

BERNINA 990



# We take pride in providing you the perfect sewing experience!



BERNINA has represented exceptional quality since 1893. As a traditional Swiss company, we use high quality materials to manufacture our products and have them extensively tested, ensuring high performance and a long life. Over the years, we have always remained true to our company philosophy - we are personally committed to offering our customers an exceptional sewing experience.

Every BERNINA is characterized by state-of-the-art technology paired with innovations in both hardware and software. This is because we truly want you to enjoy the creative process to the fullest - after all, creativity is turning your ideas into something that makes you and others happy.

With this in mind, I wish you many joyous moments with your BERNINA 990.

Sincerely, yours Hanspeter Ueltschi Owner, BERNINA

H.P. Jumil.

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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 protect against electric shock, the following instructions must be observed:

Never leave the machine unattended when it is connected to the power supply. Immediately after use and before cleaning, switch off the machine and disconnect the power cable from the outlet.

In order to protect against injury, the following instructions must be adhered to:

- Do not look directly into the laser beam or view it with optical instruments (e.g. magnifying glasses).
  - If the laser is damaged or defective, have the laser checked or repaired by your local BERNINA dealer.
- ► Do not look directly into the LED lamp with optical instruments (e.g. magnifying glass).
  - If the LED lamp is damaged or defective, have the LED lamp checked or repaired at your local BERNINA dealer.
- Switch off the machine before working in the needle area.
- Before starting the machine, close all covers.

# **WARNING**

To reduce the risk of burns, fire, electric shock or personal injury, the following instructions must be observed.

#### **General Facts**

This machine may only be used for the purpose described in this instruction manual.

#### **Working Environment**

- ▶ Do not use the machine outdoors.
- Only use the machine in dry rooms.
- ▶ Do not use the machine in a humid area.
- ► Do not use the machine in rooms where aerosol products (sprays) are being used.
- ► Do not use the machine in rooms where oxygen is dispensed.

#### **Technical Condition**

- ▶ Never use the machine when it is damp.
- ► Do not use the machine if it is not working properly.
- Do not use the machine if a cable or the plug is damaged.
- Do not use the machine if it has been dropped, damaged or has fallen into water.
- ► If the machine is damaged or does not work properly, have the machine checked or repaired by your local BERNINA dealer.
- ► Keep all ventilation openings of the machine and the foot control free of lint, dust and loose cloth.
  - Do not use the machine if the ventilation openings are blocked.

#### **Accessories and Supplies**

 Only use the accessories recommended by the manufacturer.

## IMPORTANT SAFETY INSTRUCTIONS

- Always use an original BERNINA Stitch Plate.
  - An incorrect stitch plate can result in needle breakage.
- Use only straight needles of good quality.
   Bent or damaged needles can cause needle breakage.
- The machine is double-insulated.
   Only use original spare parts. See instructions for servicing of double-insulated products.
- ► To lubricate the machine, only use oil recommended by BERNINA.
- ► Risk of chemical burns and ingestion. Keep the battery out of the reach of children. This machine contains a lithium button cell battery. If a new or used lithium button cell battery is swallowed or ingested, this can cause serious internal injuries and can be fatal within two hours. The battery compartment must therefore always be kept securely closed. If it is not possible to securely close the battery compartment, stop using the machine, remove the battery and keep it out of the reach of children. If you suspect that batteries have been swallowed or ingested, consult a doctor immediately.

#### **Appropriate Use**

- The machine may be used, cleaned and maintained by children older than eight or by people with reduced physical, sensory or mental capabilities or if there is a lack of experience and knowledge.
  Furthermore, these persons must be supervised while working with the machine, or they must know the safe operation of the machine and be aware of resulting hazards.
- Children are not allowed to play with the machine.

- Special care should be taken when the machine is operated by or in the presence of children.
- Only use the machine with the supplied power cable.
   USA and Canada only: Do not connect power plug NEMA 1-15 to circuits exceeding 150 volt-to-ground.
  - If the machine is to be used in a country other than the country of origin, obtain a power cable suitable for this country from a BERNINA dealer.
- ► Only use this machine with the supplied foot control of type LV-1.
- ► Do not insert any objects into the openings of the machine.
- Do not place any objects on the foot control.
- While sewing, guide the fabric gently.
   Pulling and pushing the fabric can cause needle breakage.
- Keep fingers away from all moving parts.
   Special care is required in the needle area.
- Only lift the machine by the handle.
- ► For activities in the needle area such as threading the needle, changing the needle, threading the looper or changing the presser foot switch off the machine.

  To switch off, set the power switch to «0».
- When protective covers are removed, when the machine is oiled or when other cleaning and maintenance operations mentioned in this instruction manual are carried out, switch off the machine and disconnect the power plug from the outlet.
- ► Pull the plug out of the outlet by pulling on the plug. Do not pull on the cable.

# SAFE THESE INSTRUCTIONS

# Safety Signs on the Machine

#### Sign

#### **Purpose**



Attention: Close the doors, lids and covers before operating the machine.

Caution; moving parts. To reduce the risk of injury, switch off the machine before maintenance work. Attach the covers.



Warning regarding chemical burns Swallowing the batteries may result in severe internal chemical burns. Make sure that the batteries do not fall into the hands of children.

# **FCC Declaration of Conformity**

(For USA and Canada)

**Responsible Company:** BERNINA International AG, Seestrasse 161, 8266 Steckborn, SCHWEIZ

**Product Name: BERNINA 990** 

This device satisfies the provisions of Section 15 of the guidelines of the American Federal Communications Commission (FCC). Operation of this device is subject to the following conditions: (1) This device must not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device has been tested and, according to the specifications in Paragraph 15 of the FCC regulations, is compliant with the limit values for a digital Class B device. These specifications define appropriate protection against such interference in closed rooms. This device can generate, use and radiate HF energy. Therefore, if not installed and used properly, it may cause harmful interference to radio communications. There is, however, no guarantee that interference will not occur in certain situations. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user should try to correct the interference by one or more of the following measures:

- Reorient the antenna or set it up at a different location
- Increase the spacing between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is
- Contact your BERNINA dealer or an experienced radio/television technician.

Any change or modification to the device that has not been expressly approved by BERNINA can invalidate the electromagnetic compatibility (EMC) and result in the revocation of the operating license for this device.

# **General Information**

# **Availability of the Instruction** Manual

■ The instruction manual is supplied with the machine.

- Keep the instruction manual safe at a suitable place near the machine to have it at hand in case that you need to look up something.
- If you pass the machine to a third party, always include the instruction manual.
- The latest version of the instruction manual can be downloaded at www.bernina.com/990-support.

## **Proper Use**

Your BERNINA machine is conceived and designed for private household use. It is intended for sewing fabrics and other materials as described in this instruction manual and on the machine. Any other use is not considered proper. BERNINA assumes no liability for consequences resulting from improper use.

# **Equipment and Scope of Delivery**



Example images are used in these instructions for the purposes of illustration. The machines and the accessories shown in the images

therefore do not always match the actual items included with your machine. The supplied accessory can vary depending on the country of delivery. Accessories mentioned or shown, which are not included in the scope of delivery, can be purchased as optional accessories from a BERNINA dealer. Further accessories can be found at www.bernina.com/990#!accessories. For technical reasons and in order to improve the product, changes may be made to the equipment of the machine and the scope of delivery at any time and without prior notice.

# **BERNINA Quality Control**

All BERNINA machines are assembled with utmost care and are subjected to an extensive functionality test. The integrated stitch counter therefore indicates that the machine has already sewn stitches, which were performed exclusively for test purposes and quality control. The subsequent thorough cleaning does not exclude the possibility that thread remnants may still be found in the machine.

# **Servicing of Double-insulated Products**

In a double-insulated product two systems of insulation are provided instead of grounding. No grounding means is provided on a double-insulated product nor should a means for grounded be added to the product. Servicing a double-insulated product requires extreme care and knowledge of the system and should only be done 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.

#### **Environmental Protection**

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



The machine is labeled with the symbol of the crossed-out wastebin. This means that the machine should not be disposed of in

household waste when it is no longer needed. Improper disposal can result in dangerous substances getting into the groundwater and thus into our food chain, damaging our health.

The machine must be returned free of charge to a nearby collection point for electrical waste and electronic equipment or to a collection point for the reuse of the machine. Information on collection points can be obtained from your local administration. When purchasing a new machine, the dealer is obliged to take back the old machine free of charge and dispose of it properly.

If the machine contains personal data, you are responsible for deleting the data yourself before returning the machine.

# **Explanation of Symbols**

#### **▲** DANGER

Designates a danger with a high risk which can lead to serious injuries or even death unless it is avoided.

#### **<u>∧</u> WARNING**

Designates a medium-risk hazard which can lead to serious injuries if not avoided.

#### **▲ CAUTION**

Designates a low-risk hazard which can lead to minor or moderate injuries if not avoided.

#### **NOTICE**

Designates a hazard which can lead to material damage if not avoided.

#### TIP

Tips from the BERNINA sewing experts.

## Welcome to the World of BERNINA

With your BERNINA 990 you can sew, embroider and guilt. Fine silk or satin fabrics as well as heavy linen, fleece and denim fabrics can be sewn on this machine with no problem at all. Numerous practical as well as decorative stitches, buttonholes and embroidery designs are at your disposal.

#### **Further Information**



In addition to your BERNINA 990, further information products are also enclosed.

The current version of your manual as well as further information about the machine and the accessories can be found on our website.

#### bernina.com

"Made to Create" is the BERNINA slogan. Not only do our machines support you as you make your ideas a reality, we offer additional suggestions and instructions for projects and the opportunity to exchange ideas with other sewing, quilting and embroidery enthusiasts. We hope you have a great pleasure in doing so.

#### **BERNINA YouTube Channel**



On YouTube we offer a wide range of how-to videos and support concerning the most important functions of our machines. You can

also find detailed explanations of presser feet and accessories that make your projects successful.

youtube.com/BerninaInternational

Available in English and German.

#### "inspiration" - the Creative Sewing Magazine and **Online Store with Sewing Patterns**



Are you looking for ideas, sewing patterns and instructions for great sewing projects? If so, the BERNINA magazine "inspiration" is just the

right thing for you. Three times a year, "inspiration" offers you great sewing and embroidery ideas. From seasonal fashion trends to trendy accessories and practical tips to original decorations for your home or cute sewing ideas for children.

The magazine is available in English, German, Dutch, and French.

In our online shop you can purchase "inspiration" as an e-magazine or as a print version, either as individual issues or as a subscription. Furthermore, there are many individual downloadable patterns to discover! Why not take a look at:

inspiration.bernina.com

And follow us on Instagram (@inspiration.sewing.magazine).

#### **BERNINA Blog**



Sophisticated instructions, free sewing patterns and embroidery designs as well as many new ideas can be found weekly on our BERNINA

Blog. Our experts give useful tips and step by step instructions to achieve your desired results. In the community you can upload your own projects and exchange experiences and ideas with other sewing and embroidering enthusiasts.

#### bernina.com/blog

Available in English, German, Dutch and French.

#### **BERNINA Social Media**



■ Follow on social networks to learn more about events, exciting projects and tips and tricks all about sewing, quilting and embroidering. We

will keep you informed and are looking forward to sharing highlights from the world of BERNINA. bernina.com/social-media

#### **BERNINA World App**



■ Download the BERNINA App to your smartphone and enjoy direct access to all product information. The accessory organizer

gives you an overview of your accessories and those you would like to have. Furthermore, you have direct access to the customer portal, the blog and the "inspiration" online store, and you can always find a BERNINA dealer near you. The app is available in the Apple App Store and the Google Play Store. bernina.com/app

#### **BERNINA Stitchout App**



■ WiFi enabled BERNINA embroidery machines can be used together with the BERNINA Stitchout App. Once the machine is connected

to the app, the embroidery process can be tracked and monitored via the smartphone. The app shows how far the embroidery design has progressed, which color will be next and how long the embroidery process will take in total. Furthermore, messages are displayed for the case that the thread is broken or the embroidery is finished. The app is available in the Apple App Store and the Google Play Store.

bernina.com/stitchout-app

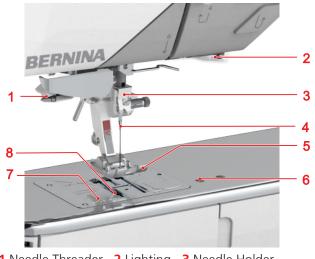
# 2.1 Machine

#### **Front**



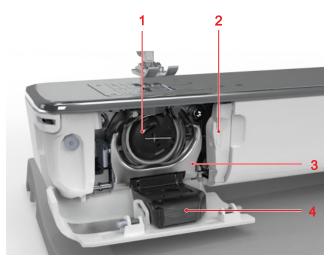
1 Embroidery Module Connection 2 Bobbin Cover 3 Needle Area 4 Thread Cutter 5 Thread Take-up Lever Cover 6 Speaker 7 Connection for Slide-on Table 8 Knee Lifter Connection

#### **Needle Area**



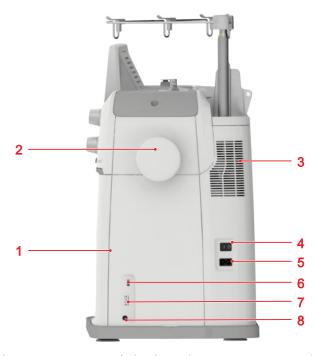
1 Needle Threader
2 Lighting
3 Needle Holder
4 Needle
5 Presser Foot
6 Connection for Sewing
Accessories
7 Stitch Plate
8 Feed Dog

#### **Bobbin Area**



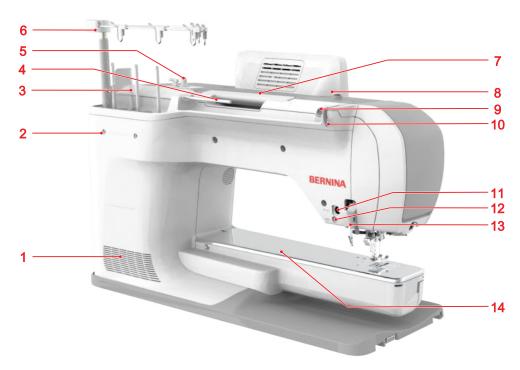
1 Bobbin Case 2 Thread Cutter 3 Bobbin Case Holder 4 Bobbin Thread Indicator

# **Right Side**



1 Magnetic Holder for Touchscreen Pen 2 Handwheel 3 Air Vents 4 Power Switch 5 Connection for Power Cable 6 USB Port, Type C 7 USB Port, Type A 8 Connection for Foot Control

#### **Back**



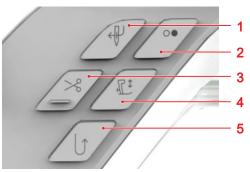
1 Air Vents 2 Connection for Multiple Spool Holder 3 Spool Pin Unit, Vertical 4 Spool Pin, Horizontal 5 Bobbin Winding Unit with Thread Cutter 6 Retractable Thread Guide 7 Carry Handle 8 Thread Guide, Winder 9 Opening for Thread Lubrication Unit 10 Thread Guide, Rear 11 Connection for Accessory 12 BSR Connection 13 BERNINA Dual Feed 14 Connection for Darning Hoop

#### **Controls**



1 External Buttons above the Needle 2 Left Controls 3 Display 4 Right Controls

#### **External Buttons above the Needle**



1 Automatic Needle Threader2 Start/Stop3 ThreadCutter4 Presser Foot Up/Down5 Quick ReverseSewing

#### **Thread Cutter**

You can use the **Thread Cutter** > button to cut the upper thread and the bobbin thread automatically. If necessary, the machine is stopped, the needle and presser foot are lowered, the upper thread and lower thread are cut.

#### TIP

In the Sewing Settings **External Buttons**, you can assign additional functions to the button.

#### **Automatic Needle Threader**

You can use the **Automatic Needle Threader**  $\P$  button to thread the needle automatically.

The **Start/Stop** ○ ● button is deactivated and lights up red. The upper thread is threaded into the needle.

If the needle is in the incorrect position, the needle will first be moved to the correct position.

#### Start/Stop

You can use the **Start/Stop** ○ ● button to start or stop the machine.

- Lights up green when the machine is ready.
- Lights up red when the machine is not ready.
- Does not light up when the machine is sewing or embroidering.

#### **Presser Foot Up/Down**

You can use the **Presser Foot Up/Down**  $\textcircled{1}^{\updownarrow}$  button to raise or lower the presser foot.

Depending on the starting position, the presser foot is either raised all the way up or lowered to the hover position.

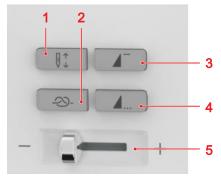
You can define the hover position height in the Settings.

#### **Quick Reverse Sewing**

You can use the **Quick Reverse Sewing** ⋃ button to sew in reverse while the button is pressed.

- Buttonhole Programs
- Darning Programs
- Tapering Stitches
- Stitch Counter Program
- Stitches with Securing Program

#### **Left Controls**



1 Needle position Up/Down2 Securing Stitches3 Pattern Begin4 Pattern End5 Speed Control

#### **Securing Stitches**

You can use the **Securing Stitches**  $ext{@-}$  button to sew a programmable number of securing stitches.

If you press the button before sewing, securing stitches will be sewn at the beginning of the seam.

If you press the button during sewing, securing stitches will be sewn immediately and the machine will stop.

#### TIP

In the Sewing Settings **External Buttons**, you can assign additional functions to the button.

#### **Needle position Up/Down**

Depending on the starting position, the needle will be raised or lowered. If the presser foot is raised, the presser foot will first be lowered.

#### **Pattern Begin**

You can use the **Pattern Begin △** button to return to the beginning of a stitch pattern or a stitch pattern combination.

With some functions, e.g., buttonholes, darning, tapering, the machine starts the pattern at the first segment.

#### **Pattern End**

You can use the **Pattern End** ⊿ ... button to stop the machine automatically at the end of a stitch pattern or a stitch pattern combination.

If you press the button before sewing, the button is activated and the **Stop** (a) icon is displayed in the stitch preview.

If you press the button during sewing, the machine will stop at the end of the pattern. If the machine is stopped in the middle of a pattern the pattern will complete when sewing is resumed. If **Repeat**  $\blacktriangle \times$  has been set, the machine will stop at the end of the set repeat.

#### TIP

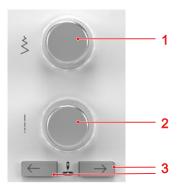
In the Sewing Settings **External Buttons**, you can assign additional functions to the button.

#### **Speed Control**

You can regulate the sewing speed via the speed control.

For a better monitoring while sewing, you can adjust the maximum sewing speed in the settings.

#### **Right Controls**



1 Upper Multi-function Knob2 Lower Multi-functionKnob3 Needle Position Left/Right

#### **Upper Multi-function Knob**

You can use the Upper Multi-function Knob for setting the Stitch Width and the values of a function.

#### **Lower Multi-function Knob**

You can use the Lower Multi-function Knob for setting the Stitch Length and the values of a function.

#### **Needle Position Left/Right**

You can use the **Needle Position Left/Right** buttons to move the needle to the left or to the right. The needle position is shown on the sewing screen. Negative values indicate a movement to the left, positive values a move to the right.

# 2.2 Accessories



**■#**S■ Further information and application notes on the supplied and optional accessories can be found under:

www.bernina.com/990#!accessories

#### **Included Accessories**

Accessories	Purpose
Dust Cover	To protect the machine from dust and contamination.
managed.	

**BERNINA Acces**sories Box



To store supplied and optional accessories.



Power Cable



To connect the machine with the power supply.



Slide-on Table

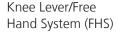


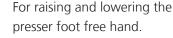
To increase the sewing surface.





To aide in guiding the fabric along the Slide-on Table.







Retractable Thread Guide



To guide the thread correctly when threading.

spool.

Accessories	Purpose	Accessories	Purpose
Touchscreen Pen	For precise operation of the touchscreen.	Thread Spool Net	To regulate threads that unwind too quickly from the spool, e.g. nylon, rayon, silk or metallics.
Spool Cap D12	Secures the thread spool in place and allows it to unwind consistently while sewing.	5× Bobbin for B9/ BERNINA Hook	To wind the bobbin thread.
Spool Cap D27	Secures the thread spool in place and allows it to unwind consistently while sewing.	Straight and CutWork Stitch Plate with Sensor	For straight stitch and embroidery projects.  For CutWork and CrystalWork projects.
Spool Cap D43	Secures the thread spool in place and allows it to unwind consistently while sewing.	5.5 mm BISR Stitch Plate with Sensor	For sewing with the BERNINA Integrated Stitch Regulator (BISR).
4× Foam Pad	The foam pad prevents the thread from slipping, tangling or breaking on the spool pin.	Height Compensation Tool	To level an angled position of the presser foot sole when sewing over thick seams.
Spool Stabilizer	To support large spools on the vertical spool holder. To avoid vibrations from the		

Accessories	Purpose	Accessories	Purpose
Seam Ripper	To undo seams and to cut buttonholes open.	Screwdriver, gray, Torx	To change the needle.
Right Seam Guide	To align even seam distances.	Thread Lubrication Unit	For sewing and embroidering metallic threads.
Needle Assortment	For the most common sewing applications.	Sewing Machine Oil	To oil the machine.
Brush	To clean the feed dog and the bobbin area.	ERNIA CATALONICA CATALONICA CONTROL OF	
		USB Stick	To save and transfer data, stitch and embroidery designs and update files.
Screwdriver, red, slot	To loosen and tighten slotted screws.		
		Sewing Thread Set	For sewing.
		Matter	

#### **Included Presser Feet**

# Presser Foot Reverse Pattern Foot #1C For forward and backward feeding utility and decorative stitches. For materials such as corduroy, denim or wool.





For forward and backward feeding utility and decorative stitches.

For materials such as corduroy, denim or wool.

To work with the BERNINA Dual Transport.

Overlock Foot #2A



For visible seams on stretch

For overlock and neatening seams.

Buttonhole Foot with Slide #3A



For automatic buttonholes with a maximum length of 30 mm, with or without cord.

Buttonhole Foot #3C



For the sewing of manual and stitch counted buttonholes, with or without a filler cord. For gathering using thread or elastic thread (smocking).

#### **Presser Foot**

#### **Purpose**

Zipper Foot #4D



For sewing in zippers, topstitching next to raised seams.

For sewing on braids, piping and hook and loop fastener.
Use only with the BERNINA Dual Feed.

Blindstitch Foot #5



For sewing blindstitch hems, edgestitching and topstitching on either side of the foot.

Button-Sew-on Foot #18



For sewing on buttons, hooks and eyelets/rings.

Open Embroidery Foot #20C



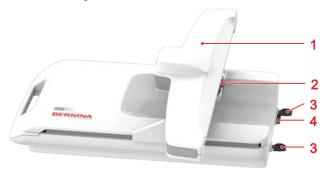
For decorative sewing applications and stitch patterns.

Sideways-Motion Foot #40C



For sewing Sideways Motion patterns and stitches in various directions.

#### **Embroidery Module**



1 Embroidery Arm2 Coupling for Securing the Hoop3 Guide Rails4 Connection to the Machine

#### **Included Embroidery Accessories**

Accessories	Purpose
Dust Cover	To protect the Embroidery Module from dust and contamination.

Embroidery Foot #26L



For embroidering, darning and free hand quilting.

Giant Hoop (incl. embroidery template)



To embroider embroidery designs, embroidery design combinations or endless embroidery.

Max. Embroidery Area:  $305 \times 410 \text{ mm} (12.0 \times 16.1 \text{ in})$ 

#### Accessories

#### Large Oval Embroidery Hoop (incl. embroidery template)

#### **Purpose**

For embroidering designs and design combinations.

Max. Embroidery Area:  $145 \times 255 \text{ mm} (5.7 \times 10.0 \text{ in})$ 



Medium Embroidery Hoop (incl. embroidery template) For embroidering designs and design combinations.

Max. Embroidery Area:  $100 \times 130 \text{ mm} (3.9 \times 5.1 \text{ in})$ 



Small Embroidery Hoop (incl. embroidery template)



To embroider small embroidery designs.

For free arm embroidering with closed sewing projects such as sleeves, trouser legs or socks.

Max. Embroidery Area:  $72 \times 50 \text{ mm} (2.8 \times 2.0 \text{ in})$ 

6x Template Holder



To fix the template in the embroidery hoop.

4x Fabric Clamp



For fixing the fabric to the outer frame of the Giant Hoop.

Accessories	Purpose
Embroidery Needle Assortment	For embroidering.
Thread Spool Net	To regulate threads that unwind too quickly from the spool, e.g. nylon, rayon, silk or metallics.
High Thread Tension Bobbin Case	Increase the lower thread tension for machine embroidery and free-motion quilting.

Embroidery Thread Set For embroidering.



# 2.3 User Interface Overview

#### **User Interface Operation**

The software can be operated with the touch-sensitive screen using touch gestures or the included touch-screen pen.

#### **Operation with Touch Gestures**

Gestures with One Finger	Application
Tap	<ul> <li>Select functions, stitch pattern or embrodery design</li> </ul>
Tap and Hold	<ul> <li>Open context menu in the File Manager and Embroidery Design Overview</li> </ul>
Drag (**)	<ul><li>Scrolling in Menus, Windows and Bars</li><li>Drawing Stitches in the Stitch Designer</li></ul>
Tap and Hold and Drag	<ul> <li>Move or delete selected stitches in Combi Mode</li> <li>Move selected layers in the Embroidery Screen</li> <li>Delete layers from the layer bar in Embroidery Mode</li> </ul>

Gestures with Two Fingers	Application
Move Apart	<ul><li>Zoom the preview in, e.g. in the Stitch Designer</li></ul>
Move Together	<ul><li>Zoom the preview out, e.g. in the Stitch Designer</li></ul>
Move	<ul> <li>Move the preview of the embroidery design in the embroidery screen</li> </ul>

#### **Operation with Mouse**

You can also operate the user interface with a mouse connected into a USB connection.

- Single Left-click
  - A single left-click works in the same way as tapping with a finger throughout the entire user interface. You can click to select elements, menus and windows.
- Left-click and Hold By pressing and holding the left mouse button on an embroidery design, you can open the context menu.

By pressing and holding the left mouse button on a stitch pattern or embroidery design in the file manager, you can display further information about the stitch pattern or embroidery design.

- Right-click and Hold and Move By holding down the right mouse button and moving the mouse, you can move the preview in the Embroidery Screen, in the Stitchout and in the Stitch Designer.
- Mouse Wheel

You can use the mouse wheel to zoom and scroll in the Sewing and Embroidery Screen, in the Stitchout, in the Stitch Designer, in the File Manager and other screens with a scroll bar.

#### **Navigation**

To go back step by step to a previous screen use the Navigation Path located on the Navigation Bar. Find Navigation Paths in the Help Center, Settings and File Manager. With the **Back** — function, you can go back step by step.

#### **Activating/Deactivating Functions**

You can switch functions on and off as follows:

Tap the Switch



- Green: Function is switched on.
- White: Function is switched off.
- Tap Icons
  - Blue: Function is switched on.
  - Gray: Function is not available.
  - Yellow Bar: Function or value deviates from the default value.
  - Red: Warning.

#### **Setting Values**

You can set values as follows:

Slider



Set the value with the slider control or reset the value to the default by tapping the small bullet.

Plus and Minus Icons



Multi-function Knobs



The knob icon that appears solid white identifies which knob modifies the value.

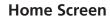
Modified values are marked in yellow. You can reset a modified value to the default by tapping the yellow field.

#### **Selection Options**

With the **Selection Options** function, you can define whether you want to select an individual object, multiple objects or all objects.



1 Single Selection 2 Multiple Selection 3 Select All





- 1 Sewing 2 BERNINA Integrated Stitch Regulator3 Embroidery 4 Help Center 5 Settings 6 Main Menu
- Modes

The main modes give you quick access to the most important functions of your machine.

#### Sewing

In **Sewing** mode, you will find the functions you need for practical and creative sewing.

#### **BERNINA Integrated Stitch Regulator**

In **BERNINA Integrated Stitch Regulator** mode, you can sew and quilt with the integrated stitch regulation. [> see page 72]

#### **Embroidery**

In **Embroidery** ① mode, you will find functions for creative machine embroidery and computerized quilting. [▶ see page 79]

#### **Help Center**

In **Help Center** 'B' mode, you will find frequently requested instructions and information, the Onboard Manual and Creative Consultant for various sewing, embroidery and quilting techniques. Connect to your device with WiFi connectivity to use the Help Center on an external device. [• see page 24]

#### Settings

In **Settings** † † mode, you can adjust various functions in sewing and embroidery, carry out simple maintenance operations and update the machine firmware.

#### Main Menu

The Main Menu provides shortcuts to quickly navigate to the following modes from any screen.

#### **Home Screen**

Main Menu 

→ Home Screen

With the **Home Screen** △ menu entry, you can return to the Home Screen. [▶ see page 21]

#### Clear

Main Menu 

► Clear CLR

The **Clear** CLR menu entry resets the following settings to the default values:

#### **Sewing Mode**

- Stitch Length and Stitch Width of the Selected Stitch
- Needle Position
- Mirroring
- Long Stitch
- Pattern Repeat
- Balance
- Directional Sewing
- Jumbo Stitch
- Stitch Density
- Upper Thread Tension
- Programmed Buttonhole Length
- Darning Program Settings
- Tapering Stitches
- Backstepping
- Stitches with Stitch Counter
- Presser Foot Selection
- Continuous Reverse

#### **Embroidery Mode**

- Design Position
- Rotation
- Scaling
- Mirroring
- Stitch Density
- Presser Foot Selection
- Shape Designer
- Thread Color Modifications

#### **Quick Help**

Main Menu ≡ ► Quick Help ?

With the **Quick Help** ⑦ function, you can tap any screen element and receive help on its use. [▶ see page 23]

#### Lock

Main Menu ≡ ► Lock ∩

With the **Lock** function, you can lock the screen and the sewing functions. With the **Lock Sewing Functions** function, the motor will be blocked and the machine cannot be started.

- **1.** To lock the screen, tap **Lock**  $\cap$  .
- **2.** To unlock the screen, swipe up and tap **Unlock**  $\widehat{\underline{\ }}$  .

#### Settings

Main Menu 

► Settings | |

With the **Settings**  $\dagger \dagger \dagger$  function, you can open the Settings directly. [ $\triangleright$  see page 43]

#### Sewing

Main Menu ≡ ► Sewing |{

#### **BERNINA Integrated Stitch Regulator**

Main Menu 

► BERNINA Integrated Stitch Regulator 

■

With the **BERNINA Integrated Stitch Regulator** 
menu entry, you can open the BISR Mode. [▶ see page 72]

#### **Embroidery**

Main Menu ≡ ► Embroidery ()

With the **Embroidery** ① function, you can open embroidery mode. [▶ see page 79]

#### **Help Center**

Main Menu 

► Help Center 

□

With the **Help Center** ⊕ function, you can open the Help Center. [▶ see page 24]

#### **File Management**



In the File Manager, you can manage your own stitch patterns and designs in the **Personal Folder**  $\bigcirc$  and **USB Stick**  $\bigcirc$  folders. You can create folders and move, copy, rename and delete files and folders.

#### Renaming a File or Folder

- **1.** Tap the **Fullscreen** ☐ icon in the toolbar to display the management options.
- **2.** Tap the **Selection**  $\stackrel{\frown}{\square}$  icon.
- **3.** Tap the desired object.
  - ⇒ The object is marked with a check mark.
- **4.** Tap the **Options** § **Rename** icon.
- **5.** Enter the name and confirm.

#### Copying or Moving a File or Folder

- **1.** Tap the **Fullscreen** ☐ icon in the toolbar to display the management options.
- **2.** Tap the **Selection** extstyle extstyle
- **3.** Tap the desired objects.
  - ⇒ The objects are marked with a check.
- **4.** Tap the **Options** § ► **Copy** or **Options** § ► **Cut** icons.
- **5.** Navigate to the target folder.
- **6.** Tap the **Options** § ▶ **Paste** icon.
  - ⇒ As soon as the process is complete, a message appears.

#### **Delete Files or Folder**

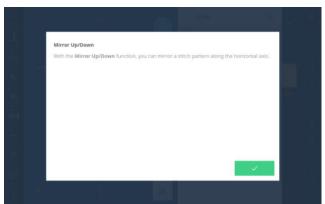
- Tap the Fullscreen ☐ icon in the toolbar to display the management options.
- **2.** Tap the **Selection**  $\square$  icon.
- **3.** Tap the desired objects.
  - ⇒ The objects are marked with a check.
- **4.** Tap the **Options** § **▶ Delete** icon.
- **5.** Confirm the query.

# 2.4 Help and Consultant

#### **Quick Help**

Main Menu 

► Quick Help ?

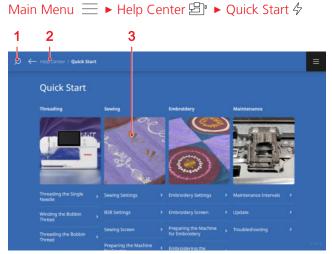


You can use the **Quick Help** ① function to open the Quick Help for many screen elements, such as icons, buttons or entire screen areas.

- **1.** Tap the **Quick Help** ? menu item.
- 2. Tap the screen element for which help is required.
  - ⇒ The Quick Help for the screen element appears.
  - ⇒ If there is further information on the screen element in the operating instructions, a link is displayed that calls up the Help Center.

#### **Help Center**

#### **Quick Start**



1 Search 2 Navigation Bar 3 Selection of Topics

You can use the **Quick Start**  $\checkmark$  function to access frequently searched instructions and information.

#### **Instruction Manual**

Main Menu 

► Help Center 

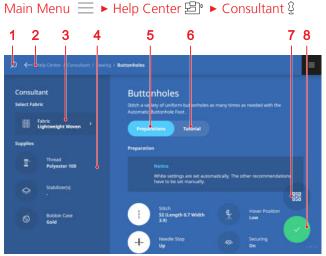
Instruction Manual



1 Search 2 Navigation Bar 3 Table of Contents4 Content Area 5 QR Code

You can use the **Instruction Manual** function to access the contents of your machine's user manual. If your tablet is on the same WiFi network as your machine, you can display the content on the tablet by tapping the **QR Code** icon and scanning the **QR** code.

#### Consultant



- 1 Search 2 Navigation Bar 3 Fabric Selection
- **4** Supplies **5** Preparations **6** Tutorial **7** QR Code
- **8** Apply Settings

You can use the **Consultant**  $\mathfrak{P}$  function to obtain recommendations for preparing and setting the machine and corresponding tutorials for various sewing, embroidery and quilting techniques. Settings with a white circle can be applied automatically using **Apply Settings**  $\checkmark$  icon.

If your tablet is on the same WiFi network as your machine, you can display the content on the tablet by tapping the **QR Code** icon and scanning the **QR** code on the machine's screen.

## 3.1 Prior to Machine's First Use

#### TIP

BERNINA recommends lubricating the hook before using the machine for the first time or after a longer period of non-use. [\*\* see page 100]

Lubricating the hook keeps the machine running smoothly and quietly.

# Removing the Protective Film on the Battery

Your BERNINA 990 contains a battery, which ensures that the clock continues to run, even if the machine is switched off and disconnected from the power supply. The protective film must be removed before the battery can be used.

- **1.** Carefully set down the machine on its back.
- **2.** Pull the protective film on the battery out of the battery compartment.



**3.** Set Up the machine.

# 3.2 Working Area

A stable table with a secure stand is a good prerequisite for optimal sewing results. Ergonomics of the sewing table is important to protect the muscles and joints of the back, shoulder, arms and hands. The recommendation for optimal ergonomics includes matching the table height with the body posture. Avoid remaining in the same position for long periods. The machine can also be operated when standing.

#### **Correct Sitting Position**

With the arms bent (90°), the fingertips can touch the stitch plate in a comfortable sitting position.

# 3.3 Connecting the Machine and Switching it On

1. Insert the cable into the machine.



- 2. Insert the power plug of the power cable into the socket
- **3.** Switch on the machine using the power switch.

# 3.4 Preparing the Machine for Sewing

For your sewing project, you must prepare and set the machine accordingly.

#### Prerequisite:

- The machine is switched on.
- The sewing settings have been made. [▶ see page 44]
- The foot control is connected. [ > see page 26]
- **1.** Attach the Slide-on Table if required. [▶ see page 27]
- **2.** Attach the Knee Lifter. [▶ see page 29]
- **3.** If the Embroidery Module is connected and is not to be removed, move the embroidery hoop to the sewing position. [▶ see page 43]
- **4.** Remove the embroidery hoop. [▶ see page 42]
- **5.** Select Sewing Mode via the main menu or the Home Screen. [▶ see page 21]
  - ⇒ The Sewing Screen appears. [▶ see page 49]
- **6.** Use a suitable stitch plate. [▶ see page 29]
- **7.** Use a suitable sewing needle. [▶ see page 32]
- **8.** Attach and select a suitable presser foot. [▶ see page 40]
- **9.** Prepare and edit stitch pattern. [▶ see page 61]
- **10.** Thread a suitable bobbin thread. [▶ see page 38]
- **11.** Thread a suitable upper thread. [▶ see page 34]

#### TIP

For special sewing techniques and fabrics, the Consultant will recommend a presser foot, stitch plate and needles as well as fabrics and sewing settings. [> see page 24]

# 3.5 Preparing the Machine for Embroidery

For your embroidery project you must prepare and set the machine accordingly.

#### Prerequisite:

- The machine is switched on.
- The embroidery settings have been made. [▶ see page 47]
- Select Embroidery Mode via the main menu or the Home Screen. [▶ see page 21]
  - ⇒ The Embroidery Screen appears. [▶ see page 79]
- 2. Remove the Knee Lifter.
- **3.** Insert the Straight Stitch Plate. [▶ see page 29]
- **4.** Insert a suitable embroidery needle. [▶ see page 32]
- **5.** Attach and select a suitable embroidery foot. [▶ see page 40]
- **6.** Attach the Embroidery Module. [▶ see page 42]
- 7. Attach the suitable hoop. [▶ see page 42]
- **8.** Prepare and edit embroidery designs. [▶ see page 83]
- **9.** Thread a suitable bobbin thread. For a higher bobbin thread tension, use a bobbin case with a high thread tension. [▶ see page 38]
- **10.** Thread a suitable upper thread. [▶ see page 34]

#### TIP

For special embroidery techniques and fabrics, the Consultant will recommend an embroidery foot, stitch plate and needles as well as fabrics and embroidery settings. [> see page 24]

#### 3.6 Foot Control

You can operate the front foot control with the ball of your foot and the rear foot control with your heel. With the ball pressure, you can start and stop the machine. Depending on the force you apply to the foot control, you can regulate the sewing speed. With the heel pressure, you can raise or lower the needle.

#### TIP

You can perform additional functions via the heel pressure. You can configure the functions in the Sewing Settings. [▶ see page 46]

#### **Connecting the Foot Control**

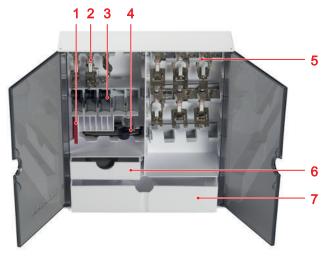
- **1.** Unwind the cable of the foot control to the desired length.
- **2.** Insert the plug of the cable into the foot control socket of the machine.



- **3.** Place the Foot Control on the floor in a comfortable position for sewing.
- **4.** If the cable is too long, roll up excess length.

# 3.7 Storing Accessories

The accessories box provides tidy storage for your accessories.



- Holder for Needle Sets
   Holder for Presser Feet without Lens
   Bobbin Holder with Spring Button
   Compartment for Buttonhole Foot with Slide #3A
   Holder for Presser Feet with Lens
   Drawer, Small
- **7** Drawer, Large
- 1. Unfold the feet and stand up the accessories box.
- 2. Open the doors.



**3.** If necessary, insert the holders into the grooves in the accessories box.

#### **NOTICE**

#### Incorrect storing of the bobbin

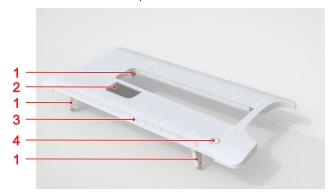
Scratched or dirty sensor surfaces on the bobbins can cause malfunctions of the lower thread indicator.

► Always position the bobbins in the bobbin holder with the silver sensor surface to the right.

- **4.** Place your accessories in the appropriate holders and compartments.
- **5.** To remove a bobbin, press the spring button down.
- **6.** Store small parts in the drawers.

#### 3.8 Slide-on Table

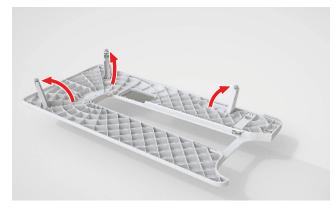
The slide-on table allows you to enlarge the sewing area. This makes it easier to position and work on your sewing project. The viewing window allows for visual access to the bobbin area while changing the bobbin without having to remove the table. The table has a printed ruler in both centimeters and inches to aide in aligning various projects. The zero center is aligned with the center needle position when attached.



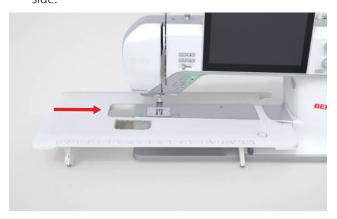
1 Adjustable Leg with Adjusting Screw 2 Viewing Window 3 Ruler 4 Unlock Button

#### **Attaching the Slide-on Table**

- 1. Raise the needle.
- **2.** Raise the presser foot.
- **3.** Release the adjustable legs on the Slide-on Table. Make sure that the adjusting screws are not turned out too far.



**4.** Slide the table over the freearm under the needle and foot to the right until it engages on the right side.



- **5.** Fully extend the legs of the table.
- **6.** Adjust the height by turning the screw at the feet. Ensure the table is flat and supported on the surface below without raising it above the freearm.



**7.** To remove the Slide-on Table, press the release button down and remove the Slide-on Table from right to left under the needle and presser foot.



**8.** Lock the legs into place for storage.

#### **Using the Seam Guide**

The Seam Guide for the Slide-on Table allows you to sew along the guide for unifom seams.



1 Release Button

#### Prerequisite:

- The Slide-on Table is attached.
- 1. To attach the Seam Guide, press the release button and engage the Seam Guide from the front to the back on the Slide-on Table.
- **2.** Press the release button down once attached and position in place as desired.
- **3.** To remove the Seam Guide, press the release button and pull the Seam Guide away to the front.

# 3.9 Knee Lifter / Free Hand System

With the Knee Lifter, you can raise and lower the presser foot without taking your hands away from your sewing project.

If the presser foot is raised, you can also lower the presser foot using the Knee Lifter.



Working with the Knee Lifter offers the following advantages:

- When the presser foot is raised with the Knee Lifter, the feed dog is lowered at the same time and the thread tension is released, enabling you to easily move or remove your sewing project.
- When the presser foot is lowered using the knee lever, the feed dog is raised after the first stitch and, if necessary, the thread tension is activated so that you can continue sewing quickly and easily.

#### **Using the Knee Lifter**

#### Attaching the Knee Lifter of the Free Hand System

- **1.** Insert the Knee Lifter into the Knee Lifter Connection as far as it will go.
- **2.** Adjust the sitting height so that the Knee Lifter can be comfortably operated with the knee.

#### TIP

The lateral position of the lever can be adjusted by your local BERNINA dealer if required.

#### **Raising the Presser Foot**

- **1.** Push the Knee Lifter to the right and hold it there with your knee.
  - ⇒ The presser foot is raised and the feed dog is lowered.
- 2. Release the Knee Lifter slowly to lower the presser foot
  - ⇒ The presser foot is lowered and the feed dog is raised.

#### **Lower the Presser Foot**

- ► When the presser foot is raised, push the Knee Lifter all the way to the right and slowly release it.
  - ⇒ The presser foot is lowered, the feed dog is raised and the thread tension is activated.

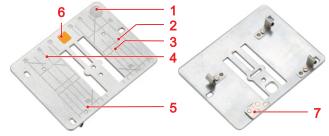
#### 3.10 Stitch Plate

The supplied 9 mm stitch plate is suitable for most sewing work. For specific applications, e.g. PunchWork, special stitch plates are used. The special stitch plates are marked with a color code.

- Without color code: 9 mm Stitch Plate
- Orange: Straight and CutWork Stitch Plate

- Yellow: PunchWork Stitch Plate
- Blue/purple: 5.5 mm BISR Stitch Plate

Vertical lines are engraved on each stitch plate, which you can use as a ruler for guiding the fabric in a straight line. You can use the diagonal lines to align the fabric at a precise 45° angle. You can use the horizontal lines to lay the fabric at the specified distance from the needle.



- 1 Pressure Point for Release 2 Fabric Placement
- **3** Needle Position **4** Ruler in cm **5** Ruler in inches
- 6 Color Code 7 Sensor

#### **Changing the Stitch Plate**

Prerequisite:

- The needle and the presser foot are raised.
- 1. Lock screen and sewing functions.
- 2. Remove the needle and presser foot.
- **3.** Press the stitch plate down at the pressure point for release on the right until it tips.



**4.** Remove the stitch plate.

**5.** Place the openings of the new stitch plate above the corresponding guide pins and press the stitch plate down until it clicks into place.



- **6.** Unlock sewing functions and screen.
  - ⇒ The machine recognizes the new stitch plate and displays it in the Status Bar.
  - ⇒ The machine checks the compatibility of the stitch plate with the attached needle and the selected stitch. If the stitch cannot be sewn with the attached stitch plate, the stitch is shown in red in the stitch preview and the machine will not start.

Needles become worn over time. Needles should be replaced regularly, as a clean stitch can only be made with a sharp tip.

#### **Needle/Thread Combination**



The needle/thread combination is correct if the thread is guided exactly into the long groove and through the eye of the needle.



If the thread is too thin for the needle, it will have too much room to move in the long groove and in the eye of the needle. This can result in the thread breaking or skipping stitches.



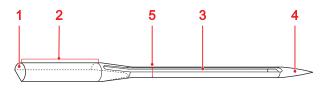
If the thread is too thick for the needle, it will be difficult to guide it through the eye of the needle and it may rub along the edge of the long groove. This can result in the thread breaking and sticking in the needle.

## 3.11 Needle

Only use needles from the 130/705 system for your machine. Select a needle thickness that is suitable for the selected fabric: Fine needles for fine fabrics, thick needles for heavy fabrics.

- Needle sizes 70, 75: Lightweight fabrics
- Needle sizes 80, 90: Medium fabrics
- Needle sizes 100, 110 and 120: Heavyweight fabrics

There are different needle types for different sewing projects. You can identify the needle type and needle size by the needle name, e.g. **130/705 H-S/70**:



1 705 = shank 2 130 = shank length 3 H = groove 4 S = Point Type 5 70 = Needle Size

Detailed information on needles and their applications can be found in the BERNINA Needle Brochure.

#### **Needle Overview**

With a medium ball

point.

