BERNINA⊞

Embroidery Software 6

USER MANUAL

BERNINA EditorPlus

BERNINA DesignerPlus

NOTE

The screen illustrations in this publication are intended to be representations, not exact duplicates of the screen layouts generated by the software.

PRINTED USER MANUAL

Registered owners of BERNINA® Embroidery Software are permitted to create one (1) copy of the BERNINA® Embroidery Software User Manual for their personal use. This can be printed with a personal printer or through a commercial printing company.

LIMITED WARRANTY

BERNINA International AG warrants for a period of 90 days, commencing from the date of delivery of the software to you, that the products are free from defects in materials and workmanship. Your exclusive remedy for breach of warranty is to return the products together with proof of purchase to BERNINA or its authorized dealers within the warranty period, and they will be replaced free of charge. You are responsible for the cost of shipping and insurance, and bear the risk of loss, damage and misplacement of 'the products'.

The purchaser relies on their own skill and judgement in selecting the software for their own use and assumes the entire risk as to the results and performance of the software. Subject to warranties and conditions imposed by law, BERNINA International AG expressly disclaims all other warranties and conditions, whether express or implied, including without limitation, warranties and conditions of merchantability, fitness for a particular purpose, title and non infringement. BERNINA International AG specifically does not warrant that the software will meet the purchaser's requirements or run without interruption or error, or appear precisely as described in the accompanying documentation.

LIMITATIONS OF LIABILITY

To the maximum extent permitted by applicable law, in no event will BERNINA International AG or its developers, officers, employees or affiliates be liable to you for any consequential, incidental, or indirect damages (including damages for loss of business profits, business interruption, loss of business information and the like), whether foreseeable, or unforeseeable, arising out of the use of or inability to use the software or accompanying security device and cable, and accompanying documentation, regardless of the basis of the claim and even if BERNINA or an authorized BERNINA representative has been advised of the possibility of such damages.

Some states or jurisdictions do not allow the exclusion of incidental, consequential or special damages, so the above limitation or exclusion may not apply to you.

TERMINATION

Your License to use the BERNINA® Embroidery Software is effective as long as you comply with the terms and conditions of the License Agreement. This License will terminate automatically without notice from BERNINA International AG if you fail to comply with any of the terms of the License Agreement.

You may terminate this License at any time by returning the BERNINA® Embroidery Software and all copies thereof, the dongle security device, cable and all accompanying documentation to BERNINA International AG.

CONTACT

If you have any questions, please contact your BERNINA distributor, or

BERNINA International AG

CH-8266 Steckborn/Switzerland

Tel: (41) 52-762 11 11
Fax: (41) 52-762 16 11

Rev 2   Nov   2009

CHAPTER 1

INTRODUCTION

Welcome to BERNINA® Embroidery Software, the leading embroidery design application for home users. This is an MS Windows®-based product incorporating many of the conventions with which most PC users are already familiar.

BERNINA® Embroidery Software is unique in providing seamless integration with CorelDRAW® Essentials 4 by the Corel Corporation, the most popular vector-based drawing package for home users. This combination offers a more efficient, user-friendly approach to embroidery design by combining the embroidery capabilities of BERNINA Embroidery Software with graphical capabilities of CorelDRAW®. It also allows users to create not just embroidery, but true, multi-medium designs.

Note CorelDRAW® Essentials 4 and its sister product, Corel PHOTO-PAINT® Essentials 4 can also be run as standalone applications. For a full description of the CorelDRAW® Essentials 4 tools, refer to the electronic User Guide available via the Windows **Start > Programs** group. Alternatively, use the onscreen help available from the **Graphics** mode **Help** menu.

First-time users

If you are new to BERNINA® Embroidery Software, you'll be pleased with its flexible digitizing capabilities, the ease with which you can create and edit designs, and how simple it is to add or create your own lettering. However, before you begin working with the product, read the Introduction to Embroidery Digitizing in the Onscreen Manual. This chapter presents an overview of the basic concepts of digitizing with BERNINA Embroidery Software and provides you with important guidelines on how to use this software to achieve the best results.

You should also familiarize yourself with Basic Procedures. Here you will learn how to start the application, create or open a design, print designs, and how to use some of the essential tools and features that BERNINA Embroidery Software provides. The chapter Viewing Designs in the Onscreen Manual also provides an overview of the design viewing modes in BERNINA Embroidery Software.

Update users

BERNINA Embroidery Software is an enhanced version of our earlier products. It has many new and expanded features. Read the chapter Introduction to Embroidery Digitizing in the Onscreen Manual to familiarize yourself quickly with the scope of these improvements.

BERNINA® Embroidery Software product levels

There are two BERNINA® Embroidery Software product levels:

‣ BERNINA EditorPlus
‣ BERNINA DesignerPlus.

Caution The product levels are controlled by the security device. This device is the most important and

valuable part of your system and should be treated with care.

Note BERNINA Embroidery Software users can purchase software upgrades directly from the Internet.

BERNINA EditorPlus

With BERNINA EditorPlus, you can edit existing designs and add lettering. You can also create attractive designs with a minimum of fuss from scanned artwork. Use powerful automatic digitizing features such as Auto Digitizer, Magic Wand and PhotoSnap. In addition you can:

- Change color sequence for better stitchouts
- Edit individual stitches to fine-tune your designs to a perfect finish
- Use Auto Digitizer to create attractive embroidery automatically from scanned artwork
- For greater control, use Magic Wand to convert shapes in pictures to stitches
- Use PhotoSnap to turn photographs into line stitching.

BERNINA DesignerPlus

BERNINA DesignerPlus offers powerful features for digitizing, editing and lettering, combining both automatic and manual digitizing tools and methods for maximum control and quality. Specifically, with this system you can:

- Use scanned or imported artwork to digitize designs on-screen
- In addition to the automatic digitizing tools, use specialized digitizing tools, plus a wide range of artistic, decorative fill patterns
- Create appliqué with Auto Appliqué
- Convert any Windows TrueType font to an embroidery alphabet
- Save all your favorite settings to templates.

Note To identify features relevant to your specific model, see the BERNINA Embroidery Software Product Feature List in the Onscreen Manual.

BERNINA® Embroidery Software documentation

BERNINA Embroidery Software provides you with a number of ways to access information about your software and how to use it, both in printed form and onscreen via the **Help** menu.

Caution Screen illustrations in the user documentation are intended to be representations, not exact duplicates of the screen layouts generated by the software. Procedural descriptions may be at slight variance from particular installations depending on which default system settings are activated.

Printed documentation

Depending on your product level, together with your BERNINA Embroidery Software installation DVD you will have received the following printed documentation:

Quick Start Guide

The BERNINA Embroidery Software Quick Start Guide contains installation instructions as well as an introduction to your BERNINA Embroidery Software. There is also a Quick Reference section which lists all the commands and shortcut keys used in the software. In addition, the guide provides a fully worked sample project. Additional tutorials are provided in the onscreen Quick Start Guide.

Tip For detailed procedures covering all features of the BERNINA Embroidery Software (all product levels) and BERNINA Portfolio applications, refer to the Onscreen Manual which can be accessed via the **Help** menu. To identify sources of information relevant to your specific model, see the BERNINA Embroidery Software Product Feature List in the Onscreen Manual.

Onscreen documentation

Onscreen documentation is provided in two formats – HTML Help and Adobe Acrobat. Depending on your product level, documentation components will include some or all of the following:

Release Notes

A set of Release Notes is included with the software installation. These provide detailed information about new and improved features as well as direct links to the relevant sections of the Onscreen Manual.

Quick Start Guide

The BERNINA Embroidery Software Quick Start Guide is also provided in onscreen form. This provides additional information about product upgrades and updates. Additional tutorials are also provided in the onscreen Quick Start Guide. While the tutorials do not cover all product features, they provide a useful introduction for all product levels.

Onscreen Manual

The Onscreen Manual provides detailed procedures covering all features of the BERNINA Embroidery Software and BERNINA Portfolio applications. It contains hundreds of step-by-step instructions together with samples and screen images. The BERNINA Cross Stitch and BERNINA Quilter applications are documented in separate supplementary manuals described below.

Onscreen Help

Onscreen Help provides quick access to general information on BERNINA Embroidery Software features and step-by-step instructions.

Supplementary user manuals

With your BERNINA Embroidery Software installation DVD you will have also received the following supplementary onscreen user manuals:

BERNINA Cross Stitch Onscreen Manual

This manual supplement documents the capabilities of the special BERNINA Cross Stitch application. Cross stitching is a popular technique for filling large areas with low stitch counts. It can also be used for outlines and borders. It is suitable for homeware, tablecloths, children's clothes and folk designs. Cross stitch is sometimes combined with appliqué.

BERNINA Quilter Onscreen Manual

This manual supplement documents the capabilities of the special BERNINA Quilter application. Patchwork is a popular technique for designing and sewing patches into blocks. BERNINA Quilter can be used to design patchwork quilts, either from existing designs or patterns, or from designs of your own making. Use BERNINA Quilter to experiment with patches and colors enabling you create beautiful, personalized quilts.

Conventions used in the manual

The following conventions are adopted and used throughout the manual.

Commands

In this manual, commands on a menu or submenu are referred to by both the menu and command names. For example the 'Show All' command in the 'View' menu is referred to as **View > Show All**.

Dialog boxes

Dialog boxes are referred to as 'dialogs' and are shown in the manual only if they provide important information on using BERNINA® Embroidery Software. The screen images provided are intended to be representations, not exact duplicates of the layouts generated by the software.

Keyboard conventions

Instruction	Symbol	Action
Click	🖱	Click the left mouse button.
Right-click	🖱	Click the right mouse button.
Double-click	"🖱	Click the mouse button twice without moving the mouse.
Click OK	🖱 or ⏎	Click OK with the mouse or press the Enter key on the keyboard to complete the action.

Shortcut	Description
Ctrl + S	While holding down the Control key (Ctrl), press the lowercase letter S key.
Ctrl + Shift + H	While holding down the Control key (Ctrl), press Shift and the H key.
For a complete list of keyboard shortcuts, refer to the Quick Reference Guide.	

Viewing information onscreen

Select Help Topics (Help menu) to view onscreen help.

Select Onscreen Manual (Help menu) to view the onscreen manual.

Select Bernina International Home Page (Help menu) to view the Bernina International Web Page.

Select Bernina of America Home Page (Help menu) to view the Bernina of America Web Page.

Select Embroidery Online (Help menu) to view the Embroidery Online Web Page.

Onscreen user documentation is provided in the form of an Onscreen Manual and Onscreen Help.

Viewing Onscreen Help

Onscreen Help provides quick access to general information on BERNINA Embroidery Software features and step-by-step instructions.

To view Onscreen Help

1 Select **Help > Help Topics** to open the main Help window.

2 Click **Contents** to display the main list of topics.

Topics are grouped under high-level headings with 'book' icons.

3 Double-click a book to view the list of topics, then double-click a topic.

Tip Alternatively, click **Find** and enter keywords to search on a specific subject.

Viewing the Onscreen Manual

You can read the Onscreen Manual using Adobe Acrobat™ Reader. This application is not supplied with your BERNINA Embroidery Software but it is freely available from the Adobe web site. Using the Onscreen Manual you can quickly search for the information you need, using standard Adobe Acrobat™ Reader features.

To view the Onscreen Manual

‣ Select **Help > Onscreen Manual**.

Note If BERNINA Embroidery Software is not running, you can open the Onscreen Manual directly from Windows Explorer. To do this, navigate to the ..\Program Files\BERNINA\Embroidery Software 6\bin folder, and double-click UserManual.pdf.

Linking to the BERNINA® websites

You can access sales and support information about the products easily from within the software.

Note You must have a correctly configured web browser on your system together with web access.

To link to the BERNINA® website

‣ Connect to your Internet Service Provider (ISP).

‣ Select **Help > BERNINA Web Page**.

You are directly connected to the BERNINA® homepage at:

‣ Bernina International - http://www.bernina.com/

‣ Bernina of America - http://www.berninausa.com/

‣ Embroidery Online - http://www.embroideryonline.com

CHAPTER 2

INTRODUCTION TO EMBROIDERY DIGITIZING

BERNINA Embroidery Software provides embroiderers with a fast, flexible way of creating and editing embroidery designs. This section provides an overview of the embroidery digitizing process as it applies to BERNINA Embroidery Software.

The embroidery digitizing process will consist of some or all of the following stages:

- Planning designs
- Digitizing designs
- Modifying designs
- Improving design quality
- Adding lettering
- Stitching out designs
- Managing designs.

Note The Onscreen Manual provides detailed procedures covering all features of the BERNINA Embroidery Software and BERNINA Portfolio applications. To identify sources of information relevant to your specific model and any options you may have selected, see the BERNINA Embroidery Software Product Feature List.

Planning designs

To create good quality embroidery, you need to choose suitable artwork for use as a digitizing backdrop. Unless you are an experienced digitizer, do not use artwork which is complicated. Artwork that is not in digital format needs to be scanned. Possible sources for good embroidery design artwork include:

- books
- internet or CD clipart

- original artwork.
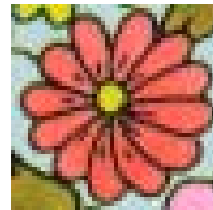
Image scanned in RGB color mode

Image scanned in 256 color mode

Good embroidery quality

Good embroidery quality starts with the design. You then need a good quality machine to stitch it out. But even that is not enough if you do not use the correct fabric, threads, backings, tension, and so on. Keep the following points in mind when planning your design:

- design looks good – shapes, colors, balance
- stitches are neat, smooth and even
- shapes are filled with correct fill and outline stitches
- stitches are angled to match shapes
- shapes are stitched correctly – no unwanted gaps
- details are clearly defined

▸ lettering is clear and easy to read.

Design looks good – shapes, colors, balance

Stitches are angled to match shapes

Shapes are filled with correct fill and outline stitches

Lettering is clear and easy to read

Details are clearly defined

Stitches are neat, smooth and even

Shapes are stitched correctly – no unwanted gaps

The stitched-out design should also have the following characteristics:

▸ The design stitches out efficiently on the machine.
▸ The fabric has not puckered around the stitched areas.
▸ The design is free of loose ends.

See also Tips & Tricks.

Preparing to digitize

Before digitizing, you need to analyze and plan design shapes and stitching sequence carefully. Design shapes need to be clearly defined to make them easy to embroider. The easiest shapes to embroider have a relatively constant width, with smooth edges, no sharp turns and no small, protruding details.

Simplify edges in artwork before or during digitizing
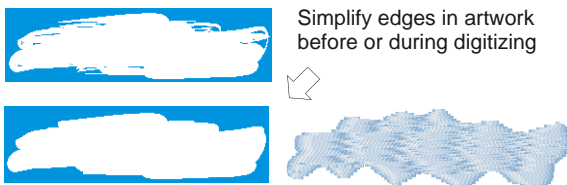
Design sequence

The design sequence is the order in which objects are created and therefore the order in which they are stitched out. You can change the sequence of objects in the design to improve sewing – for example, to

minimize color changes. Details should be stitched last. See Sequencing objects for details.
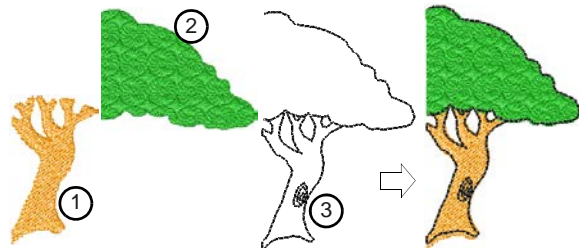
Stitch types

Decide which stitch types you will use for each design shape. While you normally set stitch type before digitizing each shape, BERNINA Embroidery Software lets you change them at any stage. See Outline & Fill Stitches for details.
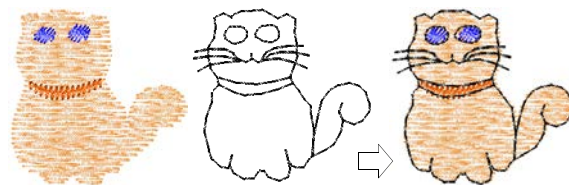
Digitizing designs

Digitizing allows you to build designs from basic shapes using the various tools available. Digitize shapes manually by marking reference points along an outline or use the automatic digitizing tools to create 'embroidery objects' automatically. All designs created in BERNINA Embroidery Software are composed of 'objects' which have their own unique sets of 'properties'. The most important property of an embroidery object is its stitch type.

Viewing designs

While digitizing, different viewing modes are available for different purposes. Depending on your product level, BERNINA Embroidery Software provides a number of viewing modes which are accessed via the **View Mode** toolbar.
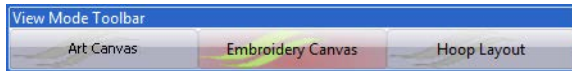
The application has one workspace or 'Design Window' but you interact with it in separate modes. See Viewing modes for details.
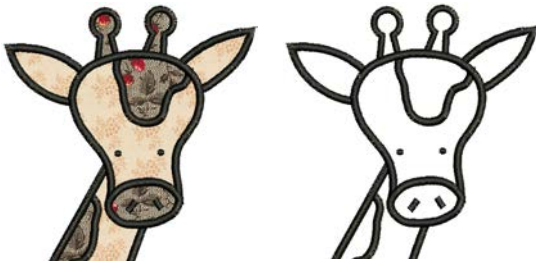
Use grid lines and hoop to help accurately place, align or size embroidery objects. You can show or hide the grid and hoop. There are many hoop sizes available to suit the size of your design. See Displaying the grid and Displaying the hoop.

Use the Overview Window and Zoom functions to quickly examine your design at different degrees of magnification. See Zooming and panning for details.
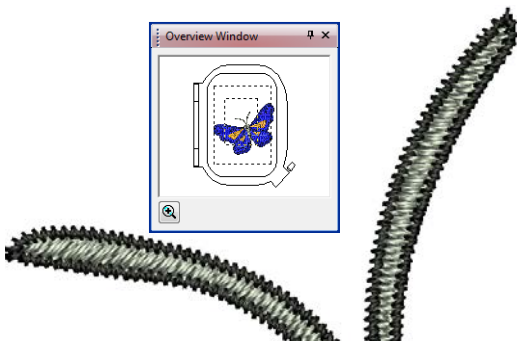
When working with embroidery designs, you need to understand the stitching sequence. You can check a design's stitching sequence by 'traveling' through it by stitches, colors or objects. You can also check the sequence by slowly redrawing your design on screen. See Viewing the stitching sequence for details.

In BERNINA Embroidery Software, you can change the background color of the Design Window to match the color of your fabric. Or you can select a background fabric for more realistic previews and presentations. See Changing backgrounds for details.

Selecting objects

BERNINA Embroidery Software provides various means for selecting the objects comprising an embroidery design. These include techniques such as point and click, bounding box selection, and multiple object selection. You can select all objects in a design or individual ones for precise modification. BERNINA Embroidery Software allows selection of object outlines or fill stitches. See Selecting Objects for details.

Hooping designs

Fabrics must be hooped before stitching out on the machine. BERNINA Embroidery Software allows you to select from a wide range of standard factory-supplied hoops. If your project contains a large design or a number of smaller designs, you may need to use multiple hoopings. If you have a hoop which does not appear in the list, you can define a custom hoop from scratch or based on a standard hoop. See Hooping Designs for details.
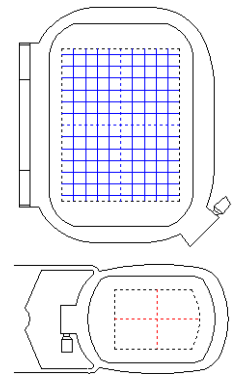
Digitizing methods

In BERNINA Embroidery Software, you build designs from basic shapes or 'embroidery objects'. The process of creating embroidery objects on-screen is called 'digitizing'. Like creating designs in graphics applications, this involves the use of different digitizing tools or methods. These are used in conjunction with stitch types to create
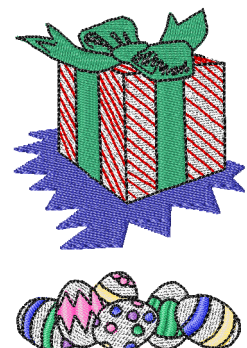
embroidery objects. Digitizing tools in BERNINA Embroidery Software are similar to drawing tools except that the end result is an embroidery object rather than a drawing object. See Digitizing Methods for details.

Outline and fill stitches

All embroidery objects in BERNINA Embroidery Software have defining settings or 'properties', the most important of which is the stitch type. Whenever you create or modify an object, stitches are generated according to the associated stitch type. Stitch settings such as spacing and length can be adjusted before or after digitizing.

Stitch types divide broadly into two categories – 'outline' and 'fill'. Outlines are used, as the name suggests, for outlines or borders of shapes and for details. Fill stitches are used cover to large areas or 'color blocks' in a design. Outline and fill stitches are generated whenever you create embroidery shapes, but they can be changed at any stage. See Outline & Fill Stitches for details.
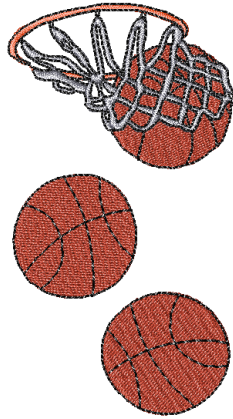
Thread colors and charts

When you digitize, you select thread colors for each object you create from the Color Palette in the Design Window. The palette contains a selection of thread colors tailored to each design. This color scheme represents the actual threads in which the design will be stitched. You can select colors from commercial thread charts containing a range of colors from different manufacturers. To save time when setting up new color schemes, you can create and print your own thread chart using your favorite or most frequently used colors. In BERNINA Embroidery Software you can search for particular threads by various criteria. Even match threads automatically from selected charts to colors in your design. See Thread Colors & Charts for details.

Object properties and templates

The properties of embroidery objects define general characteristics such as size and position, as well as embroidery-specific characteristics such as stitch type and density. The particular stitch settings determine how stitches will be regenerated when you reshape, transform or scale an object.

When you create an embroidery object, you can accept default settings for the particular digitizing method, or apply new ones. Default settings are stored in the design template. You can also define 'current' properties to influence all the objects you create in the current design. See Object Properties & Templates for details.

Improving stitch quality

BERNINA Embroidery Software provides many settings to help improve the quality and efficiency of your final stitchout. Use fabric settings so that the machine will take into account the type of fabric you are stitching on. Use Auto Underlay to help stabilize fabric and reduce distortion due to the pull effect. Adjust the amount of overstitching you need by varying the pull compensation setting. This is handy if you want to stitch a design on fabrics with varying degrees of stretch.

By applying **Auto Jump**, you can preserve long stitches in objects by turning them into a series of jumps. By default, tie-in stitches are automatically inserted at the start of objects to prevent stitches from unraveling. You can control tie-in/offs settings for whole designs or particular objects. Use **Auto Start and End** to set the positions of first and last stitches in a design. All these features are object properties, and can be applied, removed or modified at any time. See Stitch Quality for details.

Digitizing with artwork

Remember, to create good quality embroidery, you need to choose suitable artwork for use as a digitizing backdrop. Possible sources include books, internet or CD clipart, or your own artwork. Once imported into BERNINA Embroidery Software, use it as a 'backdrop'

for manual digitizing or automatically convert shapes or whole designs into embroidery objects.

Digitizing with backdrops

Electronic artwork in both bitmap and vector formats can be loaded, pasted or scanned into BERNINA Embroidery Software for use as digitizing templates or 'backdrops'. Textured backgrounds can also be imported to show what a design will look like on real fabric. Almost any artwork can be used – photographs, magazine pictures, clipart drawings, and even fabric samples. See Digitizing with Backdrops for details.

Processing images for automatic digitizing

BERNINA Embroidery Software supports the automatic and semi-automatic digitizing of bitmap images. The quality of the resulting designs greatly depends on the type and quality of the original artwork. In order to make bitmap images more suitable for automatic digitizing, BERNINA Embroidery Software also provides image processing capabilities and links to graphics packages. See Image Processing for details.

Automatic digitizing

Through its integration with CorelDRAW®, BERNINA Embroidery Software provides powerful inter-conversion of vector and embroidery objects. The **Convert Vectors to Embroidery** tool converts fill or outline properties of selected vector graphics to fill or outline stitch types respectively. It can be applied to text as well as vector graphics.

BERNINA Embroidery Software also provides a **Magic Wand** tool for quickly creating embroidery that does not require particular artistic effects or embroidery-specific knowledge directly from electronic artwork. This in turn frees you to spend more time on the artistic or inherently complicated areas of your designs. The **Auto Digitizer** tool automatically converts artwork to fully digitized embroidery with little or no intervention. With this tool, novice embroiderers can create simple designs quickly and easily. Similarly, experienced

embroiderers can improve productivity when working with simple designs. Use **PhotoSnap** to create embroidery from photographs and other images. See Automatic Digitizing for details.

Modifying designs

After digitizing a design, you can modify it as a whole, edit individual objects and even individual stitches.

Combining and sequencing objects

BERNINA Embroidery Software lets you easily combine designs and design elements by inserting the contents of one file into another. You can also add to designs quickly by copying or duplicating existing objects. Group selected objects or entire designs to keep them together for moving, scaling or transforming purposes. See Combining & Sequencing Objects for details.
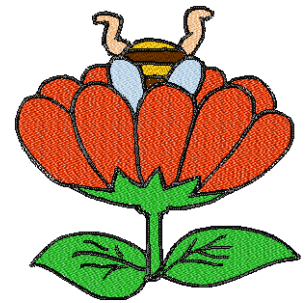
The embroidery objects in a design form a 'stitching sequence'. Initially, objects are stitched in the order they were created. However, you can change this by a variety of methods. For example, change the position of a selected object by cutting it, then pasting it somewhere else in the sequence. There are also techniques available to sequence objects 'as selected' or as 'color blocks'. You can also resequence objects using the Color Film. See Sequencing objects for details.

The Stitch Sequence feature improves the quality and efficiency of the stitchout by minimizing the number of hoopings, color changes, and trims. All existing overlaps are preserved by the operation. See Auto-sequencing entire designs for details.

Arranging and transforming objects

BERNINA Embroidery Software allows you to arrange and transform objects by a variety of means, both interactive and numeric. Position objects by means of click and drag, arrow keys or object properties. Align objects relative to each other using the special tools available. Scale objects directly on-screen or by setting exact dimensions or scale percentages. Rotate, skew and

mirror objects by similar means. Special tools allow you to duplicate and transform selected embroidery objects, as well as create mirrored and rotated objects around a central axis. See Arranging & Transforming Objects for details.

Reshaping and editing objects

BERNINA Embroidery Software lets you modify object shapes, stitch angles and entry and exit points by means of control points. Stitch angle lines and entry and exit markers all appear around selected objects. Control points vary slightly with the object type. See Reshaping & Editing Objects for details.

Editing stitches

With BERNINA Embroidery Software designs, stitches are automatically generated from design outlines and properties. This means you can scale, transform and reshape designs without affecting stitch density or quality. However, BERNINA Embroidery Software also lets you edit individual stitches. You simply select and manipulate them like any other object. For example, you can insert stitches in an object to fill gaps, or move and delete individual or clusters of selected stitches. You may need to do this, for example, when working with 'stitch files' which do not contain design outline data. Where possible, however, edit the object properties rather than individual stitches. See Editing Stitches for details.

Advanced digitizing

BERNINA Embroidery Software provides a number of powerful productivity features as well as special effects and digitizing techniques for advanced embroiderers.

Specialized digitizing techniques

BERNINA Embroidery Software provides specialized digitizing features to create special effects as well as save time while you digitize. There are tools for creating designs with a hand-drawn appearance, something which is difficult to achieve through conventional digitizing methods. See Specialized Digitizing Techniques for details.

There are tools for reinforcing outlines, cutting holes in objects, removing underlying stitching, as well as filling holes. Quickly create outline stitching around selected objects or entire designs with Single, Triple or Satin Line. There are also specialized tools for quickly and easily creating buttonholes. See also Creating buttonholes.

Artistic stitch effects

BERNINA Embroidery Software provides many artistic effects and stitch types to create textured and patterned fill stitching. Fancy Fill is a decorative fill stitch, based on Step Fill, in which the needle penetrations form a tiled pattern. See Creating fancy fills for details.

Use **Textured Edge** to add rough edges to objects, create shading effects, or imitate fur or other fluffy textures in your design. See Creating textured edges for details.

Wave Effect lets you contour fill stitches along a digitized guideline. Stitches follow the line but maintain uniform density and needle penetration patterns. See Creating wave effects for details.

Gradient Fill varies stitch spacing between dense and open fill, producing shading effects which are difficult to achieve manually. See Creating gradient fills for details.
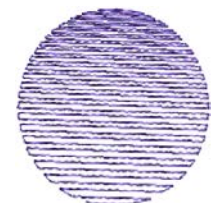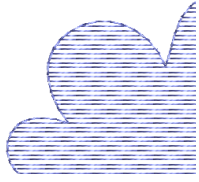
Apply **Travel on Edges** effect to force underlying travel runs to the edges of an object so that they can't be seen through open stitching. See Creating open fills for details.

Use the **Color Blending** effect to create different shading, perspective, three-dimensional and color effects by blending two colored layers in an embroidery object. See Creating color blending effects for details.
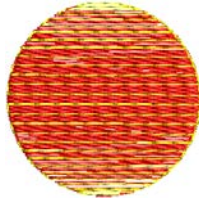
Pattern runs and fills

Patterns are pre-defined design elements, such as hearts, leaves or border patterns, that can be quickly inserted into a design. They generally consist of one or more simple objects, and are stored in a special pattern set.

Use the patterns provided with the software or create your own. Patterns can be scaled, rotated and mirrored in the same way as other objects. You can use patterns along a digitized line. You can also fill shapes with rows of repeated patterns, and apply special effects. See Patterned Stamps, Runs & Fills for details.

Craft stitch borders and fills

BERNINA Embroidery Software provides a range of craft stitches which you can use to mimic some traditional hand-worked embroidery. These include a large range of blackwork and candlewicking patterns suitable for both outlines and fills.

Backstitch and stemstitch are two versatile outline stitches. Backstitch forms a continuous thin line, similar to machine stitching, while stemstitch produces rope-like lines which can vary in thickness

depending on stitch angle. Both can be used to make a smooth continuous row of stitching suitable for outlines and for blackwork. Lacework and stipple are two decorative fill stitches. Lacework can be used to give a lacey look to objects such as flowers. Stippling, also known as vermicelli, is a free flowing run stitch that can be used for decorative effects or to produce quilting. See Craft Stitch Borders and Fills for details.

Digitizing for appliqué

Appliqué is an important craft in home sewing, and the **Auto Appliqué** feature provides an easy way to create high quality work. Use **Auto Appliqué** to generate all the stitching you require for closed-object appliqué. Up to four layers of stitching – placement line, cutting line, tackdown and cover stitch – are generated. Using the **Partial Appliqué** tool, you can create appliqué objects with partial cover stitching to create overlaps without doubling-up borders. See Digitizing for Appliqué for details.

Sometimes you require added flexibility to extend the range of designs that can be sewn. For instance, designs containing open-objects cannot be handled by **Auto Appliqué**. To this end the special **Advanced Appliqué** tool allows you to generate 'open-object appliqué' from one or more source or 'primary' objects. See Creating open-object appliqué for details.

Embroidery lettering

Create top-quality lettering quickly and simply. BERNINA Embroidery Software provides a large range of scalable closest-join alphabet styles and multi-color and fancy stitching alphabets to choose from. Select from the supplied alphabets or convert TrueType fonts for use as embroidery alphabets. See Alphabet Samples for details.

Lettering essentials

Add lettering to designs quickly and easily, either on-screen using the current settings or via object properties. Place lettering on a straight horizontal or vertical baseline, curve it around a circle or arc, or digitize your own baselines. You can apply formatting to lettering objects in the same way as a word processor, including italics, bolding, and right/left justification. Letter, word and line spacings can be determined before or after creating lettering objects and placing them in your design. See Lettering Essentials for details.

Editing embroidery lettering

BERNINA Embroidery Software gives you both interactive and precise numeric control over many attributes affecting lettering objects. You can adjust lettering objects as a whole as well as individual letters. Lettering text can be edited directly on-screen or by means of object properties. When you first create lettering, it may be too big or small. Size can be adjusted interactively or numerically. Small, narrow letters may not require underlay, depending on their size and the fabric to be used. Use the available tools to skew and rotate lettering objects. Adjust individual letters like any other embroidery object. Reshape letters, adjust stitch angles, and recolor letters individually. Baselines can be modified after placement directly on-screen or via object properties. See Editing Embroidery Lettering for details.

Special lettering effects

All TrueType fonts installed on your computer are also available to you when placing lettering in your designs. BERNINA Embroidery Software lets you add special characters to your lettering which do not appear on the keyboard. BERNINA Embroidery Software also provides a number of special alphabets for fancy lettering as well as monogramming. Like all embroidery objects, each lettering object has its own properties. You can adjust these before or after creating lettering objects. BERNINA Embroidery

Software also gives you precise control over the stitch angles of individual letters. Apply Elastic Lettering effects to lettering objects to make them bulge or arch, stretch or compress. See Special Lettering Features for details.

Monogramming

A 'monogram' is a design composed of one or more letters, typically the initials of a name, used as an identifying mark. The Monogramming feature offers a simple way to create personalized monograms using a selection of pre-defined monogramming styles, border shapes and ornaments, together with a set of tools to help you place these elements in creative and decorative ways. See Monogramming for details.

Design processing

At some stage you will actually want to output your designs to printer, machine, or storage device. For this, you will need an understanding of the different print options, embroidery file types and the storage media available.

Outputting designs

You can output embroidery designs in a variety of ways – by printing as worksheets, as appliqué patterns, color films, or as thread charts. BERNINA Embroidery Software also allows you to save your designs as images for use with fabric and garment applications. You can also send them directly to machine for stitching. When working with designs that are larger than the available physical hoop, you can split them into parts, each containing an object or group of objects. The software automatically calculates which files are to be sent and shows you how they will look. See Outputting Designs for details.

Storing and retrieving designs

By default BERNINA Embroidery Software saves designs to its native 'ART' file format. This format contains all information necessary both for stitching a design and for later modification. However, BERNINA Embroidery Software can open and save designs in other formats as well. When doing so, BERNINA Embroidery Software converts design data so you can modify it using the full range of software features. When you send designs directly to machine, they will be lost when the machine is turned off. Apart from saving to hard disk, floppy disk or archiving to CD, you can also preserve designs by writing them to embroidery machine memory, design card, or USB memory stick. If you have a Magic Box, you can read from and write to other design cards as well. See Reading & Writing Design Files for details.

Design management

BERNINA Portfolio provides an efficient way for viewing and managing embroidery designs. This design management tool can access design files stored on your computer hard disk, CD-ROM, or floppy disk. BERNINA Portfolio even lets you view design files in folders which have been archived by means of the popular WinZip utility. It recognizes all design file formats used by BERNINA Embroidery Software. See BERNINA Portfolio Basics for details.
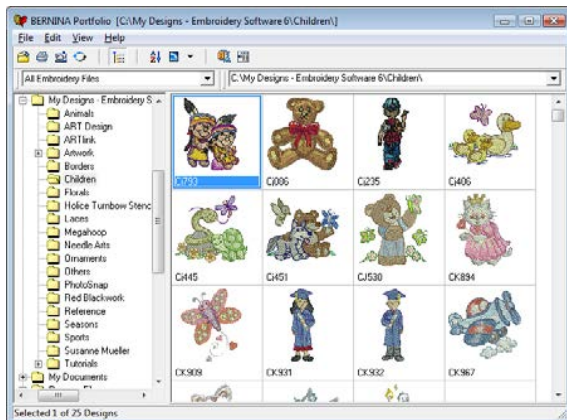
Designs in BERNINA Portfolio folders can be sorted in various ways. This is useful when you want to select designs for stitching out, printing, archiving, and so on. Once a design is selected in an BERNINA Portfolio folder, you can send it direct to an embroidery machine. You can also convert ART and other design files to and from other file formats. Catalogs of

designs in a folder contain thumbnails and/or summary information. These can be sent to a printer and published in a variety of formats. BERNINA Portfolio lets you archive and view design files in folders which have been archived by means of the popular WinZip utility. This can be useful for sending or receiving multiple files via email. See BERNINA Portfolio Advanced for details.

PART I
THE BASICS

Designs created in BERNINA Embroidery Software are composed of 'embroidery objects'. They are called 'objects' because they are discrete entities which can be manipulated independently of each other. Each object has certain defining characteristics or 'properties' such as color, size, position, and so on. The most important property of an embroidery object is its stitch type.

Introduction to embroidery digitizing

BERNINA Embroidery Software provides embroiderers with a fast, flexible way of creating and editing embroidery designs. This section provides an overview of the embroidery digitizing process as it applies to BERNINA® Embroidery Software. See Introduction to Embroidery Digitizing for details.

Basic procedures

This section describes how to start BERNINA Embroidery Software and access the available commands and tools. It covers basic procedures to do with opening, creating and saving design files. It explains how to activate hoops and grids and it covers accessing object properties. See Basic Procedures for details.

Viewing designs

This section explains the design viewing modes available in BERNINA Embroidery Software as well as the various design viewing settings. It describes zooming and panning as well as how to view the stitching sequence. It covers displaying design backdrops and changing backgrounds. It also explains how to obtain information about your designs. See Viewing Designs for details.

Selecting objects

This section describes how to select objects using the selection tools and keyboard. It also shows how to select color blocks or individual objects using the Color Film. See Selecting Objects for details.

Hooping designs

This section describes how to choose and display hoops in BERNINA Embroidery Software. It covers creating and modifying custom hoops. It also deals with hooping large designs. See Hooping Designs for details.

Hardware and software setup

This section describes how to set up embroidery machines, and scanners and describes how to calibrate the monitor. It also deals with changing grid spacing and hoop options. The setting of general options – such as automatic save, pointer position display options, etc – is also covered. See Hardware & Software Setup for details.

CHAPTER 3
BASIC PROCEDURES

To start using BERNINA Embroidery Software, you need to know the basic procedures, such as starting up, opening and creating designs, and saving. Once you start BERNINA Embroidery Software, you use commands or icons, and dialogs to complete your tasks. You select commands in the same way as other MS Windows® applications – from menus or toolbars.

BERNINA Embroidery Software opens a range of native ART files, as well as some other embroidery file formats, from computer hard disk, USB stick, or CD-ROM. BERNINA Embroidery Software gives you a wide range of standard factory-supplied hoops to select from. Grid lines help you accurately align or size embroidery objects. The most important dialog in BERNINA Embroidery Software is the Object Properties dialog. This and the Effects dialog are 'modeless', meaning that they stay on the Design Window as long as you need them.

Note This section describes how to start BERNINA Embroidery Software and access the available commands and tools. It covers basic procedures to do with opening, creating and saving design files. It explains how to activate hoops and grids and it covers accessing object properties.

BERNINA Embroidery Software interface

BERNINA Embroidery Software integrates with CorelDRAW® Essentials 4 into a single application, allowing users to create, not just embroidery, but true, multi-medium designs. The application has one workspace or 'Design Window' but you interact with it in separate operating modes: **Art Canvas** and **Embroidery Canvas**. A third mode, **Hoop Layout**, is available for multi-hooping large designs. See also Viewing modes.

View Mode Toolbar		
Art Canvas	Embroidery Canvas	Hoop Layout
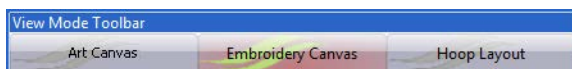
Starting BERNINA Embroidery Software

Double-click to start BERNINA® Embroidery Software.

BERNINA Embroidery Software can be opened via the desktop icon or MS Windows® Start menu. It defaults to **Embroidery Canvas** mode. This mode allows you to create and edit embroidery objects using the embroidery digitizing toolset.

To start BERNINA Embroidery Software

‣ Double-click the BERNINA Embroidery Software shortcut icon on the MS Windows® desktop or select it via the Windows **Start > Programs** group.

BERNINA Embroidery Software opens in **Embroidery Canvas** mode with a new, blank design (Design1). The screen image below displays an exploded view of **all** toolbars in the

BERNINA DesignerPlus product. Depending on your product level, you will have access to some or all of these options.

Title bar
Menu bar
General toolbar
Stitch and Color Bar
Edit toolbar
Digitize toolbar
Arrange toolbar
Craft Stitch toolbar
View Mode toolbar
Status bar
Design Window
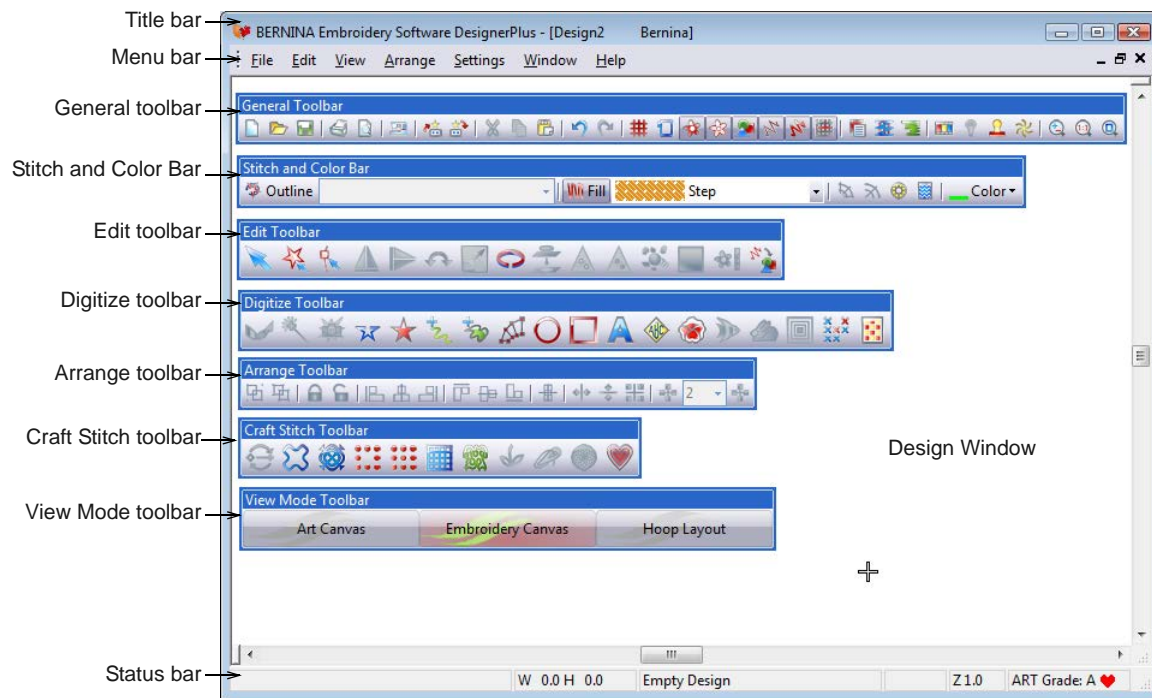
Note Toolbars are dockable left, right, top and bottom, and can be 'floated' anywhere in the Design Window. While the **Stitch and Color Bar** can be docked vertically, the **Outline** and **Fill** dropdown lists are not displayed. Therefore, it is advisable to dock the bar only horizontally. See also BERNINA Embroidery Software Quick Reference.

▸ Customize the Design Window by showing or hiding the grid, changing the grid dimensions, as well as showing and hiding toolbars. See Displaying the grid for details.

Docking panes

BERNINA Embroidery Software includes 'dockers' for key functions. **Embroidery Canvas** has docking panes for **Color Film**, **Carving Stamps**, **Morphing**

Effects, and an **Overview Window**. All panes are dockable at the right side of the Design Window.

Nested dockers

Dockers can be 'nested' to increase available workspace. When nested, tab buttons for each dialog appear to the side. All dockers can be fixed or minimized. By hovering the mouse over the tab, a minimized docker will 'fly out', allowing you to access its functions. It automatically minimizes when not in use. Dockers may also be 'floated' by dragging the caption bar to the Design Window or double-clicking it when 'pinned' in place.

Status bar

A **Status Bar** at the bottom of the **Embroidery Canvas** Design Window provides continuous display of current cursor position status as well as instructions for use of selected tools.

Measurement indicators:
X, Y, L and A

Enter point 1 on the curve | W 104.7 H 83.0 | X= -7.0 Y= 40.5 L= 41.1 A

Prompt message   Design width and height

Stitch count   File type

Y= 40.5 L= 41.1 A= 100 | 16149 | Z 2.1 | ART Grade: A ♥

Zoom factor
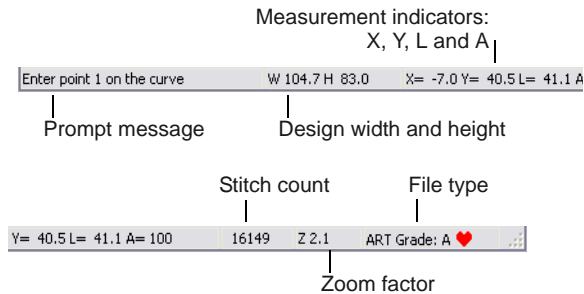
Information displayed includes:

▶ Prompt message: guides you through use of selected functions

▶ Design width and height

▶ Coordinates of current needle position (X/Y), and length (L) and angle (A) of current stitch. See also Measuring distances onscreen.

▶ Stitch count: total number of stitches in design

▶ Zoom factor

▶ File type: indicates grade of ART design – BERNINA Embroidery Software native ART designs are classified in four grades depending on how the file was created. See Embroidery design formats for details.

Working with design files

- -

By default BERNINA Embroidery Software saves designs to its native 'ART' file format. This format contains all information necessary both for stitching a design and for later modification. BERNINA Embroidery Software opens a range of native ART files, as well as some other embroidery file formats, from computer hard disk, USB stick, or CD-ROM. You can save designs in ART as well as other file formats. See Reading & Writing Design Files for details.

⚠️ **Caution** You cannot open ART files created with a later version of the software to the one you are running. If you attempt to, you will be prompted to update your system to the current version.

