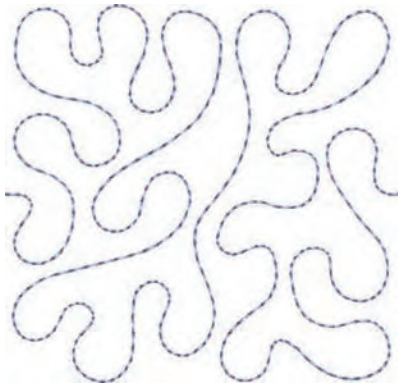
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
NB347-48 76.2 x 76.3 3.00 x 3.00		NB334-48 127.0 x 127.0 5.00 x 5.00	
NB335-48 127.1 x 127.1 5.00 x 5.00		NZ498 88.9 x 88.9 3.50 x 3.50	
NZ503 99.1 x 98.7 3.90 x 3.88		82013-29 121.2 x 121.2 4.76 x 4.76	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
82013-30 83.0 x 166.1 3.26 x 6.53		82013-31 57.6 x 57.6 2.26 x 2.26	
82013-32 121.8 x 105.6 4.79 x 4.15		12416-24 88.9 x 73.1 3.50 x 2.87	
12607-16 122.8 x 122.3 4.83 x 4.81		12616-16 122.8 x 122.6 4.83 x 4.82	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12380-22 110.6 x 60.9 4.35 x 2.39		12380-43 123.5 x 123.5 4.86 x 4.86	
12380-30 89.2 x 96.3 3.51 x 3.79		12380-04 83.1 x 89.9 3.27 x 3.53	
12380-08 89.2 x 89.1 3.51 x 3.50		12380-09 111.6 x 61.6 4.39 x 2.42	

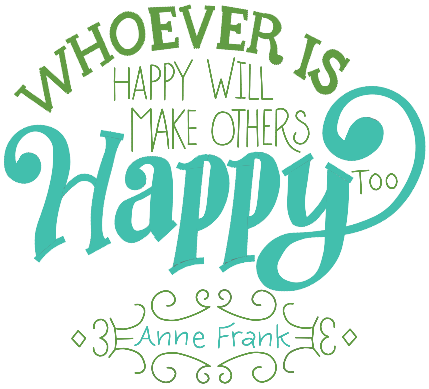
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
BD800 127.3 x 122.4 5.01 x 4.81		BD801 122.2 x 124.2 4.81 x 4.88	
BD804 122.9 x 123.6 4.83 x 4.86		BD796 47.2 x 174.5 1.85 x 6.87	
BD837 123.6 x 123.6 4.86 x 4.86		BD292 94.8 x 95.1 3.73 x 3.58	

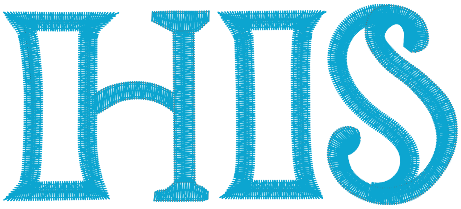
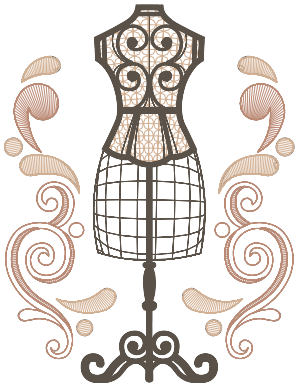
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
BD299 94.5 x 95.0 3.72 x 3.74		BD308 95.0 x 94.4 3.74 x 3.71	
BD413 97.1 x 97.2 3.82 x 3.82		BD554 109.9 x 109.9 4.32 x 4.32	
BD553 113.8 x 121.1 4.48 x 4.76		BD567 107.9 x 108.2 4.24 x 4.25	

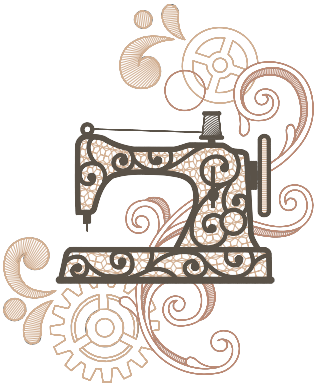
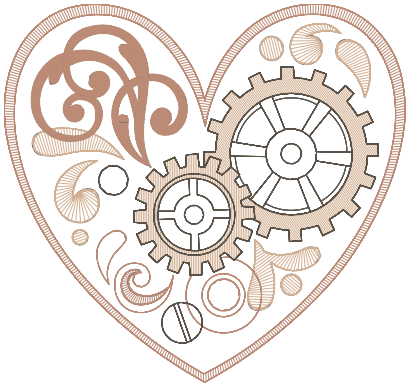
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
BD394 97.0 x 96.8 3.81 x 3.81		BD412 89.4 x 53.2 3.51 x 2.09	
BD501 63.5 x 61.1 2.50 x 2.40		BD502 61.5 x 60.7 2.42 x 2.38	
BD513 63.5 x 63.4 2.50 x 2.49		BD514 63.5 x 62.9 2.50 x 2.47	

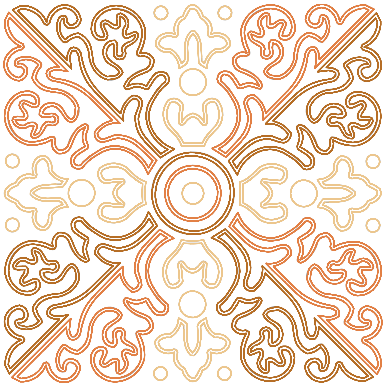
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
BD562 63.9 x 126.0 2.51 x 4.96		BD568 109.5 x 160.3 4.31 x 6.31	
BD563 89.7 x 89.6 3.53 x 3.52		BD569 120.6 x 120.6 4.74 x 4.74	