#### Needle **Purpose Universal Needle** For woven fabrics (light, medium, heavy-weight), 130/705 H knitwear, leather, vinyl, jeans/ 60/8 - 120/19denim. For natural and synthetic fabrics. $\times$ For general sewing, sewing on With a slightly buttons and buttonholes, rounded point. zippers, hems and topstitching, decorative sewing, embroidery, patchwork, quilting. Stretch Needle For knitwear (jersey, tricot, knit and stretch material). 130/705 H-S For general sewing, sewing on 75/11 - 90/14 buttons and buttonholes, zippers, hems and

topstitching, decorative

sewing, embroidery.

point.

# 3 Set Up the machine

#### Needle **Purpose** Needle **Purpose** Jersey/ For woven fabrics (light, **Embroidery** For woven fabrics (light, medium, heavy-weight), **Embroidery** medium, heavy-weight), Needle Needle knitwear, vinyl. knitwear. For thicker threads. 130/705 H-E 130/705 H SUK For general sewing, sewing on For general sewing, sewing on 75/11 - 90/14 buttons and buttonholes, buttons and buttonholes, 80/12 zippers, hems and zippers, hems and topstitching, decorative topstitching, decorative With a light ball sewing, embroidery. sewing, embroidery. With a medium ball point and a particularly wide eye and point. wide groove. Jeans Needle Woven fabrics (light, medium, heavy-weight), leather, jeans/ **Fine Fabrics** For fine, delicate materials, 130/705 H-J such as velvet. Needle 80/12 - 110/18 For general sewing, sewing on 130/705 H SES For general sewing, sewing on buttons and buttonholes, buttons and buttonholes, 70/10 - 90/14zippers, hems and zippers, hems and With a slim sharp topstitching, decorative topstitching, decorative $\times$ point. sewing, embroidery, sewing, embroidery, With a light ball patchwork, quilting. patchwork, quilting. point. **Leather Needle** For leather, imitation leather **Metafil Needle** For woven fabrics (light, and similar materials. 130/705 H LR medium, heavy-weight), 130/705 H METAFI For zippers, hems and 90/14, 100/16 knitwear. For sewing with L topstitching, materials that special effects and fancy 80/12 tend to stick. threads, especially metallic With cutting tip. For embroidery with metallic With medium ball **Sharp Microtex** For woven fabrics (light, thread. For hems and point and long eye Needle medium, heavy), plastics, topstitching, decorative (2 mm). materials that are difficult to sewing and embroidery. 130/705 H-M glide such as silk, microfiber 60/8 - 110/18 fabrics, vinyl, coated materials. **Topstitch Needle** For woven fabrics (light, medium and heavy-weight). For general sewing, sewing on 130/705 H-N buttons and buttonholes, zips, For hems and topstitching, 80/12 - 100/16 With a very slim hems and topstitching and decorative sewing and sharp point. decorative sewing. For straight embroidery. For decorative stitches when topstitching and guilting work with several With medium ball edges. sewing threads and also for point and long eye embroidery. (2 mm). **Quilting Needle** For woven fabrics (light, medium and heavy-weight). 130/705 H-O Felting needle For woven fabrics (light, Decorative sewing, 75/11 - 90/14 medium, heavy-weight), jeans/ **PUNCH** patchwork, quilting. For stitching/topstitching tasks, For felting a variety of yarns such as quilting and With small barbs. With a very slim, and threads into base fabrics. patchwork. slightly rounded

#### Needle **Purpose Hemstitch Needle** For woven fabrics (light, medium and heavy-weight). 130/705 H WING For special effects in 100/16, 120/20 decorative sewing and embroidery with hemstitching. $\times$ With a "wing" on each side of the needle. **Universal Twin** For visible hems in stretch Needle fabrics, pintucks, decorative sewing. 130/705 H ZWI 70-100

#### Stretch Twin Needle

Needle distance: 1.0/ 1.6/ 2.0/ 2.5/

3.0/4.0/6.0/8.0

130/705 H-S ZWI 75

Needle distance: 2.5/ 4.0

 $\times$ 

For visible hems in stretch fabrics, pintucks, decorative sewing.

# Hemstitch Twin Needle

130/705 H ZWIHO 100

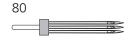


Needle distance: 2.5

For special effects with hemstitch embroidery.

#### Universal Triple Needle

130/705 H DRI



Moodlo

Needle distance: 3.0

For visible hems in stretch fabrics, decorative sewing.

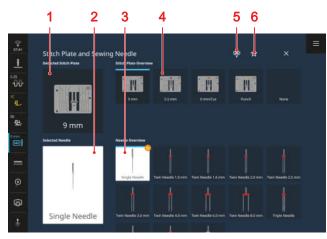
## **Changing the Needle**

- 1. Raise the needle.
- 2. Lock screen and sewing functions.
- **3.** Loosen the screw on the needle using the gray Torx Screwdriver and pull the needle out in a downward direction.



- **4.** Insert and push the new needle with the flat side to the back as far up as it will go into the needle holder and hold it in place.
- **5.** Tighten the screw.
- **6.** Unlock sewing functions and screen.
- 7. In the Status Bar, tap **Stitch Plate and Sewing**Needle and select the fitted needle in the
  Needle Overview section. see page 32]

# **Stitch Plate and Sewing Needle**



1 Detected Stitch Plate
 2 Selected Needle
 3 Needle
 Overview
 4 Stitch Plate Overview
 5 Needle Minder
 6 View Recommended

The attached Stitch Plate is automatically recognized and shown in the Status Bar and in the **Detected Stitch Plate** section.

The stitch plates and needles compatible with the machine are displayed in the **Stitch Plate Overview** and **Needle Overview** sections.

Recommended stitch plates and needles are shown with the **Recommended**  $\stackrel{\sim}{\not\sim}$  icon.

In order to verify the compatibility of the stitch plate, presser foot and needle, you must select the attached needle in the **Needle Overview** section. The selected needle is shown in the **Selected Needle** section and in the Status Bar. If the selected needle can no longer be used with the stitch plate or the presser foot, an error message is dsiplyed.

#### Recommended

With the **Recommended**  $\since$  function, you can filter the overview by recommended stitch plates and needles.

#### **Needle Minder**

With the **Needle Minder** % function you can note the needle type and needle size of the attached needle. If you have forgotten which needle is attached, you can look it up at any time.

#### **Needle Position**

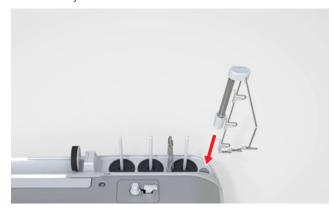
You can adjust the position of the needle in various ways:

- Button **Needle position Up/Down** (1): To raise or lower the needle.
- Buttons **Needle Position Left/Right** .: To move the needle 5 positions to the left or to the right of the center.
- Status icon **Needle Stop** <u>1</u>: To adjust the needle position up or down when stopping the machine in sewing mode.

# 3.12 Attaching the Retractable Thread Guide

BERNINA recommends using the two left vertical spool pins for sewing and stitching in conjunction with the retractable thread guide. The retractable thread guide ensures a clean unwinding of the thread from the spools.

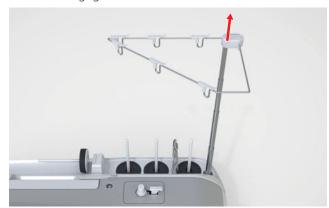
1. Insert the retractable thread guide into the opening provided and press it down firmly until it sits securely.



**2.** Flip over the guide and engage it in the groove. Align the thread guide in such a way that the three rear eyelets lie exactly above the three vertical spool pins.



**3.** Pull the thread guide up as far as it will go. While doing so, rotate the rod slightly so that the locking cams engage.



# 3.13 Upper Thread

The quality, thickness and material of the thread must be suitable for the selected fabric. BERNINA recommends purchasing high-quality threads to achieve optimum sewing results.

- Cotton threads are particularly suitable for sewing decorative projects on cotton fabric, such as quilts. As cotton threads are not particularly tear-resistant, they can also be used for basted seams that are later undone. They should not, however, be used for seams that need to be particularly hardwearing.
- Mercerized cotton threads have a slight sheen that remains even after washing.
- Polyester threads have a high tensile strength and are particularly colorfast. Polyester threads are more flexible and are recommended where a strong and elastic seam is required.
- Rayon/viscose threads are characterized by their bright sheen. Rayon threads are suitable for decorative stitches and create a more beautiful effect.

#### Threading the Single Needle

In order to get a proper stitch and prevent threads from becoming tangled, the upper thread must be threaded correctly.

The direction in which the thread should be threaded is marked on the machine with solid arrows and is numbered according to the correct sequence.

#### Prerequisite:

- The retractable thread guide is attached. [▶ see page 33]
- A foam pad is attached to each of the vertical spool pins.
- **1.** Raise the presser foot so that the thread tension discs are open and the thread can slide easily between them.
- **2.** Raise the needle so that the thread can be easily inserted into the thread take-up lever.
- **3.** Lock screen and sewing functions.
- **4.** Place the spool on the center vertical spool pin.

**5.** Pull the thread upward and through the two thread guides lying vertically above it in the thread guide.



**6.** Guide the thread through the thread eyelet from right to left.



7. Hold the thread with your right hand and, with your left hand, pull the thread taut under and through the thread guide to the front of the machine.



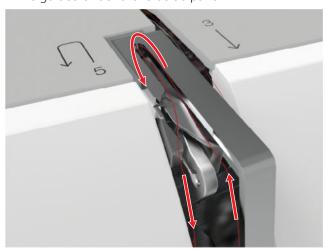
**8.** Guide the thread on the right downward past the thread tension disc.



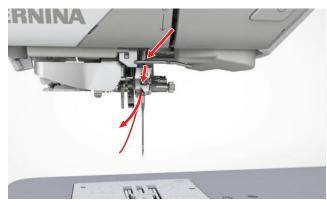
**9.** Guide the lower thread upward around the thread take-up lever cover.



**10.** Guide the thread through the thread take-up lever and guide it downward. Make sure that the thread is guided under the left side panel.



**11.** Guide the thread behind the two thread guides in the needle area.



#### **NOTICE**

# Damage to the Automatic Needle Threader or the Needle

Thin needles can break when using the automatic needle threader.

The threading hook of the automatic needle threader can be damaged.

- ► Only use the automatic needle threader with needles of size 70 and above.
- ► Always thread size 60 needles by hand.
- **12.** Guide the thread from back to front around the thread cutter and trim the thread.



- **13.** Unlock sewing functions and screen.
- **14.** Press the **Automatic Needle Threader** ♥ button.
  - ⇒ The thread is threaded into the needle.

#### **Notes on the Automatic Needle Threader**

- The Automatic Needle Threader is only suitable for threading a single needle. Always thread twin needles and triple needles by hand.
- The Automatic Needle Threader is suitable for needles of size 70 and above. Thread thinner needles by hand.
- The Automatic Needle Threader is not compatible with the following presser feet. If you are using one of these presser feet, thread the needle by hand.

- Punch Tool #45
- Walking Foot #50
- Leather Roller Foot #55
- Adjustable Ruler Foot #72
- Binder Attachment #85
- Ruffler #86
- Foot for Cut 'n' Sew Attachment #90

#### Threading the Twin Needle

To thread a twin needle, thread both threads one after the other according to the instructions for the single needle. Start with the left needle. [•] see page 34]

Note the following differences:

#### Prerequisite:

- A foam pad is attached to each of the vertical spool pins.
- 1. Place the spool for the right needle on the center spool pin and the spool for the left needle on the left spool pin.
- **2.** Guide both upper threads up to the thread tension disc in the same way as threading the single needle.
- **3.** At the thread tension disc, guide the thread for the left needle down the left and the thread for the right needle down the right of the thread tension disc.



- **4.** Guide the threads up to the needle in the same way as threading the single needle.
- 5. Thread both needles by hand.

#### Threading the Triple Needle

To thread a triple needle, thread the three threads one after the other according to the instructions for the single needle. Start with the left needle. [> see page 34]

Note the following differences:

#### Prerequisite:

- A foam pad is attached to each of the vertical spool pins.
- 1. Place the spool for the left needle on the left spool pin, the spool for the center needle on the center spool pin and the spool for the right needle on the right spool pin.
- **2.** Guide the threads up to the needle in the same way as threading the single needle.
- **3.** At the thread tension disc, guide the thread for the left needle down to the left and the threads for the right and center needle down to the right of the thread tension disc.



- **4.** Guide the threads up to the needle in the same way as threading the single needle.
- **5.** Thread all needles by hand.

#### **Threading Special Threads**

Special threads such as loosely twined threads and metallic threads can be difficult to thread and use. The Thread Lubrication Unit and the special silicone fluid prevent delicate threads from tearing or breaking and making them easier to use.

1. Insert the Thread Lubrication Unit in the opening provided and moisten the felt surfaces with a little silicone fluid.

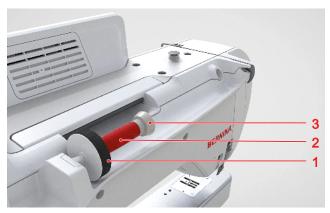
**2.** Insert the thread between the felt surfaces of the Thread Lubrication Unit.



- **3.** Guide the thread to the needle in the same way as threading the single needle. [▶ see page 34]
- **4.** Thread the needle by hand.

## **Using the Horizontal Spool Pin**

On the horizontal spool pin, a foam pad and a spool cap ensure that the thread is unwound properly. The foam pad prevents the spool from rotating too quickly. The spool cap ensures that the spool pin is held in place and the thread is unwound from the spool without becoming tangled. Spool caps are available in different sizes.



1 Foam Pad 2 Thread Spool 3 Spool Cap

- 1. Place the foam pad on the spool pin.
- 2. Place the thread spool on the spool pin.
- **3.** Select a spool cap with the same diameter as the spool and place it on the spool pin. The spool should not rotate. The thread should unwind properly.

**4.** For slippery threads put a spool net over the spool as an additional measure.



Guide the thread directly to the rear thread guide and continue threading. [► see page 34]



## 3.14 Bobbin Thread

For general sewing, we recommend using the same thread for the upper thread and the lower thread. Consult the Creative Consultant for thread recommendations with various applications and fabrics.

### **Bobbin Winding**

The direction in which the bobbin thread should be spooled is indicated on the machine with broken lines and numbered accordingly.

**1.** Place an empty bobbin on the bobbin winder so that the silver sensor surface is facing downward.



- 2. Place the spool on the right vertical spool pin.
- **3.** Pull the thread upward and insert it from back to front in the two thread guide eyelets directly above.



**4.** Guide the thread through the thread eyelet from right to left.



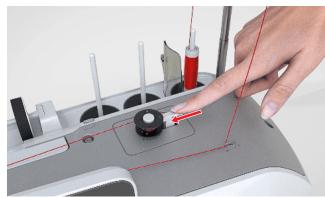
**5.** Guide the thread around the bobbin winder pretension in the direction of the arrow.



**6.** Wind the thread 2-3 times around the bobbin in the direction of the arrow and cut it using the thread cutter on the engaging lever.



**7.** Push the engaging lever toward the bobbin.



- ⇒ As the bobbin starts to wind, the speed can be adjusted on the screen.
- ⇒ The winding indicator is displayed in the Status Bar.
- ⇒ The winding will stop automatically when the bobbin is full.
- **8.** To stop before the bobbin is full, simply engage the lever to the right to pause.
- **9.** Remove the bobbin and cut the thread using the thread cutter.

## Threading the Bobbin Thread

- 1. Raise the needle.
- 2. Raise the presser foot.
- **3.** Lock screen and sewing functions.
- **4.** Open the bobbin cover.

**5.** Press the latch on the right of the bobbin case and remove the bobbin case.



- **6.** Remove the bobbin from the bobbin case.
- **7.** Insert the new bobbin so that the silver sensor surface lies inside the bobbin case.



**8.** Guide the thread through the slot to the left.



**9.** Pull the thread through under the spring and under the two thread guides.



- **10.** When inserting the bobbin case, hold the bobbin case so that the wire of the thread guide points upward.
- **11.** Insert the bobbin case. Press the left side of the bobbin case until the bobbin case engages.



**12.** Pull the thread over the thread cutter and cut.



**13.** Close the bobbin cover.

### 3.15 Presser Foot

## **Raising/Lowering the Presser Foot**

The presser foot is automatically lowered at the start of sewing.

- ► Press the **Presser Foot Up/Down** 🔁 button.
  - ⇒ Depending on the starting position, the presser foot is either raised or lowered to the hover position.

#### TIP

If the presser foot is raised, you can also lower the presser foot using the Knee Lifter.

## **Changing the Presser Foot**

- **1.** Raise the needle.
- **2.** Raise the presser foot.
- **3.** Lock screen and sewing functions.
- **4.** Press the clamping lever up and pull the presser foot downward to the side.



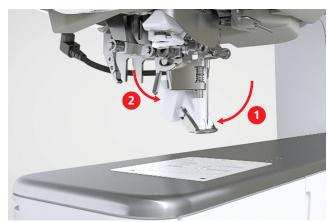
- **5.** Guide the new presser foot into the holder from below and press the clamping lever down.
- **6.** Unlock sewing functions and screen.
- 7. Tap the Presser Foot icon and select in the Presser Foot Overview the attached presser foot.
  [▶ see page 40]

# Attach the BERNINA Stitch Regulator (BSR)

### Prerequisite:

■ The screen and sewing functions are locked.

1. Attach the BSR Presser Foot.



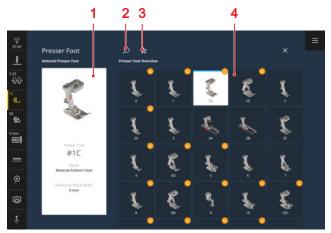
2. Insert the cable of the presser foot into the BSR connection.



- 3. Unlock sewing functions and screen.
  - ⇒ The **BSR Mode** function is switched on and the BSR Settings are displayed.

#### **Presser Foot Selection**

Sewing ▮ ► Presser Foot ⊈



- 1 Selected Presser Foot 2 Search 3 Recommended
- 4 Presser Foot Overview

The presser foot recommended for the selected stitch or embroidery design is displayed in the status bar. The presser feet compatible with the machine are displayed in the **Presser Foot Overview** section. Recommended presser feet are marked with the **Recommended**  $\stackrel{\sim}{\bowtie}$  icon.

In order for the machine to check the compatibility of the stitch, presser foot, needle and stitch plate, you must select the attached presser foot in the **Presser Foot Overview** section. The selected presser foot is shown in the **Selected Presser Foot** section and in the Status Bar.

If the stitch pattern or the embroidery design is not compatible with the selected presser foot, this can lead to collisions - an error message will appear, the stitch in the stitch preview is shown in red and the machine does not start.

#### Search

With the **Search**  $\bigcirc$  function, you can search for the attached presser foot by entering the presser foot number.

#### Recommended

With the **Recommended**  $\mit \simeq$  function, you can filter the overview by recommended presser feet.

#### **Presser Foot Pressure**

### 

The presser foot pressure has a default setting for working with medium fabrics. When working with thick fabrics, a reduced presser foot pressure enables the fabric to be moved more easily beneath the presser foot. When working with thin fabrics, a higher presser foot pressure prevents the fabric from slipping easily. We recommend testing the setting before you start. If the fabric moves with some resistance, you can reduce the presser foot pressure. If the fabric slips easily beneath the presser foot, you can increase the presser foot pressure.

Help on finding the optimum presser foot pressure for various fabric types and sewing techniques can be found in Consultant in the Help Center.

## 3.16 Fabric Feed

### **Feed Dog**

#### Sewing Feed Dog F

The feed dog moves the fabric under the presser foot. To ensure that the fabric is fed evenly, the presser foot must be positioned horizontally. To compensate for the seam height, you can place one or more height compensation plates behind or in front of the needle under the presser foot as required.

The feed dog can be lowered for applications in which the fabric is to be guided freely.

In sewing mode, you can lower and raise the feed dog manually via the icon **Feed Dog** in the status bar. In embroidery, BISR and BSR mode, the feed dog is lowered automatically.

#### **Dual Feed**

The BERNINA Dual Feed feeds the upper fabric while the feed dog controls the bottom layer. This ensures a more even feed for many applications, including:

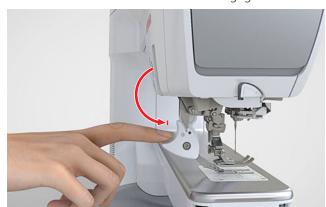
- Sewing seams and zippers
- Managing difficult fabrics such as: velvet, satins
- Matching pattern repeats, stripes and checks
- Knits and Fleece
- Patchwork: Accurate piecing, quilting and binding

**Note**: The BERNINA Dual Feed can only be used with presser feet with the designation D.

#### Switching On/Off the BERNINA Dual Feed

#### **Engaging the BERNINA Dual Feed**

- **1.** Raise the presser foot.
- **2.** Attach a D presser foot.
- **3.** Push the dual feed down until it engages.



### **Disengaging the BERNINA Dual Feed**

- **1.** Raise the presser foot.
- **2.** Pull the dual feed downward and let it slide backward and up.



# 3.17 Embroidery Module

# **Connecting and Removing the Embroidery Module**

#### **Connecting the Embroidery Module**

Prerequisite:

- The work area is large enough and has sufficient load-bearing capacity for the machine and the embroidery module.
- There is enough space for the embroidery arm to move freely.
- 1. Lift the embroidery module on the left side.
- **2.** Push and lower the embroidery module carefully from left to right into the embroidery module connection of the machine.



#### **NOTICE**

### Lifting or moving the machine when the Embroidery Module is connected

Damage to the embroidery module connection and machine.

► Before lifting or moving the machine, detach the embroidery module.

## **Removing the Embroidery Module**

Lift the embroidery module on the left side and carefully pull it to the left.



#### **Preparing the Embroidery Hoop**

Prepare the embroidery hoop according to the hoop instructions. You can download the instructions for embroidery hoops at <a href="https://www.bernina.com">www.bernina.com</a>.

## **Attaching and Removing the Hoop**

#### Attaching the Hoop



- 1 Attaching Mechanism 2 Hoop
- 1. Raise the needle.
- **2.** Raise the presser foot.
- **3.** Hold the hoop with the right side of the fabric up with the attaching mechanism to the left.
- **4.** Position the hoop below the presser foot.

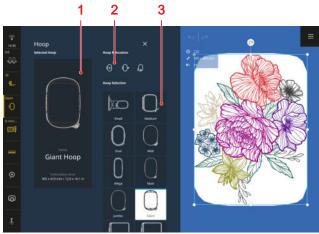
- **5.** Squeeze both attaching mechanisms of the hoop towards each other.
- **6.** Position the embroidery hoop above the bracket of the embroidery arm.
- **7.** Press the hoop down until it clicks in position.
- **8.** Release the attaching mechanism.
- **9.** Select the embroidery hoop on the machine. [▶ see page 43]
- **10.** Before using the embroidery hoop for the first time or if the needle position and the center of the embroidery hoop are not aligned, calibrate the embroidery hoop on the machine. [▶ see page 47]

#### **Removing the Embroidery Hoop**

- **1.** Squeeze both attaching mechanisms of the hoop towards each other.
- 2. Remove the hoop.

## **Hoop Overview**

Embroidery ○ ► Hoop ○



**1** Selected Hoop **2** Hoop Relocation **3** Hoop Selection

#### **Selected Hoop**

The attached hoop is automatically recognized and shown against a dark background in the Status Bar and in the **Selected Hoop** section.

If no embroidery hoop has been attached, an embroidery hoop matching the size of the embroidery design is preselected in the **Hoop Selection** section. The selected hoop is shown against a light background.

#### **Hoop Relocation**

In the **Hoop Relocation** area, you can move the attached hoop to certain positions.

- **Centered** : For easier threading of the needle.
- **Sewing Position** () : For sewing without having to remove the embroidery module. If a hoop is attached, you will be prompted to remove the hoop.
- At the Rear ( ): To easily access the bobbin area.

#### **Hoop Selection**

The hoops compatible with the machine are displayed in the **Hoop Selection** section.

To prepare the embroidery design, you can select a suitable embroidery hoop before attaching the hoop.

# 3.18 Machine Settings

#### **Machine Name**

Settings † → Machine 🗗 ➤ Information ➤ Identification ➤ Machine Name

With the setting you can enter the name under which the machine is displayed in a WiFi network.

#### **Data Usage**

Settings † → Machine 🗗 ➤ Information ➤ Data Usage

With the setting **Data Usage** you can agree or object to the use of anonymized usage data by BERNINA for product improvement.

#### **Monitoring Functions**

The machine has monitoring sensors that warn you if the upper or bobbin thread has broken or run out. With the **Monitoring Functions** setting, you can switch the Upper Thread Indicator and the Bobbin Thread Indicator on or off.

#### Sound

Settings ‡ ► Machine 🗗 ► Sound

With the setting **Sound**, you can generally activate and deactivate the acoustic signals.

If acoustic signals are activated in general, you can make the following adjustments:

- **Sound**  $\triangleleft$  : To adjust the volume of the signals.
- **Stitch Selection** : To select different acoustic signals and to switch the acoustic signal on and off.

- **Functions and Icons** ②: To select different acoustic signals and activate and deactivate the acoustic signal.
- **Stitch Regulation (** : Activate and deactivate the acoustic signal.

### **Display Brightness**

Settings † → Machine 🗗 ➤ Display and Lighting ➤ Display

With the setting **Display Brightness**, you can adjust the brightness of the screen.

#### Lighting

Settings † → Machine 🗗 ➤ Display and Lighting ➤ Lighting

With the settings **Free Arm** (and **Needle Area** (b) you can switch the sewing light above the free arm and the needle area on and off independently of each other and adjust the brightness of the sewing lights.

#### **Date and Time**

Settings ₩ ► Machine 🗗 ► Date, Time and Alarm

With the **Date and Time** setting, you can select the time format and set the date and time manually or automatically.

#### **Alarm**

Settings ₩ ► Machine 🗗 ► Date, Time and Alarm

With the **Alarm**  $\bigtriangleup$  setting, you can switch on a reminder and set the following information:

- Alarm Time (1)
- Sound <
- Alarm Message =

#### WiFi Connection

Settings ₩ ► Machine 🖭 ► WiFi Connection

You can connect the machine to a WiFi network. This allows you to transfer embroidery designs from the BERNINA Embroidery Software onto the machine, to track the progress of the stitching on the BERNINA Stitchout App or display content from the Help Center on a tablet.

With the **WiFi** setting, you can switch the WiFi connection on and off. The machine indicates the network to which it is connected.

All available networks are displayed in the **Available Networks (2.4 GHz)** list. You can connect the machine to any available network. In the case of protected networks, you must sign in with a password. Once you have set up the WiFi connection, you can switch the WiFi connection on and off via the status bar.

# 3.19 Personal Settings

#### **Welcome Message**

Settings † Personal ♥ ► Welcome Message

With the **Welcome Message** setting, you can enter a text to be displayed when the machine is switched on.

#### **Background Color**

Settings † → Personal ♡ ► Background Color

With the **Background Color** setting, you can select a color scheme for your screen.

#### Language

Settings † → Personal ♡ ➤ Language

With the **Language** setting, you can set the language of the user interface.

#### **My Dealer Information**

Settings † → Personal ♡ ➤ My Dealer Information

With the **My Dealer Information** setting, you can enter the address of your BERNINA dealer for quick reference at any time.

# 3.20 Sewing Settings

## **Upper Thread Tension**

Settings † → Sewing Upper Thread Tension

The upper thread tension is optimally set in the BERNINA factory. Mettler Metrosene/Serlon thread size 100/2 is used for the upper and bobbin thread.

If you use different types of sewing threads, the upper thread tension may vary. You can override the default setting based on thread and fabric you are using in the Upper Thread Tension in the Sewing Settings. This modification is made to all sewing patterns and kept until changed again in the Settings, even after a machine restart.

The higher the upper thread tension, the more the upper thread is tensioned and the bobbin thread is pulled more strongly into the fabric. The lower the upper thread tension, the less the upper thread is tensioned and the bobbin thread is pulled less strongly into the fabric.



#### **Perfect Stitch Formation**

The thread knotting is in the center of the fabric.



# Upper thread tension too tight

This pulls the bobbin thread more strongly into the fabric.



# Upper thread tension too loose

This pulls the upper thread more strongly into the fabric.

#### TIP

If the sewing test shows that the upper thread tension is not optimal for a stitch pattern, you can modify the upper thread tension for the selected stitch pattern using the **Upper Thread Tension** function in the Status Bar.

### **Sewing Speed**

With the **Sewing Speed** function, you can limit the maximum sewing speed. The setting is saved when the machine is switched off.

The sewing speed is specified in stitches per minute. The maximum sewing speed is 1200 stitches per minute.

### **Securing Stitches**

With the **Securing Stitches** function, you can set whether securing stitches should be sewn automatically upon starting sewing.

#### **Presser Foot Hover Position**

Settings † ► Sewing ► Presser Foot Hover Position

With the **Presser Foot Hover Position** function, you can set how high the presser foot is raised when the machine stops with the needle position down. The following options are available:

- **Low**: The presser foot remains lowered.
- Medium: The presser foot is raised to medium height.
- High: The presser foot is raised.

#### **External Buttons**

Settings † ► Sewing External Buttons

With the **External Buttons** function, you can program additional functions for the following buttons:

- Pattern End
- Securing
- Presser Foot Up/Down
- Thread Cutter
- Quick Reverse

#### **Pattern End**

Settings † ► Sewing External Buttons ► Pattern Fnd

You can use the setting **Pattern End** to specify which additional functions are performed when the button **Pattern End** \_\_\_\_\_ is pressed. The following functions are available:

- Securing
- Cut Upper and Lower Thread
- Raise Presser Foot

You can combine the functions with each other.

#### Securing

With the **Securing**  $\Longrightarrow$  function, you can switch the sewing of securing stitches on and off.

#### **Securing Stitches**

If the function **Securing** is activated, you can define the way how the securing stitches are sewn. The following options are available:

- **Secure in Place**: The securing stitches are sewn on the spot.
- **Running Stitches**: Short securing stitches are sewn one after the other.

If you have selected the **Running Stitches** | setting, you can set the count of securing stitches.

### **Cut Upper and Lower Thread**

With the **Cut Upper and Lower Thread** of function, you can switch the thread cut on and off.

### **Raise Presser Foot**

With the **Raise Presser Foot** 1 function, you can switch the raising of the presser foot on and off.

### **Securing Stitches**

You can use the setting **Securing Stitches** to specify which function is performed when the button **Securing Stitches**  $ext{@}$ - is pressed. The following functions are available:

- **Secure in Place**: The securing stitches are sewn on the spot.
- **Running Stitches**: Short securing stitches are sewn one after the other.

If you have selected the **Running Stitches** | setting, you can set the count of securing stitches.

#### **Presser Foot Up/Down**

Settings † → Sewing External Buttons ➤ Presser Foot Up/Down

With the **Presser Foot Height** function, you can set the height to which the presser foot is raised when the **Presser Foot Up/Down**  $\mathfrak{T}^{\updownarrow}$  button is pressed. Depending on the material thickness, you can raise the presser foot to 0 – 7 mm.

#### **Thread Cutter**

Settings † ↑ ► Sewing External Buttons ► Thread

You can use the setting **Thread Cutter** to specify whether additional securing stitches are sewn when the button **Thread Cutter** >% is pressed.

#### Securing

With the **Securing**  $ext{@}$ - function, you can switch the sewing of securing stitches on and off.

#### **Securing Stitches**

If the function **Securing** is activated, you can define the way how the securing stitches are sewn. The following options are available:

- **Secure in Place**: The securing stitches are sewn on the spot.
- Running Stitches: Short securing stitches are sewn one after the other.

If you have selected the **Running Stitches** | setting, you can set the count of securing stitches.

### **Quick Reverse**

With the **Quick Reverse** function, you can set how the machine sews in reverse when the **Quick Reverse**  $\circlearrowleft$  button is pressed. The following functions are available:

- **Reverse** (): The machine sews in reverse.
- Backstep: The machine sews the stitch pattern in reverse stitch by stitch according to the stitches sewn. This setting is particularly suitable for decorative stitches.

#### **Foot Control**

Settings † ► Sewing Foot Control

The default setting **Needle Up/Down** ↓ is set for the back kick on the foot control. You can switch the standard function off and on or switch on and set a combination of the following functions:

#### Securing

With the **Securing**  $\otimes$ - function, you can switch the sewing of securing stitches on and off.

#### **Securing Stitches**

If the function **Securing** is activated, you can define the way how the securing stitches are sewn. The following options are available:

- Secure in Place: The securing stitches are sewn on the spot.
- **Running Stitches**: Short securing stitches are sewn one after the other.

If you have selected the **Running Stitches** | setting, you can set the count of securing stitches.

### **Cut Upper and Lower Thread**

With the **Cut Upper and Lower Thread** & function, you can switch the thread cut on and off.

#### **Raise Presser Foot**

With the **Raise Presser Foot**  $\stackrel{\square}{\underline{}}$  function, you can switch the raising of the presser foot on and off.

#### **Buttonhole Foot Calibration**

The Buttonhole Foot with Slide #3A is calibrated to the machine and they should always be used together. A new buttonhole foot must be calibrated with the machine in the sewing settings before its first use.

#### Prerequisite:

- The needle is not threaded.
- 1. Open the Buttonhole Foot Calibration setting.
- 2. Attach and lower the Buttonhole Foot with Slide #3A.
- **3.** Push the **Start/Stop** ● button.
  - ⇒ The machine moves the buttonhole foot with slide forward and backward and displays successful calibration.

# 3.21 Embroidery Settings

### **Upper Thread Tension**

Settings † → Embroidery ○ ► Upper Thread Tension

The upper thread tension is set optimally at the BERNINA factory. Mettler Metrosene/Serlon thread size 100/2 is used for the upper and bobbin thread.

If you use different types of sewing threads, the upper thread tension may vary. You can override the default setting in the Embroidery Settings. This modification is made to all embroidery designs and kept until changed again in the Settings, even after a machine restart.

The higher the upper thread tension is set, the tighter the upper thread is tensioned, and the bobbin thread is pulled deeper into the fabric. The lower the setting the lower the upper thread is tensioned, and the bobbin thread is pulled less deeply into the fabric.

#### TIP

If the embroidery test shows that the upper thread tension is not optimal for an embroidery design, you can modify the upper thread tension for the selected embroidery design using the **Upper Thread Tension** Tension in the Status Bar.

For a higher bobbin thread tension, use a bobbin case with a high thread tension (HTTBC).

## **Embroidery Speed**

Settings ¼ ► Embroidery ○ ► Embroidery Speed

The embroidery speed is specified in stitches per minute. The maximum embroidery speed is 1000 stitches per minute.

With the **Embroidery Speed** setting, you can limit the maximum embroidery speed. The setting is saved when the machine is switched off.

#### TIP

You can also modify the embroidery speed during stitching using the foot control or the slide speed control. You can switch on the maximum embroidery speed for the current embroidery design while embroidering using the function **High Speed** .

## **Design Position**

Settings † → Embroidery ○ ► Design Position

With the **Design Position** setting, you can set the standard positioning of the embroidery design in the hoop.

Embroidery designs can be positioned either in the center of the hoop (default) or at the saved position. The saved position corresponds either to the position of the embroidery design when saved in your Personal Folder or to the position saved in BERNINA Embroidery Software. The setting is saved when the machine is switched off.

### Calibrating the Hoop

Settings ¼ ► Embroidery ○ ► Hoop Calibration

Hoops must be calibrated when new and after every machine firmware update.

With the **Hoop Calibration** function, you can calibrate all hoops.

- 1. Hoop the fabric with non-woven material.
- **2.** Place the template in the inner hoop onto the fabric.
- **3.** Attach the hoop.
  - ⇒ The machine recognizes the attached embroidery hoop and displays it in the Status Bar.
- **4.** Activate the **Hoop Calibration** function.
- **5.** Switch on the **Camera** and **Laser** functions.
  - ⇒ The laser indicates the exact position of the needle.
- **6.** If the needle is not positioned exactly at the center of the template, center the needle using the arrow buttons.
- **7.** Confirm the hoop calibration.

The setting is saved when the machine is switched off. With the **Reset Calibration** function, you can delete an existing calibration.

#### **Cut and Secure**

Settings † ► Embroidery ○ ► Cut and Secure

#### **Quilt Settings**

With the **Quilt Settings** \$\mathbb{\omega}\$ function, you can switch on and off special quilt settings for thread cutting and securing.

Quilt Settings:

- Quilt Securing Stitches.
- Thread Cut Disabled.
- Thread Away Disabled.

#### **Thread Cut After Start**

If the **Thread Cut After Start** & function is switched on, the machine stops after a few stitches and you can cut the thread end by hand.

#### Securing

With the **Securing**  $ext{@}$ - function, you can switch the sewing of securing stitches on and off.

#### **Securing Stitches**

If the function **Securing** is activated, you can define the way how the securing stitches are sewn. The following options are available:

- **Secure in Place**: Securing Stitches in Place.
- Running Stitches: Running Stitches.

### **Secure at Beginning**

With the **Secure at Beginning**  $\otimes$ — function, you can switch the sewing of securing stitches at the beginning of the embroidery design on and off.

If an embroidery design has programmed securing stitches, the programmed securing stitches are sewn.

#### Secure at End

With the **Secure at End** — function, you can switch the securing stitches at the end of the embroidery design.

If an embroidery design has programmed securing stitches, the programmed securing stitches are sewn.

#### **Unit of Measurement**

Settings ¼ ► Embroidery ○ ► Unit of Measurement

With the **Unit of Measurement** function, you can set the preferred measurement, either mm or inches. The embroidery size is shown in the selected measurement unit. The setting is saved when the machine is switched off.

## **SPI (Customizable Quilt Designs)**

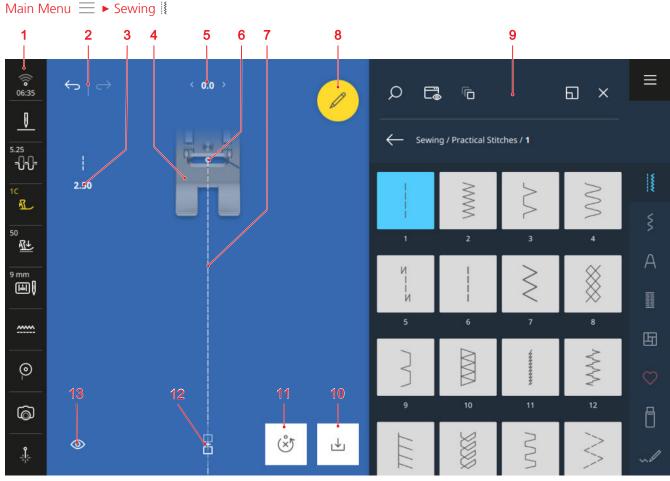
Settings † 

† 

Embroidery 

► SPI (Customizable Quilt Designs)

With the **SPI (Customizable Quilt Designs)** setting, you can set the stitch length for Customizable Quilt Designs in stitches per inch (SPI).



1 Status Bar 2 Undo/Redo 3 Stitch Length 4 Presser Foot Preview 5 Stitch Width 6 Needle Position 7 Stitch Preview 8 Edit 9 File Manager 10 Save 11 Reset 12 Combi Mode 13 View

#### Undo

With the **Undo**  $\leftarrow$  function, you can undo the most recent actions.

#### Redo

With the **Redo**  $\longrightarrow$  function, you can redo undone actions.

#### Stitch Length

With the **Stitch Length** function, you can adjust the length of the current stitch.

#### **Presser Foot Preview**

A preview of the recommended or selected presser foot is displayed in the presser foot preview.

#### Stitch Width

With the **Stitch Width** function, you can adjust the width of the current stitch.

#### **Fdit**

With the **Edit** function, you can open the stitch pattern editing functions. [▶ see page 61]

#### **Needle Position**

If the needle has been moved to the left or right, the value of the needle position is displayed. You can move the needle position back to the middle position by tapping the icon **Needle Position** .

#### **Stitch Preview**

The Stitch Preview shows a preview of the current stitch or stitch pattern combination, along with the selected presser foot. In Combi Mode, you can select and move the individual stitches in the stitch preview.

#### Save

With the **Save** ↓ function, you can save a modified stitch pattern as a new stitch or with new default settings. [▶ see page 69]

#### Reset

With the **Reset** ★ you can reset the saved settings of the loaded stitch to the factory default. [▶ see page 70]

The function is only displayed if you have loaded a stitch pattern with new default settings.

#### **Combi Mode**

With the **Combi Mode** ∃ you can switch the Combimode on and off. [▶ see page 68]

#### View

With the **View**  $\odot$  function, you can adjust the view on the Sewing Screen.

- **Rotate** □ : Rotate the view by 90°, e.g. to make it easier to design texts.
- **Presser Foot On/Off** (a): Show and hide the presser foot.
- **Grid On/Off** # : Show and hide the grid.
- Zoom In/Zoom Out ②: Zoom the view in or out.
- **Zoom Factor**: Reset the view to the default.

## 4.1 Status Bar

The Status Bar displays the state of various functions. Some functions can be set directly with the respective status, e.g. the needle position, the feed dog or the laser. For other functions, you can open the settings with the status, e.g. the upper thread tension or the presser foot pressure.

The color of the icon shows the current state of the function.

White: Default settingBlue: Active setting

Yellow: Modified setting

Red: Warning

#### WiFi, Time and Alarm

The **WiFi** sicon displays the WiFi connectivity, the current time and alarm if active.

By tapping the icon, you open the settings for WiFi, Time and the Alarm function. In the Settings, you can switch the WiFi connection on or off or set up the WiFi connection. [• see page 44]

You can also set a reminder. [▶ see page 44]

## **Needle Stop**

The **Needle Stop**  $\underline{\mathbb{I}}$  icon shows the needle position when the machine is stopped.

- <u>I</u>: Needle Stop Up.

You can set the needle position to stop up or down by toggling the icon.

#### **Upper Thread Tension**

The **Upper Thread Tension** - con shows the recommended upper thread tension for the selected stitch.

You can modify the upper thread tension for the selected stitch by tapping the **Upper Thread Tension** icon. [▶ see page 44]

#### **Presser Foot**

The **Presser Foot**  $\P$  status shows the recommended or selected presser foot.

You can open presser foot selection by tapping the icon. In the presser foot selection, you can select the attached presser foot and display details about the presser foot. [• see page 40]

#### **Presser Foot Pressure**

The **Presser Foot Pressure** <u>U</u> icon shows the presser foot pressure.

You can open and change the presser foot selection by tapping the **Presser Foot Pressure** icon. [▶ see page 41]

#### Stitch Plate and Sewing Needle

The **Stitch Plate and Sewing Needle** status shows the selected needle and the attached stitch plate. The attached stitch plate is automatically recognized.

You can open the needle overview and select the attached needle by tapping the icon. [▶ see page 32]

#### Feed Dog

The **Feed Dog** status shows the position of the feed dog.

■ **Feed Dog** ...... (white): Feed Dog is up.

■ **Feed Dog** (yellow): Feed Dog is down.

You can lower and raise the feed dog by tapping the icon.

#### **Bobbin Thread**

The **Bobbin Thread**  $\odot$  status shows the fill capacity of the lower thread bobbin.

White: Good

Yellow: Low or Empty

You can open the Bobbin Thread Status by tapping the **Bobbin Thread** occidental icon. In the setting, the bobbin fill capacity is shown and you can visualize the animation and step-by-step instructions to insert the Bobbin Case.

#### TIP

Toggle the light on/off to make it easier to insert the Bobbin Case when the Slide-on Table is attached.

#### Camera

The **Camera** icon shows the status of the camera.

White: Camera off.

Yellow: Camera on.

■ Red: Camera not available.

You can switch the camera on and off for a live image of the sewing area by tapping the icon.

#### Laser

The **Laser** & icon shows the status of the laser.

White: Laser off.Yellow: Laser on.

By tapping the icon, you can switch the laser on and off.

The laser indicates the next stitch point in sewing mode and the exact needle position in embroidery mode. Depending on the presser foot and needle position, the entry point may be concealed by the presser foot. To avoid the deflection of the laser with transparent presser feet, you can lower the presser foot before the sewing start, e.g. with the Knee Lifter.

# 4.2 File Manager

In the File Manager, you can load and manage stitch patterns. The File Manager is opened when you tap a stitch pattern category, the tabs **Personal Folder**  $\bigcirc$  and **USB Stick**  $\sqcap$  in the Quick Access Bar.



1 Toolbar 2 Navigation Bar 3 Quick Access Bar

4 Selection Area

### **Toolbar**

In the toolbar, you will find functions for searching for files, adjusting the view and managing your own files in your Personal Folder and on a USB stick.

#### Search

With the **Search**  $\bigcirc$  function, you can search for stitch patterns by stitch number.

#### Selection

With the **Selection** function, you can select folders or files that you wish to manage using a function from the **Options** menu.

The **Selection** ☐ function is only available for the **Personal Folder** ○ and **USB Stick** ☐ folders.

#### **Options**

With the **Options** are menu, you can manage the selected file(s) or folder(s) using the **Selection** function.

- Rename: Renaming a File or Folder [▶ see page 23]
- Cut: Cut File(s) or Folder(s). [▶ see page 23]
- Copy: Copy File(s) or Folder(s). [ > see page 23]
- Paste: Paste cut or copied File(s) or Folder(s). [▶ see page 23]
- New Folder: Create New Folder.
- Information: Show preview and further information on the stitch pattern.
- **Select All**: Select all displayed File(s) and Folder(s).
- **Delete**: Delete File(s) or Folder(s). [▶ see page 23]

The **Options** \$ menu is only available for objects in the **Personal Folder**  $\bigcirc$  and **USB Stick**  $\lnot$  folders.

#### View

With the **View** function, you can switch the view in the selection area between grid and list view. In the grid view, you can choose between large and small icons.

#### History

With the **History** function, you can display and choose the most recently sewn stitch patterns. The History is retained after restarting the machine.

#### **USB Stick**

With the **USB Stick** function, you can switch between your Personal Folder and the USB Stick in the selection area.

This function is only available if a USB stick is inserted.

#### **Fullscreen**

With the **Fullscreen** function, you can expand the File Manager to fill the entire screen and show additional functions.

### **Navigation Bar**

The navigation bar shows the path to the selected stitch pattern. With the **Back**  $\leftarrow$  function, you can go back step by step.

### **Quick Access Bar**

You can use the Quick Access Bar to directly access the categorized stitch folders, Personal Folder and USB as well as the Stitch Designer.

#### **Practical Stitches**

In the **Practical Stitches** [ folder, you will find all practical stitches. [ see page 53]

#### **Decorative Stitches**

In the **Decorative Stitches** § folder, you will find all decorative stitches collated into folders by categories. [**b** see page 56]

#### **Alphabets**

In the **Alphabets**  $\triangle$  folder, you will find all sewing alphabets. [ $\triangleright$  see page 57]

#### **Buttonholes**

In the **Buttonholes** ∰ folder, you will find all buttonholes, eyelets and the Button Sew-on Program. [▶ see page 57]

#### **Quilt Stitches**

In the **Quilt Stitches** ⊞ folder, you will find all quilt stitches. [▶ see page 59]

### **Personal Folder**

In the folder **Personal Folder**  $\bigcirc$  , you can save and load your own stitch pattern. You can organize the stitch patterns in folders.