Opening designs

📁 Use Open (General toolbar) to open an existing design.

BERNINA Embroidery Software opens a range of embroidery files in addition to its own ART format. Native ART designs are classified in four grades depending on how the file was created. See also Starting BERNINA Embroidery Software.

📝 **Note** By default, designs are automatically grouped upon opening or insertion into another design. See Setting other general options for details.

- -

To open a design

1 Click the **Open** icon.

The **Open** dialog opens.
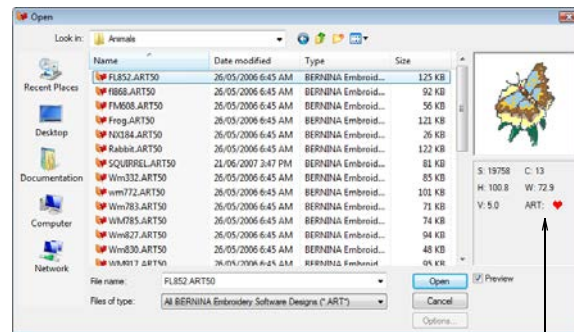
Native ART design

2 Select a folder from the **Look In** list.

📝 **Note** You can read designs stored on USB stick or CD-ROM, as well as computer hard disk.

3 If the design is not in ART format, select a file type from the **Files of Type** list.

4 Select a design or designs.

▶ To select a range, hold down **Shift** as you click.

▶ To select multiple items, hold down **Ctrl** as you click.

5 Select the **Preview** checkbox to preview the design (for supported file formats) together with design data. This includes stitch and color numbers, design height and width, and software version number.

6 Click **Open**.

📝 **Note** You can also read designs from your embroidery machine memory or BERNINA design card. If you have a Magic Box, you can read from other design cards as well. See Reading & Writing Design Files for details.

Starting new designs

Use New (General toolbar) to start a new design with the NORMAL template.

When you start BERNINA Embroidery Software, a new file – **Design1** – is automatically created, ready for you to start digitizing. By default, **Design1** is based on the NORMAL template. Templates contain pre-set styles, defaults or objects, to make digitizing quicker and easier. When you create a file based on a template, the template's values are copied to the new design. You can also select a custom template to base your new design on. See also Object Properties & Templates.

To start a new design

▶ Click the **New** icon.

A blank design opens in the Design Window based on the NORMAL template.

▶ To use a custom template, select **File > New**.

If there are templates additional to the default, the **New** dialog will appear.
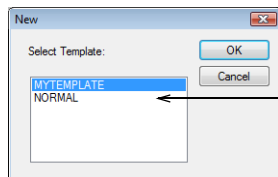
Select required template

▶ Select a template from the list and click **OK**. See also Object Properties & Templates.

Saving designs

Use Save (General toolbar) to save the current design.

BERNINA Embroidery Software designs can be saved in pure ART format as well as a number of non-native formats. Saving a design records its file name, location and format, and updates it with any changes you make. When you save an existing design under a new name, to a different location or format, you create a copy of the original design. See also Reading & Writing Design Files.

Tip Save your designs early and often. Do not wait until you finish working. To save changes to an existing file but preserve the original, use **Save As**. Once you have saved a design, every time you click **Save** on the toolbar the file will be updated.

To save a design

1 Click the **Save** icon.

If this is the first time you have saved the design, the **Save As** dialog opens.

Folder containing design

Design name
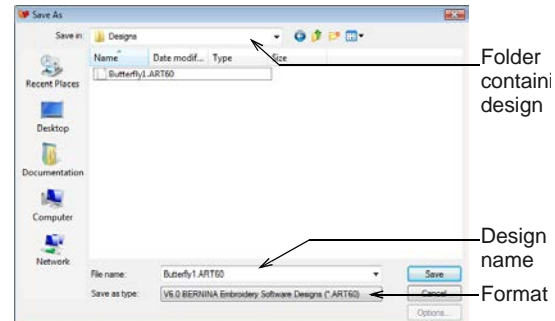
Format

2 Select the folder where you want to save the design from the **Save In** list.

3 Enter a name for the design in the **File name** field.

4 Select a file format from the **Save as type** list. See also Supported embroidery file formats.

5 Click **Save**.

Note You can also write designs to your embroidery machine memory or BERNINA design card. If you have a Magic Box, you can write to other design cards as well. See Reading & Writing Design Files for details.

Sample designs and artwork

BERNINA Embroidery Software contains hundreds of ready-to-stitch designs including many new attractive ornaments, samples and digitizing backdrops. Design files (ART files) and images (BMP, JPG, and WMF files) can be found in your **My Designs - Embroidery Software 6** folder. See also Digitizing with Backdrops and Viewing design information in the Onscreen Manual.

BERNINA Portfolio displays embroidery design thumbnails and limited design information. You can

filter the contents of the display window to show only certain embroidery file types. See Browsing designs in folders for details.
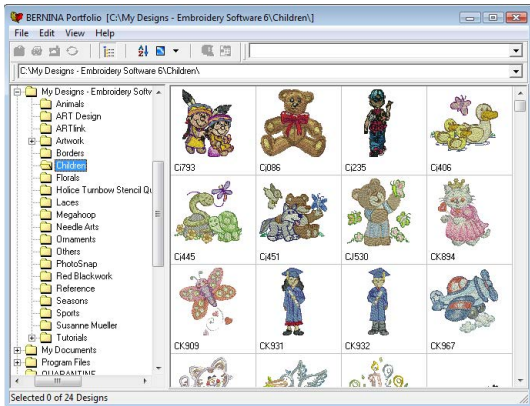
CorelDRAW® Essentials 4 itself is packaged with a selection of clipart which can be used as digitizing backdrops or converted directly into embroidery. See also Browsing clipart.
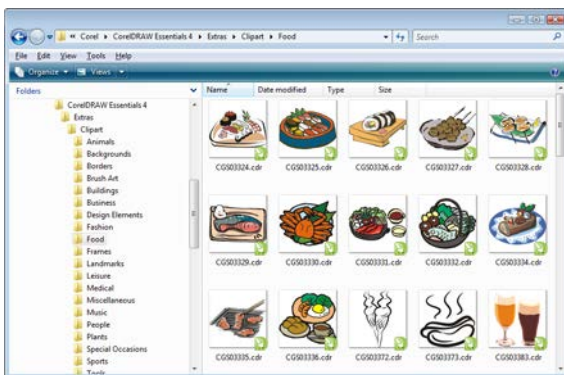
⚠️ **Caution** Included artwork (clipart) and embroidery designs can only be used for personal use – i.e. they cannot be commercially sold in any form. Changing the medium – i.e. clipart to embroidery or embroidery to clipart – does not remove copyright protection.

Hoops and grids

Fabrics should be hooped before stitching out on the machine. BERNINA Embroidery Software gives you a wide range of standard factory-supplied hoops to select from. Grid lines help you accurately align or size embroidery objects.

Displaying the hoop

> 🔲 Click Show Hoop (General toolbar) to view the hoop. Right-click to change settings.

Whenever you create a new design, a single hoop representing the one you attach to your embroidery machine appears by default in the Design Window. As you position objects, the hoop position adjusts automatically so that it is always centered around objects in the window. See also Hooping Designs.

To display the hoop

‣ Click the **Show Hoop** icon to turn on the hoop display.

‣ Click the **Show Hoop** icon again to turn off the hoop display.

Displaying the grid

> ⊞ Click Show Grid (General toolbar) to show or hide the grid. Right-click to change the Grid settings.

Use grid lines to help accurately align or size embroidery objects. You can show or hide the grid.

💡 **Tip** You can change the grid spacing, select a reference point and turn **Snap to Grid** on or off in the **Options** dialog. See Setting grid options for details.

To display the grid

▸ Click the **Show Grid** icon to turn on the grid display.
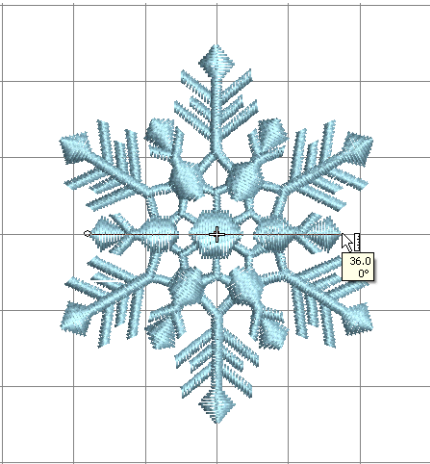
▸ Click the **Show Grid** icon again to turn off the grid display.

Measuring distances onscreen

Measure the distance between two points in the Design Window using the **Measure** command. This command displays coordinates, distance and angle of the mouse pointer from a point corresponding to the center of a hoop in an empty design. View the measurements in the Status Bar or in a tooltip. See Interpreting pointer position values for details.

Tip For more accurate results, zoom in before you measure. The measurement is always the actual size, and is not affected by the zoom factor.

To measure a distance onscreen

1 Select **View > Measure** or press **M**.

2 Click the start point.

3 Move the pointer to the end point and hold the mouse still.

The following information displays in the **Status Bar**:

▸ Position coordinates of the end point (**X=, Y=**).

▸ Length of the measured line **(L=)**.

▸ Angle of the line relative to the horizontal **(A=)**.

Measurements are shown in millimeters or inches, depending on the option selected in the MS Windows® Control Panel. See your

MS Windows® documentation for more information.

Measurements appear as tooltip or in Status bar
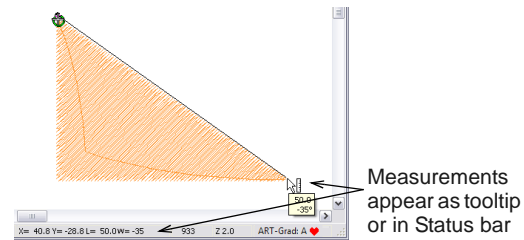
Tip If activated, length and angle measurements will also appear in a tooltip. See Setting other general options for details.

4 Press **Esc** to finish.

Using commands and tools

Once you start BERNINA Embroidery Software, you use commands or icons, and dialogs to complete your tasks. You select commands in BERNINA Embroidery Software in the same way as other MS Windows® applications – from menus or toolbars. Keyboard shortcuts are also available for the most frequently used commands. See Keyboard Shortcuts for details.

Selecting commands from toolbars

Toolbars provide quick and easy access to BERNINA Embroidery Software commands. Click a toolbar button to activate a command or, where applicable, right-click to set its properties.

To select commands from toolbars

▸ Rest the pointer over an icon to see its name in a 'tooltip'.

▸ Click the icon to activate the command.

▸ Right-click to adjust settings or activate the secondary command.

  ▸ If the icon has both left and right-click commands, the name is split with a slash (/). For example, the **Scale by 20% Down/Up** icon lets you scale objects down by 20% when you click it, or scale objects up by 20% when you right-click.

  ▸ For many tools, right-click accesses current command settings. For example, left-click **Lettering/Values** selects **Lettering** as the input method, while right-click accesses the **Object Properties** dialog.

Note Object properties can be modified **with** or **without** objects selected. The former affects only selected objects. The latter affects current settings. See also Applying and managing object properties.

Undoing and redoing commands

Use Undo (General toolbar) to undo a command.

Use Redo (General toolbar) to reapply a command which has been 'undone'.

You can undo the effects of most commands. If you change your mind, you can redo them again. BERNINA Embroidery Software remembers the last few commands you used.

To undo and redo a command

‣ To undo a command, click the **Undo** icon.

When BERNINA Embroidery Software cannot remember more commands, **Undo** is dimmed.

‣ Click the **Redo** icon to re-apply an 'undone' command.

Moving and docking toolbars

Toolbars provide quick and easy access to BERNINA Embroidery Software commands. Toolbars are 'dockable'. This means you can move them around the Design Window.

To move or dock a toolbar

‣ To move a toolbar to a more convenient location, click and drag it:

  ‣ Toolbars are dockable left, right, top and bottom.

‣ They can be 'floated' anywhere in the Design Window.
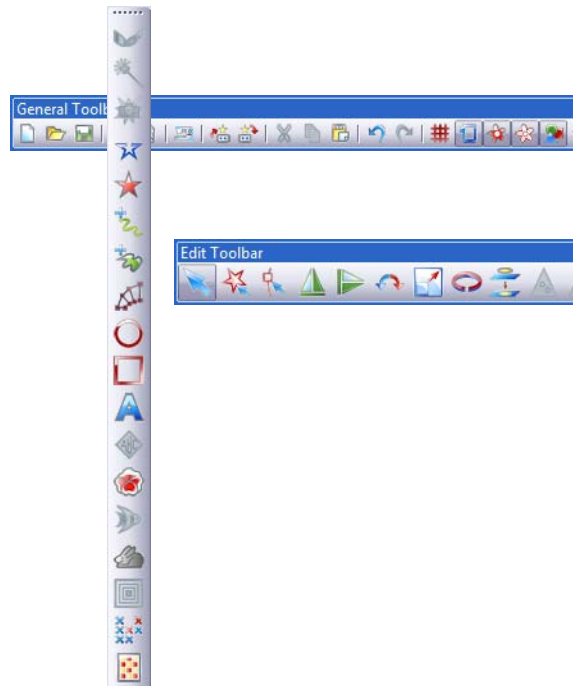
‣ To dock it in its normal position, double-click the toolbar title.

Accessing object properties

Use Object Properties (General toolbar) to set current properties or properties of selected objects.

Designs created in BERNINA Embroidery Software are composed of 'embroidery objects'. They are called 'objects' because they are discrete entities which can be manipulated independently of each other. Each object has certain characteristics or 'properties' such as color, size, position, and so on. The most important dialog in BERNINA Embroidery Software is the **Object Properties** dialog. See also Applying and managing object properties.

To access object properties

‣ Open the **Object Properties** dialog by any of the following means:

  ‣ Click the **Object Properties** icon.

  ‣ Select **Settings > Object Properties**.

▸ Double-click or right-click any object in the Design Window.
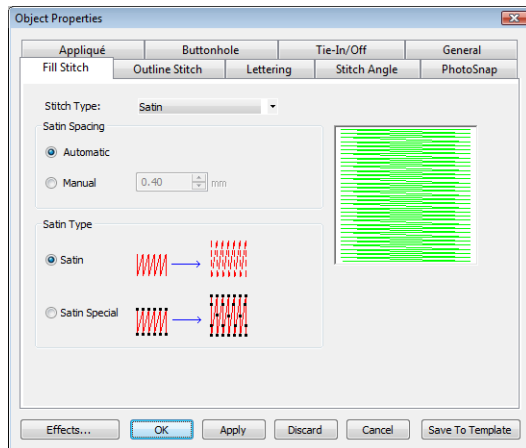
▸ Select a tab to access the object property set you want to adjust.
▸ Use fields, dropdown lists, radio buttons, checkboxes, and slider controls to key in or adjust settings.
▸ Click the **Effects** button to access a separate set of more specialized object property settings such as Underlay, Textured Edge, Gradient Fill, etc.
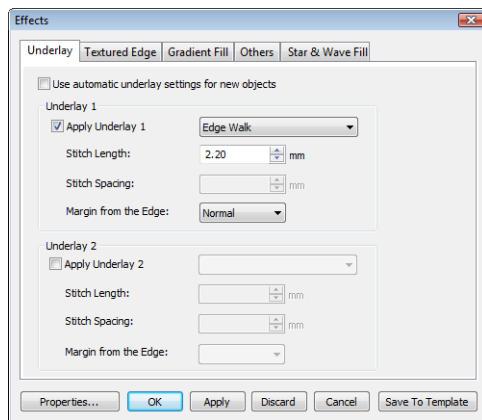
Note This dialog, in turn, includes a **Properties** button which opens the **Object Properties** dialog. You can choose to close the **Object Properties** dialog automatically whenever the

Effects dialog is opened, and vice versa. See Setting other general options for details.
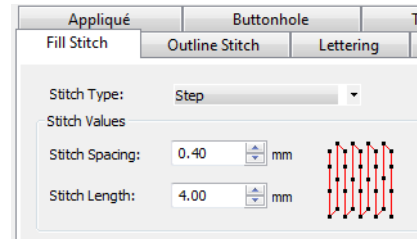
Tip Graphic tips are incorporated into the **Object Properties** dialog to give you visual feedback on particular settings. These are displayed whenever you hover the mouse over a control. For example, with the mouse placed over the **Stitch Spacing** control, a graphic tip appears beside it.

▸ Apply settings by means of the **Apply** button at the bottom of the dialog or by pressing **Enter**.
  ▸ If one or more objects are selected, changes are applied to all relevant objects.
  ▸ If no objects are selected, changes are made to the current settings – these will affect any newly created objects.
  ▸ If you have modified settings on a number of tabs, all changes that can be applied will be applied.
▸ Click the **Save to Template** button to save settings to the current template.

  These become the defaults whenever you create new files based on this template. See Managing design templates for details.
▸ Click the **Discard** button or press the **Esc** key to discard any changes.
▸ Click **OK** to close the dialog and apply any pending changes.

CHAPTER 4
VIEWING DESIGNS

BERNINA Embroidery Software provides many viewing features to make it easier to work with your design. Zoom in on an area to see more detail or view the design at actual size. Show or hide various design elements with the available display settings. Preview an existing design in different colors on different fabrics.

When working with embroidery designs, you need to understand the stitching sequence. You can check a design's stitching sequence in BERNINA Embroidery Software by 'traveling' through it stitch-by-stitch. You can also check the sequence by simulating the design stitchout onscreen.

BERNINA Embroidery Software also provides information about designs in a variety of ways and formats. Before even opening BERNINA Embroidery Software or your design, you can check some design information for ART files directly from MS Windows® Explorer. You can view stitching details about a design in the Design Properties dialog. Also the Print Preview provides essential design information, including a design preview, the size of the design, color sequence and any special instructions.

This section explains the design viewing modes available in BERNINA Embroidery Software as well as the various design viewing settings. It describes zooming and panning as well as how to view the stitching sequence. It covers displaying design backdrops and changing backgrounds. It also explains how to obtain information about your designs.

Viewing modes

While digitizing, different viewing modes are available for different purposes. Depending on your product level, BERNINA Embroidery Software provides a number of viewing modes which are accessed via the **View Mode** toolbar.

The application has one workspace or 'Design Window' but you interact with it in separate modes.
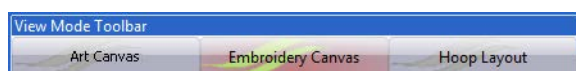
Art Canvas mode

Load, edit and save graphics as a backdrops for embroidery digitizing. Includes entire suite of CorelDRAW® Essentials 4 drawing tools. In addition, it provides capabilities to convert vectors and vector text directly to embroidery objects.

In Art Canvas mode, the View Mode toolbar includes the Show Embroidery button to toggle embroidery display on or off.

Below is a screen image of the **Art Canvas** workspace which is accessed via the **View Mode** toolbar. This mode allows you to create and edit vector graphics using the CorelDRAW® Essentials 4 toolset which offer many sophisticated techniques for drafting outlines and shapes onscreen.
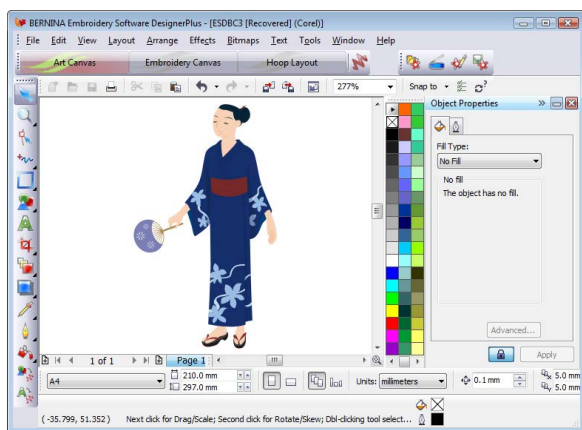
In addition to the CorelDRAW® Essentials 4 toolset, **Art Canvas** provides capabilities to convert vectors and vector text directly to embroidery objects. Vector graphics or text created or imported into the **Art Canvas** can be converted directly to embroidery designs. You can use **Art Canvas** to insert or paste third-party vector graphics such as clipart for use in embroidery designs. Alternatively, insert, paste or scan bitmap artwork for use as digitizing templates or 'backdrops'. See Loading pictures for details.

Note For a full description of the CorelDRAW® Essentials 4 tools, refer to the electronic User Guide available via the Windows **Start > Programs** group. Alternatively, use the onscreen help available from the **Graphics** mode **Help** menu.

Embroidery Canvas mode

Digitize and edit embroidery designs. Show embroidery shapes as well as graphics. View designs realistically in simulated 3D.

Below is a screen image of the **Embroidery Canvas** workspace which is accessed via the **View Mode** toolbar. This mode allows you to create and edit embroidery objects using the embroidery digitizing toolset. See also BERNINA Embroidery Software interface.
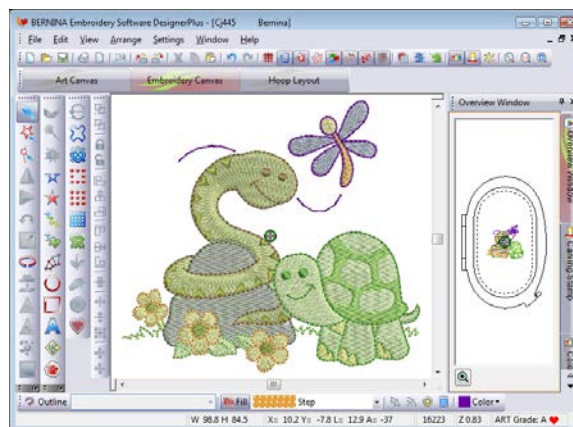
Use this mode when you want to create embroidery from digitizing 'backdrops'. Various types of image file can be loaded in BERNINA Embroidery Software. See also Digitizing with Backdrops.

Embroidery Canvas also offers a graphical representation of what the final embroidery will look like. Use **Show Artistic View** together with a background fabric to see how your design will look when stitched out. See also Changing backgrounds.

Hoop Layout mode

View and edit multi-hoopings. If embroidery is too large or contains multiple designs spaced around an article, split into multiple hoopings.

Below is a screen image of the **Hoop Layout** workspace which is accessed via the **View Mode** toolbar. If your embroidery is too large or contains a number of designs spaced around an article, you can split it into multiple hoopings. This means you can create embroidery designs that are larger than it is possible to stitch out on a single hoop. **Hoop Layout**

allows you to set up the position and sequence of each hoop. See Hooping large designs for details.
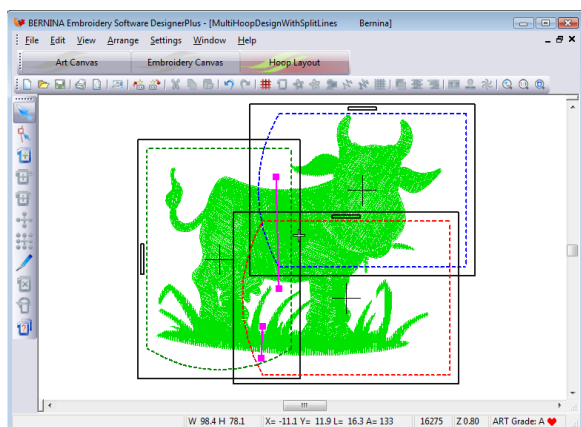
Design viewing settings

You can show or hide design elements in **Embroidery Canvas** with a variety of display settings. See a graphical representation of the final embroidery. Show or hide needle penetration points and stitches themselves. Or show/hide selected colors.

Viewing simulated embroidery

Click Show Artistic View (General toolbar) to toggle artistic or 'stitchout' view on/off.

With **Artistic View**, you can see a graphical representation of the final embroidery.

To view simulated embroidery

▸ To view simulated embroidery (Artistic View), toggle the **Show Artistic View** icon on.
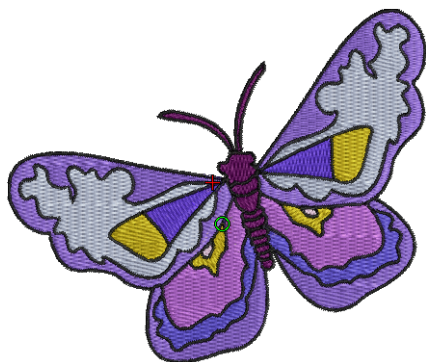
▸ To view embroidery stitches (Stitch View), toggle the **Show Artistic View** icon off.
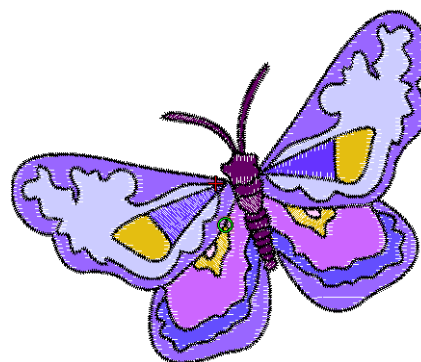
Viewing needle points

Select Needle Points (View menu) to show or hide the needle points in a design.

In **Embroidery Canvas**, you can show or hide needle points. For example, you may want to view needle points to select stitches for editing. See also Editing Stitches.

To view needle points

▸ To show or hide needle points, select **View > Needle Points**.

Needle points ON
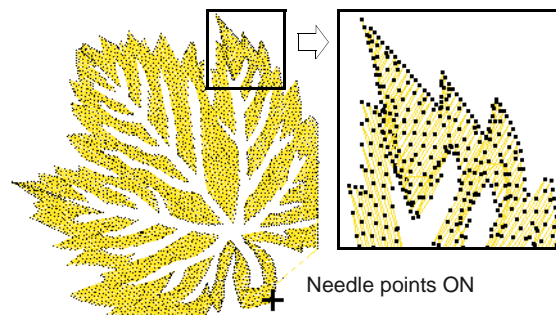
Viewing stitches and outlines

Click Show Stitches (General toolbar) to toggle stitch view on/off.

You can show or hide stitches and object outlines in any viewing mode as you work. Hide stitches to see outlines more clearly when reshaping. See Reshaping & Editing Objects for details.

To view stitches and outlines

▸ Click the **Show Stitches** icon to turn stitches on or off.

Stitches ON   Stitches OFF
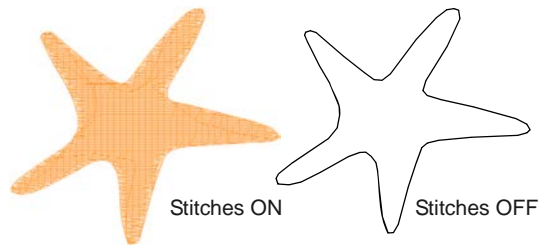
Viewing objects by color

Select By Color (View menu) to isolate design elements by color.

To help you isolate individual design elements for checking or manipulation, the **View By Color** function lets you view objects by color. This is particularly useful when you are resequencing objects by color. See also Resequencing objects by color.

Note You will need to ungroup the design before you can view object by color.

To view objects by color

1 Create or open a design.

2 Select **View > By Color**.

The **Select By Color** dialog opens.

Select By Color				
Thread	Code	Brand	Description	
1	1335	Isacord 40	1335	OK
2	1514	Isacord 40	1514	Cancel
3	10	Default	Orange	
4	0821-brass	Isacord 40	0821	
5	0904	Isacord 40	0904	All Colors
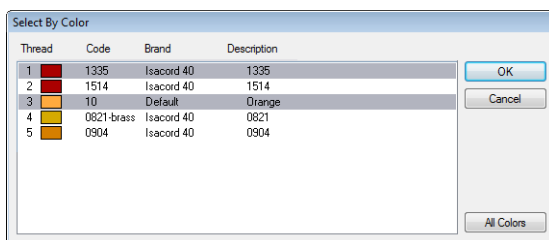
3 Select the colors you want to view.

    ▸ To select a range, hold down **Shift** as you click.

    ▸ To select multiple items, hold down **Ctrl** as you click.

4 Click **OK**.

The design appears with only those colors you selected in view.

Two colors selected

5 To view all colors in the design, select **View > By Color** again and click **All Colors**.

6 Click **OK**.

Tip The **Color Film** provides another way to view design objects. See Viewing and selecting color blocks for details.

Zooming and panning

Use the **Overview Window** and **Zoom** functions to quickly examine your design at different degrees of magnification.

Tip The **Status Bar** displays the current 'zoom factor'. See Starting BERNINA Embroidery Software for details.

Viewing designs in overview

Use the Overview Window to view design thumbnails. The window updates whenever you make a change and can be used to zoom into or pan across the Design Window.

To view designs in overview

1 Select **View > Overview Window**.

The **Overview Window** opens.

Click to activate zoom box
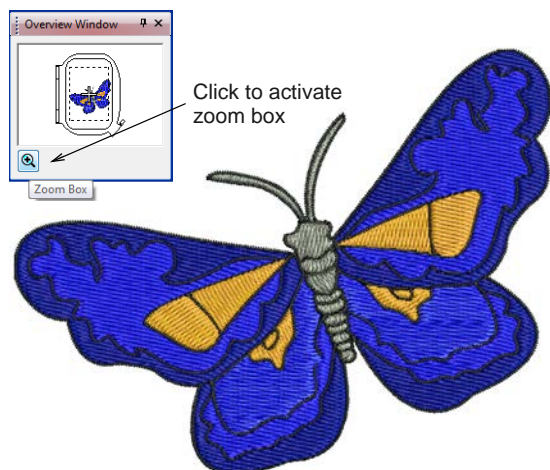
2 To zoom in or out, click the **Zoom** button on the Overview Window and drag a bounding box around the area to zoom and drop.

Drag and drop a bounding box around area to zoom
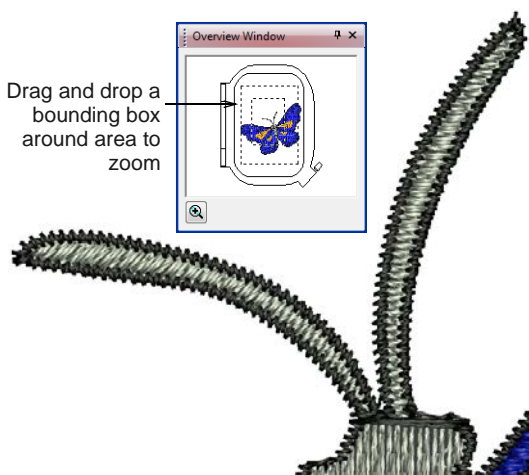
3 To pan across the design, move the cursor inside the zoom box – it changes to a four-way arrow cursor – and drag and drop.

Drag zoom box to area to pan
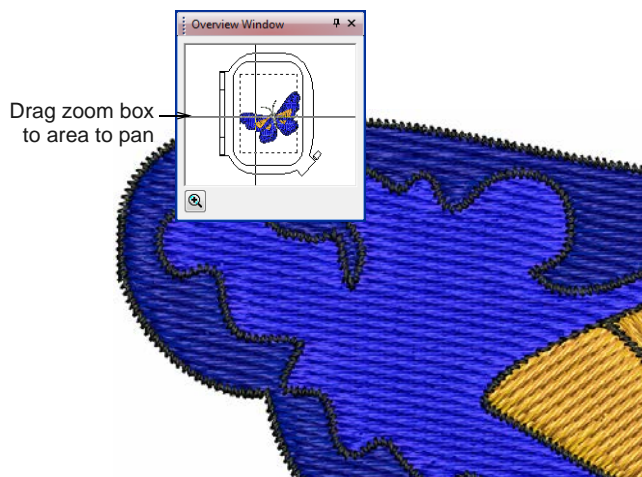
Zooming in and out

Click Zoom Box (General toolbar) to zoom in and out of the Design Window. Use it also to zoom in on bounded areas of the screen.

Click Show All (General toolbar) to show the whole design.

Click Show 1:1 (General toolbar) to show the design at the correct size.

Magnify your view of the design by zooming in on individual stitches or details, or zoom out to display more of the design in the window. The current zoom factor is shown at the lower right corner of the screen. See also Keyboard Shortcuts.

Note To make sure your design is being displayed at the correct size, calibrate your monitor. See Calibrating the monitor for details.

- -

To zoom in and out

▶ Click the **Zoom Box** icon or press shortcut letter **B**.

The cursor becomes a magnifying glass.

▶ Right-click in the Design Window to zoom out – the view zooms out to half the previous screen magnification, centered at the point you clicked.
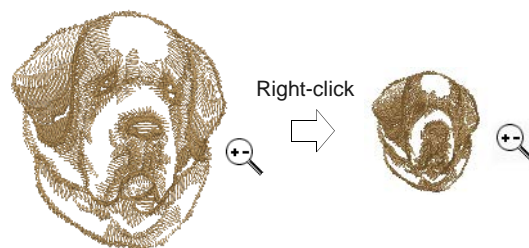
Right-click

Tip The **Status Bar** displays the current 'zoom factor'. See Starting BERNINA Embroidery Software for details.

▶ Left-click in the Design Window to zoom in – the view zooms to twice the previous screen magnification, centered at the point you clicked.

▸ Left- or right-click-and-drag a bounding box around the zoom area. Release the mouse to view the entire boxed area in the Design Window.

Click-and-drag
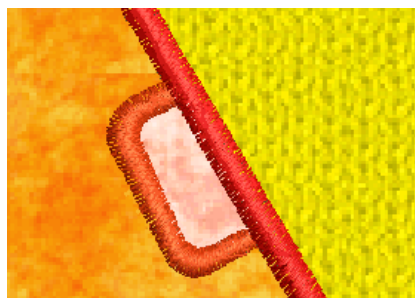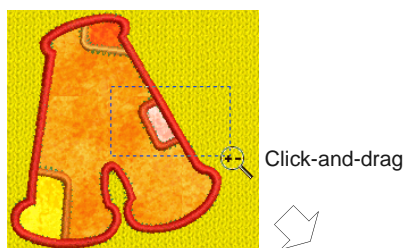
Note All bitmap images, regardless of context, maintain the same zoom scale as embroidery. Bitmaps are used in a number of contexts:

- ▸ As a backdrop or guide picture for digitizing: See Digitizing with Backdrops for details.
- ▸ As a background to simulate the stitchout fabric: See Changing backgrounds for details.
- ▸ As a fabric patch for appliqués: See Digitizing for Appliqué for details.

▸ To display the whole design, click **Show All**. Alternatively, select **View > Show All**, or press **0**.

▸ To display the design at actual size, click **Zoom 1:1**.

▸ To display the design at a particular scale, press **F** on the keyboard. Enter a scale as a percentage of the actual size, and click **OK**.
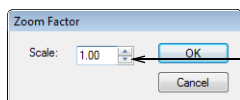
Enter scale

▸ Press **Esc**, **Enter** or **Spacebar** keys to exit **Zoom** mode.

Viewing the stitching sequence

When working with embroidery designs, you need to understand the stitching sequence. You can check a design's stitching sequence by 'traveling' through it by stitches, colors or objects. You can also check the

sequence by simulating the design stitchout onscreen. BERNINA Embroidery Software simulates stitching out by changing stitches from black to their allocated thread colors as they are 'stitched'. See also Viewing and selecting color blocks.
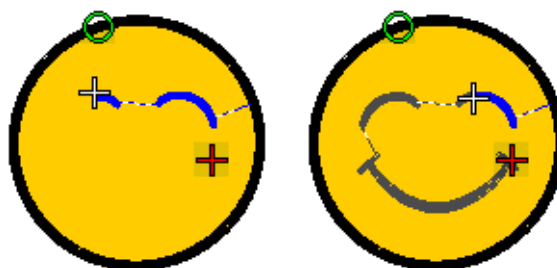
Traveling by object and color block

Use the keyboard shortcuts to travel through designs by object or color block. This technique is useful if you need to locate a specific object in order to delete it or insert another object at that point the stitching sequence. See also Keyboard Shortcuts.

To travel by object or color block

▸ To travel to the end of the design, press the **End** key.

The white cross is located at the last stitch and the design displayed in the selected thread colors.

Start point

White cross - current needle position marker
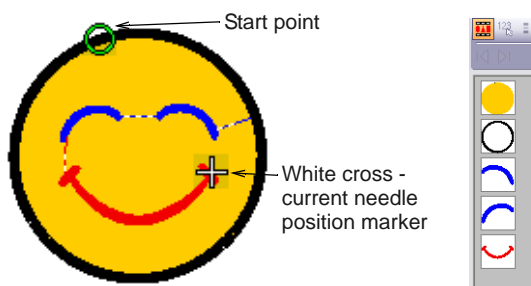
▸ To travel to the start of the design, press the **Home** key.

The white cross is located at the first stitch and the entire design displayed in dark gray.

White cross - current needle position marker

End point
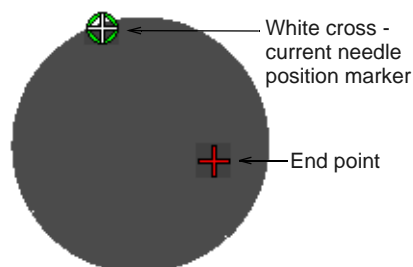
▸ To travel to the next object, press **Ctrl+T**.

White cross - current needle position marker
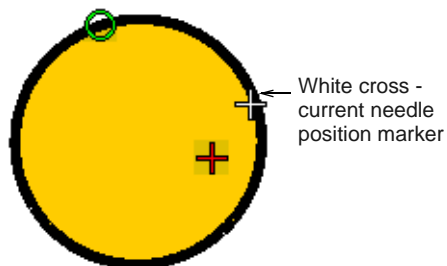
▸ To travel to the previous object, press **Shift+T**.

▸ To travel to the next color, press the **Page Down** key.

White cross - current needle position marker
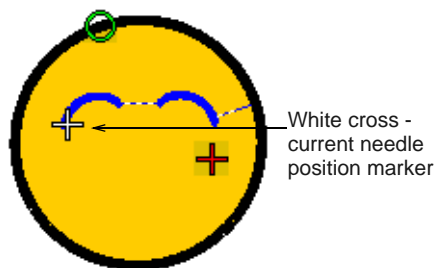
▸ To travel to the previous color, press the **Page Up** key.

Tip With the **Select Object** tool activated, you can select objects while traveling through the stitching sequence. See Selecting objects by Tab key for details.

Traveling by stitches

Use the stitch travel tools or shortcut keys to travel through the design one or more stitches at a time. The current needle position is indicated by a large white cross or 'needle position marker'. Initially, this is located at the end of the design. When you travel through stitches, the needle position marker moves accordingly. The current stitch number appears in the **Status Bar**.

- -

To travel by stitches

1 Select **Edit > Stitch Edit** or press **Esc**.

2 Ensure that **Select Object** is not selected, then press the arrow keys to travel by 1 or 10 stitches.

- 10

-1   +1

+ 10
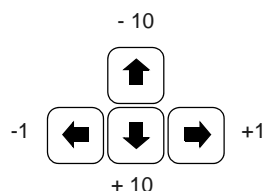
▸ Press the left or right arrow key to travel 1 stitch backward or forward.

▸ Press the up or down arrow key to travel 10 stitches backward or forward.

3 Press the **+** or **-** keys located on the keypad to travel by 100 stitches. The **+** key moves you forward, while the **-** key moves you backwards.

Travel backwards one stitch
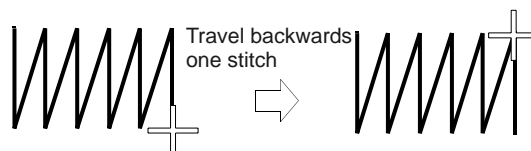
Tip If you travel outside the visible area, press the **C** key to center the current stitch on the screen.

Simulating design stitchouts

The **Slow Redraw** function lets you simulate the actual embroidery design stitchout onscreen. Use it to view design stitching and color sequence in slow motion. Redrawing can be started from any stitch in the design. Hide previously stitched parts of the design as required. With larger designs, you can choose to scroll automatically so that the area being stitched remains onscreen.
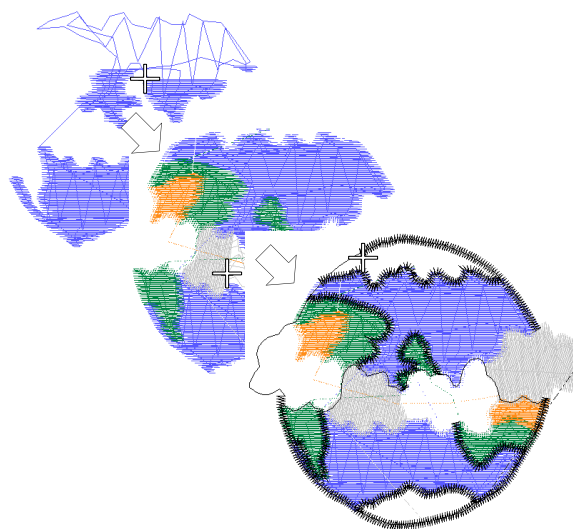
Because **Slow Redraw** emulates the movements of the embroidery machine, you are able to make decisions about how to optimize your design in order to lessen the load on the machine. This is particularly important if you intend to make multiple stitchouts of the same design. It is good practice to perform Slow Redraw on completed designs for this reason.

Note **Slow Redraw** cannot be used with **Artistic View**.

To simulate the design stitchout

1 Switch to **Stitch View**.

2 Select **View > Slow Redraw** or press **Shift+R**. The **Slow Redraw** dialog opens.

Play Pause Stop Back to Start
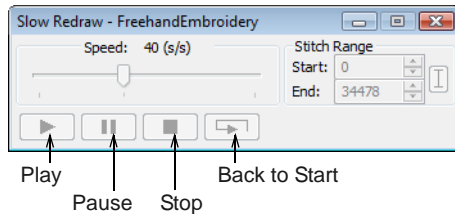
3 To redraw only a section of the design, specify the start and end stitch in the **Stitch Range** field.

4 Use the slider bar to set the redraw speed.

5 Click the **Play** button.

The design is redrawn onscreen according to stitching sequence and selected speed.

6 Adjust control buttons as required:

Button	Function
Speed	Use the slider bar to adjust the redraw speed in 'real time'.
Pause	Pauses the redraw, letting you resume where you left off.
Stop	Stops the redraw and returns to the beginning of the design.
Back to Start	Redraws from the beginning of the design.

Backdrops and backgrounds

You can display a backdrop while you digitize. Hide it temporarily while you work, or dim it for easier stitch viewing. You can also change the background color of the Design Window to match the color of your fabric.

Viewing backdrops

Use Show Pictures (General toolbar) to toggle backdrops on/off.

Use Dim Artwork (General toolbar) to dim backdrops in order to show stitches more clearly when digitizing.

Use Show Vectors (General toolbar) to toggle on/off display of vector graphics.

Use Show Appliqué Fabric (General toolbar) to toggle appliqué fabrics/colors on/off.

You can display a backdrop, bitmap or vector, while you digitize, or hide it temporarily. Hiding backdrops does not delete them from the design. You can also dim backdrops to make it easier to view stitches. See also Digitizing with Backdrops.

To view backdrops

‣ To toggle backdrop pictures on/off – both bitmap and vector graphics – click the **Show Pictures** icon. See also Importing images into BERNINA Embroidery Software.
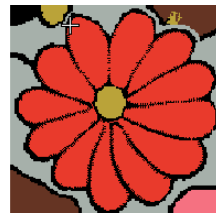
With Show Pictures ON   With Show Pictures OFF
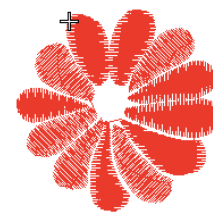
Note The drawing appears dimmed if **Dim Picture** is selected.

‣ To dim a backdrop, click the **Dim Artwork** icon.
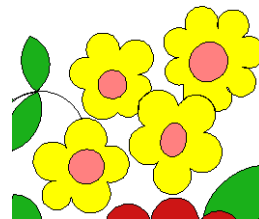
Original bitmap image   Dimmed bitmap image
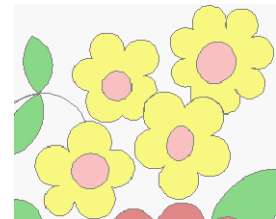
Note To return to full color, click the **Dim Picture** icon again.

‣ To toggle backdrop vector graphics on/off, click **Show Vectors** icon.

▶ Click the **Show Appliqué Fabric** icon to show appliqué fabrics/colors. See also Digitizing for Appliqué.
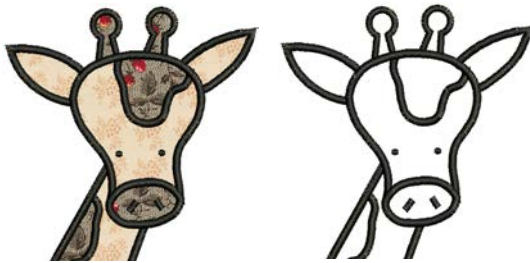
| With Show Appliqué Fabric ON | With Show Appliqué Fabric OFF |

▶ To hide the fabrics/colors, click the **Show Appliqué Fabric** icon again.

Changing backgrounds

Select Fabric Display (Settings menu) to change background color and fabrics.

 Use the Show Appliqué Fabric tool (General toolbar) to toggle fabric display on or off.

In BERNINA Embroidery Software, you can change the background color of the Design Window to match the color of your fabric. Or you can select a background fabric for more realistic previews and presentations. The background is saved with the design.

Tip Use the **Show Appliqué Fabric** toggle to turn appliqué fabrics/colors display on/off. See Placing fabrics in Auto Appliqué designs for details.

- -

To change backgrounds

1 Select **Settings > Fabric Display**.

The **Display** dialog opens.

Select background color or fabric
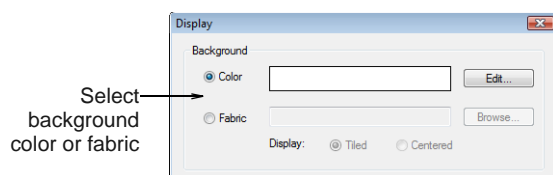
Tip You can also access this dialog using **Settings > Thread Colors** or clicking the link in the **Color Palette** dialog. Then double-click **BKG** in the

Thread Colors tab. See Thread Colors & Charts for details.