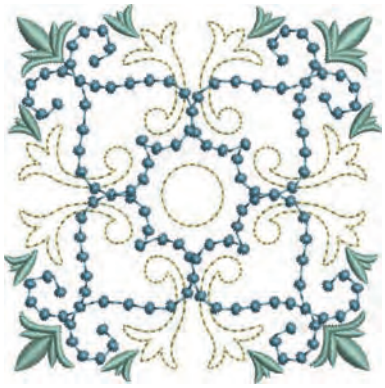
Ornaments

No. Width x Height > in mm > in inch	Embroidery motif Colors	No. Width x Height > in mm > in inch	Embroidery motif Colors
NB843-48 87.6 x 121.1 3.44 x 4.76		NB826-48 134.9 x 132.9 5.31 x 5.23	
12633-06 119.8 x 119.9 4.71 x 4.72		12473-06 133.4 x 119.9 5.25 x 4.72	
12473-04 93.6 x 184.2 3.68 x 7.25		BE7904-03 140.0 x 130.4 5.51 x 5.13	

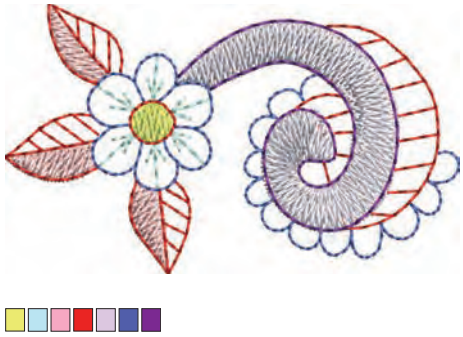
No. Width x Height > in mm > in inch	Embroidery motif Colors	No. Width x Height > in mm > in inch	Embroidery motif Colors
80090-06 83.6 x 37.0 3.29 x 1.45		80090-07 128.1 x 36.5 5.04 x 1.43	
19999-002 124.9 x 136.4 4.91 x 5.37		NB934-48 132.4 x 164.8 5.21 x 6.48	
NB935-48 104.1 x 168.9 4.09 x 6.64		21021-05 118.7 x 155.7 4.67 x 6.12	

No. Width x Height > in mm > in inch	Embroidery motif Colors	No. Width x Height > in mm > in inch	Embroidery motif Colors
21021-04 123.1 x 150.2 4.84 x 5.91		21021-06 116.0 x 109.5 4.56 x 4.31	
12490-03 118.1 x 113.4 4.64 x 4.46		12490-04 146.4 x 122.4 5.76 x 4.81	
12490-05 125.8 x 104.5 4.95 x 4.11		FP887 186.7 x 134.8 7.35 x 5.30	

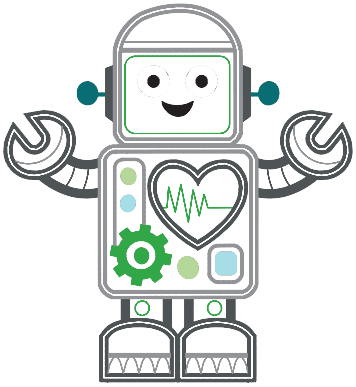
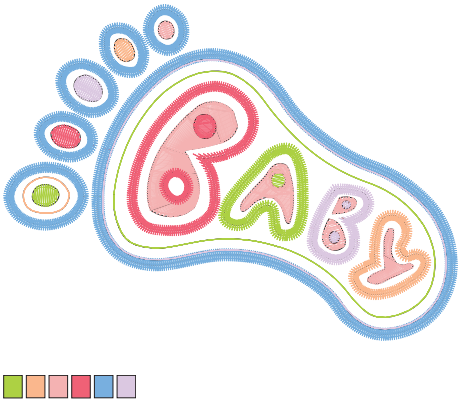
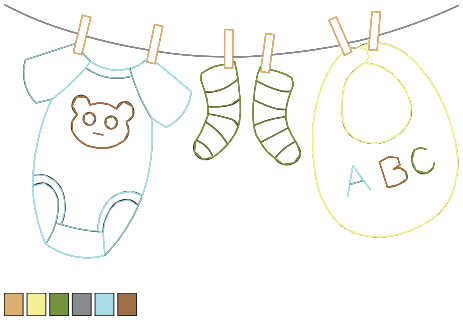
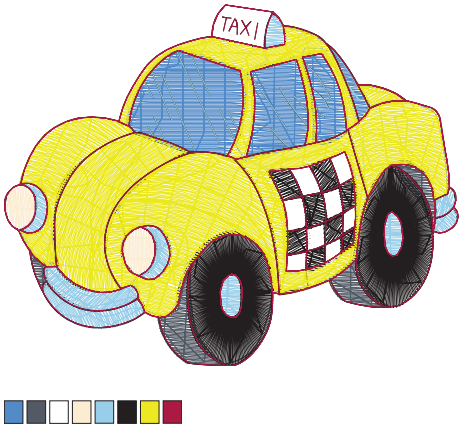
No. Width x Height > in mm > in inch	Embroidery motif Colors	No. Width x Height > in mm > in inch	Embroidery motif Colors
12528-12 123.8 x 123.8 4.87 x 4.87		12528-03 76.6 x 130.5 3.01 x 5.13	
OC07207 105.8 x 138.6 4.16 x 5.45		82007-11 111.7 x 94.2 4.39 x 3.70	
82007-44 114.0 x 114.8 4.48 x 4.51		82006-30 99.9 x 174.6 3.93 x 6.87	