#### **USB Stick**

In the **USB Stick** folder, you can save or load your own stitch patterns on a USB stick. You can organize the stitch patterns in folders.

#### Stitch Designer

With the **Stitch Designer** ✓ icon, you can open the **Stitch Designer** function and modify existing stitch patterns or design your own stitch pattern. [▶ see page 74]

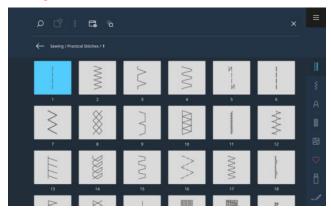
#### **Selection Area**

In the Selection Area, you can navigate through the folders and load a stitch pattern. Each stitch pattern is displayed with a preview image. Stitch pattern combinations are also marked.

If you press and hold a stitch pattern or stitch pattern combination, a preview of the stitch pattern or the entire combination and further information is displayed. If you tap the icon **Load** in the preview, the stitch pattern or combination is loaded.

# **5.1 Practical Stitches**

Sewing ▮ ► Practical Stitches ▮



Stitch patterns	Stitch number	Name	Purpose
	1	Straight Stitch	For joining seams, for topstitching and basting.
<b>***</b>	2	Zigzag	For finishing, sewing knit seams, sewing on lace inserts and elastic bands.
>	3	Vari-Overlock	For finishing edges, sewing together and finishing knit fabrics.
<b>N</b>	4	Running Stitch	For darning and reinforcing fabric edges or attaching lace or elastic tape.
И     	5	Securing Program	For automatic securing at the start of the seam with forward and reverse stitches.
	6	Triple Straight Stitch	For reinforced seams on heavy fabrics, topstitching and decorative effects.
<b>\Rightarrow</b>	7	Triple Zigzag	For durable seams on strong fabrics, visible hems and decorative seams.
*	8	Honeycomb Stitch	For visible and decorative seams on knits and wovens.
}	9	Blind Stitch	For blind hems on most fabric types and for shell edging on soft jerseys and fine fabric.
	10	Double Overlock	For sewing together and finishing knit fabrics.
**************************************	11	Superstretch Stitch	For very stretchy open seams.

Stitch patterns	Stitch number	Name	Purpose
<b>***</b>	12	Gathering Stitch	For gathering with heavier threads and for flat joining seams on medium-weight fabrics.
1111	13	Stretch Overlock	For sewing together and finishing knit fabrics as well as for flat joining seams.
	14	Tricot Stitch	For visible hems and seams in lingerie and sweaters and for mending tricot fabric.
777	15	Universal Stitch	For flat joining seams, visible hems and decorative seams in heavy fabrics such as felt and leather and for attaching elastic tape.
<u> </u>	16	Stitched Zigzag	For finishing and reinforcing fabric edges, for sewing on elastic tape and for decorative seams.
	17	Lycra Stitch	For flat joining seams, visible hems on lycra fabric and for stitching over seams in undergarments.
pol/monos/Men	18	Stretch Stitch	For stretchy seams and hems in woven and knit fabrics.
	19	Reinforced Overlock	For overlock seams or flat joining seams on medium-weight knit fabrics and toweling.
	20	Knit Overlock	For stretchy seams and hems in woven and knit fabrics.
	21	Basting Stitch	For tacking seams, hems and for quilting projects.
	22	Simple Darning Program	For automatic darning in fine to heavy fabrics.
	23	Reinforced Darning Program	For automatic darning in heavy materials.
PARAMANA	24	Bartack Program	For reinforcing pocket openings, buttonholes and sewing belt loops.
z	25	Bartack Program	For reinforcing pocket openings and securing seam ends.
	26	Large Fly Stitch	For reinforcing pocket openings, zippers and slits in medium-weight to heavy fabrics.
À	27	Small Fly Stitch	For reinforcing pocket openings, zippers and slits in fine to medium-weight fabrics.

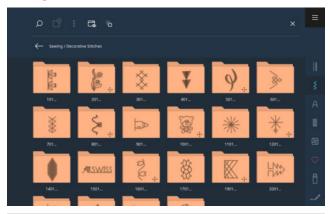
Stitch patterns	Stitch number	Name	Purpose
}	29	Narrow Blind Stitch	For blind hems and shell edging in fine and soft fabrics.
	31	Triple Straight Stitch with Long Stitch	For durable seams in heavy fabrics, e.g. visible and decorative seams.
1	32	Single Straight Stitch	As a connecting stitch in a combination of one straight stitch.
	33	Three Single Straight Stitches	As connecting stitches in a combination of three individual straight stitches.
)00000	34	Darning Stitch	For darning.
	35	Open Overlock Stitch	For sewing together and finishing knit fabrics with a reinforced edge.
<b>\$</b>	36	Overlock	For medium-weight knit fabrics.
	37	Reinforced Overlock Stitch	For sewing together and finishing knit fabrics.
₩	38	Chain Stitch	For decorative and reinforcing stitches on most woven fabrics.
	39	Cover Stitch Effect	To sew decorative seams and hems in heavy knits and woven fabrics.
	40	Cover Stitch Effect	To sew decorative seams and hems in heavy knits and woven fabrics.
/ <del>}}}</del>	41	Open Overlock Stitch	For sewing together and finishing knit fabrics with a reinforced edge.
	42	Cover Stitch Effect	To sew decorative seams and hems in heavy knits and woven fabrics.

# **5.2 Decorative Stitches**

Sewing 

▶ Decorative Stitches 

§



Category	Name
100 k <sup>3</sup> k <sup>3</sup>	Nature
200	Nature Sideways Motion
300	Cross Stitches
400	Satin
500 <b>y</b>	Satin Sideways Motion
600	Geometric
700	Heirloom
800	Heirloom Sideways Motion
900	Children

Category	Name
1000	Children Sideways Motion
1100 **	Special
1200 *	Filigree
1400	Tapering
1500 Asswiss	Banner
1600 9	Quilt Stitches Sideways Motion
1700	International
1900	Geometric Sideways Motion
2000 L\m\	Seasons
2200	Sport and Hobby
2500	Constellations
2600	Emojis
2700 Ø	Emojis Sideways Motion

# 5.3 Alphabets

Sewing **▮** ► Alphabets A



Stitch Patterns	Name

# ABCabc

Block

ABCabe Double Block

 $\mathcal{ABCabc}$  Script Italic

ABC Obc Quilt

Art Deco

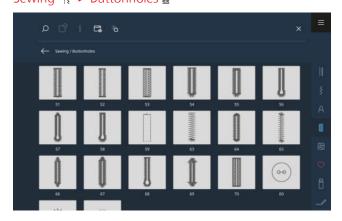
Stitch Patterns	Name
<b>ABC</b> abc	Comic
<i>ABCabc</i>	Calibri Italic
ABC abc	Agency
ABCabc	Hand of Sean
ABC	Monogram
ABC abc	Long Thin
あいう	Hiragana
アイウ	Katakana
АБВабв	Cyrillic
АБВ абв	Cyrillic Italic
火中金	Kanji

# 5.4 Buttonholes

Sewing 

▶ Buttonholes 

■



Stitch patterns	Stitch number	Name	Purpose
миниминиминиминиминиминиминиминиминимин	51	Standard Buttonhole	For light to medium-weight fabrics. e.g. blouses, dresses and bed linen.
режименным	52	Narrow Standard Buttonhole	For light to medium-weight fabrics, e.g. blouses, dresses, children's and baby clothes, crafts.
30000000000000000000000000000000000000	53	Stretch Buttonhole	For all knit fabrics.
U	54	Round Buttonhole with Normal Bartack	For medium-weight to heavy fabrics. e.g. dresses, jackets, coats and rainwear.
0	55	Round Buttonhole with Horizontal Bartack	For medium-weight to heavy fabrics, with a reinforced bar, e.g. dresses, jackets, coats and rainwear.
Į.	56	Keyhole Buttonhole	For heavy woven fabrics, e.g. jackets, coats and leisure wear.
<u> </u>	57	Keyhole Buttonhole with Pointed Bartack	For stronger, woven fabrics, e.g. jackets, jeans coats and leisurewear.
Į	58	Keyhole Buttonhole with Horizontal Bartack	For heavy woven fabrics, e.g. jackets, coats and leisurewear.
	59	Straight Stitch Buttonhole	For staystitching and reinforcing buttonholes and as buttonhole edging, especially for buttonholes in leather and imitation leather.
***	63	Heirloom Buttonhole	For handlook stitching effects on clothes and handicrafts on light to medium-weight fabrics.
0	64	Double-rounded Buttonhole	For medium-weight to heavy fabrics.
***	65	Double-rounded Heirloom Buttonhole	For light to medium-weight, woven fabrics. e.g. blouses, dresses and bed linens.
0	66	Narrow Buttonhole with Double Pointed Bartack	For decorative buttonholes in medium-weight fabrics, e.g. dresses and jackets.
0	67	Round Buttonhole with Bartack	For medium-weight woven fabrics, e.g. blouses, dresses and jackets.
I	68	Decorative Keyhole Buttonhole with Horizontal Bartack	For stronger, woven fabrics, e.g. jackets, coats and leisurewear.

Stitch patterns	Stitch number	Name	Purpose
1	69	Decorative Buttonhole with Double Pointed Bartack	For decorative buttonholes in firmer woven fabrics.
ADDITION OF THE PROPERTY OF TH	70	Decorative Stretch Buttonhole	For decorative buttonholes in light to medium- weight knit fabrics.
( <del>00</del> )	60	Button Sew-on Program	Sews buttons with 2 or 4 holes.
****	61	Small Zigzag Eyelet	Openings for cords or narrow ribbons and for decorative work.
0	62	Straight Stitch Eyelet	Openings for cords or narrow ribbons and for decorative work.

# **5.5 Quilt Stitches**

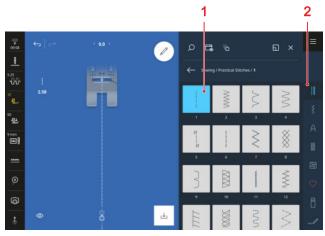
Sewing ▮ ► Quilt Stitches ⊞



Stitch	Number	Name	Purpose
	No. 1301	Quilting, Securing Program	To secure at the sewing start and end with short stitches forward.
	No. 1302	Quilting, Straight Stitch	For machine quilting using a straight stitch with a 3 mm stitch length.
	No. 1303	Piecing Stitch/Straight Stitch	For piecing quilt blocks together using a straight stitch with a 2 mm stitch length.
		Hand-look Quilt Stitches	For imitating the look of hand quilting with monofilament thread.
]		Blanket Stitch	For appliqué.

Stitch	Number	Name	Purpose
#		Blanket Stitch	For sewing on the edge between two areas in crazy patchwork.
	No. 1315	Satin Stitch	For appliqué with more distinct seams.
}	No. 1316	Narrow Blind Stitch	For edging and appliqué with minimally visible seams.
\{\}		Decorative Quilting Stitches	For quilting, crazy patchwork, embellishing and finishing.
િક્સફ્સ	No. 1331	Stippling Stitch	For quilting, crazy patchwork, embellishing and finishing.
		Feather Stitch	For quilting, crazy patchwork, embellishing and finishing.
		Decorative Quilting Stitches	For quilting, crazy patchwork, embellishing and finishing.
$\nearrow$		Decorative Quilting Stitches	For quilting, crazy patchwork, embellishing and finishing.

## 6.1 Load Stitch Pattern



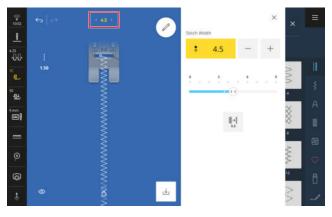
1 Selection Area 2 Quick Access Bar

- **1.** Tap the stitch category in the Quick Access Bar.
- **2.** Find and load the desired stitch pattern in the File Manager.
  - ⇒ The stitch pattern is displayed in the stitch preview.

Further information on the selection area can be found in the File Manager. [▶ see page 51]

# **6.2 Stitch Pattern Editing**

### Stitch Width



The recommended stitch width is indicated for each stitch. You can modify the stitch width for most stitches, alphabets and buttonholes. The stitch width depends on the needle used, the presser foot and the stitch plate.

The machine checks the compatibility between the needle, presser foot, stitch plate and stitch. To do this, the attached presser foot must be selected in the Status

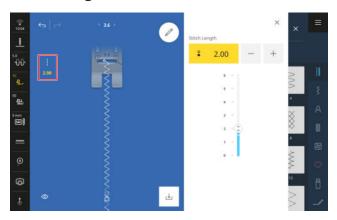
Bar with the **Presser Foot**  $\mathcal{L}$  icon. If the stitch cannot be sewn with the selected presser foot and the attached stitch plate, the stitch is shown in red.

#### TIP

You can also modify the stitch width during sewing with the Upper Multi-function Knob.

With the **5.5** function, you can set the stitch width directly to 5.5 mm, e.g. if you are using a narrow presser foot.

## **Stitch Length**



The recommended stitch length is indicated for each stitch. You can modify the stitch length for most stitches, alphabets and buttonholes.

In the case of decorative stitches and alphabets, the pattern length is shown instead of the stitch length.

#### TIP

You can also modify the stitch length during sewing with the Lower Multi-function Knob.

## **Editing Functions**

Sewing ▮ ► Edit Ø



With the **Edit** punction, you can view the editing functions for the selected stitch. Associated functions are grouped together. The **Edit** and **Optimize** submenus are always available. For some stitch categories, e.g. buttonholes, additional submenus are shown.

#### Repeat

With the function **Repeat** ▲ × , you can set the number of repeats of a stitch pattern or a stitch pattern combination after which the machine should stop. You can set up to 99 repeats. The number of repeats still to be sewn is displayed on the Sewing Screen.

#### Mirror Left/Right

With the **Mirror Left/Right** ₄ | \( \sqrt{Left/Right} \) function, you can mirror a stitch pattern along the vertical axis.

#### Mirror Up/Down

With the **Mirror Up/Down** ightharpoonup function, you can mirror a stitch pattern along the horizontal axis.

#### **Jumbo Stitch**

With the **Jumbo Stitch** ¶ function, you can enlarge or decrease the size of the stitch pattern. When increased over 9 mm in width the stitch becomes a Sideways Motion pattern and stitches with the Presser Foot #40C.

#### TIP

Jumbo Stitch is better suited for patterns that are not too complex.

Bring the Jumbo Stitch into Embroidery to embellish embroidered projects.

#### TIP

To adjust satin stitches so that they can be sewn larger, also change the stitch density. [▶ see page 64]

### **Long Stitch**

With the **Long Stitch** | function, the machine only sews every second stitch.

You can use the **Long Stitch** | function to create new stitch patterns. Satin stitches are not changed. If you combine the **Long Stitch** | function with the straight stitch, you can easily create basted seams. At a stitch length of 6 mm, the machine sews 12 mm long basting stitches.

#### **Directional Sewing**

With the **Directional Sewing** (a) function, you can sew stitch patterns in any direction without having to rotate the fabric.

The #40C presser foot must be attached in order to use the **Directional Sewing** (a) function.

#### TIP

- Stabilize the fabric.
- Guide the fabric lightly with your fingertips.
- Use the guide lines on the Slide-on Table to guide the fabric in a straight line.
- Draw parallel guide lines to keep the fabric parallel to the presser foot.

#### TIP

You can also modify the sewing direction in 0.5° increments during sewing using the multi-function knobs.

#### **Stitch Counter**

With the **Stitch Counter** j<sup>122</sup> function, you can save the length of a seam for some stitch patterns based on the count of stitches sewn. The number of stitches counted is displayed on the Sewing Screen and saved until the machine is switched off. [> see page 63]

#### **Distort**

With the **Distort**  $\Delta$  function, you can distort stitch patterns in a horizontal and vertical direction. For example, sewing a straight font in italics.

#### **Reverse**

Sewing | ► Edit ► Edit ► Reverse \

With the **Reverse**  $\bigcup$  function, you can sew in reverse without pressing and holding the **Quick Reverse Sewing**  $\bigcup$  button.

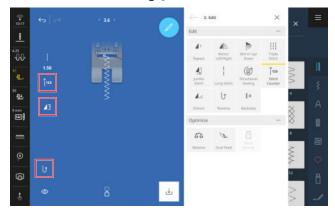
#### **Backstep**

With the **Backstep** § function, you can perform precise backwards stitching. The machine ensures that the stitches sewn in reverse are sewn precisely over the stitches sewn forward. This allows you to secure decorative stitches or make individual stitch patterns bolder by sewing over them several times.

### **Using the Stitch Counter**

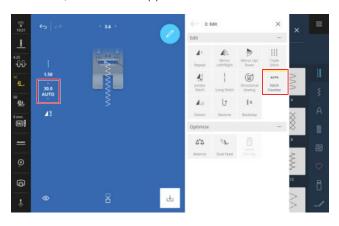
Prerequisite:

- A stitch pattern is selected.
- 1. Tap the Stitch Counter 123 icon.
  - ⇒ In the info bar the **Stitch Counter** j<sup>123</sup> and **Repeat**  $\checkmark$  × icons are shown and the **Quick Reverse Sewing** | j icon flashes.



- 2. Sew the desired length.
- - ⇒ The **Stitch Counter** j<sup>123</sup> display changes to **AUTO** and shows the length of the saved seam.
  - ⇒ As soon as the stitch pattern is sewn again, the machine stops after the saved stitch number.
  - ⇒ The stitch count is saved until it is overwritten or cleared.

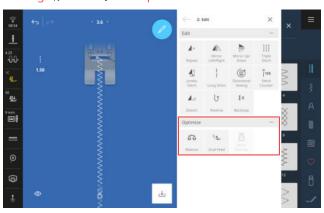
**4.** To access the saved stitch count after deactivating the function, tap the **Stitch Counter** μ<sup>123</sup> icon twice, until **AUTO** appears.



### **Optimization Functions**

Sewing 

 ► Edit 
 ► Optimize

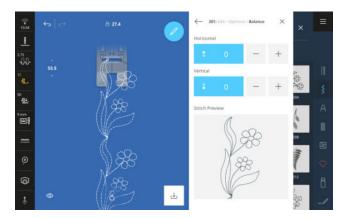


The optimization functions for stitch patterns are grouped together in the **Optimize** submenu.

#### Ralance

With the **Balance** function, you can fine tune any stitch patterns that are not sewn correctly due to the selected fabric.

Compare a sewn sample with the display in the **Stitch Preview** section and adjust the balance so that the preview corresponds to the incorrectly sewn stitch pattern.



#### **Dual Feed Balance**

If the fabric layers are not fed evenly despite the fact that the Dual Feed is engaged, you can use the **Dual Feed Balance**  $\mathcal{L}_{N}$ , function to optimize the Dual Feed.

- If the upper fabric becomes increasingly longer than the lower fabric, set a positive value.
- If the upper fabric becomes increasingly shorter than the lower fabric, set a negative value.

### **Stitch Density**

With the **Stitch Density** function, you can modify the stitch density for some decorative satin stitches (e.g. No. 401).

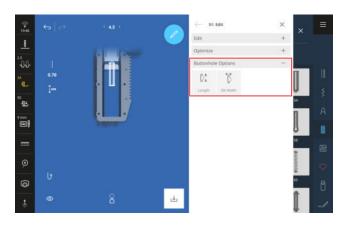
- If you increase the stitch density, the stitch spacing is reduced and the threads become closer.
- If you reduce the stitch density, the stitch spacing is increased and the threads are further away.

The length of the stitch pattern is not affected.

### 6.3 Buttonholes

For buttonholes, you can adjust the buttonhole length as well as the width of the slit. As soon as a buttonhole stitch is loaded, the **Buttonhole Options** submenu appears in the editing menu.

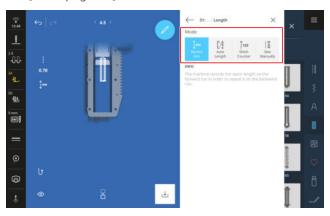
- **Length**  $\[ \] ^{\uparrow}$ : Program the buttonhole length.
- **Slit Width** : Adjust the width of the slit.



### **Buttonhole Length**

To set the buttonhole length, the following modes are available:

- **Record mm** jmm: Program the buttonhole length in mm. [▶ see page 64]
- **Auto Length** [ \* : Adjust the buttonhole length to the button size. [ \* see page 65]
- **Stitch Counter**  $\mathring{1}^{123}$ : Program the buttonhole length with the stitch counter. [▶ see page 65]
- **Sew Manually** [%: Sew the buttonhole manually. [▶ see page 65]



#### Record the Buttonhole Length in mm

In the mode **Record mm**  $\mathring{\downarrow}^{mm}$ , the machine measures the sewn length of the first bead and saves it. The machine finishes the buttonhole automatically.

#### Prerequisite:

- A buttonhole is loaded.
- Buttonhole Foot #3A is attached.
- **1.** Tap the **Record mm** ĵ™ icon.
  - ⇒ The **Reverse** ⊕ icon flashes on the Sewing Screen.

- 2. Sew the first bead and press the **Quick Reverse**Sewing | → button at the desired length.
  - ⇒ The machine will complete the buttonhole.
  - ⇒ The machine switches to **Button Size** \$\oint\_{\oints}^{\oints}\$ mode and all additional buttonholes are automatically sewn to the displayed length in mm.
  - ⇒ The buttonhole length remains saved until it is overwritten, cleared or the machine is switched off.

# Adjusting the Buttonhole Length to the Button Size

In the mode **Auto Length**  $\mathbb{D}^{\frac{4}{5}}$ , you can measure the diameter of the button. The machine automatically adjusts the length of the buttonhole to the size of the button.



#### Prerequisite:

- A buttonhole is loaded.
- Buttonhole Foot #3A is attached.
- **2.** Place the button in the measuring circle on the screen and adjust the size of the measuring circle to the size of the button.
  - ⇒ The measured buttonhole length is displayed in the Sewing Screen.
- 3. Sew the buttonhole.
  - ⇒ The buttonhole length remains saved until it is overwritten, cleared or the machine is switched off.

# Programming the Buttonhole Length with the Stitch Counter

Using the Buttonhole Foot #3, you can program the buttonhole length in mode **Stitch Counter**  $^{\circ}_{122}$ . The machine sews the left bead forward, the lower bartack, the right bead in reverse and finally the upper bartack. The length of the right bead is not automatically adjusted to the length of the left bead, but must be separately programmed.

#### Prerequisite:

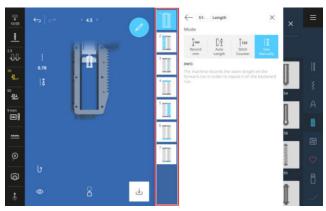
- A buttonhole is loaded.
- Buttonhole Foot #3 is attached.
- **1.** Tap the **Stitch Counter**  $\mathring{1}^{123}$  icon.
- **2.** Sew the left bead and stop at the desired length.
  - ⇒ The **Reverse**  $\bigcup$  icon flashes on the Sewing Screen
- **3.** Press the **Quick Reverse Sewing** *\( \)* button.
  - ⇒ The machine sews the lower bartack and starts to sew the right bead in reverse.
  - ⇒ The **Reverse** ⊕ icon flashes on the Sewing Screen
- **4.** Stop the left bead at the height of the first stitch and press the **Quick Reverse Sewing** ⋃ button.
  - ⇒ The machine sews the upper bartack.
  - $\Rightarrow$  The lengths of the beads are saved.
  - ⇒ All additional buttonholes are sewn with the saved count of stitches.
  - ⇒ The buttonhole length remains saved until it is overwritten, cleared or the machine is switched off.

#### TIP

Detailed step-by-step instructions on this topic can also be found in the Consultant on your machine.

#### **Sewing a Buttonhole Manually**

In the mode **Sew Manually** [%], you can sew buttonholes segment by segment. The individual segments of the buttonhole are displayed in the Buttonhole bar. Every time you have sewn a segment, you can move to the next segment by pressing the **Quick Reverse Sewing** [1] button.

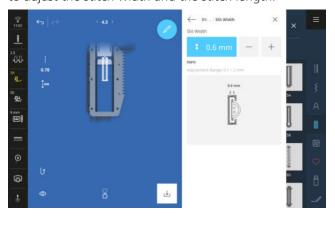


#### Prerequisite:

- A buttonhole is loaded.
- Buttonhole Foot #3 is attached.
- **1.** Tap the **Sew Manually**  $[^{*}_{\mathbb{A}}$  icon.
  - ⇒ The individual segments are displayed in the Buttonhole bar.
  - ⇒ Segment 1 is active.
- **2.** Sew the left buttonhole bead and stop the machine at the desired length.
  - ⇒ Segment 2 is active during sewing.
- **3.** To switch to the next segment, tap the **Quick Reverse Sewing** ∫ button or stop the machine and select the next segment in the buttonhole bar.
- **4.** Finish sewing the buttonhole segment by segment.

#### Slit Width

With the **Slit Width** production, you can set the width of the slit between 0.1 and 2.0 mm. If you make a significant change to the slit width, you may also have to adjust the stitch width and the stitch length.



#### TIP

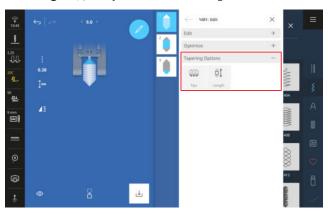
Set a wide slit width for thick buttons on heavy fabrics. To reinforce the buttonhole, increase the stitch width and shorten the stitch length.

Set a narrow slit width for thin buttons on light fabrics. To make the buttonhole lighter, reduce the stitch width and increase the stitch length.

# 6.4 Tapering Stitches

Tapering stitches are decorative stitches that taper off at the beginning and at the end. You can edit the tips and the length of the tapering stitches. As soon as a tapering stitch is loaded the **Tapering Options** submenu appears in the editing menu.

- **Tips** 💬 : For modifying the style of the tips.
- **Length** 🚉 : Adjust the overall length.



#### **Tips**

Sewing ► Edit Tapering Options ► Tips ♣

With the **Tips** () function, you can adjust the tips of the tapering stitches. You can choose from 4 predefined tips **1** – **4** and use the **Adjust Manually** MAN function to adjust the lateral position and the angle of the selected tip.



#### Tip

Sewing 
 ► Edit 
 ► Tapering Options 
 Tips 
 ► Adjust Manually MAN

With the **Tip** setting, you can move the tips of the tapering stitches to the side from the far left to the far right.

#### **Angle**

Sewing 

► Edit 

► Tapering Options 

► Tips 

← Adjust Manually MAN

With the **Angle** setting, you can adjust the angle of the tips between 0° and 90°.

### Length

With the **Length** \$\hat{\text{\tin}\text{\texi}\text{\text{\text{\tex{\text{\text{\text{\text{\texi}\text{\text{\text{\texi}\text{\text{\text{\text{\text{\text{\texi}\text{\text{\text{\texi}\text{\t

- Record mm jmm
- Adjust Length <sup>1</sup>/<sub>2</sub>
- Sew Manually

#### **Record mm**

Sewing 
 ► Edit 
 ► Tapering Options 
 Length 
 □
 Record mm 
 □

With the **Record mm** jume function, you can sew the desired length and save it with the **Reverse** just button. Additional tapering stitches with this stitch pattern are sewn at the same length. The setting remains saved until it is overwritten, cleared or the machine is switched off.

#### **Adjust Length**

With the **Adjust Length** \$\hat{g}\$ function, you can adjust the desired overall length im mm. The machine automatically sews the tapering stitch.

#### **Sew Manually**

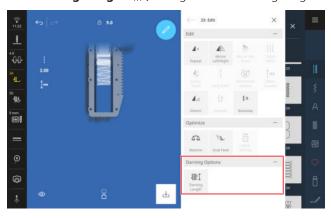
With the **Sew Manually** in function, you can sew the middle section freely for each tapering stitch. The machine sews the first tip and automatically switches to the middle section. As soon as you press the

**Reverse**  $\bigcirc$  button, the machine sews the second tip. The sewn length is not saved.

# 6.5 Darning Program

The darning program No. 23 allows you to set the darning length. As soon as the darning program is loaded, the **Darning Options** submenu appears in the editing menu.

■ **Darning Length** ##1: Program the darning length.



### **Darning Length**

To set the daring length, the following modes are available:

- **Record mm** ; Program the darning length in mm. [▶ see page 67]
- Auto Length ##1: Set the auto darning length.

  [▶ see page 68]

#### Record the Darning Length in mm

In the mode **Record mm** ;\*\*\*, the machine measures the sewn length and saves it. The machine finishes the darning program automatically.

Prerequisite:

- The Darning Program No. 23 is loaded.
- Buttonhole Foot #3A is attached.
- **1.** Tap the **Record mm** j<sup>™</sup> icon.
  - ⇒ The **Reverse** (↑) icon flashes on the Sewing Screen.
- 2. Sew the first row and press the **Quick Reverse**Sewing ∫ button at the desired length.
  - ⇒ The machine will complete the darning program.
  - ⇒ The darning length remains saved until it is overwritten, cleared or the machine is switched off.

## **Sew the Darning Length Automatically**

Sewing 
► Edit 
► Darning Options 
► Darning Length 

↑ Auto Length 

↑

In the mode **Auto Length**  $\# \uparrow$ , you can set the darning length in millimeters. The machine automatically finishes the darning program with the set darning length.

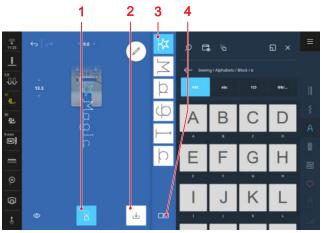
#### Prerequisite:

- The Darning Program No. 23 is loaded.
- Buttonhole Foot #3A is attached.
- **1.** Tap the **Auto Length** #↑ icon.
- **2.** Set the darning length.
- **3.** Sew the darning program.
  - ⇒ The machine will complete the darning program.
  - ⇒ The darning length remains saved until it is overwritten, cleared or the machine is switched off.

## 6.6 Stitch Pattern Combination

#### **Combi Mode**

In combination mode, you can combine stitch patterns and letters to create stitch pattern combinations or lettering. Stitch pattern combinations can be saved and sewn out as one stitch pattern.



- 1 Combi Mode 2 Save 3 Combination Bar
- **4** Selection Options

## **Creating Stitch Pattern Combinations**

**1.** Tap the **Combi Mode** ∃ icon in the Sewing Screen.

- **2.** Combine the desired stitch patterns or letters from the File Manager, in sequence to form a combination.
  - ⇒ The stitch patterns are inserted in the combination bar, after the stitch selected, and displayed in the Stitch Preview.
  - ⇒ The combination can be sewn and/or saved.

## **Combination Options**

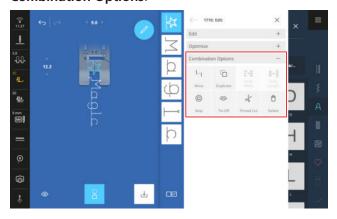
Sewing 

► Combi Mode 

► Edit 

✓

The additional functions for editing individual stitch patterns, several stitch patterns or the complete stitch pattern combination are summarized in the submenu **Combination Options**.



#### TIP

For stitch patterns in combinations, you can also use the functions in the **Edit** and **Optimize** submenus.

#### Move

Sewing 

► Combi Mode 

► Edit 

► Combination Options 

► Move 

☐

With the **Move** In function, you can move individual stitch patterns in combination horizontally and vertically. Connectors are inserted between the moved stitch pattern and the stitch pattern combination. These connectors are not stitched but are movements of the feed dog. When these are inserted the combination is now a Sideways Motion pattern.

#### TIP

You can also drag and drop a stitch pattern in the Sewing Screen to move it.

#### **Duplicate**

Sewing 

► Combi Mode 

► Edit 

► Combination Options 

► Duplicate 

□

With the **Duplicate** in function, you can duplicate individual stitch patterns, multiple stitch patterns or the entire combination. The duplicated stitch patterns are inserted after the selected stitch patterns. If the "Select All" option is selected, the entire sequence is inserted at the end.

### **Unify Width**

With the **Unify Width** [] I function, you can set the width of all stitch patterns in the combination to match the widest stitch pattern. The **Unify Width** [] I function is only available if the entire combination is selected.

#### **Unify Length**

Sewing 
► Combi Mode 
► Edit 
► Combination Options 
► Unify Length 
□ □

With the **Unify Length** ♣ function, you can set the length of all stitch patterns in the combination to match the longest stitch pattern. The **Unify Length** ♣ function is only available if the entire combination is selected.

#### Stop

Sewing 

► Combi Mode 

► Edit 

► Combination Options 

► Stop 

□

With the **Stop** function, you can stop the machine automatically after any stitch pattern in the combination. The **Stop** function is only available in single selection mode.

#### Tie-Off

With the **Tie-Off** extstyle exts

#### **Thread Cut**

Sewing 

► Combi Mode 

► Edit 

► Combination Options 

Thread Cut 

✓

With the **Thread Cut** & function, you can stop the machine after any stitch pattern in the combination and cut the threads automatically. The **Thread Cut** & function is only available in single selection mode.

#### TIP

Examples of Application:

- Create combination with lettering types and sew it onto various different labels.
- Prepare lettering, interrupt it at a specific point and continue sewing it on a new line.
- Sew a stitch pattern in a different color.

#### Delete

Sewing 

► Combi Mode 

► Edit 

► Combination Options 

► Delete 

□

With the **Delete**  $\Box$  function, you can remove the selected stitch pattern from the combination or remove the entire combination.

#### TIP

You can also drag and drop selected stitch patterns out of the combination bar to the left to remove them.

### **6.7** Save

With the **Save**  $\downarrow$  function, you can save a modified stitch pattern as follows:

- **New Stitch** (a): Save stitch pattern as new stitch pattern. (b) see page 70]
- **New Default** <u>\underline\*</u>: Save stitch pattern with new default settings. [▶ see page 70]



### **New Stitch**

## Sewing ▮ ► Save ⊥ ► New Stitch □

With the **New Stitch** □ function, you can save modified stitch patterns in the folder **Personal Folder** ○ or on a USB stick. To do this, you must name the new stitch and select the folder in which the stitch is to be saved. [▶ see page 51]

### **New Default**

### Sewing Save New Default New Default ■

With the **New Default**  $\downarrow$  function, you can save a modified stitch pattern as the new standard setting. Each time you select the stitch pattern in the File Manager, it will be opened with the new settings.

#### Reset

### Sewing ▮ ► Reset 🖄

If you load a stitch with new default settings, the **Reset**  $\mathring{\mathscr{S}}$  function is displayed on the Sewing Screen. With the **Reset**  $\mathring{\mathscr{S}}$  function, you can reset the saved settings to the factory default.

# 7 Securing

The machine offers various options for securing the thread at the beginning and end of the seam.

#### At the Beginning of the Seam

- Thread with the needle threader or press the
   Thread Cutter > button.
   If the Securing Stitches function is switched on in the sewing settings, the machine secures.
- Manually sew a few stitches forward, then backward, then forward again.
- Press the **Securing Stitches** <a>>>> button before starting to sew.</a>
- With a back-kick on the foot control, if the Securing Securing 
  Function is switched on for the back-kick.

#### At the End of the Seam

- Manually sew a few stitches backward, then forward again.
- Press the **Securing Stitches** ⇒ button when securing is to be carried out.
- Press the Pattern End button. The Stop bicon appears in the stitch preview.
  If the button for the Securing function is activated in sewing settings, the machine stops and secures at the end of the pattern.
- Press the **Thread Cutter** > button. If the button for the **Securing** > function is activated in sewing settings, the machine secures when the button is pressed and cuts the thread.
- With a back-kick on the foot control, if the Securing - function is switched on for the back-kick.

# 8 Free-motion Quilting with Stitch Regulation

Free-motion quilting often results in varying stitch lengths due to freely guiding the fabric. The stitch regulation compensates for these differences in stitch length.

Integrated sensors register the movement of the fabric and adjust the speed of the machine to suit the movement of the fabric. The faster you guide the fabric, the faster the machine sews. If you move the fabric more slowly, the machine will sew equally slowly. This ensures that all stitches are sewn to equal length, resulting in regular stitch formation.

To use the stitch regulation, choose between the BERNINA Integrated Stitch Regulator (BISR) and various presser feet or the BERNINA Stitch Regulator (BSR) #42.

#### TIP

Detailed step-by-step instructions on this topic can also be found in the Consultant on your machine.

# 8.1 Stitch Regulation



1 Stitch Regulation On/Off 2 Sound 3 Stitch 4 Mode 5 Settings 6 KickStart

### Stitch Regulation On/Off

With the **Stitch Regulation On/Off** function, you can switch the stitch regulatoin on or off. When the function is switched off, the stitch length will not be corrected, even if BISR mode is activated or the BSR presser foot is attached.

For the **BISR Mode** function, the **BERNINA Integrated Stitch Regulator** mode must be called up via the main menu and the 5.5-mm BISR Stitch Plate must be attached.

The BERNINA Stitch Regulator (BSR) must be attached in order to use the **BSR Mode** function [▶ see page 40]

#### Sound

With the **Sound** function, you can activate an audible warning. The warning tone sounds if you feed the fabric too quickly and the machine reaches the maximum speed and therefore is no longer able to correct the stitch length.

#### Stitch

In BISR and BSR mode, you can choose between straight stitch and zigzag options.

The straight stitch option is suitable for free-motion quilting, embroidery and thread painting.

The zigzag option can be used in free-motion embroidery or thread painting.

#### Mode

In the **Mode** area, you can select the desired BSR mode:

- **BSR 1**: The needle continues sewing in place if the fabric is not being moved. [▶ see page 72]
- **BSR 2**: The needle stops when you stop moving the fabric. [▶ see page 73]
- **BSR 3**: Basting Mode [▶ see page 73]

You can edit the settings associated with each mode.

#### **KickStart**

With the **KickStart** function, you can quilt without continuously pressing down the foot control. [▶ see page 73]

#### **BISR 1/BSR 1 Mode**

In this mode, the machine runs continuously at a low speed once you press the foot control or the **Start/ Stop** • button. As you move the fabric, the machine speeds up or slows down in order to keep to the set stitch length.

This mode is well-suited to quilt designs with many points or with micro-stippling, where the fabric stops briefly with each change in direction. If the machine continues sewing slowly when doing so, quilting feels smoother. Sewing in place also enables you to secure the thread without pressing an additional button.

The following settings can be selected for this mode:

- Stitches per Inch (SPI)
- Revolutions per Minute (RPM)

#### Stitches per Inch (SPI)

With the **Stitches per Inch (SPI)** setting, you can set the desired stitch length in stitches per inch.

## 8 Free-motion Quilting with Stitch Regulation

#### **Revolutions per Minute (RPM)**

With the **Revolutions per Minute (RPM)** setting, you can set the speed at which the machine sews when the fabric is not being moved. The set speed is the minimum speed when the machine is sewing.

#### **BISR 2/BSR 2 Mode**

In this mode, the machine starts sewing as soon as you press the foot control and move the fabric. The machine stops as soon as you are no longer moving the fabric or no longer pressing the foot control.

To secure the thread, you can move the fabric back and forth in place or press the **Securing Stitches** —button.

#### Stitches per Inch (SPI)

With the **Stitches per Inch (SPI)** setting, you can set the desired stitch length in stitches per inch.

#### **BISR 3/BSR 3 Mode**

This mode is intended for basting. You can choose between two basting stitch lengths. To ensure that the stitches are sewn correctly, move the quilt more slowly when basting.

#### **Using KickStart**

With the **KickStart**  $\bowtie$  function, you can quilt without continuously pressing down the foot control.

- **1.** Tap the **KickStart**  $\swarrow$  icon.
  - ⇒ The **KickStart** screen will appear.
- **2.** To start the machine, press the foot control with your heel.
  - ⇒ Once the fabric is moved, the machine starts sewing with the selected settings.
- **3.** To stop the machine, press the foot control with your heel.
  - ⇒ The machine will stop, but the KickStart 

    function will remain active.
- **4.** To end the **KickStart** function, tap the screen or press the foot control with the ball of your foot.
  - ⇒ The **KickStart** screen will disappear.

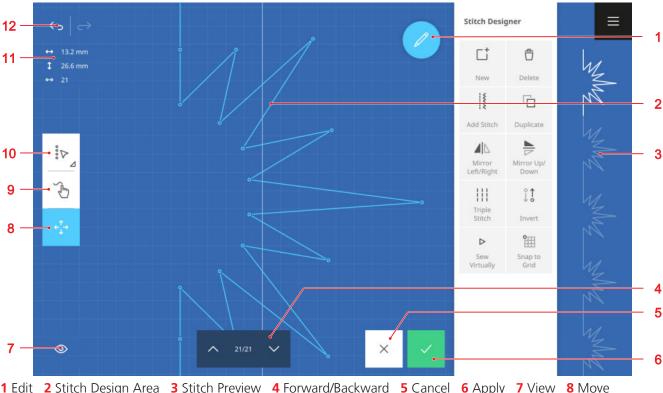
#### **Please Note**

- As long as the **KickStart** if function is active, the function programmed for the back-kick will be deactivated. In this case, the back-kick is instead used to start and stop the machine.
- If no sewing is being carried out in the BSR modes 2 and 3, the machine will switch to standby mode after 7 seconds. This means that the machine will not start sewing automatically if the fabric is moved. You can end standby mode with another back-kick.
- The **KickStart >** function is automatically stopped in the following cases:
  - If the active monitoring function reports an error, e.g. thread break or bobbin empty.
  - If the foot control cable is removed.
  - If no sewing takes place for 60 seconds.

## 9 Stitch Designer

### 9.1 Stitch Designer Screen

Sewing **§** ► Stitch Designer √ *Q* 



1 Edit 2 Stitch Design Area 3 Stitch Preview 4 Forward/Backward 5 Cancel 6 Apply 7 View 8 Move
9 Draw 10 Selection Options 11 Stitch Information 12 Undo/Redo

You can use the Stitch Designer to modify existing stitch patterns or create your own stitch patterns. Stitches created in the Stitch Designer can be saved in the folder **Personal Folder**  $\bigcirc$  or on an USB stick.

#### Undo

With the **Undo**  $\leftarrow$  function, you can undo the most recent actions.

#### Redo

With the **Redo**  $\longrightarrow$  function, you can redo undone actions.

#### **Stitch Information**

The stitch information displays information about the stitch pattern, depending on the selection.

- **Width** ←→: Horizontal distance between two points.
  - One point selected: Distance between the selected point and the centerline. Points with a negative value are to the left of the centerline, while points with a positive value are to the right of the centerline.
  - Multiple points selected: Distance between the two points farthest from one another.

- All points selected: Width of the stitch pattern.
- Length ↑: Vertical distance between two points.
  - One point selected: Distance between the selected point and the previous point.
  - Multiple points selected: Distance between the two points farthest from one another.
  - All points selected: Height of the stitch pattern.
- Number of Stitches o—o : Number of selected points.

If only one point is selected, this display is hidden.

#### **Selection Options**

With the **Selection Options**  $\triangleright$  function, you can select individual points, multiple points or the entire stitch pattern.

- **Single Point**: Select a single point.
- **Multiple Points**: > : Starting from the currently selected point, select multiple connected points.
- **All Points** : Select all points.

## 9 Stitch Designer

#### **Draw**

With the **Draw** function, you can draw a new stitch pattern directly on the screen. The points are automatically set in the Stitch Design Area. Once you have drawn the stitch pattern, you can edit the individual points.

#### Move

With the **Move**  $\leftarrow$  function, you can move the selected points within the Stitch Design Area.

#### TIP

You can also move points using the multi-function knobs.

#### View

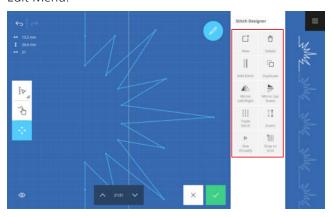
- **Rotate** □ : Rotate the view by 90°, e.g. to make it easier to design texts.
- **Limit Width** 9 MM: Limit the width of the stitch design area.
- Zoom In/Zoom Out ② : Zoom the view in or out.
- **Zoom Factor**: Reset the view to the default.

#### Forward/Backward

With the **Forward/Backward** function, you can run the stitch pattern point by point to select a stitch point.

### 9.2 Editing Functions

With the **Edit** // function, you display and hide the Edit Menu.



#### New

When you start the Stitch Designer, the selected stitch is displayed in the stitch design area. With the **New** [ † function, you can clear the stitch design area and start a new stitch design.

#### **Delete**

Sewing 

► Stitch Designer 

► Edit 

► Delete 

¬

With the **Delete**  $\Box$  function, you can delete the selected points.

#### **Add Stitch**

Sewing 
► Stitch Designer 
► Edit 
► Add
Stitch

With the **Add Stitch** is function, you can add a stitch or a stitch pattern from any stitch category to the stitch design. The stitch is inserted after the selected point.

#### **Duplicate**

Sewing 

► Stitch Designer 

Duplicate 

Duplicate 

Stitch Designer 

Left 

Left

With the **Duplicate**  $\Box$  function, you can duplicate the selected points.

#### Mirror Left/Right

With the **Mirror Left/Right** ⊿ function, you can mirror the selected points along the vertical axis.

#### Mirror Up/Down

Sewing 

► Stitch Designer 

► Edit 

► Mirror Up/Down 

►

With the **Mirror Up/Down**  $\Rightarrow$  function, you can mirror the selected points along the horizontal axis.

#### **Triple Stitch**

Sewing 

Stitch Designer 

Edit 

Triple Stitch 

Triple Stitch 

Triple Stitch 

Triple Stitch 

Stitch

With the **Triple Stitch** | | | function, you can sew the selected points or the stitch before a selected point with a triple stitch.

#### Invert

Sewing 

Stitch Designer 

Edit 

Invert ↓ 

Invert ↑ 

Inver

With the **Invert** \$\hat{1}\$ function, you can reverse the sewing order of the selected points.

## 9 Stitch Designer

#### **Sew Virtually**

Sewing 

► Stitch Designer 

► Edit 

► Sew Virtually

With the **Sew Virtually**  $\triangleright$  function, you can virtually sew the created stitch pattern.

Sew Virtually enables you to recognize potential errors or problems such as uneven stitch lengths or overlapping stitches in order to rectify them.

#### **Snap to Grid**

Sewing 

Stitch Designer 

Edit 

Snap to Grid 

Solution Stitch Designer 

Solution Stitch Designer 

Solution Solution Stitch Designer 

Solution Solution

With the **Snap to Grid**  $\stackrel{\circ}{=}=$  function, you can snap the points into place at the displayed points on the grid. The grid helps you to align the stitch patterns symmetrically and maintain uniform spacing.

## 10 General Embroidery Information

#### **Embroidery File Format**

Your machine can read embroidery designs that have been created using the BERNINA Embroidery Software and exported as EXP files. When they are exported, a BMP file and an INF file are created alongside the actual embroidery file. The BMP file provides a preview of the embroidery design and the INF file provides the information on the thread colors. If the INF file is missing, the embroidery design cannot be displayed in the correct thread colors and will instead be displayed in default colors. You can set the colors manually in the editing functions.