Click to access Thread Colors

Double-click to change background
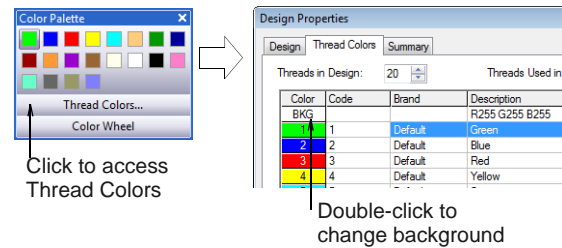
2 Select the background type you want:

Option	Purpose
Color	Select a background color.
Fabric	Select a background fabric.

3 Select the color or fabric you want to use:

▶ To select a background color, click **Edit** and select a color from the **Color** dialog.
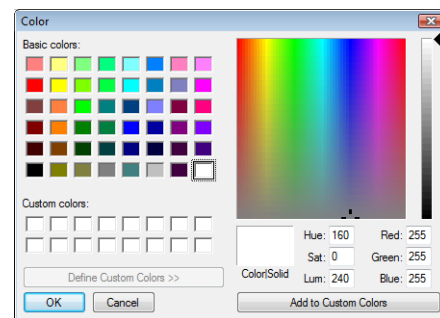
▶ To select a fabric, click **Browse** and choose from the **Select Fabric Pattern** dialog.
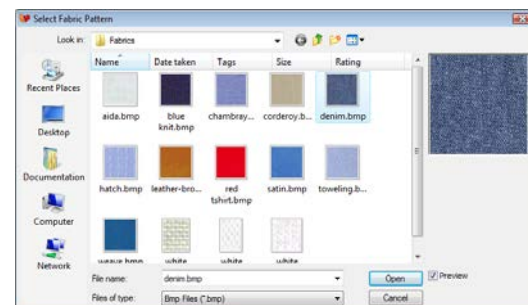
Tip If you choose fabric, you can center or tile the image in the Design Window. If the bitmap is large enough to fill the entire window, select **Center**. Otherwise, select **Tile**.

Select tiled or centered

4 Click **OK**.

Yellow background   Denim background

Note The background is saved with the design.

Viewing design information

BERNINA Embroidery Software provides information about designs in a variety of ways and formats. Before even opening BERNINA Embroidery Software or your design, you can check some design information for ART files directly from MS Windows® Explorer. You can view stitching details in the **Design Properties** dialog. The **Print Preview** tool provides essential design information, including a design preview, the size of the design, color sequence and any special instructions.

Viewing design properties

Use Design Properties (File menu) to view stitching details about a design.

You can check software version number and other design information through the **Design Properties** dialog. Stitching details are also provided. Most of the fields cannot be modified directly.

To view design properties

1 Select **File > Design Properties**.

The **Design Properties > Design** dialog opens. This tab contains information about height and

width and stitch count and colors. The data is extracted from the design and cannot be modified.

2 Select the **Summary** tab to view or enter summary information about the design.

3 Click a field and enter any text which will help you identify the design at a later date.

Note Information from this tab is included on the Print Preview as well as the **Summary** tab of the **Windows Properties** dialog. See Viewing design information in Windows Explorer and Previewing designs for details.

4 Click **OK**.

Viewing design information in Windows Explorer

Before opening ART files, you can view design thumbnails and details via MS Windows® Explorer. The **Properties** dialog displays a design preview together with design information such as stitch count, number of stops and color changes. You can also view general file information, such as file size and modification dates. See also Design Management.

Note This same dialog can be accessed from within the **Open** dialog in BERNINA Embroidery Software. See also Opening designs.

To view design information in Windows Explorer

1 In Windows Explorer, select the folder you are interested in.

Design thumbnails are displayed in the Windows Explorer window.
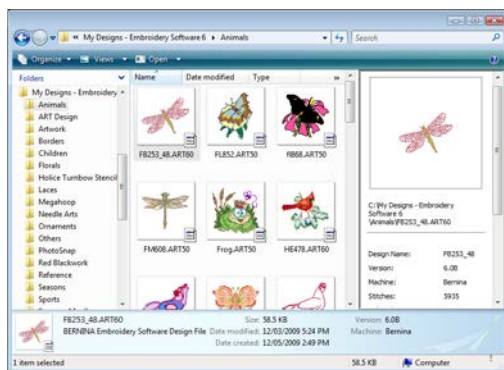
2 Right-click a file and select **Properties** from the popup menu.

The **Properties** dialog opens.

ART design details available in Windows Properties dialog
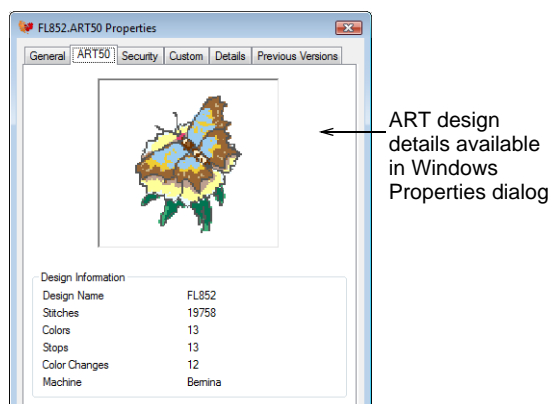
3 Check the design information, or click the other tabs for general file information.

Tip The **Summary** tab provides some of the same information entered in the **Design Properties > Summary** tab in BERNINA Embroidery Software. See Viewing design properties for details.

4 Click **OK**.

Previewing designs

Click Print Preview (General toolbar) to preview the print preview onscreen.

The **Print Preview** contains a design preview and essential design information, including the size of the

design, color sequence and any special instructions. See also Printing designs.

To preview designs

1 Click the **Print Preview** icon.

The design preview displays in a preview window.

Click to print design   Click to display one or two pages   Click to set print options

Design   Design information
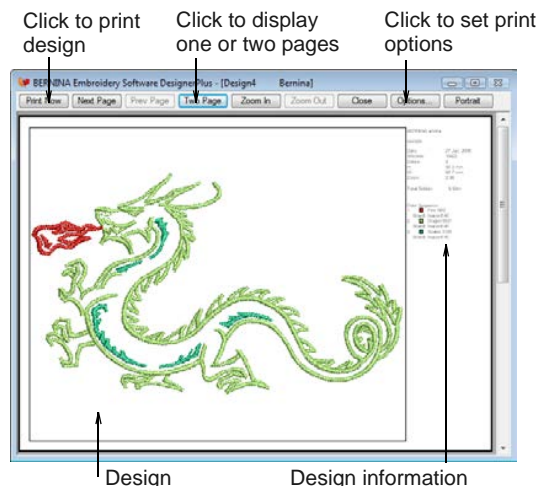
2 Adjust the view as required:

▸ To change the orientation of the paper, click **Landscape** or **Portrait**.

▸ To change the information that displays, and set printing preferences, click **Options**. See also Setting print options for embroidery.

▸ Click **Zoom In** to read the design information or view the design preview more closely. Large designs may be displayed over a number of pages.

▸ To print the design, click **Print**.

▸ To close the print preview, click **Close**.

CHAPTER 5
SELECTING OBJECTS

BERNINA Embroidery Software provides various means for selecting the objects comprising an embroidery design. These include techniques such as point and click, bounding box selection, and multiple object selection. You can select all objects in a design or individual ones for precise modification. BERNINA Embroidery Software allows selection of object outlines or fill stitches.

Note Designs must be ungrouped before objects can be selected. See Ungrouping objects for details.

This section describes how to select objects using the selection tools and keyboard. It also shows how to select color blocks or individual objects using the Color Film.
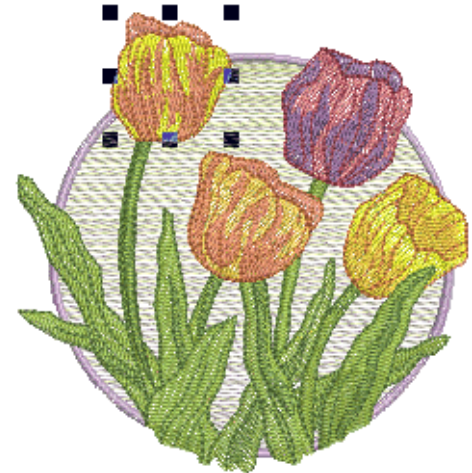
Selecting objects by point and click

Click Select Object (Edit toolbar) as necessary (generally activated by default), and click objects to select.

The simplest way to select objects is by pointing and clicking with the mouse with the **Select Object** tool activated. Using **Shift** and **Ctrl** keys, you can select multiple objects. Both outlines and/or filled areas can be selected. Clicking an outline selects an object even if another is above it. Where you have a mixture of closed objects, you can select object outlines or fill stitches.

Note With low-density stitching and/or at high zooms, it is actually possible to click between stitches and not select the object.

To select objects by point and click

▸ Click the **Select Object** icon.

▸ Click an outline to select the object.

▸ Click the fill behind a outline object to select the filled object.
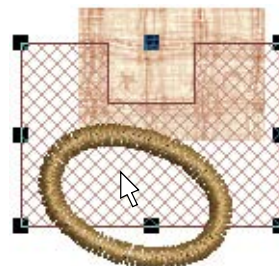
▸ Click the fill to select an object even if it lies within the bounds of a larger object.

Tip To select an object which is behind another object, zoom in and click the outline. Alternatively, position the pointer over the object, hold down the **2** key, and click until the object is selected. Each click selects the next overlapping object.

▸ To select multiple items, hold down **Ctrl** as you click.

Click an object   Hold down Ctrl and click another object   Ctrl +
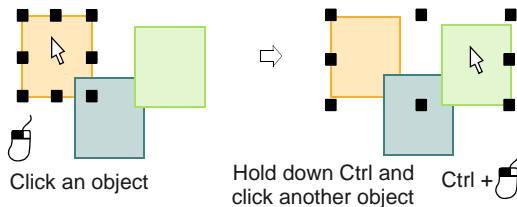
▸ Select a range of objects by holding down **Shift** while you click the first and last objects in the range.

Click first object   Hold down Shift and click last object   Shift +
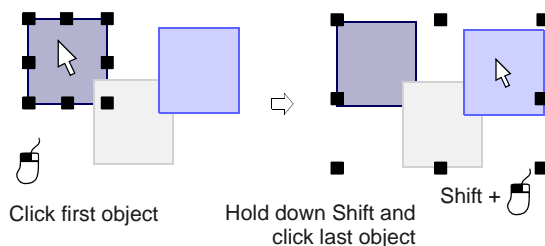
Selecting objects by bounding box

Use Select Object (Edit toolbar) and drag a bounding box around the object to select.

With the **Select Object** tool activated, you can select objects by dragging a bounding box around them.

To select objects by bounding box

1 Click the **Select Object** icon.

2 Drag a bounding box around the objects you want to select.

Objects are selected when you release the mouse button.

Drag a bounding box around the objects   Objects are selected
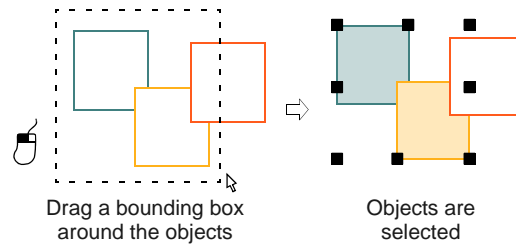
Note Unless they have already been grouped, only objects completely within the bounding box will be selected when you release the mouse button. See also Grouping objects.

Selecting objects by Polygon Select

Use Polygon Select (Edit toolbar) to select objects with a bounding box.

Use **Polygon Select** to select objects with a bounding box.

To select objects by Polygon Select

1 Click the **Polygon Select** icon.

2 Mark reference points around the object/s you want to select.

The objects you want to select must be completely within the outline.

3 Press **Enter** to select.

Mark reference points around object/s to select
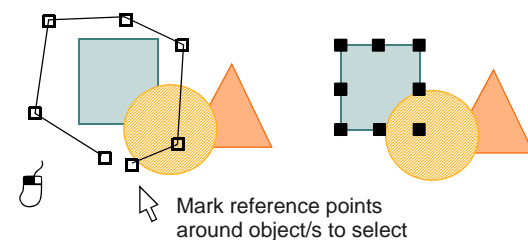
Selecting objects by Tab key

Click Select Object (Edit toolbar) and press Tab or Shift + Tab to tab between objects.

With the **Select Object** tool activated, you can select the first or last object in the design sequence using the **Tab** key. If an object is selected, you can select

the object before or after it in the stitching sequence. See also Reshaping next or previous objects.

To select objects by Tab key

▸ Click the **Select Object** icon.

▸ With an object selected, do one of the following:

  ▸ Press **Tab** to select the next object in the stitching sequence.

  ▸ Press **Shift+Tab** to select the previous object.
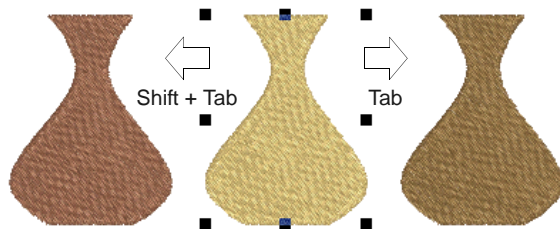
Shift + Tab   Tab

▸ With **no** objects selected, do one of the following:

  ▸ Press **Tab** to select the first object in the stitching sequence.

  ▸ Press **Shift+Tab** to select the last object.

Tip Hold down the **Ctrl** key to select multiple items as you tab between them.

Selecting all objects in a design

Select all objects to apply changes to a whole design. See also Keyboard Shortcuts.

To select all objects in a design

▸ Select **Edit > Select All** or press **Ctrl+A**.

  Sizing handles appear around the entire design.

No objects selected   All objects selected
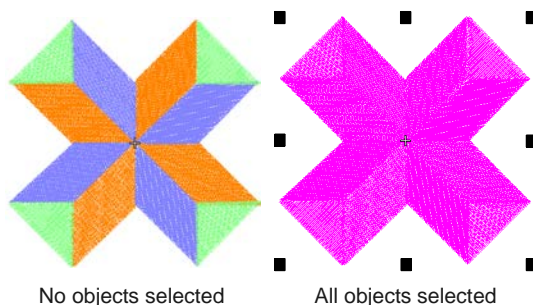
▸ To deselect, select **Edit > Deselect All**, press **X** or **Esc**.

Deselecting and deleting objects

Deselecting and deleting objects are basic operations which rapidly become second-nature. See also Combining objects.

Deselecting objects

You can cancel all selections in the design, or remove individual objects from a group of selected objects.

To deselect objects

▸ Cancel a selection using any of the following methods.

  ▸ Press **Esc**.

  ▸ Select another object.

  ▸ Click an empty area of the background.

  ▸ Select **Edit > Deselect All**.

▸ Remove an object from a selection by holding down **Ctrl** and clicking the object to deselect.

Deleting objects

Select Delete (Edit menu) to delete selected objects.

Various methods are available for deleting objects. See also Sequencing objects with Color Film.

To delete objects

▸ Select the object/s to delete, and do one of the following:

  ▸ Press **Delete**.

  ▸ Select **Edit > Delete**.

  ▸ Right-click object/s in the Color Film and select **Delete** from the popup menu. See Viewing and selecting color blocks for details.

Viewing and selecting color blocks

Click Color Film (General toolbar) to view all color blocks and objects in a design.

Click Show Individual Objects (Color Film toolbar) to view individual objects in order of stitching sequence.

The **Color Film** tool provides a sequential list of objects grouped by color. Use it to select and manipulate 'color blocks' – consecutive objects of the same color. In addition, you can display, select, modify and sequence individual objects. Color Film is

synchronized with the Design Window and vice versa. It dynamically updates whenever you select, modify or delete objects, or create new ones. See also Sequencing objects with Color Film.

- -

To view and select color blocks

▸ Click the **Color Film** icon.

The **Color Film** toolbar opens displaying all color blocks in the design in order of stitching sequence.

Consecutive objects of same color form single color block

All objects comprising color blocks shown in their stitching order
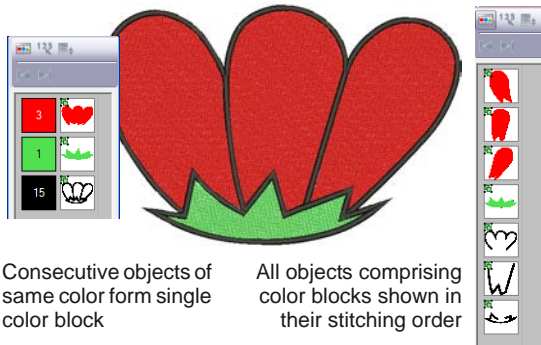
▸ Click the **Show Individual Objects** toggle to view individual objects.

All objects within a color block are displayed in stitching order.

▸ Click an icon to select the color block or object.

▸ To select a range, hold down **Shift** as you click.

▸ To select multiple items, hold down **Ctrl** as you click.

Select color block or object in Color Film
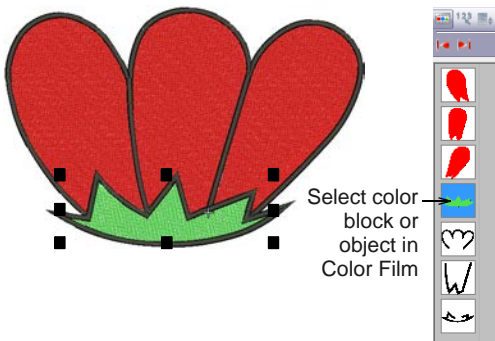
▸ Manipulate the color blocks as required. See also Sequencing objects with Color Film.

You can quickly access popup menu commands for manipulating selected color blocks or objects by right-clicking their icons. See also Combining objects.

Use popup menu to cut, copy, paste objects as required
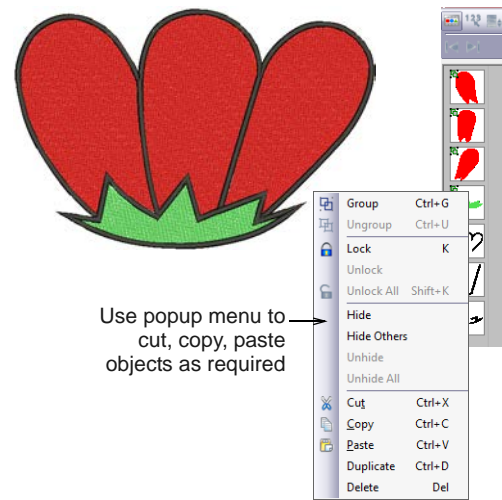
Tip To enlarge thumbnail images of color blocks or objects, click and drag the edge of the dialog.

Drag edge to enlarge thumbnails
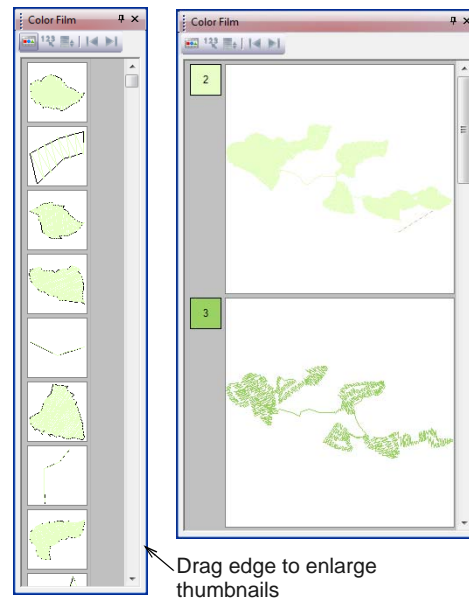
CHAPTER 6
HOOPING DESIGNS

Fabrics must be hooped before stitching out on the machine. BERNINA Embroidery Software allows you to select from a wide range of standard factory-supplied hoops. If your project contains a large design or a number of smaller designs, you may need to use multiple hoopings. If you have a hoop which does not appear in the list, you can define a custom hoop from scratch or based on a standard hoop. See also Displaying the hoop.
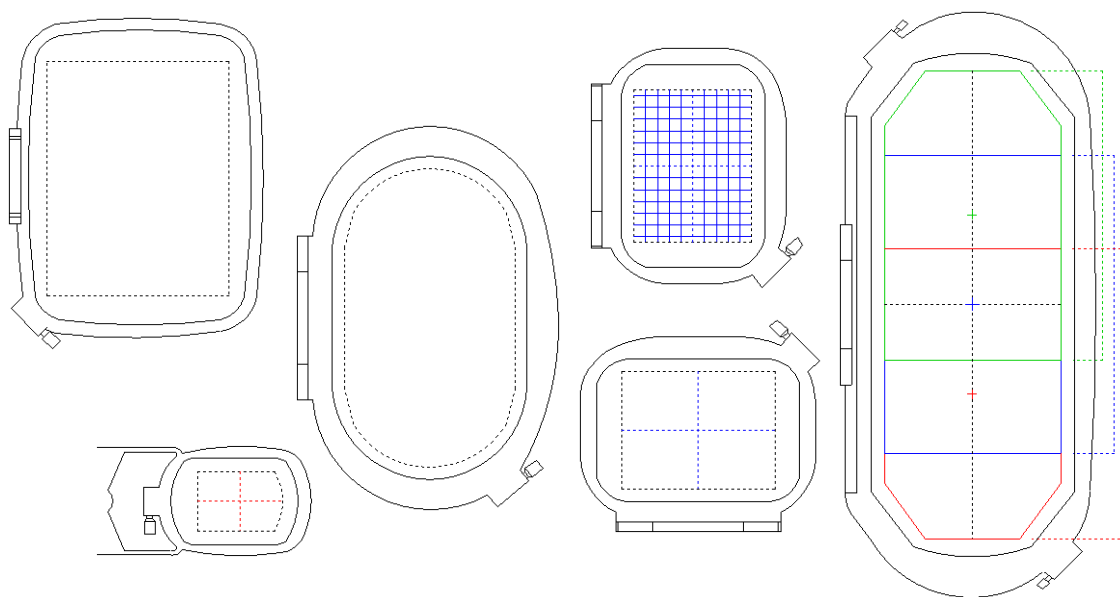
This section describes how to choose and display hoops in BERNINA Embroidery Software. It covers creating and modifying custom hoops. It also deals with hooping large designs.

Selecting hoops

Whenever you create a new design, a single hoop representing the embroidery hoop you connect to your embroidery machine appears by default in the middle of the Design Window. As you position objects, the hoop position adjusts automatically so that it is always centered around objects in the window. The **Show Hoop** tool allows you to toggle hoop display on or off. A range of hoop sizes is available for a wide variety of design types. You can change hoop orientation on screen for ease of digitizing. See also Auto-sequencing entire designs.

Changing hoops

Click Show Hoop (General toolbar) to turn hoop display on or off. Right-click to change hoop settings.

From the range of hoop sizes available, select the smallest hoop which will accommodate your design.

This will hold the fabric tight while stitching. See also Hooping large designs.

![note icon]
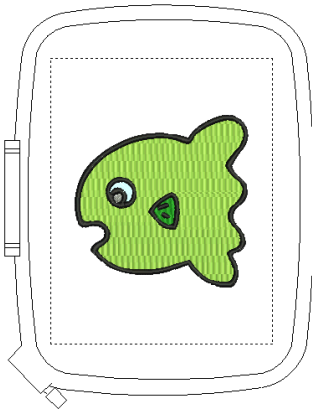
Note When you choose a new hoop, it becomes the 'current' hoop until changed in the present or a future session.

- -

To change hoops

1 Right-click the **Show Hoop** icon or select **View > Hoop**.

The **Options > Hoop** dialog opens.
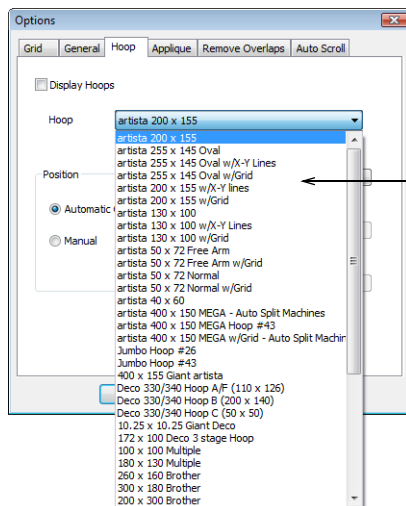
Choose required hoop size

2 Select a hoop from the **Hoop** list.

3 If you want a significant point of the design to be stitched in a particular part of the hoop, select **Manual** and select **Set Hoop Center**.

4 Click **OK**.

If you selected **Set Hoop Center**, click where you want the center to be in the Design Window.

Setting hoop centers

![show hoop icon] Click Show Hoop (General toolbar) to turn hoop display on or off. Right-click to change hoop settings.

By default, BERNINA Embroidery Software ensures that your design is always centered in the hoop. However, you can use the manual option to make the hoop display does not move from its original position. This means it won't automatically center while you're digitizing. If you are creating a single hoop design, however, you should always turn auto-centring back on to check that the design will fit within the hoop when it gets to the machine.
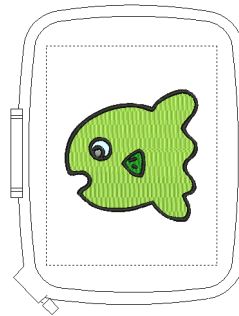
Automatic Centering   Manual

![note icon]

Note These settings are digitizing functions only as the embroidery machine will always center the design. See also Setting automatic start and end points.

- -

To set the hoop center

1 Right-click the **Show Hoop** icon or select **View > Hoop**.

The **Options > Hoop** dialog opens.
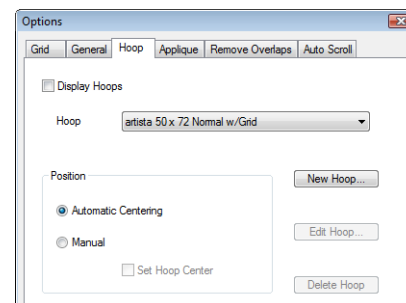
2 In the **Position** panel, select how to center the hoop.

▸ **Automatic Centering**: the hoop moves so that the design is always in the center.
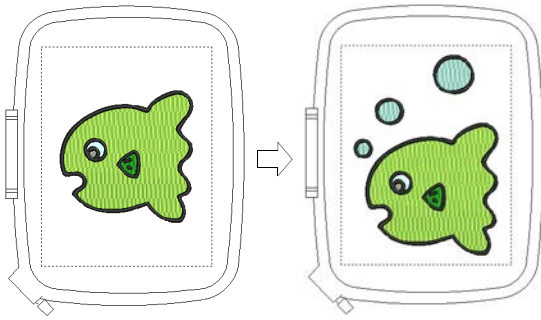
▸ **Manual**: the hoop remains in its original position.

Select **Set Hoop Center** to change the hoop position.
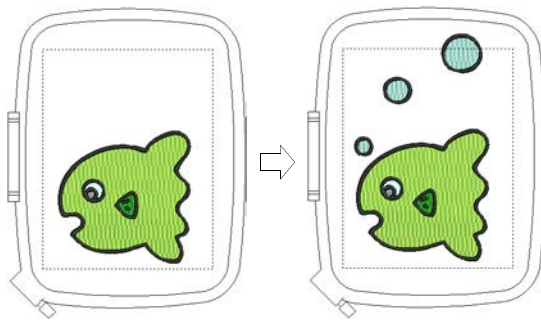
3 Click **OK**.

If you selected **Set Hoop Center**, click in the Design Window where you want the center to be.

Hooping large designs

Hoop Layout View and edit multi-hoopings. If embroidery is too large or contains multiple designs spaced around an article, split into multiple hoopings.

If your embroidery is too large or contains a number of designs spaced around an article, you can split it into multiple hoopings. Each one contains an object or group of objects that can be stitched out in a single hooping. These can be stitched consecutively to form the whole design. They can be sent directly to

machine or saved to file. See also Auto-sequencing entire designs.
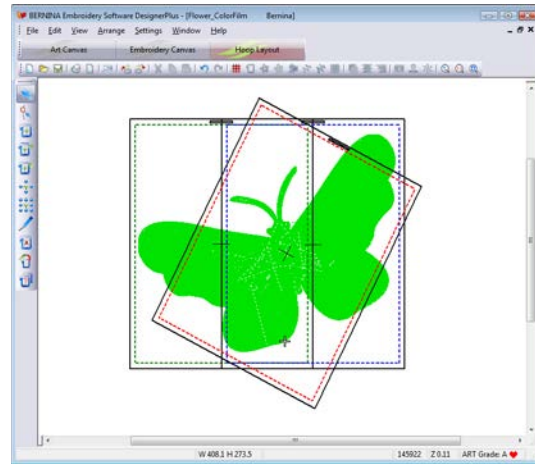
Multi-hooping guidelines

When BERNINA Embroidery Software calculates multiple hoopings, it attempts to split whole objects between sequential hoopings. Where one object overlaps another, the **overlapped** object must be stitched before the **overlapping** object.

Check object sequence prior to hooping

Three hoop positions but five 'hoopings'
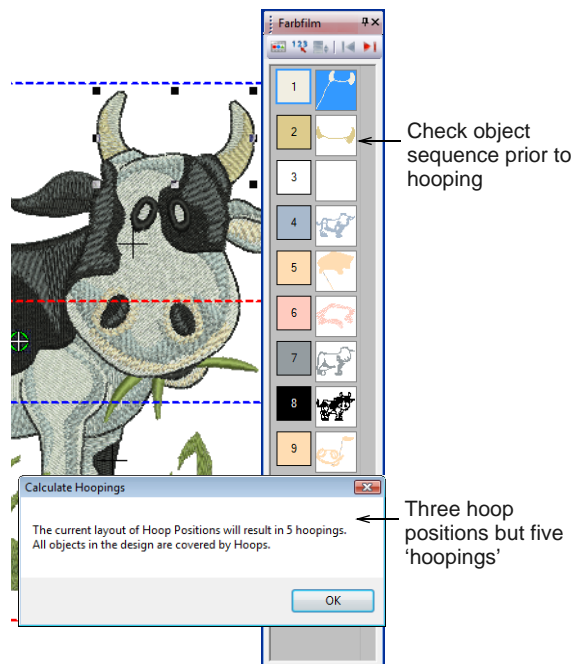
Bearing this in mind, try to ensure that:

▸ Each successive hoop position overlaps a previously stitched hoop position.

▸ Hoops are placed as near as possible to the order of the actual design object sequence. This will minimize the number of eventual hoopings.

Note 'Hooping' is not the same thing as 'hoop position' – you can have more hoopings than hoop positions but you can never have less. In other words, a single hoop position may involve more than one hooping in order to preserve the design sequence.

Hooping sequence

When a large design requires multiple hoopings, it is important to establish the stitching order so that objects in the foreground are sewn after those in the background. BERNINA Embroidery Software allows you to set up the position and sequence of each hoop. Multiple hoops are color-coded as follows, according to their position in the sequence:

Hoop	Color
1	Dark Green
2	Blue
3	Red
4	Brown
5	Orange
6	Purple
7	Teal
8	Aqua

In the unlikely event that you use more than eight hoopings, the color sequence is repeated, as long as none of the previously created hoop positions is deleted.
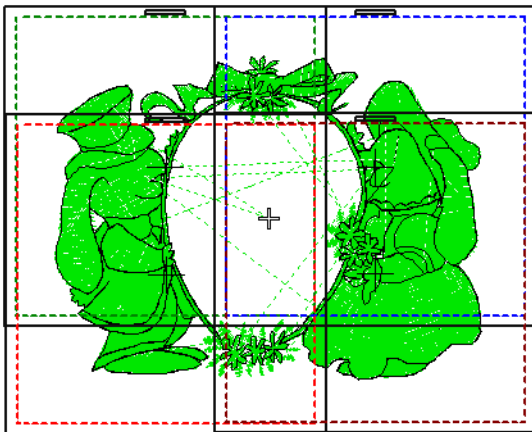
Checking the design sequence

Knowing the design object sequence helps you place hoops in the best possible hooping sequence. A good technique is to use the **Color Film** tool in object mode as shown above. As you select objects from the list, they are highlighted in the design. This will help you understand the order in which objects are sewn, and

hence the order in which they should be hooped. See also Viewing and selecting color blocks.

Check stitching sequence of objects that cross hooping overlaps
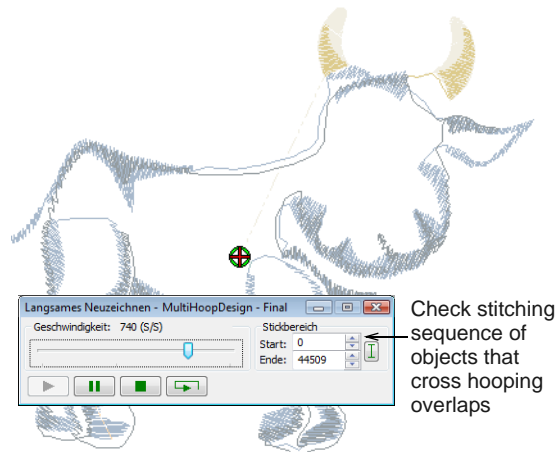
Another useful tool is **Slow Redraw**. When you run **Slow Redraw**, you are checking to see if the start and end point of a particular object may have a bearing on the number of hoopings. For example, if you split a large object but the first half is in the second hoop, this may result in an additional hooping. With **Slow Redraw**, you are aiming to make sure that any split objects are split between **adjacent** hoops (both in terms of position and hoop placement sequence) and that the object starts stitching in the earlier hoop. See also Simulating design stitchouts.

Adjusting the design sequence

While correct hoop placements reduce the number of calculated hoopings, sometimes the design object sequence may not be ideal for multi-hooping. You may find that the only way to reduce the number of hoopings is to re-sequence the design itself. As a general guideline, bear in mind the following:

▶ Stock designs which have been created for a single hoop are generally sequenced by color in order to reduce the number of color changes. This is important for single needle machines.

▶ Enlarging a stock design to the point where it requires multiple hoopings may require the design sequence to be changed in order to reduce the number of hoopings.

▶ Since a given stitchout can use only one size of hoop, choose a hoop that will cover the **largest** object in the design.

▶ Always try to place hoops as near as possible to the order of the actual design object sequence.

Hooping calculations

While BERNINA Embroidery Software always preserves the original stitching sequence, hoop placements which follow the design object sequence reduce the number of calculated hoopings.

The time taken to calculate design hoopings is dependent more on the number of objects and hoop positions than stitch count. Designs converted from EXP, PES, HUS, etc, will in general result in a larger number of objects than a native BERNINA Embroidery Software design. Hence, these designs will take longer to calculate. However, even with pure ART files, if the design is complex, large, and contains many hoop positions, calculation can take time.

Creating multi-hoop designs

Use **Selection On** (Multi-Hooping toolbar) to select hoops in Design Window.

Use **Reshape Splitting Guide** (Multi-Hooping toolbar) to reshape split lines in Design Window.

Use **Add Hoop** (Multi-Hooping toolbar) to center new hoop in Design Window in upright orientation.

Use **Add Hoop Right** (Multi-Hooping toolbar) to place new hoop directly to right of selected hoop with 10 mm overlap between sewing fields.

Use **Add Hoop Up** (Multi-Hooping toolbar) to place new hoop directly above selected hoop.

Use **Add Four Adjacent Hoops** (Multi-Hooping toolbar) to automatically add four hoopings around selected hoop perimeter.

Use **Add Eight Adjacent Hoops** (Multi-Hooping toolbar) to automatically add eight hoopings around selected hoop perimeter.

Use **Splitting Guide** (Multi-Hooping toolbar) to digitize one or more split lines in multi-hooped design prior to outputting to file, machine or memory card.

Use **Delete Hoop** (Multi-Hooping toolbar) to remove selected hoops from Design Window.

Click **Rotate Hoop Left / Right** (Multi-Hooping toolbar) with left or right mouse buttons to rotate selected hoop 45° in either direction.

Use **Calculate Hoopings** (Multi-Hooping toolbar) to evaluate hoopings that will result from current hoop layout.

BERNINA Embroidery Software provides a dedicated **Hoop Layout** mode which allows you to create multiple hoopings. This means you can stitch out embroidery designs that are larger than can be accommodated within a single hoop. **Hoop Layout** mode allows you to define multiple hoop positions. The aim is to add hoops and move them around until you get the least number of hoopings necessary to accommodate the entire design. These are then stitched out consecutively. See also Outputting multi-hooped designs.

Tip Knowing the design object sequence helps you place hoops in the best hooping sequence. A good technique is to use the **Color Film** tool in object mode. As you select objects from the list, they are highlighted in the design. Another useful tool for this purpose is **Slow Redraw**. See Viewing and selecting color blocks for details. See also Simulating design stitchouts.

- -

To create a multi-hoop design

1 In **Embroidery Canvas** mode, choose the hoop you want to use. See Changing hoops for details.

Artistic View
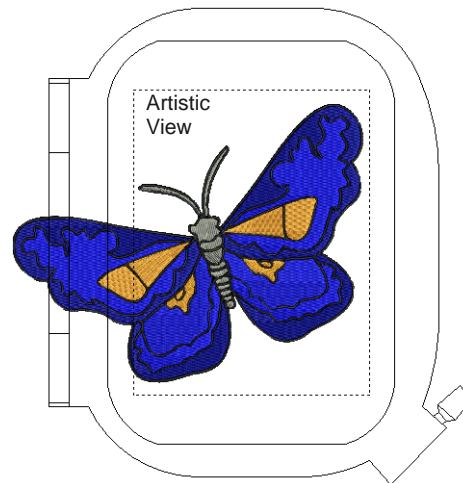
Tip Since a given stitchout can use only one size of hoop, you need to choose a hoop that will cover the **largest** object in the design.

2 Switch to **Hoop Layout** mode. See Viewing modes for details.

When you enter **Hoop Layout**, covered objects – those that fit wholly within a hoop – display as green stitches. Uncovered objects – those that do **not** fit – display as black stitches.
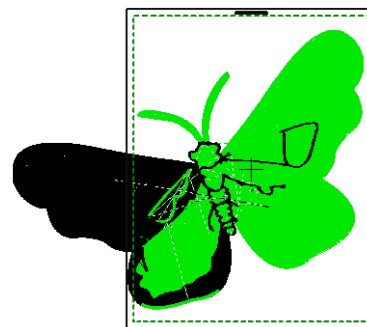
Note No embroidery object can be selected or manipulated in **Hoop Layout**.

3 Click the **Selection On** icon, click a hoop outline, and drag it till it covers the largest object in the design.

Design not covered, more hoopings needed
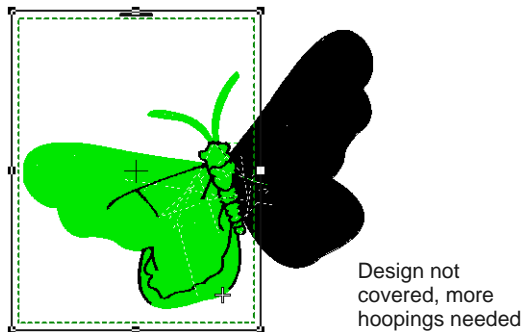
4 Use the **Add Hoop** tools to add more hoop positions.

As soon as a hoop is moved or joined by others, automatic centering is deactivated, meaning that it no longer centers itself automatically around objects in the design.

▸ Click the **Add Hoop** icon to add a new hoop to the Design Window in an upright orientation.

▸ Use the **Add Hoop Right** tool to place a new hoop directly to the right of a selected hoop with a 10 mm overlap between sewing fields.

New hoop added
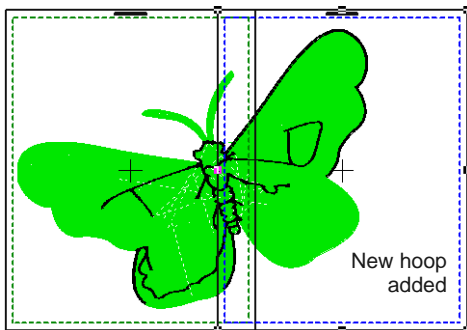
▸ Similarly, use the **Add Hoop Up** tool to place a new hoop directly above a selected hoop.

The **Add Four Adjacent Hoops** and **Add Eight Hoops Around** commands become available when a single hoop is selected in the Design Window. Clicking the associated icon causes four or eight hoopings to be added around hoop's perimeter, starting from the top and continuing in

a clockwise direction, with a 10mm overlap between sewing fields.
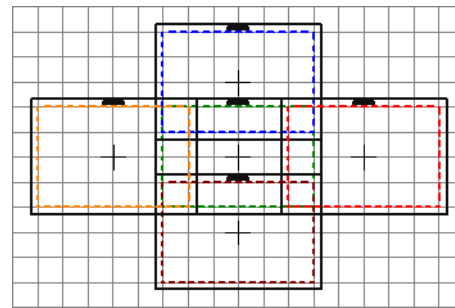
Add four adjacent hoops
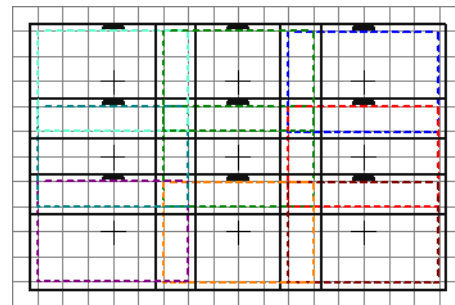
Add eight adjacent hoops

5 Click the **Delete Hoop** icon or press the **Delete** key to remove selected hoops from the Design Window as necessary.

Deleting a hoop position does not cause the colors of remaining hoops to change.

Note If you remove all hoops in a design and create a new one, automatic centering is re-activated.

Tip To select more than one hoop at a time, use one of the following techniques:

▸ Click hoop outlines while holding down the **Ctrl** key to toggle selection on and off.

▸ Click hoop outlines while holding down the **Shift** key to select a range of hoops.

▸ Click and drag a marquee with the cursor to select all hoops lying wholly within the area described.

6 Re-position additional hoops and, if necessary, rotate them so that they completely cover all objects in the design.

▸ Click the **Rotate Hoop Left / Right** icon with left or right mouse buttons to rotate a selected hoop 45° in either direction.

▶ Alternatively, click the hoop again and rotate hoops by means of rotation handles and rotation center-point.

Re-position center point

Drag rotation handle
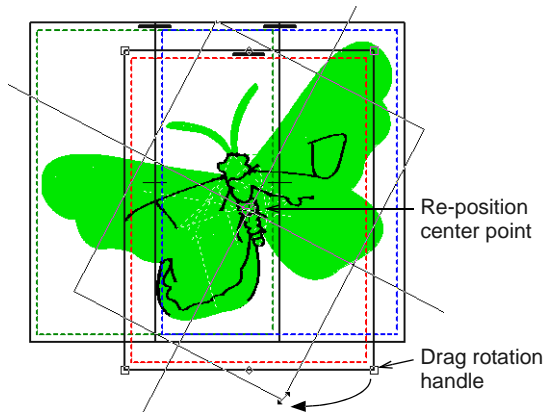
Note Hoops in **Hoop Layout** can be rotated to any angle you choose. Note, however, that when a rotated hoop is viewed in Hoop Layout, the top will also appear, incorrectly, to be rotated.

▶ Nudge selected hoops into position using the arrow keys.

All objects covered
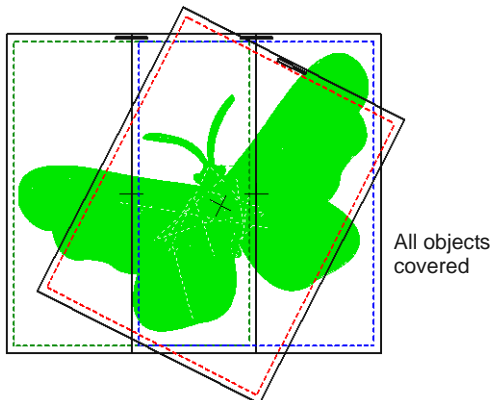
Note While a design may be entirely covered by separate hoop positions, some objects may remain uncovered, as indicated by black stitching. If you try to output at this stage, you will receive the message that some objects are still not covered. The **Splitting Guide** tool allows you to split objects that would not otherwise fit within a hooping. See Splitting objects between hoopings for details.

7 Finally, click the **Calculate Hoopings** icon to evaluate the hoopings that will result from the current hoop layout.
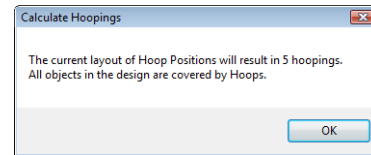
The file is split into at least as many files as there are hoopings, depending on whether you have split some objects between hoopings. You are now ready to save the design to one or more files or send it to machine. See Outputting multi-hooped designs for details.

Tip Print a copy of the design showing the hoop positions to help you stitch it in the correct hooping order. See Printing multi-hooped designs for details.

Splitting objects between hoopings

Use Splitting Guide (Multi-Hooping toolbar) to digitize one or more split lines in multi-hooped design prior to outputting to file, machine or memory card.

Use Reshape Splitting Guide (Multi-Hooping toolbar) to reshape split lines in Design Window.

The **Splitting Guide** tool allows you to split objects that would not otherwise fit within a hooping. In effect, it allows you to digitize one or more split lines in a multi-hooped design prior to outputting to file, machine or memory card. Although split lines are only visible in **Hoop Layout**, they are maintained when switching to other modes. Split lines do not affect object integrity and you can still reshape and transform split objects as before.
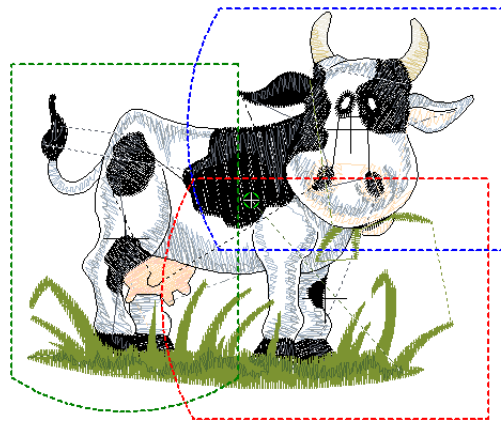
To split objects between hoopings

1 Select **Hoop Layout** mode.

A design already exists in the Design Window with multiple hoopings and uncovered objects.
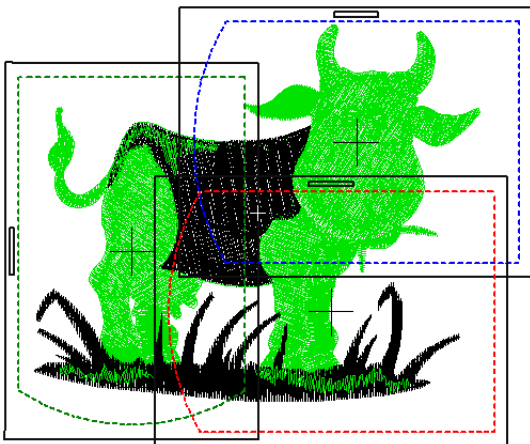
2 Select the **Splitting Guide** tool.