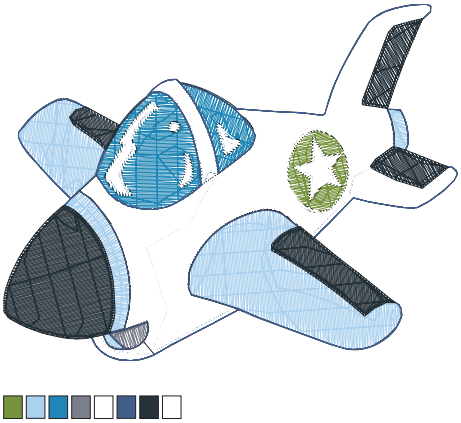
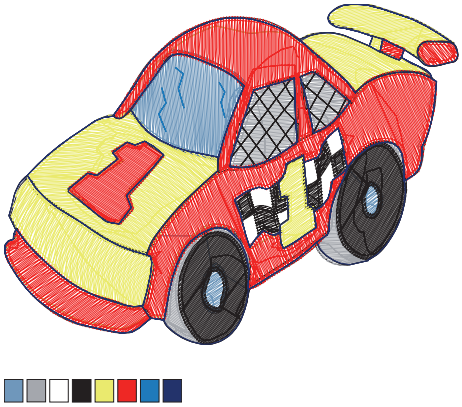
No. Width x Height > in mm > in inch	Embroidery motif Colors	No. Width x Height > in mm > in inch	Embroidery motif Colors
NB251 71.6 x 103.3 2.81 x 4.06		BE790405 125.9 x 185.4 4.95 x 7.29	
FB126 86.9 x 102.2 3.42 x 4.02		BE790502 59.9 x 58.2 2.35 x 2.29	
21003-26 123.0 x 124.1 4.84 x 4.88		NB403 78.1 x 78.3 3.07 x 3.08	

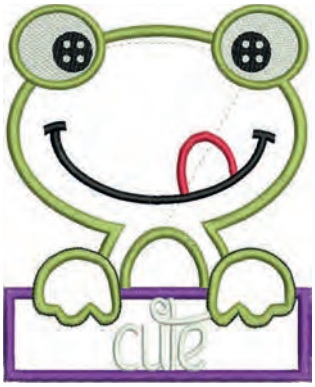
No. Width x Height > in mm > in inch	Embroidery motif Colors	No. Width x Height > in mm > in inch	Embroidery motif Colors
NB373 121.4 x 176.8 4.77 x 6.96		NB442 55.6 x 58.4 2.18 x 2.29	
NB481 123.4 x 67.6 4.85 x 2.66		NB749 126.5 x 262.8 4.98 x 10.34	
NA959 75.6 x 103.7 2.97 x 4.08		FB106 128.1 x 92.6 5.04 x 3.64	

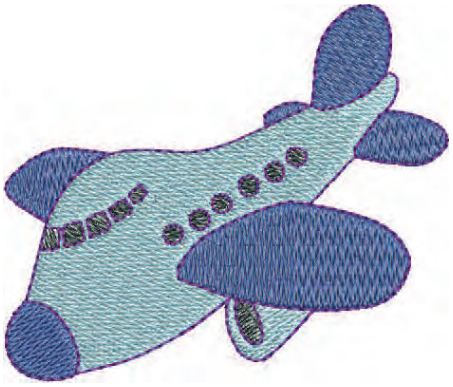
No. Width x Height > in mm > in inch	Embroidery motif Colors	No. Width x Height > in mm > in inch	Embroidery motif Colors
NB002 59.3 x 35.1 2.33 x 1.38		FQ870 122.1 x 105.1 4.80 x 4.13	
WS655 116.5 x 222.3 4.58 x 8.75			

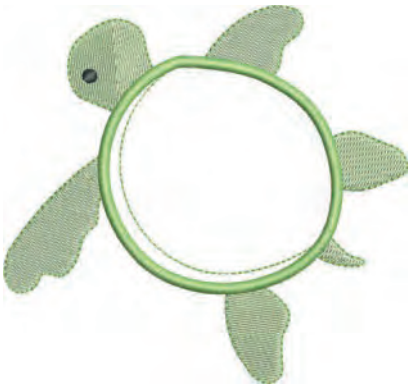
Children

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12590-03 135.5 x 146.9 5.33 x 5.78		CK867 122.2 x 132.8 4.81 x 5.22	
CM031-48 85.7 x 63.4 3.37 x 2.49		12401-17 98.8 x 55.1 3.88 x 2.16	
CK859 118.8 x 141.8 4.67 x 5.58		CK520 75.6 x 60.3 2.97 x 2.37	