The built-in embroidery alphabets are a unique format to this machine. Once saved they are converted to an EXP format. Some editing functions are then no longer available.

In addition to the BERNINA embroidery file format, your machine can also read the following embroidery file formats: BQM, HQF, PAT, PLT, QLI, TAP, SEW, PES, PEC, XXX, PCS, JEF and DST.

BERNINA International AG cannot guarantee that embroidery designs that have not been created or converted using the BERNINA Embroidery Software will be correctly read and embroidered.

#### **Design Size**

You can increase or decrease the size of embroidery designs by up to 20 % without loss of quality on the machine or on a PC using the BERNINA embroidery software. Embroidery Lettering can be resized greater than 20 % and stitches are recalculated.

Customizable Quilt Designs (BQM, HQF, PAT, PLT, QLI, TAP) are vector-based embroidery designs. You can adjust the size of such quilt designs in almost any way. The stitch length set in the embroidery settings remains when the pattern size is adjusted.

#### **Upper Thread**

Select high-quality embroidery threads for the upper thread, as these have an even thickness and are less prone to breaking. Embroidery created with glossy, fine embroidery thread is particularly beautiful. Thread manufacturers offer a comprehensive range of thread types and colors.

- Polyester with a sheen is durable, break-resistant and colorfast. Polyester with a sheen is suitable for all types of embroidery.
- Rayon is a fine, silk-like fiber with a glossy effect.
   Rayon is suitable for fine embroidery that is not subject to heavy stress.
- Metallic thread is a glossy thread available in fine to medium thicknesses, and is suitable for special effects in embroidery.

When using metallic threads, switch off the automatic thread cutter and reduce the embroidery speed and upper thread tension.

To reduce thread breakage, you can use the Thread Lubrication Unit.

#### **Bobbin Thread**

Special bobbin thread for embroidery is usually only available as black or white thread. If both sides of the embroidery will be visible, you can also use the upper thread in the same color or another normal embroidery thread as the bobbin thread.

Embroidery bobbin thread is an especially soft and light polyester thread which is suited 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.

#### **Stabilizers**

Use a stabilizer to stabilize the fabric during stitching. Light weight and knit fabrics are difficult to hoop and tend to deform. A stabilizer prevents the fabric moving or puckering during stitching.

There are various types of stabilizers for various applications.

## 10 General Embroidery Information

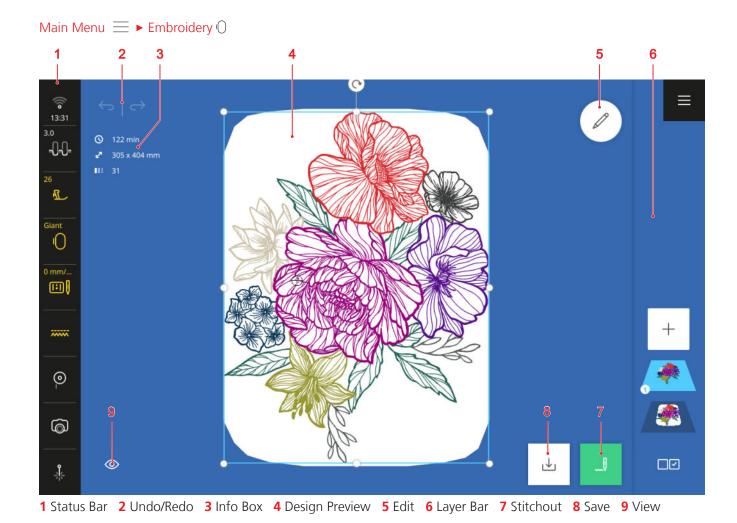
Stabilizer	Scope of Application	Fabric/Application
Cut-away Stabilizer	Necessary: Knit fabrics Possible: Woven fabrics	<ul><li>Jersey, sweater, knitwear, stretch fleece</li><li>Embroidery designs with high stitch density</li></ul>
Tear-away Stabilizer	Woven fabrics	■ Denim, cotton, linen, felt, wool, silk
Water-soluble Stabilizer	Washable fabrics Projects where there must not be any visible stabilizer residue	<ul><li>Organza, net, chiffon</li><li>Freestanding embroidery</li></ul>
Topping	Fabrics with a pile or texture	<ul> <li>Velvet, fleece, plush, knit fabrics, corduroy, broadcloth</li> </ul>
Adhesive Stabilizer	Fabrics or projects that cannot be hooped	<ul> <li>Leather, imitation leather, cork, velvet, velour, neoprene, fur, corduroy</li> <li>Collar corners, pockets, cuffs</li> </ul>
Hydro Stabilizer	For most embroidery applications	<ul> <li>Leather, imitation leather, cork, velvet, velour, neoprene, fur, corduroy</li> <li>Collar corners, pockets, cuffs</li> </ul>
Iron-on Stabilizer	Iron-on fabrics	<ul> <li>Appliques and patches</li> </ul>

Stabilizers can be fixed onto the fabric with adhesive spray or starch spray before hooping. Starch spray can be used to stiffen the fabric before embroidering.

#### **Embroidery Test**

For important projects it is recommended to test sew the embroidery design on the same or similar fabric using the same stabilizer, threads and needle.

- An embroidery test enables you to recognize potential errors or difficulties in advance so that you can make appropriate adjustments.
- The embroidery test enables you to check the selected embroidery threads and colors appear on the fabric and adjust as needed.
- The embroidery test enables you to determine the ideal stitch density and apply the correct settings.



#### Undo

With the **Undo**  $\leftarrow$  function, you can undo the most recent actions.

#### Redo

With the **Redo**  $\longrightarrow$  function, you can redo undone actions.

#### **Info Box**

In the Info Box, you can find the following information about the embroidery design:

- **Embroidery Time** ③: Estimated time required to stitchout the selected layer(s).
- **Embroidery Size** ∠7 : Overall width and height of selected layer(s).
- **Number of Colors** □ : Number of colors used in the selected layer(s).

#### **Design Preview**

The Design Preview shows a preview of the current embroidery designs in the attached or selected hoop.

#### Edit

With the **Edit** ✓ function, you can show editing functions for the embroidery designs. [▶ see page 84]

#### Stitchout

With the **Stitchout** function, you can open the **Stitchout Summary** window und start stitchout. **[** see page 94]

#### Save

With the **Save** <u>↓</u> function, you can save the embroidery design in your Personal Folder or on a USB stick. [▶ see page 93]

#### View

With the **View** of function, you can adjust the view on the Embroidery Screen.

- **Background** ①: Adjust the background of the hoop. [▶ see page 83]
- **Background On/Off (**©: Display or hide the background of the hoop.
- **Grid** # : Display the center of the hoop, display a grid and hide the center point and grid.

- Zoom In/Zoom Out ③: Zoom view in or out.
- **Default**: Reset the view to the default.

#### **Context Menu**

You can tap and hold an object to open a context menu with the following functions:

- Edit Text: Change selected text.
- **Lock**: Lock selected object for editing. The layer is marked with the **Lock** ⊕ icon. You can unlock the object by tapping the **Lock** ⊕ icon in the layer bar.
- Delete: Delete selected objects.
- Delete All: Delete all objects.
- Mirror Left/Right: Mirror the selected object on a vertical axis
- Mirror Up/Down: Mirror the selected object on a horizontal axis.
- **Select All**: Select all objects.

#### 11.1 Status Bar

The Status Bar displays the state of various functions. Some functions can be set directly with the respective status, e.g. the needle position or the laser. For other functions, you can open the settings via the status display, e.g. upper thread tension.

The color of the icon shows the current state of the function.

White: Default settingBlue: Active settingYellow: Modified setting

Red: Warning

#### WiFi, Time and Alarm

The **WiFi** sicon displays the WiFi connectivity, the current time and alarm if active.

By tapping the icon, you open the settings for WiFi, Time and the Alarm function. In the Settings, you can switch the WiFi connection on or off or set up the WiFi connection. [•] see page 44]

You can also set a reminder. [▶ see page 44]

#### **Upper Thread Tension**

The **Upper Thread Tension** - 1-12- status shows the recommended upper thread tension for the selected embroidery design.

You can modify the upper thread tension for the selected embroidery design by tapping the status. [•] see page 44]

#### **Presser Foot**

The **Presser Foot**  $\P$  status shows the recommended or selected presser foot.

You can open presser foot selection by tapping the icon. In the presser foot selection, you can select the attached presser foot and display details about the presser foot. [• see page 40]

#### Hoop

The **Hoop** ① status displays the attached hoop. If no hoop has been attached, the status shows the recommended hoop for the selected embroidery design.

- White/Bue: Default and/or selected hoop.
- Yellow: Attached and recognized hoop.
- Red: Incompatible hoop or design does not fit inside the hoop area.

You can select the attached hoop and display details for the hoop by tapping the status. [▶ see page 43]

#### Stitch Plate and Sewing Needle

The **Stitch Plate and Sewing Needle** status shows the selected needle and the attached stitch plate. The attached stitch plate is automatically recognized.

You can open the needle overview and select the attached needle by tapping the icon. [▶ see page 32]

#### Feed Dog

The **Feed Dog** status shows the position of the feed dog. In embroidery mode, the feed dog is lowered automatically.

#### **Bobbin Thread**

The **Bobbin Thread**  $\odot$  status shows the fill capacity of the lower thread bobbin.

White: Good

Yellow: Low or Empty

You can open the Bobbin Thread Status by tapping the **Bobbin Thread** (a) icon. In the setting, the bobbin fill capacity is shown and you can visualize the animation and step-by-step instructions to insert the Bobbin Case.

#### TIP

Toggle the light on/off to make it easier to insert the Bobbin Case when the Slide-on Table is attached.

#### Camera

The **Camera** icon shows the status of the camera.

- White: Camera off.
- Yellow: Camera on.
- Red: Camera not available.

You can switch the camera on and off for a live image of the embroidery area by tapping the icon. You can only switch on the camera if a hoop is attached.

#### Laser

The **Laser** & icon shows the status of the laser.

White: Laser off.

Yellow: Laser on.

By tapping the icon, you can switch the laser on and off

The laser indicates the next stitch point in sewing mode and the exact needle position in embroidery mode. Depending on the presser foot and needle position, the entry point may be concealed by the presser foot. To avoid the deflection of the laser with transparent presser feet, you can lower the presser foot before the sewing start, e.g. with the Knee Lifter.

### 11.2 Layer Bar



1 Add Design 2 Embroidery Design Layers3 Embroidery Designs Combined 4 Selection Options

In the layer bar, the individually added embroidery designs or elements of an embroidery design are displayed as layers. The most recently added embroidery design is shown at the top. The lowest layer shows all added embroidery designs combined. The order of the layers affects the embroidery.

The following functions are available in the layer bar:

- Add Design +: Add embroidery designs from the File Manager. [▶ see page 83]
- **Selection Options** : You can select a single layer, multiple layers or all layers for editing. [▶ see page 21]
- Change the order of the layers by moving them or delete layers by dragging them out. [▶ see page 20]

### 11.3 File Manager

In the File Manager, you can load and manage embroidery designs. The File Manager is shown when the  $\mathbf{Add}$   $\mathbf{Design}$  + function is tapped in the layer bar.



- 1 Toolbar 2 Navigation Bar 3 Quick Access Bar
- 4 Selection Area

#### **Toolbar**

In the toolbar, you will find functions for searching for files, adjusting the view and managing your own files in your Personal Folder and on a USB stick.

#### Search

With the **Search**  $\bigcirc$  function, you can search for embroidery designs by name in the currently selected folder.

#### Selection

With the **Selection** function, you can select folders or files that you wish to manage using a function from the **Options** menu.

The **Selection** ☐ function is only available for the **Personal Folder** ○ and **USB Stick** ☐ folders.

#### **Options**

With the **Options** are menu, you can manage the selected file(s) or folder(s) using the **Selection** function.

- **Rename**: Renaming a File or Folder. [▶ see page 23]
- Cut: Cut File(s) or Folder(s). [ > see page 23]
- Copy: Copy File(s) or Folder(s). [▶ see page 23]
- **Paste**: Paste cut or copied File(s) or Folder(s). [▶ see page 23]
- New Folder: Create New Folder.
- **Information**: Show preview and further information on the stitch pattern.
- Select All: Select all displayed File(s) and Folder(s).
- **Delete**: Delete File(s) or Folder(s). [▶ see page 23]

The **Options** \$ menu is only available for objects in the **Personal Folder**  $\bigcirc$  and **USB Stick**  $\blacksquare$  folders.

#### View

With the **View** function, you can switch the view in the selection area between grid and list view. In the grid view, you can choose between large and small icons.

#### **USB Stick**

With the **USB Stick** f function, you can switch between your Personal Folder and the USB Stick in the selection area.

This function is only available if a USB stick is inserted.

#### **Fullscreen**

With the **Fullscreen** function, you can expand the File Manager to fill the entire screen and show additional functions.

#### **Navigation Bar**

The Navigation Bar shows the path to the selected folder. With the **Back**  $\leftarrow$  function, you can go back step by step.

#### **Quick Access Bar**

With the Quick Access Bar you can directly access the various embroidery design folders, your Peronal Folder and a USB stick.

#### **Embroidery Designs**

In the **Embroidery Designs**  $\mathfrak{P}$  folder, you will find all embroidery designs that are supplied with the machine. The embroidery designs are collated into folders by subjects. [ $\triangleright$  see page 119]

#### Lettering

In the **Lettering**  $\triangle$  folder, you will find alphabets which you can use to create your own texts. [ $\triangleright$  see page 91]

#### Sewing

In the **Sewing** if folder you will find all the sewing stitches and can use them as embroidery designs. [**b** see page 53]

#### **Personal Folder**

In the folder **Personal Folder**  $\bigcirc$  , you can save and load your own embroidery designs. The stitch pattern last used in the sewing mode is displayed in the My

Folder and can be uploaded for embroidering. You can organize the embroidery designs in folders. [▶ see page 23]

#### **USB Stick**

In the folder **USB Stick** [], you can save or load your own embroidery designs on a USB stick. You can organize the embroidery designs in folders.

#### **Selection Area**

In the Selection Area, you can navigate through the folders and load an embroidery design. Each embroidery design is displayed with a preview image including details of the file format.

If you press and hold on an embroidery design, a preview and further information is displayed, such as the number of stitches, the recommended hoop or the embroidery motif size. If you tap the icon **Load** in the preview, the embroidery design is loaded.

# 12.1 Loading the Embroidery Design



1 Add Design 2 Selection Area 3 Quick Access Bar

- If the File Manager is not open, tap the Add Design + function in the layer bar.
- **2.** Tap the embroidery design category in the Quick Access Bar.
- **3.** Find and load the desired embroidery design in the File Manager.
  - ⇒ The embroidery design is displayed in a hoop in the design preview that is closest to the size of the design.

Further information on the selection area can be found in the File Manager. [▶ see page 81]

### 12.2 Hoop Background

Embroidery ○ ► View ○ ► Background ○

With the **Background** ① function, you can select a hoop background.

- None: Show white background.
- **Scanned Image**: Scan the hoop and show as a background image. [▶ see page 83]
- Color: Set the background color. [▶ see page 83]

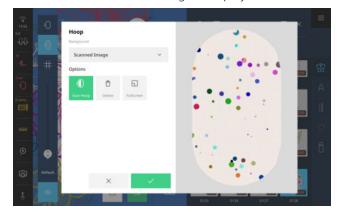
#### **Scan Hoop**

If you wish to position an embroidery design precisely on patterned fabric, a quilt or a project, simply hoop the fabric and scan it as a background image.

#### Prerequisite:

- A hoop with the hooped project is attached.
- An embroidery foot or no presser foot is attached.

- The thread is removed from the needle and is outside the embroidery area.
- - ⇒ The last scanned image is displayed.

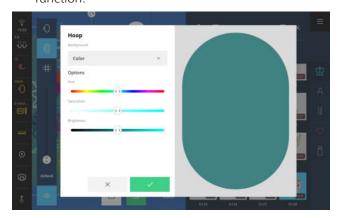


- 2. Tap the Scan Hoop ( icon.
  - ⇒ The hoop is scanned and the image is displayed.
  - ⇒ With the **Delete** † function, you can delete the scanned image.
  - ⇒ With the **Scan Hoop** (1) function, you can scan the hoop again.
- **3.** To use the scanned image as the background, confirm the image.

#### **Setting the Background Color**

You can use a colored hoop background to simulate the color of the fabric, so that you can better visualize how the embroidery design will appear on the project. Embroidery designs with light colors in particular are easier to see on a dark background.

**1.** Select the **Color** option in the **Background** () function.



2. Set the hue, saturation and brightness to your preferences and confirm.

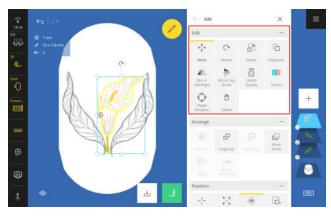
### 12.3 Embroidery Design Editing

Embroidery ○ ► Edit Ø

With the **Edit** // function, you can view the editing functions. The editing functions are summarized in the **Edit**, **Arrange** and **Position** submenus.

The results of editing are shown in real time in the design preview in the selected hoop.

#### **Editing Functions**



The editing functions for embroidery designs are grouped together in the **Edit** submenu. The editing functions are applied to the currently selected layers.

#### Move

With the **Move**  $\leftarrow_{\downarrow}^{\uparrow}$  function, you can move the selected layers horizontally and vertically. With the **Center**  $\rightarrow_{\downarrow}^{-}$  function, you can position the layers in the center of the hoop.

#### TIP

You can also move the layers directly in the design preview, e.g. using finger gestures or the multifunction buttons.

#### **Rotate**

You can use the **Rotate** of function to rotate the selected layers in 1° or 45° increments.

#### TIP

You can also rotate the layers directly in the design preview, e.g. using finger gestures or the multifunction buttons.

#### Resize

Embroidery ○ ► Edit ► Edit ► Resize 🗗

With the **Resize** function, you can modify the size of the selected layers. With the default setting, the length and width is changed proportionally. With the **Proportional** function, you can unlink the length and width, enabling you to set the values separately. You can also modify the size of the layers directly in the design preview. Moving the corner points will change the size of the layers non-proportionally.

#### TIP

For best results, do not enlarge or reduce the layers by more than 20%.

#### **Duplicate**

Embroidery ○ ► Edit ► Edit ► Duplicate □

With the **Duplicate**  $\Box$  function, you can duplicate the selected layers.

#### Mirror Image Left/Right

Embroidery ○ ► Edit ► Edit ► Mirror Image Left/ Right ▲ △

With the **Mirror Left/Right** ⊿ function, you can mirror the selected layers along the vertical axis.

#### TIP

You can also access this function by pressing and holding an embroidery design.

#### Mirror Up/Down

Embroidery □ ► Edit ► Edit ► Mirror Up/Down ⇒

With the **Mirror Up/Down** function, you can mirror the selected layers along the horizontal axis.

#### TIP

You can also access this function by pressing and holding an embroidery design.

#### **Stitch Density**

Embroidery ○ ► Edit ► Edit ► Stitch Density 🗒

With the **Stitch Density** function, you can set the density of stitches in the selected layers. This change is only shown in the design preview once you have confirmed the modified value. Depending on the size and complexity of the embroidery design, processing time to calculate the preview may be required.

#### Colors

With the **Colors** III function, you can display and modify the colors and thread brands of the selected layers.

The following functions enable you to edit the thread brand and the color:

- **Change Color**  $\bigcirc$ : Modify the color and thread brand of the selected color. [ $\triangleright$  see page 87]
- **Back to Default** 🕸 : Reset all changes to default settings.
- **Color Wheel ③**: Modify all colors at the same time or modify colors individually. [▶ see page 87]

#### **Shape Designer**

With the **Shape Designer** ♀ function, you can arrange the selected layers around a shape, e.g. around a circle. You can change the arrangement to create unique embroidery design combinations. [▶ see page 88]

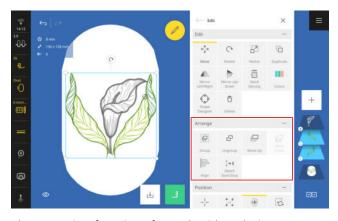
#### **Delete**

With the **Delete**  $\Box$  function, you can delete the selected layers.

#### TIP

You can also drag and drop selected layers out of the layer bar to the left to remove them.

#### **Arranging Functions**



The arranging functions for embroidery designs are grouped together in the **Arrange** submenu.

#### Group

With the **Group** function, you can group together the selected layers. The group is displayed in place of the lowest selected layer in the layer bar.

#### Ungroup

Multi-colored embroidery designs are saved as a single group, where each color forms its own layer. With the **Ungroup** [ function, you can split up an embroidery design into its color layers and up to its connecting stitches. The layers are displayed separately in the layer bar and can be edited separately.

Embroidery designs that have previously been grouped together can also be split up again with the **Ungroup** ☐ function.

#### Move Up

Embroidery ○ ► Edit ► Arrange ► Move Up 🖃

With the **Move Up** in function, you can move the selected layer upward step by step in the layer bar. Moving layers upward will cause them to be stitched later. The top layer is stitched last.

#### **TIP**

You can also move a layer within the layer bar with finger gestures.

#### **Move Down**

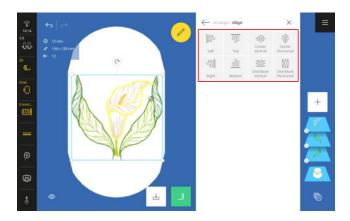
With the **Move Down** production, you can move the selected layer downward step by step in the layer bar. Moving layers downward will cause them to be stitched earlier. The bottom layer is stitched first.

#### TIP

You can also move a layer within the layer bar with finger gestures.

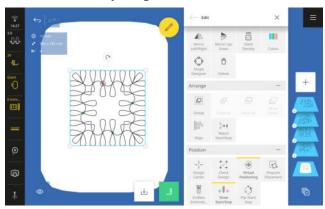
#### Align

With the **Align** function, you can align multiple selected layers with each other, center multiple selected layers together, or distribute multiple selected layers evenly.



#### Match Start/Stop

With the **Match Start/Stop** \$\ightarrow\$ function, you can combine two embroidery designs, e.g. BQM Quilt Designs or sewing stitches. The last stitch of a selected embroidery design is merged with the first stitch of the next selected embroidery design in the layer bar. The second embroidery design is moved to the last stitch of the first embroidery design.

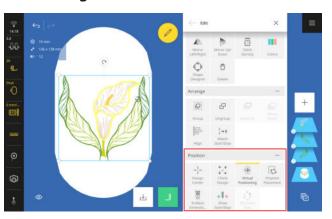


This function is particularly useful in the following applications:

- Borders
- Shape Designer
- Duplicate
- Assembling Customizable Quilt Designs

In combination with the **Reduce Thread Changes** function, the embroidery designs are joined together without sewing stitches and stitched out seamlessly.

#### **Positioning Functions**



The positioning functions for embroidery designs are grouped together in the **Position** submenu.

#### **Center Design**

Embroidery () ► Edit ► Position ► Center Design --

With the **Center Design** -'<sub>i</sub>- function, the needle position is moved to the center of the embroidery design.

This function is only active if a hoop is attached.

#### **Check Design**

Embroidery ○ ► Edit ► Position ► Check Design 💢

With the **Check Design** ♀ function, you can check the four corners and the center of the selected layer and move the embroidery design if necessary. [▶ see page 88]

#### **Virtual Positioning**

Embroidery ○ ► Edit ► Position ► Virtual Positioning ⑥

With the **Virtual Positioning** (a) function, you can move the hoop such that the needle is at the selected position in the design preview. With this function you can check the position of an embroidery design stichby-stitch.

This function is only active if a hoop is attached.

#### TIP

You can use the laser to precisely check the virtual positioning.

#### **Pinpoint Placement**

Embroidery ○ ► Edit ► Position ► Pinpoint Placement ♂

With the **Pinpoint Placement**  $\[ \bigcirc \]$  function, you can position an embroidery design at a specific position in the hoop. You can also rotate and modify the size of

the embroidery design while doing so in order to ensure that it is correctly stitched, even if the fabric is not clamped straight. [• see page 88]

#### **Endless Embroidery**

Embroidery ♥ ► Edit ► Position ► Endless Embroidery ♥

With the **Endless Embroidery** are you can stitch combinations that are longer than the hoop. Reference markings can be programmed and stitched, which are useful for repositioning the hoop after re-hooping. You can also create combinations of designs and stitch patterns, duplicate them and use them to fill the area of the hoop, e.g. as a patterned background for an embroidery project. [ see page 90]

#### **Show Start/Stop**

Embroidery ○ ► Edit ► Position ► Show Start/ Stop + ↑+

With the **Show Start/Stop**  $+ \emptyset +$  function, you can display the first and the last stitch of each individual embroidery design in the design preview.

Green: First stitchRed: Last stitch

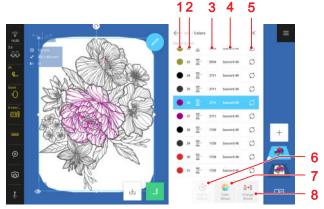
#### Flip Start/Stop

Embroidery ○ ► Edit ► Position ► Flip Start/Stop ♣5

With the **Flip Start/Stop** function, you can reverse the stitch sequence of Customizable Quilt Designs.

#### **Changing the Colors**

Embroidery ○ ► Edit ► Edit ► Colors ■



- 1 Color 2 Embroidery Sequence 3 Color Number4 Thread Brand 5 Change Color 6 Back to Default
- **7** Color Wheel **8** Change Brand

There are the following options available for changing a color in an embroidery design:

- **Change Color** ⊖: Select a color from a color palette.
- **Change Color**  $\bigcirc$ : Use the **Search**  $\bigcirc$  function to search for a color by color number.
- Color Wheel 😵 : Modifying colors with the color wheel

#### **Modifying Colors with the Color Wheel**



- 1 Color Bar 2 Slider Hue 3 Selected Color
- 4 Brightness

With the **Color Wheel** \$\rightarrow\$ function, you can change all the colors in an embroidery design simultaneously or modify each color separately.

- **1.** Select the color to be changed in the color bar.
  - ⇒ The selected color is highlighted in the color wheel.
- **2.** To modify the hue of all colors, turn the color wheel with the **Hue** control.
- **3.** To change the hue of an individual color, pull the highlighted color in the color wheel to the desired point.
- **4.** To change the brightness of the selected color, move the **Brightness** control.
  - ⇒ The changes are displayed in the color bar and in the design preview.

#### **Change Thread Brand**

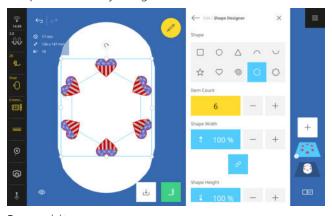
The embroidery designs are programmed with the lsacord 40 thread brand. If you would rather work with embroidery threads from other brands, you can change the thread brand.

1. To change the thread brand for all threads in the layer, tap the **Change Brand** ≜⇒ icon and select the thread brand from the list.

To change the thread marker for an individual color, select the color, tap the Change Color 
 ▶ Change Palette 
 icon, select the thread marker from the list and tap the desired color.

#### **Arranging Embroidery Designs**

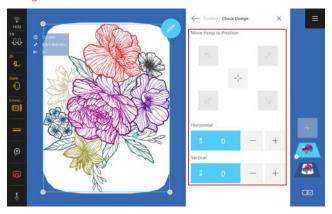
With the **Shape Designer**  $\diamondsuit$  function, you can create unique embroidery design combinations.



#### Prerequisite:

- A layer or multiple layers are loaded.
- The size and colors of the embroidery designs have been adjusted.
- **1.** Activate the **Shape Designer**  $\diamondsuit$  function.
- 2. Select the shape form for arranging the motifs.
- 3. Set the number of motifs.
- **4.** Set the size of the shape.
- **5.** Align the motifs with the shape.
- 6. Mirror motifs and/or rotate in 45° steps if required.⇒ Every second motif is mirrored.
- **7.** To reset the arrangement, tap the selected shape again.

#### **Check Design**



#### Prerequisite:

- A hoop with the hooped project is attached.
- 1. Tap an arrow in the **Move Hoop to Position** area.
  - ⇒ The hoop moves until the needle is located at the selected point of the embroidery design, as long as the point is within the area to be embroidered.
- **2.** Check whether the position is correct.
- **3.** If necessary, move the embroidery design horizontally and vertically.
- **4.** If necessary, check other positions.

#### **Pinpoint Placement**

With the **Pinpoint Placement**  $\[ \]$  function, you can position the embroidery design with the following options:

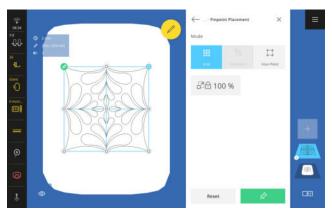
- Grid 💥
- Free Point 💥
- Four Point 🗀

#### TIP

Using the Laser function, you can position the point precisely at the desired location on the fabric.

## Positioning the Embroidery Design by 2 Grid Points

With the **Grid** strong option, you can position embroidery designs precisely on the fabric using 2 grid points.



#### Prerequisite:

- The desired position of the embroidery design is marked on the fabric with two points and is clearly visible
- A hoop with the hooped project is attached.
- 1. Tap the **Grid** sicon.
- 2. To maintain the size of the embroidery design, activate the **Retain Size** ⚠ function.
- **3.** Select any point on the grid as the rotation point.

## Positioning the Embroidery Design by means of 2 Freely Positioned Points

With the **Free Point**  $\mbox{$\%$}$  option, you can position embroidery designs precisely on the fabric using 2 freely positioned points.



#### Prerequisite:

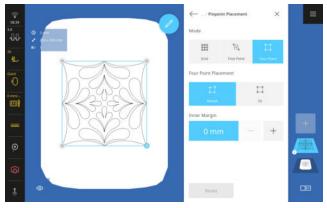
- The desired position of the embroidery design is marked on the fabric with two points and is clearly visible.
- A hoop with the hooped project is attached.

- **1.** Tap the **Free Point** will icon.
- **2.** To maintain the size of the embroidery design, activate the **Retain Size** ⚠ function.
- **3.** Select any point on the embroidery design as the rotation point.
- **4.** Position the needle at the corresponding marking on the fabric using the multifunction knobs and confirm with the **Pin** *☆* button. You can activate the laser to assist with exact positioning of the needle
- **5.** Select the second point of the embroidery design. Position the needle at the second marking on the fabric and confirm with the **Pin** ⋄ button.

## Positioning the Embroidery Design in a Square

With the **Four Point** [ option, you can position the embroidery design in a square using four points, e.g. in a quilt block. The following options can be used to place the design:

- **Morph** :: The embroidery design is reshaped so that it fits into the boundary.
- **Fit** ; : The embroidery design is inserted proportionally and centered within the boundary.



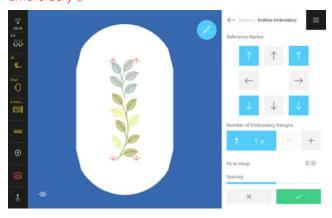
#### Prerequisite:

- The desired position of the embroidery design is marked on the fabric with four points and is clearly visible, or the hoop has been scanned and the preview displays the fabric. [▶ see page 83]
- A hoop with the hooped project is attached.
- **1.** Tap the **Four Point** icon.
  - ⇒ The design is placed inside a rectangular bounding box.
- 2. Select one of the corner points and position the needle over the corresponding marking on the fabric with the multi-function knobs. You can activate the laser to assist with exact positioning of the needle.
- **3.** Select all corner points one after the other and position the needle.

- **4.** Select the **Morph** or **Fit** option.
  - $\Rightarrow$  The design is placed inside a bounding box.
- **5.** To maintain the size of the embroidery design, activate the **Retain Size** ⚠ function.
- **6.** If necessary, set a margin spacing from the grid.

#### **Borders**

Embroidery ⊕ Edit Position ► Endless Embroidery ♥



With the **Endless Embroidery** a function, you can stitch combinations that are longer than the hoop.

#### TIP

- Using a larger hoop will require less re-hooping.
- To help keep the designs straight, draw guide lines on the fabric and use the template for clamping and re-hooping. Make sure that the guide lines run parallel to the lines of the template. You can also reposition the embroidery design using the **Pinpoint Placement** 

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#### **Creating Borders**

#### Prerequisite:

- A hoop with the hooped project is attached.
- 1. Select an embroidery design.
- 2. Select the **Endless Embroidery** affinction.
  - ⇒ The embroidery design is multiplied to match the hoop.
  - ⇒ Marker positions are inserted.
- **3.** If necessary, insert additional marker positions. The marker points are also embroidered and help to align the project when rehopping.
- **4.** If necessary, enter the number of repetitions of the embroidery design.
- **5.** If necessary, adjust the size of the embroidery design so that it fits into the hoop.
- **6.** If necessary, adjust the spacing between the embroidery designs.
- 7. Confirm settings.

#### **Endless Embroidery**

#### Prerequisite:

- A hoop with the hooped project is attached.
- 1. With the **Stitchout** function, open the **Stitchout Summary** screen and confirm the settings.
- **2.** Use the **Start/Stop** ● button to start stitching out
- **3.** Once the embroidery design has been fully stitched out, remove the hoop and re-hoop the fabric so that the stitched-out marker positions are located in the upper embroidery area of the hoop.
- 4. Using the Pinpoint Placement ► Free Point function in the embroidery design, connect at the stitched marker postions. see page 86]
- 5. Continue stitchout.
- **6.** Repeat these steps until the required length of the trim has been achieved.

## 12.4 Lettering

### Lettering

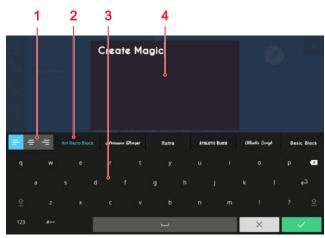
Embroidery ○ ► Lettering A



Condensed Sans Curved Block Cyr	file Calligraphic Fiare Full Block Outline Full Block
Font	Name
ABC	Art Deco Block
ARC.	Artemis Script
ABC	Astra
ABC	Athletic Block
ABC .	Atlantic Script
ABC	Basic Block
ABC	Blackletter English
ABC	Boffo
АБВ	Cyrillic Book
ABC	Chancery

Font	Name
ABC	Children's Slab
ABC	Chivalry
ABC	Condensed Sans
ABC	Curved Block
AБB	Cyrillic Calligraphic
ABC	Flare
ABC	Full Block Outline
ABC	Full Block
ABC	Happy Times
ABC	Micro Block
ABC	Oriental Script
ABC	Park Avenue
ABC	Quilt Block
ABC	Winding Times

#### **Creating Lettering**



**1** Justification **2** Font Selection **3** Keyboard **4** Text Preview

You can design single-line or multi-line lettering.

- **1.** Tap the **Add Design** + icon in the layer bar.
- **2.** In the File Manager, tap the **Lettering**  $\triangle$  tab and select a font.
- **3.** Type in the text using the on-screen keyboard. You can adjust the font, orientation and line breaks to suit your preferences when doing so.
  - ⇒ The changes are displayed in the preview.
- **4.** Confirm the completed text.

Access special characters by long pessing on the keyboard character, e.g. "È", "É" etc. when you press the letter "E".

#### **Editing Functions**





You can edit lettering using special functions. These are grouped together in the **Lettering** submenu.

#### **Edit Text**

With the **Edit Text**  $\top$  function, you can edit the lettering. This enables you to correct text, insert line breaks or modify the alignment.

#### TIP

You can also access this function by pressing and holding an embroidery design.

#### **Transform**

With the **Transform** ABC function, you can reshape single-line text as follows:

- Horizontal ABC: Arrange text horizontally.
- **Vertical** <sup>§</sup>: Arrange text vertically.
- **Arch** \*\*C: Reshape horizontal text into an arch.

#### Spacing

Embroidery ○ ► Edit Lettering ► Spacing ↔

With the **Spacing**  $\overset{\text{V/A}}{\Longleftrightarrow}$  function, you can modify the character spacing.

#### Line Spacing

Embroidery  $\bigcirc$   $\blacktriangleright$  Edit  $\nearrow$   $\blacktriangleright$  Lettering  $\blacktriangleright$  Line Spacing  $\updownarrow$ 

With the **Line Spacing**  $\updownarrow \equiv$  function, you can modify the spacing between lines for multi-line lettering.

#### **Styling**

With the **Styling**  $_{\circ -\circ}^{ABC}$  function, you can modify the stitches in the lettering with the following settings:

- **Stitch Density**: Modify the density of the lettering.
- **Pull Compensation**: Compensate for the fabric contracting when stitching.
- **Satin Value**: Transform satin stitches that are longer than the set value into step stitches.

The lettering is recalculated and the changes are only shown in the design preview when you confirm the settings.

## 12.5 Saving Embroidery Designs

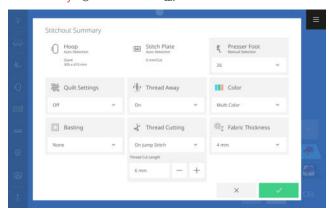
You can save modified embroidery designs in the Personal Folder or on a USB stick.

- **1.** Tap the **Save** <u>↓</u> icon.
- **2.** Enter and confirm the embroidery design name.
- **3.** Select a folder, create a new folder or select the **USB Stick** icon in the toolbar and confirm.
  - $\Rightarrow$  The embroidery design is saved in the Personal Folder  $\bigcirc$  or on the USB stick  $\boxed{\hspace{-0.1cm}}$  .

## 13 Embroidering the Embroidery Design

### **13.1 Stitchout Summary**

Embroidery ○ ► Stitchout ....



In the **Stitchout Summary** screen, you can modify the most common settings for optimal stitchout quality before entering the Stitchout. Additional settings can be modified in Embroidery Settings. [•] see page 47]

#### Hoop

The **Hoop** () status shows the attached hoop.

#### Stitch Plate

The **Stitch Plate** setting shows the attached stitch plate.

#### **Presser Foot**

The **Presser Foot**  $\mathbb{Q}$  setting shows the selected presser foot. If you use a different presser foot, you can select it from the list. The list contains all presser feet that are suitable for embroidery.

#### **Quilt Settings**

With the **Quilt Settings** \$\mathbb{\omega}\$ function, you can switch on and off special quilt settings for thread cutting and securing. The following options are available:

- On: Activate quilt settings.
  - Quilt Securing Stitches.
  - Thread Cut Disabled.
  - Thread Away Disabled.
- **Off**: Adopt the thread cut settings from the embroidery settings. [▶ see page 48]

#### **Thread Away**

With the **Thread Away** function, you can set cut threads to be pulled to the rear of the fabric for cleaner embroidery on the top.

For embroidery designs with long stitches, it is recommended to switch off the function because the presser foot could get caught in the long stitches due to the rapid movement of the embroidery arm. The same applies to projects with appliqués, wash-out stabilizer or other relief decorations, e.g. buttons.

The **Thread Away** function should not be used if the **Thread Cutting** function is switched off.

#### Color

With the **Color** setting, you can define how thread changes are handled during embroidery. The following options are available:

- Multi Color: The embroidery design is stitched with multiple colors as indicated in the saved design.
  - After each color, the machine stops so that you can change the threads.
- **Single Color**: The embroidery design is stitched with the thread that is currently threaded, without changing threads.
- Reduce Thread Changes: The embroidery design is regrouped so that the fewest possible thread changes need to be made.

Use this function when sewing Customizable Quilt Designs to avoid multiple starts and stops. If this function is activated, the colors are also regrouped in edit mode.

#### **Basting**

With the **Basting** if function, you can secure materials in the hoop that cannot be hooped, e.g., felt, organza and silk. The basting can also be used to prevent top stabilizers from moving or as a guide for trimming after embroidery. The following functions are available:

- None: No basting is stitched.
- Around Design: The machine sews a basted seam around the embroidery design.
  If you sew a basted seam around the embroidery design, you can determine the distance between the basted seam and the embroidery design. Use the basted seam around the pattern if the embroidery design is substantially smaller than the hoop, or if you are only embroidering a small piece of fabric.
- Around Hoop: The machine will sew a basted seam along the inner edge of the hoop.

## 13 Embroidering the Embroidery Design

#### **Thread Cutting**

With the **Thread Cutting** & function, you can switch automatic cutting of the thread on and off. The following options are available:

- Off: The thread is not automatically cut.
- On Thread Change: The thread is automatically cut on thread changes.
- **On Jump Stitch**: The thread is automatically cut when connecting stitches are made.

If this option is selected, you can define the length of the connecting stitch at which the thread is to be cut.

#### **Fabric Thickness**

With the **Fabric Thickness**  $@_{\times}$  function, you can set the thickness of the fabric. The set value affects the embroidery speed. The higher the value, the slower the machine embroiders so that the needle does not get stuck in thicker fabrics.

#### 13.2 Stitchout

Embroidery ○ ► Stitchout ■ ► OK ✓



1 Design Preview 2 Color Bar 3 Color Change 4 Embroidery Information 5 High Speed 6 Stitch 7 Summary 8 Edit 9 Current Color 10 View

The **Stitchout** screen appears when the embroidery design is ready for stitching out. You can start stitching with the **Start/Stop** ○ ● button.

#### **Design Preview**

The design preview shows the embroidery design as it will be stitched out. When it is opened, the current color layer is adjusted in the preview. You can adjust the preview with finger gestures or the view slider.

#### Color Bar

The color bar shows the color layers in the order in which they will be stitched out. The length of the individual color sections corresponds to the count of stitches in that color – the more stitches, the longer the section

You can scroll left and right in the color bar using the two arrow keys, in order to display other colors in the embroidery design.

If you select a color, that color is displayed in the **Current Color** bar and in the design preview. At the same time, the hoop is moved to the starting position for the selected color. The embroidery information is also adjusted.

## 13 Embroidering the Embroidery Design

#### **Color Change**

With the **Color Change** function, you can define how thread changes are handled during embroidery. This setting overwrites the setting on the **Stitchout Summary**screen. The following options are available:

- **Multi Color Sellon**: The embroidery design is stitched with multiple colors as indicated in the saved design.
  - After each color, the machine stops so that you can change the threads.
- **Single Color @@@@@!** The embroidery design is stitched with the thread that is currently threaded, without changing threads.
- Reduce Thread Changes [1] : The embroidery design is regrouped so that the fewest possible color changes need to be made.

Use this function when sewing Customizable Quilt Designs to avoid multiple starts and stops. If this function is activated, the colors are also regrouped in edit mode.

#### **Embroidery Information**

The following information about the embroidery process is displayed in the Embroidery Information area:

- **Color**: Sequence number of the current color.
- **Stitch**: Current stitch number/Total stitch number.
- **Total Time**: Estimated stitch time for the whole design.
- **Color Time**: Estimated stitch time for the current color.

#### **High Speed**

Embroidery designs are stitched out at the optimum speed for an even embroidery pattern. The optimum embroidery speed depends on the hoop used. With the **High Speed** (2) function, you can increase the embroidery speed up to the saved maximum speed. Depending on the type of stitch, e.g. triple stitch, the function may result in an irregular stitch pattern. This function is only available once you have started stitching out using the **Start/Stop** • button.

#### Stitch

With the **Stitch** sing function, you can return to a specific point in the embroidery after a thread break or other interruption in the embroidery process in order to continue stitching from that point. The machine displays the needle position at the time the process was canceled.

You can move stitch by stitch or use the lower multifunction knob to move across larger sections of the design. The laser makes it easier to recognize the current stitch. If you wish to return to a specific stitch, you can enter the number of the stitch.

#### **Summary**

With the **Summary**  $\stackrel{\checkmark}{=}$  function, you can cancel stitchout in order to modify the current embroidery settings in the **Stitchout Summary** screen.

#### Edit

With the **Edit**  $\leftarrow$  function, you can cancel stitchout in order to edit the embroidery design.

#### **Current Color**

The color bar shows the current thread color with the thread brand and number.

If the machine is sewing, the slider shows the current needle position. If the machine is not sewing, you can move the slider to move the needle to a desired position.

#### View

With the **View** of function, you can modify the size of the embroidery design in the design preview.

#### 14.1 Software

#### **Update Firmware**

Settings † → Machine 🖅 ➤ Update and Reset ➤ Update Firmware

You can use the **Update Firmware** function to install the latest version of the firmware on your machine. You can update the current firmware of the machine and download detailed step-by-step instructions for the update process at www.bernina.com/990-support.

#### Prerequisite:

- The latest firmware data has been downloaded and copied to the USB stick according to the update instructions.
- **1.** You can open the **Update Firmware** function in the settings.
- **2.** Update the firmware according to the instructions on the screen.

#### **Reset Settings**

Settings ¼ ► Machine 🗗 ► Update and Reset ► Reset Settings

With the **Reset Settings** functions, you can reset the sewing and embroidery settings or all settings to the factory settings.

#### **Delete Data**

Settings † → Machine 🖅 ➤ Update and Reset ➤ Delete Data

With the **Delete Data** function, you can delete all personal data stored on the machine.

#### Save and Transfer Data

Settings ₩ ► Machine 🗗 ► Update and Reset ► Save and Transfer Data

With the **Save and Transfer Data** functions, you can save your personal data, e.g. settings and your own stitch and embroidery designs, to a USB stick and transfer them back to the machine.

#### 14.2 Machine

#### **Maintenance Intervals**

To ensure that your machine remains in proper working order for many years to come, BERNINA recommends regular maintenance and care of your machine.

The maintenance intervals depend largely on the following factors:

- Frequency of use of the machine
- Nature of the fabric used
- Number of stitches
- Nature of the thread used

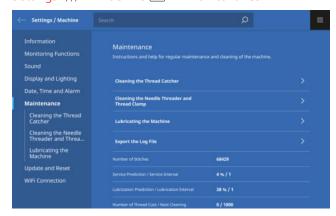
BERNINA recommends maintaining the machine after every 3 – 4 full bobbins have been used.

Task	Maintenance Interval	Measures
Cleaning the Machine	Regularly, depending on usage of the machine.	Wipe down the surface of the machine and screen with a soft, slightly damp microfiber cloth.
Checking the Machine	Regularly, depending on usage of the machine.	<ol> <li>Check the machine for external damage.</li> <li>In case of damage, contact your BERNINA dealer.</li> </ol>
Cleaning the Feed Dog and the Stitch Plate	Regularly, depending on usage of the machine.	➤ Clean the feed dog. [▶ see page 99]
Cleaning the Hook	Regularly, depending on usage of the machine.	➤ Clean the hook. [▶ see page 99]

Task	Maintenance Interval	Measures
Cleaning the Thread Catcher	If the relevant message is displayed.	► Clean the thread catcher. [► see page 101]
Cleaning the Needle Threader and Thread Clamp	Regularly, depending on usage of the machine.	Cleaning the needle threader and thread clamp [▶ see page 101]
Replacing the Needle	Regularly, depending on usage of the machine.	► Replace the needle.
Updating Firmware	As soon as a new version is available.	► Updating Firmware.
Lubricating the Hook	<ul> <li>Before using the machine for the first time.</li> <li>After a longer downtime of the machine.</li> <li>Before every new project.  Now and then during a project, depending on the scope of the project.</li> <li>Regularly, depending on usage of the machine.</li> <li>If the relevant message is displayed.</li> <li>In case of unusual noises in the bobbin area.</li> </ul>	► Lubricate the hook. [► see page 100]
Adjusting, cleaning and lubricating machine components inside the machine	<ul><li>With intensive use: annually</li><li>With normal use: 2-yearly</li><li>If the relevant message is</li></ul>	► Contact your BERNINA dealer.

displayed.