You are prompted to enter the starting point of the split line within sewing field overlaps.

Digitize split lines as open curve objects
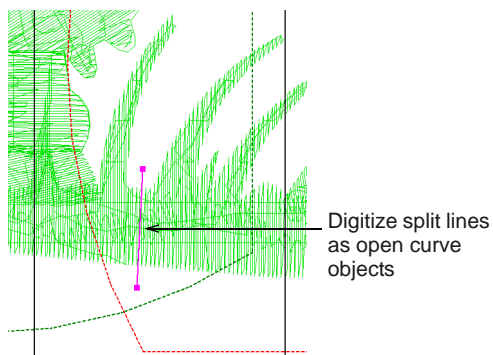
3 Digitize split lines just as you would open curve objects, using right-clicks for curves and left-clicks for corner points.

As long as splits occur within the sewing field of overlapping hoopings, the resultant 'split objects' become covered and are displayed in green.
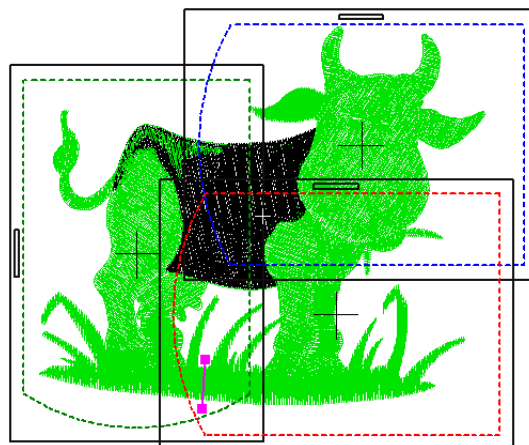
Lines that completely cross over objects that are not already covered will be split on output. The split will not necessarily be along the digitized line. Instead, it will be made as inconspicuous as possible. The resulting objects will preserve their original object type, stitch angle, parameters and color.

4 Repeat as necessary or press **Enter** to complete.
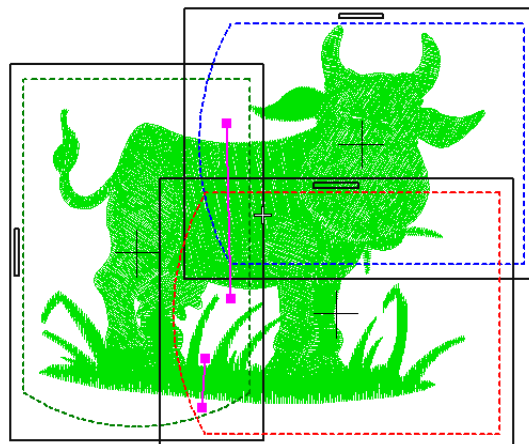
Note Split lines can be reshaped once created by selecting the line using the **Reshape Splitting**

Guide tool. Control points for the split line are highlighted and can be manipulated as required.

← Corner point

← Selected point

← Curve point
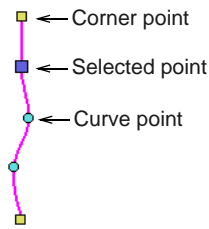
Note Split lines that do not cross an object completely, or cross an object which is already covered, are ignored.

Creating sliding-hoop designs

 Use Selection On (Multi-Hooping toolbar) to select hoops in Design Window.

 Use Add Hoop (Multi-Hooping toolbar) to center new hoop in Design Window in upright orientation.

 Use Delete Hoop (Multi-Hooping toolbar) to remove selected hoops from Design Window.

Sliding hoops are special hoops with adjustable frames to accommodate larger designs. You can adjust the position of the sewing field according to objects in the design. You can even define multiple sewing field positions as required. The entire design, however, must fit within the overall hoop.

Sewing Field

Total Height

Width
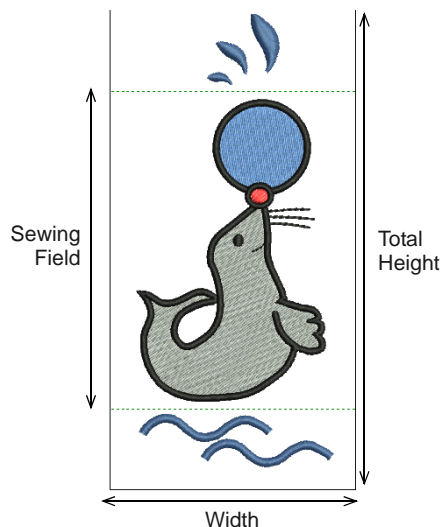
Note You can define your own sliding hoop to suit the one you are working with. See Defining sliding hoops for details.

To create a sliding-hoop design

1 In **Embroidery Canvas** mode, choose the sliding hoop you want to use. See Changing hoops for details.

The overall outline is displayed in solid black.
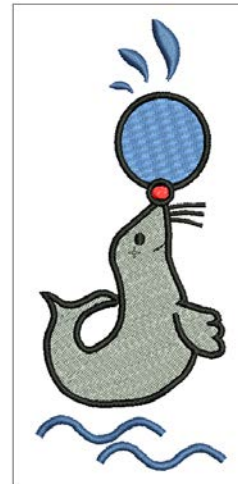
← Sliding hoop

Note The design can only use a single sliding hoop, so you need to choose one that will accommodate the entire design. The sewing field must also be able to accommodate the largest object in the design.

2 Switch to **Hoop Layout** mode. See Viewing modes for details.

When you enter **Hoop Layout**, covered objects – those that fit wholly within the sewing field – display as green stitches. Uncovered objects – those that do **not** fit – display as black stitches.

← Sliding hoop

← Sewing field position
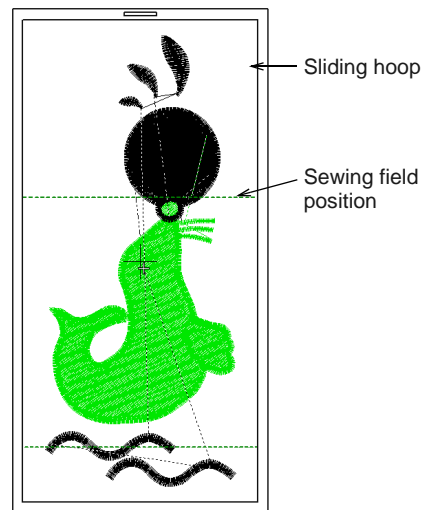
Note No embroidery object can be selected or manipulated in **Hoop Layout**.

3 Click the **Selection On** icon, and click and drag the dotted outline till it covers the largest object in the design.

4 Click the **Add Hoop** icon.

A new sewing field position – shown as a dotted outline in a different color – is added to the center of the hoop.

Note The **Add Hoop Right** and **Add Hoop Up** tools are not available.

5 Click and drag the new sewing field position and add more as required.

Second sewing field position
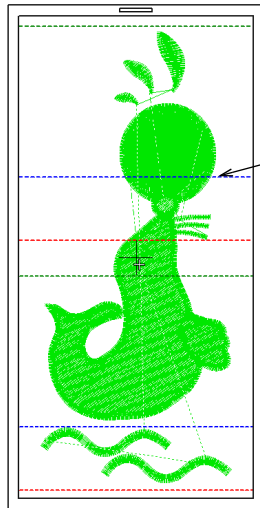
6 Click the outline of the overall hoop to select it and all positions within it, and reposition or rotate as required. See Creating multi-hoop designs for details.

7 Remove a sewing field position as required by clicking the dotted outline and clicking the **Delete Hoop** icon.

Tip The height of the sewing field and size of the overall hoop can be adjusted at any time to match the actual hoop you are working with. See Modifying custom hoops for details.

Creating 3-position-hoop designs

Use Selection On (Multi-Hooping toolbar) to select hoops in Design Window.

Use Add Hoop (Multi-Hooping toolbar) to center new hoop in Design Window in upright orientation.

Use Add Hoop Right (Multi-Hooping toolbar) to place new hoop directly to right of selected hoop with 10 mm overlap between sewing fields.

Use Add Hoop Up (Multi-Hooping toolbar) to place new hoop directly above selected hoop.

Use Delete Hoop (Multi-Hooping toolbar) to remove selected hoops from Design Window.

3-position hoops allow large designs to be split manually and stitched without the usual registration problems. Unlike sliding hoops, the sewing fields are in fixed positions with known dimensions, making it easy to register objects stitched in each position. The three sewing areas are presented in turn to the sewing machine without any need to detach the fabric from the hoop. In the software, they are displayed as three dotted rectangles. The top rectangle is green, the middle, blue and the bottom, red.

Position 1 Height

Position 2 Height

Position 3 Height

Total Height

Width
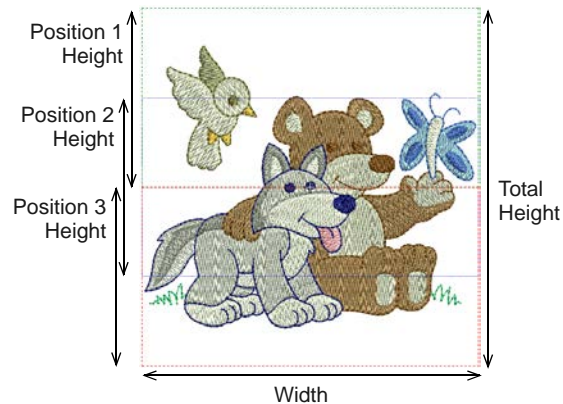
Note You can define your own 3-position hoop to suit the one you are working with. See Defining 3-position hoops for details.

To create a 3-position-hoop design

1 In **Embroidery Canvas** mode, choose the 3-position hoop you want to use. See Changing hoops for details.

The overall outline is displayed in solid black, with a dotted outline for each sewing field.

Note Very large designs can use multiple 3-position hoopings if required. The sewing field, however, must be able to accommodate the largest object in the design.

2   Switch to **Hoop Layout** mode. See Viewing modes for details.

When you enter **Hoop Layout**, covered objects – those that fit wholly within a hoop – display as green stitches. Uncovered objects – those that do **not** fit within the hoop – display as black stitches.
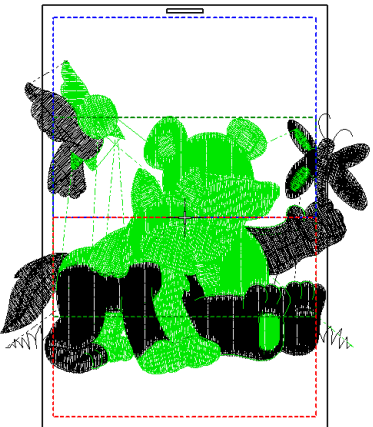
Note No embroidery object can be selected or manipulated in **Hoop Layout**.

3   Click the **Selection On** icon, click and drag the hoop outline till it covers the largest object in the design.

Note With a 3-Position Hoop, you can select the overall hoop but no individual hoop positions within it.

4   Use the **Add Hoop** tools to add more hoops as required. See Creating multi-hoop designs for details.
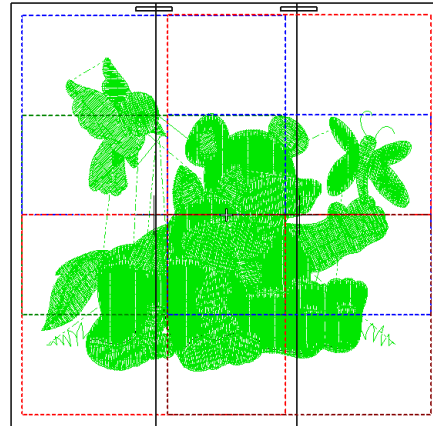
5   Re-position or rotate the hoops as required. See Creating multi-hoop designs for details.

Note Moving or rotating affects the whole hoop and all positions within it.

6   Remove a hoop as required as required. See Creating multi-hoop designs for details.

Tip The height of the sewing fields and the size of the overall hoop can be modified at any time. See Modifying custom hoops for details.

Defining custom hoops

If you are using a hoop size that is not in the hoop list, you can define your own hoops and save them for later use. You can create or edit four types of hoop – rectangular, oval, sliding and 3-position.

Defining rectangle hoops

Click Show Hoop (General toolbar) to turn hoop display on or off. Right-click to create hoops.

Rectangle hoops are displayed as dotted black lines. You can set the height and the width of the rectangle

according to the dimensions of the hoop you are using.

Height

Width
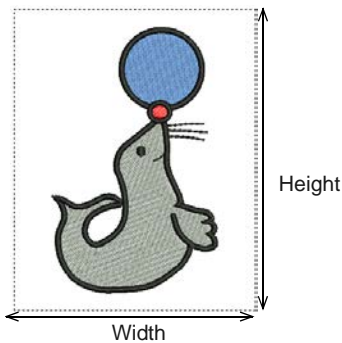
To define a rectangle hoop

1 Right-click the **Show Hoop** icon or select **View > Hoop**.

The **Options > Hoop** dialog opens.
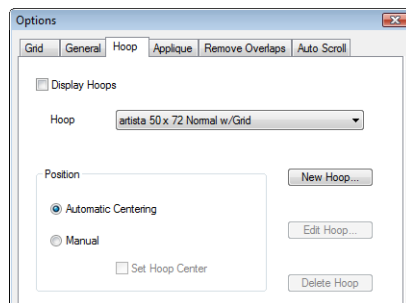
2 Click **New Hoop**.

The **Create/Edit Hoop** dialog opens.
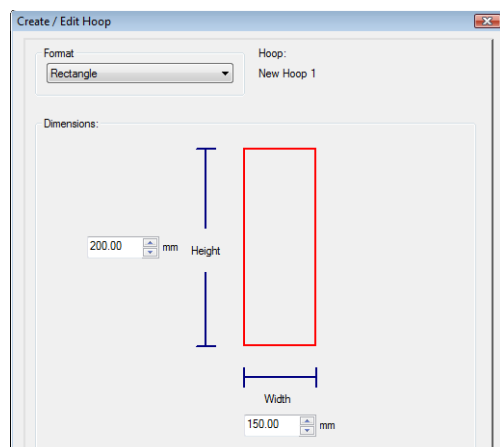
3 In the **Format** panel, select **Rectangle**.

4 In the **Dimensions** panel, enter the **Height** and the **Width** of the rectangle hoop.

5 Click the **Save Hoop As** button.

The **Save Hoop As** dialog opens.

6 Enter a hoop name.
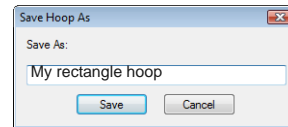
7 Click **Save** and **Save Hoop**.

Defining oval hoops

Click Show Hoop (General toolbar) to turn hoop display on or off. Right-click to create hoops.

Oval hoops are displayed as black dotted outlines. You can set the height and the width of the oval according to the dimensions of the hoop you are using.

Rectangle Height

Total Height

Width
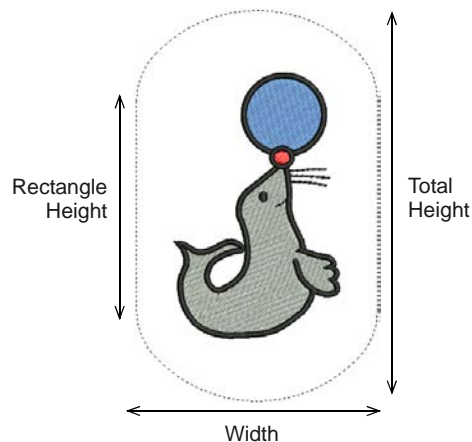
To define an oval hoop

1 Right-click the **Show Hoop** icon or select **View > Hoop**.

The **Options > Hoop** dialog opens.
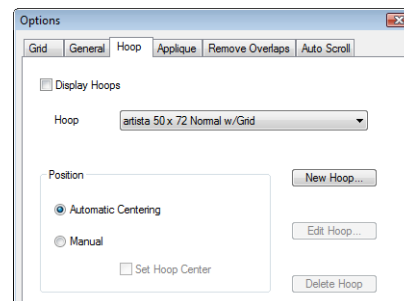
2 Click **New Hoop**.

The **Create/Edit Hoop** dialog opens.
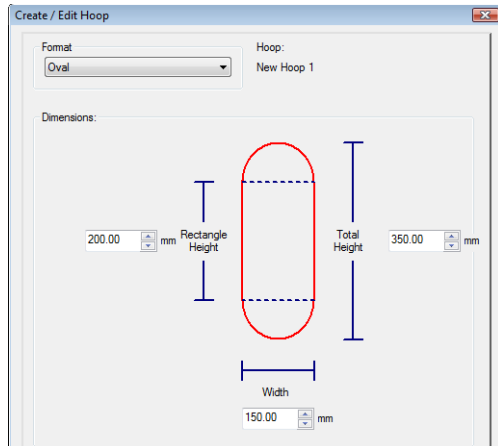
3 In the **Format** panel, select **Oval**.

4 In the **Dimensions** panel, enter the **Rectangle Height, Total Height** and the **Width** of the oval hoop.

5 Click the **Save Hoop As** button.

The **Save Hoop As** dialog opens.

6 Enter a hoop name.
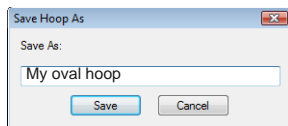
7 Click **Save** and **Save Hoop**.

Defining sliding hoops

> Click Show Hoop (General toolbar) to turn hoop display on or off. Right-click to create hoops.

Sliding hoops are special hoops with adjustable frames to accommodate unusual size designs. You can set the height and the width of the hoop as well

as the sewing field within according to the dimensions of the hoop you are using.
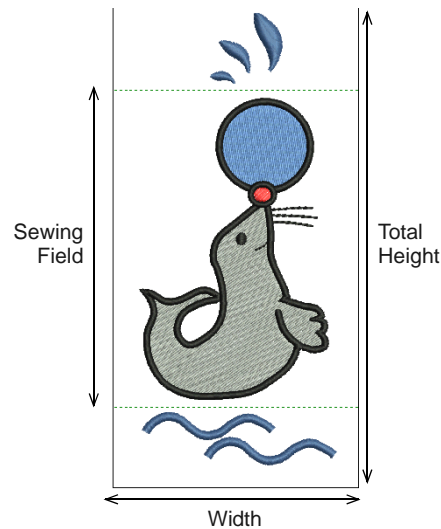
To define a sliding hoop

1 Right-click the **Show Hoop** icon or select **View > Hoop**.

The **Options > Hoop** dialog opens.
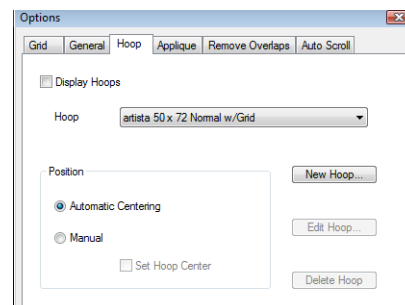
2 Click **New Hoop**.

The **Create/Edit Hoop** dialog opens.
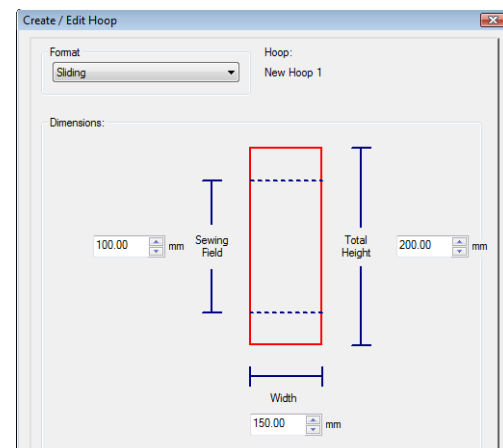
3 In the **Format** panel, select **Sliding**.

4 In the **Dimensions** panel, enter the **Sewing Field, Total Height** and **Width** of the hoop.

Note It is best to enter the total height of the hoop first. If the sewing field is larger than the default total height, the size will go back to a smaller size.

5 Click the **Save Hoop As** button.

The **Save Hoop As** dialog opens.

6 Enter a hoop name.
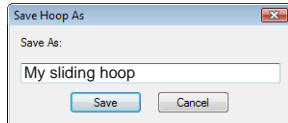
7 Click **Save** and **Save Hoop**.

Defining 3-position hoops

Click Show Hoop (General toolbar) to turn hoop display on or off. Right-click to create hoops.

3-position hoops allow large designs to be split manually and stitched without the usual registration problems. Unlike sliding hoops, the sewing fields are in fixed positions with known dimensions, making it easy to register objects stitched in each position. In the software, they are displayed as three dotted rectangles. The top rectangle is green, the middle, blue and the bottom, red. You can define your own 3-position hoop according to the dimensions of the hoop you are using.
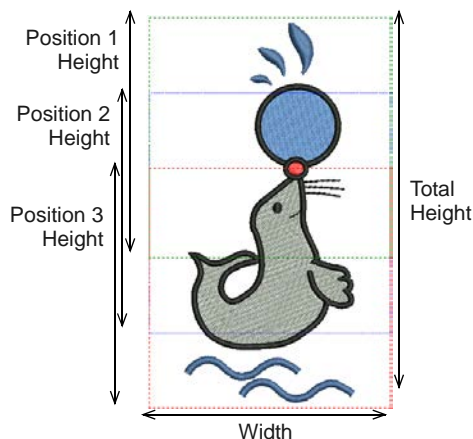
To define a 3-position hoop

1 Right-click the **Show Hoop** icon or select **View > Hoop**.

The **Options > Hoop** dialog opens.
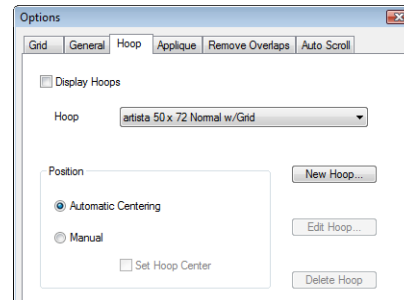
2 Click **New Hoop**.

The **Create/Edit Hoop** dialog opens.
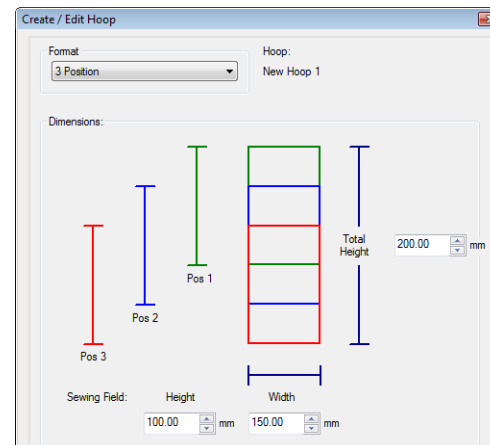
3 In the **Format** panel, select **3-Position.**

4 In the **Dimensions** panel, enter the **Total Height**, the heights for **Position 1, 2** and **3,** followed by the hoop **Width**.

Note It is best to enter the total height of the hoop first. If the sewing field is larger than the default total height, the size will default to a smaller size.

5 Click the **Save Hoop As** button.

The **Save Hoop As** dialog opens.

6 Enter a hoop name.
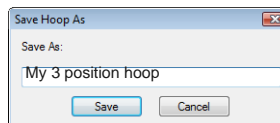
7 Click **Save** and **Save Hoop**.

Modifying custom hoops

You can edit and delete custom hoops as required. Only custom hoops can be modified.

Editing hoops

> Click Show Hoop (General toolbar) to turn hoop display on or off. Right-click to edit hoops.

Change the height and width of the new hoops as required.

To edit a hoop

1 Right-click the **Show Hoop** icon or select **View > Hoop**.

   The **Options > Hoop** dialog opens.
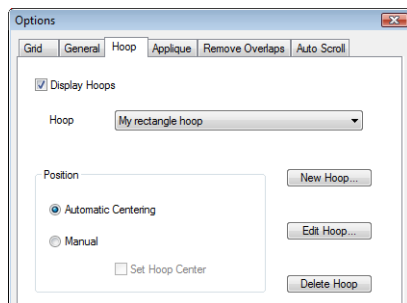
2 In the **Hoop** list, select the hoop.
3 Click **Edit Hoop**.

   The **Create/Edit Hoop** dialog opens.
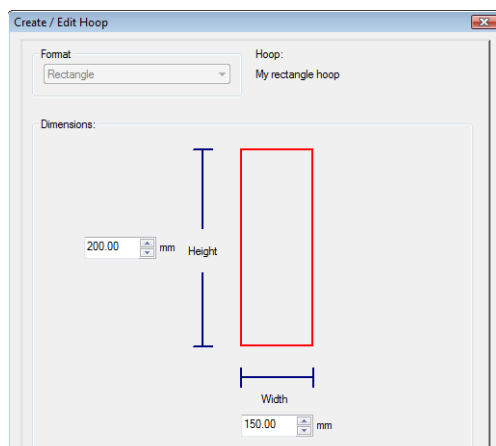
4 Enter the new dimensions.
5 Click the **Save Hoop** button.

Deleting hoops

> Click Show Hoop (General toolbar) to turn hoop display on or off. Right-click to delete hoops.

When you delete a hoop type, it is removed permanently. Only custom hoops can be deleted.

To delete a hoop

1 Right-click the **Show Hoop** icon or select **View > Hoop**.

   The **Options > Hoop** dialog opens.

2 Select a customized hoop to be deleted.
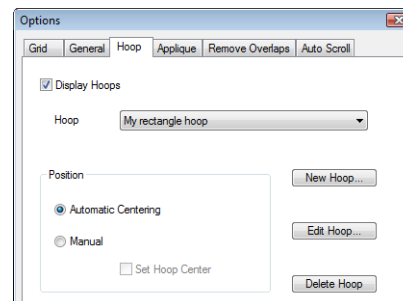
3 Click **Delete Hoop** then click **OK** to confirm.

   The hoop is removed permanently.

<div align="right">

CHAPTER 7

HARDWARE & SOFTWARE SETUP

</div>

You will need to connect peripheral devices for use with BERNINA Embroidery Software. These may include printers, scanners and embroidery machines. BERNINA Embroidery Software lets you adjust various system settings controlling the appearance of designs on screen, display of design information, the behavior of the Design Window, and other settings.

This section describes how to set up embroidery machines, and scanners and describes how to calibrate the monitor. It also deals with changing grid spacing and hoop options. The setting of general options – such as automatic save, pointer position display options, etc – is also covered.

Setting up hardware

Different devices are set up in different ways – some in MS Windows®, via the Control Panel, others within BERNINA Embroidery Software itself. For instructions on connecting devices to your computer and setting up in MS Windows®, see the documentation for the device as well as your MS Windows® documentation.

Peripheral device connection settings

Peripheral devices such as printers are connected to an available 'port' at the front or back of your computer. These may be of either 'serial', 'parallel' or USB type. The software settings need to be configured within the MS Windows® Control Panel.

Serial port settings

PC serial COM ports are male connectors, and can be either 9-pin or 25-pin. They are named COM1, COM2, etc. The number of available ports limits the number of devices you can connect. If additional ports are required, you can add them. BERNINA Embroidery Software allows up to 4 serial ports.

Note You must be able to identify the ports on your computer. If in doubt, consult a PC technician.

Parallel port settings

Parallel ports may be used to connect your printer and scanner. They are named LPT1, LPT2, etc.

USB port settings

USB – Universal Serial Bus – ports are used to connect your dongle. They can also be used to connect your printer or scanner. Additional USB ports can use a powered USB hub.

Setting up embroidery machines

Your BERNINA embroidery machine should be connected to the COM1, COM2, COM3, COM4 or USB port of your computer. See your BERNINA embroidery machine manual for details on connecting the machine to your computer.

Setting up printers

Your printer is connected to a USB or parallel port. Some printers can be connected to either port type. BERNINA Embroidery Software will use the default printer that you have specified through the **Printer** icon in the **Windows Control Panel**.

See your printer manual for directions on setting it up properly. See **Windows Help** (select **Windows Start > Help > Index**, then type 'default printer') for directions on how to set up a default printer.

Setting up scanners

Use Scanner Setup (Settings menu) to setup scanners.

BERNINA Embroidery Software supports TWAIN-compatible scanners.

Note Some scanners will not work with BERNINA Embroidery Software because they require their own scanner software. If this is the case with your scanner, use your scanner software for scanning, save the image to your hard drive, then load the image into BERNINA Embroidery Software.

To set up scanners

1 Connect the scanner using the accompanying instructions.

2 Set it up in MS Windows® using the accompanying instructions and/or the Microsoft MS Windows® documentation.

3 Start BERNINA Embroidery Software.

4 Select **Settings > Scanner Setup**.

The **Select Source** dialog opens displaying a list of scanner drivers loaded on your computer.

Select scanning driver
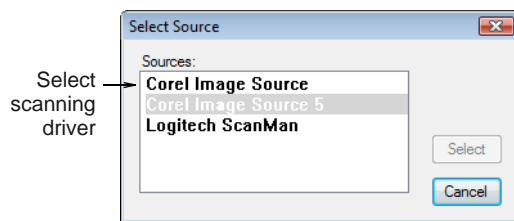
5 Select the scanning driver to use, then click **Select**.

Note If you have trouble with scanning after re-starting BERNINA Embroidery Software, there may be a conflict with previously installed scanner drivers. Re-install BERNINA Embroidery Software and test the scanner. If the selected scanner driver does not work in BERNINA Embroidery Software, select another scanner driver from the list. There are usually two installed for each scanner.

Calibrating the monitor

Use Display Setup (Settings menu) to calibrate the monitor.

You need to calibrate your monitor so that designs at 1:1 scale appear at real size. Do this when you first

install BERNINA Embroidery Software or whenever you change your monitor.

To calibrate the monitor

1 Select **Settings > Display Setup**.

The **Screen Calibration** dialog opens.

Measure height
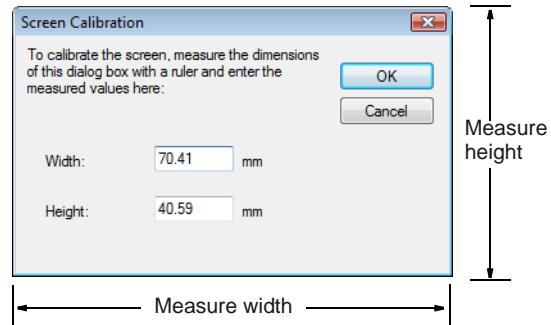
Measure width

2 Measure the height and width of the dialog box.

3 Enter the measurement in the **Width** and **Height** fields.

4 Click **OK**.

Setting grid options

Right-click Show Grid (General toolbar) to set grid reference point and spacing.

You can turn the grid on or off, change the grid spacing, or set a reference point. You can also turn **Snap to Grid** on or off in the **Options** dialog.
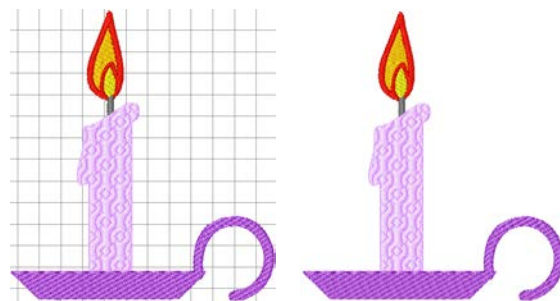
Align the grid with a specific point in the design by setting a reference point – for example, when you want grid lines to intersect the center point of the design, or a horizontal grid line to sit under a particular object.

Use **Snap to Grid** to align objects in your design to the nearest grid lines. You can align objects to the horizontal (X) or vertical (Y) axis, or both. New reference points will 'snap' to the nearest grid line as you digitize. Existing objects will snap to grid when you select and move them.

To set grid options

1 Right-click the **Show Grid** icon.

The **Options > Grid** dialog opens.

Select to display grid —— Show Grid

Select snap to grid —— Snap to Grid

Enter horizontal and vertical spacing —— Grid Spacing
Horizontal: 10.00 mm
Vertical: 10.00 mm

Select to align grid to a point —— Set Reference Point
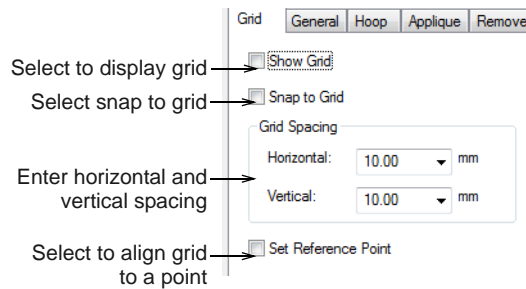
2 Select the **Show Grid** checkbox to display the grid.

3 Select the **Set Reference Point** checkbox to align a significant point of the design with a grid line or grid point.

For example, you can set the grid reference point to the design center. This is easier and faster than moving the whole design.

4 Enter **Grid Spacing** values for horizontal and vertical grid lines.

5 Select the **Snap to Grid** checkbox.

Tip To temporarily disable **Snap to Grid** as you digitize, hold down **Alt**.

6 Click **OK**.

If you selected **Set Reference Point**, mark the reference point on your design. The grid aligns so that horizontal and vertical grid lines intersect at this point.

Setting auto scroll options

Use **Auto Scroll** to scroll the design automatically while you are digitizing. This can be more convenient than using panning or the scroll bars.

To set auto scroll options

1 Select **Settings > Options** and select the **Auto Scroll** tab.

Auto Scroll

Move Pointer After Scroll

Input AutoScroll Values

Autoscroll Response (smaller value faster response) 3

Move Input Point To: MIDWAY
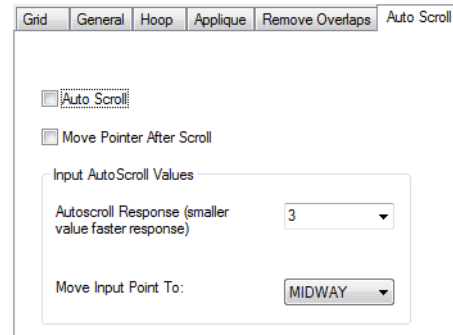
2 Select the **Auto Scroll** checkbox to apply automatic scrolling.

3 Select the **Move Pointer After Scroll** checkbox to move the position of the pointer after each scroll.

4 Adjust the **Autoscroll Response** field as required.

Enter smaller values to increase scrolling speed.

5 Select the pointer position after scrolling from the **Move Input Point To** list:

Option	Purpose
Center	Center of the window. Use this setting for large movements.
Midway	Halfway between the original pointer position and the center of the window. Use this setting for smaller movements – e.g. when zooming into a small area of the design.
Corner	The edge of the screen. Use this setting for slow scrolling.

6 Click **OK**.

The effect of this setting only becomes apparent when you start to digitize. The Design Window automatically scrolls to follow the current cursor position.

Tip Hold down the **Shift** key to temporarily deactivate **Auto Scroll**.

Setting hoop options

Right-click Show Hoop (General toolbar) to change the hoop settings.

A range of sizes is available to suit the size of your design as well as a number of embroidery machines. Select the smallest hoop which fits the design from the range of hoop sizes available. This will hold the fabric tight while stitching.
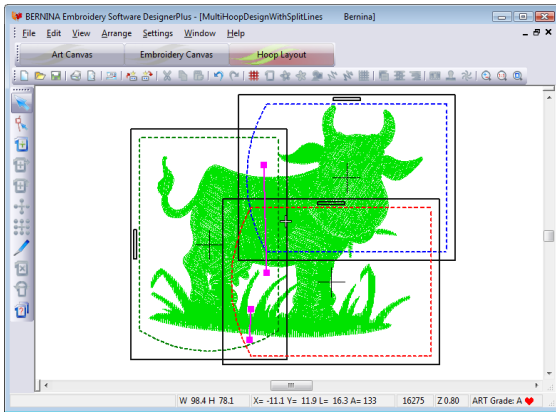
To set hoop options

1 Select **View > Hoop** or right-click the **Show Hoop** icon.

The **Options > Hoop** dialog opens.
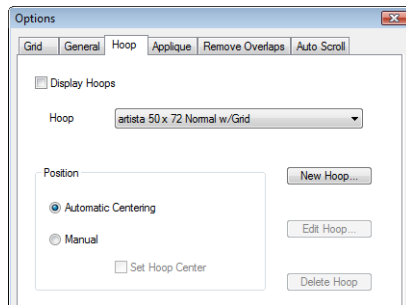
Tip Hide the hoop by clearing the **Display Hoops** checkbox.

2 Select a hoop from the **Hoop** list.

3 Select a position in the **Position** panel to center your hoop. See Setting hoop centers for details.

4 Click **New Hoop** to create customized hoops. See Defining custom hoops for details.

5 Click **Edit Hoop** to edit existing hoops. See Editing hoops for details.

6 Click **Delete Hoop** to delete existing hoops. See Deleting hoops for details.

7 Click **OK**.

Setting Auto Appliqué options

Select Options (Settings menu) to set Auto Appliqué options.

Use **Auto Appliqué** to produce all the stitching you require for closed-object appliqué. Options determining single or multiple boundaries as well as frame-out position are set in the **Options** dialog. See also Creating closed-object appliqué.

To set Auto Appliqué options

1 Select **Settings > Options** and select the **Applique** tab.

This tab contains two panels – **Boundaries** and **Frame Out**.
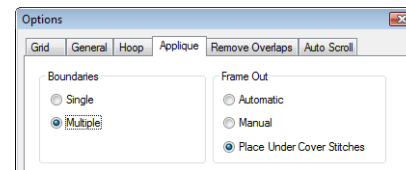
2 Select the required **Boundaries** option:

Option	Purpose
Single	Use when creating a single closed-object appliqué object.
Multiple	Use when creating multiple closed-object appliqué objects. See Creating closed-object appliqué for details.

3 Select the required **Frame Out** method:

▸ **Automatic**: If selected, the frame-out position is determined automatically.

▸ **Manual**: If selected, the frame-out position is marked as part of the digitizing process.

▸ **Place Under Cover Stitches**: If selected, the frame-out position is placed at the location of the last needle penetration before the frame-out would occur.

4 Click **OK**.

Setting Remove Overlaps options

Select Options (Settings menu) to set Remove Overlaps options.

Use **Remove Overlaps** to remove underlying layers of stitching. This helps to reduce the stitch count and

prevent a build-up of stitches where they are not needed. See also Removing underlying stitching.

- -

To set Remove Overlaps options

1 Select **Settings > Options** and select the **Remove Overlaps** tab.

The **Options > Remove Overlaps** dialog opens.
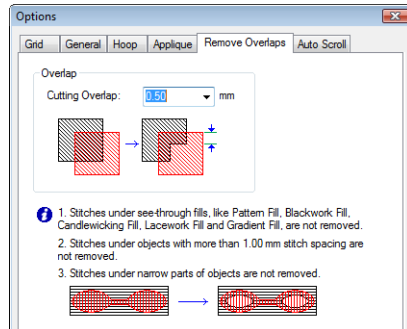
2 Enter the amount of overlap required in the **Cutting Overlap** field.
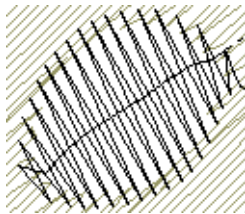
Cutting Overlap: 0.5 mm   Cutting Overlap: 1.5 mm
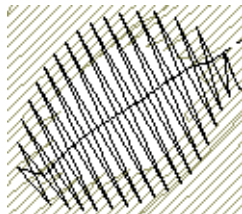
3 Click **OK**.

Setting general options

- -

BERNINA Embroidery Software lets you adjust various general settings controlling the automatic saving of designs, the position of the pointer on-screen, as well the display of measurements.

Setting automatic save

Select Options (Settings menu) to set automatic save and backup options.

Save your work automatically at regular intervals using **Auto Save** to protect you from losing work in the event of hardware or software failure. A backup file is created every time you save a design. The design will be saved in the BACKUP folder of your BERNINA Embroidery Software installation. It will have the same name as the original file with the extension 'BAK'.

⚠️

Caution Backup files remain in the BACKUP folder until you delete them. To prevent the folder from using too much hard disk space, delete unwanted files regularly.

- -

To set automatic save

1 Select **Settings > Options > General** tab.
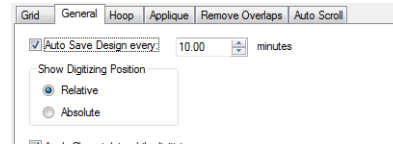
2 Select the **Save Design** checkbox.

3 Enter the auto-save frequency in the **Auto Save Period** field.

4 Click **OK**.

Interpreting pointer position values

The **X** and **Y** values show the horizontal and vertical distance of the pointer from the relative or absolute point. The **L** value is the length of the line connecting the pointer with the start point, while **A** is the angle of that line, relative to the horizontal.
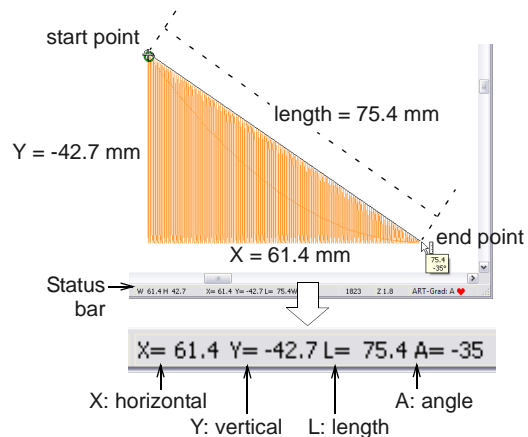
A negative **X** value indicates that the second point was placed to the left of the first point, while a negative **Y** value displays when the second point is below the first. Negative angles indicate angles of

more than 180° – for example, an angle of -60° is equal to 300°.
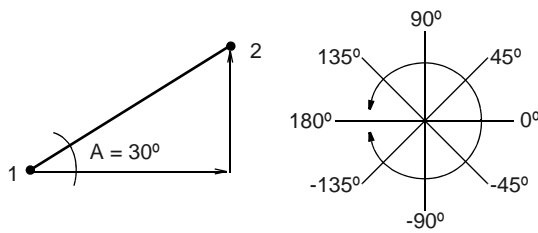
Tip You can measure on-screen distances using the values in the **Status Bar**. See Measuring distances onscreen for details.

Setting pointer position display options

Select Options (Settings menu) to set pointer position display options.

When you move the mouse, the pointer position is displayed in the **Status Bar** at the bottom of the screen. You can optionally display the pointer position relative to the last digitized point or stitch point, or as an absolute value from the first needle point of the design.

To set pointer position display options

1 Select **Settings > Options > General** tab.
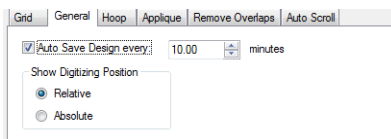
2 Select a **Relative** or **Absolute** setting for the pointer.

   ▸ **Relative**: shows pointer position relative to the last digitized point or stitch point. Useful while digitizing or editing stitches.

   ▸ **Absolute**: shows pointer position as an absolute value from the first needle point of the design. Useful for checking that the design fits a given area.

3 Click **OK**.

Setting other general options

The **Special** > **Options** > **General** provides options for activating the following functions:

   ▸ Applying Closest Join while digitizing

   ▸ Displaying a measure tooltip when using the Measure command

   ▸ Hiding object properties

   ▸ Grouping designs when opening and inserting.

To set other general options

1 Select **Settings > Options > General** tab.
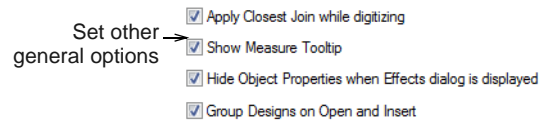
2 Select one or more of these options:

   ▸ **Apply Closest Join while digitizing**: The **Closest Join** method (the default) automatically calculates the closest join between objects while digitizing. When deactivated, all newly digitized objects are joined by the **As Digitized** method. See Digitizing closed shapes for details.

   ▸ **Show Measure Tooltip**: shows length and angle in a tooltip when measuring distances on screen. See Measuring distances onscreen for details.
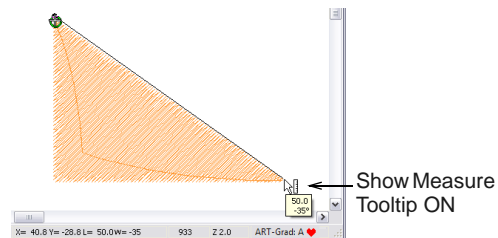
   ▸ **Hide object properties**: When selected, the Object Properties dialog automatically closes when the **Effects** dialog is opened, and vice versa. See Accessing object properties for details.

   ▸ **Group Designs on Open and Insert**: When selected, a design is automatically grouped when first opened or inserted into another design. This makes it easier to drag into position without accidentally deselecting it. This is particularly useful when working with designs which have been placed right on top of existing design elements. See Working with design files for details.

3 Click **OK** to confirm.

PART II

DIGITIZING TECHNIQUES

In BERNINA Embroidery Software, you build designs from basic shapes or 'embroidery objects'. These are like ordinary drawing objects in that they have certain defining characteristics or 'properties' such as color, size, position, and so on. They also have properties unique to embroidery such as stitch type and density.

Outline and fill stitches

This section explains how to select basic outline and fill stitch types, as well as change stitch settings to obtain the best results. Basic outlines dealt with here include Single and Triple stitch, Satin stitch, and Blanket stitch. Basic fills discussed include Satin fill and Step fill. See Outline & Fill Stitches for details.

Digitizing methods

This section describes how to digitize shapes with the main digitizing methods. It also explains how to adjust digitizing settings to obtain the best results. See Digitizing Methods for details.