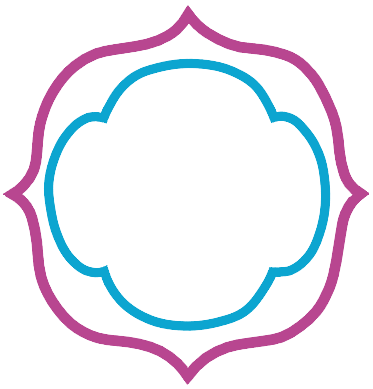
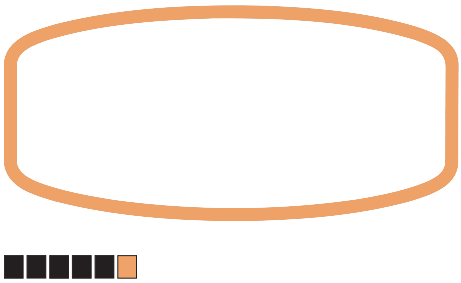
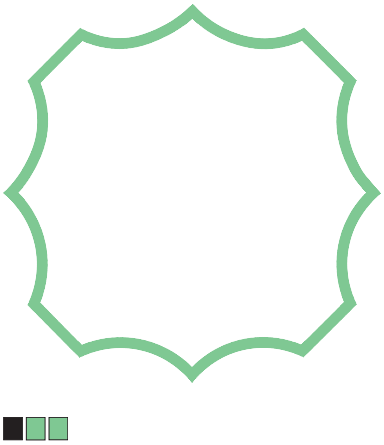
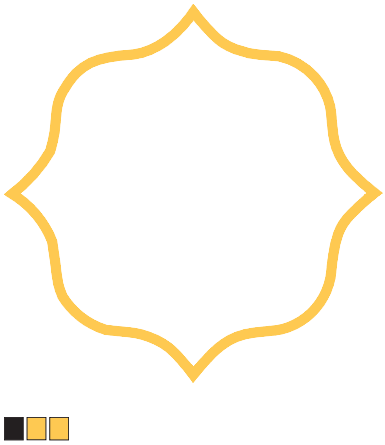
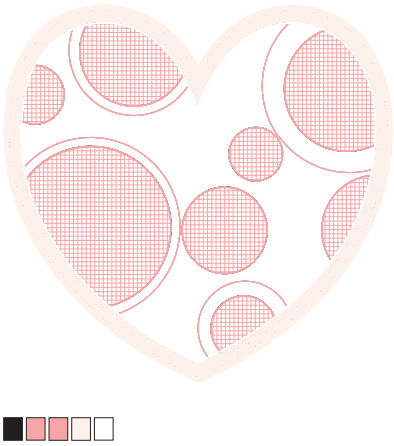
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
CK510 76.2 x 59.9 3.00 x 2.35		CK522 70.8 x 53.1 2.78 x 2.09	
CK863 127.1 x 124.6 5.00 x 4.90		NB198-48 94.2 x 72.4 3.70 x 2.85	
BE790307 141.5 x 126.9 5.57 x 4.99		BE790311 114.1 x 152.5 4.49 x 6.00	

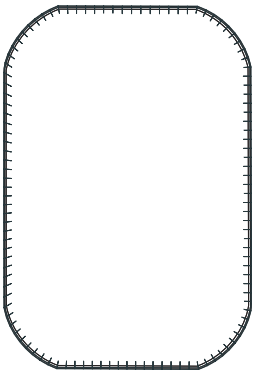
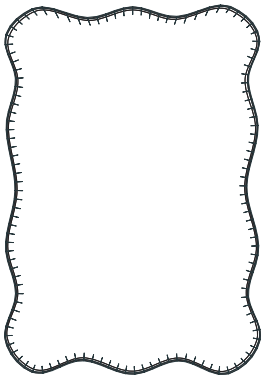
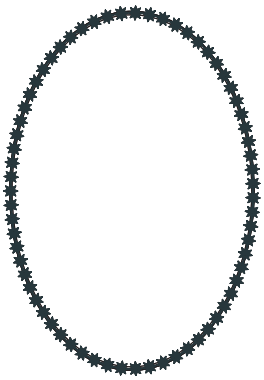
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
BE790305 118.3 x 145.5 4.65 x 5.72		BE790306 132.1 x 151.4 5.20 x 5.96	
BE790309 87.5 x 149.8 3.44 x 5.89		BE790310 137.8 x 136.0 5.42 x 5.35	
BE790312 122.0 x 133.1 4.80 x 5.24		BE790313 98.9 x 102.3 3.89 x 4.02	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
CK511 76.2 x 64.6 3.00 x 2.54		CM193-48 106.7 x 127.4 4.20 x 5.01	
CK667 99.8 x 82.3 3.92 x 3.24		CK738 89.1 x 85.7 3.50 x 3.37	
CK970 84.4 x 81.6 3.33 x 3.21		CM147 55.0 x 99.6 2.16 x 3.92	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
CM220 71.5 x 71.8 2.81 x 2.82		CM348 119.0 x 167.1 4.68 x 6.57	
CM362 120.6 x 113.0 4.74 x 4.44		CM376 100.3 x 97.5 3.94 x 3.12	
NB193 113.3 x 96.2 4.46 x 3.78			

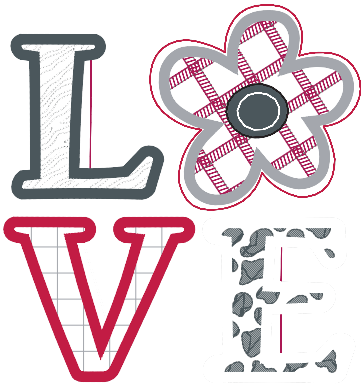
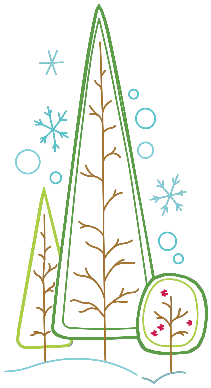
Frames and borders