#### **Maintenance Information**



#### **Number of Stitches**

The display **Number of Stitches** shows the number of stitches that have been sewn with the machine.

#### **Service Prediction / Service Interval**

The display **Service Prediction / Service Interval** shows how much of the maintenance interval has elapsed. If the maintenance forecast reaches 100 %, a corresponding message is displayed when the machine is started and the machine must be serviced.

**Lubrication Prediction / Lubrication Interval**The display **Lubrication Prediction / Lubrication Interval** shows how much of the lubrication interval has elapsed. If the maintenance forecast reaches

100 %, a corresponding message is displayed when the machine is started and the machine must be lubricated. [**>** see page 100]

#### **Number of Thread Cuts / Next Cleaning**

The display **Number of Thread Cuts / Next Cleaning** shows the number of thread cuts the machine has made.

#### **Cleaning the Screen**

- **1.** Lock screen and sewing functions.
- **2.** Wipe down the screen with a soft, slightly damp microfiber cloth.

#### **Cleaning the Feed Dog**

Thread residue accumulates under the stitch plate over time. Remove the thread residue on a regular basis.

- 1. Raise the needle and presser foot.
- 2. Lower feed dog.

#### **A CAUTION**

#### **Electronically Driven Components**

Risk of injury near the needle and the hook.

- Switch off the machine and disconnect it from the power supply.
- **3.** Remove the needle and presser foot.
- **4.** Remove the stitch plate.

#### NOTICE

#### Dust and thread remnants inside the machine

Damage to mechanical and electronic components.

- ▶ Use a brush or a soft cloth.
- Do not use compressed air spray.
- **5.** Clean the feed dog with the brush.

#### **Cleaning the Hook**

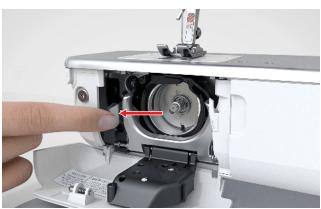
#### **A** CAUTION

#### **Electronically Driven Components**

Risk of injury near the needle and the hook.

- Switch off the machine and disconnect it from the power supply.
- 1. Open the bobbin cover.
- 2. Remove the bobbin case.

**3.** Push the release lever to the left.



- **4.** Fold down the fastening bracket with the black hook race cover.
- **5.** Remove the hook.

#### NOTICE

#### Dust and thread remnants inside the machine

Damage to mechanical and electronic components.

- Use a brush or a soft cloth.
- Do not use compressed air spray.
- **6.** Clean the hook race area with a brush and a soft cloth. Never use any sharp instruments.
- **7.** Hold the hook at the pin in the center with two fingers.



- **8.** Guide the hook with the lower edge diagonally from the top to the bottom behind the bobbin cover.
- **9.** Position the hook with the two lugs on the hook driver meeting the corresponding openings in the hook. The gray marking on the hook driver must be visible in the hole of the hook.
- 10. Insert the hook.
  - ⇒ The shuttle is magnetic and therefore pulled into the correct position.
- **11.** Close the bobbin cover and the fastening bracket until the release bracket engages.
- 12. Turn the handwheel to check.
  - ⇒ The hook will rotate.

**13.** Insert a bobbin case and close the bobbin cover.

#### **Lubricating the Hook**

Lubricating the hook keeps the machine running smoothly and quietly.

#### **⚠ CAUTION**

#### **Electronically Driven Components**

Risk of injury near the needle and the hook.

- Switch off the machine and disconnect it from the power supply.
- 1. Open the bobbin cover.
- 2. Remove the bobbin case.
- 3. Push the release lever to the left.



- **4.** Fold down the bobbin case holder with the black bobbin cover.
- **5.** Remove the hook.



**6.** Clean the hook race area with a brush and a soft cloth. Never use any sharp instruments.

**7.** Add a drop of BERNINA sewing machine oil to the bottom of the hook race.



**8.** Add one drop of BERNINA sewing machine oil into each of the two oil depots so the felt is damp. Make sure that the surface of the hook sleeve remains free of oil.



**9.** Hold the hook at the pin in the center with two fingers.



- **10.** Guide the hook with the lower edge diagonally from the top to the bottom behind the bobbin cover.
- **11.** Position the hook with the two lugs on the hook driver meeting the corresponding openings in the hook. The gray marking on the hook driver must be visible in the hole of the hook.
- 12. Insert the hook.
  - ⇒ The shuttle is magnetic and therefore pulled into the correct position.

- **13.** Close the bobbin cover and the fastening bracket until the release bracket engages.
- **14.** Turn the handwheel to check.
  - ⇒ The hook will rotate.
- **15.** Insert a bobbin case and close the bobbin cover.
- **16.** To absorb excess oil, sew or embroider on a test fabric.

#### **Cleaning the Thread Catcher**

Settings ¼ ► Machine 🗗 ► Maintenance ► Cleaning the Thread Catcher

Thread remnants accumulate in the thread catcher over time. Clean the thread catcher when the corresponding message is displayed.

- **1.** You can open the **Cleaning the Thread Catcher** function in the settings.
- **2.** Clean the thread catcher according to the instructions on the screen.

## Cleaning the Needle Threader and Thread Clamp

Settings † ► Machine 🖃 ► Maintenance ► Cleaning the Needle Threader and Thread Clamp

Lint can accumulate on the needle threader and prevent proper performance. It is recommended to clean the threader head regularly.

- **1.** You can open the **Cleaning the Needle Threader and Thread Clamp** function in the settings.
- **2.** Clean the thread catcher and the thread clamp according to the instructions on the screen.

#### **Changing the Battery**

- **1.** Switch off the machine and disconnect it from the power supply.
- 2. Remove all threads and thread stand.
- **3.** Carefully set down the machine on its back.

**4.** Open the battery compartment cover on the bottom of the machine.



**5.** Remove the battery and dispose of it properly.



#### **↑** WARNING

## Danger of chemical burns if the lithium button cell battery is swallowed

Swallowing the lithium button cell battery may result in severe internal chemical burns.

- ► Make sure that the battery does not fall into the hands of children and is not swallowed.
- ► If you suspect that the battery has been swallowed or has otherwise entered the body, contact a doctor immediately.
- **6.** Insert a new type CR2032 battery. When doing so, make sure that the positive pole is facing outward.
- 7. Close the battery compartment cover.
- **8.** Set up the machine.

#### **Export the Log File**

Settings † → Machine 🖅 ➤ Maintenance ➤ Export the Log File

Log files help service personnel to find errors in the firmware. If you are requested to do so by BERNINA Service, you can export a log file.

- **1.** Insert the USB stick into the machine.
- **2.** Confirm saving the log file and wait until the export is complete.
- **3.** Close the window.

#### The Automatic Needle Threader does not thread the needle The needle selected in the needle selection cannot be Single needle: Select the needle in the needle automatically threaded, e.g. twin needle. selection to match the attached needle. [▶ see page 32] Double and triple needles: Thread the needle by hand. Automatic threading is not possible with the selected Attach the appropriate presser foot and select it in the presser foot selection. [> see page 40] presser foot. The automatic needle threader is dirty. Clean the needle threader. [▶ see page 101] The threader mechanism is not in the correct position. Check the position of the threader mechanism. If the needle threader is at the front, turn the needle threader slightly to the left until it is perpendicular to the machine head. If necessary, confirm the error message. Rethread the needle. Stitch regulation does not react correctly Dust or thread residue in front of the BISR sensor. Switch off the stitch regulation. Open the bobbin cover. Clean the sensor at the bobbin cover and the area under the stitch plate with a brush and soft cloth. **BSR** not detected Insert the BSR connector properly and ensure it is BSR cable not inserted correctly. clicked into place. The screen does not respond .The screen is locked. Unlock the screen. [▶ see page 22] Screen is defective or not connected correctly. Contact your BERNINA dealer. Wrong touchscreen pen. Use other touchscreen pen or finger. **Error during Firmware Update** USB stick is not recognised. Use a BERNINA USB stick. The update process is blocked and the animation on Remove the USB stick. the screen is inactive. Switch the machine off. Switch the machine on. Follow the instruction on the screen.

Contact your BERNINA dealer.

Error during Firmware Update			
Firmware update files are not found.	<ul> <li>Unpack the compressed ZIP file according to the update instructions.</li> <li>Store data for the firmware update directly on the data medium and not in a folder on the USB stick.</li> </ul>		
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.		
Incorrect needle/thread combination.	► Use a needle with a suitable needle size. [► see page 30]		
Speed too low			
Room temperature is too warm or too cold.	Place the machine in a warm room one hour before use.		
Reduced maximum speed.	<ul> <li>Move the speed control to the right.</li> <li>Modify the maximum sewing speed in the Settings.         [▶ see page 45]</li> <li>Modify the maximum embroidery speed in the Settings. [▶ see page 47]</li> </ul>		
Camera image is blurred or contains dirt particles			
Camera lens dirty.	► Have the lens cleaned by a BERNINA dealer.		
The Laser Dot is not visible or is at the wrong position			
The laser is concealed or deflected by the presser foot or the needle.	<ul> <li>Raise the needle.</li> <li>Fit another presser foot.</li> <li>Lower the presser foot before starting sewing.</li> <li>Contact your BERNINA dealer.</li> </ul>		
The Light of the button "Start-/Stop" doesn't light up			
Light is defective.	► Contact your BERNINA dealer.		

The Machine doesn't start		
The machine is not connected to the power supply.	<ul> <li>Insert the mains plug into the socket and into the machine.</li> <li>Check the socket for power.</li> </ul>	
Room temperature is too warm or too cold.	<ul> <li>Place the machine in a warm room one hour before use.</li> <li>Connect the machine and switch it on.</li> </ul>	
The machine is damaged.	► Contact your BERNINA dealer.	
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.	
Fabric was pulled.	► Feed the fabric evenly.	
Thick fabric has been pushed.	<ul> <li>Use a suitable presser foot for thick fabric, e.g. Jeans Foot #8.</li> <li>Use the height compensation tool when sewing over a thick seam.</li> </ul>	
Knotted thread.	► Use quality thread.	
Sewing Light and/or the Light on the Free Arm do not light up		
Sewing light and/or light on the free arm not switched on.	➤ Switch on the sewing light and the light on the free arm in the Settings. [▶ see page 44]	
Sewing light and/or free arm light defective.	► Contact your BERNINA dealer.	
Faulty 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 the upper and lower thread.	
Thread remnants below the bobbin case spring.	<ul><li>Remove the bobbin case.</li><li>Remove the thread remnants under the spring.</li></ul>	

Upper thread is not threaded	
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.
Threader head is defective.	► Contact your BERNINA dealer.
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 the upper thread.
Poor quality thread.	► Use quality thread.
The stitch plate or the hook tip is damaged.	<ul> <li>Contact your BERNINA dealer to have the damages repaired.</li> </ul>
	► Replace the stitch plate.
The thread is caught in the area of the thread take-up lever.	<ul> <li>Slide the cover at the front of the sewing machine head to the left and remove the cover.</li> <li>Remove the thread remnants.</li> </ul>
B 900	<ul> <li>Remove the thread remnants.</li> <li>Guide the 4 knobs of the cover into the recesses provided and push the cover to the right until it clicks into place.</li> </ul>
Upper Thread Indicator fails to respond	
The upper thread indicator is not switched on.	➤ Switch on the upper thread indicator in the Settings. [▶ see page 43]
The upper thread indicator is defective.	► Contact your BERNINA dealer.
Upper Thread Indicator reacts too frequently	
Upper thread not threaded correctly.	► Thread the upper thread correctly. [► see page 34]
Upper thread tension too low.	► Adjust the upper thread tension. [► see page 50]
The upper thread indicator is defective.	► Contact your BERNINA dealer.
Buttonholes are repeatedly not sewn properly	
The Buttonhole Foot with Slide #3A is not calibrated with the machine.	► Calibrate Buttonhole Foot with Slide #3A. [► see page 46]
Lens on the presser foot is dirty.	► Clean the lens with a soft, slightly damp cloth.

Stitch width not adjustable	
The selected needle and stitch plate cannot be used in combination.	<ul> <li>▶ Replace the needle. [▶ see page 32]</li> <li>▶ Replace the stitch plate. [▶ see page 29]</li> </ul>
The presser foot selection prevents the adjustment of the stitch width.	► Attach and select a suitable presser foot. [► see page 40]
Stitch Plate not detected	
Stitch Plate without sensor.	► Attach Stitch Plate with sensor.
Disturbance due to magnetic field.	Remove magnetic accessories in the area of the stitch plate.
Sensor on the stitch plate defective.	► Contact your BERNINA dealer.
Time does not remain set	
Battery is empty.	► Change battery. [► see page 101]
Battery protection film has not been removed.	▶ Removing the Protective Film on the Battery. [▶ see page 25]
Uneven Stitch Formation	
Upper thread too tight or too loose.	<ul> <li>Adjust the upper thread tension. [▶ see page 50]</li> <li>Check the thread feed from the thread spool.</li> </ul>
Needle blunt or bent.	▶ Replace the needle, make sure that a new BERNINA quality needle is used. [▶ see page 32]
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.	<ul> <li>Rethread the upper thread. [▶ see page 34]</li> <li>Rehtread the bobbin thread. [▶ see page 38]</li> </ul>
Fabric was pulled.	► Feed the fabric evenly.
Incorrect bobbin case is used.	► Use supplied bobbin case.
Lower thread too tight or too loose.	► Contact your BERNINA dealer.

Lower Thread Breaks		
The bobbin case is damaged.	► Replace the bobbin case.	
The stitch hole in the stitch plate is damaged.	<ul> <li>Contact your BERNINA dealer to have the damages repaired.</li> <li>Replace the stitch plate. [** see page 29]</li> </ul>	
Needle blunt or bent.	► Replace the needle. [► see page 32]	
Bobbin Thread Indicator doesn't react		
The bobbin door cover is opened.	► Close the bobbin cover.	
The bobbin thread indicator is not switched on.	➤ Switch on the bobbin thread indicator in the Settings. [▶ see page 43]	
The bobbin thread indicator is defective.	► Contact your BERNINA dealer.	
USB stick is not detected		
USB stick is incompatible.	Use a BERNINA USB stick or compatible USB stick.	
USB stick not with correct file system.	► Use a USB stick with the FAT32 file system.	

## 16 Storage and Disposal

## 16.1 Storing the Machine

BERNINA recommends that you store the machine in its original packaging. If the machine is stored in a cold room, place the machine in a warm room for one hour before use.

- **1.** Switch off the machine and disconnect it from the power supply.
- 2. Clean the machine.
- **3.** Don't store the machine outdoors.
- **4.** Protect the machine against climatic influences.

## 16.2 Dispose of the Machine

- **1.** Delete personal data on the machine. [▶ see page 97]
- **2.** Sort components by material and dispose of in accordance with local laws and regulations.

## 17 Technical Data

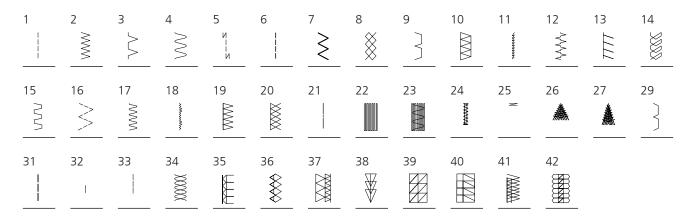
Term	Value	Unit
Maximum Speed	1200	Stitches per Minute
Needle System	130/705	
Measurements without the Spool Pin (W $\times$ H $\times$ D)	675 × 420 × 245	mm
	$(26.6 \times 16.5 \times 9.7)$	(in)
Measurements incl. Embroidery Module without	1175 × 420 × 635	mm
Spool Pin (W $\times$ H $\times$ D)	$(46.3 \times 16.5 \times 25.0)$	(in)
Weight of the Machine	19.2	kg
	(42.3)	(lb)
Weight of the Embroidery Module	6.7	kg
	14.8	(lb)
Energy Consumption	160	W
Input Voltage	100 – 240	V
	50/60	Hz
WiFi Frequency Band	2.4	GHz
WiFi Protocol	802.11 b/g/n	
Power Output (802.11 b)	17.5	dBm
Power Output (802.11 g)	14.0	dBm
Power Output (802.11 n)	12.5	dBm
Laser Class	LASER	
(according to IEC 60825-1:2014)	<b>*</b> 1	

Protection Class (Electrical Engineering)

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### **18 Stitch Patterns**

### **18.1 Practical Stitches**



### **18.2 Decorative Stitches**

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144	145	146	147	148	149 <del>************************************</del>	150	152	153	154	155	156	158 ** **	159 <b>*</b>    ◇ <b>*</b>
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### **18 Stitch Patterns**

#### **Nature Sideways Motion** Z. 金安安 \* 60<del>8</del>00 **[**] XXX \*\* X 茶 $\mathbb{X}$ <del>}}</del>

#### **Cross Stitches**

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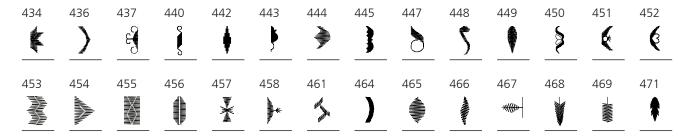
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#### 112

### **18 Stitch Patterns**



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### Satin Sideways Motion

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### Geometric

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### **18 Stitch Patterns**

#### Heirloom \* \*\* $\bigotimes$ \* $\bigoplus_{i=1}^{n}$ $\lessapprox$ WW \* $^{*}$ $\bigoplus$ $\bigoplus$ \* <u>M</u> $\Rightarrow$

### **Heirloom Sideways Motion**

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#### Children

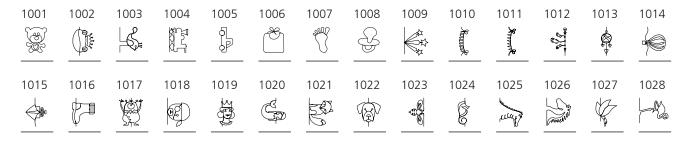
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933	934	935	936	938	939	940	942	944	945	946	948	949	950

#### 114

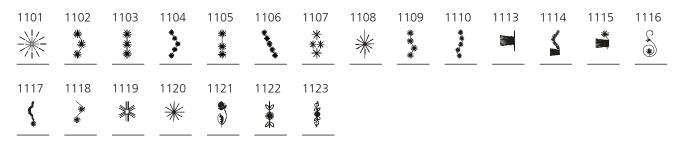
### **18 Stitch Patterns**



#### **Children Sideways Motion**



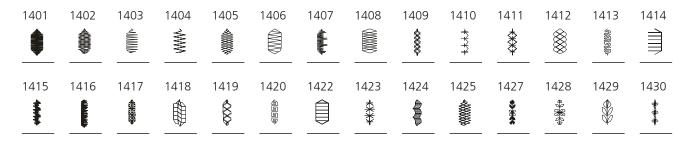
#### **Special**



### **Filigree Sideways Motion**

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1215	1216	1217	1218	1220	1221	1222	1223	1224	1225 ©	1226 6	1227	1228	

#### **Tapering**



### **18 Stitch Patterns**

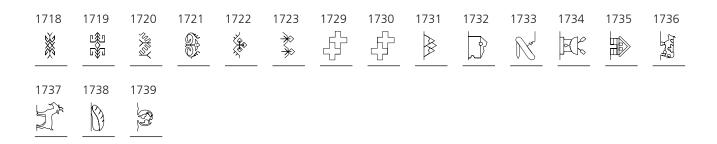
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#### **Quilting Stitches Sideways Motion** (e) De **SEO** × $\times_{\mathsf{K}}$

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### **18 Stitch Patterns**



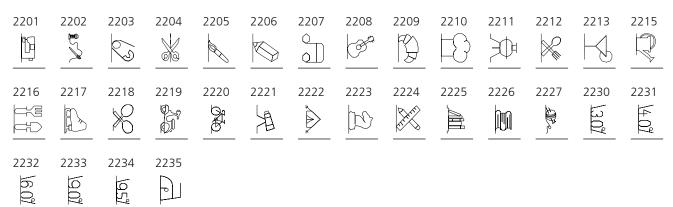
### **Geometric Sideways Motion**

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#### **Seasons**

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### **Sport and Hobbies**



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### **18 Stitch Patterns**

#### **Constellations**

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### **Emojis**

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#### **Emojis Sideways Motion**

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### 18.3 Buttonholes

\*\*\* (00) U 

### **18.4 Quilting Stitches**

Ŧ Ŧ 6 / Inch 2.4 / cm 10 / Inch 4 / cm irregular ----look  $\bigvee_{i \in \mathcal{I}}$ **\*\*** 

### **18 Stitch Patterns**

1344	1345 <del>***</del>	1346	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372	1373
1374	1375	1376	1377	1378	1379	1380	1381 	1382	1383	1384 <del>}} k</del>	1385 <del>[k</del>	1386 <del>*</del> *	1387
1388	1389	1390 <del>{ </del> 0	1391	1393	1394								

118



Let your creativity run free. A large selection of embroidery designs is included with your

After registering your machine, the included embroidery designs are available as downloads in an editable format at the BERNINA Customer Portal. If you see one of the following pictograms below a number of the embroidery design, you can find additional information at https://www.bernina.com/specialeffects.

	Freestanding Lace	PunchWork
<b>**</b>	Basic CutWork	Couching

<b>S</b>	Fringe Embroidery	0	Projects in the Hoop
	Appliqué		Puffy Fonts
	CutWork	<b>2</b>	Quilting
$\mathscr{D}$	PaintWork	*	Trapunto
	CrystalWork		

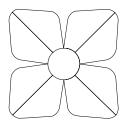
### 19.1 Inspirations

You can find the detailed embroidery instructions at bernina.com/990-designs.

#### Quilt

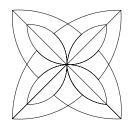


1. Isacord 40 0020



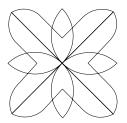
**図** Q102

1. Isacord 40 0020



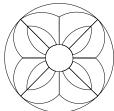
**図** Q103

1. Isacord 40 0020



**図** Q104





**図** Q105

1. Isacord 40 0020



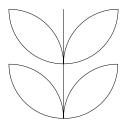
**図** Q106





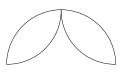
### **図** Q107

1. Isacord 40 0020



### **図** Q108

1. Isacord 40 0020



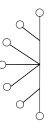
### **図** Q109

1. Isacord 40 0020



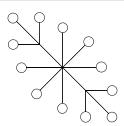
### **図** Q110

1. Isacord 40 0020



### **図** Q111

1. Isacord 40 0020



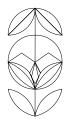
### **図** Q112

1. Isacord 40 0020



### **図** Q113

1. Isacord 40 0020



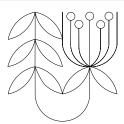
### **図** Q114

1. Isacord 40 0020

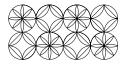


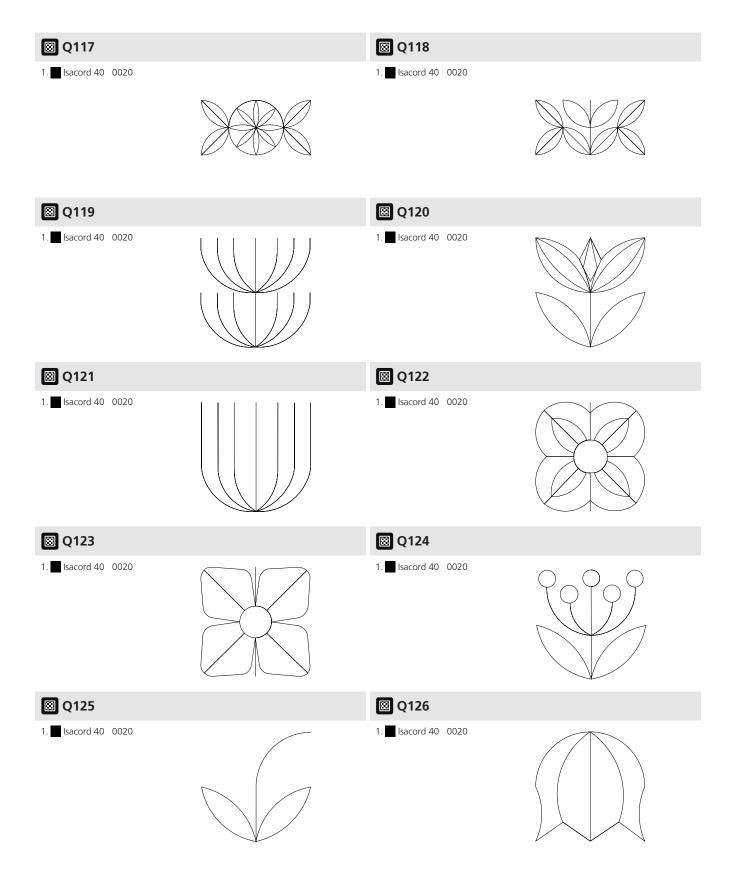
### **図** Q115

1. Isacord 40 0020

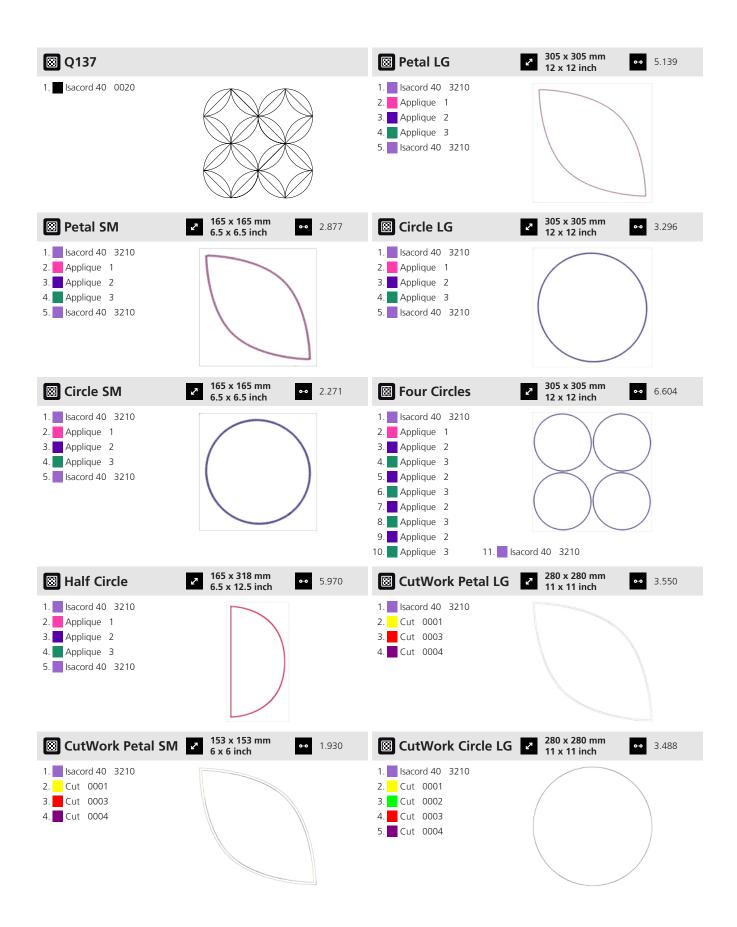


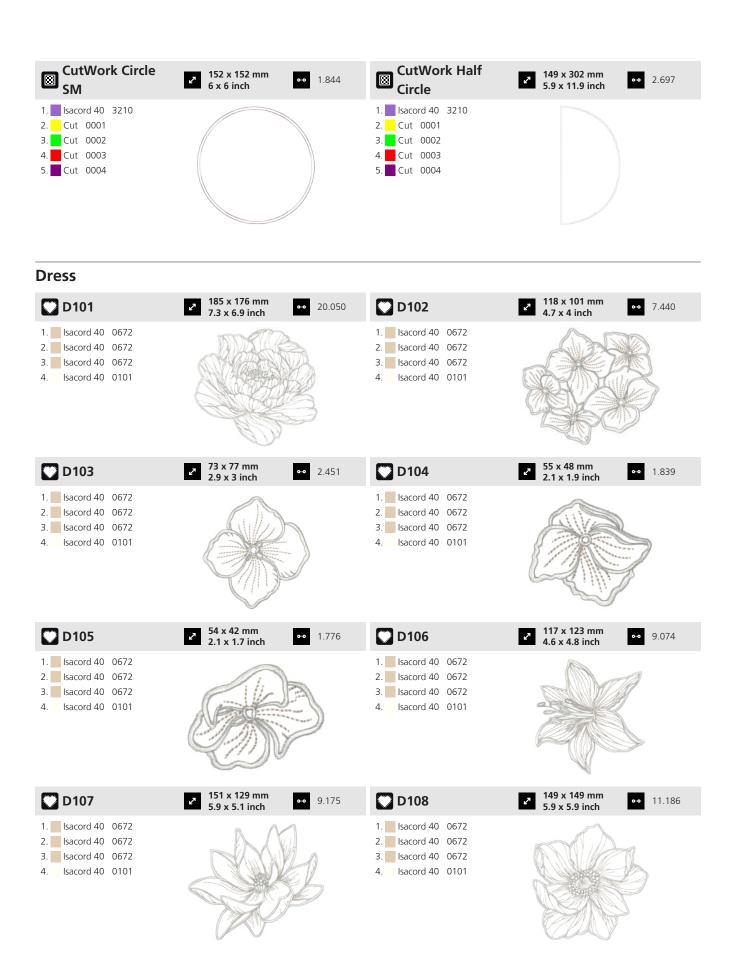
### **図** Q116

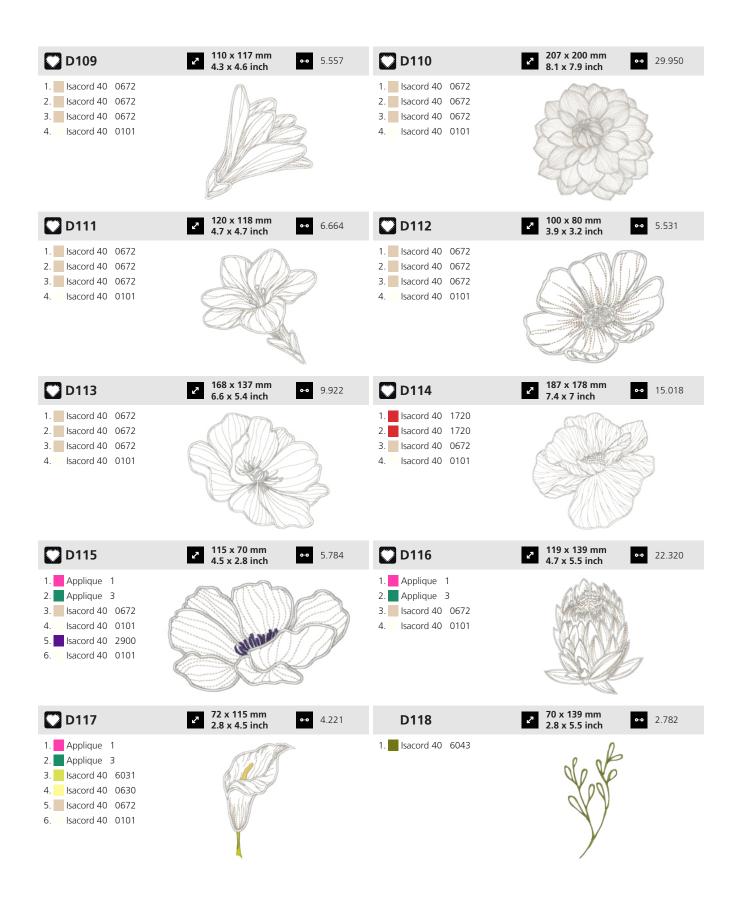


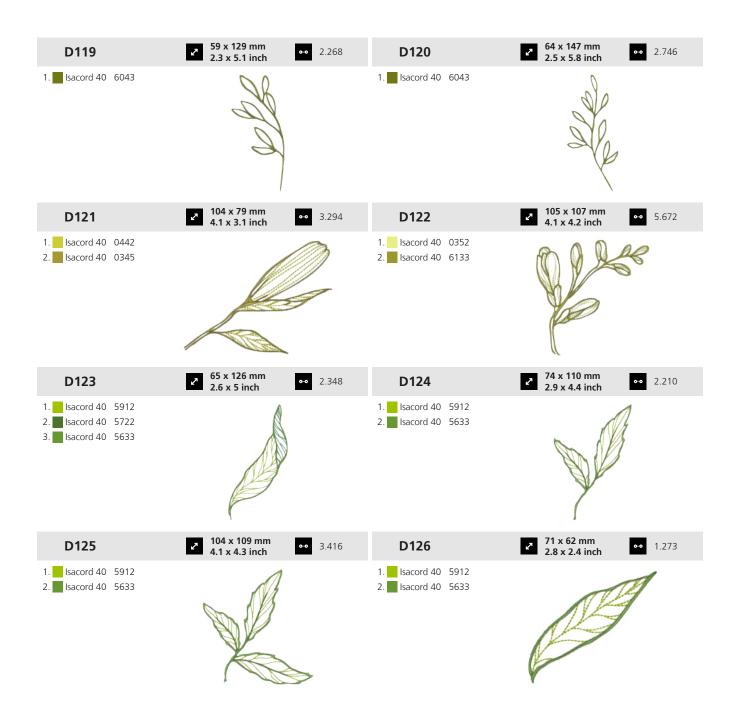


# **図** Q127 **図** Q128 1. Isacord 40 0020 1. Isacord 40 0020 **図** Q129 **図** Q130 1. Isacord 40 0020 1. Isacord 40 0020 **図** Q131 **図** Q132 1. Isacord 40 0020 1. Isacord 40 0020 **図** Q133 **図** Q134 1. Isacord 40 0020 1. Isacord 40 0020 **図** Q135 **図** Q136 1. Isacord 40 0020 1. Isacord 40 0020



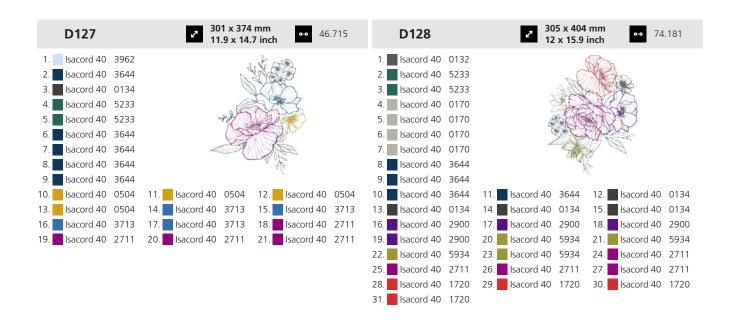




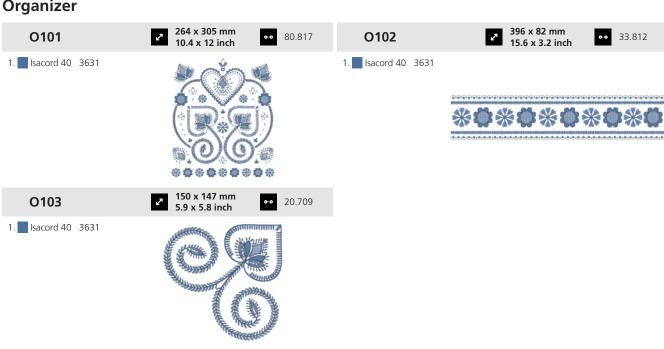


#### 127

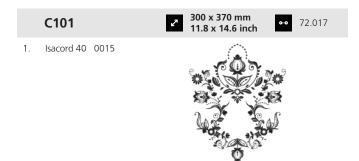
### 19 Embroidery Designs



#### Organizer



#### Chair



### 19.2 Quilting

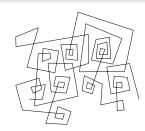
### **32196-01**

1. Isacord 40 0020



### **32196-02**

1. Isacord 40 0020



### **32196-03**

1. Isacord 40 0020



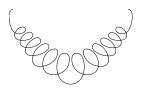
### **図** 32196-04

1. Isacord 40 0020



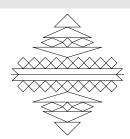
### ᠍ 32196-05

1. Isacord 40 0020



### **32196-06**

1. Isacord 40 0020



### **32196-07**

1. Isacord 40 0020



### **32196-08**

1. Isacord 40 0020

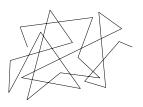


### **32196-09**

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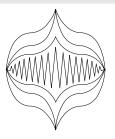


#### **32196-10**



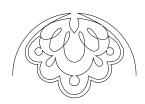
### ᠍ 32196-11

1. Isacord 40 0020



### **図** 32196-12

1. Isacord 40 0020



### **32196-13**

1. Isacord 40 0020



### **32196-14**

1. Isacord 40 0020



### **32196-15**

1. Isacord 40 0020



### **32196-16**

1. Isacord 40 0020



### **■** 32196-17

1. Isacord 40 0020



### **32196-18**

1. Isacord 40 0020



### **32196-19**

1. Isacord 40 0020

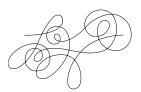


### **32196-19-1**



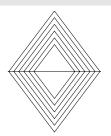
### ᠍ 32196-20

1. Isacord 40 0020



### **図** 32196-21

1. Isacord 40 0020



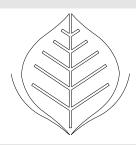
### **図** 32196-22

1. Isacord 40 0020



### **32196-23**

1. Isacord 40 0020



### **図 32196-24**

1. Isacord 40 0020



### **図** 32196-25

1. Isacord 40 0020



### **■** 32196-26

1. Isacord 40 0020



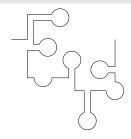
### **■** 32196-27

1. Isacord 40 0020



### **32196-28**

1. Isacord 40 0020



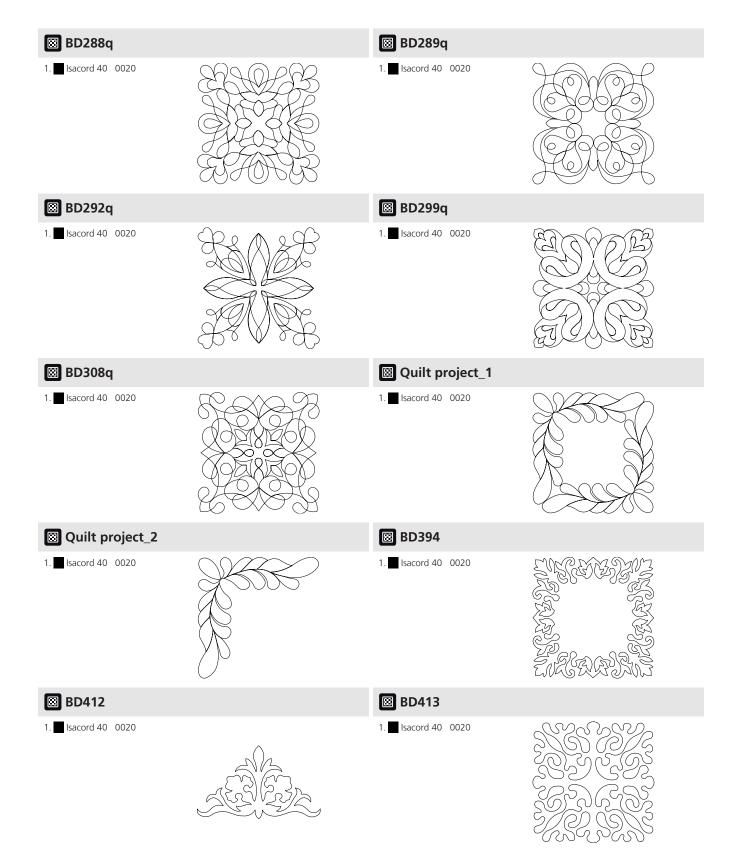
### **図** 32196-29

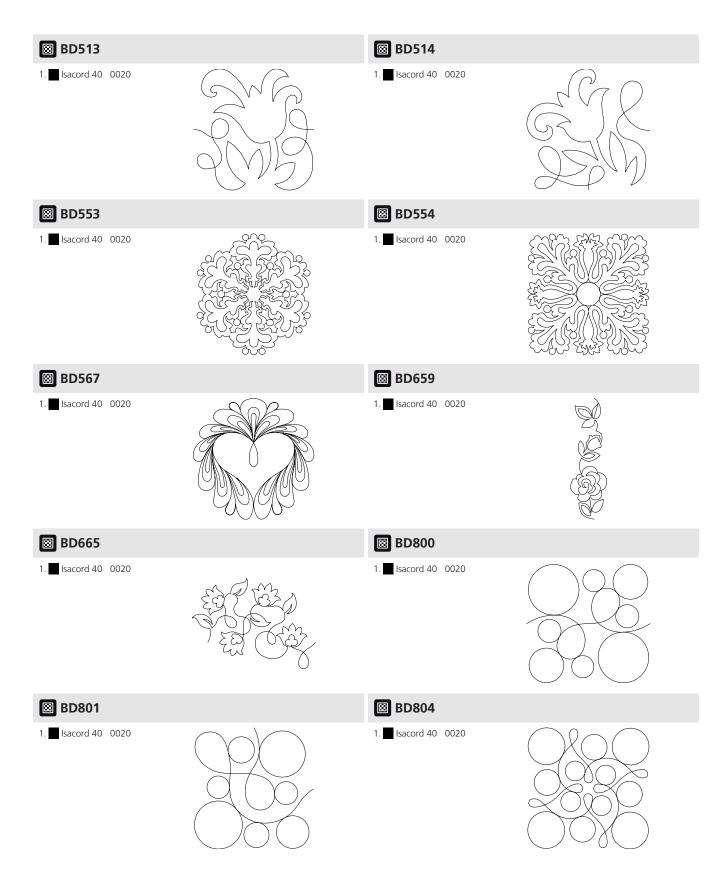


# **■ 32196-30 図** Basics\_02s 1. Isacord 40 0020 1. Isacord 40 0020 **■** Basics\_01 **■** Basics\_05s 1. Isacord 40 0020 1. Isacord 40 0020 **図** Basics\_02 **■** Basics\_03 1. Isacord 40 0020 1. Isacord 40 0020 **■** Basics\_04 **■** Basics\_04\_corner 1. Isacord 40 0020 1. Isacord 40 0020 **図** Basics\_05 **図** 12416-15q 1. Isacord 40 0020 1. Isacord 40 0020

## **3** 12416-36q **図** 12416-38q 1. Isacord 40 0020 1. Isacord 40 0020 **12591-14\_1 12591-14\_2** 1. Isacord 40 0020 1. Isacord 40 0020 **12607-28**q **12607-33**q 1. Isacord 40 0020 1. Isacord 40 0020 **図** 12756-01q **図** 12756-02q 1. Isacord 40 0020 1. Isacord 40 0020 **12756-03**q **図** 12756-11q 1. Isacord 40 0020 1. Isacord 40 0020

# **3** 12756-18q **図** 12756-19q 1. Isacord 40 0020 1. Isacord 40 0020 **12756-22**q **図** 80185-01q 1. Isacord 40 0020 1. Isacord 40 0020 **図** 80185-07q **80185-03**q 1. Isacord 40 0020 1. Isacord 40 0020 **図** 12380-04q **図** 12380-08q 1. Isacord 40 0020 1. Isacord 40 0020 **12380-09**q 1. Isacord 40 0020 1. Isacord 40 0020



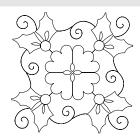


# BD837 1. Isacord 40 0020

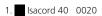


### **⊠** HE959

1. Isacord 40 0020



### **図** Panto\_Candle





### **■** Villette

1. Isacord 40 0020



### **図 Villette2**

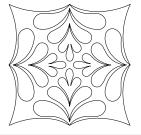
1. Isacord 40 0020



### **Amandy Murphy**

### 図 80202-01

1. Isacord 40 0020



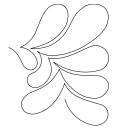
### **№** 80202-02

1. Isacord 40 0020



### ₿ 80202-03

1. Isacord 40 0020



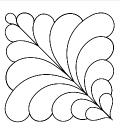
### **80202-04**



## **■ 80202-05 図 80202-05s** 1. Isacord 40 0020 1. Isacord 40 0020 80202-06 80257-01 1. Isacord 40 0020 1. Isacord 40 0020 **図 80257-02 80257-03** 1. Isacord 40 0020 1. Isacord 40 0020 **■** 80257-04 **■** 80257-05 1. Isacord 40 0020 1. Isacord 40 0020 **図** 80257-06 **図** 80257-05s 1. Isacord 40 0020 1. Isacord 40 0020

### ፟ 80258-02

1. Isacord 40 0020



### **図** 80258-03

1. Isacord 40 0020



### 80258-04

1. Isacord 40 0020



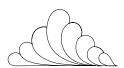
### **図** 80258-05

1. Isacord 40 0020



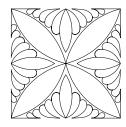
### **80258-06**

1. Isacord 40 0020



### **図 80259-01**

1. Isacord 40 0020



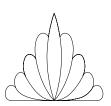
### **■** 80259-02

1. Isacord 40 0020



### **80259-03**

1. Isacord 40 0020

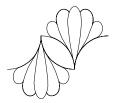


### 図 80259-04

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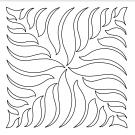
### **図** 80259-05



## **■** 80259-06 **■** 80260-02 1. Isacord 40 0020 1. Isacord 40 0020 80260-03 **80260-06** 1. Isacord 40 0020 1. Isacord 40 0020 **図 80210-07s** 80210-03 1. Isacord 40 0020 1. Isacord 40 0020 **■** 80210-05 **■** 80210-06 1. Isacord 40 0020 1. Isacord 40 0020 80210-08 **図** 80210-09 1. Isacord 40 0020 1. Isacord 40 0020