Thread colors and charts

This section describes how to select colors from the Color Palette as well as how to assign threads to the colors in your design. How to modify thread charts is also covered, as well as creating custom thread charts. See Thread Colors & Charts for details.

Object properties and templates

This section explains how to change the object properties in your design, as well as how to apply, create and maintain templates in BERNINA Embroidery Software. See Object Properties & Templates for details.

Improving stitch quality

This section covers adjusting fabric settings, stabilizing with underlays, and compensating for fabric stretch. It also describes how to preserve long stitches, adjust tie-in/off settings, and set automatic start and end points. See Stitch Quality for details.

CHAPTER 8
OUTLINE & FILL STITCHES

All embroidery objects in BERNINA Embroidery Software have defining settings or 'properties', the most important of which is the stitch type. Whenever you create or modify an object, stitches are generated according to the associated stitch type. Stitch settings such as spacing and length can be adjusted before or after digitizing.

Stitch types divide broadly into two categories – 'outline' and 'fill'. Outlines are used, as the name suggests, for outlines or borders of shapes and for details. Fill stitches are used to cover large areas or 'color blocks' in a design. Outline and fill stitches are generated whenever you create embroidery shapes, but they can be changed at any time. BERNINA Embroidery Software provides a variety of digitizing methods or 'tools' for creating embroidery objects. These tools are used in conjunction with stitch types to create embroidery 'objects'.

This section explains how to select basic outline and fill stitch types, as well as change stitch settings to obtain the best results. Basic outlines dealt with here include Single and Triple, Satin, and Blanket. Basic fills discussed include Satin and Step. See also Advanced Digitizing.
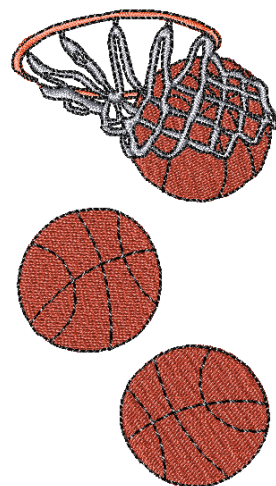
Selecting or changing stitches

BERNINA Embroidery Software provides a number of basic outline and fill stitch types as well as those of a more artistic or decorative kind. Different stitch types suit different shapes. Whenever you create an object, it always takes the currently selected stitch type. You can change this at any stage.

Tip Preset stitch values by changing the current properties in the **Object Properties** dialog **before** you digitize. See also Object Properties & Templates.

Selecting outline stitches

Outline	Click Outline (Stitch and Color Bar) to access outline stitches.
Single	Use Single for thin outlines.
Triple	Use Triple for thicker outlines.

Satin	Use Satin outline for adding thicker borders.
Blanket	Use Blanket for long, narrow borders with a 'comb' effect.

BERNINA Embroidery Software provides basic Single, Triple, Satin and Blanket outline stitches, as well as more decorative stitch types. You can interchange these at any stage.

To select an outline stitch

1 With or without an object selected, click the **Outline** icon to access a dropdown menu.
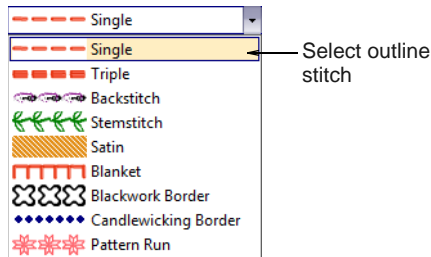
Select outline stitch

2 Select a stitch type from the list.

The selected stitch type is applied to the selected object or any newly created outline objects. Current settings apply.

Tip Use **Stemstitch** and **Backstitch** for decorative outlines. **Pattern Run** is also available. See Craft Stitch Borders and Fills and Patterned Stamps, Runs & Fills for details.

Selecting fill stitches

Click Fill (Stitch and Color Bar) to access fill stitches.

Satin	Use Satin fill for narrow shapes.
Step	Use Step for larger, irregular shapes.
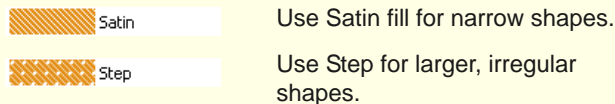
BERNINA Embroidery Software provides basic Satin and Step fills, as well as more decorative stitch types. You can interchange these at any stage.
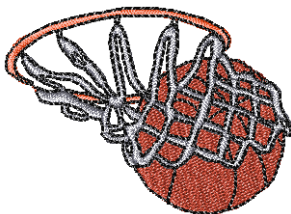
To select a fill stitch

1 With or without an object selected, click the **Fill** icon to access a dropdown menu.
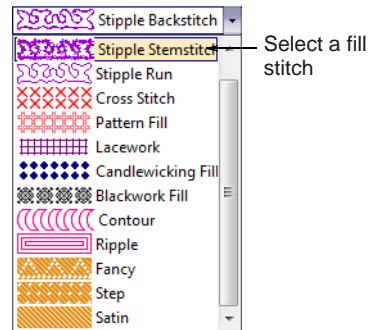
Select a fill stitch

2 Select a stitch type from the list.

The selected stitch type is applied to the selected object or any newly created filled objects. Current settings apply.

Tip Use Fancy, Pattern, and Craft Stitch fills for more artistic effects. See Artistic Stitch Effects, Patterned Stamps, Runs & Fills, and Craft Stitch Borders and Fills for details.

Creating outlines with Single and Triple stitch

Use the **Single** and **Triple** tools to digitize lines of single or triple outline stitching. **Single** places a single row of stitches along a digitized line. **Triple** repeats each stitch three times for a thicker line. These tools are typically used to add borders to designs.
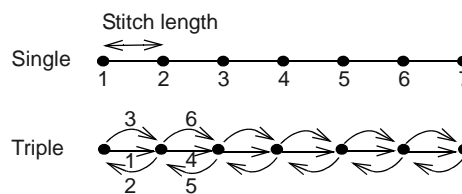
Note You cannot see a big difference between **Single** and **Triple** stitches on screen as the extra stitches in Triple cover each other. To check that an object is stitched with Triple, travel through the stitches. See Traveling by stitches for details.

Creating Single and Triple outlines

 Outline Click Outline (Stitch and Color Bar) to access outline stitches.

Use **Single** or **Triple** stitch to create lines of single or triple stitches. Left and right mouse clicks create reference points – corner points and curve points respectively.

To create a Single or Triple outline

1   Click the **Outline** icon and choose **Single** or **Triple** from the dropdown menu.
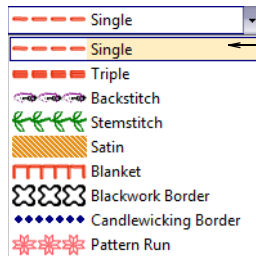
Select Triple or Single stitch

Note The outline is created with default Single or Triple stitch settings. Stitch length can be adjusted before or after digitizing. See Adjusting Single or Triple stitch length for details.

2   Select a digitizing tool and digitize a shape, open or closed. See Digitizing Methods for details.
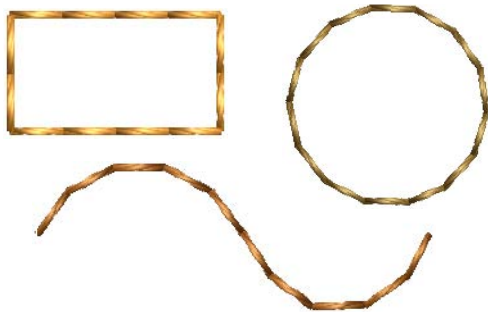
Note The **Block Digitizing** tool cannot be used for outlines.

Adjusting Single or Triple stitch length

 Click Object Properties (General toolbar) to adjust stitch settings.

You can change stitch length in the **Object Properties** dialog either before or after digitizing. For both Single and Triple stitches, set a stitch length to suit the digitized shape. Where the object has tight curves, select a shorter stitch length. To reduce the

stitch count for flatter curves, increase the stitch length.

Too few stitches to follow tight curve

Stitch length

Stitches follow curve more closely
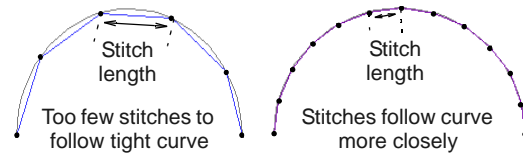
Stitch length

To adjust Single or Triple stitch length

1   Double-click or right-click a Single or Triple outline object.

The **Object Properties > Outline Stitch** dialog opens.
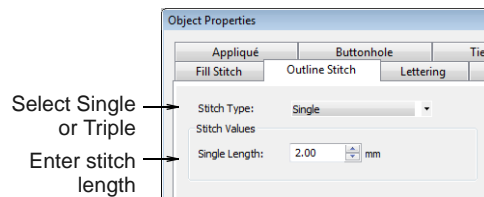
Select Single or Triple

Enter stitch length

Tip You can preset stitch settings before digitizing. Click the **Object Properties** icon to access the dialog at any time.

2   Select **Single** or **Triple** from the **Stitch Type** list to change stitch types as necessary.

3   Enter the stitch length in the **Stitch Length** box.

If a line has tight, sharp curves, reduce the length, for example to 1.8 mm, so that the stitches follow the line.

Tip You can mimic handmade embroidery with **Single** or **Triple** stitches by setting the length to 4.0 mm. See also Craft Stitch Borders and Fills.

4   Click **Apply**.

Creating outlines with Satin stitch

Satin stitch can be used for outlines or fills. It is well-suited to thicker borders. Adjust stitch density by setting a fixed spacing value, or let Auto Spacing calculate it for you.
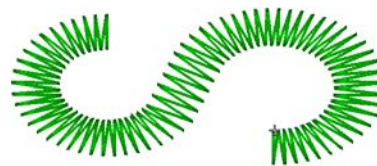
Creating Satin outlines

 Outline Click Outline (Stitch and Color Bar) to access outline stitches.

Use Satin outline type to create thicker borders.

- -

To create a Satin outline

1 Click the **Outline** icon and choose **Satin** from the dropdown menu.
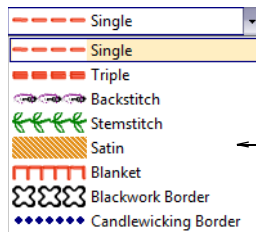
Select Satin stitch

 Note The outline is created with default Satin stitch settings. Stitch spacing and width can be adjusted before or after digitizing. See Adjusting Satin outline stitch spacing and width for details.

2 Select a digitizing tool and digitize a shape, open or closed. See Digitizing Methods for details.
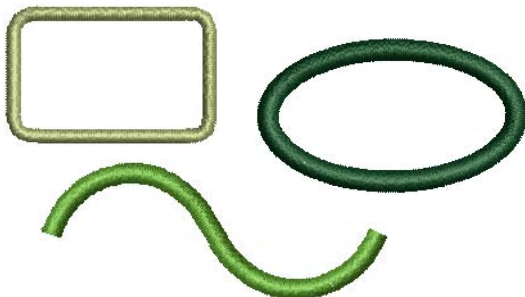
 Note The **Block Digitizing** tool cannot be used for outlines.

Adjusting Satin outline stitch spacing and width

  Click Object Properties (General toolbar) to adjust stitch spacing and width.

Stitch spacing is the distance in millimeters between two needle penetrations on the same side of a shape. Change the stitch density in Satin outlines by adjusting the Stitch Spacing setting. The larger the spacing between stitches, the lower the density. The smaller the value, the higher the density. Adjust Satin

Width to change the thickness of the outline. See also Applying automatic spacing to Satin outline.

Satin width   Satin spacing

- -

To adjust Satin outline stitch spacing and width

1 Double-click or right-click a Satin outline object.

The **Object Properties > Outline Stitch > Satin** dialog opens.

Select Manual to change stitch spacing

Adjust spacing and width
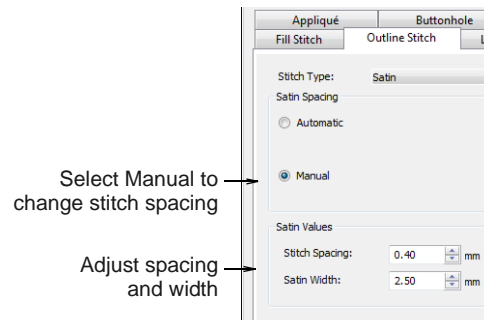
 Tip You can preset stitch settings before digitizing. Click the **Object Properties** icon to access the dialog at any time.

2 Select the **Manual** option.

The **Stitch Spacing** field becomes activated.

 Note If **Automatic** spacing is selected, the **Stitch Spacing** field is deactivated. See Applying automatic spacing to Satin outline for details.

3 In the **Stitch Spacing** field, enter a value.

- ▸ To increase stitch density, enter a smaller value.
- ▸ To reduce the density for more open stitching, enter a larger value.
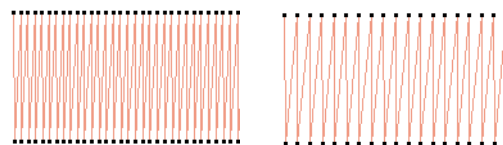
Stitch Spacing 0.6mm   Stitch Spacing 1.0mm

4 Enter the satin width in the **Satin Width** field.

5 Click **Apply**.

 Tip If a Satin border is wide, some stitches may exceed the maximum stitch the particular

embroidery machine can produce. When **Special Satin** is applied, BERNINA Embroidery Software breaks any long Satin stitches into shorter ones. See also Splitting long stitches in Satin fills.

Applying automatic spacing to Satin outline

> Click Object Properties (General toolbar) to apply Automatic Spacing.

Where a border narrows, stitches are tight, thus requiring fewer stitches to cover the fabric. Where it is very narrow, stitches need to be less dense because too many needle penetrations can damage the fabric. The Automatic Spacing setting adjusts stitch spacing for Satin stitches according to outline width. For varying width objects, Automatic Spacing changes spacing to the best density for the width. See also Adjusting Satin outline stitch spacing and width.

To apply automatic spacing to Satin outline

1 Double-click or right-click a Satin outline object.

   The **Object Properties > Outline Stitch > Satin** dialog opens.
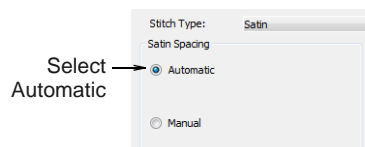
Select Automatic

2 Select the **Automatic** checkbox.
3 Click **Apply**.
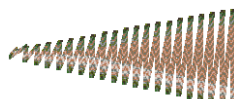
Auto Spacing ON   Auto Spacing OFF

> **Tip** If a Satin border is wide, some stitches may exceed the maximum stitch the particular embroidery machine can produce. When **Special Satin** is applied, BERNINA Embroidery Software breaks any long Satin stitches into shorter ones. See also Splitting long stitches in Satin fills.

Adjusting Satin outline stitch offsets

> Click Object Properties (General toolbar) to set stitch offsets.

By default, stitches are positioned around the center of a digitized line. You can, however, offset them to one side.

To adjust Satin outline stitch offsets

1 Double-click or right-click a Satin outline object.

   The **Object Properties > Outline Stitch > Satin** dialog opens.

Select center or offset

2 Select an offset option – **Center** or **Offset**.
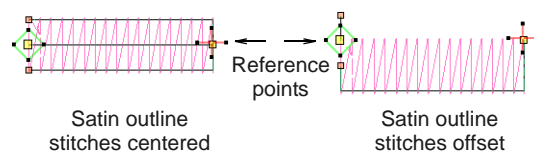
Reference points

Satin outline   Satin outline
stitches centered   stitches offset

> **Tip** See the offset by selecting the object then clicking the **Reshape Object** tool.

3 Click **Apply**.

Creating outlines with Blanket stitch

Blanket stitch is used to create long, narrow borders with a 'comb' effect. It is often used to stitch borders around appliqués. The needle penetrates both sides of the border, and then penetrates the second side again, laying the thread along the side. Blanket stitches are usually more open than Satin stitches.

Creating Blanket outlines

> Click Outline (Stitch and Color Bar) to access outline stitches.

Use **Blanket** outline type to create long, narrow borders with a 'comb' effect.

To create a Blanket outline

1 Click the **Outline** icon and choose **Blanket** from the dropdown menu.

Select Blanket stitch
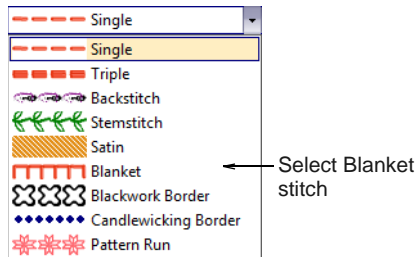
Note The outline uses default Blanket stitch settings. Stitch spacing and width can be adjusted before or after digitizing. See Adjusting Blanket stitch spacing and width for details.

2 Select a digitizing tool and digitize a shape, open or closed. See Digitizing Methods for details.
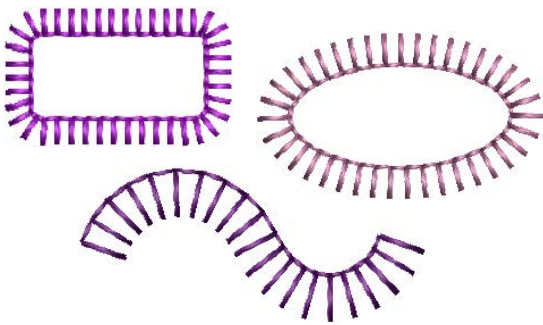
Note When an open shape is digitized left-to-right, blanket stitch is oriented downwards. When digitized right-to-left, it is oriented upwards.

Adjusting Blanket stitch spacing and width

Click Object Properties (General toolbar) to adjust stitch spacing and width.

You can adjust the length of the stitches and the spacing between them.

Stitch width
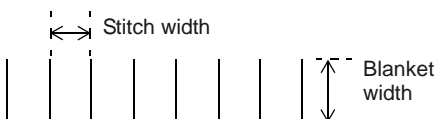
Blanket width

To adjust Blanket stitch spacing and width

1 Double-click or right-click a Blanket outline object.

The **Object Properties > Outline Stitch > Blanket** dialog opens.
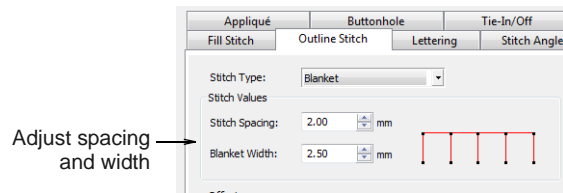
Adjust spacing and width

Tip You can preset stitch settings before digitizing. Click the **Object Properties** icon to access the dialog at any time.

2 In the **Stitch Spacing** field, enter the spacing value.

This value is the distance in millimeters between each perpendicular stitch.

Spacing: 1.0 mm   Spacing: 2.0 mm   Spacing: 3.5 mm
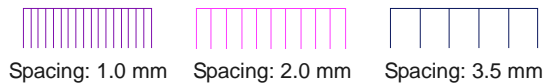
3 In the **Blanket Width** field, enter the width of each blanket stitch.

Blanket width: 2.5 mm

Blanket width: 5 mm

4 Click **Apply**.

Adjusting Blanket stitch offsets

Click Object Properties (General toolbar) to set Blanket stitch offsets.

By default, stitches are positioned around the center of a digitized line. You can, however, offset them to one side.

To adjust Blanket stitch offsets

1 Double-click or right-click a Blanket outline object.

The **Object Properties > Outline Stitch** dialog opens.

Select Center or Offset

2 Select an offset option:

▶ Center

▸ Offset
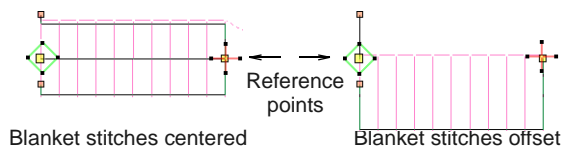
Reference points

Blanket stitches centered | Blanket stitches offset

Tip See the offset by selecting the object then clicking the **Reshape Object** tool.

3 Click **Apply**.

Creating fills with Satin fill

Satin fill is well-suited to stitching narrow borders and shapes, where the length of each stitch forms the width of the border. Satin stitches are almost parallel, with every second stitch slightly slanted. Because there are generally no needle penetrations breaking up the fill, Satin fill creates a glossy, high-quality effect.

Tip If a border is too wide, stitches may be loose and not cover the fabric properly. If you intend to increase the design size, use **Special Satin**. This adjusts the stitch length automatically as you scale your design.

Creating Satin fills

Wn Fill	Click Fill (Stitch and Color Bar) to access fill stitches.

Use Satin fill stitch when creating narrow borders and shapes.

To create a Satin fill

1 Click the **Fill** icon and choose **Satin** from the dropdown menu.

Select Satin stitch
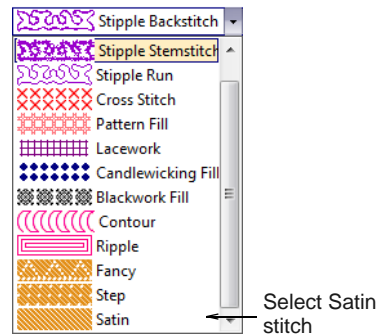
Note The filled object is created with default Satin fill settings. Stitch spacing can be adjusted before or after digitizing. See Adjusting Satin fill spacing for details.

2 Select a digitizing tool and digitize a closed shape. See Digitizing Methods for details.
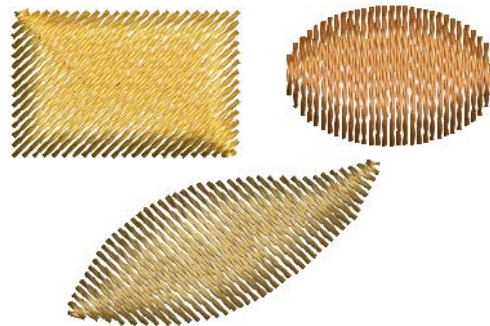
Note The **Open Object** tool cannot be used for fills. See Digitizing tools for details.

Adjusting Satin fill spacing

	Click Object Properties (General toolbar) to adjust Satin fill spacing.

Stitch spacing is the distance in millimeters between two needle penetrations on the same side of a shape. Where a shape is narrow, stitches are tight, thus requiring fewer stitches to cover the fabric. Where it is very narrow, stitches need to be less dense because

too many needle penetrations can damage the fabric. See also Preserving long stitches.

Satin spacing
Width
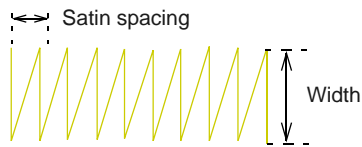
Change the stitch density in Satin fills at any stage. The larger the spacing, the lower the density. The smaller the spacing, the higher the density.

To adjust Satin fill spacing

1 Double-click or right-click a satin fill object.

The **Object Properties > Fill Stitch > Satin** dialog opens.
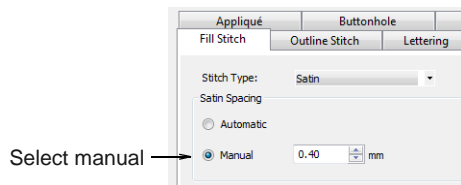
Select manual

Tip You can preset stitch settings before digitizing. Click the **Object Properties** icon to access the dialog at any time.

2 Select the **Manual** checkbox.

3 Enter the spacing in the **Stitch Spacing** field.

 ▸ To increase stitch density, enter a smaller value.

 ▸ To reduce the density for more open stitching, enter a larger value.

Stitch Spacing 1.0mm   Stitch Spacing 1.8mm
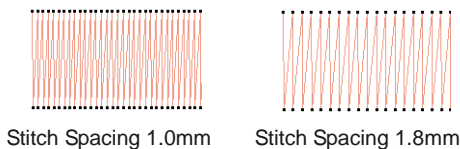
4 Click **Apply**.

Applying automatic spacing to Satin fill

 Click Object Properties (General toolbar) to set automatic spacing to Satin fill.

You can set a fixed spacing value for Satin fill or let Auto Spacing calculate it for you. Auto Spacing automatically adjusts the stitch spacing wherever the border changes width. See also Preserving long stitches.

To apply automatic spacing to Satin fill

1 Double-click or right-click a satin fill object.

The **Object Properties > Fill Stitch > Satin** dialog opens.
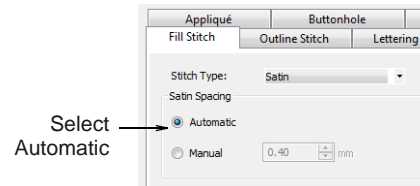
Select Automatic

2 Select the **Automatic** checkbox.

Automatic stitch spacing   Manual stitch spacing

Different spacing depending on object shape   Stitch spacing remains same for whole object
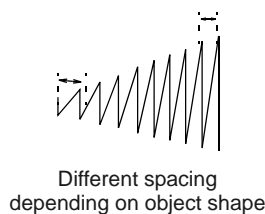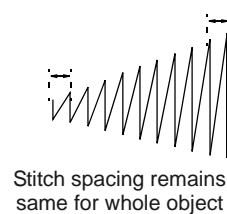
3 Click **Apply**.

Splitting long stitches in Satin fills

If a Satin shape is wide, some stitches may exceed the maximum stitch the particular embroidery machine can produce. When **Special Satin** is applied, BERNINA Embroidery Software breaks any long Satin stitches into shorter ones. It also distributes needle penetrations in a random pattern so that they do not form a line in the middle of the shape.

While **Special Satin** is used primarily to prevent long stitches in wide shapes, it can also be used as an alternative to Step fill. **Special Satin** looks more Satin-like and works well with turning stitches, creating soft lines and a little more depth. By contrast, Step fill is flat and can show unwanted patterns with tight curves. See also Preserving long stitches.

To split long stitches in Satin fills

1 Double-click or right-click a satin fill object.

The **Object Properties > Fill Stitch > Satin** dialog opens.

Select Special Satin
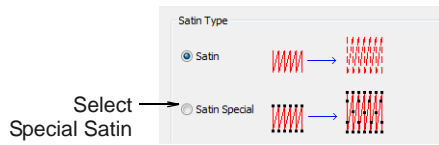
2 Select the **Special Satin** checkbox.

Special Satin On   Special Satin Off
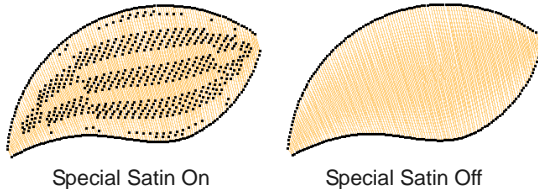
3 Click **Apply**.

Creating fills with Step fill

Different stitch types suit different shapes. BERNINA Embroidery Software provides normal Satin and Step fills, as well as Fancy and Craft Stitch fills. These can all be accessed from the **Stitch and Color Bar**. There is also a dedicated **Craft Stitch** toolbar.

Step fill consists of rows of straight stitches and is suitable for filling large, irregular shapes. Stitches are laid in rows going back and forth across the shape. These can be uniform or patterned. You can choose from a number of preset patterns. You can also control stitch spacing and length.

Note With Step fills you can select patterns formed by needle penetrations. The default Step pattern (No. 1) is designed to create a uniformly flat and smooth texture similar to a woven mat. See also Applying Step patterns.

Creating Step fills

Fill Click Fill (Stitch and Color Bar) to access fill stitches.

Use **Step** fill type when creating large and/or irregular shapes.

To create Step fill

1 Click the **Fill** icon and choose **Step** from the dropdown menu.
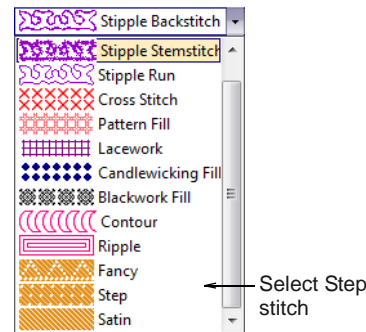
Select Step stitch

Note The filled object is created with default Step fill settings. Stitch spacing and length can be adjusted before or after digitizing. See Adjusting Step fill spacing and length for details.

2 Select a digitizing tool and digitize a closed shape. See Digitizing Methods for details.
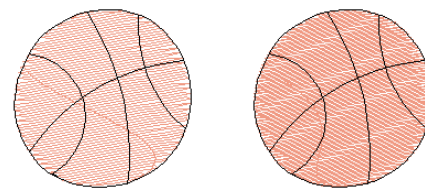
Note The **Open Object** tool cannot be used for fills. See Digitizing tools for details.

Adjusting Step fill spacing and length

Click Object Properties (General toolbar) to set step fill stitch spacing.

For Step, stitch density is determined by the distance between each row of stitches. The spacing setting is the distance between two forward rows.

Stitch spacing

Stitch length

Forward

Backward
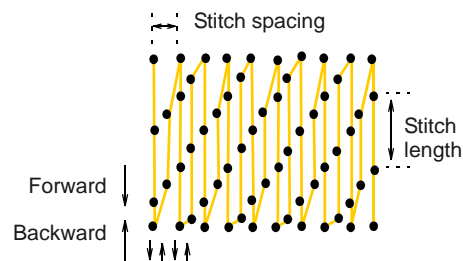
You can also specify Step fill stitch length. This varies slightly to ensure that small stitches are not generated at the edges.

To adjust Step fill spacing and length

1 Double-click or right-click a step fill object.

The **Object Properties > Fill Stitch > Step** dialog opens.

Adjust stitch spacing and length
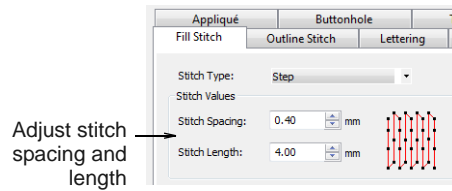
Tip You can preset stitch settings before digitizing. Click the **Object Properties** icon to access the dialog at any time.

2 In the **Stitch Spacing** field, enter the new spacing value.

This value is the distance between each forward row of stitching.

▶ To increase the density, enter a smaller value.

▶ To decrease the density, enter a larger value.
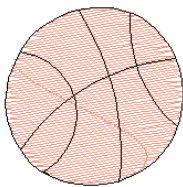
Stitch spacing: 1.2 mm   Stitch spacing: 0.7 mm
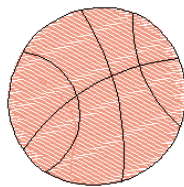
3 In the **Stitch Length** field, enter the stitch length you require.
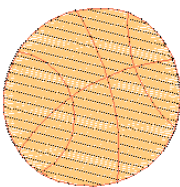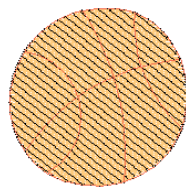
Stitch length: 5.0 mm   Stitch length: 2.0 mm

4 Click **Apply**.

Applying Step patterns

Click Object Properties (General toolbar) to set step patterns.

With Step fills you can select patterns formed by needle penetrations. The default Step pattern (No. 1) is designed to create a uniformly flat and smooth

texture similar to a woven mat. See also Creating fancy fills.
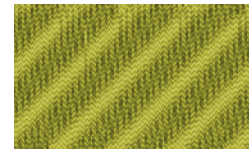
There are other preset patterns to choose from. Experiment to find the best pattern for your purpose. See Step Fill Samples for details.

To apply a Step pattern

1 Double-click or right-click a step fill object.

The **Object Properties > Fill Stitch > Step** dialog opens.

Select Step fill pattern
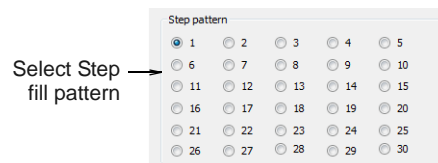
2 Select a pattern.

A preview of the pattern appears.
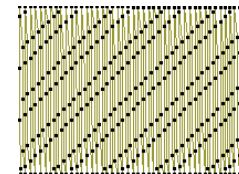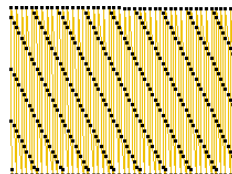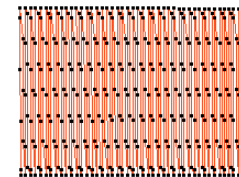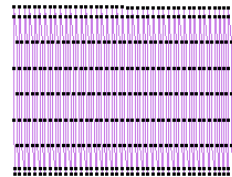
3 Click **Apply**.

CHAPTER 9
DIGITIZING METHODS

In BERNINA Embroidery Software, you build designs from basic shapes or 'embroidery objects'. The process of creating embroidery objects on-screen is called 'digitizing'. Like creating designs in graphics applications, this involves the use of different digitizing tools or methods. These are used in conjunction with stitch types to create embroidery objects. Digitizing tools in BERNINA Embroidery Software are similar to drawing tools except that the end result is an embroidery object rather than a drawing object.

Like drawing objects, embroidery objects have certain defining characteristics or 'properties' such as color, size, position, and so on. They also have properties unique to embroidery such as stitch type and density. The most important property for an embroidery object is its stitch type. Different stitch types are suited to different shapes. See Outline & Fill Stitches for details.

Object properties are defined as you digitize, but they can be changed at any stage. When you create an embroidery object, you can accept the default settings for the particular digitizing method, or apply new ones. Default settings are stored in the design template. You can also define 'current' properties to influence all the objects you create in the current design. See Object Properties & Templates for details.

This section describes how to digitize shapes with the main digitizing methods. It also explains how to adjust digitizing settings to obtain the best results.

Digitizing tools

Different digitizing methods or 'tools' are suited to creating different shapes or design elements. Digitizing methods divide broadly into two categories – outline and fill.

Tip Drawing objects themselves can be converted to embroidery objects using Magic Wand. See Digitizing with Magic Wand for details.

Selecting digitizing tools

	Use Open Object (Digitize toolbar) to digitize a line.
	Use Closed Object (Digitize toolbar) to digitize an irregular shape.
	Use Circle/Oval (Digitize toolbar) to digitize a circle or oval.
	Use Rectangle (Digitize toolbar) to digitize a square or rectangle.
	Use Block Digitizing (Digitize toolbar) to digitize columns.

Digitizing methods divide broadly into two categories – outline and fill. BERNINA Embroidery Software

provides various tools with which to digitize shapes – **Open Object**, **Closed Object**, **Block Digitizing**, **Circle/Oval**, and **Rectangle**. The **Open Object** tool is used to create outline shapes. The **Block Digitizing** tool is used to create columns of varying width and stitch angle. The **Closed Object**, **Circle/Oval**, and **Rectangle** tools are used to create filled or outlined shapes.

Reference points and reshape nodes

Once you have selected a digitizing tool, you digitize shapes by marking 'reference points' along an outline using the following conventions:

▸ Click to enter corner points.

▸ Right-click to enter curve points.
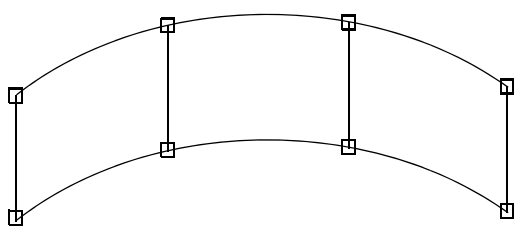
In general, you mark a reference point where:

▸ a curved outline changes curvature

▸ the outline has corners

▸ the outline changes from a straight line to curve.

The reference points you mark when digitizing become 'reshape nodes' during reshaping operations. Other control points associated with objects allow you to transform objects (rotate, skew, etc), scale (resize), adjust letter spacing, and change entry and exit points.
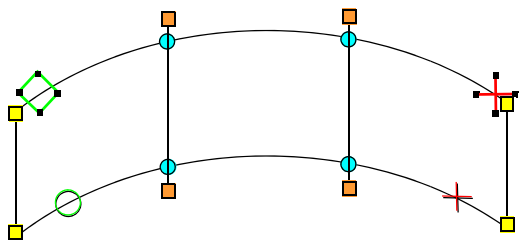
Reshape nodes are color-coded, corner points appearing as yellow squares, curve points as turquoise circles, and stitch angle points as orange squares. Object entry points are shown as green diamonds, exit points as red crosses. The start and end points of an entire design are indicated by a small green circle and small red cross respectively.

Note Most reshape nodes can be added, deleted, moved or changed to either corner or curve points. Some reshape nodes have a specific function and cannot be deleted – for example, the entry point marker. See also Reshaping & Editing Objects.

Join methods

The **Closest Join** setting automatically calculates the closest join between objects while digitizing saving you having to think about entry and exit points. When activated (the default), all newly digitized objects are joined by this method. When deactivated, all newly digitized objects are joined by the **As Digitized** method. This means they are joined from the exit point of the last digitized object to the entry point of the new object. When Closest Join is off, you are able to specify entry and exit points when digitizing closed objects. See Setting general options for details.

Closest Join on

Closest Join off
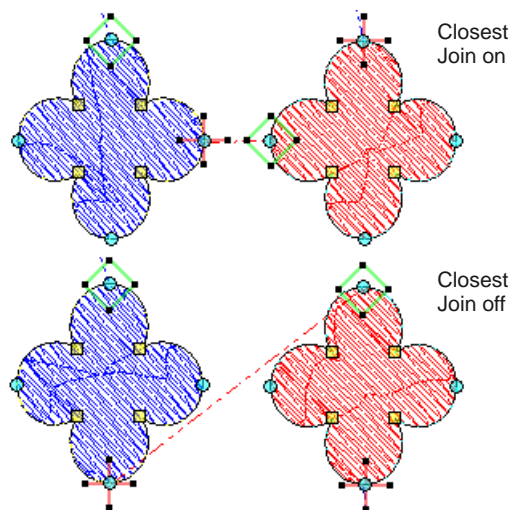
Switching between fill and outline digitizing methods
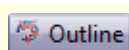
Use Outline (Stitch and Color Bar) to digitize a line.

Use Fill to digitize a shape.

You can quickly switch from fill stitch to outline stitch using the **Fill** and **Outline** tools. See also Outline & Fill Stitches.

To switch between fill and outline digitizing methods

▸ Select a digitizing tool then click either the **Fill** or **Outline** icon before digitizing a shape.

Digitizing open shapes

Use Open Object (Digitize toolbar) to digitize open shapes.

Use the **Open Object** tool to digitize open shapes of single/triple run, satin, blanket, patterned or craft

stitching. **Open Object** places a row of stitches along a digitized line. This tool is typically used to add borders to designs.
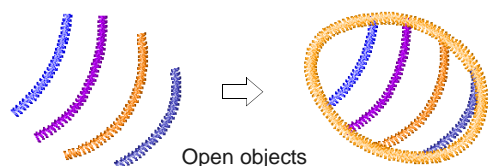
Open objects

To digitize an open shape

1 Select an **Outline** stitch type. See Selecting outline stitches for details.

2 Click the **Open Object** icon.

3 Digitize the shape, by marking reference points around its outline.

▸ Click to enter corner points.

▸ Right-click to enter curve points.
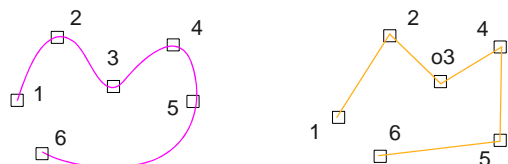
Tip Follow the prompts in the **Status Bar** to help you digitize. If you make a mistake, press **Backspace** to delete the last reference point, then continue adding reference points or press **Esc** to delete all the points so you can start again.

4 Press **Enter** to complete the shape.

Note If you decide to close the object, use the **Arrange > Close Object > …** command with the option of using straight or curved points.
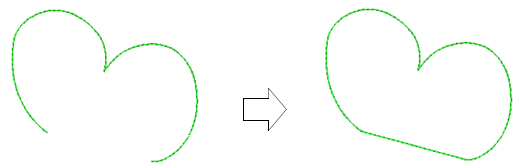
Open object   Close Object used

Digitizing closed shapes

Use Closed Object (Digitize toolbar) to digitize irregular closed shapes.

Digitize complex shapes with the **Closed Object** tool. Create objects using left and right clicks to mark reference points to form the boundary outlines.
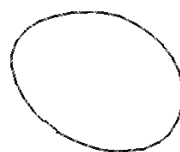
Outlined closed object   Filled closed object

To digitize closed shapes

1 Select an **Outline** or **Fill** stitch type. See Selecting or changing stitches for details.

2 Select the **Closed Object** tool and digitize the boundary of the shape by marking reference points around its outline:

▸ Click to enter corner points.

▸ Right-click to enter curve points.

Tip Follow the prompts in the **Status Bar** to help you digitize. If you make a mistake, press **Backspace** to delete the last reference point, then continue adding reference points or press **Esc** to delete all the points so you can start again.

3 Close the shape.

▸ To close the shape with the same type of reference point as the last you digitized – i.e. corner or curve – simply press **Enter**.

▸ To close the shape using a different type of reference point, mark the last on top of the first and press **Enter**.
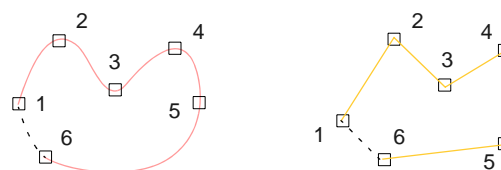
Objects are closed automatically

4 Repeat as many times as necessary to create more objects.

Note By default, objects are joined by the **Closest Join** method. If deactivated, all newly digitized objects are joined by the **As Digitized** method. This means you need to specify entry and exit points, following prompts in the **Status Bar**.

See Setting general options for details. See also Adjusting entry and exit points.

As digitized   Closest join
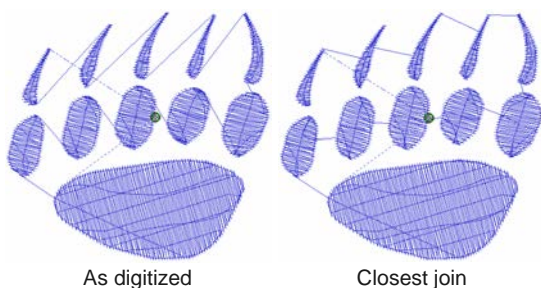
5 Press **Esc** to deselect the tool.

Digitizing columns of varying width

 Use Block Digitizing (Digitize toolbar) to create columns of varying width and stitch angle.

Use the **Block Digitizing** tool to digitize columns of varying width and stitch angle. Digitized pairs of reference points define the outline, while lines connecting the pairs define the stitch angles.

To digitize a column of varying width

1 Select a **Fill** stitch type. See Selecting fill stitches for details.

2 Click the **Block Digitizing** icon.

3 Digitize the column by marking reference points on alternate sides of the column.

  ‣ Click to enter corner points.

  ‣ Right-click to enter curve points.

Mark a pair of points wherever the outline changes, and wherever you want the stitch angle to change.
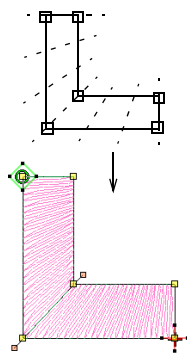
Stitches change their   Stitches remain parallel
angle gradually   between parallel stitch angles
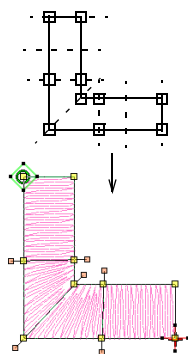
Tip The reshape nodes in a pair do not have to be the same type. For example, one can be a corner point, the other a curve.
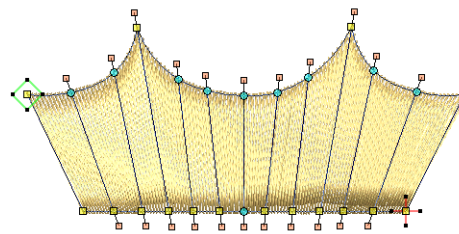
Different types of reshape node in same pair

Tip If you make a mistake, press **Backspace** to delete the last reference point, then continue digitizing.

4 Press **Enter** to complete.

5 Repeat as many times as necessary to create more objects.

By default, objects are joined by the **Closest Join** method. If deactivated, all newly digitized objects are joined by the **As Digitized** method. This means you need to specify entry and exit points, following prompts in the Status Bar. See Setting other general options for details. See also Adjusting entry and exit points.

Tip If you are using the **As Digitized** method, you can choose whether to omit or include the last stitch. For example, if joining two objects, keep or omit the last stitch so that the exit point is close to where you begin the next object.

  ‣ Press **Enter** to **keep** the last stitch and place the exit point at the last reference point you marked.

Start   Start

Finish
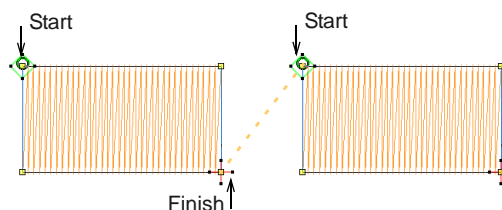
▸ Press **Spacebar** to **omit** the last stitch and place the exit point on the opposite the last reference point you marked.

Start   Finish   Start
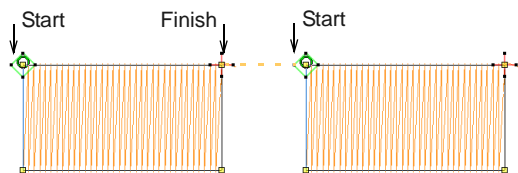
6 Press **Esc** to deselect the tool.

Digitizing circles and ovals

- -

> Use Circle/Oval (Digitize toolbar) to digitize circles and ovals.

Digitize circles and ovals with a few clicks. You can use any fill or outline stitch type with circles and ovals.

Single   Satin   Blanket

Step   Pattern Run   Fancy

- -
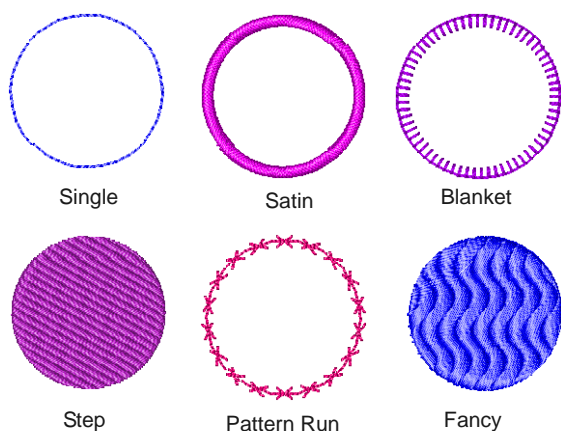
To digitize a circle or oval

1 Select an **Outline** or **Fill** stitch type. See Selecting or changing stitches for details.

2 Click the **Circle/Oval** icon.

3 Digitize the circle or oval.

▸ Click to mark the center of the circle or oval. A circle outline attaches to the pointer.