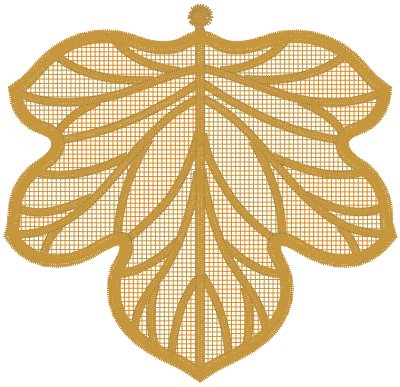
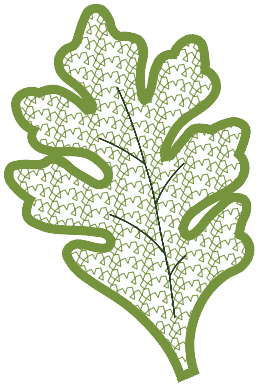
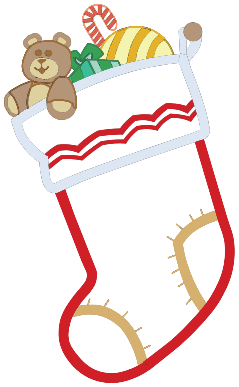
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
80090-26 124.4 x 128.8 4.89 x 5.07		12630-07 205.0 x 120.6 8.07 x 4.74	
12611-27 136.9 x 137.3 5.38 x 5.40		12611-28 140.0 x 140.0 5.51 x 5.51	
12649-05 91.2 x 88.6 3.59 x 3.48		12606-26 138.8 x 138.8 5.46 x 5.46	

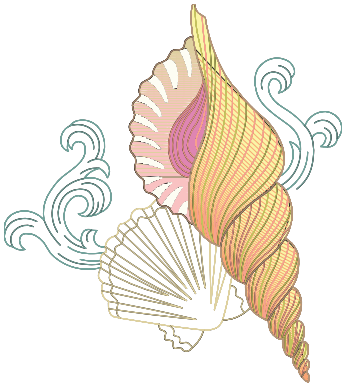
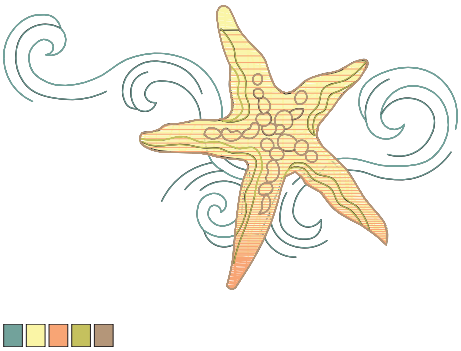
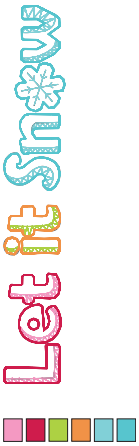
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12606-33 43.0 x 70.0 1.69 x 2.75		12606-37 45.6 x 77.8 1.79 x 3.06	
32078-02 123.4 x 172.9 4.85 x 6.80		32078-03 123.4 x 172.9 4.85 x 6.80	
32078-04 123.4 x 172.9 4.85 x 6.80		NZ195 76.8 x 76.8 3.02 x 3.02	

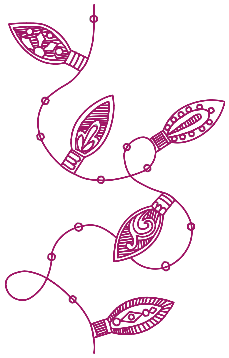
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12611-21 155.8 x 71.7 6.13 x 2.82		12611-23 155.8 x 71.7 6.13 x 2.82	
12611-22 155.8 x 71.7 6.13 x 2.82		12611-24 155.8 x 71.7 6.13 x 2.82	

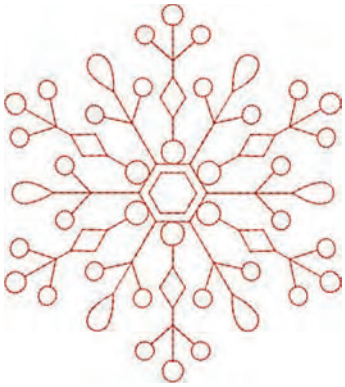
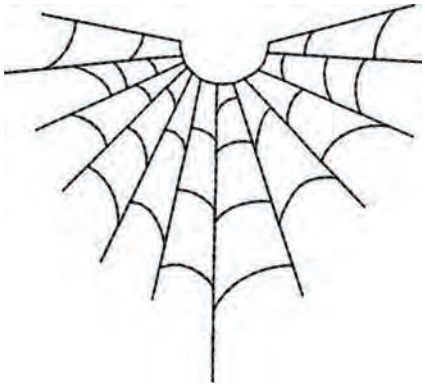
Seasons

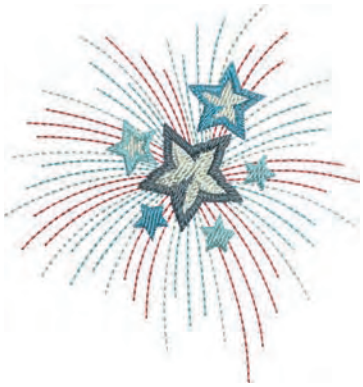
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
21019-14 123.1 x 130.3 4.84 x 5.12		HG795-48 89.3 x 164.4 3.51 x 6.47	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12597-16 88.4 x 85.0 3.48 x 3.34		80009-17 85.7 x 129.8 3.37 x 5.11	
HE255 133.2 x 127.1 5.24 x 5.00		HE252 88.1 x 145.0 3.46 x 5.70	
HG746-48 111.6 x 138.2 4.39 x 5.44		RC514 74.3 x 98.8 2.92 x 3.88	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
HG747-48 124.0 x 147.5 4.88 x 5.80		NB754-48 114.3 x 128.1 4.50 x 5.04	
NB759-48 98.7 x 61.7 3.88 x 2.42		HD976 101.1 x 108.3 3.98 x 4.26	
HG806-48 27.7 x 170.4 1.07 x 6.70		12415-32 79.6 x 191.2 3.13 x 7.52	