### **■ 80210-01**

1. Isacord 40 0020



### **図** 80210-04

1. Isacord 40 0020



### 80210-07

1. Isacord 40 0020



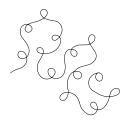
#### LoopedFlowers\_ Border1

1. Isacord 40 0020



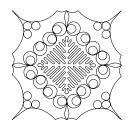
### LoopedFlowers\_ Panto2

1. Isacord 40 0020



#### PebblesShell\_ Square

1. Isacord 40 0020



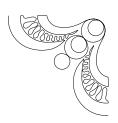
### PebblesShells\_ Border

1. Isacord 40 0020



#### PebblesShells\_ Corner

1. Isacord 40 0020



#### PebblesShells\_ Panto

1. Isacord 40 0020

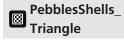


#### PebblesShells\_ Segment



### PebblesShells\_ Segment1

1. Isacord 40 0020



1. Isacord 40 0020





#### SwirlsPaisley\_ Border

1. Isacord 40 0020



#### SwirlsPaisley\_ Corner

1. Isacord 40 0020



#### SwirlsPaisley\_ Panto

1. Isacord 40 0020



#### SwirlsPaisley\_ Segment

1. Isacord 40 0020



#### SwirlsPaisley\_ Segment1

1. Isacord 40 0020



## SwirlsPaisley\_ Square1

1. Isacord 40 0020



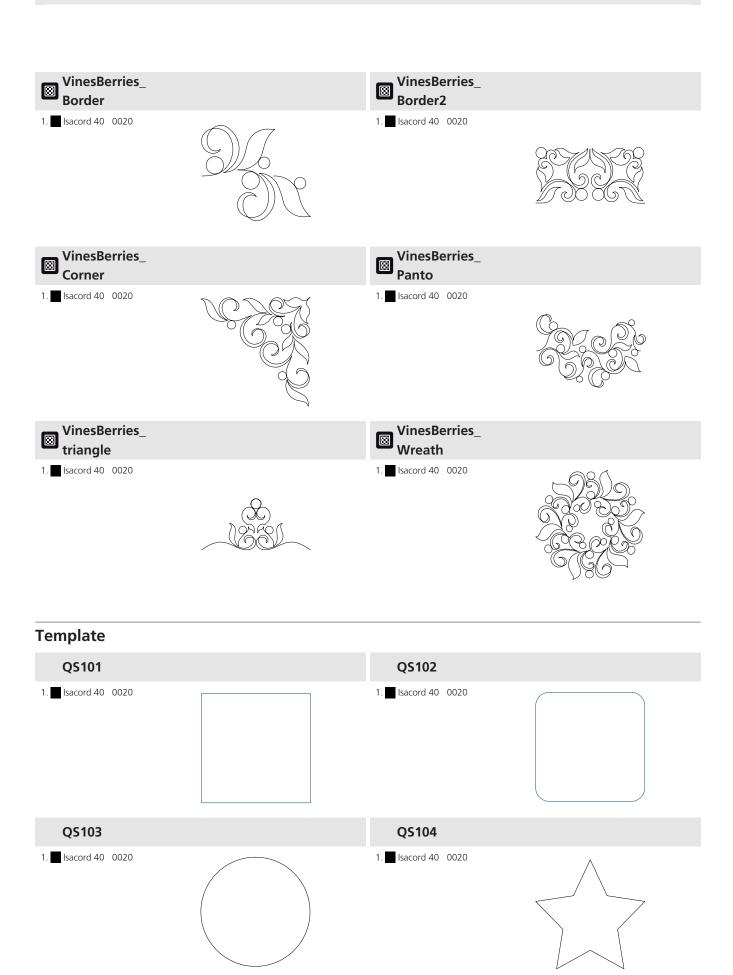
### SwirlsPaisley\_ Square2

1. Isacord 40 0020



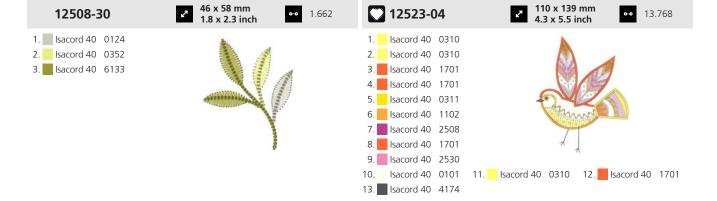
### VinesBerries\_ Block

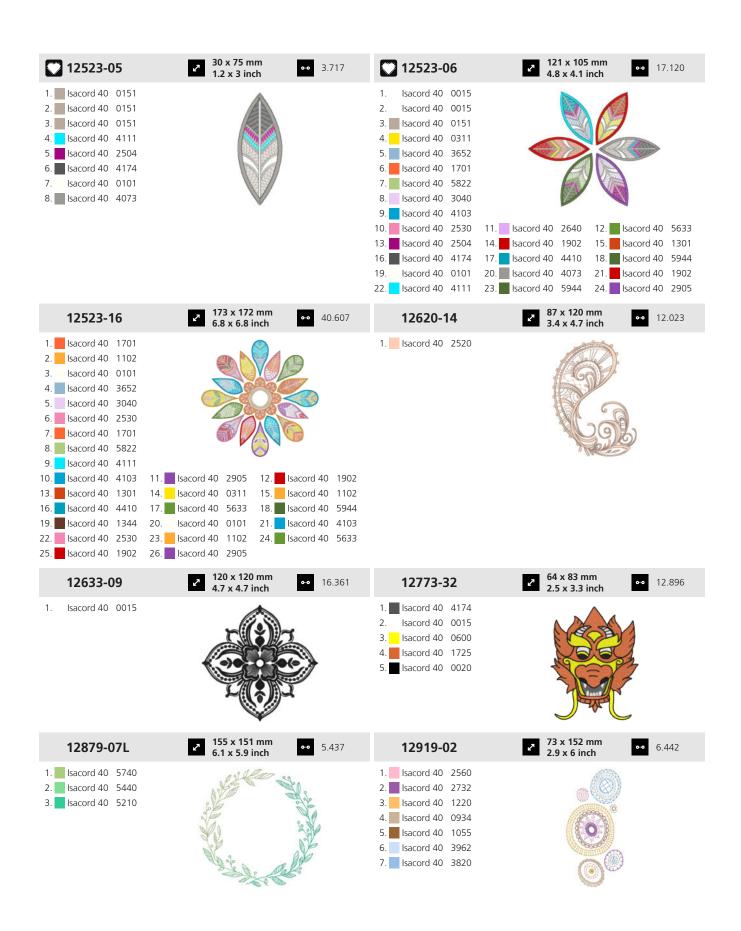


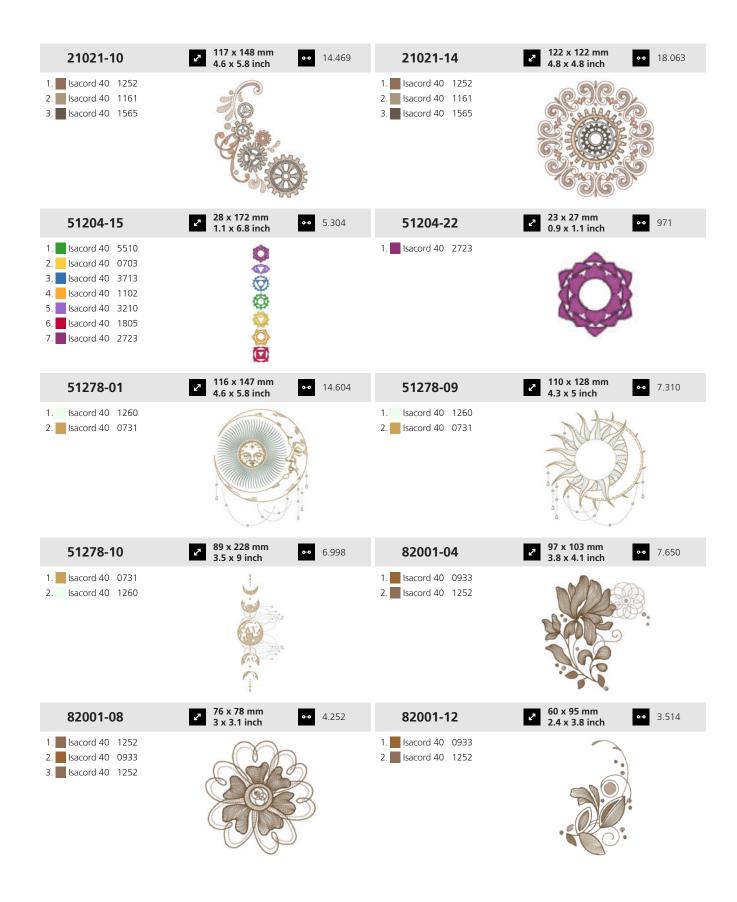


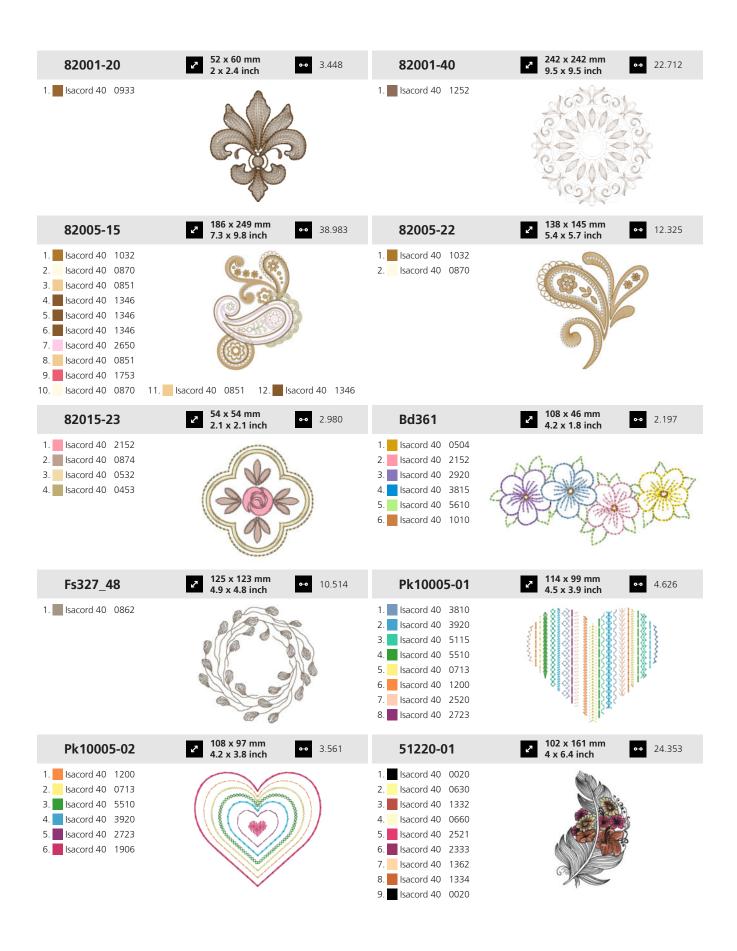
# QS105 QS106 1. Isacord 40 0020 1. Isacord 40 0020 QS107 QS108 1. Isacord 40 0020 1. Isacord 40 0020 QS109 QS110 1. Isacord 40 0020 1. Isacord 40 0020 QS111 QS112 1. Isacord 40 0020 1. Isacord 40 0020 QS113 1. Isacord 40 0020

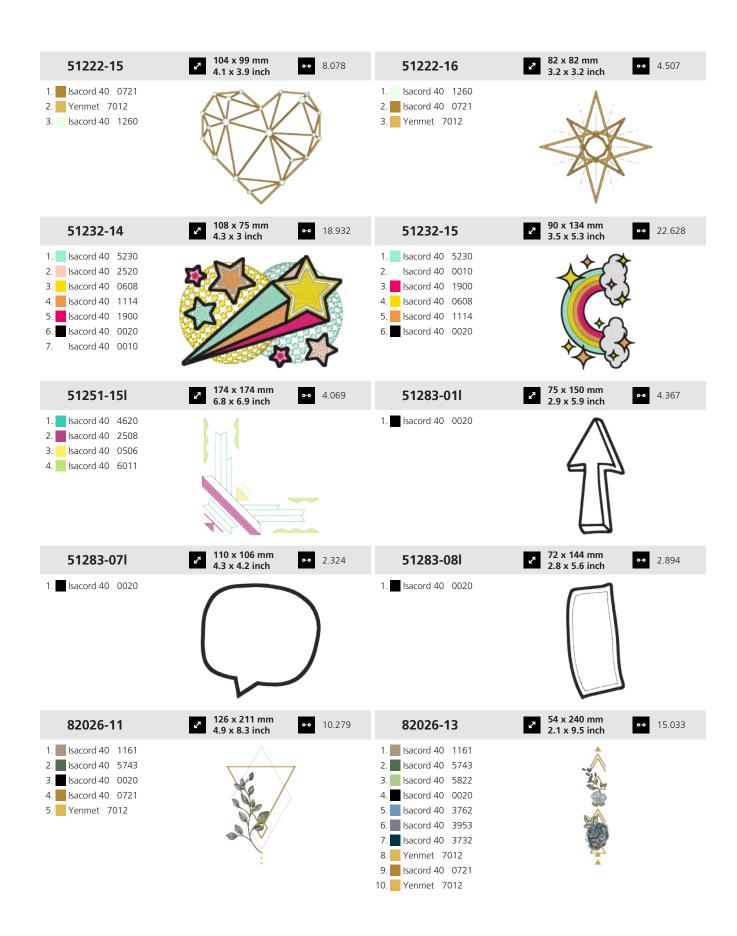
#### 19.3 Accents 100 x 37 mm 3.9 x 1.4 inch 172 x 50 mm 6.8 x 2 inch 12436-29 2.464 12440-19 3.005 1. Isacord 40 1543 1. YLI variations 8016 2. Isacord 40 1521 2. YLI variations 8015 3. Yenmet 7030 3. Isacord 40 2761 4. Isacord 40 1543 127 x 120 mm 124 x 124 mm 4.9 x 4.9 inch 12445-11 12445-13 ⊶ 11.385 •• 16.595 5 x 4.7 inch 1. Isacord 40 2520 1. Isacord 40 2520 2. Isacord 40 2550 2. Isacord 40 2550 3. Isacord 40 2504 3. Isacord 40 2504 4. Isacord 40 2520 4. Isacord 40 2520 5. Isacord 40 2715 5. Isacord 40 2715 46 x 60 mm 1.8 x 2.4 inch 44 x 34 mm 1.8 x 1.3 inch 12508-12 12508-21 2.629 1.789 1. Isacord 40 4752 1. Isacord 40 6133 2. Isacord 40 0352 2. Isacord 40 4752 3. Isacord 40 5552 3. Isacord 40 5552





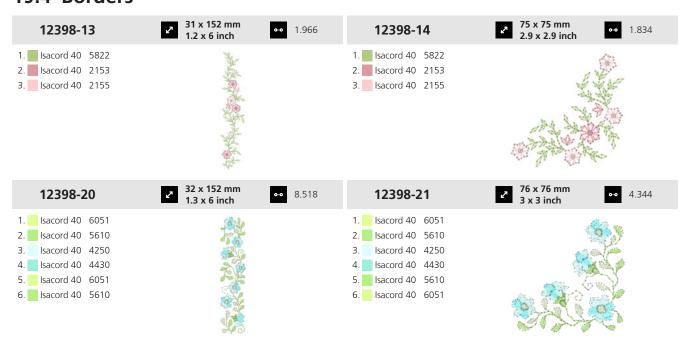


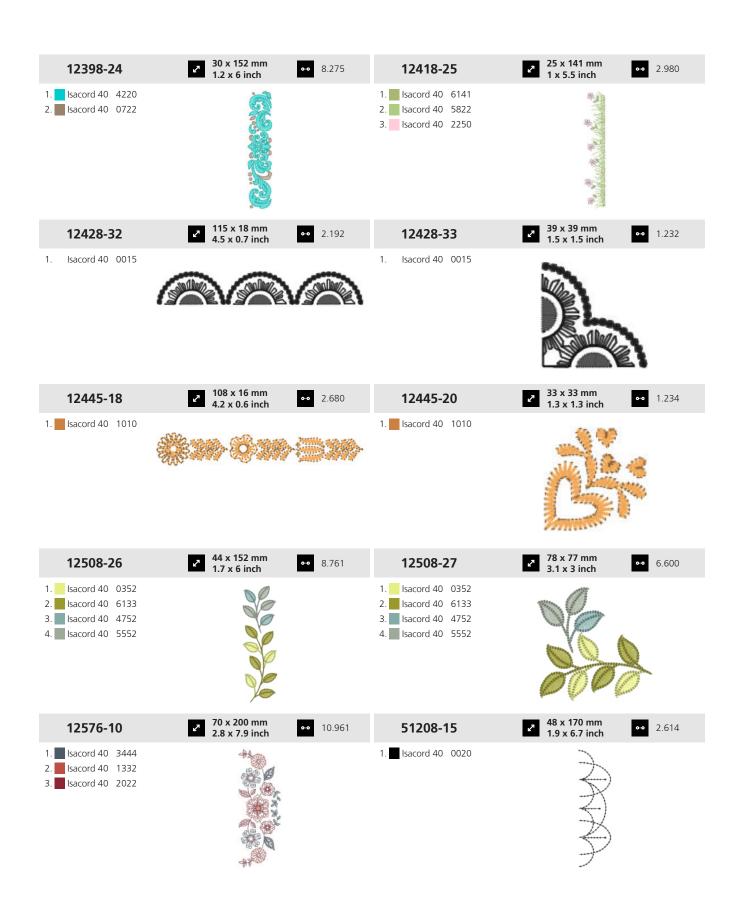


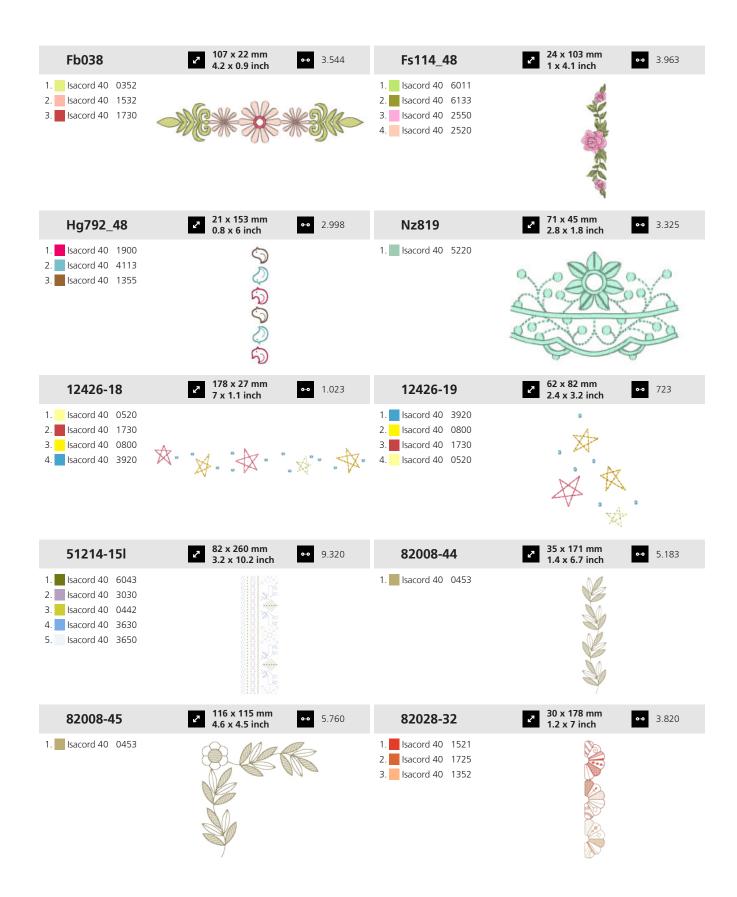


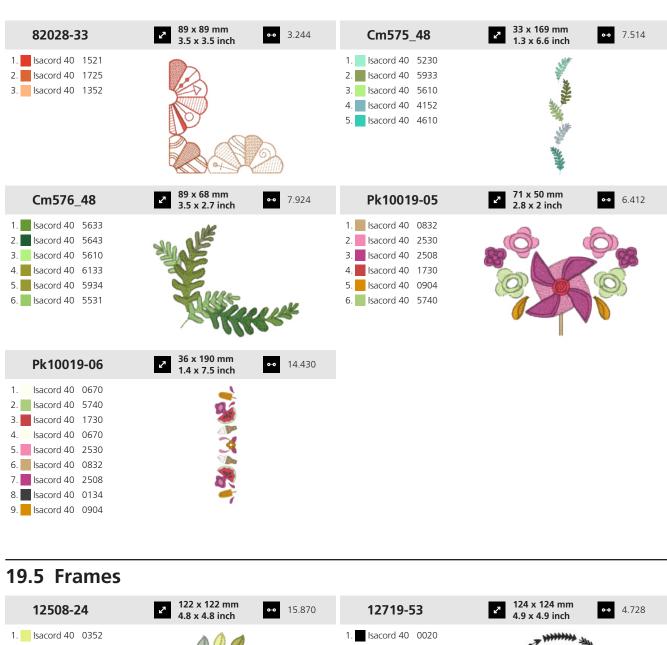


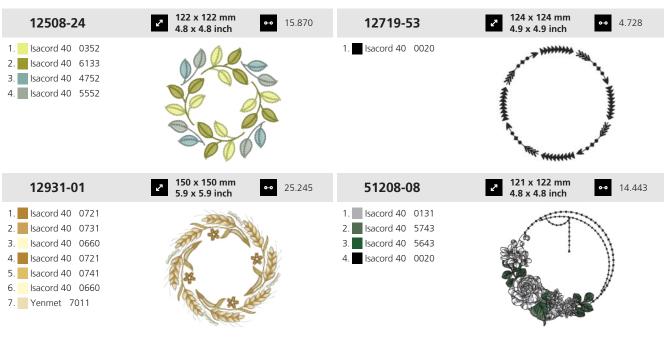
#### 19.4 Borders

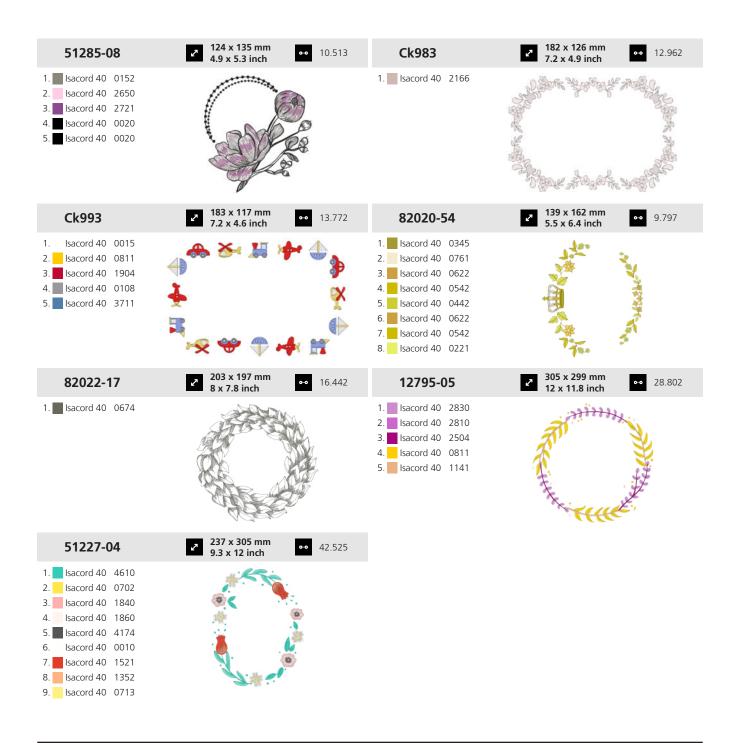




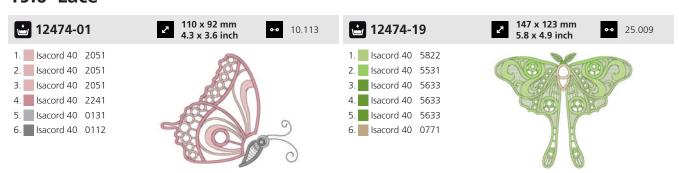


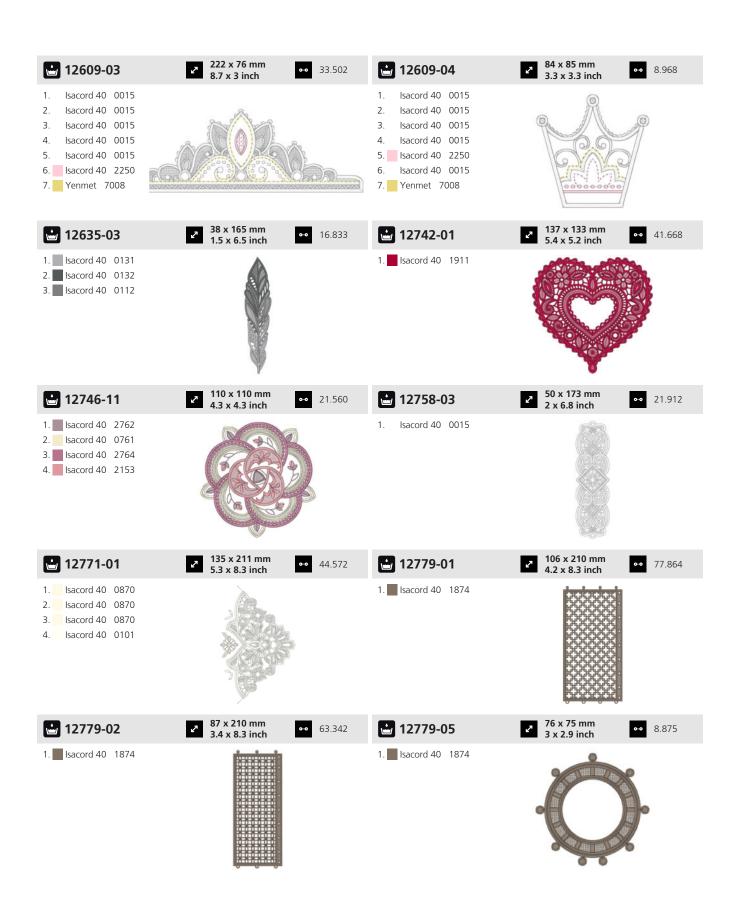


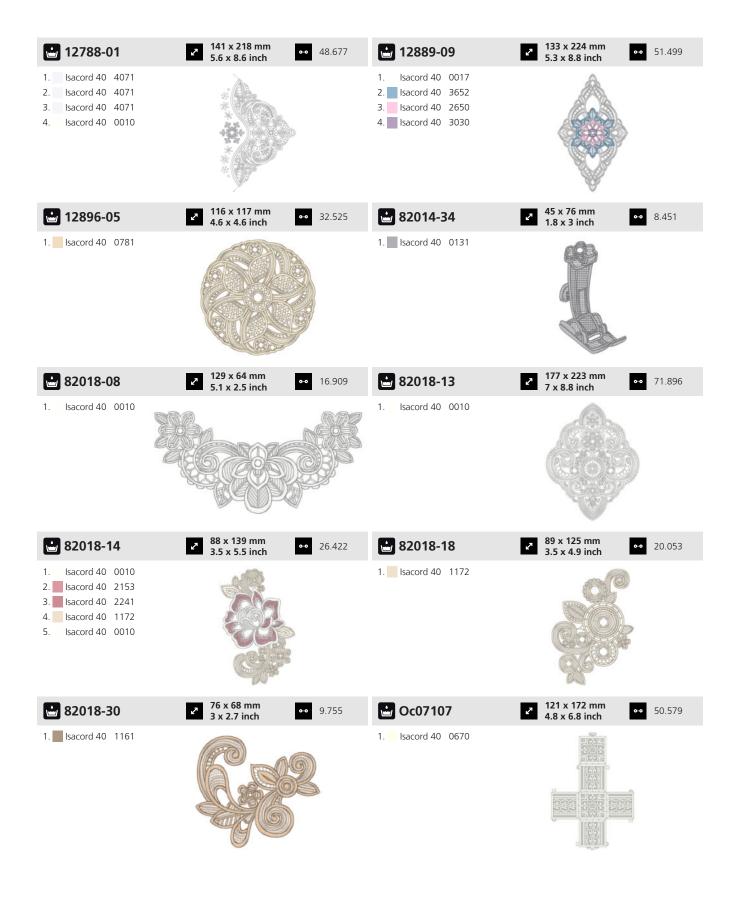




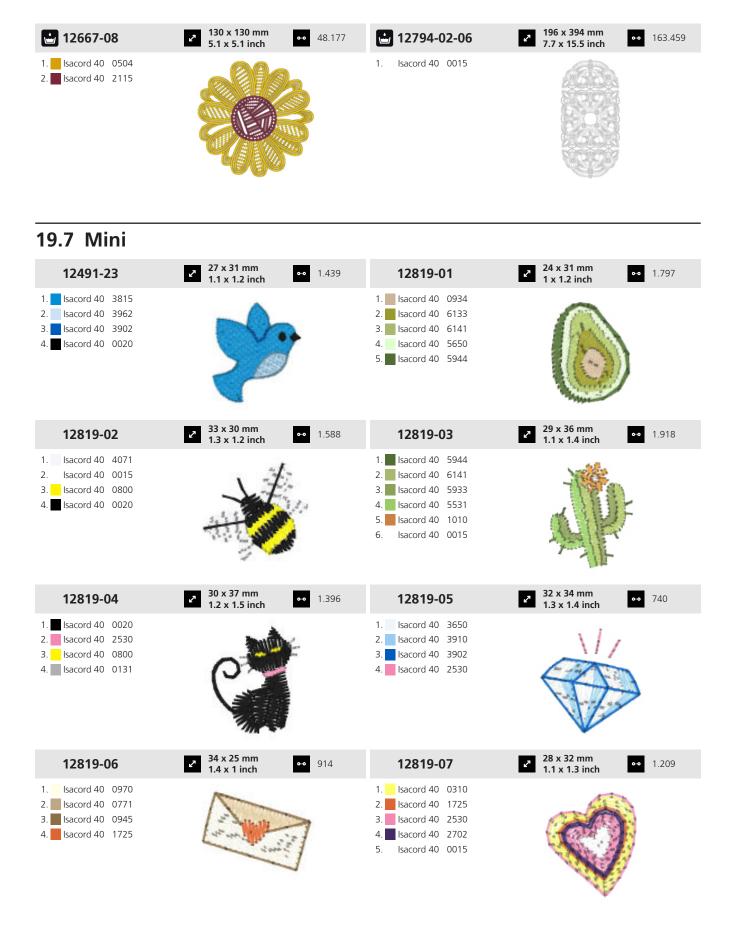
#### 19.6 Lace

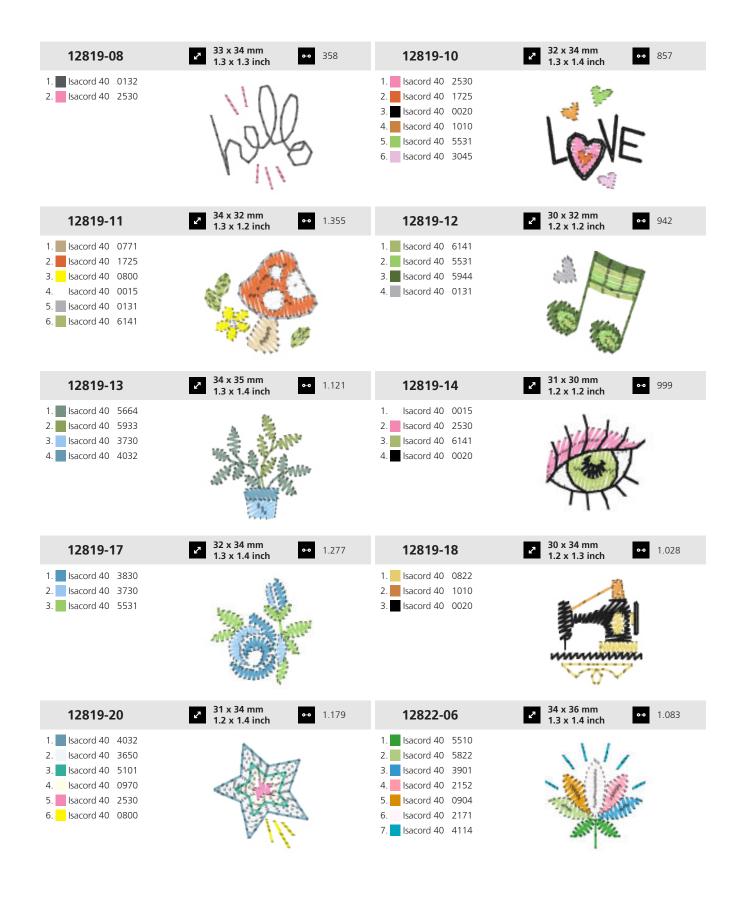


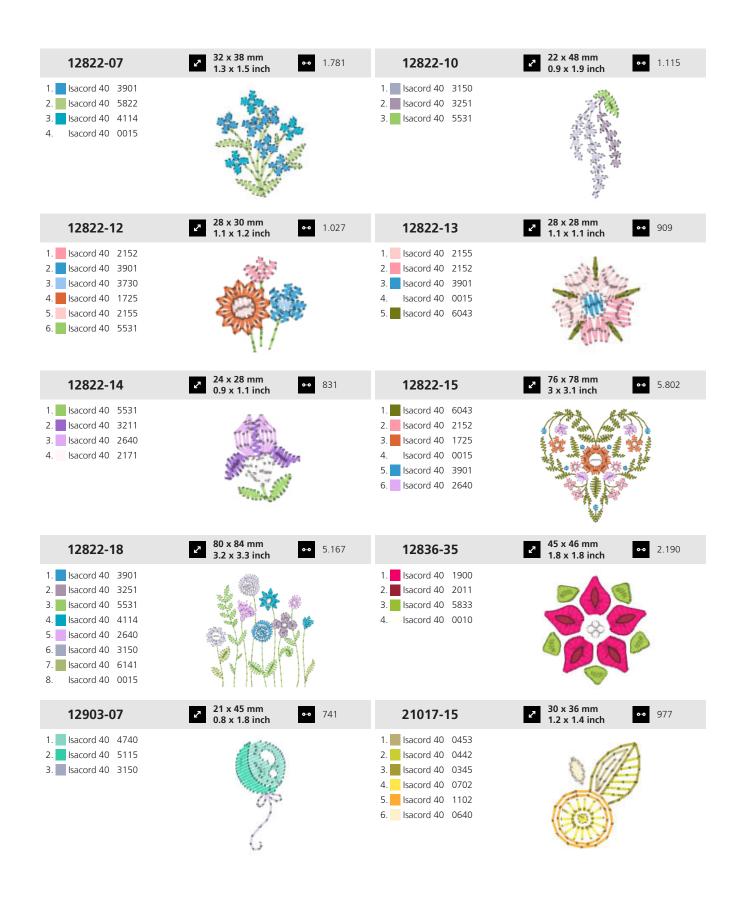




#### 156



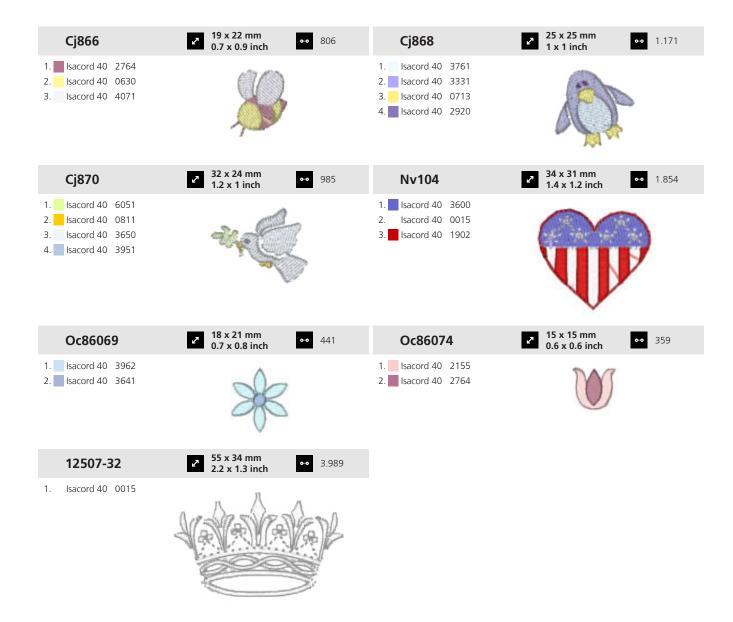




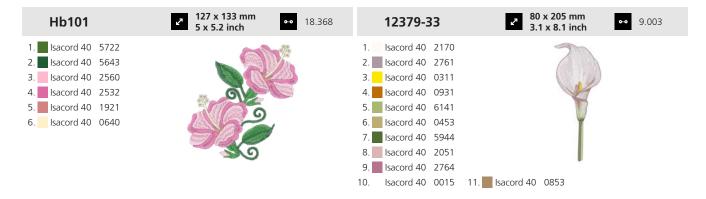


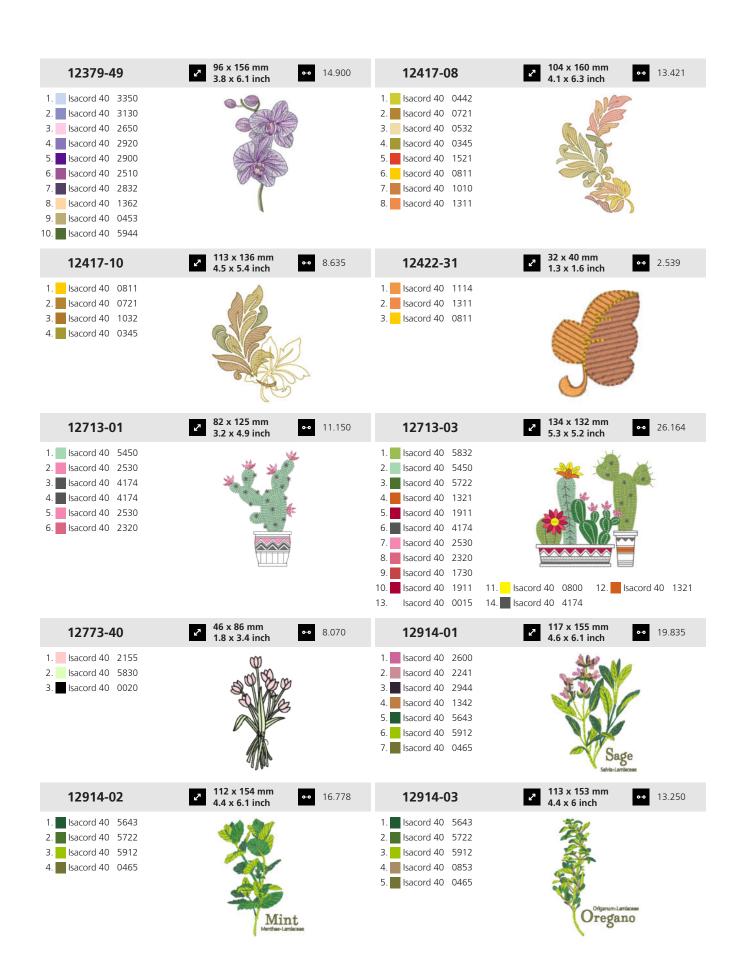
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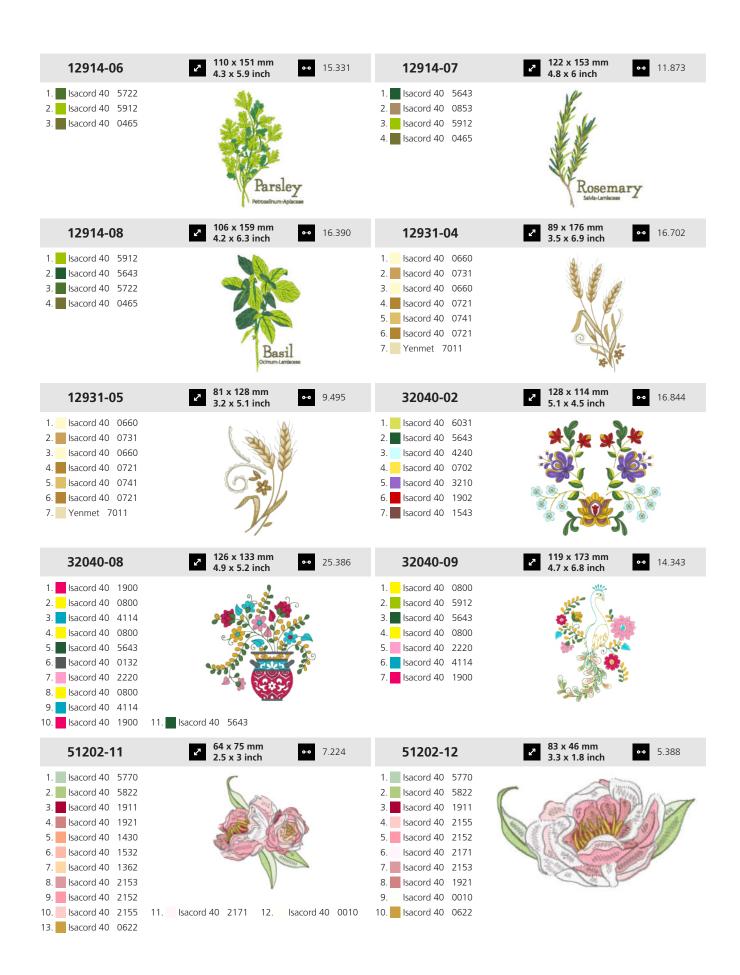
## 19 Embroidery Designs

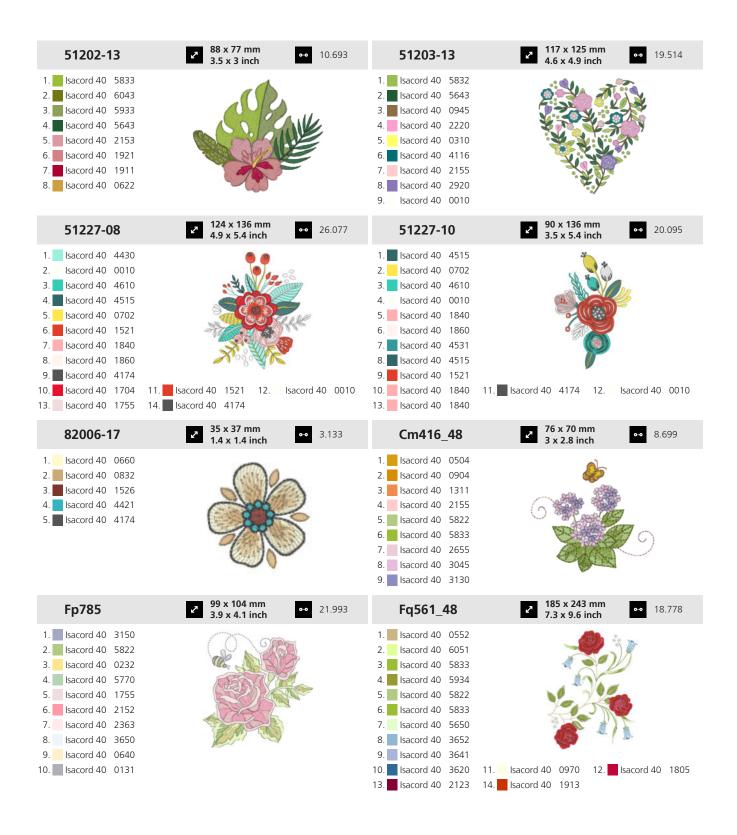


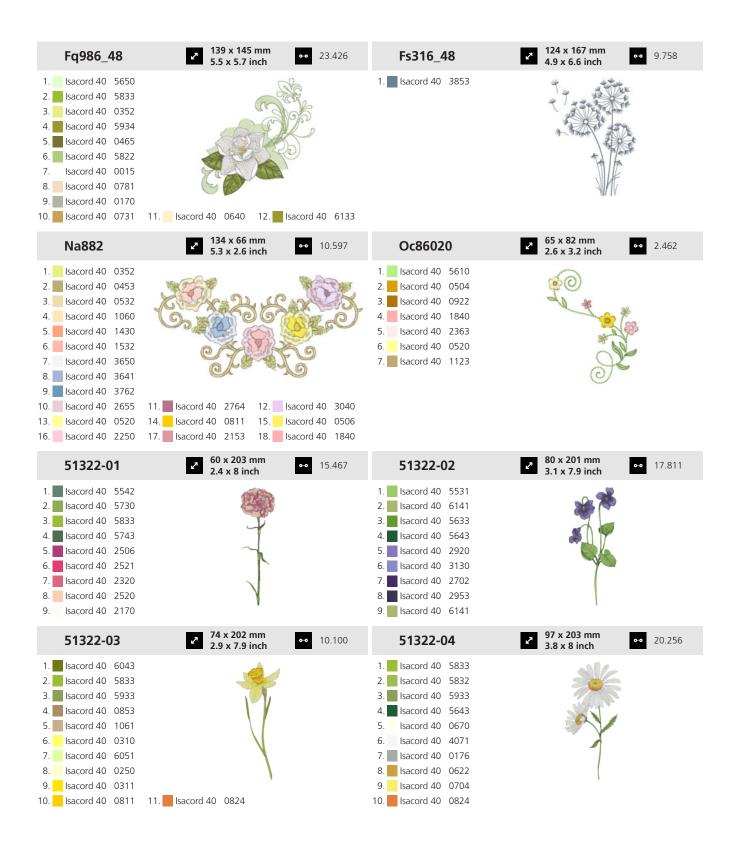
#### 19.8 Flowers

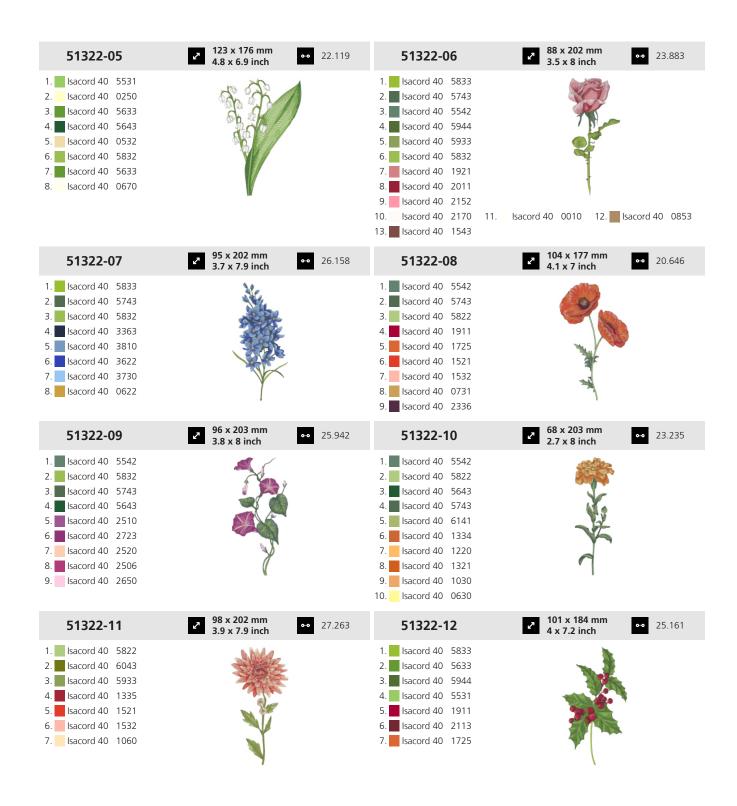


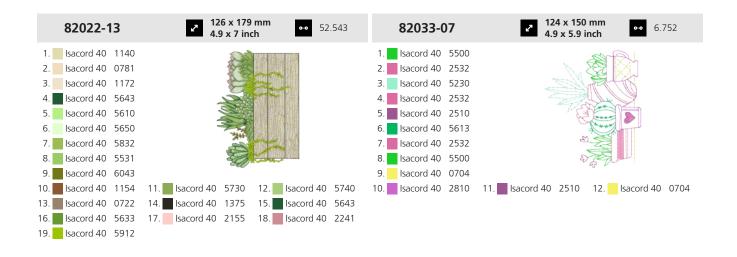




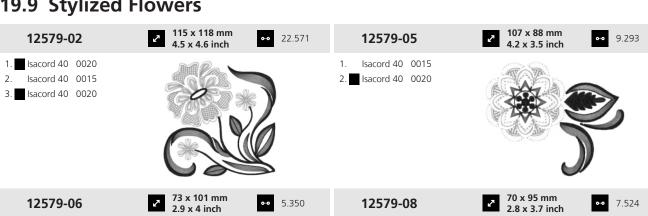








#### 19.9 Stylized Flowers



1. Isacord 40 0015

2. Isacord 40 0020



1. Isacord 40 0020

2. Isacord 40 0015



142 x 144 mm 5.6 x 5.6 inch 93 x 100 mm 3.7 x 3.9 inch 12579-10 ⊶ 11.277 12627-05 · 8.679