▸ Move the pointer until the outline is the required size, then click to mark the radius reference point.

▸ To create a circle, press **Enter**.

▸ To create an oval, click again to mark a second radius point, and press **Enter**.

center   1   3
                    1
              center
        2   2

Press Enter   Press Enter
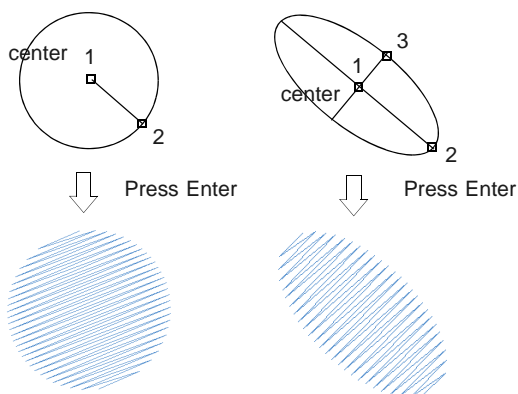
Digitizing squares and rectangles

- -

> Use Rectangle (Digitize toolbar) to digitize squares and rectangles.

Digitize squares and rectangles with a few clicks. You can use any fill or outline stitch type with squares and rectangles.

Single   Satin   Blanket

Step   Pattern Run   Fancy

- -
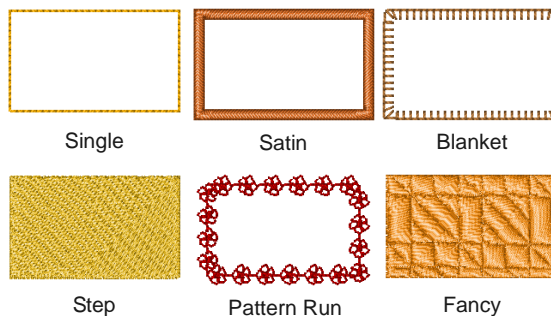
To digitize a square or rectangle

1 Select an **Outline** or **Fill** stitch type. See Selecting or changing stitches for details.

2 Click the **Rectangle** icon**.**

3 Digitize the square and rectangle.

▸ Click to mark one corner of the rectangle.

▸ Drag the pointer until the outline is the required size.

▸ Click again to define the opposite corner of the rectangle/square.

1

2
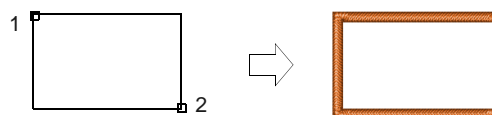
▸ To create a square, hold the **Ctrl** key down whilst dragging the pointer.

CHAPTER 10
THREAD COLORS & CHARTS

When you digitize, you select thread colors for each object you create from the Color Palette in the Design Window. The palette contains a selection of thread colors tailored to each design. This color scheme represents the actual threads in which the design will be stitched. You can select colors from commercial thread charts containing a range of colors from different manufacturers. To save time when setting up new color schemes, you can create your own thread chart using your favorite or most frequently used colors. In BERNINA Embroidery Software you can search for particular threads by criteria. Even match threads automatically from selected charts to colors in your design.

This section describes how to select colors from the Color Palette as well as how to assign threads to the colors in your design. How to modify thread charts is also covered, as well as creating custom thread charts.

Changing thread colors

New objects are digitized using the selected color on the **Stitch and Color Bar**. You can change the color before or after digitizing. If the color you want is not available, you may need to add it to the palette.

Current color

Note Due to the differences in computer monitors and computer video cards, the approximate colors displayed should be used only as guides. Threads should always be matched to the appropriate physical color card.

Changing current colors
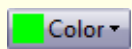
Use Color (Stitch and Color Bar) to set current color.

When you digitize a new object, it automatically takes the color selected in the Color Palette. This is the 'current' color.

To change the current color

1. Deselect all objects. The currently selected (default) color is shown on the toolbar with a dropdown arrow beside it.

Click to open Color Palette
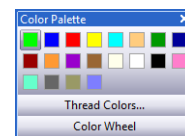
Note The Color Palette expands to accommodate numbers of colors.

2. Click the arrow beside the **Color** icon in the **Stitch and Color Bar**.

3. Select a color from the Color Palette.

This color becomes current for newly digitized objects.

Recoloring selected objects

Change the color of one or more selected objects in your design at any time.
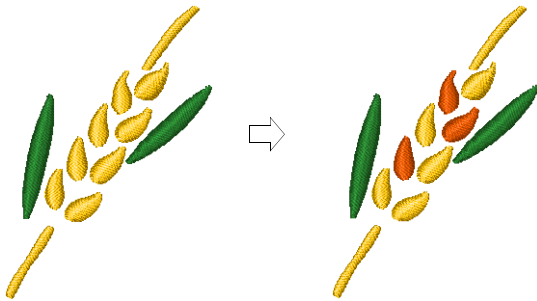
To recolor a selected object

1 Select the object/s you want to recolor.

Select color from Color Palette
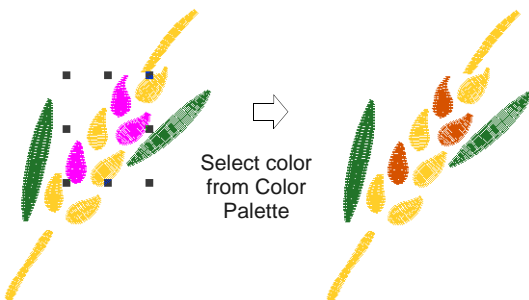
2 Click the arrow beside the **Color** icon in the **Stitch and Color Bar**.

The **Color Palette** opens.

Click to open Color Palette
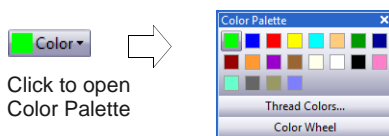
3 Select a color from the Color Palette.

The selected objects change color immediately.

Assigning thread colors

In BERNINA Embroidery Software you can search for particular threads manually by various criteria and assign them to your design. Thread color matching lets you to find and change a thread color based on closest match in one or several thread charts. The **Color Wheel** function allows you to change colors in an entire design and match them automatically to colors in the chart.

Tip The **Thread Chart > Print** option allows you to print the thread list in the current thread chart as a shopping reference when purchasing threads. See Printing thread charts for details.

Searching and assigning threads

Select Thread Colors (Settings menu) to search for a thread.

You can search for a thread by code or description and assign it to a selected design color slot. The supplied charts represent the brands of threads that BERNINA Embroidery Software supports. Each chart has a range of colors associated with it. The code, brand and description of each color is displayed so that you can easily find them in a craft or sewing shop. You can select colors by shade or by number. Select the thread chart for the brand of thread you have at home or just select a chart which has colors you like.

Note You can also create your own thread charts, even charts which include threads from different makers. See also Creating custom thread charts.

To search and assign a thread

1 Select **Settings > Thread Colors** or click the link in the **Color Palette** dialog.
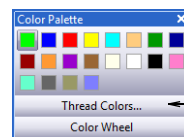
Click to access Thread Colors

The **Design Properties > Thread Colors** dialog opens.

Click to change background color

Select thread chart

Code or description matched

Enter search string

Select thread criterion
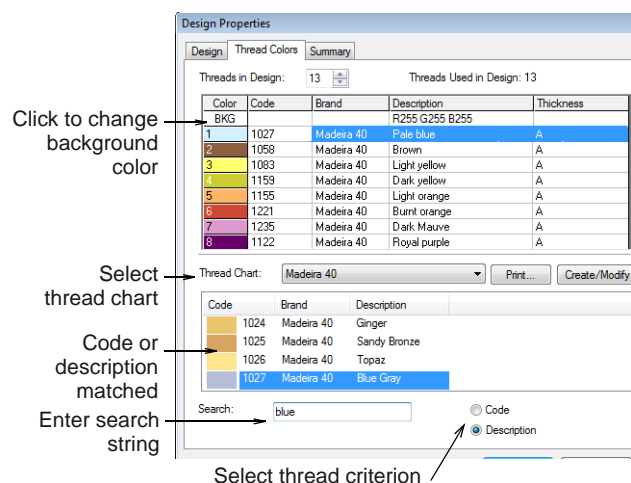
Tip Change backgrounds via the **BKG** button at the top of the **Threads in Design** panel. See Changing backgrounds for details.

2 Select a thread chart from the **Thread Chart** list.

3 Select the thread criterion to search on – **Code** or **Description**.

Code is the identification number of a thread color in a brand.

4 In the **Search** field, enter the first few characters of the required code or description.

The system searches for the closest match and displays them in the thread color list.

5 Select a color in the **Threads in Design** panel and click **Assign** or double-click the thread.

6 Click **Apply** to preview any changes directly in the Design Window.

7 Click **OK** to close.

Note Selected color settings only apply to the current design and are part of the 'design properties'. As such they are saved with the design.

Matching and assigning threads

Select Thread Colors (Settings menu) to match threads from different charts.

Use the **Match** command to match a selected design color to a color in the current thread chart. Optionally, the **Match & Assign All** option matches **all** design colors with their nearest threads and replaces them automatically.

Tip You can also use this method to change all objects of one color to another color. For example, change all light green objects to dark green.

- -

To match and assign threads

1 Select **Settings > Thread Colors** or click the link in the **Color Palette** dialog.

The **Design Properties > Thread Colors** dialog opens. All colors in the current design are displayed in the **Threads in Design** panel.

Select color to match

Select thread chart
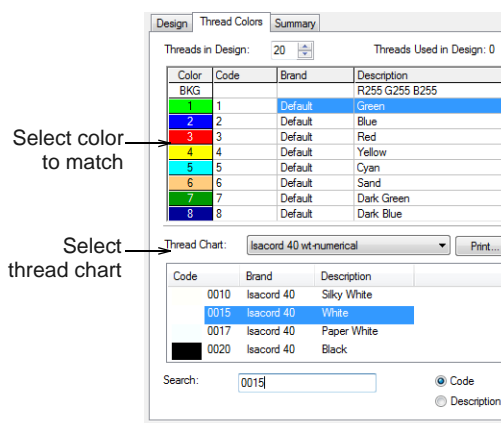
2 Select a design color from **Threads in Design** list.

3 Select a thread chart from the **Thread Chart** list.

The **Match** button is enabled.

Click to match color to thread

Click to assign matching thread
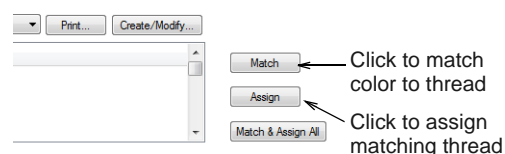
4 Click **Match**.

The closest available thread is highlighted at the top of the **Thread Color** list.

5 Click the **Assign** button or double-click the thread.

The selected color in the **Threads in Design** list is replaced by the closest matching thread.

6 Repeat until all the colors you intend to use in the design have been matched.

Original design colors

Orange assigned to yellow

Another green color assigned
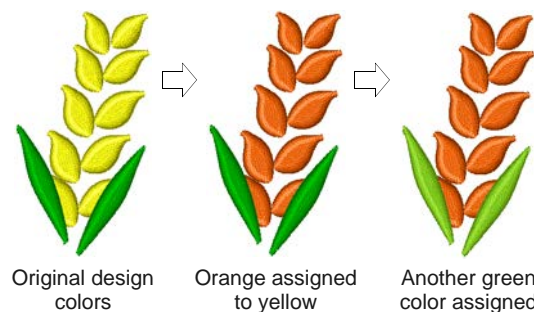
Tip Alternatively, simply click the **Match & Assign All** button. The closest matching thread in the selected thread chart is found for each color and replaced automatically.

7 Click **Apply** to preview any changes directly in the Design Window.

8 Click **OK** to close.

Changing entire design colors

The **Color Wheel** function allows you to change colors in an entire design and match them automatically to colors in the chart (if sufficiently defined). If BERNINA Embroidery Software cannot find a useful match, it adds colors to the palette instead. You then need to manually match them to threads (or use **Match & Assign All**). The main purpose of the tool is to create a new 'colorway' quickly and easily in order to 'spice up' old designs or place them on a different fabric.

To change entire design colors

1 Select the objects you want to modify or the entire design.

2 Select **Color Palette** from the **Stitch and Color Bar** via the **Color** button.
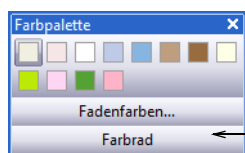
Select Color Wheel

3 Select **Color Wheel** from the palette.

The **Color Wheel** dialog opens.

4 Use the **Hue** and **Brightness** controls to create the desired colorway and click **OK**.

The design changes to reflect the new color scheme. If you have sufficient colors already defined in the color chart, they will be automatically matched. Otherwise, BERNINA Embroidery Software will add the colors to the palette instead.

5 If you need to match and assign thread colors, you can do so manually or use the **Match & Assign All** function. See Matching and assigning threads for details.

Modifying thread charts

Update existing thread charts by modifying thread details or removing threads. You can also rename or delete thread charts.

Note The thread charts contained in BERNINA Embroidery Software represent the many different brands and colors of thread available. Unfortunately, these charts may not always be accurate because thread manufacturers often change, delete, and add new colors to their lines. For this reason, you can modify charts to update your own personal palette of threads.

Modifying thread details

Change the code, brand or description for an existing thread.

To modify thread details

1 Select **Settings > Thread Colors** or click the link in the **Color Palette** dialog.

The **Design Properties > Thread Colors** dialog opens.

Click to modify thread chart

2 Click **Create/Modify**.

The **Modify Thread Chart** dialog opens.
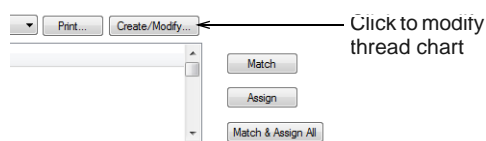
Select thread chart

Select thread to modify   Click to edit thread color
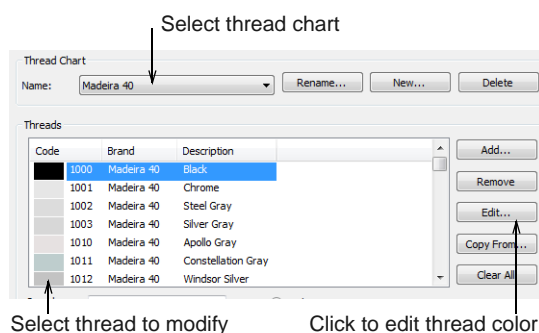
3 From the **Name** list, select the chart to modify.

4 In the **Threads** list, select the thread to modify.

5 Click **Edit**.

The **Edit Thread** dialog opens.

Mix color

Edit code, brand and description
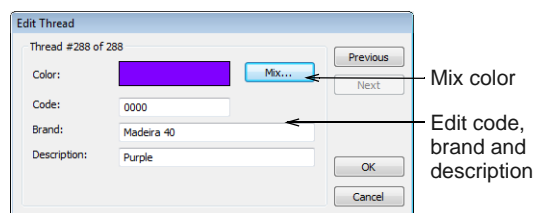
6 Edit the code, brand, and description details for the thread color as required.

Code is the identification number of a thread color in a brand.

7 Click **Mix** to select the thread **display** color. See Mixing your own thread colors for details.

8 Click **OK**.

The edited color appears in the **Threads** list.
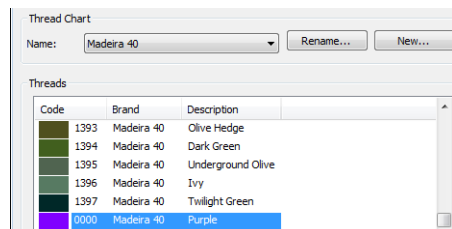
Mixing your own thread colors

You can change the color that displays for a particular thread, or create new thread colors using the **Color** dialog.

To mix your own thread colors

1 In the **Add Thread** or **Edit Thread** dialog, click **Mix**.

▸ See Modifying thread details for details.

▸ See Adding your own colors to thread charts for details.

The **Color** dialog opens.
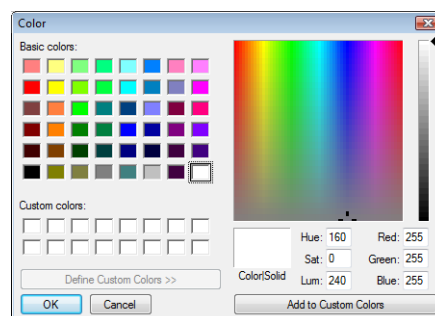
2 From the **Basic colors** table, select a color that closely matches the color you require.

3 Click and drag the cross hairs on the color spectrum to get the exact color you require.

4 Drag the slider on the right of the color spectrum to adjust color brightness.

The HLS and RGB values appear in the bottom right-hand corner of the **Color** dialog. Enter these values directly to define exact colors.

5 When you have mixed the required color, click **Add to Custom Colors**.

6 Click **OK**.

The new color appears in the **Color** preview box.

Removing threads from charts

Select Thread Colors (Settings menu) to remove threads from charts.

You can remove obsolete thread colors from thread chart easily, using the **Modify Charts** dialog.

To remove threads from charts

1 Open the **Modify Thread Chart** dialog. See Modifying thread details for details.

Click to remove selected color from chart

Click to remove ALL colors from chart
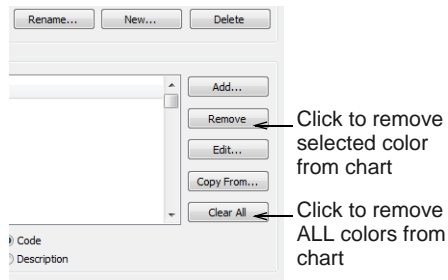
2 From the **Name** list, select the chart to modify.

3 In the **Threads** list, select the thread (or threads) to remove:

 ▸ To select a range, hold down **Shift** as you click.

 ▸ To select multiple items, hold down **Ctrl** as you click.

4 Click **Remove.**

You are prompted to confirm.

5 Click **Yes.**

Tip To delete all the threads from a thread chart, click **Clear All**.

Renaming thread charts

Select Thread Colors (Settings menu) to rename thread charts.

Rename thread charts from the **Modify Thread Chart** dialog.

Tip Select names that will help you remember the charts you need, or that sort frequently used charts to the top of the list.

To rename thread charts

1 Open the **Modify Thread Chart** dialog. See Modifying thread details for details.

Select thread chart   Click to rename chart
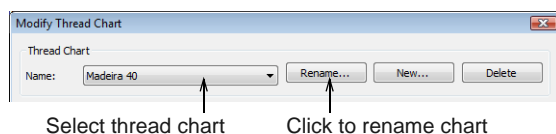
2 From the **Name** list, select the chart to modify.

3 Click **Rename**.

The **Rename Thread Chart** dialog opens.

Rename chart
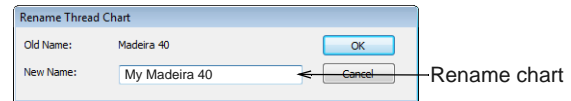
4 Enter the new name for the thread chart, then click **OK**.

Deleting thread charts

Select Thread Colors (Settings menu) to delete thread charts.

Delete obsolete thread charts from the **Modify Thread Chart** dialog.

Note Be careful when deleting thread charts. If you delete the wrong chart you will need to reinstall BERNINA Embroidery Software to restore it.

To delete thread charts

1 Open the **Modify Thread Chart** dialog. See Modifying thread details for details.

Select thread chart   Click to delete chart
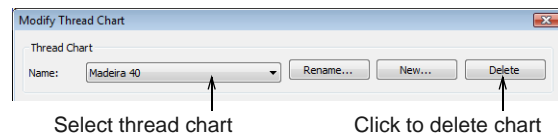
2 From the **Name** list, select the chart to delete.

3 Click **Delete**.

You are prompted to confirm the deletion.

4 Click **Yes**.

Creating custom thread charts

Select Thread Colors (Settings menu) to create new thread charts.

Thread charts are lists of pre-defined thread colors. They may be based on commercially available thread charts, or charts you define yourself.

Tip The **Thread Chart > Print** option allows you to print the thread list in the current thread chart as a shopping reference when purchasing threads. See Printing thread charts for details.

Creating new thread charts

When you create a thread chart, you are creating a store of colors to use in your designs. For instance, you may want to create a chart consisting of threads you already have in your collection. This may include multiple brands of threads. Having a pre-sorted list in your own custom thread chart makes it easier to match and replace design colors with your available threads.

To create a new thread chart

1 Select **Settings > Thread Colors** or click the link in the **Color Palette** dialog.

    The **Design Properties > Thread Colors** dialog opens.

Click to create thread chart
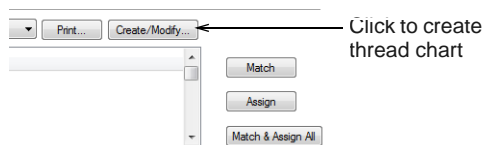
2 Click **Create/Modify**.

    The **Modify Thread Chart** dialog opens.
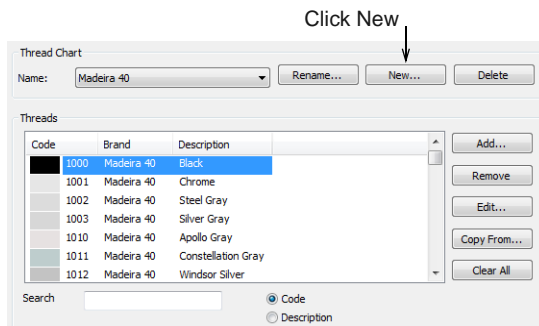
Click New

3 Click **New**.

    The **New Thread Chart** dialog opens.

Enter chart name
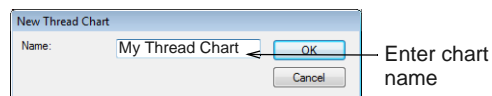
4 Enter a name for the chart and click **OK**.

    Note Do not use symbols or punctuation, such as commas, when creating your own color charts or editing existing color charts.

You return to the **Modify Thread Chart** dialog. The new chart is created, ready for you to add thread colors.
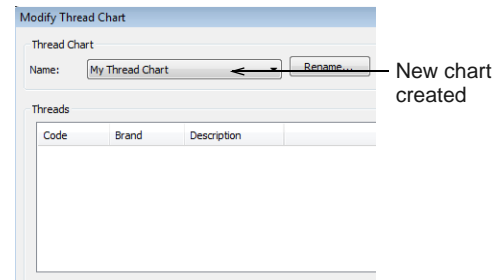
New chart created

5 Click **Add** to open the **Add Thread** box. See Adding your own colors to thread charts for details.

6 Click **Copy From** to add colors from an existing chart. See Copying colors between charts for details.

7 Click **Close**.

    The new chart is created and ready for use.

Copying colors between charts

You can copy colors between different thread charts to create your own charts from existing colors.

To copy colors between charts

1 Open the **Modify Thread Chart** dialog. See Creating new thread charts for details.

Select thread chart

Click to copy from other chart
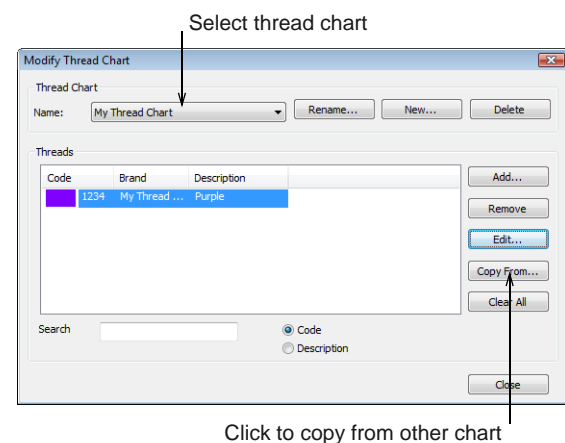
2 Select a chart from the **Thread Chart > Name** list.

3 Click **Copy From**.

The **Copy From** dialog opens.

Select thread chart to copy from

Select thread colors
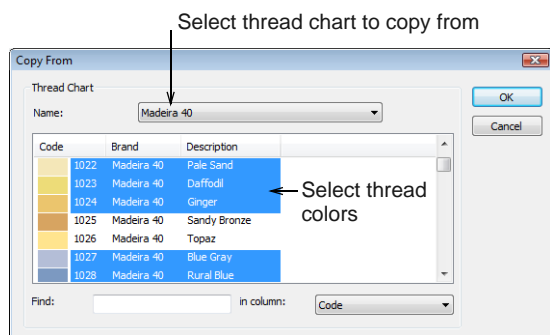
The new color appears in the **Threads** list.
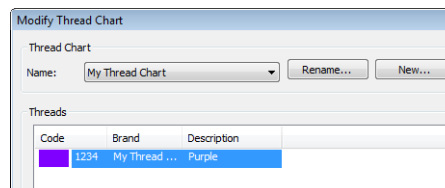
4 From the **Name** list, select the thread chart containing the color you want to copy.

5 Select the colors you want to copy:

- ▸ To select a range, hold down **Shift** as you click.
- ▸ To select multiple items, hold down **Ctrl** as you click.

6 Click **OK**.

The colors are copied to the thread chart, and appear at the bottom of the list.

Adding your own colors to thread charts

You can add colors to thread charts using colors from other charts or colors you mix yourself.

- -

To add your own colors to a thread chart

1 Open the **Modify Thread Chart** dialog. See Creating custom thread charts for details.

2 Click **Add** to add your own colors.

The **Add Thread** dialog opens.

Mix color

Enter code, brand and description
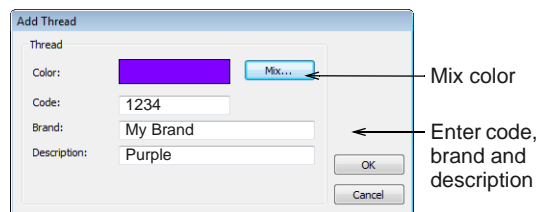
3 Click **Mix** to select the thread **display** color. See Mixing your own thread colors for details.

4 Enter code, brand, and description details for the new thread color.

Code is the identification number of a thread color in a brand.

5 Click **OK**.

CHAPTER 11

OBJECT PROPERTIES & TEMPLATES

The properties of embroidery objects define general characteristics such as size and position, as well as embroidery-specific characteristics such as stitch type and density. The particular stitch settings determine how stitches will be regenerated when you reshape, transform or scale an object.

When you create an embroidery object, you can accept default settings for the particular digitizing method, or apply new ones. Default settings are stored in the design template. You can also define 'current' properties to influence all the objects you create in the current design.

This section explains how to change the object properties in your design, as well as how to apply, create and maintain templates in BERNINA Embroidery Software.
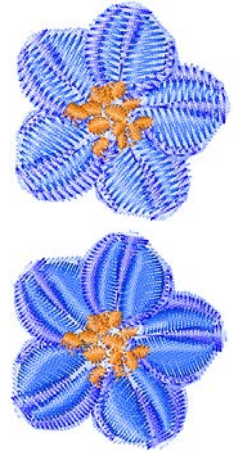
Applying and managing object properties

BERNINA Embroidery Software stores three sets of object properties: **default**, **current** and **existing**.

Note Some object properties can be modified on-screen; for example, you can change the size properties by scaling the object with the selection handles. Other properties, such as stitch spacing or length, are modified in the **Object Properties** dialog.

Default object properties

Default object properties are the properties stored in a design template and become the starting settings used when creating a new design based on that template.

Current object properties

Current object properties are the settings used to create new objects. Unless you change these settings, they remain the same as the template defaults. You generally change them to save time when digitizing. For example, you may preset the Step stitch spacing setting to use a specific density for all new *Step* objects you create.

Note The change affects new objects in the design, not the template itself. To apply changes to all new designs based on the current template, you need to change the **default** – not the **current** – properties.

Properties of existing objects

Properties of **existing** objects are the settings stored with each object in the design.

Setting current object properties

Use Object Properties (General toolbar) to set current properties.

When you change **current** object properties, the new settings automatically apply to any new objects created in the current design.

To set current object properties

1 Click the **Object Properties** icon with no object selected.

The **Object Properties** dialog opens.

Select tab →
Adjust settings →
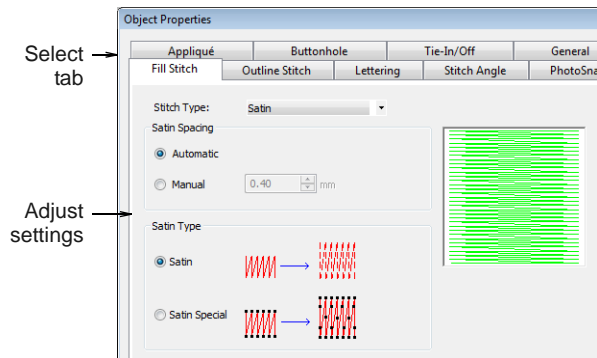
Tabs display at the top of the **Object Properties** dialog. These provide access to all the possible object properties settings.

2 Click a tab to view the current settings and change as required.

3 Click **Apply**.

Changing properties of selected objects

You can change the properties of selected object/s. For example, if you make a design bigger, you may want to stitch some objects with **Step** fill instead of **Satin** fill for better coverage. If you select more than one object, the **Object Properties** dialog will only display tabs that include relevant settings for **all** selected objects.
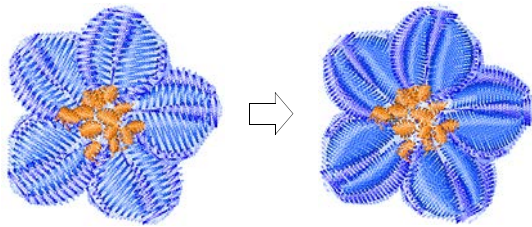
If selected objects have different current values for the same setting, the field will be blank. If you enter a new value, it will apply to all objects.

Note Changing the properties of existing objects does **not** affect the current or default settings, nor the properties of any objects **not** currently selected.

- -

To change properties of selected objects

1 Select the object/s whose properties you want to change.

2 Double-click or right-click the object/s.

The **Object Properties** dialog opens.

3 Select the tab you want and change the settings as required.

4 Click **Apply**.

Changing default object properties

You can change default object properties at any time by saving the properties of the object you are working with to the current template. Only settings relevant to that object are saved. Other properties retain their current settings. For example, if you make the properties of a selected Satin object the default, the default Fancy Fill settings will not change. While saving changes to the template, you can choose whether settings will relate to lettering objects only, other types of objects, or both.
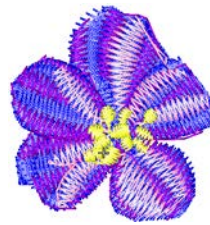
Default Satin Spacing values applied   New Satin Spacing values applied
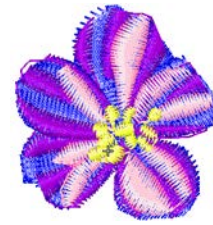
Note The change affects all new designs created using this template. If you only want the changes to apply to the design you are working in, change the **current** – not the **default** – properties. See Setting current object properties for details.

- -

To change default object properties

1 Select the object/s on which you want to base the defaults.

2 Double-click or right-click the object/s.

The **Object Properties** dialog opens.

Change settings as required   Click to save to template
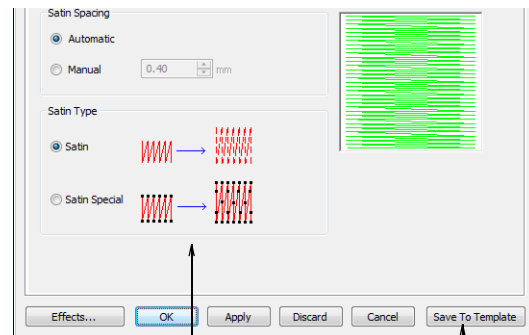
3 Select the tab you want and change the settings as required.

4 Click **Save To Template**.

The **Save To Template** dialog opens.
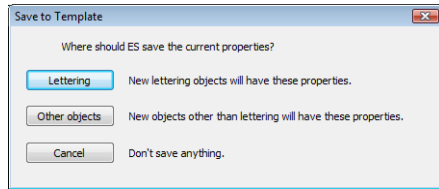
5 Select the required option:

▸ **Lettering**: only new lettering objects will be affected by changed settings.

▸ **Other Objects**: only new objects other than lettering will be affected.

▸ **All objects**: all new objects will be affected by changed settings.

A confirmation message appears.
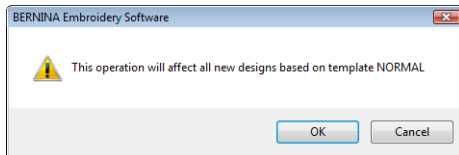
6 Click **OK** to update the template.

The object properties are saved to the current template and will apply to any new objects of the specified type based on this template.

Note You can also create a new template using modified object properties as defaults. See Managing design templates for details.

Managing design templates

Templates are special files used to store default settings. Use templates when digitizing frequently-used design types so that you do not have to set the current properties every time. For example, a template may include standard objects and sample lettering. It may simply have preferred stitch settings, lettering font and size, and colors set as current properties. Or it may have special density, pull compensation or underlay settings set up to suit different fabrics.

Frequently used Background color can be saved in the template

The NORMAL template is the default template supplied with BERNINA Embroidery Software. It contains current object properties. If necessary, you can revert to the original NORMAL template after modifying it. See Reverting to the NORMAL template for details.

Creating design templates

You create templates from designs containing the required objects and object properties. Simply save the design, or elements of it, as a template. Templates look the same as design files, but use the file extension **AMT**. Make sure that you select a name for your new template **before** saving changes. If you make changes to your **Object Properties** settings – and click **Save To Template** – the changes will be saved to the template you are now using. See also Changing default object properties.

Note You cannot overwrite templates by accident. Each time you create a new design from a template, BERNINA Embroidery Software opens a duplicate. When you save the design the first time, the Save As dialog opens so you can save the template under a new name.

To create a design template

1 Start a new design or open an existing one.

2 Adjust the object properties as required.

3 Add any objects and lettering to be included in the template.

For instance, you may want to include sample lettering using different baselines. Simply overtype the sample text when using the template. See Applying lettering baselines for details.

4 Select **File > Save As.**

The **Save As** dialog opens.

Enter template
name

Select BERNINA
templates
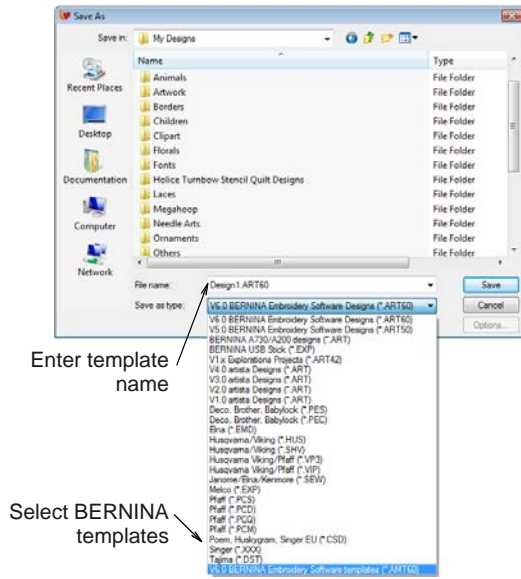
5 Select **BERNINA Embroidery Software Templates** from **Save as Type** dropdown list.

BERNINA Embroidery Software automatically opens the **..\Program Files\BERNINA\Embroidery Software 6\template** folder. Design templates must be saved here or they will not appear in the template list when you start a new design.

6 Enter a name for the template in the **File Name** field.

7 Click **Save**.

Modifying design templates

You can modify templates in the same way as a normal design. Changes apply only to future uses of the template. Existing designs based on the template are not affected.

Note Delete templates in the same way as you would any other file using MS Windows® Explorer. Templates are located in the **..\Program Files\BERNINA\Embroidery Software 6\template** folder.

- -

To modify design templates

1 Select **File > Open**.

The **Open** dialog opens.

2 Navigate to the **..\Program Files\BERNINA\Embroidery Software 6\template** folder.

3 Select **BERNINA Embroidery Software Templates** from the **Files of Type** dropdown list.

The available template files display.

4 Select the template you want to modify and click **Open**.

5 Modify object properties, styles and other settings as required.

Lettering added to
template for display
with every design

6 Select **File > Save As**.

The **Save As** dialog opens.

7 Select the **..\Program Files\BERNINA\Embroidery Software 6\template** folder.

8 From the **Save as Type** dropdown list, select **BERNINA Embroidery Software Templates**.

9 Select the template file and click **Save**.

A confirmation message appears.

Tip To create a new template based on the modified one, type a new file name and click **Save**.

10 Click **Yes** to confirm.

The modified template is ready for use.

Design 1   Design 2

Saving current properties to a template

You can easily save current object properties to the current template. See also Applying and managing object properties.

To save current properties to a template

1 Access the **Object Properties** dialog.

▸ To use the **current** object properties, deselect all objects, then click the **Object Properties** icon.

▸ To use the properties for a particular object, select the object, then double-click or right-click it.

2 Change object properties settings as required.

3 Click **Save To Template**.

A confirmation message appears.

Note Only the **current** object properties – not the objects or other settings in the design – are saved to the template.

4 Click **OK** to update the template.

5 Click **Close** to return to the Design Window.

The new settings are saved in the template from which the design was created and are available for use.

Reverting to the NORMAL template

If you modify the NORMAL template supplied with BERNINA Embroidery Software, you can revert to the original version. A factory copy is always maintained so that the NORMAL template can be restored.

To revert to the NORMAL template

1 Close BERNINA Embroidery Software.

2 Click the MS Windows® **Start** button and select **All Programs > BERNINA Embroidery Software > Revert**.

The **Revert to Factory Template** dialog opens.
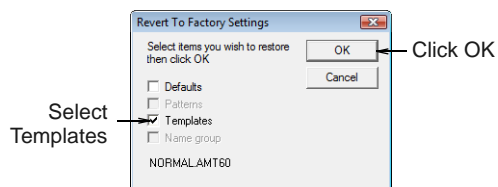
Note It may take up to 1 or 2 minutes for the dialog to open.

3 Select the **Templates** checkbox and click **OK**.

The original settings for the NORMAL template are restored.

CHAPTER 12
STITCH QUALITY

BERNINA Embroidery Software provides many settings to help improve the quality and efficiency of your final stitchout. Use fabric settings so that the machine will take into account the type of fabric you are stitching on. Use Auto Underlay to help stabilize fabric and reduce distortion due to the pull effect. Adjust the amount of overstitching you need by varying the pull compensation setting. This is handy if you want to stitch a design on fabrics with varying degrees of stretch.

By applying Auto Jump, you can preserve long stitches in objects by turning them into a series of jumps. By default, tie-in stitches are automatically inserted at the start of objects to prevent stitches from unraveling. You can control tie-in/offs settings for whole designs or particular objects. Use Auto Start and End to set the positions of first and last stitches in a design. All these features are object properties, and can be applied, removed or modified at any time.

This section covers adjusting fabric settings, stabilizing with underlays, and compensating for fabric stretch. It also describes how to preserve long stitches, adjust tie-in/off settings, and set automatic start and end points.
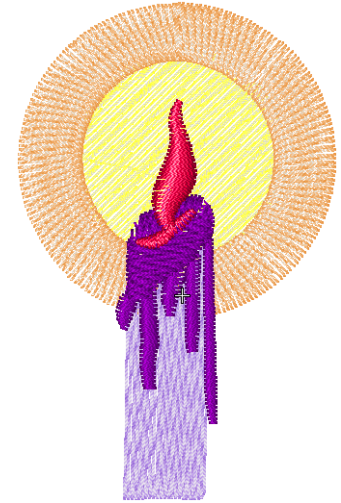
Adjusting fabric settings

BERNINA Embroidery Software allows you to change fabric settings so that the machine will take into account the type of fabric you are stitching on. For example, the fabric setting you choose will set the pull compensation to suit the fabric you will be embroidering on. Pull compensation keeps your design from having gaps between objects. See also Compensating for fabric stretch.
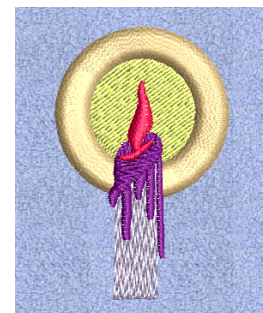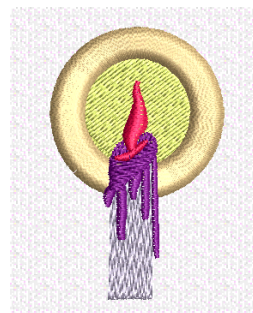
Stitch settings for different fabric types are summarized in the table below.

Weight	Fabrics	Pull Comp (mm)	Spacings (mm)				
			Satin (Manual)	Satin (Auto)	Step	Zigzag Underlay	Step Underlay
Factory defaults	N/A	0.200	0.4	0.01	0.45	3.0	3.0
Knit Light	T-shirts	0.250	0.37	0.02	0.40	3.0	2.5
Knit Medium	Polo shirts / Pique	0.250	0.37	0.02	0.40	3.0	2.5
Knit Heavy	Fleece / Sweatshirts	0.350	0.36	-0.02	0.38	2.5	2.5
Terry Medium	Towels	0.250	0.36	0.02	0.38	1.5	1.8
Terry Heavy	Towels / Bath Robes	0.250	0.36	-0.02	0.38	1.5	1.8
Woven Light	Batiste / Cotton / Satin	0.200	0.38	0.03	0.40	3.0	2.8
Woven Medium	Cotton / Muslin / Polyester	0.200	0.38	0.0	0.40	2.5	2.5
Woven Heavy	Denim / Canvas / Twill	0.200	0.38	-0.01	0.40	2.5	2.5

Note By default, the new settings will be applied to all objects in the design except for lettering. See also Compensating for fabric stretch.

– –

To adjust fabric settings

1 Select **Edit > Select All**.

Your entire design is selected.

2 Select **Settings > Fabric Settings**.

The **Fabric Settings** dialog opens.
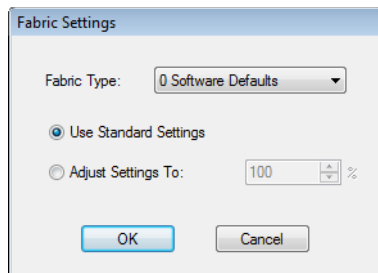
3 Select a fabric type from the **Fabric Type** list.

4 Select to use standard settings or fine tune the settings using your own values.

▶ **Use Standard Settings**: Changes are made according to the type of fabric you selected.

▶ **Adjust Spacing:** Enter a value to fine tune the setting. A number greater than 100 will increase the stitch spacing. A number less than 100 will decrease stitch spacing. In some

cases, the pull compensation will also be adjusted.
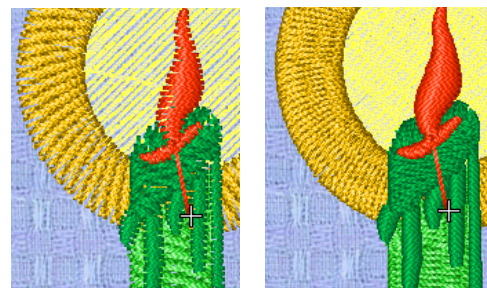
Knit Heavy Weight setting adjusted to 150%   Knit Heavy Weight setting adjusted to 75%

5 Click **OK**.

The selected fabric settings are applied to all objects in the design.

Stabilizing with underlays

– –

To improve the quality of the stitchout, you need to add underlay. Underlay helps stabilize fabric and reduce distortion due to the pull effect. It also provides 'loft', raising cover stitches and preventing them from sinking into soft fabrics. When no underlay is applied, the embroidery lays flat on the fabric. It not only looks flat, but the underlying fabric often shows through. New digitizers might be tempted to

increase stitch density but it is more effective to apply a proper underlay.
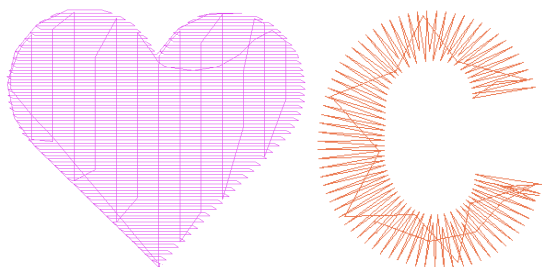
Applying automatic underlays

> Use **Auto Underlay** (General toolbar) to strengthen and stabilize embroidery designs with automatic underlay.

The **Auto Underlay** tool generates underlay stitching for objects based on current settings in the **Effects** dialog. You can preset **Auto Underlay** to generate automatic underlay stitching for all newly created objects in your design. Underlay settings are stored with each object in the same way as other object properties. Thus they are regenerated whenever the object is scaled or transformed.

To apply automatic underlays

1   Right-click the **Auto Underlay** icon.

    The **Effects > Underlay** dialog opens.

Automatically generate underlay stitching for new objects
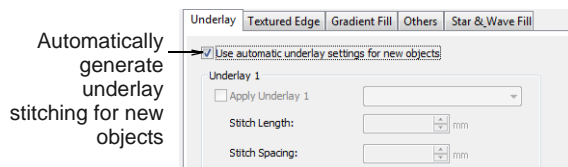
2   Select **Use automatic underlay settings for new objects** if already not selected.

⚠

Caution When this option is set, BERNINA Embroidery Software always calculates automatic settings even if you have saved custom settings to the template. See also Applying custom underlays.