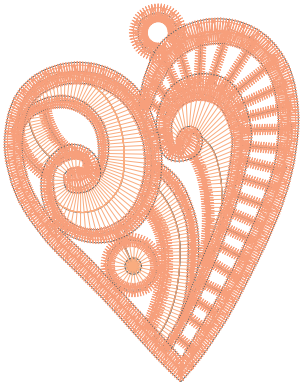
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12415-29 108.4 x 172.4 4.26 x 6.78		12655-14 164 x 110 6.45 x 4.33	
12433-05 83.4 x 124.4 3.28 x 4.89		12417-04 84.3 x 97.1 3.31 x 3.82	
BE790303 69.5 x 70.1 2.73 x 2.75		BE790301 127.2 x 89.0 5.00 x 3.50	

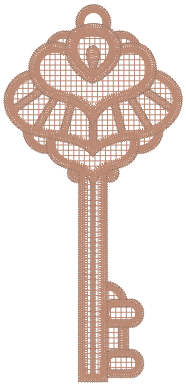
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
GNNF80834 95.2 x 78.8 3.74 x 3.10		HE962 120.5 x 135.2 4.74 x 5.32	
12421-11 39.9 x 43.6 1.57 x 1.71		12421-37 67.4 x 61.0 2.65 x 2.40	
12421-03 45.8 x 48.3 1.80 x 1.90		CM287 90.4 x 117.2 3.55 x 4.61	

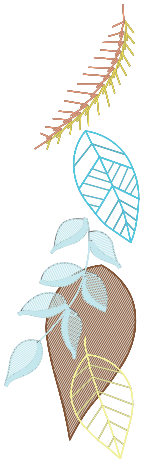
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
CM426 45.8 x 96.0 1.80 x 3.77		FQ749 77.6 x 94.8 3.05 x 3.73	
HE919 89.1 x 69.2 3.50 x 2.72		HG053 122.1 x 121.8 4.80 x 4.79	
HG319 88.6 x 151.5 3.48 x 5.96		HG460 91.8 x 98.1 3.61 x 3.86	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
NB317 87.4 x 86.9 3.44 x 3.42			

Borders and Lace

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12659-01 45.2 x 57.8 1.77 x 2.27		12659-06 36.7 x 59.5 1.44 x 2.34	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
21021-25 33.8 x 71.5 1.33 x 2.81		OC00303 100.6 x 110.6 3.96 x 4.35	
HG341 63.8 x 63.7 2.51 x 2.50		NX957 97.9 x 88.1 3.85 x 3.46	
NX696 91.2 x 90.7 3.59 x 3.57		FB461 121.7 x 121.6 4.79 x 4.78	

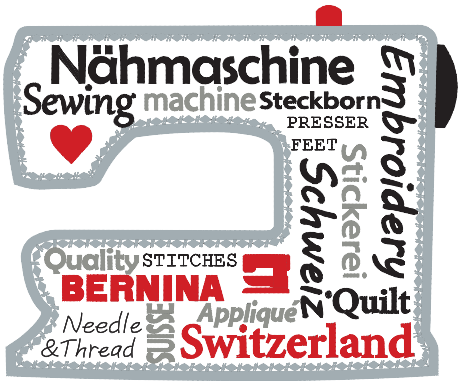
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12633-20 34.3 x 170.1 1.35 x 6.69		12508-08 40.0 x 150.9 1.57 x 5.94	
12508-17 42.1 x 152.5 1.65 x 6.00		OC33411 24.2 x 177.1 0.95 x 6.97	
OC33416 36.4 x 127.8 1.43 x 5.03		12485-12 41.3 x 139.0 1.62 x 5.47	

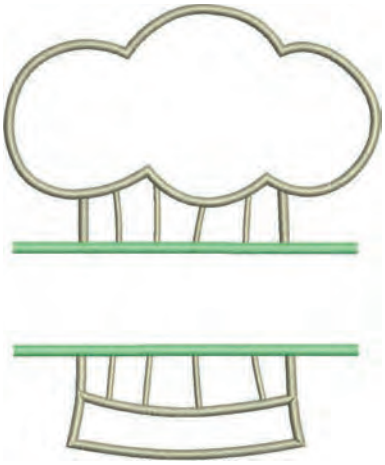
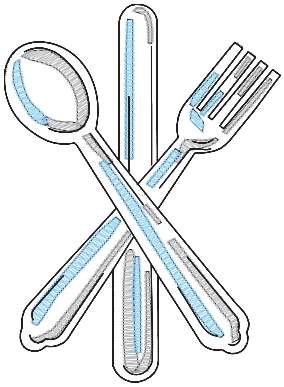
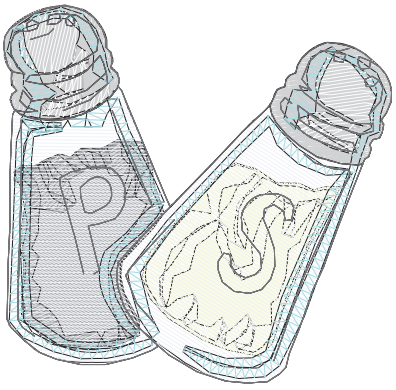
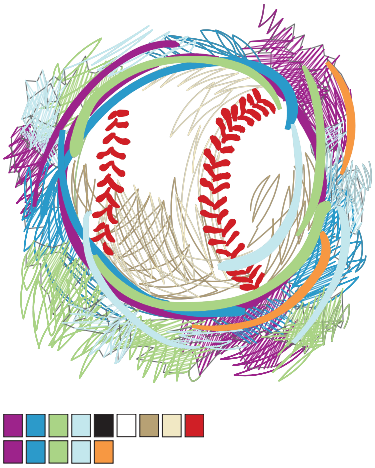
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12485-31 45.6 x 225.2 1.79 x 8.86		21013-29 40.2 x 152.0 1.58 x 5.98	
BE110415 43.7 x 172.4 1.72 x 6.78		FA981 35.1 x 142.3 1.38 x 5.60	
21002-21 21.6 x 150.9 0.85 x 5.94		21009-29 31.9 x 152.6 1.25 x 6.00	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
82005-40 26.0 x 239.4 1.02 x 9.42		BE790702 73.0 x 190.5 2.87 x 7.50	
NA914 120.3 x 18.8 4.73 x 0.74		NB520 26.3 x 175.9 1.03 x 6.92	
HG177 50.0 x 158.6 1.96 x 6.24		CM473 31.8 x 209.6 1.25 x 8.25	