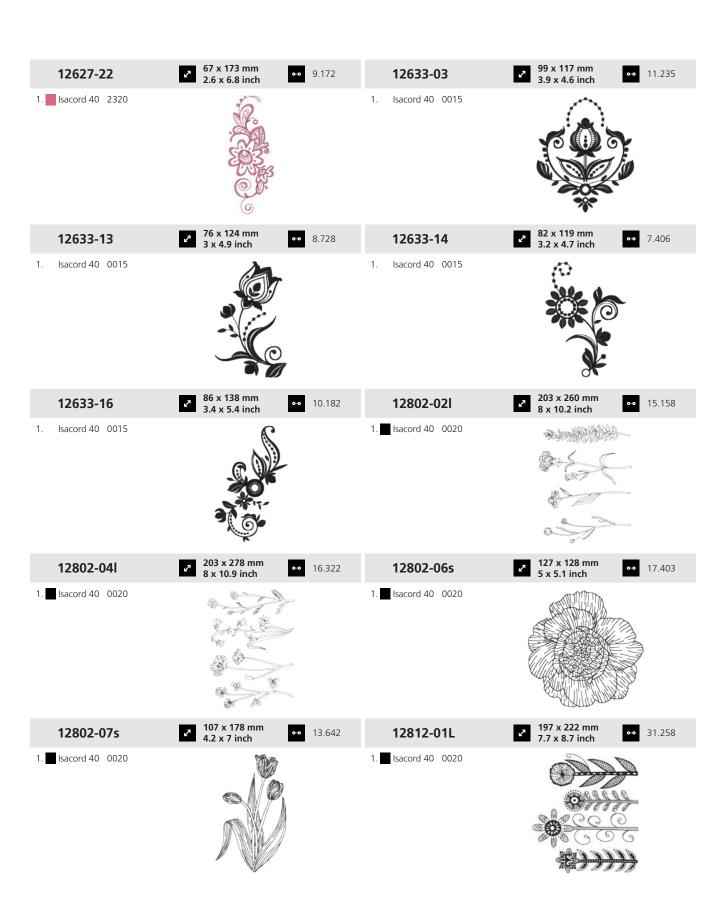
1. Isacord 40 0015

2. Isacord 40 0020

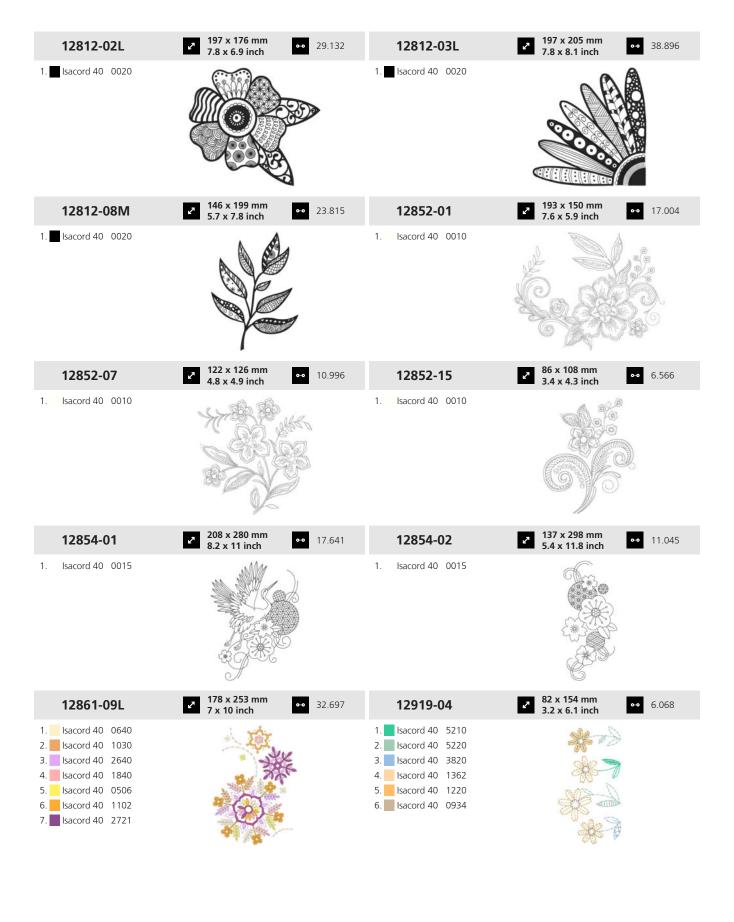


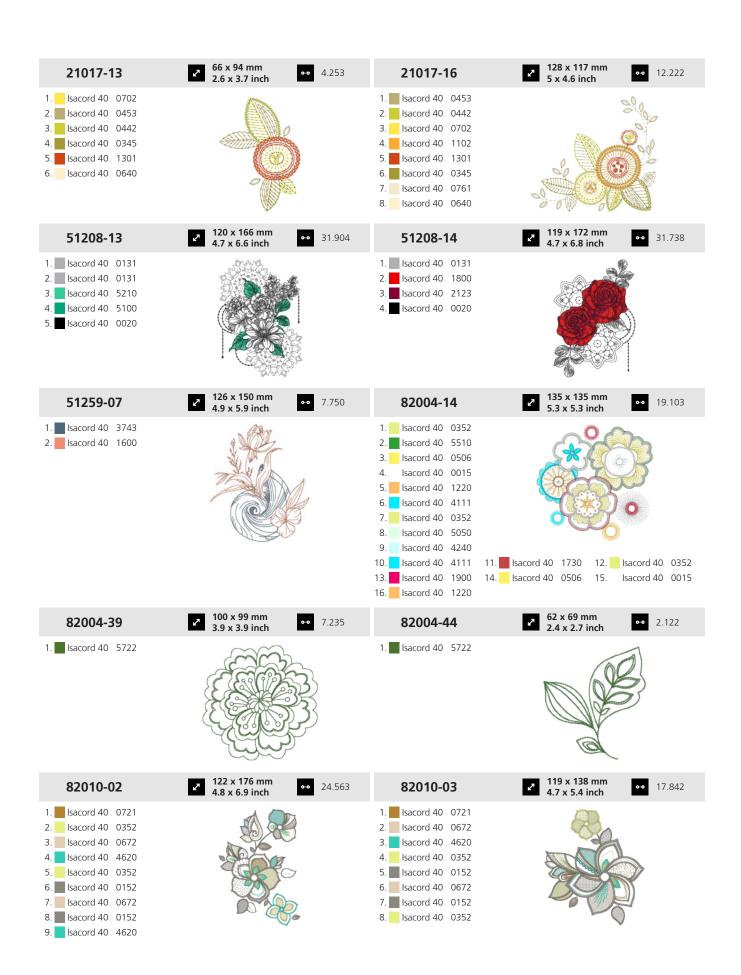
1. Isacord 40 5230



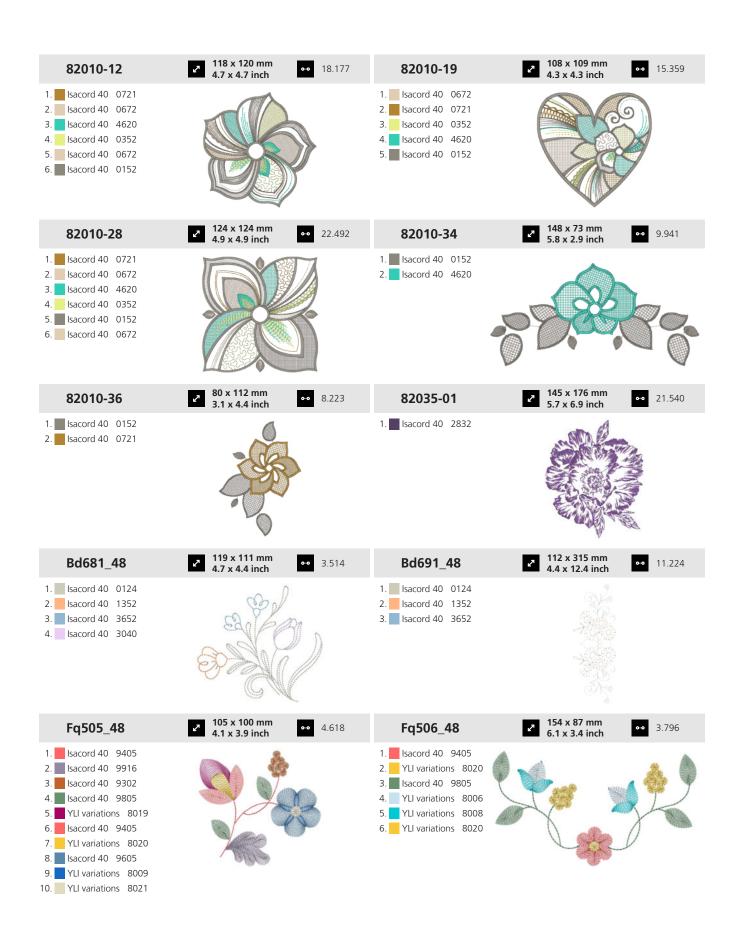


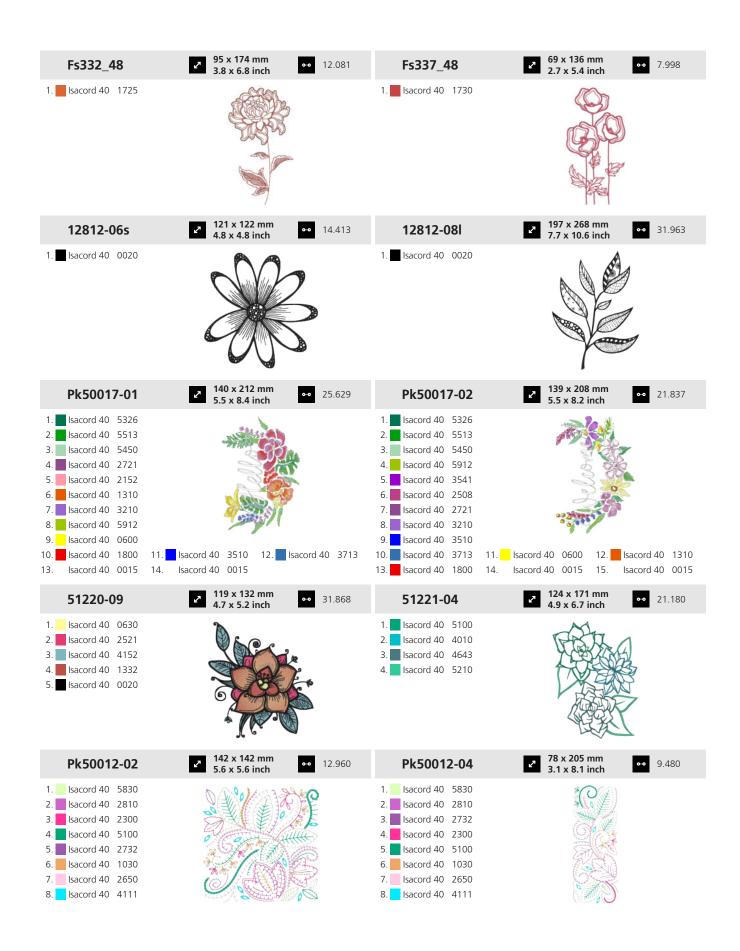
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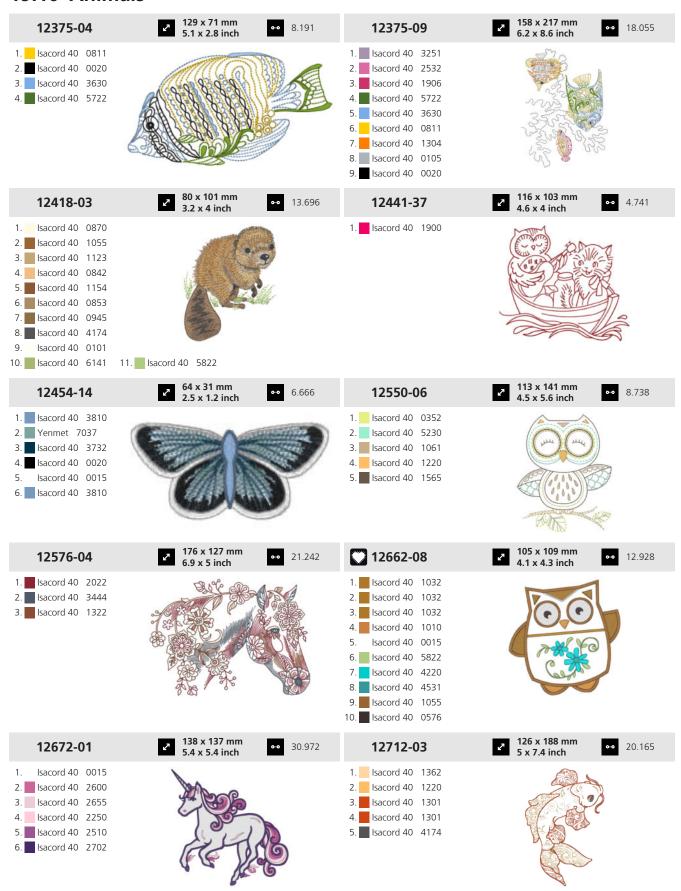


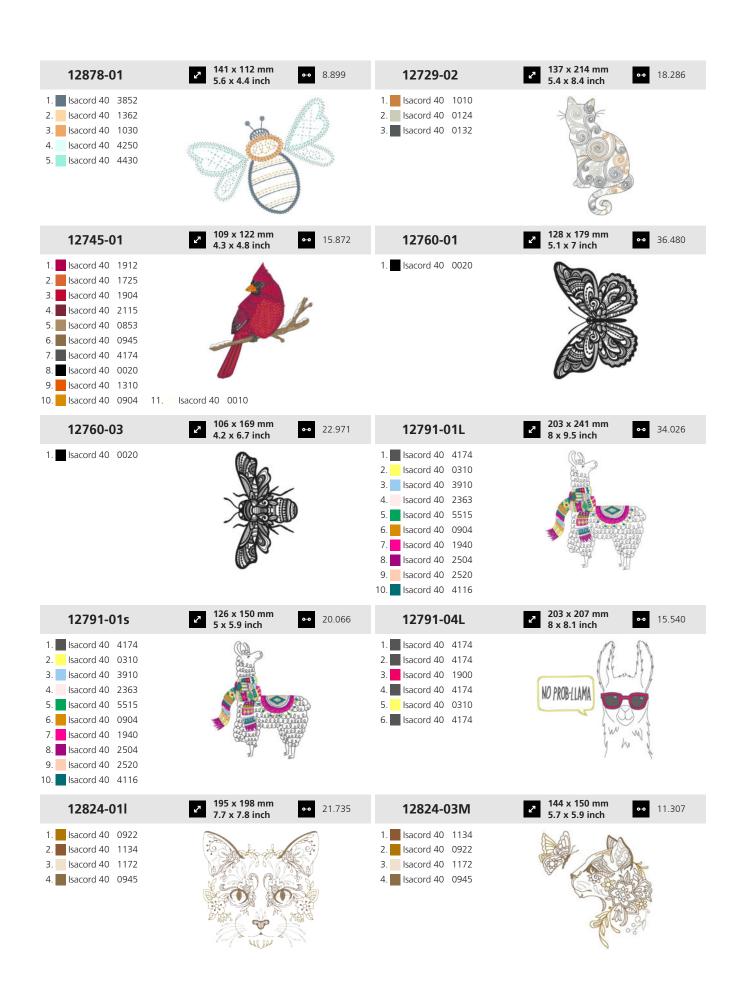
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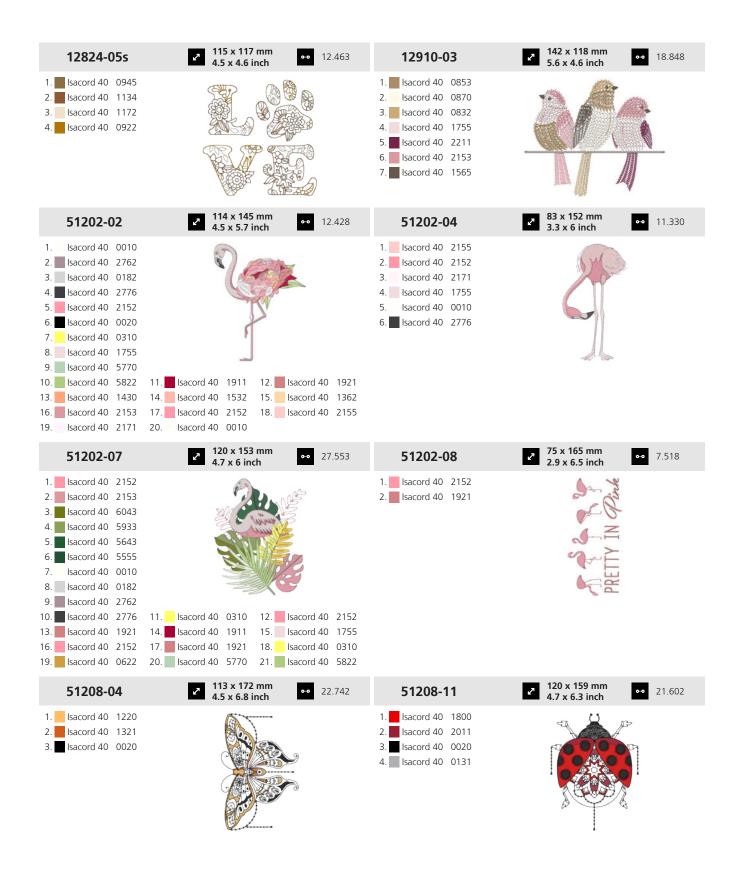