3   Click **Apply**.

All newly digitized objects will include an underlay determined automatically by the system.
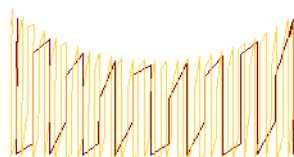
Step Stitch Block Digitizing - Step Underlay
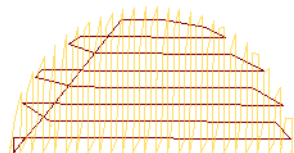
Step Stitch Closed Curve - Step Underlay
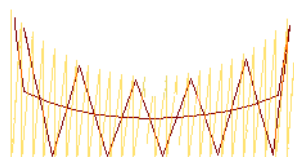
Satin Stitch Block Digitizing - Zigzag Underlay
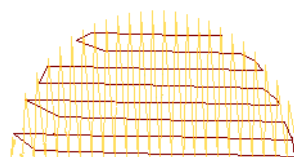
Satin Stitch Closed Curve - Step Underlay

Applying custom underlays

> Use **Auto Underlay** (General toolbar) to strengthen and stabilize embroidery designs with automatic underlay.

The **Auto Underlay** tool generates underlay stitching for objects based on current settings in the **Effects** dialog. You can preset custom underlay settings for all newly created objects in your design, or apply them to selected objects.

To apply custom underlays

1   Click the **Auto Underlay** icon to activate the feature.

💡

Tip To adjust settings prior to digitizing, right-click the **Auto Underlay** icon to access the **Effects > Underlay** dialog.

2   Create a closed-object – circle or square. See Digitizing Methods for details.

    The object is digitized using current **Auto Underlay** settings.

3   If you want to change underlay settings, select the object and right-click the **Auto Underlay** icon.

The **Effects > Underlay** dialog opens. This tab gives you the option of a single underlay or combined first and second underlays.

Select 1st underlay and stitch type
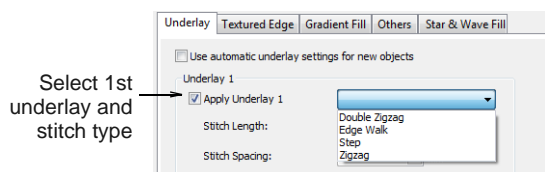
4 Select **Apply Underlay 1** and select an underlay type from the dropdown list.

The type of underlay you choose is determined by the purpose it is to serve.

Zigzag underlay

Step underlay

Double Zigzag underlay
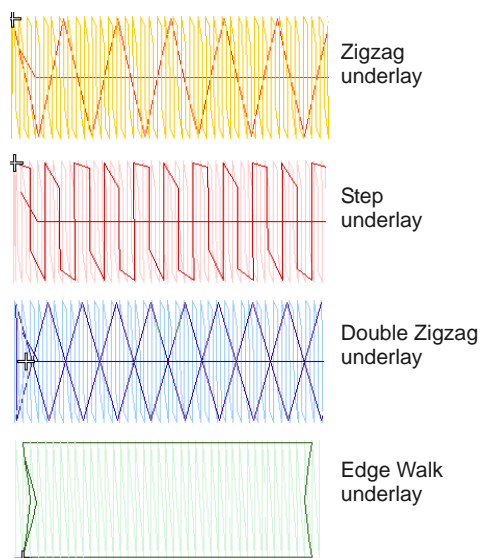
Edge Walk underlay

Note Not all underlay types are applicable to all selected objects.

5 Adjust stitch length and margin settings as required. See Adjusting Edge Walk underlay spacing, Adjusting zigzag underlay spacing, and Setting underlay margins for details.

When you select the **Apply Underlay 1** option, the **Apply Underlay 2** checkbox becomes active. All underlay types available for Underlay 1 are also available for Underlay 2.

Select 2nd underlay and stitch type
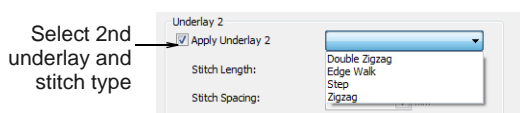
6 For extra stability, select a second underlay.

Any combination of underlay types can be used.

Zigzag underlay

Edge Walk underlay

Edge Walk underlay
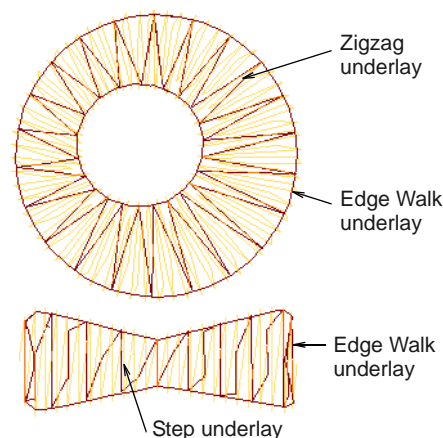
Step underlay

Caution You should, however, use only one Step underlay at a time – i.e. it is not good practice to combine Step stitch for both Underlay 1 and Underlay 2.

7 Click **Apply**.

New or selected objects use the new settings.

8 To keep a permanent record of your custom settings, click **Save To Template**. See Saving current properties to a template for details.

9 Select **Use automatic underlay settings for new objects** if already not selected.

Caution When the **Use automatic underlay settings for new objects** option is set, BERNINA Embroidery Software always calculates automatic settings even if you have saved custom settings to the template. See Applying automatic underlays for details.

Adjusting Edge Walk underlay spacing

Right-click Auto Underlay (General toolbar) to change automatic underlay settings.

Edge Walk places stitches around the edge of an object. Adjust the stitch length for Edge Walk underlays to ensure the underlay stitches follow the shape of curves and are not visible in the final embroidery. Apply settings before or after digitizing.

Note Stitch settings for Edge Walk underlays are stored separately from, and do not affect, cover stitch settings.

To adjust Edge Walk underlay spacing

1 Choose whether to make settings current or apply them to selected objects:

- ▸ Press **Esc** to make sure all objects are deselected.
- ▸ Alternatively, select an object or objects to adjust their particular settings.

2 Right-click the **Auto Underlay** icon.

The **Effects > Underlay** dialog opens.
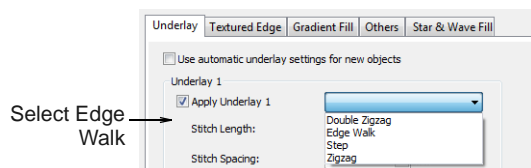
Select Edge Walk →

3 Select the **Apply Underlay 1** checkbox and select **Edge Walk** as the underlay type.

4 Enter the required stitch length.

Edge Walk Stitch Length: 1.5mm

Edge Walk Stitch Length: 3.5mm
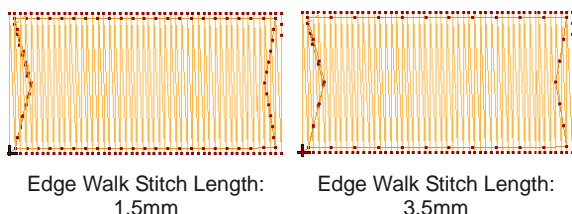
5 Click **Apply**.

New or selected objects use the adjusted settings.

Adjusting zigzag underlay spacing

Right-click Auto Underlay (General toolbar) to change automatic underlay settings.

Use zigzag and double-zigzag underlay stitching to support wide columns. you can set stitch length for zigzag and double-zigzag underlay. Double-zigzag underlay only works with satin outline or lettering. Apply settings before or after digitizing.

Note Zigzag underlay stitch settings are stored separately from, and do not affect, zigzag cover stitch settings.

To adjust zigzag underlay spacing

1 Choose whether to make settings current or apply them to selected objects:

- ▸ Press **Esc** to make sure all objects are deselected.

- ▸ Alternatively, select an object or objects to adjust their particular settings.

2 Right-click the **Auto Underlay** icon.

The **Effects > Underlay** dialog opens.

Select Zigzag or Double Zigzag →
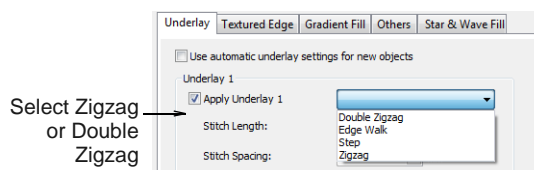
3 Select the **Apply Underlay 1** checkbox and select **Zigzag** or **Double Zigzag** as the underlay type.

4 Enter the required stitch length.

Zigzag Stitch Length: 2.5 mm

Zigzag Stitch Length: 5 mm

Double Zigzag Stitch Length: 7 mm

Double Zigzag Stitch Length: 3.5 mm
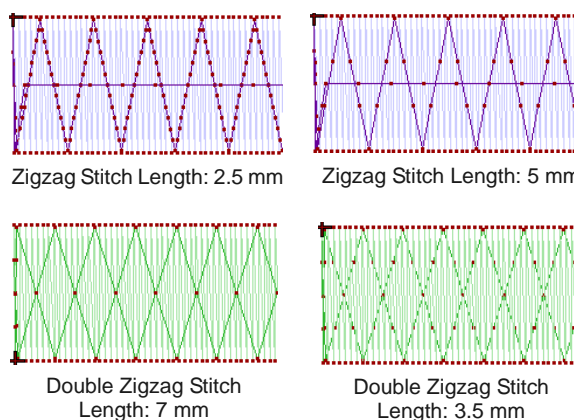
5 Click **Apply**.

Selected objects are updated with the adjusted settings.

Setting underlay margins

Right-click Auto Underlay (General toolbar) to change automatic underlay settings.

The underlay margin is the distance between an object outline and the edge of the underlay. Increase this margin to prevent underlay stitches from extending outside the cover stitches.
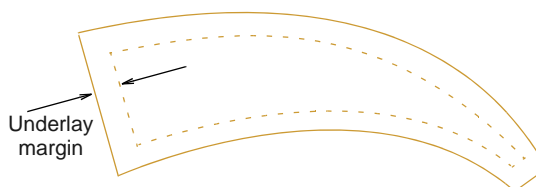
Underlay margin

To set underlay margins

1 Choose whether to make settings current or apply them to selected objects:

▸ Press **Esc** to make sure all objects are deselected.

▸ Alternatively, select an object or objects to adjust their particular settings.

2 Right-click the **Auto Underlay** icon.

The **Effects > Underlay** dialog opens.
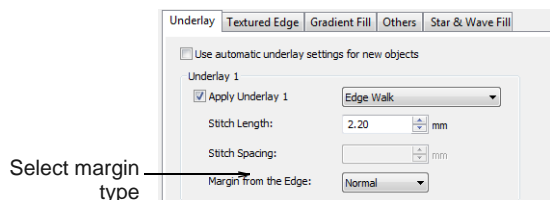
Select margin type →

3 Select a **Margin** type from the dropdown list.

Normal

Medium

Wide
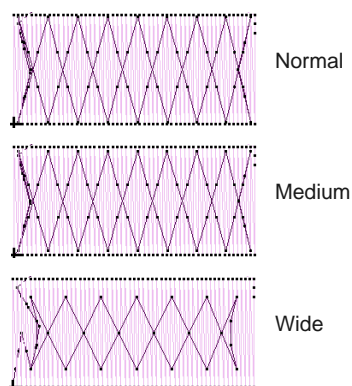
4 Click **Apply**.

New or selected objects use the adjusted settings.

Compensating for fabric stretch

> Use Object Properties (General toolbar) to adjust pull compensation settings.

Embroidery stitches pull fabric inwards where the needle penetrates. This can cause fabric to pucker and gaps to appear in the embroidery. Shapes are slightly narrower and longer in the final embroidery than they look on the screen. Pull compensation counters this effect by 'overstitching' outlines of filled shapes on the sides where the needle penetrates.

Apply automatic pull compensation to objects in your design, either before or after digitizing.

Pull compensation

Digitized outline   Calculated outline
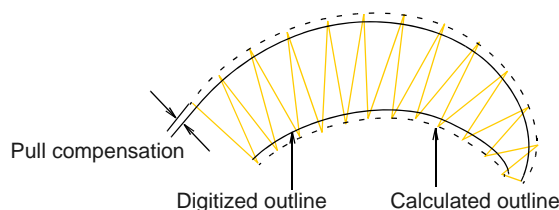
The amount pull compensation required depends on the stitchout fabric. Experiment with the fabrics you are going to use and see if the set amount is suitable before changing it. Use the following table as a guideline.

Fabric	Pull compensation (mm)
drills, cotton	0.1
T-shirt	0.2
fleece, knit	0.25 - 0.3
lettering	0.2 - 0.3

You can also adjust pull compensation to suit the fabric you are embroidering on by selecting **Settings > Fabric Settings**. See Adjusting fabric settings for details.

Tip Applying underlay stitching, and using appropriate backing and topping when stitching out, can also reduce pull effect. See also Stabilizing with underlays.

To apply automatic pull compensation

1 Choose whether to make settings current or apply them to selected objects:

▸ Press **Esc** to make sure all objects are deselected.

▸ Alternatively, select an object or objects to adjust their particular settings.

2 Click the **Object Properties** icon.

The **Object Properties** dialog opens.

3 Click the **Effects** button and select the **Others** tab.

4 Select the **Pull Compensation** checkbox.

Select Pull Compensation →

0.200 mm: suitable for most objects
0.350 mm: recommended for bolder lettering
0.400 mm: recommended for Auto Digitizer & Magic Wa

5 Click **Apply**.

New or selected objects use the new settings.
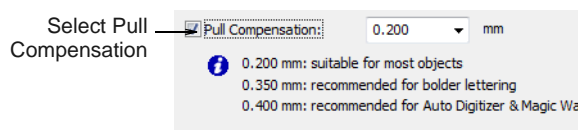
Pull Compensation ON   Pull Compensation OFF
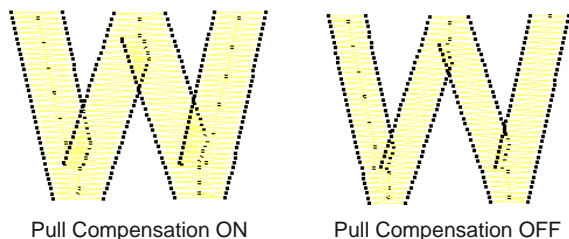
Tip Pull compensation is automatically set at 0.2 mm. This is suitable for most designs. However, 0.4 mm is recommended for use with automatic digitizing.

6 Enter an overstitch allowance (in mm) as required.
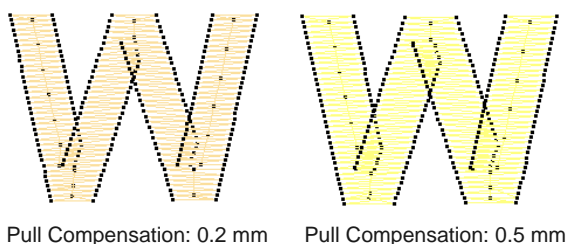
Pull Compensation: 0.2 mm   Pull Compensation: 0.5 mm

7 Click **Apply**.

New or selected objects use the adjusted settings.

Tip Click **Save To Template** before closing this dialog to save settings permanently. Saved settings will be applied to all new designs based on the current template. See Object Properties & Templates for details.

Preserving long stitches

Use Object Properties (General toolbar) to adjust Auto Jump settings.

Embroidery machines have a maximum possible stitch length which is determined by the frame movement limitations of the machine itself. If a stitch exceeds this, it is broken into smaller stitches. This can affect the embroidery appearance, especially in Satin fills. By applying **Auto Jump**, you can preserve long stitches in an object by turning them into a series of jumps. See also Splitting long stitches in Satin fills.

Maximum stitch

Long stitch is broken into smaller needle arm movements or 'jumps'
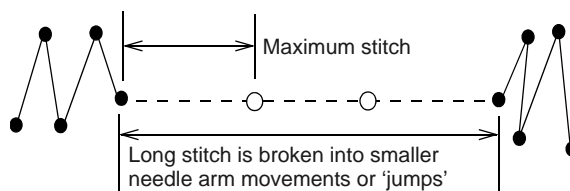
To create a narrow column with more 'loft' than normal Satin, apply Auto Jump, in conjunction with a suitable underlay, with the maximum stitch length set to a small value, e.g. 6 mm. If the cover stitches are short, splitting them with a jump makes them looser and thus more effectively raised off the fabric. See also Stabilizing with underlays.

Auto Jump can also be used, for example, with manually digitized underlays. It can even be used to create quilted effects, for example, by applying it to Satin areas that are over-stitched with Run stitch or Pattern Fill. Auto Jump is stored as an object property and is activated by default. You can change its values at any time for selected or newly created objects. Auto Jump values can be adjusted for Fill stitch, Outline Satin and Outline Blanket stitch.

To apply Auto Jump

1 Choose whether to make settings current or apply them to selected objects:

▸ Press **Esc** to make sure all objects are deselected.

▸ Alternatively, select an object or objects to adjust their particular settings.

2 Click the **Object Properties** icon.

The **Object Properties** dialog opens.

3 Click the **Effects** button and select the **Others** tab.

Select Auto Jump — Auto Jump
Adjust max stitch and jump length values — Maximum Stitch: 12.1 mm, Jump Length: 7.0 mm
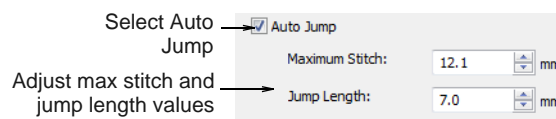
4 Select **Auto Jump** if not already selected and click **Apply**.

Long jump stitches

No jumps
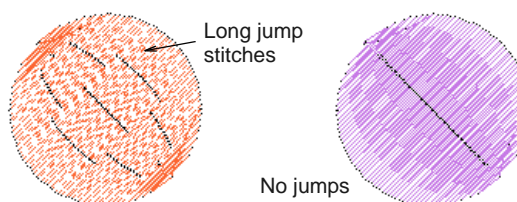
5 In the **Maximum Stitch** field, adjust the maximum stitch length as required.

Stitches exceeding this value will have **Auto Jump** applied.
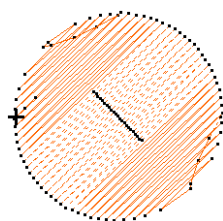
Max stitch length: 10 mm   Max stitch length: 12.1 mm
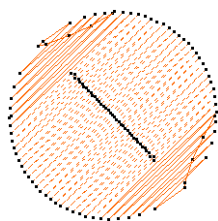
Tip Set the maximum stitch larger than the longest Satin fill stitch you want to allow in the design, otherwise some Satin stitches will be split into two or more stitches.

6 In the **Jump Length** field, enter the length of each jump.
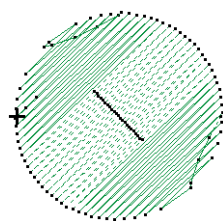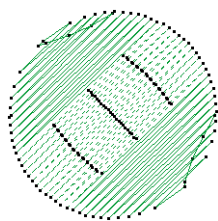
Jump Length: 7 mm   Jump Length: 4 mm

Tip Smaller jumps increase the time required to stitch out but move the frame more smoothly across the design.

7 Click **Apply**.

New or selected objects use the adjusted settings.

Tip Click **Save To Template** before closing this dialog to save settings permanently. Saved settings will be applied to all new designs based on the current template. See Object Properties & Templates for details.

Connecting embroidery objects

'Connectors' link objects in a design. They take the form of 'travel runs' or 'jumps' and are displayed in Stitch View but hidden in **Artistic View**. Ideally, you will plan your embroidery so that connecting stitches will be covered later by other elements of the design.

If a connecting stitch is not covered, it will need to be trimmed after stitchout.

'As Digitized' connectors

'Closest Join' connectors

Connectors not displayed in Artistic View
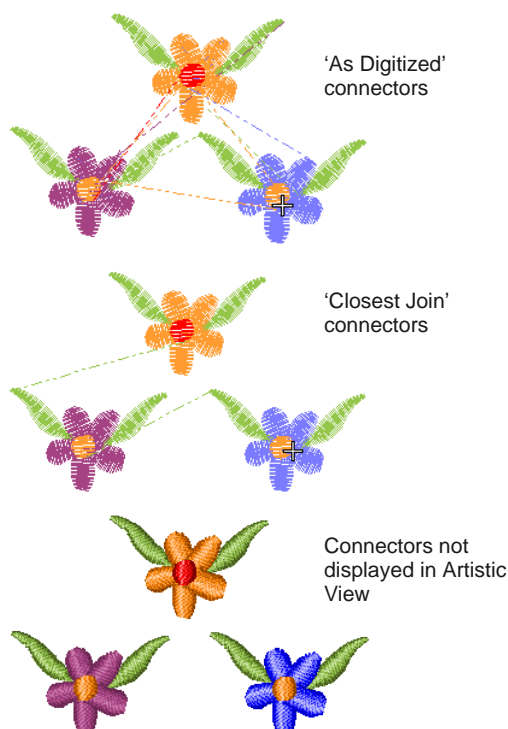
Connecting stitches are generated automatically but you can resequence objects in order to minimize trims. You can even change entry and exit points, but the **Closest Join** setting (the default) automatically calculates the closest join between objects while digitizing. See Setting other general options for details.

Travel runs

Travel runs are automatically added when the needle has to travel between segments within an object. They are always covered by the overlying stitches but may sometimes show through.

Travel run   Travel run visible in Artistic View   Entry point changed – no travel run
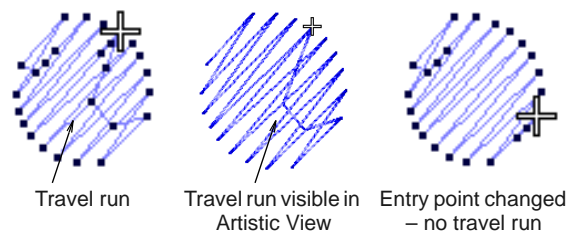
Travel runs are kept to a minimum by adjusting entry and exit points of consecutive objects. You can manually adjust entry and exit points using the **As Digitized** method, but the **Closest Join** setting (the default) automatically calculates the closest join between objects while digitizing. See Setting other general options for details.

Jumps

Jump connectors move the frame from one part of the design to another without needle penetrations. You generally need to trim the connecting thread. Jump connectors are displayed in **Stitch View** either as a dotted or solid line – solid lines for short connectors, dotted lines for long connectors (more than 12.1 mm). Dash-dotted lines indicate color changes.
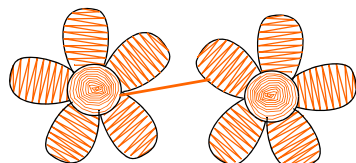
Short connector: solid line
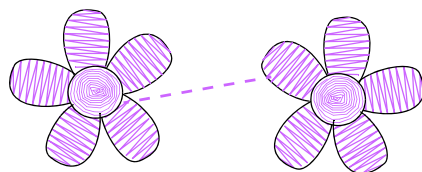
Long connector: dotted line
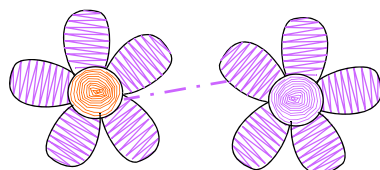
Color change: dash-dotted line (no thread to trim)

Long jump connectors have needle jumps of up to 7 mm along their length. This usually causes the machine to slow down while moving the hoop to the next needle penetration point.

Note The default connector jump length is the same as that set for **Auto Jump**.

Tie-ins and tie-offs

Tie-ins and tie-offs are extra stitches that are added before and after jumps and color changes so that threads can be trimmed without stitches unraveling.
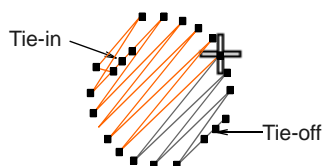
Tie-in
Tie-off

Tie-in stitches are automatically inserted at the start of objects after any connector longer than 2 mm or after a color change. With Satin objects, they are inserted inside the shape on the second stitch.

Likewise, tie-offs are automatically added before connectors or before a color change.

Tie-in at the start of the object
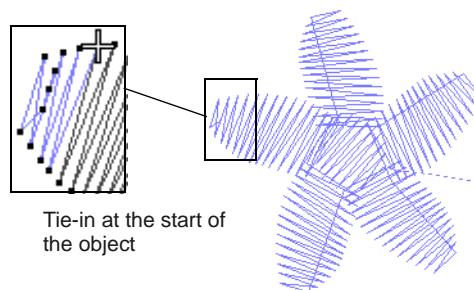
Tip Travel through the design by one stitch to check for tie-ins and tie-offs. See Traveling by stitches for details.

Adjusting tie-in/off settings

 Use Object Properties (General toolbar) to set current properties.

By default, tie-in stitches are inserted at the start of objects to prevent stitches from unraveling. There are instances, however, where whole designs may not include tie-ins, or where selected objects, such as lettering, may not include them. BERNINA Embroidery Software gives you control over tie-in/offs settings. This is necessary for specialized purposes such as 'reverse embroidery' which involves using thick threads in the bobbin. There can be no tie-offs for this. You may want to make embroidery with creative threads where tie-offs can't be used. In these cases, you can turn off tie-ins and/or tie-offs and keep threads from unraveling by cutting them long and pulling them through. See also Adjusting entry and exit points.

To adjust tie-in/off settings

1 Access the **Tie-In/Off** controls in one of the following ways:

  ▸ To adjust current design settings, click the **Object Properties** icon or select **Settings > Object Properties** to access the **Object Properties** dialog.

  ▸ To adjust a particular object or objects, double-click or right-click the object(s) to access the **Object Properties** dialog.

2 Select the **Tie-In/Off** tab.

The tab contains two panels – **Tie In Before Object** and **Tie Off After Object** – which allow you to turn the respective option on or off.
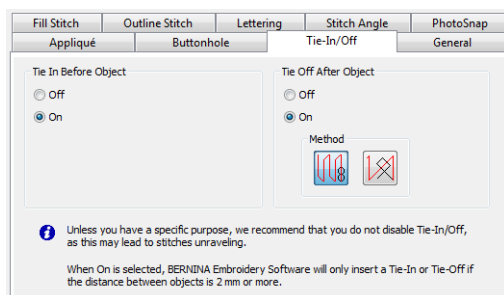
Note Existing designs created in previous versions of BERNINA Embroidery Software or other applications may have a connector length setting that differs from the 2 mm default setting.

3 Adjust the **Tie In Before Object** setting as required:

▶ When turned off, no tie-ins are inserted for either external or internal connectors.

▶ When turned on, tie-ins are inserted if the connecting stitch before an object is greater than 2 mm.

Tie-in with two stitches
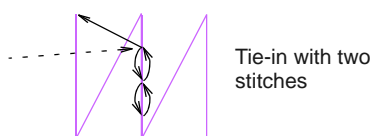
4 Adjust the **Tie Off After Object** setting as required:

▶ When turned off, no tie-offs are inserted for either external or internal connectors.

▶ When turned on, tie-offs are inserted if the connecting stitch following an object is greater than 2 mm.
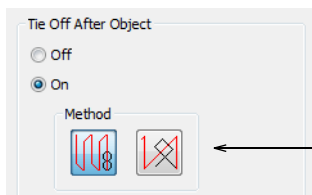
Select tie-off method

5 Select a tie-off method:

▶ The first method inserts tie-off stitches along the last stitch.

▶ The second inserts tie-off stitches between the last two stitches.

The first method is better suited to non-lettering objects while the second method is better for lettering objects.

6 Click **Apply**.

Settings are applied to selected objects or, if no objects are selected, current properties.

Setting automatic start and end points

Before stitching, some embroidery machines require you to position the starting needle exactly above the first needle penetration point. Use automatic **Start and End** to set the positions of first and last stitches in a design.

To set automatic start and end points

1 Select **Arrange > Start and End**.

The **Start and End** dialog opens.

Select a start needle position method

Select an end needle position method
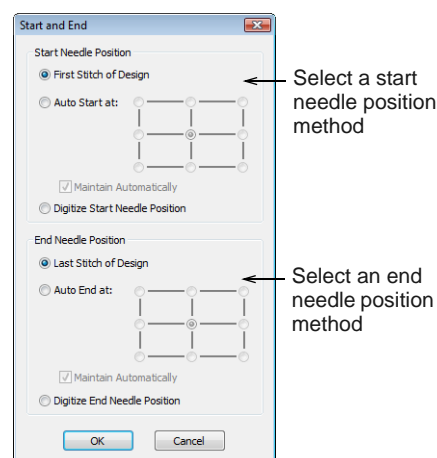
2 Select a **Start Needle Position** method:

▶ **First Stitch of Design**: The start point is set to the first stitch in the design.

▶ **Auto Start at**: The start point is automatically maintained at a specified point in the design. Choose from the available options:

Select a start needle position
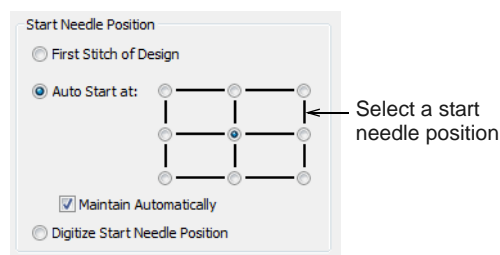
‣ **Digitize Start Needle Position**: You are prompted to manually mark the start and end points.

Start Point: First Stitch
End Point: Last Stitch of the design

Start Point: Auto Start
End Point: Auto End, Center of the design
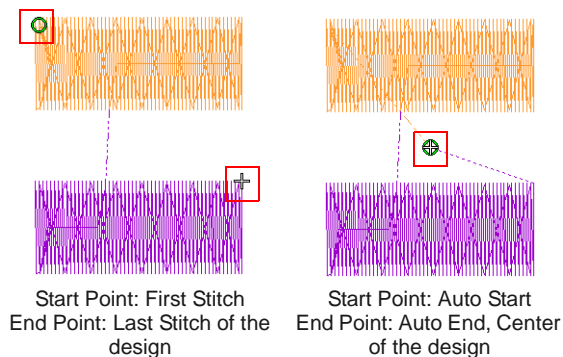
3 Select an **End Needle Position** method:

‣ **Last Stitch of Design**: The end point is set to the last stitch in the design.

‣ **Auto End at**: The end point is automatically maintained at a specified point in the design.

‣ **Digitize End Needle Position**: You are prompted to manually mark the end point.

4 Select the **Maintain Automatically** checkbox (the default) to automatically maintain start and/or end needle positions.

5 Click **OK**.

Connecting stitches will be inserted as required before the first and after the last stitches in the design.

PART III

DIGITIZING WITH ARTWORK

There are two broad categories of artwork file, both of which can be imported into BERNINA Embroidery Software for use as digitizing backdrops – vector and bitmap. To create good quality embroidery, you need to choose or create suitable artwork of either format.

Digitizing with backdrops

This section describes how to choose suitable artwork for digitizing purposes as well as how to scan it into BERNINA Embroidery Software. It also describes how to digitize with images as backdrops, as well as how to show and hide them as you digitize. See Digitizing with Backdrops for details.

Processing images for automatic digitizing

This section describes how to prepare images for automatic digitizing. It explains how to prepare both outlined and non-outlined images. See Image Processing for details.

Automatic digitizing

This section describes how to automatically convert vector graphics as well as bitmap images to embroidery designs with the available techniques. It also covers how to create embroidery from photographs. See Automatic Digitizing for details.

CHAPTER 13

DIGITIZING WITH BACKDROPS

Electronic artwork in both bitmap and vector formats can be loaded, pasted or scanned into BERNINA Embroidery Software for use as digitizing templates or 'backdrops'. Textured backgrounds can also be imported to show what a design will look like on real fabric. Almost any artwork can be used – photographs, magazine pictures, clipart drawings, and even fabric samples.

From within BERNINA Embroidery Software you can open images into MS Paint, Corel PHOTO-PAINT® Essentials 4, or Paint Shop Pro™. Images updated in this way are automatically re-imported into BERNINA Embroidery Software.

This section describes how to choose suitable artwork for digitizing purposes as well as how to scan it into BERNINA Embroidery Software. It also describes how to digitize with images as backdrops, as well as how to show and hide them as you digitize.

Using design backdrops

Backdrops can be used as a guide to manual digitizing. Alternatively, BERNINA Embroidery Software semi-automatic and automatic digitizing can convert bitmaps to embroidery designs. In summary, backdrops can help you to:

▶ Digitize objects manually.

  You trace shapes and lines over the artwork using the appropriate digitizing tools. See Digitizing Methods for details.

▶ Digitize shapes automatically with **Magic Wand**.

  You select a shape and **Magic Wand** automatically determines the required stitches.

▶ Digitize complete images automatically with **Auto Digitizer**.

  You select the image and **Auto Digitizer** automatically determines the shapes and stitches needed to digitize the design. See Digitizing with Auto Digitizer for details.

▶ Digitize photographs with **PhotoSnap**.

  Again you select the image and **PhotoSnap** automatically determines the shapes and

stitches needed to digitize the design. See Digitizing with PhotoSnap for details.

Artwork can be imported into BERNINA Embroidery Software in both vector and bitmap formats:

▶ **Vector graphics:** These consist of outlines which may be colored and may have colored fills. Vector outlines remain thin and clear even at large zoom factors, so you can digitize them accurately.

▶ **Bitmap images:** These consist of colored dots or pixels. When you zoom in on a small area, the outlines become jagged and are displayed as a series of colored squares or pixels.

To create good quality embroidery, you need to choose suitable artwork. Once in BERNINA® Embroidery Software, you can set general properties such as size and position. You can also arrange and transform artwork in the same way as embroidery designs.

⚠️

Caution Included artwork (clipart) and embroidery designs can only be used for personal use – i.e. they cannot be commercially sold in any form. Changing the medium – i.e. clipart to embroidery or embroidery to clipart – does not remove copyright protection.

Vector graphics

Vector graphics can be loaded into BERNINA® Embroidery Software for use as digitizing backdrops. They are automatically converted to bitmap images.
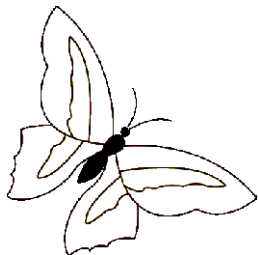
Drawing   Digitized with Magic Wand

Bitmap images

Bitmap images can be loaded or scanned into BERNINA® Embroidery Software for use as digitizing backdrops. For both manual and automatic digitizing purposes, 'clean' images, sometimes referred to as 'cartoons', work best. Such images have a limited number of solid colors which in turn have well-defined outlines. Ideally, they are:

▸ well defined, where each shape is made up of pixels of the same color

▸ clearly 'blocked', where each shape is a stitchable size, at least 1 sq mm

▸ saved at a color depth of at least 256 colors (8 bit), or preferably millions of colors (16 bit). (Images are automatically reduced to 256 colors or less when loaded into BERNINA® Embroidery Software.)

Tip You can scale and transform bitmap images once they are loaded into BERNINA® Embroidery Software. However, if an image needs to be resized or rotated, it is best to do so during scanning. Scaling afterwards may distort the image.

Supported graphic formats

BERNINA Embroidery Software supports a wide variety of vector and bitmap graphic formats:
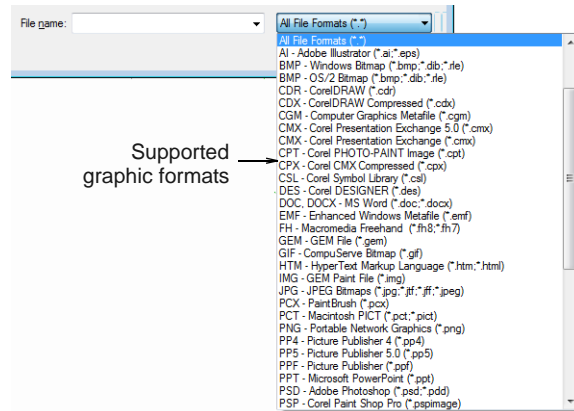
Supported graphic formats

Note For a full discussion of graphics formats, refer to the CorelDRAW® Essentials 4 User Guide available via the Windows **Start > Programs** group. Alternatively, use the onscreen help available from the **Graphics** mode **Help** menu.

Automatic digitizing

BERNINA® Embroidery Software automatic digitizing techniques – **Auto Digitizer** and **Magic Wand** – produce best results with images of the type found in clipart libraries or created from scratch in a graphics application. See Digitizing with Magic Wand and Digitizing with Auto Digitizer for details.

Automatic digitizing can work with images from other sources but they require greater or lesser amounts of preparation. This is because most commonly available images are **not** made up of solid colors. Scanners introduce noise, while graphics applications perform 'dithering' and 'anti-aliasing' to improve image print quality.

Automatic digitizing works least effectively with photographic images which may contain many dithered colors and complex forms. With photographs, however, you can pick out shapes that you want to embroider, leaving out unnecessary detail. Alternatively, **PhotoSnap** is available to create embroidery designs from scanned photographs.

Scanned images

Images scanned from hardcopy drawings or existing embroidery typically contain a lot of introduced 'noise'. While they can be used as input to automatic digitizing, once again, best results are achieved with relatively clean images consisting of solid color

Image containing a lot of scanner 'noise'

blocks. Typically, logos and simple drawings scanned

from business cards, letterheads, books, magazines, cards fall into this category.

Noisy images typically need to be prepared by reducing the color count and sharpening the outlines. See Image Processing for details.

Dithered images

Dithering is a software technique which combines existing colors in a checkerboard arrangement of pixels. It is typically used to simulate colors that are missing from an image palette.
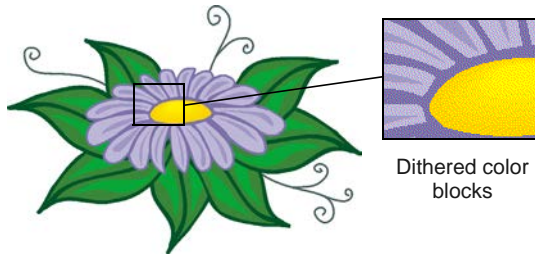
Dithered color blocks

Like noisy images, dithered images need to be color-reduced before use. Be aware, however, that while the software is excellent at processing dithered colors within a defined outline, it does not work so well with non-outlined images. See Image Processing for details.

Anti-aliased images

Anti-aliasing is a software technique similar to dithering which is used to soften hard outlines where color blocks intersect. It produces smoother outlines by 'blurring' the pixels where colors join.

Where anti-aliasing is deliberately used to blur outlines, these need to be

Anti-aliased outlines

'sharpened' before use with automatic digitizing. See Image Processing for details.

Scanning artwork into BERNINA Embroidery Software

- -

If you have existing artwork, you can scan it with a TWAIN-compatible scanner using the BERNINA Embroidery Software scanning function. It is important to scan your artwork properly if you intend to use one of the automatic digitizing techniques; the

scanned image quality will affect the quality of the final embroidered design.

| Good image: good stitch quality | Poor image: poor stitch quality |

Preparing artwork for scanning

With embroidery design, less is more. You do not need every detail in an image to create a design. You use the 'structure' of the image rather than the fine details of texture and color.

To simplify artwork, you can cover it with tracing paper and draw only the essential shapes and lines which will be filled with stitches. When scanning, take away the original artwork and put white paper behind the tracing paper.
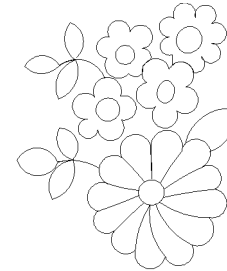
| Original artwork | Required parts traced |

Shiny surfaces, such as glossy photographs, may not scan well. Cover them with tracing paper. If the artwork has very light colors, highlight outlines with a fine black felt-tip pen.

Scanning resolution

Most scanners require you to enter scanning resolution information. Resolution determines the number of dots per inch (dpi) used to create a drawing. The higher the value, the clearer the image but larger the file. For digitizing purposes, use a maximum resolution of 300 dpi (dots per inch). A resolution of 72 dpi (screen resolution) will usually be sufficient. Generally speaking, the smaller the source image and/or more detail it contains, the higher the resolution needs to be. Use the following table as a guide.

Type of artwork	Scanning resolution
Business cards, letter heads	150 - 300 dpi

Type of artwork	Scanning resolution
Hand sketches	150 - 300 dpi
Photos and images	150 - 300 dpi
Commercial art, line drawing	72 - 150 dpi

Color mode

Most scanners also require you to enter color mode information. First decide whether your image is line art (black and white drawing), sketch, color picture, or black and white or color photograph, then choose an appropriate mode. Black and white mode produces the smallest files. Color photograph and grayscale modes generate 256 color images and produce similar sized files. 'RGB', 'True Color' or 'millions of colors' modes generate 16.7 million colors and produce the biggest files. Use the table below to decide which mode is suitable for use with your image.

Note Note that scanners may use different terms for the same mode, some of these terms are included.

Source image	Example	Description	Recommended color mode *	No. of colors in scanned image
Line art		Two colors – usually black and white	Black/white drawing Line art	2 2
Drawing/sketch		Sketch or drawing with shades of gray	Grayscale Line art	256 2
Black & white photograph		Shades of gray	Black/white photo Grayscale	256 256
Color photograph		Many colors	Color RGB Color photo	16 million 256
Color picture		Two colors or more	Color RGB Millions of colors Color drawing	16 million 16 million 2 - 256

* Different scanning software uses different terms for the same mode.

Scanning tips

‣ Do not scan line art images in grayscale mode; grayscale scanning produces fuzzy edges.
‣ Scan color images in RGB mode (millions of colors) rather than 256 color mode. You may not notice any difference on screen. In fact the 256 color image may look better than the RGB image. However, BERNINA Embroidery Software converts all images to 256 colors or less upon loading. It uses the extra information to produce a better

image than if it was originally scanned at 256 colors.
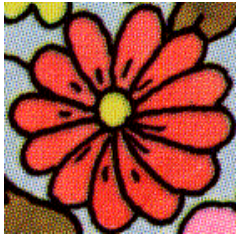
Scanned in 256 color mode

Scanned in RGB color mode (millions of colors)

‣ Do not scan color images in CMYK mode as this is only used for images that will be printed and the colors may be different from RGB colors.

‣ If the image needs to be resized, scale it when you scan it. Scaling afterwards may distort the image.

Sharpening

Some scanning software lets you apply what is called 'sharpening' as you scan. Sharpening compensates for the slight blurring in a scanned image by looking for any differences between colors in the image. Sharpening accentuates these differences which makes the image edges more defined. It does not increase the image details; it just makes them more obvious. In general, use sharpening with images that have well-defined outlines. Do not use it with non-outlined images.

Scanned with sharpening

Scanned without sharpening

Importing images into BERNINA Embroidery Software

Bitmap images and vector graphics of different formats can be scanned or 'loaded' into BERNINA Embroidery Software for use as digitizing backdrops. You can scale and transform them after importing but

it is generally better to do so during scanning. Scaling afterwards may distort the image.
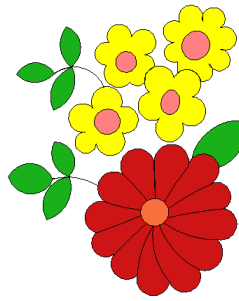
Traced image scanned
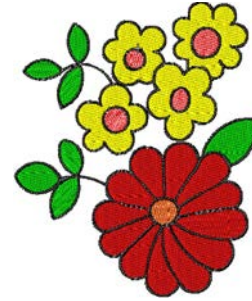
Auto-digitized

⚠

Caution Included artwork (clipart) and embroidery designs can only be used for personal use – i.e. they cannot be commercially sold in any form. Changing the medium – i.e. clipart to embroidery or embroidery to clipart – does not remove copyright protection.

Scanning artwork

| | Use Art Canvas to load, edit and save pictures as a backdrop for embroidery digitizing. |
| | Use Scan Picture (Image toolbar) to scan an image into BERNINA Embroidery Software. |

You can scan images directly into BERNINA Embroidery Software for use as digitizing backdrops. The scanning feature in BERNINA Embroidery Software allows you to use most TWAIN-compatible scanners. You can use any scanning software provided that it can save the image in one of the compatible formats.

💡

Tip You can also scan in your own textured backgrounds to see what a design will look like on real fabric. Fabrics can be scanned to provide full, centered, backgrounds to your design, or as small samples which can be tiled to fill the screen. See also Changing backgrounds.

To scan artwork

1 Set up your scanner. See Setting up scanners for details.

2 Prepare the artwork for scanning. See Preparing artwork for scanning for details.

3 Create a new file or open a design you want to load the image into.

4 Switch to **Art Canvas** mode.

5 Click the **Scan Picture** icon.

Your scanning program will open.

6 Choose a scanning mode and resolution. See Scanning resolution and Color mode for details.

💡 **Tip** If you are scanning a fabric background, set the scan to 256 colors, 100% and 72 dpi (dots per inch). These settings will give a small file which will display well on your screen without taking up too much disk space or memory.

7 Preview the image in the scanning program.

8 Select the area to be scanned and scan the image.

9 Save the scanned picture in a compatible format picture file to your **My Designs** folder. See also Digitizing with Backdrops.

📝 **Note** Scanned drawings are bitmaps and must be saved separately from the design file or they will be lost when you close the design. See Saving backdrops as separate files for details.

Loading pictures

Use Art Canvas to load, edit and save pictures as a backdrop for embroidery digitizing.

Use Load Picture (Image toolbar) to load an image for use as a digitizing backdrop.

You can load bitmap images of various formats for use as digitizing backdrops. See also Digitizing with Backdrops.

📝 **Note** Vector graphics are converted to bitmap images when loaded into BERNINA Embroidery Software.

- -

To load a picture

1 Switch to **Art Canvas** mode and click the **Load Picture** icon.

The **Import** dialog opens.

Select folder

Select required format
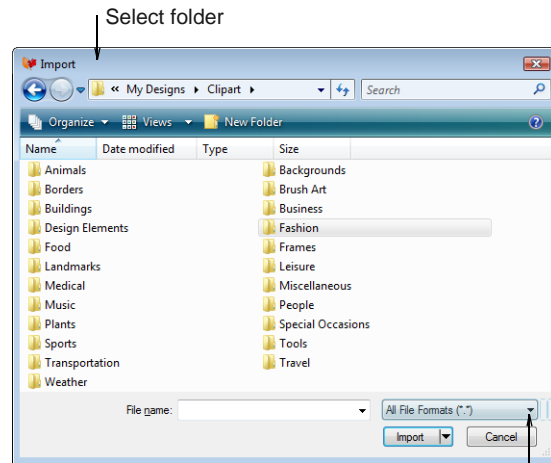
2 Select a folder and select a file type from the **Files of Type** list – e.g. BMP.