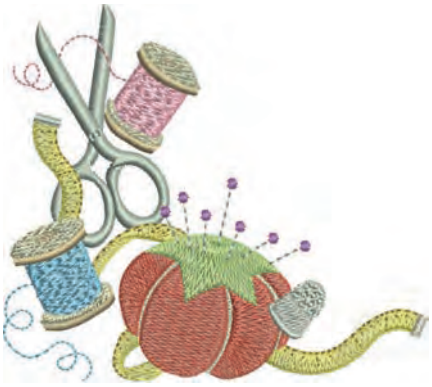
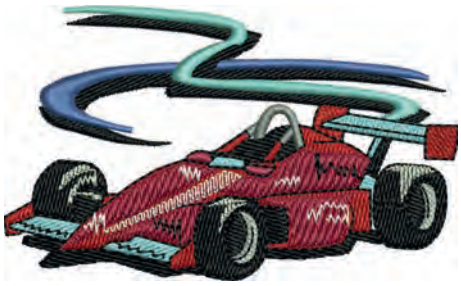
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
FB436 29.2 x 132.8 1.15 x 5.22			

Sports and hobby

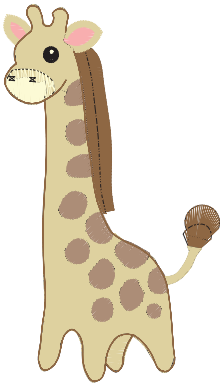
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
82014-28 141.5 x 117.1 5.57 x 4.61		12611-08 80.0 x 119.7 3.14 x 4.71	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12611-18 130.2 x 157.6 5.12 x 6.20		NX737 72.1 x 98.7 2.83 x 3.88	
NX741 80.0 x 78.0 3.14 x 3.07		12383-18 90.7 x 171.2 3.57 x 6.74	
12472-01 137.7 x 141.7 5.42 x 5.57		SP980 63.2 x 63.5 2.48 x 2.50	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
BE790606 100.2 x 86.0 3.94 x 3.38		BE790608 80.3 x 80.1 3.16 x 3.15	
BE790603 80.5 x 74.8 3.16 x 2.94		BE790602 80.3 x 75.6 3.16 x 2.97	
SP989 101.6 x 82.5 4.00 x 3.24		SR067 87.5 x 96.6 3.44 x 3.81	

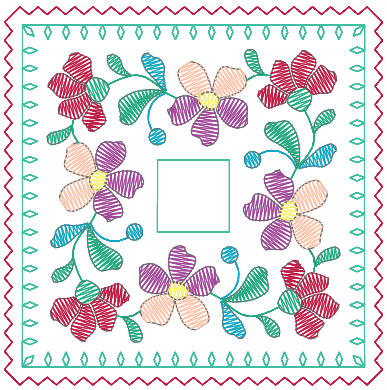
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
FB148 101.1 x 89.5 3.98 x 3.52		SR589 95.2 x 66.5 3.52 x 2.61	
LT870 97.5 x 57.0 3.83 x 2.24		RC244 88.4 x 53.4 3.48 x 2.10	
SR551 120.3 x 38.0 4.73 x 1.49			

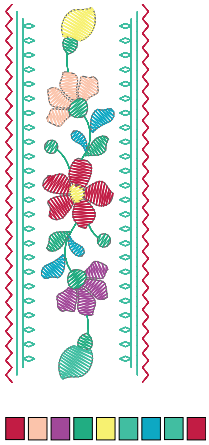
Animals

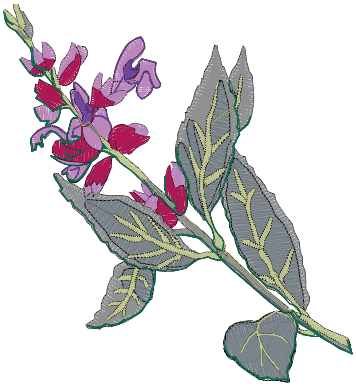
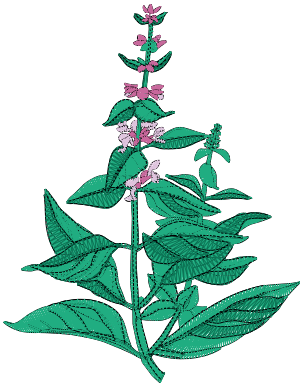
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
WP415-48 132.4 x 148.4 5.21 x 5.84		CM216-48 47.0 x 67.0 1.85 x 2.63	
CM213-48 58.3 x 101.9 2.29 x 4.01		WP421-48 95.8 x 137.5 3.77 x 5.41	
NA248 77.5 x 73.3 3.05 x 2.88		HD977 97.7 x 98.6 3.84 x 3.88	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
LJ598 106.5 x 81.5 4.19 x 3.20		CM220 71.5 x 71.8 2.81 x 2.82	