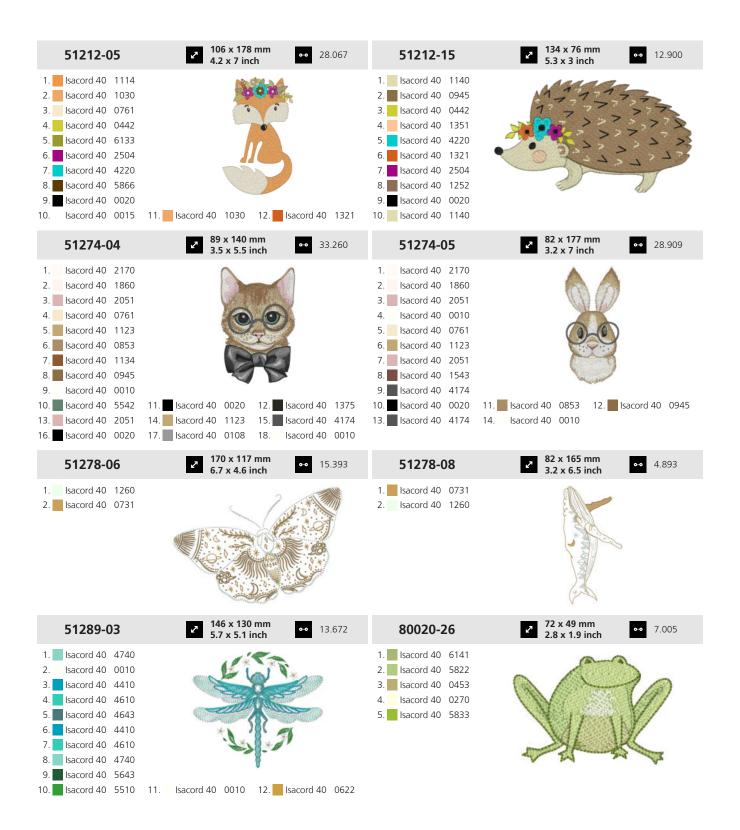


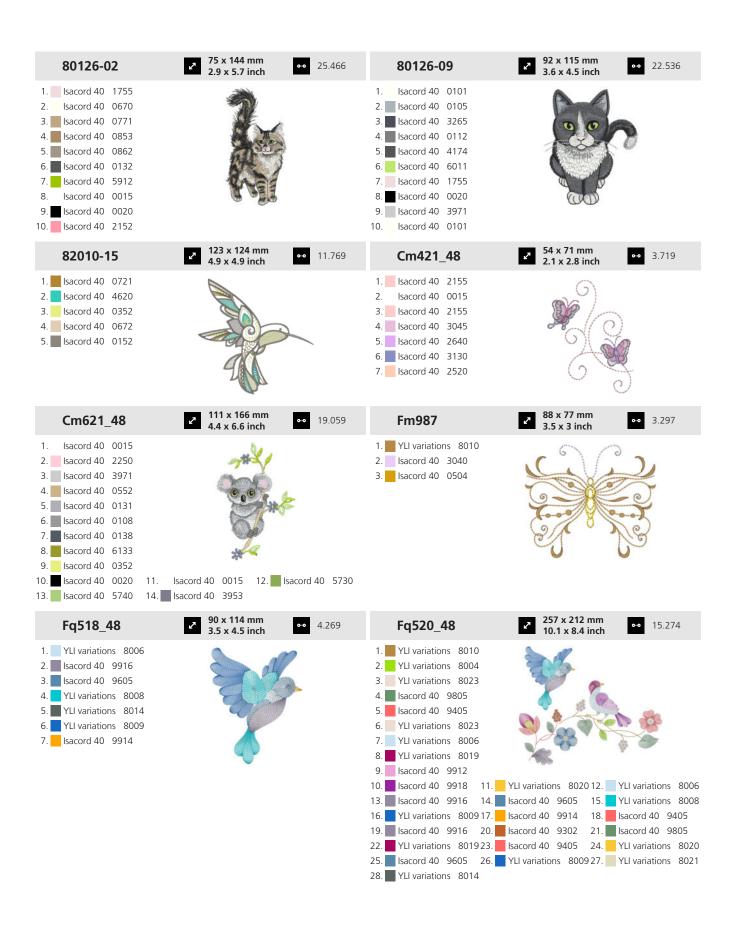
#### 19.10 Animals

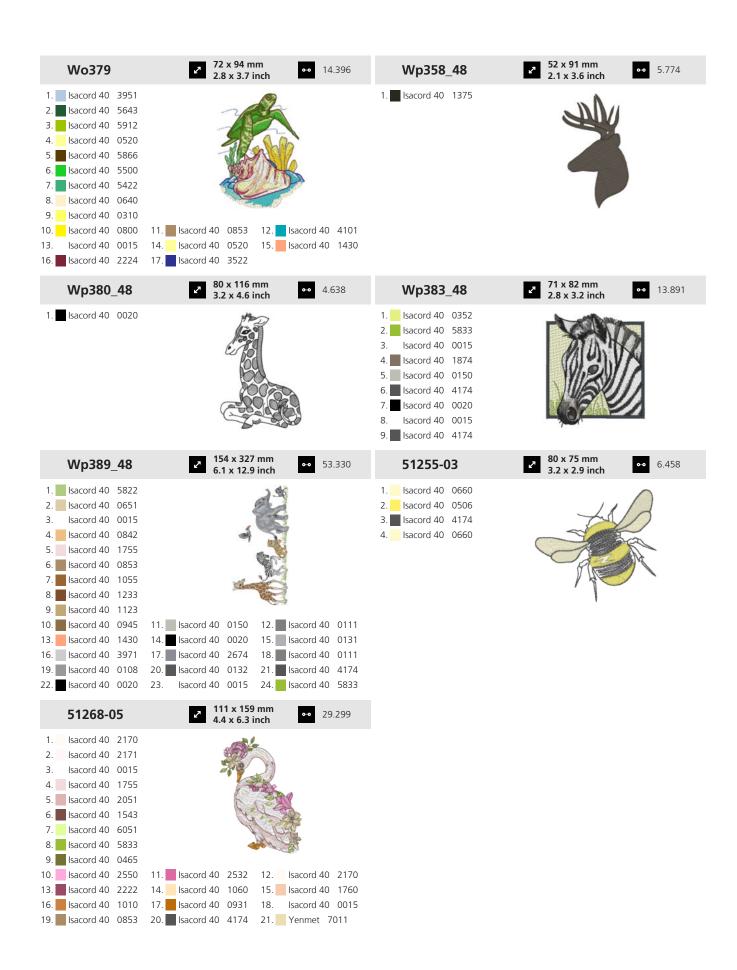




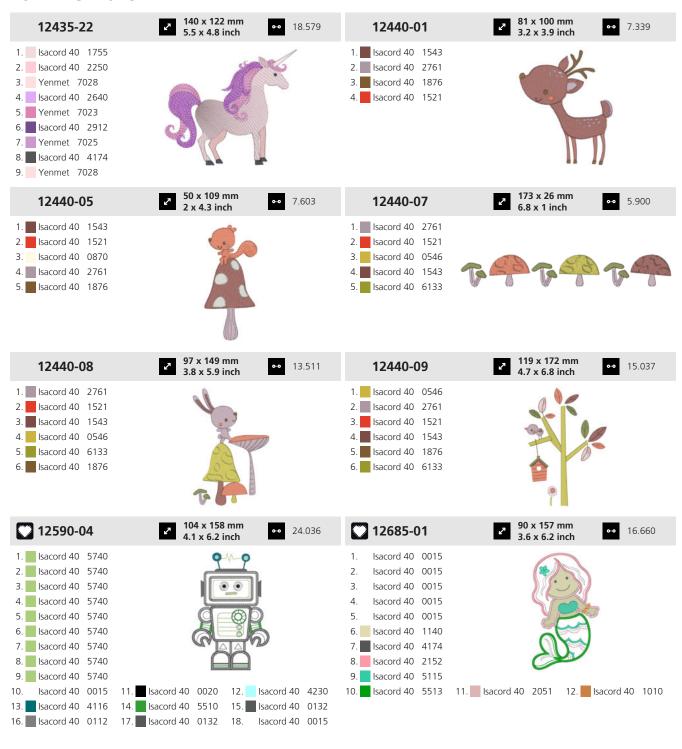


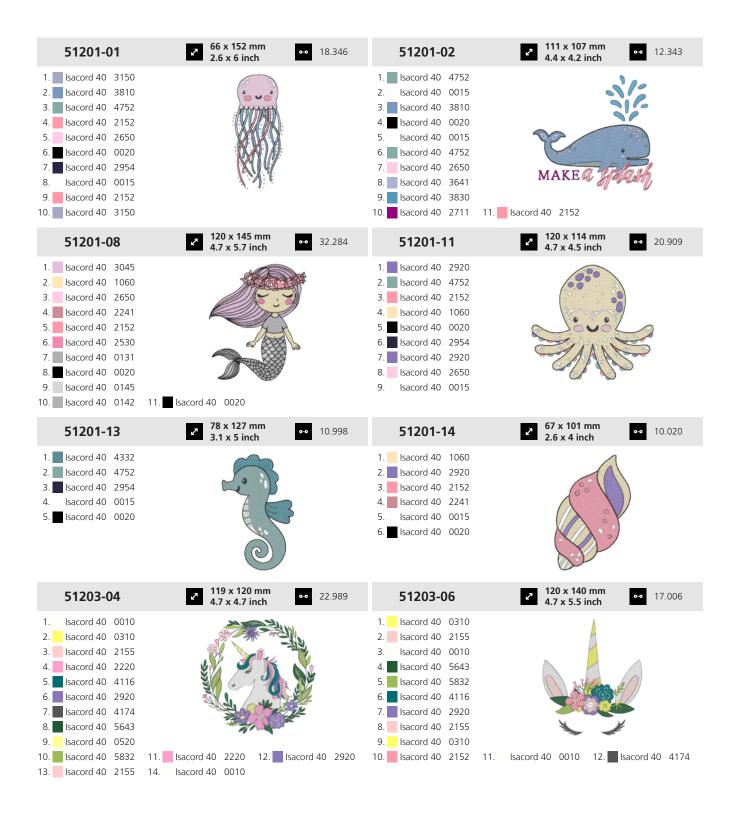


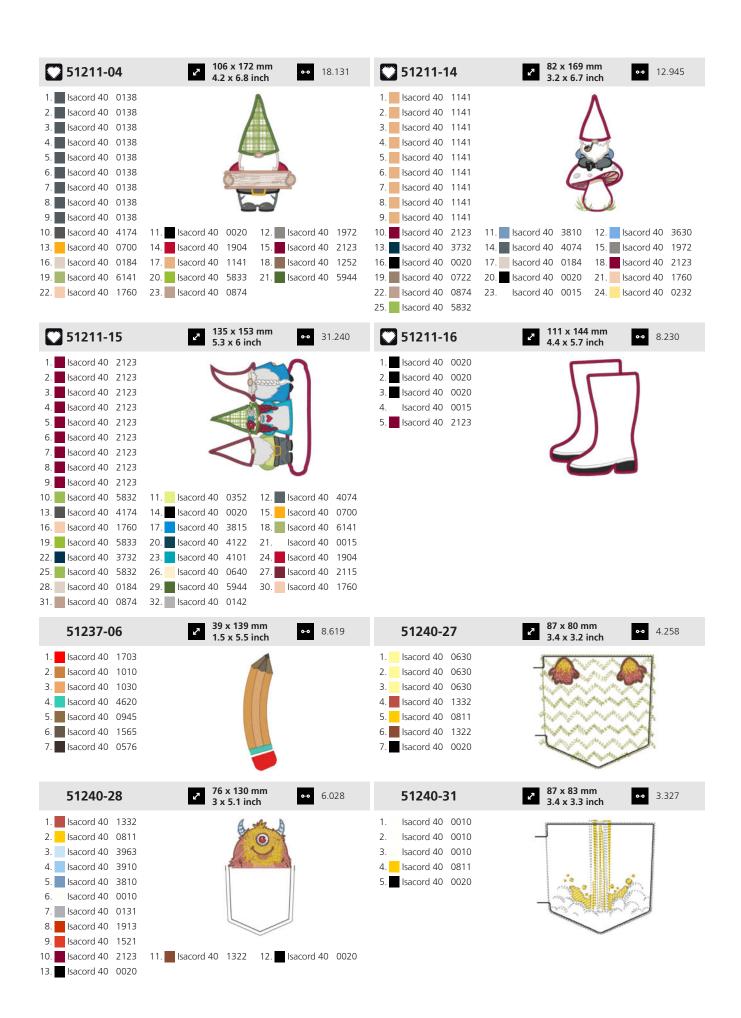


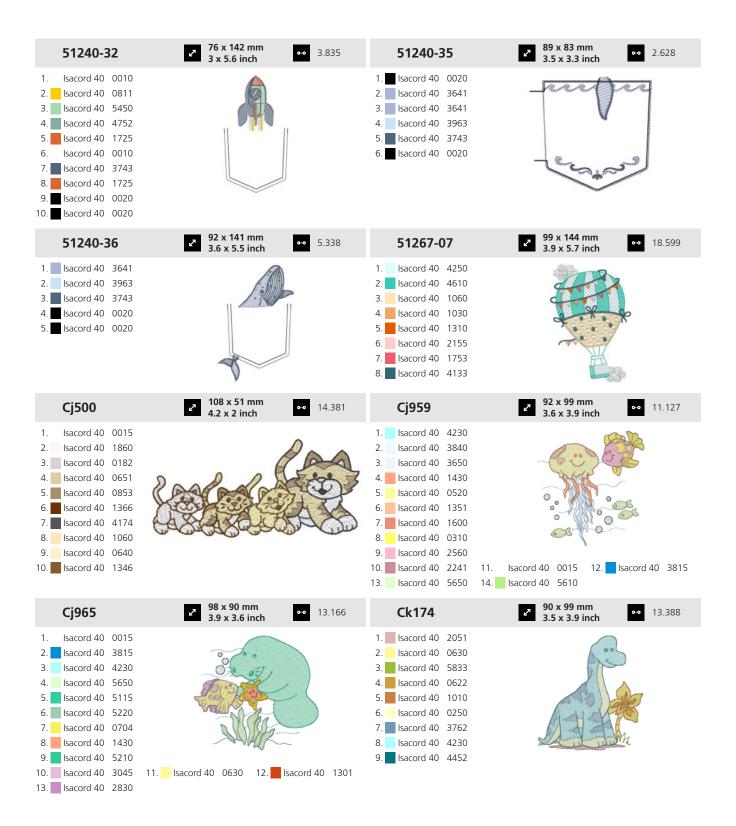


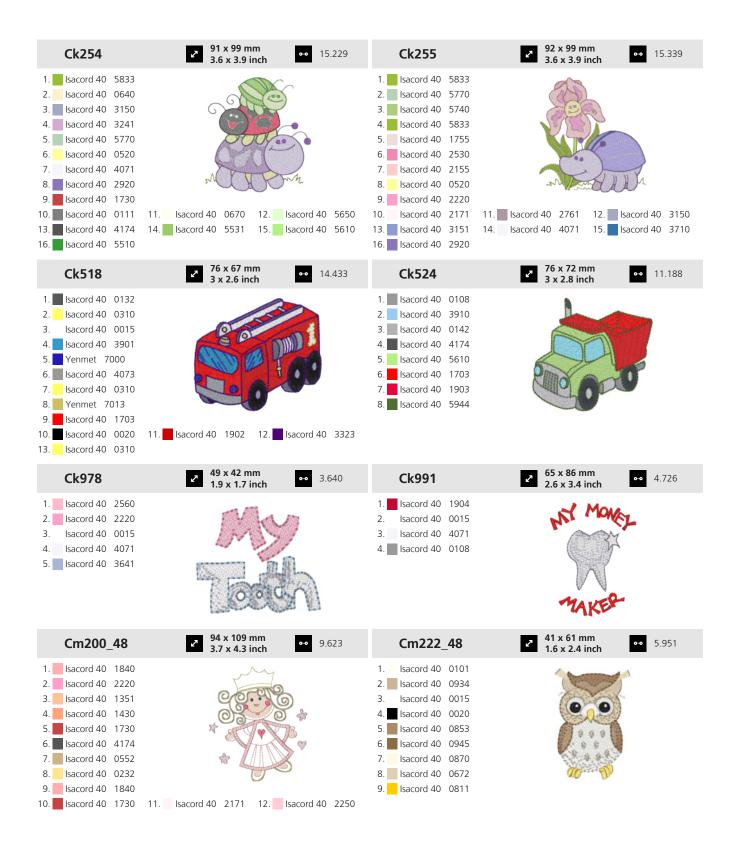
#### 19.11 Children

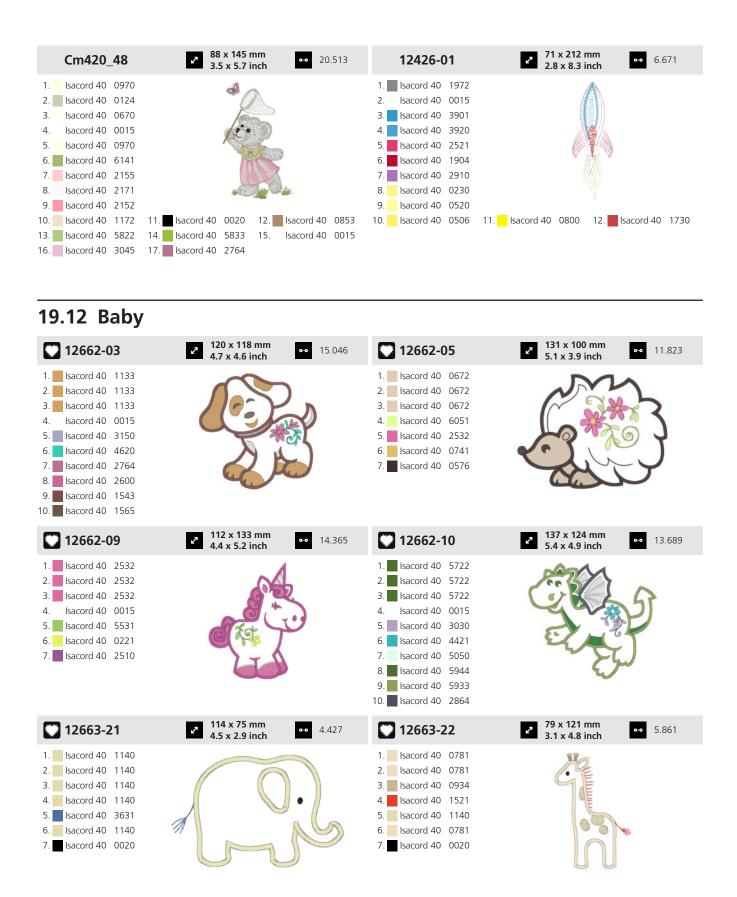


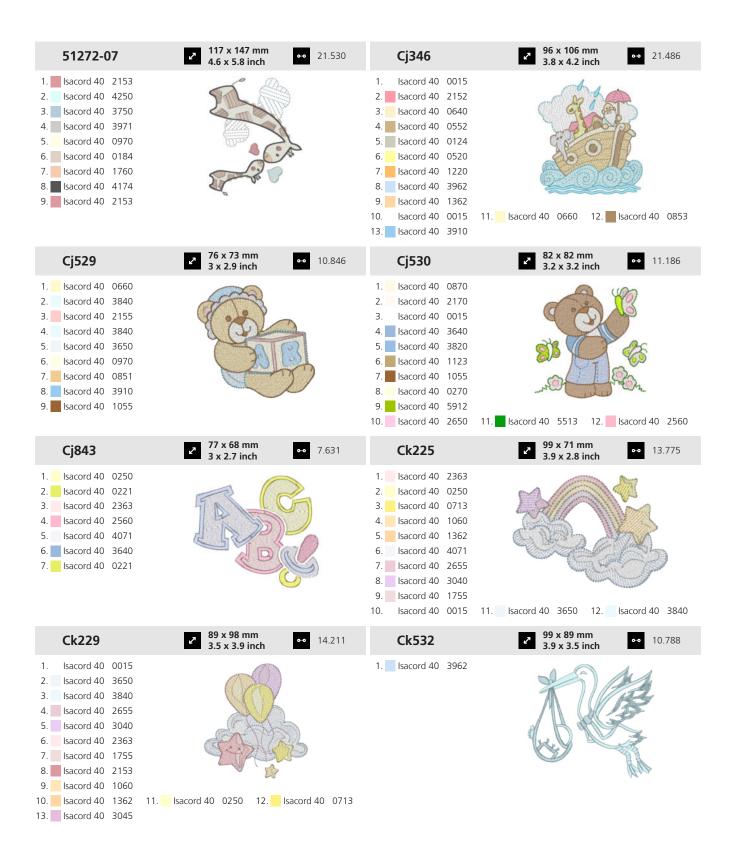


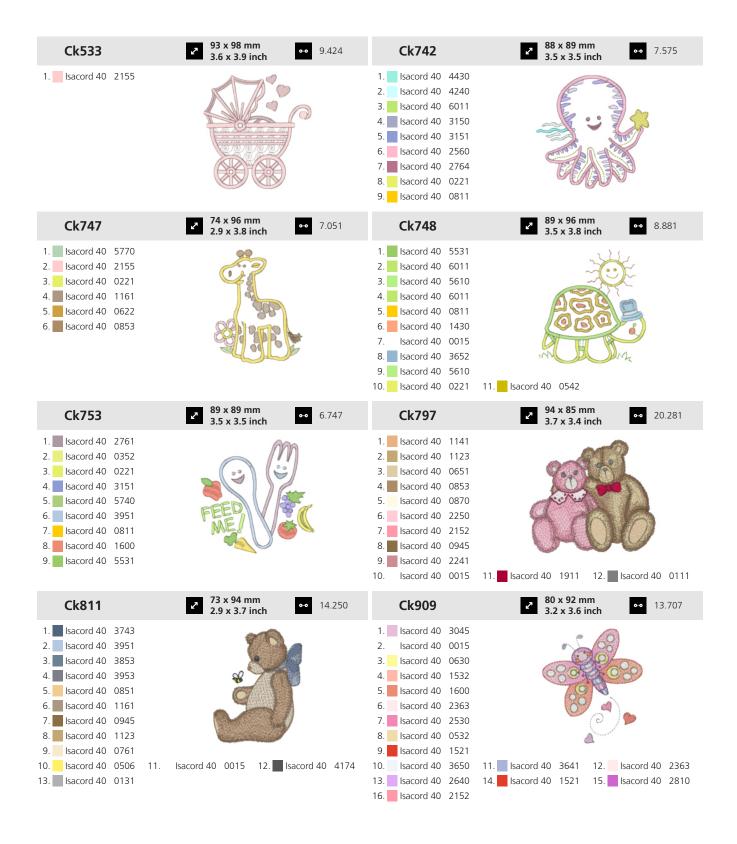


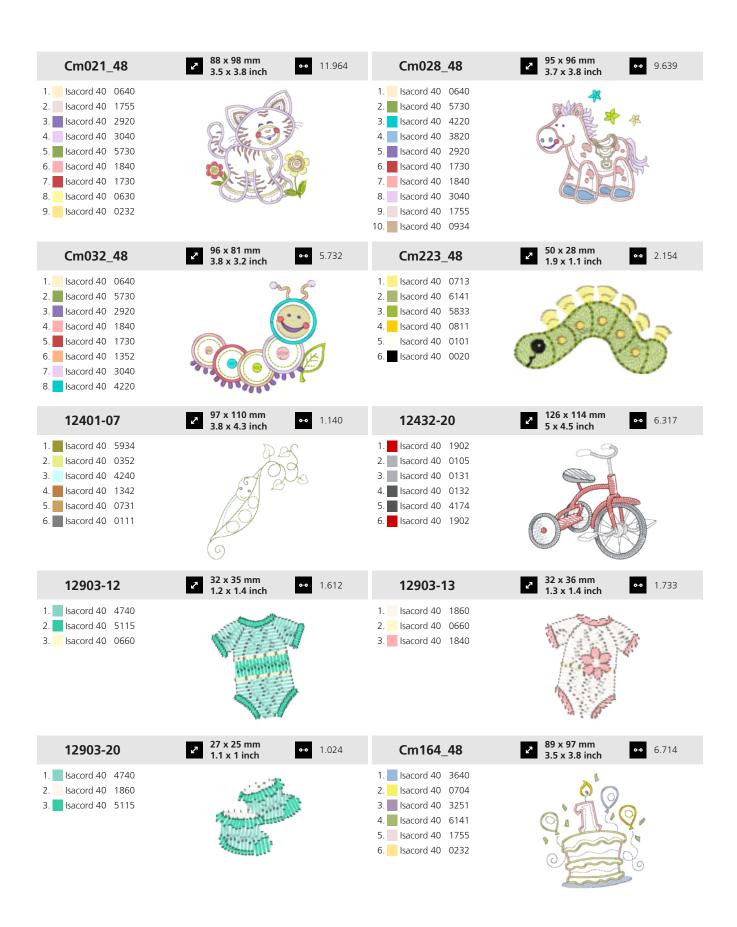








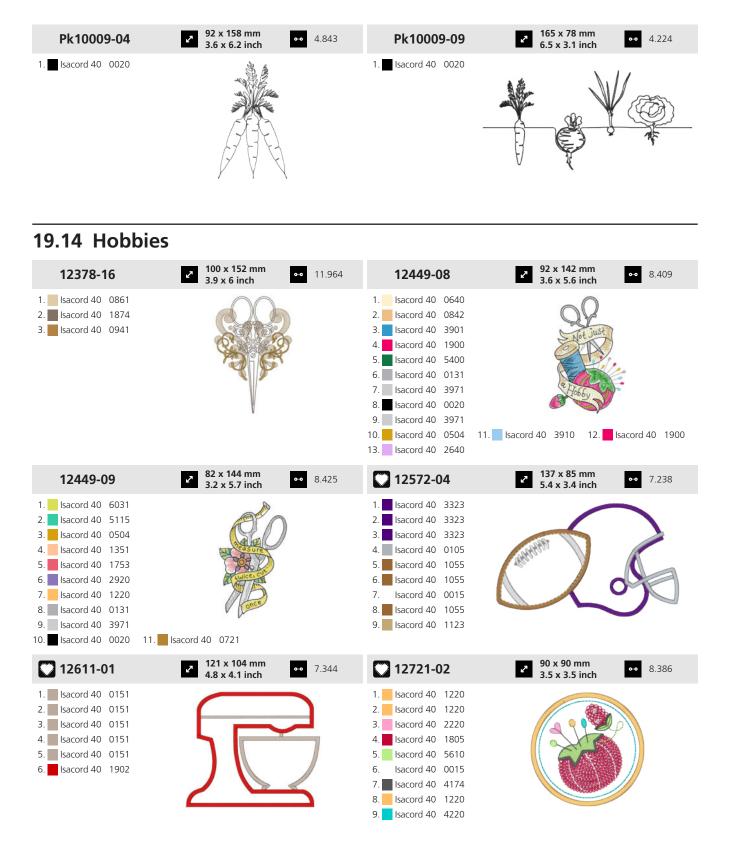


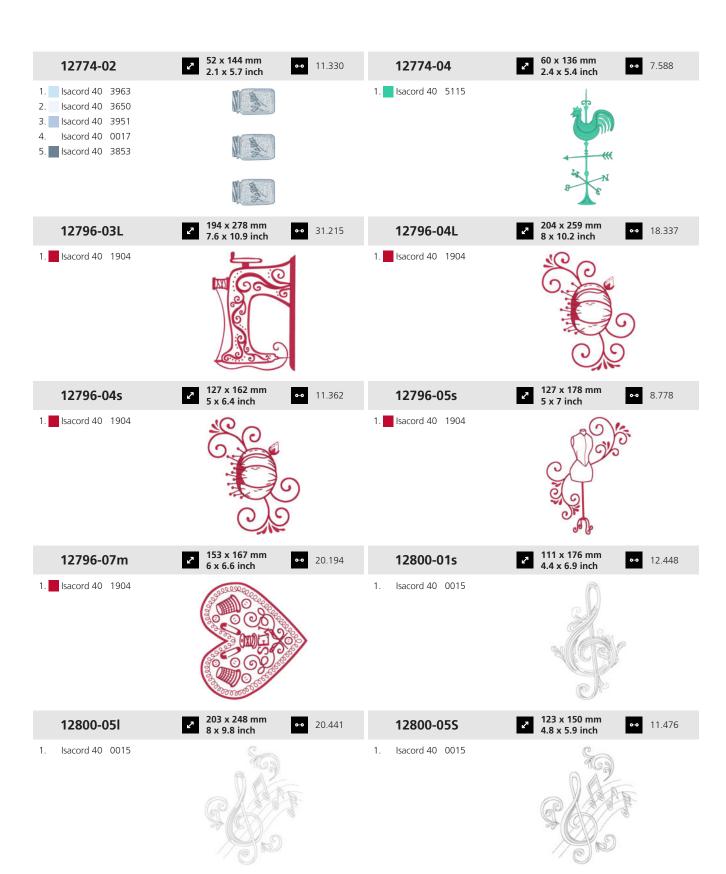


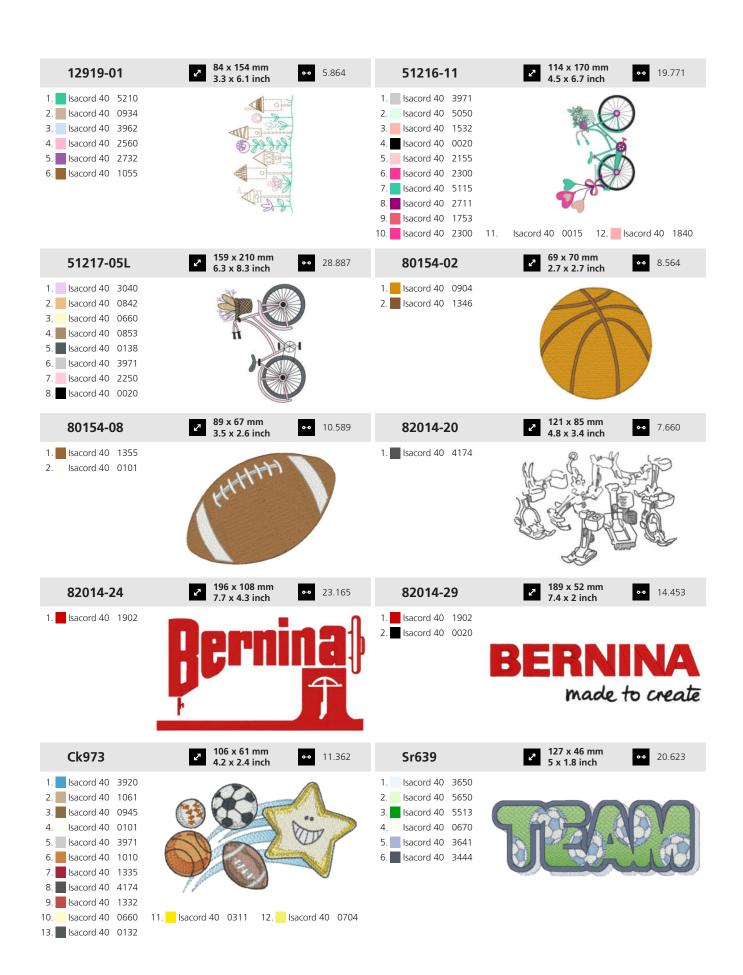
#### 19.13 Food and Drink

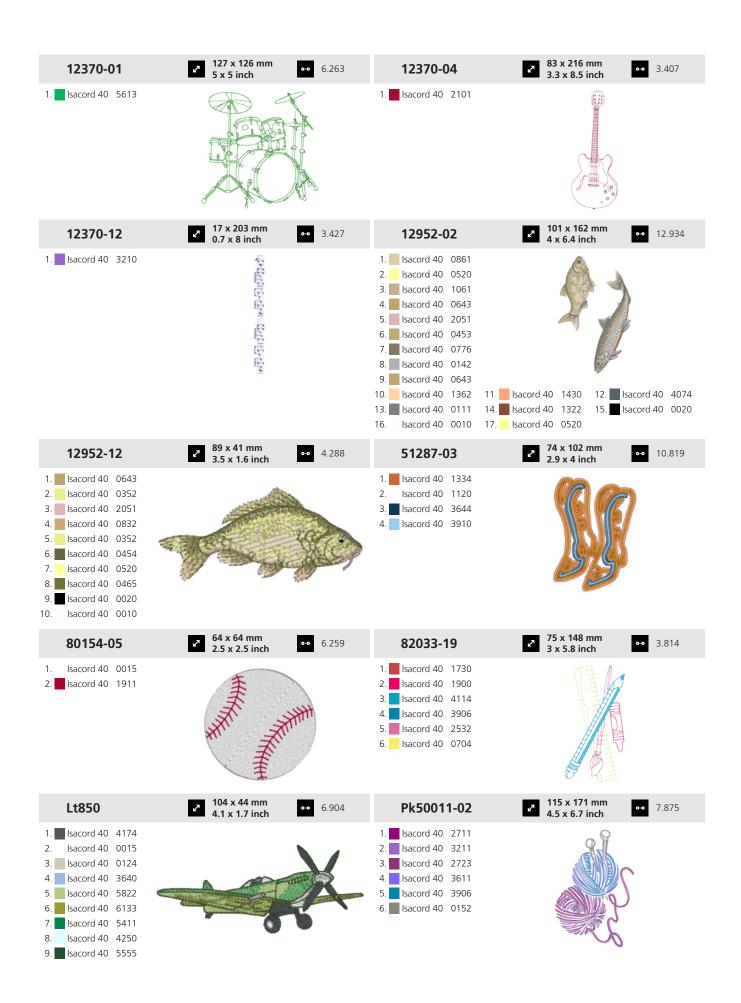


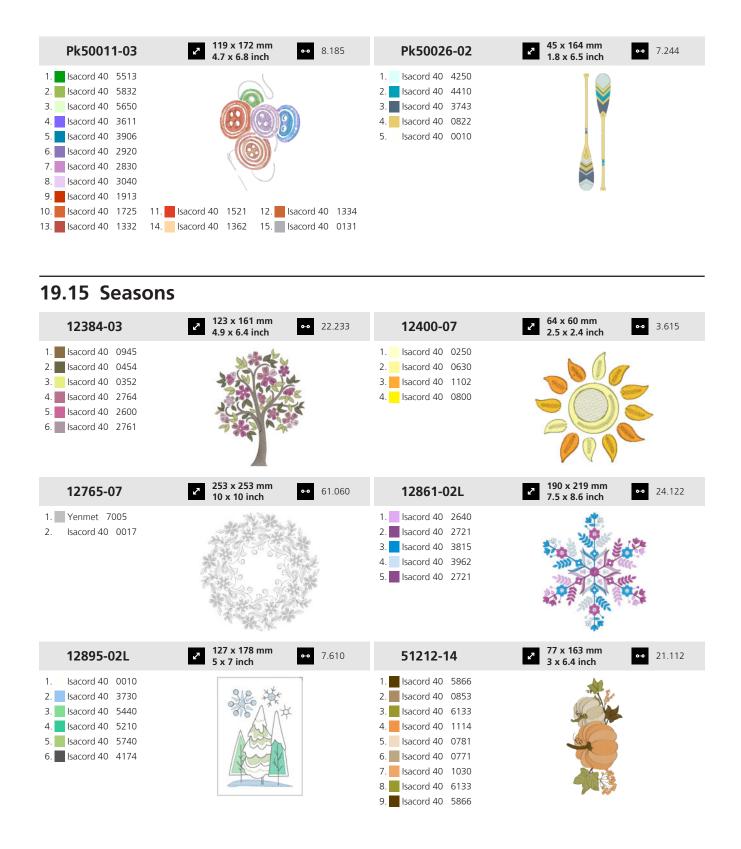


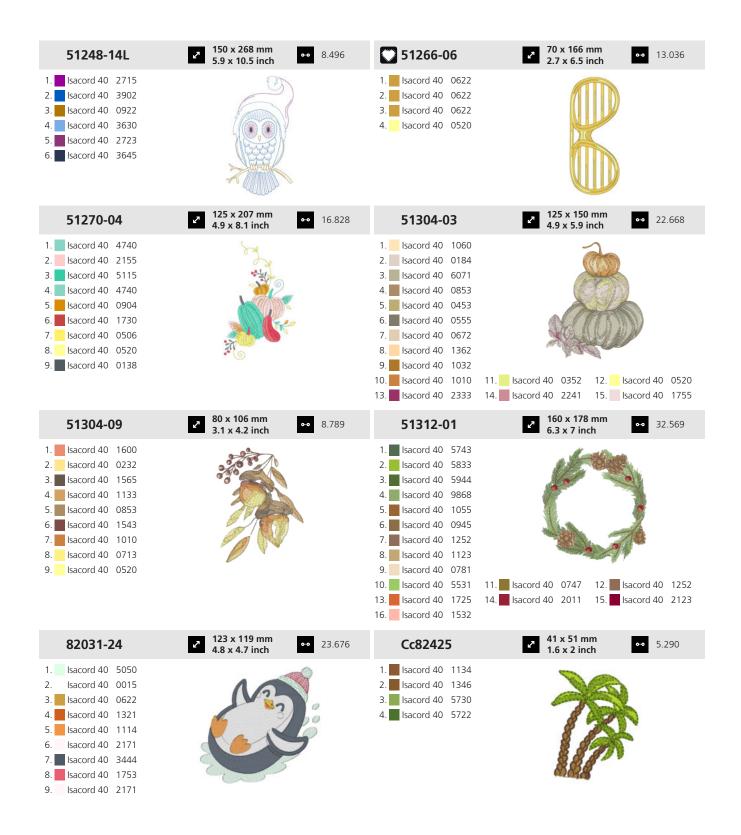


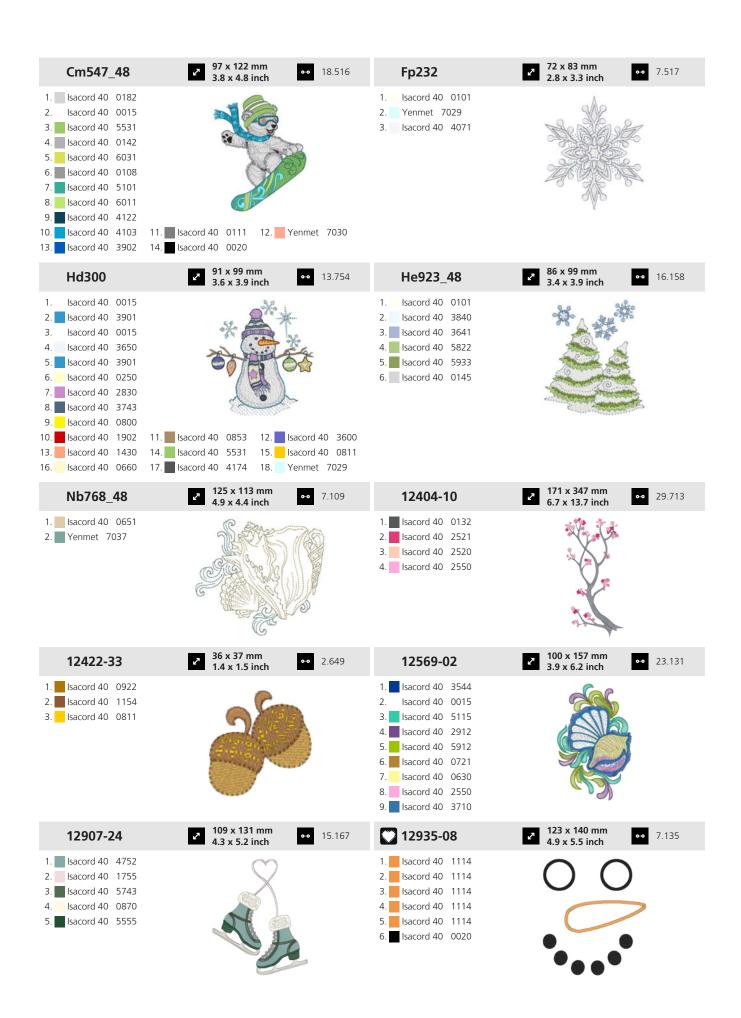


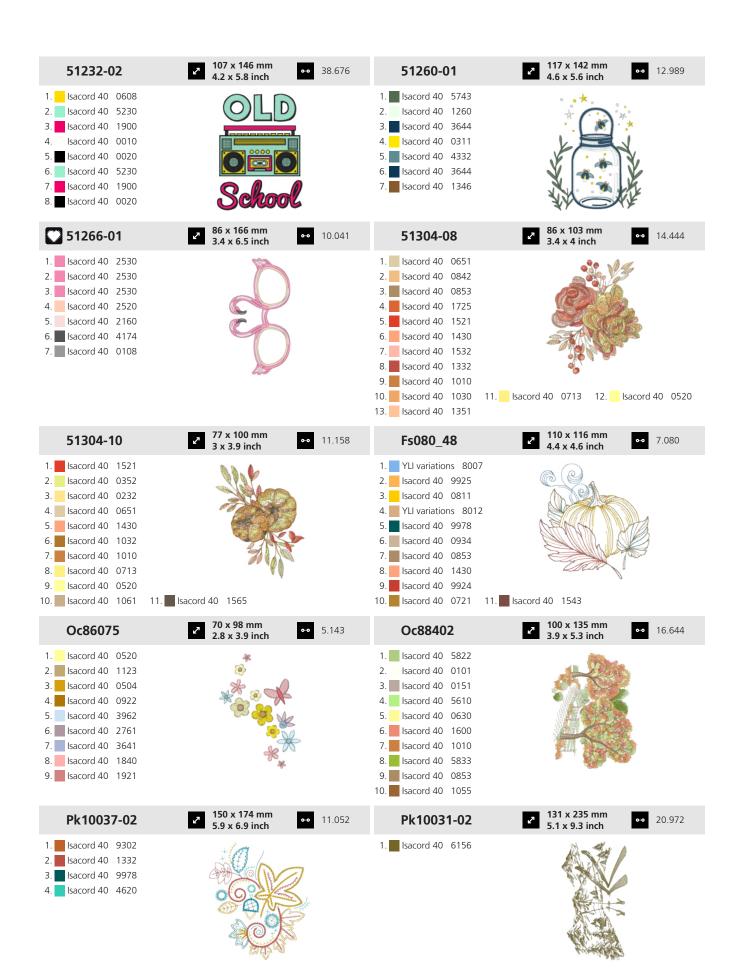


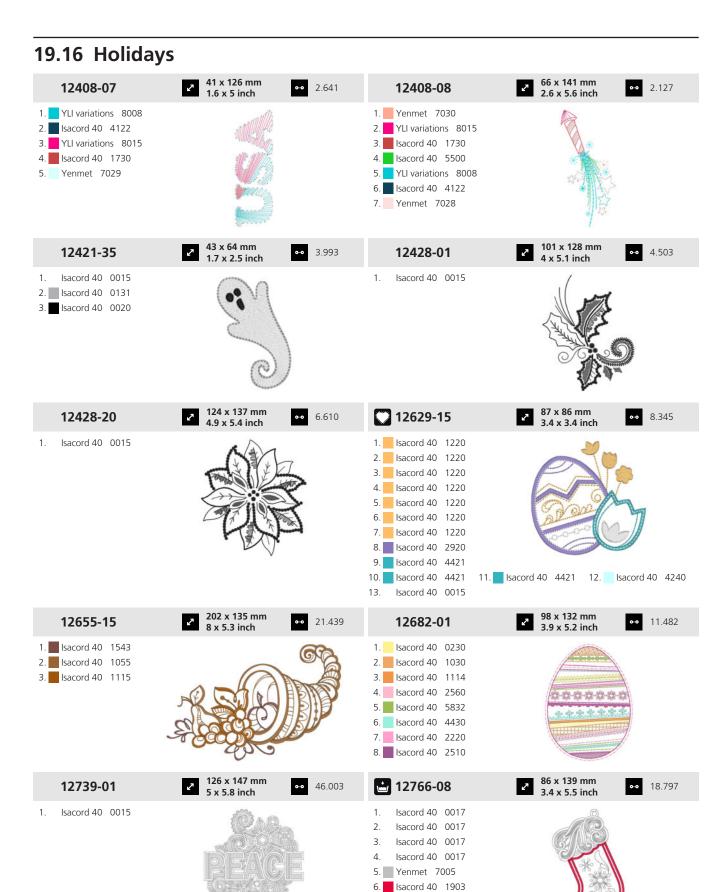


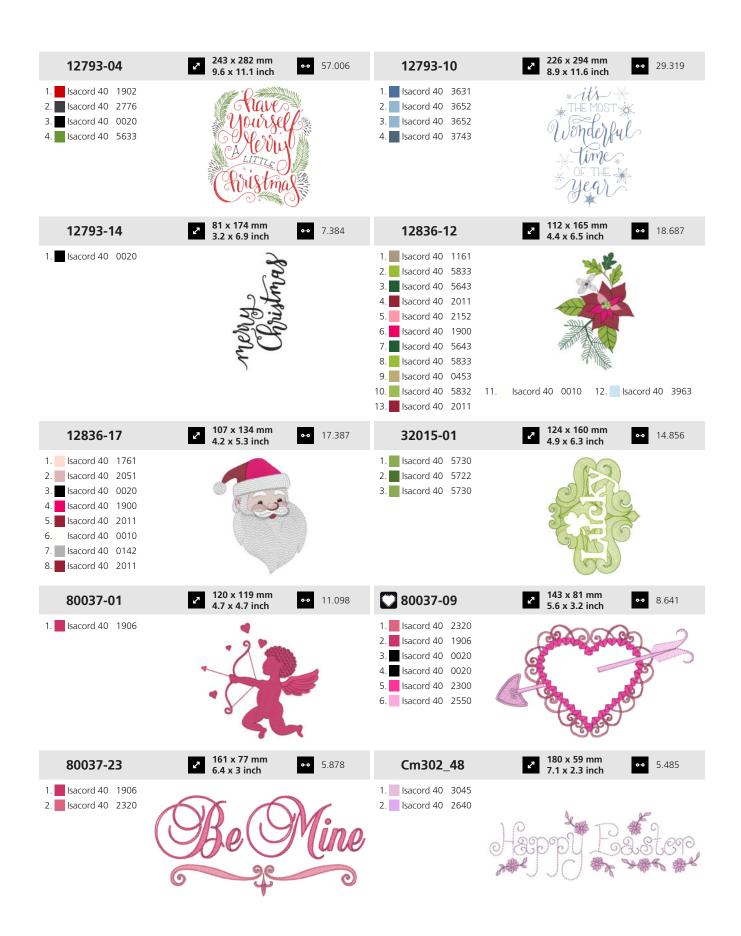


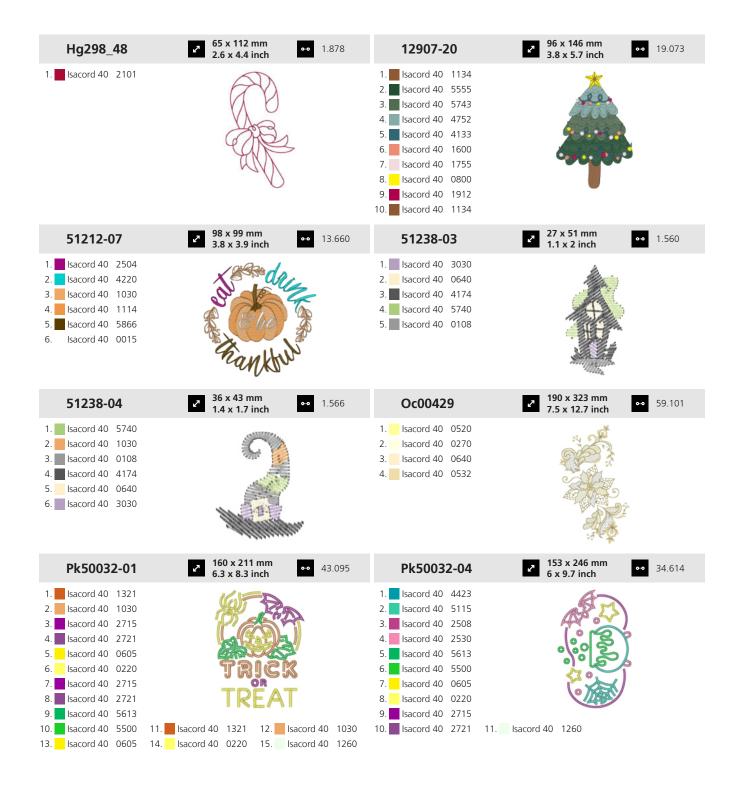








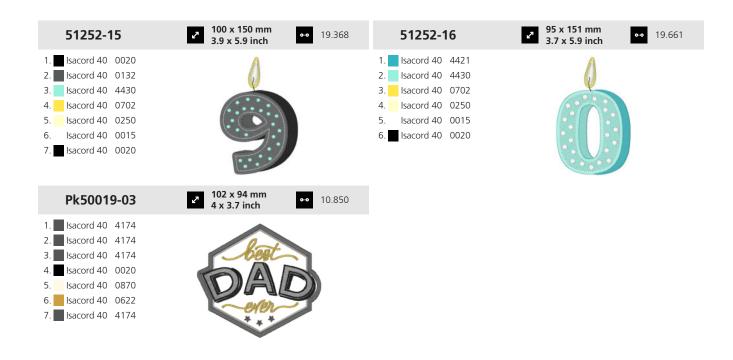




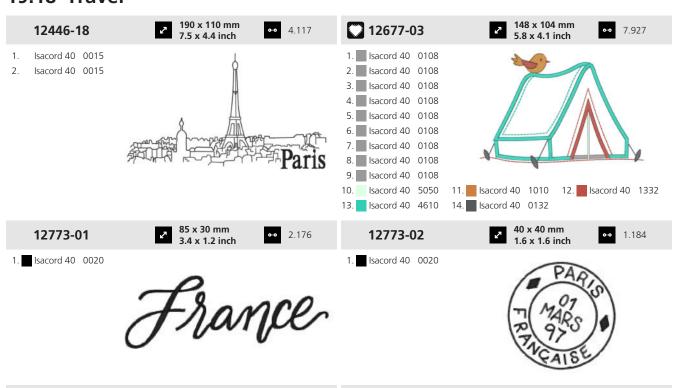
#### 19.17 Celebrations

#### 62 x 64 mm 2.5 x 2.5 inch 36 x 49 mm 1.4 x 1.9 inch 12436-23 · 5.510 12478-01 • 1.746 1. Isacord 40 0150 1. YLI variations 8004 2. Isacord 40 1950 2. Isacord 40 1902 3. YLI variations 8019 3. Isacord 40 0015 39 x 48 mm 1.5 x 1.9 inch 39 x 37 mm 1.5 x 1.4 inch 12478-03 12478-07 2.859 • 1.694 1. Isacord 40 3910 1. Isacord 40 5912 2. Isacord 40 0640 2. Isacord 40 0015 3. Isacord 40 5912 3. Isacord 40 2810 39 x 55 mm 1.5 x 2.2 inch 2 43 x 38 mm 1.7 x 1.5 inch 12478-08 ● 3.263 12478-12 · 3.372 1. Isacord 40 5912 1. Isacord 40 0020 2. Isacord 40 0941 3. Isacord 40 2530 4. Isacord 40 3910 5. Isacord 40 0622 46 x 53 mm 1.8 x 2.1 inch 119 x 174 mm 4.7 x 6.9 inch 12478-13 12555-02 ·• 7.613 • 1.752 1. Isacord 40 1902 1. Isacord 40 5400 2. Isacord 40 2810 2. Isacord 40 1902 3. Isacord 40 5912 Isacord 40 3906 4. Isacord 40 3910 Yenmet 7029 Isacord 40 5500 6. Isacord 40 4122 7. Yenmet 7030 8. Isacord 40 1730 134 x 142 mm 5.3 x 5.6 inch 115 x 117 mm 4.5 x 4.6 inch 12693-01 15.755 12718-01 ·• 19.427 1. Isacord 40 4174 1. Isacord 40 0015 2. Isacord 40 4174 3. Isacord 40 4174 4. Isacord 40 4174

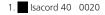




#### 19.18 Travel



12773-03 2 x 82 mm 1.2 x 3.2 inch •• 1.704 12773-09 2 91 x 39 mm 3.6 x 1.5 inch •• 2.972

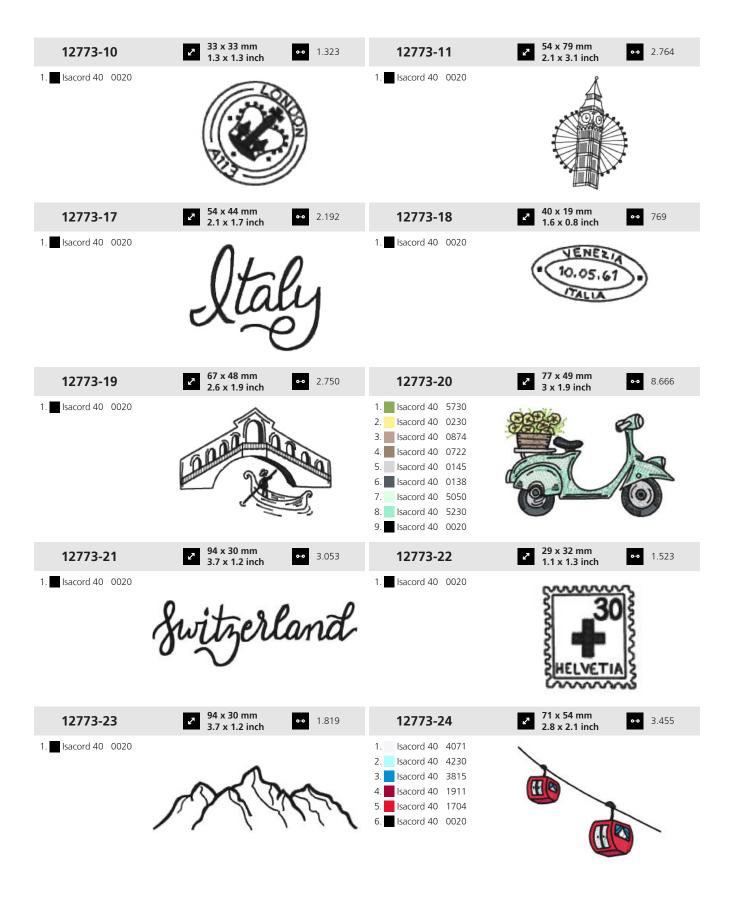




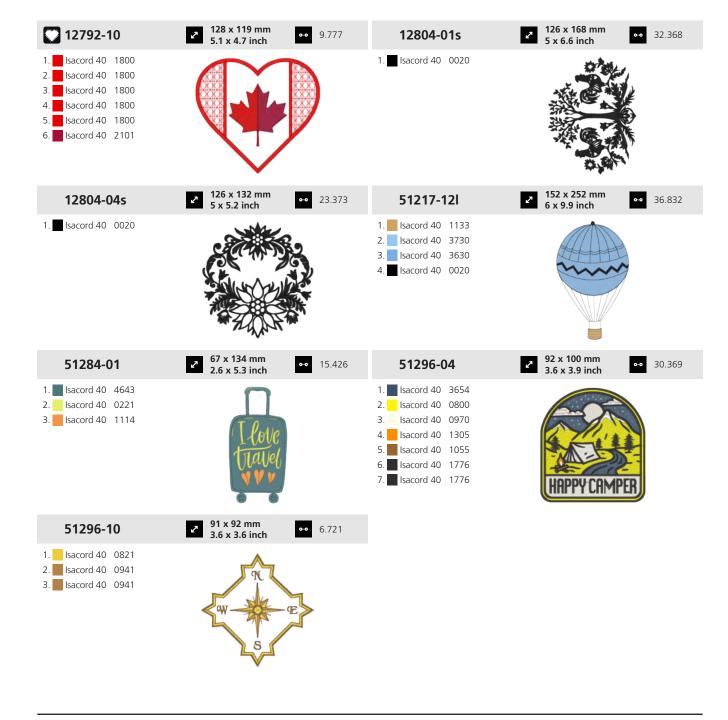
1. Isacord 40 0020



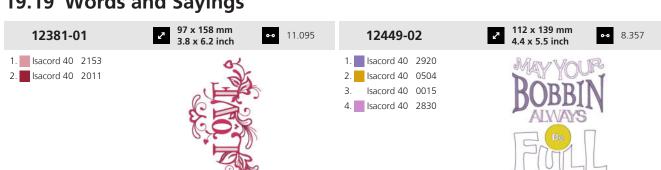
#### 203

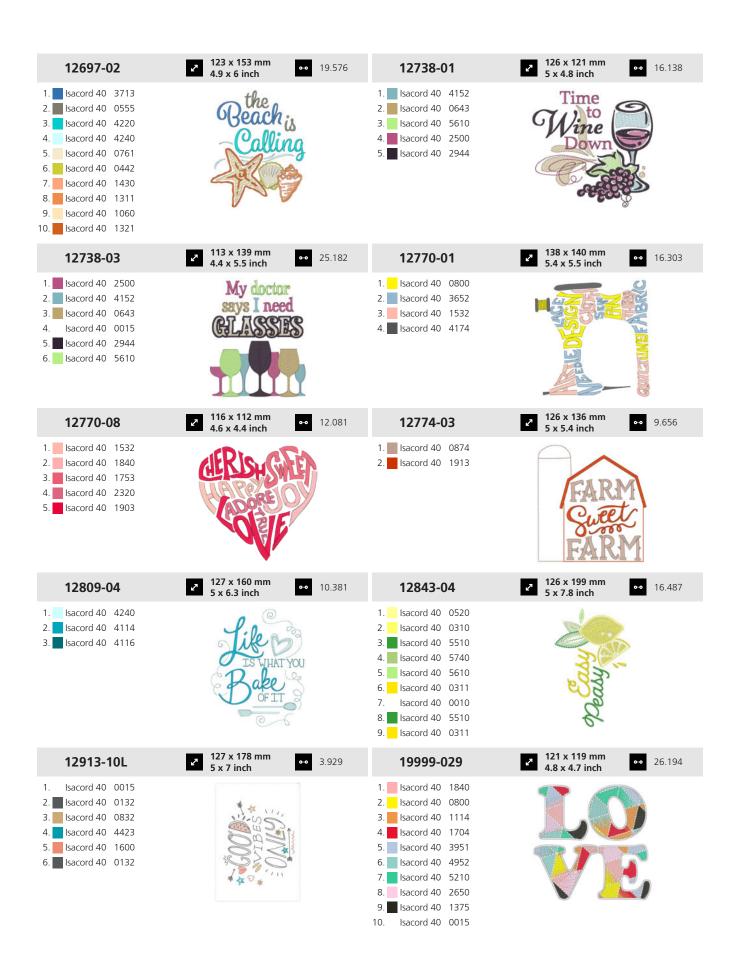


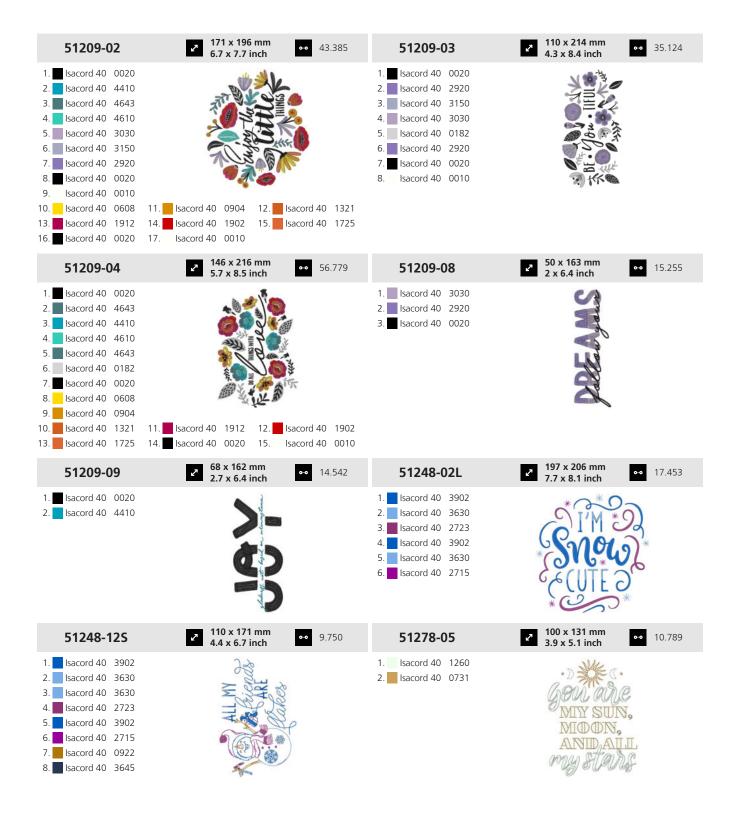
46 x 32 mm 1.8 x 1.3 inch 93 x 33 mm 3.6 x 1.3 inch 2.364 2.055 12773-25 12773-26 1. Isacord 40 0020 1. Isacord 40 0020 anada 78 x 38 mm 3.1 x 1.5 inch 33 x 33 mm 1.3 x 1.3 inch •• 1.941 •• 844 12773-29 12773-30 1. Isacord 40 0020 1. Isacord 40 0020 2016,10,11. 40 x 40 mm 1.6 x 1.6 inch 83 x 23 mm 3.3 x 0.9 inch 12773-33 12773-34 •• 882 2.234 1. Isacord 40 0020 1. Isacord 40 0020 100 x 27 mm 3.9 x 1.1 inch 84 x 32 mm 3.3 x 1.3 inch 12773-35 2.023 12773-37 ●● 3.206 1. Isacord 40 0020 1. Isacord 40 0020 33 x 40 mm 1.3 x 1.6 inch 62 x 72 mm 2.4 x 2.8 inch •• 1.944 ·• 2.176 12773-38 12773-39 1. Isacord 40 0020 1. Isacord 40 0020

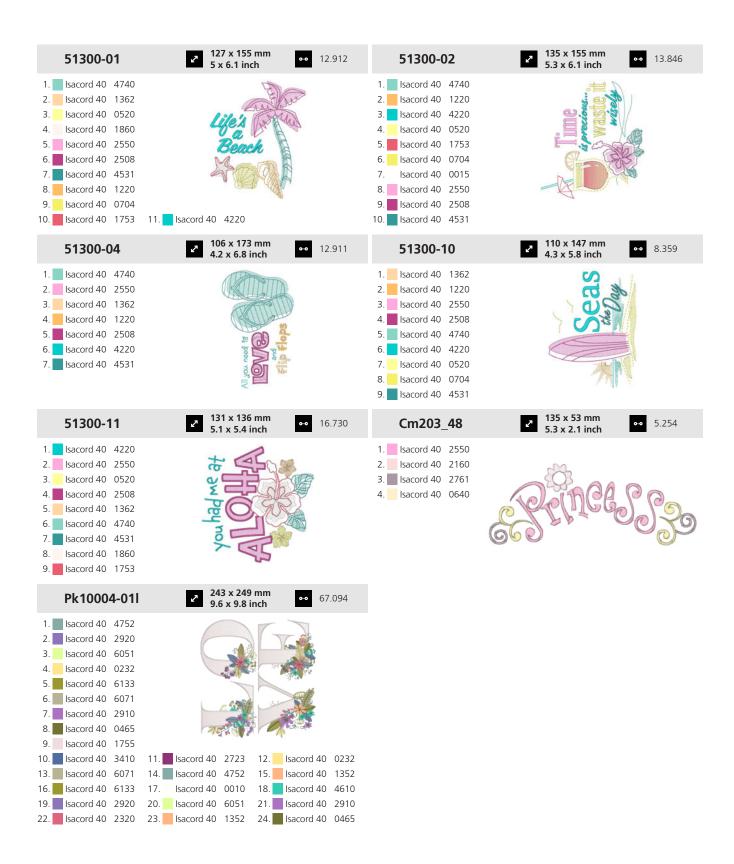


#### 19.19 Words and Sayings









•• 10.441

• 10.360

• 10.414

•• 10.741

9.836

# 19 Embroidery Designs

#### 19.20 Monograms

# 12863-01 2 113 × 119 mm 4.4 × 4.7 inch

1. Isacord 40 0020

2. Isacord 40 0020

3. Isacord 40 0020



•• 10.297

10.224

● 10.658

10.430

#### 12863-02

1. Isacord 40 0020

2. Isacord 40 0020

3. Isacord 40 0020



113 x 119 mm 4.4 x 4.7 inch

113 x 119 mm 4.4 x 4.7 inch

2 113 x 119 mm 4.4 x 4.7 inch

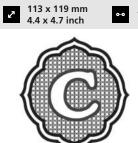
113 x 119 mm 4.4 x 4.7 inch

#### 12863-03

1. Isacord 40 0020

2. Isacord 40 0020

3. Isacord 40 0020



#### 12863-04

1. Isacord 40 0020

2. Isacord 40 0020

3. Isacord 40 0020



#### 12863-05

1. Isacord 40 0020

2. Isacord 40 0020

3. Isacord 40 0020



#### 12863-06

1. Isacord 40 0020

2. Isacord 40 0020

3. Isacord 40 0020



#### 12863-07

1. Isacord 40 0020

2. Isacord 40 0020

3. Isacord 40 0020



2 113 x 119 mm 4.4 x 4.7 inch

#### 12863-08

1. Isacord 40 0020

2. Isacord 40 0020

3. Isacord 40 0020

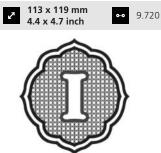


#### 12863-09

1. Isacord 40 0020

2. Isacord 40 0020

3. Isacord 40 0020

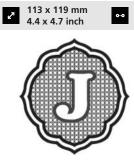


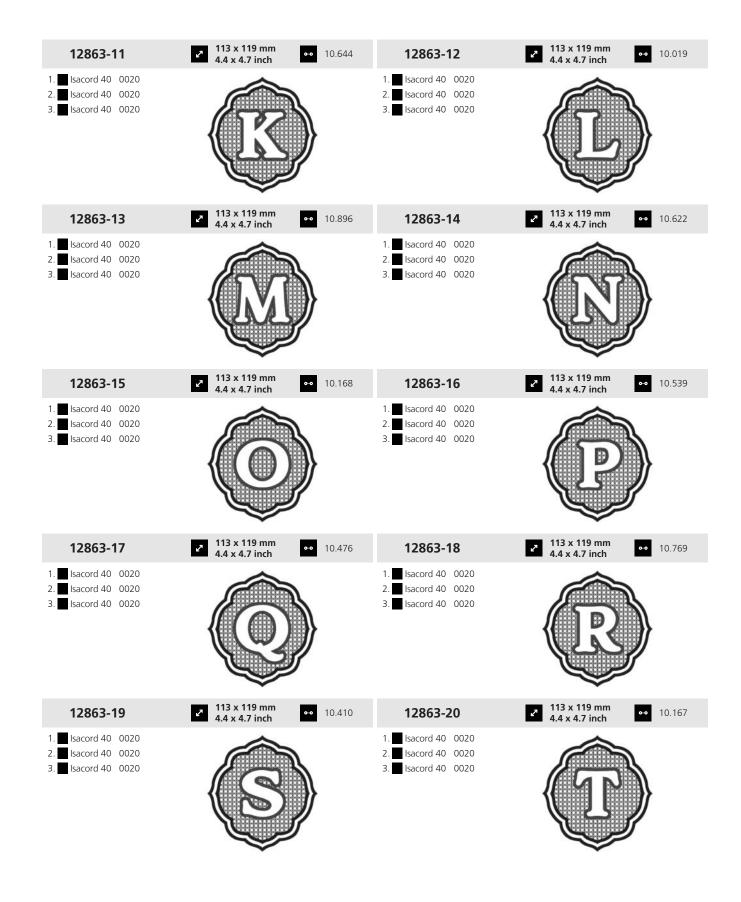
#### 12863-10

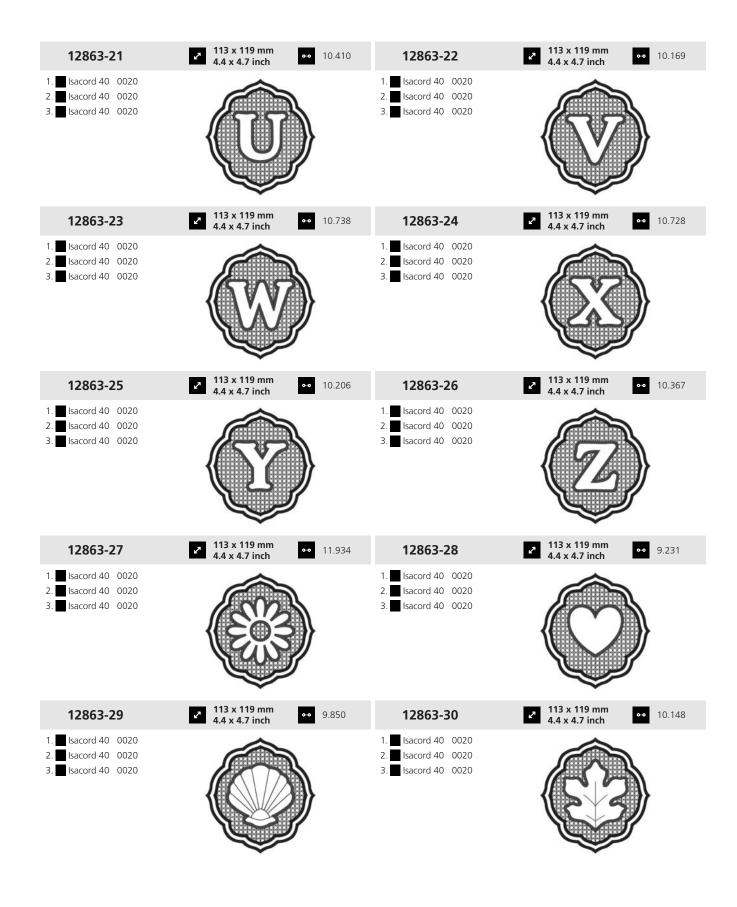
1. Isacord 40 0020

2. Isacord 40 0020

3. Isacord 40 0020

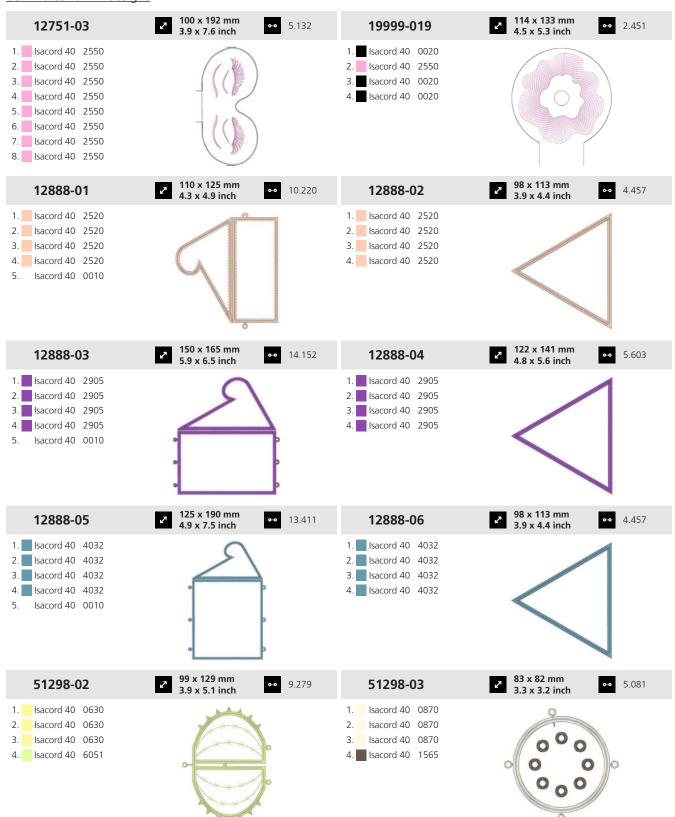


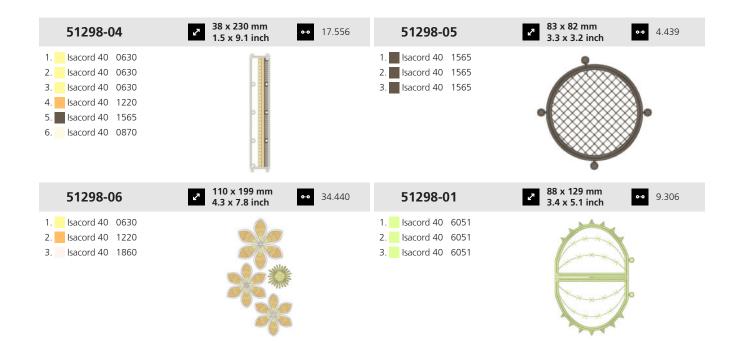




#### 19.21 In the Hoop

You can find the detailed embroidery instructions at bernina.com/990-designs.





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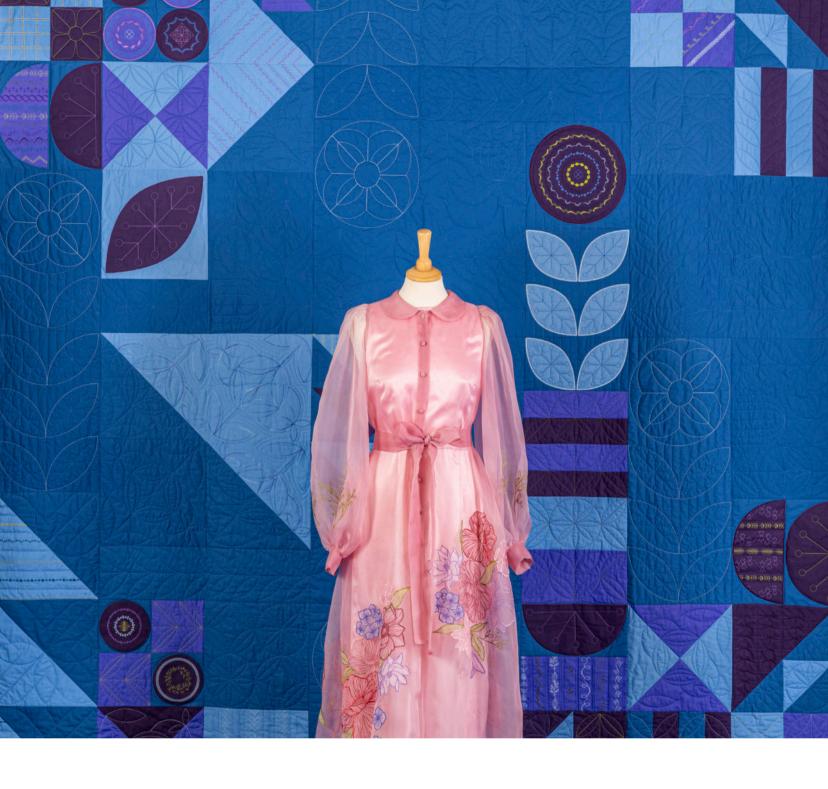
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