Flowers

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
21027-01 123.0 x 122.2 4.84 x 4.81		21027-14 120.8 x 120.8 4.75 x 4.75	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
21027-16 57.4 x 151.8 2.25 x 5.97		21027-17 57.3 x 151.4 2.25 x 5.96	
21017-01 104.5 x 157.5 4.11 x 6.20		FI135 88.5 x 87.1 3.48 x 3.42	
FI136 84.7 x 89.2 3.33 x 3.51		FI138 85.0 x 75.5 3.34 x 2.97	

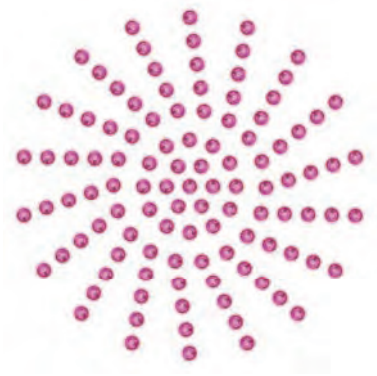
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
FI142 79.0 x 85.8 3.11 x 3.37		FI230 78.1 x 72.4 3.07 x 2.85	
FI171 69.5 x 88.9 2.73 x 3.50		82006-07 123.7 x 165.6 4.87 x 6.51	
21006-02 114.5 x 135.5 4.50 x 5.33		80001-23 85.0 x 101.6 3.34 x 4.00	

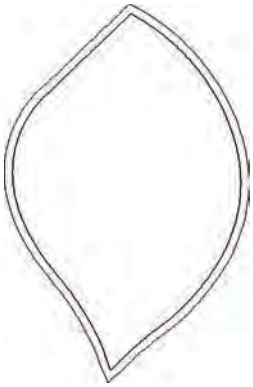
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12457-06 106.3 x 172.3 4.18 x 6.78		12457-13 113.1 x 130.3 4.45 x 5.12	
21009-21 64.9 x 107.7 2.55 x 4.24		BE790408 58.3 x 89.7 2.29 x 3.53	
21002-02 109.7 x 160.0 4.31 x 6.29		21012-04 123.1 x 123.9 4.84 x 4.87	

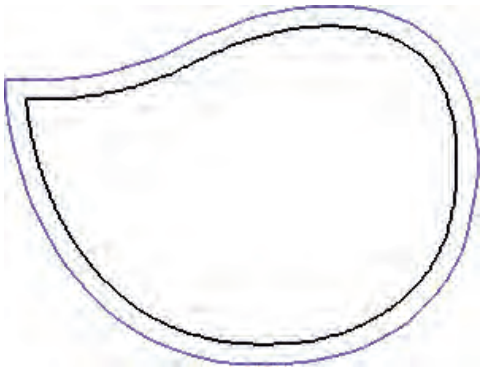
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
FB492 86.8 x 293.2 3.41 x 11.54		FP246 65.6 x 61.8 2.58 x 2.43	
FP814 88.0 x 84.4 3.46 x 3.32		FQ562 90.3 x 156.3 3.55 x 6.15	
FQ722 80.0 x 90.6 3.14 x 3.56		FQ733 66.5 x 66.5 2.61 x 2.61	

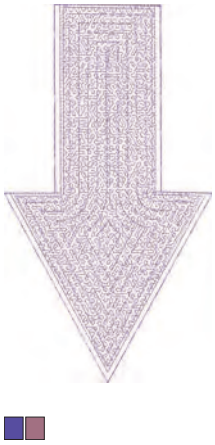
No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
FQ801 46.0 x 112.5 1.81 x 4.42		NB209 90.0 x 89.9 3.54 x 3.53	

Designs with special effects

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
DW11 70 x 71 2.76 x 2.80		21026-08_DW 86.4 x 174.0 3.40 x 6.85	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
21026-02_DW 68.6 x 193.8 2.70 x 7.62		21026-02_CWA 60.8 x 93.8 2.39 x 3.69	
21026-02_CR 103 x 12 4.05 x 0.47		12448-09_PW 121 x 161 4.76 x 6.34	
21026-05_DW 118.0 x 201.9 4.64 x 7.94		12448-11_CR 84 x 123 3.31 x 4.84	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
12448-08_PW 119.1 x 177.4 4.68 x 6.98		21022-13_DW 105.6 x 192.8 4.15 x 7.59	
21022-13_CWA_A 75.4 x 76.4 2.96 x 3.00		21022-13_CWA_B 47.7 x 36.2 1.86 x 1.42	
21022-13_CR 95 x 86 3.74 x 3.39		DW07 114 x 152 4.49 x 5.98	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
DW05 105 x 94 4.13 x 3.70		DW10 119 x 119 4.69 x 4.69	
DW08 100 x 206 3.94 x 8.11		BE700121 124 x 124 4.88 x 4.88	
BE700122 119.4 x 37.0 4.70 x 1.45		BE700123 112.7 x 205.8 4.43 x 8.10	

No. Width x Height > mm > inch	Embroidery motif Colors	No. Width x Height > mm > inch	Embroidery motif Colors
BE700124 141.0 x 134.4 5.55 x 5.29			

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made to create BERNINA