Select required format
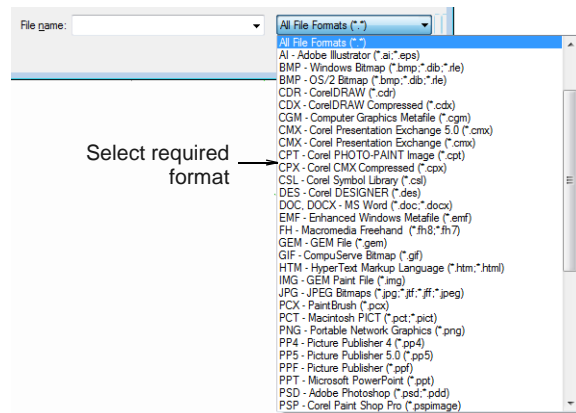
3 Select the file you want to load and click **Import**.

4 Position the picture in the Design Window as necessary.

5 Use any of the automatic conversion options available or use the image as a digitizing backdrop:

▸ Convert vectors to embroidery: See Digitizing with vector graphics for details.

▸ Convert bitmaps to embroidery: See Automatic Digitizing for details.

▸ Switch to **Embroidery Canvas** and use the imported image as a digitizing backdrop: See Digitizing Methods for details.

📝 **Note** If you cannot see the image you loaded, make sure **Show Picture** icon is toggled on. See Viewing backdrops for details.

Browsing clipart

CorelDRAW® Essentials 4 itself is packaged with a selection of clipart which can be used as digitizing backdrops or converted directly into embroidery. See also Converting vectors to embroidery.

- -

To browse clipart

1 Access the CorelDRAW® Essentials 4 folder via the Windows **Start > Programs** group.
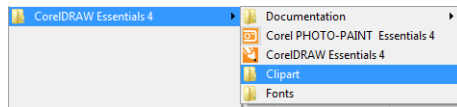
2 Select the **Clipart** folder.
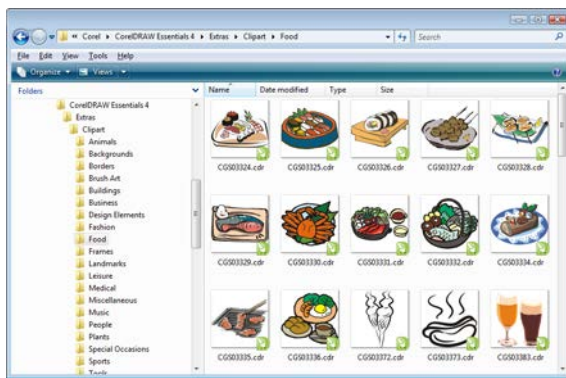
3 Browse the folders for the clipart you are interested in.

Note To open the clipart in BERNINA Embroidery Software, you will need to do so via **Art Canvas**. See also Loading pictures.

Tip It may be more convenient to take a copy of the entire CorelDRAW® **Clipart** folder and copy it to **My Designs - Embroidery Software 6** folder for easy reference.

Editing imported images

- -

For both manual and automatic digitizing purposes, you may want to crop an image before digitizing. You can do this within BERNINA Embroidery Software or using a third-party graphics application. Sometimes, you may want to save backdrops as separate files after scanning or cropping.

Tip For both manual and automatic digitizing purposes, 'clean' images, sometimes referred to as 'cartoons', work best. Scanners introduce noise, while graphics applications perform 'dithering' and 'anti-aliasing' to improve print quality. See also Preparing images for automatic digitizing.

Cropping images for digitizing

BERNINA Embroidery Software allows you to crop images prior to use. Before using bitmap images for design purposes, crop them to remove unnecessary detail and save processing time.

- -

To crop images for digitizing

1 Scan or load the image you want to use. See Importing images into BERNINA Embroidery Software for details.

2 Select the image and a cropping tool:

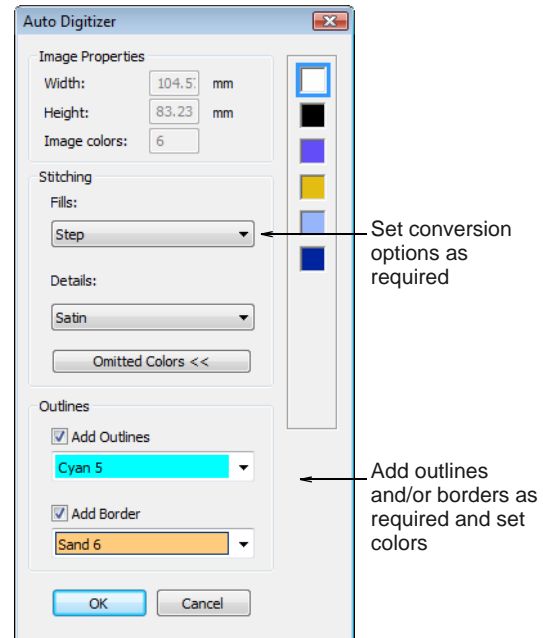▸ Select **Edit > Crop Image > Rectangle** to crop the image in rectangular form.

▸ Select **Edit > Crop Image > Oval** to crop the image in oval form.

▸ Select **Edit > Crop Image > Heart** to crop the image in heart form.

▸ Select **Edit > Crop Image > Star <n> point** to crop the image in star form.
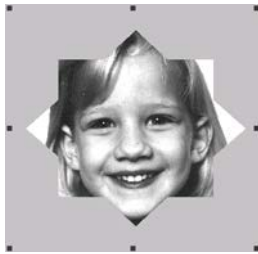
Star 8 points   Star 10 points

▸ Select **Edit > Crop Image > Curve** to crop the image in free form.

▸ Digitize points to create a cropping shape around the part of the image you require and press **Enter**.

Tip Use the prompt line to guide you.

BERNINA Embroidery Software crops the area inside the cropping selection. This process may take some time.

Reshaping cropped images

Click Reshape Object (Edit toolbar) to crop a free form image.

After an image has been cropped, you can reshape and transform the cropping outlines in the same way as you reshape and transform lettering. You can also use the tool to reposition cropping outlines. See also Reshaping letters on screen.

- -

To reshape cropped images

1 Crop an image. See Cropping images for digitizing for details.

2 Select the image.

3 Click the **Reshape Object** icon.

The image displays the cropping outline with reshape nodes.
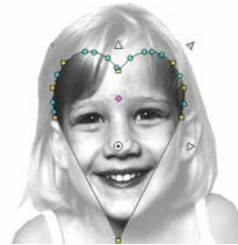
4 Adjust reshape nodes to change the shape and press **Enter**.
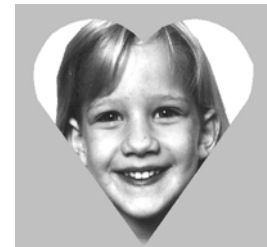
5 Press **Esc** to finish.

Editing images in graphics applications

Load, edit and save graphics as a backdrops for embroidery digitizing. Includes entire suite of CorelDRAW® Essentials 4 drawing tools. In addition, provides capabilities to convert vectors and vector text directly to embroidery objects.

Use Touch Up Picture (Image toolbar) to edit images in a graphics application.

From within BERNINA Embroidery Software you can open images into third-party graphics applications which can help you improve your scanned images. Eliminate backgrounds, flood-fill solid areas with color, or add outlines, close gaps, or reinforce outlines. Images updated in this way are automatically re-imported into BERNINA Embroidery Software.

Many graphics applications are available. At one end of the spectrum you have the simple MS Paint application. This comes free with MS Windows® but can handle few formats or color conversions. At the other end there are professional tools such as Corel PHOTO-PAINT® Essentials 4. An excellent compromise is Paint Shop Pro™ which has many of the features of high-end applications but at a much lower cost.

To edit images in a graphics application

1 Scan or load the image you want to use. See Importing images into BERNINA Embroidery Software for details.

2 Still in **Art Canvas** mode, select the image.
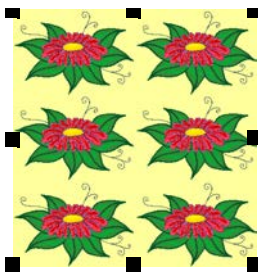
Use a graphics application, for example, to cut out the part to be embroidered

3 Click the **Touch Up Picture** icon.

The image opens into the Corel PHOTO-PAINT® Essentials 4 application.

4 Edit the image as required.

Image cropped

Background removed

Outlines added

5 Select **File > Update Design1**.

The image displays in BERNINA Embroidery Software overlaid with stripes. This means that it is still open in the graphics application.
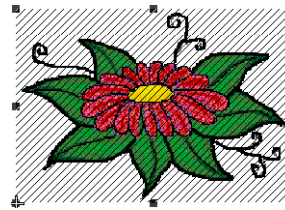
Image still open in graphics application

6 Select **File > Exit & Return <Filename>** to exit the graphics application.

The updated image displays in BERNINA Embroidery Software and the stripes disappear.

Tip If you want to keep the graphics application open, select **File > Close** when finished updating the image.

Saving backdrops as separate files

Art Canvas	Load, edit and save graphics as a backdrops for embroidery digitizing. Includes entire suite of CorelDRAW® Essentials 4 drawing tools. In addition, provides capabilities to convert vectors and vector text directly to embroidery objects.
	Use Save Picture (Image toolbar) to save a backdrop as a separate file.

All images placed in the Design Window, whether by scanning, pasting or inserting from hard disk, are saved together with the embroidery design in the ART file. After editing in BERNINA Embroidery Software or third-party graphics application, you may want to save the image out as a separate file.

To save a backdrop as a separate file

1 Scan or load the image you want to use. See Importing images into BERNINA Embroidery Software for details.

2 Still in **Art Canvas** mode, select the image.
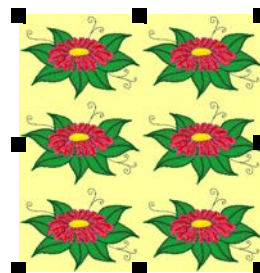
3 Click the **Save Picture** icon.

The **Export** dialog opens.

Select folder

Enter file name | Select required format
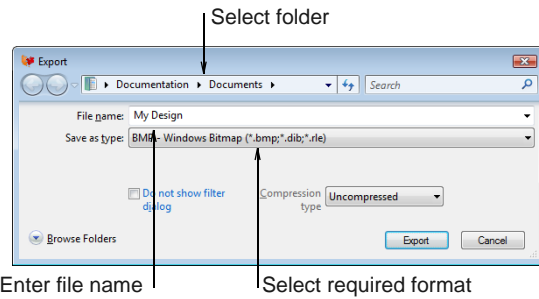
4 In the **Save In** field, select a folder, then select a format from the **Save as type** dropdown list.

5 Enter a new file name and click **Export**.

When you save the design, the reference is updated to use the new image file.

Note This file is not referenced by the ART file. Any further changes to it are not reflected in the embedded image.

CHAPTER 14

IMAGE PROCESSING

BERNINA Embroidery Software supports the automatic and semi-automatic digitizing of bitmap images. The quality of the resulting designs greatly depends on the type and quality of the original artwork. In order to make bitmap images more suitable for automatic digitizing, BERNINA Embroidery Software also provides image processing capabilities and links to graphics packages.

This section describes how to prepare images for automatic digitizing. It explains how to prepare both outlined and non-outlined images.

Preparing images for automatic digitizing

Before applying automatic digitizing, you frequently need to improve or 'clean up' artwork. To work effectively, both **Auto Digitizer** and **Magic Wand** require solid color images as input. You can improve artwork both with bitmap editing tools in graphics packages and/or the image processing tools provided in BERNINA® Embroidery Software. In fact, the software will not let you apply **Auto Digitizer** until the image has been suitably processed.

Outlined vs non-outlined images

Before preparing your image you need to know what type you are using. For the purposes of automatic digitizing, there are two categories – outlined and non-outlined. Outlined images ideally have a solid black outline around each colored area. Non-outlined images ideally consist of solid areas of color. Outlined and non-outlined images require different methods of preparation.

Image with outlines   Image without outlines

Image clean up

In practice, cleaning up scanned images may involve any one or a combination of the following techniques:

- reducing the number of colors
- adding or emphasizing outlines
- removing noise, dithering or anti-aliasing
- eliminating unnecessary detail
- cropping sections
- eliminating backgrounds.

Color reduction

Sometimes an image looks clean but extra colors have been introduced during scanning or in a graphics package. Color reduction means reducing the actual **number** of image colors in order to eliminate unnecessary detail and reduce each block to a single color. Color reduction also cleans the image, removing noise and anti-aliasing if present. This in turn helps minimize the number of trims and color changes required in the resulting embroidery design. Reduce colors in a non-outlined and outlined images using the **Image Preparation** tool.

Color reduction should only be applied if the loss of detail does not affect the image shapes. Before color reduction, the colored areas in the image below

include many colors. After reduction, each area is reduced to a single color. The detail is preserved.
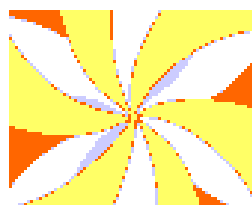
Image before color reduction

Image after color reduction

If you are scanning images, make sure you scan them correctly for best results. See Scanning artwork into BERNINA Embroidery Software for details.
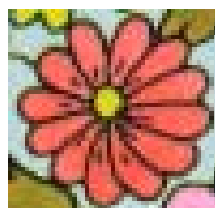
Image scanned in RGB color mode

Image scanned in 256 color mode

Outline sharpening

Outline sharpening means more clearly defining the outlines bordering distinct color blocks or shapes in the artwork. These may have been indistinct in the original or made so by the scanning process. Outline sharpening is important for automatic digitizing because it makes it easier for the software to identify the distinct areas which become embroidery objects in the resulting design.

Note Outline sharpening only works on images with black or dark outlines.

Image before outline sharpening

Image after outline sharpening

Some images have solid outlines but they may be indistinct or incomplete. These need to be rectified with the BERNINA® Embroidery Software image preparation tools or a graphics package. See Editing images in graphics applications for details.

Noise filtering

Noise filtering means restoring the solid color blocks of the original artwork in scanned images. This is achieved by merging different shades into one solid color. Noise filtering is important for automatic digitizing because it makes it easier for the software to identify solid color blocks which become embroidery objects in the resulting design. It also cleans up blurred or mottled areas of color.

Image of mottled colors before noise removal

Image single colors after noise removal

Image preparation summary

Even if your artwork looks ready to stitch when inserted into the software, it will need to be image-processed before conversion. The software will not let you apply automatic digitizing techniques without preliminary image-processing.
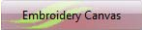
Action	Outlined image	Non-outlined image	Photo
Scan artwork	• Scans in RGB mode • Uses sharpening	• Scans in RGB mode • No sharpening	Scans in RGB mode
Scan line drawing	Scans in two color mode	-	-

Action	Outlined image	Non-outlined image	Photo
Touch up in graphics package	• Crops • Adds or edits outlines • Edits colors • Removes noise	• Crops • Edits image shapes • Edits colors • Removes noise	• Crops • Converts to grayscale • Removes background • Lightens or darkens • Adjusts contrast
Use Image Preparation tool in BERNINA Embroidery Software	Adjusts lightness or darkness of outlines. Automatically: • blends each outlined block into a single color • removes anti-aliasing, noise and dithering • sharpens outlines.	Reduces colors to a specified number. Automatically: • reduces each block to a single color • removes anti-aliasing, noise and dithering • removes colors less than specified area.	-
Digitize	• Manual • Magic Wand • Auto Digitizer	• Manual • Magic Wand • Auto Digitizer	PhotoSnap

Preparing non-outlined images

Use Art Canvas mode to load, edit and save pictures as a backdrop for embroidery digitizing.

Use Embroidery Canvas mode to prepare pictures for automatic digitizing.

Use Image Preparation (Edit toolbar) to reduce number of colors and remove image 'noise' in non-outlined images.

Use the **Image Preparation > Reduce Colors** option to prepare **non-outlined** images for automatic digitizing. The tool automatically reduces color blocks in bitmap images to a single color, removing anti-aliasing and noise. You can let the software reduce the color count automatically or specify a precise number. The latter is useful if you want to match design colors to an exact number of threads.

Tip Depending on the quality of the scanned image, you may need to touch it up manually before processing in BERNINA Embroidery Software. You would normally do this in order to eliminate backgrounds, flood-fill solid areas with color, or add outlines, close gaps, or reinforce outlines. See Editing images in graphics applications for details.

Prepared image   Digitized image
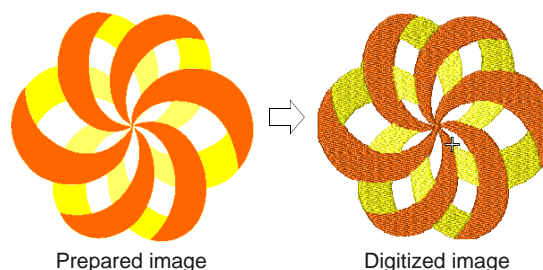
To prepare a non-outlined image

1 Scan or load the image you want to use. See Importing images into BERNINA Embroidery Software for details.

2 Still in **Art Canvas** mode, select the image and crop or edit it as required. See Editing imported images for details.

3 Switch to **Embroidery Canvas** mode, and select the image.
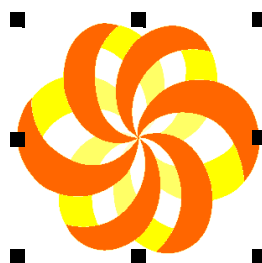
4 Click the **Image Preparation** icon.

The **Image Preparation** dialog opens with the image in the preview panel.
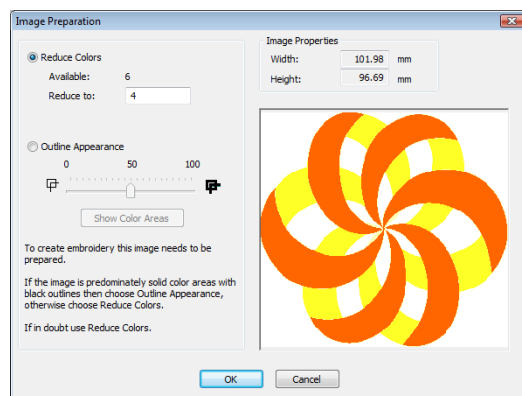
5 Check how many colors are in the image.

This is indicated by the **Available** colors. If there appear to be too many, the image probably contains 'noise'. See Preparing images for automatic digitizing for details.

Enter number of colors required
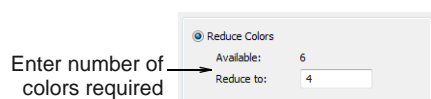
6 Enter the number of colors you require:

You can accept the number suggested by BERNINA Embroidery Software or change it.
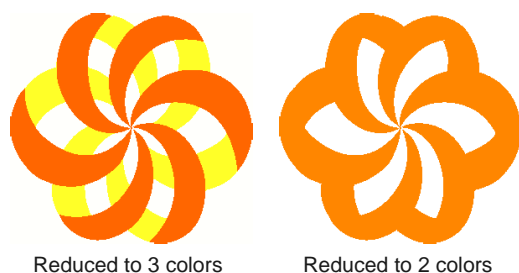
Reduced to 3 colors   Reduced to 2 colors

7 Click **OK** to apply the changes.

The image is ready for automatic digitizing. See Automatic Digitizing for details.

Preparing outlined images

Use Art Canvas mode to load, edit and save pictures as a backdrop for embroidery digitizing.

Use Embroidery Canvas mode to prepare pictures for automatic digitizing.

Use Image Preparation (Edit toolbar) to sharpen outlines and reduce noise in outlined images.

Use the **Image Preparation > Outline Appearance** option to prepare **outlined** images for automatic digitizing. The tool automatically sharpens outlines and reduces noise. Areas enclosed by a black outline are reduced to a single color. Outline sharpening makes it easier for the software to recognize distinct areas in the artwork. These areas then become the embroidery objects of the finished design. Use it particularly if the outlines are blurry, fuzzy or indistinct.
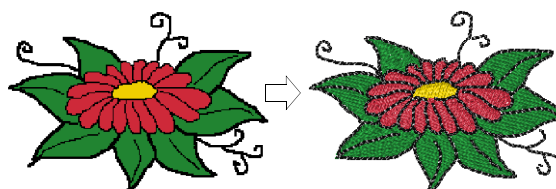
Image with single,   Digitized image
solid colors

Tip Depending on the quality of the scanned image, you may need to touch it up manually before processing in BERNINA Embroidery Software. You would normally do this in order to crop an image, eliminate backgrounds, flood-fill solid areas with color, or add borders, close gaps, or reinforce borders. See Editing images in graphics applications for details.

To prepare an outlined image

1 Scan or load the image you want to use. See Importing images into BERNINA Embroidery Software for details.

2 Still in **Art Canvas** mode, select the image and crop or edit it as required. See Editing imported images for details.

3 Switch to **Embroidery Canvas** mode, and select the image.
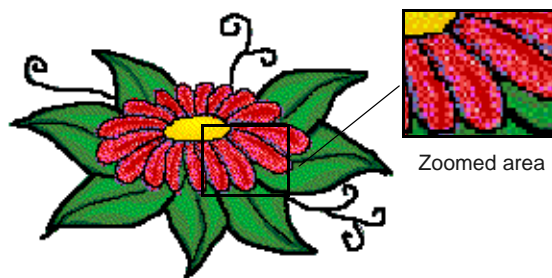
Zoomed area

4 Click the **Image Preparation** icon.

The **Image Preparation** dialog opens.
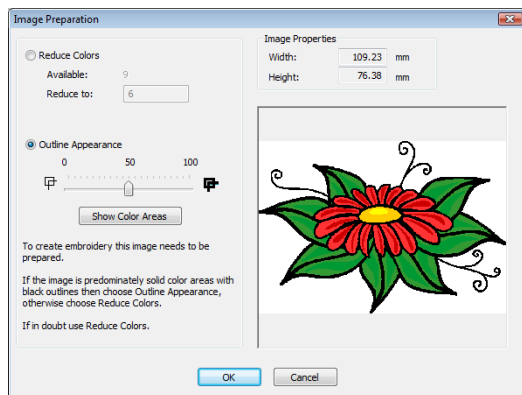
The image appears in the preview panel. The **Available** colors field shows the number of image colors.

Set outline appearance
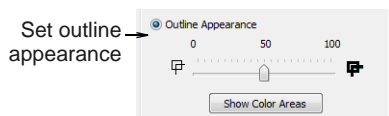
5 Set the outline contrast tolerance by dragging the slider control.

This produces a black and white preview of the detected outlines.
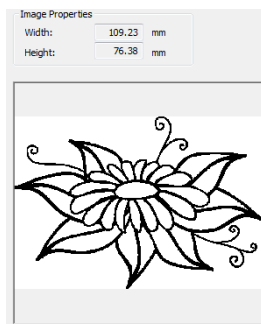
Tip Move the slider to the right until there is too much black, then move it slowly back to the left. Stop when the image shows all the outlines you need.

6 Click **Show Color Areas** to see the updated image.

Slider moved to the left, outlines lightened

Slider moved to the right, outlines darkened

7 Click **OK** to apply the changes.

The image is ready for automatic digitizing. See Automatic Digitizing for details.

CHAPTER 15

AUTOMATIC DIGITIZING

Through its integration with CorelDRAW®, BERNINA Embroidery Software provides powerful inter-conversion of vector and embroidery objects. The **Convert Vectors to Embroidery** tool converts fill or outline properties of selected vector graphics to fill or outline stitch types respectively. It can be applied to text as well as vector graphics.

BERNINA Embroidery Software also provides a **Magic Wand** tool for quickly creating embroidery that does not require particular artistic effects or embroidery-specific knowledge directly from electronic artwork. This in turn frees you to spend more time on the artistic or inherently complicated areas of your designs. The **Auto Digitizer** tool automatically converts artwork to fully digitized embroidery with little or no intervention. With this tool, novice embroiderers can create simple designs quickly and easily. Similarly, experienced embroiderers can improve productivity when working with simple designs. Use **PhotoSnap** to create embroidery from photographs and other images.

This section describes how to automatically convert vector graphics as well as bitmap images to embroidery designs with the available techniques. It also covers how to create embroidery from photographs.
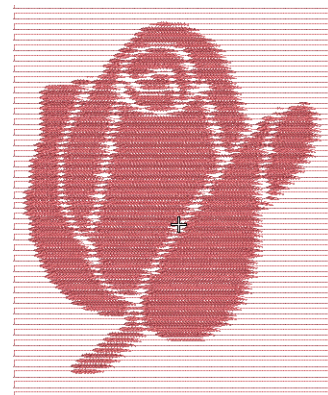
Digitizing with vector graphics

Special conversion tools in BERNINA Embroidery Software automatically convert vector objects and text to embroidery or lettering objects. In fact, entire vector drawings can be quickly and easily converted to embroidery designs. When creating embroidery objects, the software determines optimum object and stitch type for given shapes. These can be modified as

required. You can also convert embroidery designs or objects to vector objects.
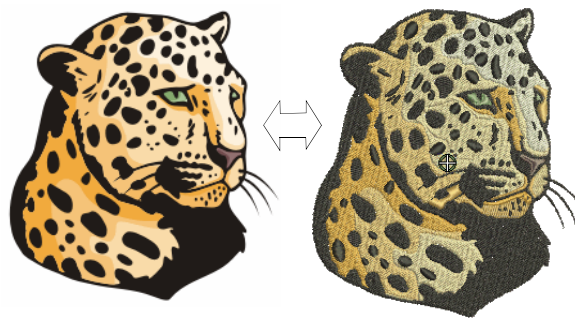
Caution Included artwork (clipart) and embroidery designs can only be used for personal use – i.e. they cannot be commercially sold in any form. Changing the medium – i.e. clipart to embroidery or embroidery to clipart – does not remove copyright protection.

Conversion tools

The conversion feature provides three tools:

- Convert Vectors to Embroidery
- Convert Vector Text to Embroidery: See Converting text to embroidery for details.
- Convert Selected Embroidery to Art Vectors.

The **Convert Vectors to Embroidery** and **Convert Text to Embroidery** tools are accessed via buttons on the **Art Toolbox** in **Art Canvas**. The **Convert Selected Embroidery to Art Vectors** tool is accessed via the **Edit** toolbar in **Embroidery Canvas**.

Conversion limitations

There are some limitations when converting some CorelDRAW® vectors to embroidery. Vector special effects, such as drop shadow, contour, and transparency, do not convert well as there is no equivalent embroidery effect. Enveloped text and **Fountain** or **Mesh** fills do not always give the expected result either.

Drop shadow unable to be converted

Also **Artistic Media** is not always converted to embroidery as you might expect. Unless you first break the object into its constituent parts, the result is sometimes just a single line of run stitches.

Artistic Media (I)

Artistic Media broken apart prior to conversion
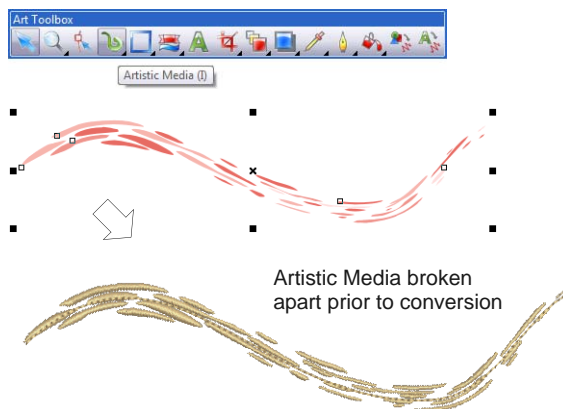
However, as long as the vector object has a fill and/or an outline, BERNINA Embroidery Software will

attempt to convert it. But if there is no embroidery equivalent, the object is converted with solid colors only. Enveloped text is converted to embroidery objects rather than embroidery text.

Tip A workaround is to break any 'special' vector objects apart using the **Arrange > Break Apart** command in **Art Canvas**. In most cases, you will get a result, but it may not be exactly the one you want.

Converting vectors to embroidery

Use Convert to Embroidery (Art Toolbox) to convert selected vectors to fill or outline stitches.

The **Convert Vectors to Embroidery** tool converts fill or outline properties of selected vector graphics to fill or outline stitch types respectively. It can be applied to text as well as vector graphics. See also Converting text to embroidery.

Note Bitmaps cannot be converted to embroidery via the **Convert to Embroidery** tool as images still need to be processed prior to conversion. See Image Processing for details.

- -

To convert vectors to embroidery

1 Switch to **Art Canvas** mode.

2 Scan, load, or create the artwork and/or text you want to use. See also Importing images into BERNINA Embroidery Software.

3 Click the **Convert to Embroidery** tool.

BERNINA Embroidery Software automatically switches to **Embroidery Canvas** mode. The source objects are removed from the design.

BERNINA Embroidery Software automatically switches to **Art Canvas** mode. The source objects are removed from the design.

Converting embroidery to vectors

Use Convert Selected Embroidery to Art Vectors (Edit toolbar) to convert selected embroidery objects to vectors.

The new **Convert Selected Embroidery to Art Vectors** tool converts selected embroidery objects to vector.

To convert embroidery to vectors

1   Switch to **Embroidery Canvas** mode.
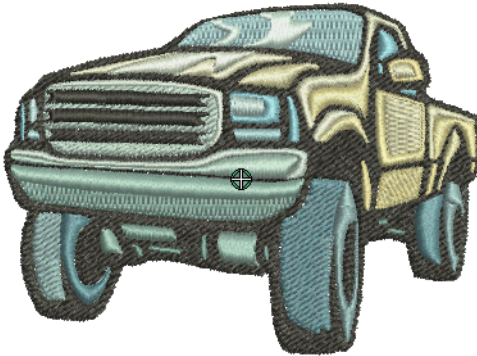
2   Select one or more embroidery and/or lettering objects and click the **Convert Selected Embroidery to Art Vectors** tool.

Digitizing with Magic Wand

The **Magic Wand** tool provides everything necessary to digitize shapes in bitmap images automatically.

Note Even if your artwork looks ready to stitch when inserted into the software, it will need to be image-processed before conversion. The software will not let you apply automatic digitizing techniques without preliminary image-processing. See Image Processing for details.

Digitizing fills automatically
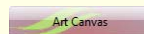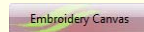
Art Canvas	Use Art Canvas mode to load, edit and save pictures as a backdrop for embroidery digitizing.
Embroidery Canvas	Use Embroidery Canvas mode to prepare pictures for automatic digitizing.
	Use Magic Wand (Digitize toolbar) to digitize filled shapes in your artwork.

If you want to fill an object, select a fill stitch from the **Stitch and Color Bar** before using the **Magic Wand**. You may need to add underlay to your embroidery. See Stabilizing with underlays for details.

To digitize fills automatically

1   Scan or load the image you want to use. See Importing images into BERNINA Embroidery Software for details.

Tip If you cannot see the image you loaded make sure **Show Pictures** icon is toggled on. See Viewing backdrops for details.

2 Select **Embroidery Canvas** and click **Magic Wand**.

The tool is only enabled if at least one bitmap exists in the Design Window.

Image processed

3 Click an area of the image as prompted.

The software checks whether the bitmap has been processed and displays the **Image Preparation** dialog as necessary. See Preparing images for automatic digitizing for details.

4 Change thread color and stitch type as desired in the **Stitch and Color Bar**. See Assigning thread colors for details.

5 Hover the mouse pointer over an area of the image, and click.

Fill stitches are generated accordingly.
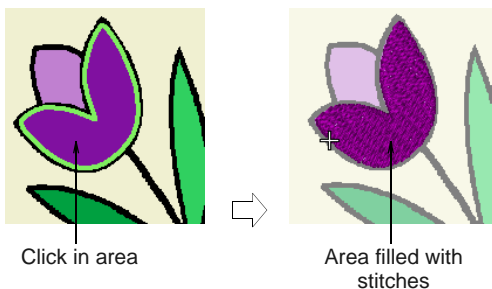
Click in area   Area filled with stitches

Tip If you want to both fill and outline a shape, you need to create two objects – one with fill stitch and one with outline stitch. See also Digitizing outlines automatically.

6 Digitize the other filled shapes in the same way, changing thread color and stitch type as required.

7 To finish, select another input tool or press the **Esc** button.

8 Check the results in **Artistic View**.

All areas digitized

Note Stitches are generated according to current stitch settings. You may have jumps if the stitch length exceeds the default setting.

Digitizing outlines automatically

Art Canvas	Use Art Canvas mode to load, edit and save pictures as a backdrop for embroidery digitizing.
Embroidery Canvas	Use Embroidery Canvas mode to prepare pictures for automatic digitizing.
	Use Magic Wand (Digitize toolbar) to digitize filled shapes in your artwork.

If you want to outline an object, select an outline stitch before using the Magic Wand.

To digitize outlines automatically

1 Scan or load the image you want to use. See Importing images into BERNINA Embroidery Software for details.

Tip If you cannot see the image you loaded make sure **Show Pictures** icon is toggled on. See Viewing backdrops for details.

2 Select **Embroidery Canvas** and click **Magic Wand**.

The tool is only enabled if at least one bitmap exists in the Design Window.

Image processed

3 Click an area of the image as prompted.

The software checks whether the bitmap has been processed and displays the **Image Preparation** dialog as necessary. See Preparing images for automatic digitizing for details.

4   Change thread color and stitch type as desired in the **Stitch and Color Bar**. See Assigning thread colors for details.

5   Hover the mouse pointer over an area of the image, and right-click.

Outline stitches are generated accordingly.
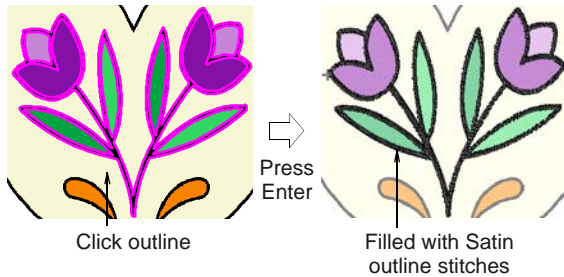
Click outline   Press Enter   Filled with Satin outline stitches

Tip If you want to both fill and outline a shape, you need to create two objects – one with fill stitch and one with outline stitch. See also Digitizing fills automatically.

6   Digitize the other filled shapes in the design in the same way changing thread color and stitch type as required.
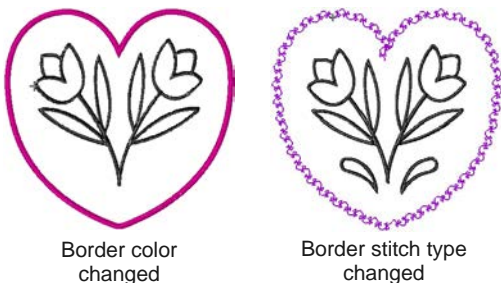
Border color changed   Border stitch type changed

7   To finish, select another input tool or press the **Esc** button.

8   Check the results in **Artistic View**.

Completed design   Only outlines digitized
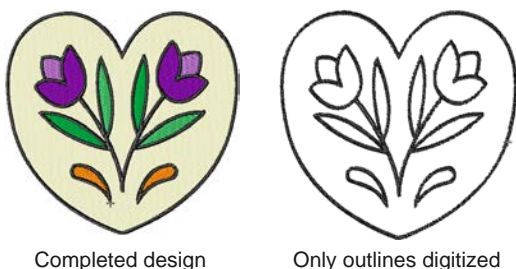
Note Stitches are generated according to current stitch settings. You may have jumps if the stitch length exceeds the default setting.
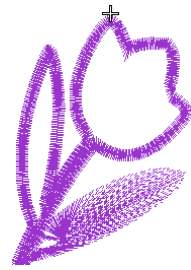
Satin Stitch width: 2.5mm some jumps   Satin Stitch width: 1.0mm NO jumps
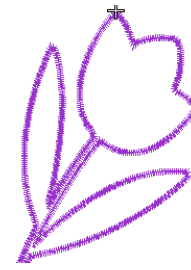
Digitizing with Auto Digitizer
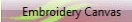
An extension of **Magic Wand** technology, **Auto Digitizer** recognizes shapes in artwork and makes decisions about the most suitable stitch types to use. It also determines the stitching sequence based on closest join. Artwork is effectively 'batch processed' to create the many embroidery objects that make up a design.

Auto Digitizer allows you some control over how an image is interpreted during conversion. You can choose to omit selected colors and you can specify stitch types. Once created, you can always edit the final result using the available digitizing techniques. See also Digitizing Methods. Always remember to apply underlays and you may need to reshape some objects. See Applying automatic underlays for details.

Note Even if your artwork looks ready to stitch when inserted into the software, it will need to be image-processed before conversion. The software will not let you apply automatic digitizing techniques without preliminary image-processing. See Image Processing for details.

Digitizing whole images automatically

Art Canvas	Use Art Canvas mode to load, edit and save pictures as a backdrop for embroidery digitizing.
Embroidery Canvas	Use Embroidery Canvas mode to prepare pictures for automatic digitizing.
(icon)	Use Auto Digitizer (Digitize toolbar) to create embroidery designs directly from imported images.

In essence, creating an embroidery design with **Auto Digitizer** is simply a matter of selecting the image you want to convert, and clicking the **Auto Digitizer** tool. There are, however, some settings you can adjust to optimize the conversion process for a particular image. Only one image may be selected at a time. The command is disabled if the selection contains anything other than an image.

Tip Change the pull compensation to 0.4 mm when using **Auto Digitizer**.

- -

To digitize a whole image automatically

1 Scan or load the image you want to use. See Importing images into BERNINA Embroidery Software for details.

Image processed

Tip If you cannot see the image you loaded make sure **Show Pictures** icon is toggled on. See Viewing backdrops for details.

2 Select **Embroidery Canvas** and click **Auto Digitizer**.

The tool is only enabled if at least one bitmap exists in the Design Window.

3 Click the image as prompted.

The software checks whether the bitmap has been processed and displays the **Image Preparation** dialog as necessary. See Preparing images for automatic digitizing for details.

4 Click the image again as prompted.

The **Auto Digitizer** dialog opens. Image information is given in the top panel, including

width and height values as well as the number of image colors.
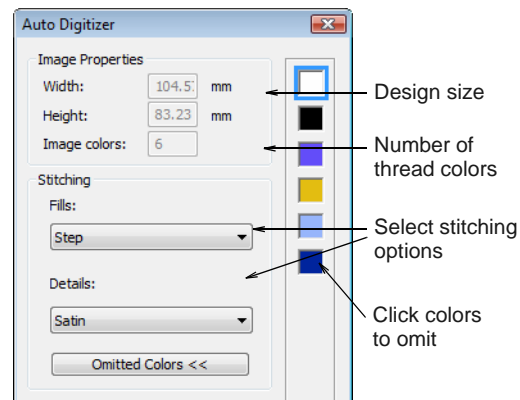
5 Select the stitch types for fills and outlines. See Adjusting automatic stitch settings and Digitizing outlines automatically.

6 Click **Omitted Colors**.

A list of image colors is displayed in the dialog. You can choose to omit selected colors from the operation:

- To select multiple items, hold down **Ctrl** as you click.
- To select a range, hold down **Shift** as you click.
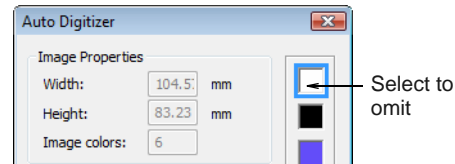
7 Set outline or border options as required. See Creating automatic outlines and borders for details.

8 Click **OK**.

Auto Digitizer converts the artwork to embroidery objects and generates stitches.

White background omitted   Some colors omitted

9 Click the **Show Artistic View** icon on the **General** toolbar or press the 'T' shortcut key.

The software matches colors from the existing palette. If the design does not seem to convert colors properly, check that your monitor is set to 16 Bit color depth and check that you have selected an appropriate thread chart.

Adjusting automatic stitch settings

Auto Digitizer lets you adjust fill and detail stitch settings.

Note Do not use Satin fill for areas where the stitch length exceeds 7 mm. See Preserving long stitches for details.

Satin fill not suitable   Jump stitches created
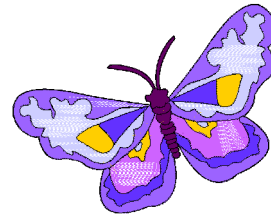
▸ Select a stitching style for **Details** from the list.

Style	Description
Satin	Most suited for use with thicker lines or small shapes of varying width.
Double Run	Most suited for use with thin lines.
Satin Line	Suited for use with thicker lines.

▸ Click **OK**.

Auto Digitizer converts the artwork to embroidery objects and generates stitches.

Outline: Satin   Outline: Double Run

Creating automatic outlines and borders

Use Auto Digitizer (Digitize toolbar) to create automatic outlines and borders from imported bitmap images.

The **Auto Digitizer** tool allows you to automatically generate outlines during image conversion. These may be in the form of outlines between objects and/or borders around the design itself. Automatic outlining can also be used to provide an open filled background for stitching on difficult fabrics or simulating a shadow, etc. You can select the outline colors to use at the time of converting the image. Colors and object details of generated objects can be changed at any time.

To adjust automatic stitch settings

▸ Scan or load the image you want to use and run **Auto Digitizer** to digitize a whole design automatically. See Digitizing whole images automatically for details.

▸ Click the image as prompted.

The **Auto Digitizer** dialog opens.

Select stitching style for fills

Select stitching style for details

▸ Select a stitching style for fills from the list.

Style	Description
Auto	The software works out the best stitch type.
Step	Suited for most areas.
Satin	Suited for use in small and narrow areas.

Note If the image already contains outlines, the use of **Add Outlines** is not recommended as you will get double outlines. See Creating outlines and borders for details.

- -

To create automatic outlines and borders

1   Scan or load the image you want to use. See Importing images into BERNINA Embroidery Software for details.

Tip If you cannot see the image you loaded make sure **Show Pictures** icon is toggled on. See Viewing backdrops for details.

2   Select **Embroidery Canvas** and click **Auto Digitizer**.

The tool is only enabled if at least one bitmap exists in the Design Window.

3   Click the image as prompted.

The software checks whether the bitmap has been processed and displays the **Image Preparation** dialog as necessary. See Preparing images for automatic digitizing for details.

4   Click the image again as prompted.

The **Auto Digitizer** dialog opens.

Set conversion options as required

Add outlines and/or borders as required and set colors

5   Check the **Add Outlines** and/or **Add Border** options as required.

- ▸ Generated outline stitching uses Run stitching to surround separate color blocks in the source image. The Run stitching has the same stitch properties as any details generated during conversion.

- ▸ Generated border outlines are created as Satin objects with the current design settings for width and other properties. The border is oriented clockwise for consistent stitching with objects such as appliqué.

6   Select thread colors for outlines from the dropdown lists and click **OK**.

Auto Digitizer converts artwork to embroidery objects and generates stitches.

Outlines added   Border added

Tip You may, if you wish, omit all image colors from the selection criteria and choose to generate only outlines and/or borders.
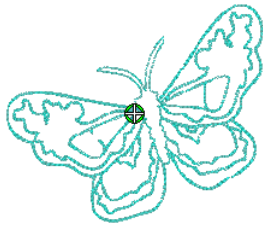
All image colors omitted
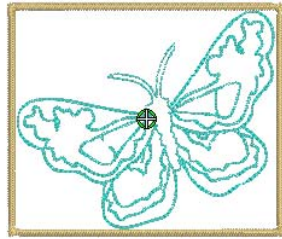
All image colors omitted, border added

Digitizing with PhotoSnap

 Use Art Canvas mode to load, edit and save pictures as a backdrop for embroidery digitizing.
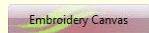
 Use Embroidery Canvas mode to prepare pictures for automatic digitizing.

 Use PhotoSnap (Digitize toolbar) create embroidery designs directly from photographs.

Use **PhotoSnap** to create embroidery from photographs and other images. Use color or grayscale. Grayscale images are made up of different shades of gray pixels. Color images are automatically converted to grayscale when you apply PhotoSnap.

PhotoSnap designs consist of rows of Satin stitches of varying spacing settings. The effect resembles the output of a line printer.

With border and lettering added

Tip For best results, use images with well-defined subjects or constantly varying shades.

To create a design using PhotoSnap

1 Scan or load the image you want to use. See Importing images into BERNINA Embroidery Software for details.
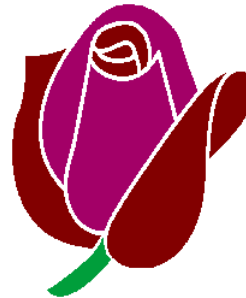
Tip If you cannot see the image you loaded make sure **Show Pictures** icon is toggled on. See Viewing backdrops for details.

2 In **Embroidery Canvas** mode, click the **PhotoSnap** icon and click the image as prompted.

BERNINA Embroidery Software generates stitches. This process may take some time.

3 Right-click or double-click the resulting **PhotoSnap** design.

The **Object Properties > PhotoSnap** dialog opens.
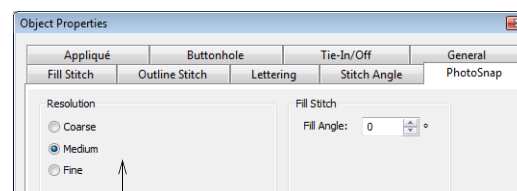
Select resolution

4 In the **Resolution** panel, select a resolution – **Coarse**, **Medium**, or **Fine** – and click **Apply**.

Coarse

Fine
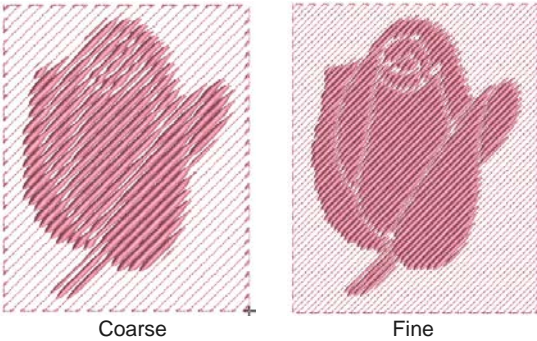
5 In the **Background Fabric** panel, select a background option – **Light** or **Dark** – and click **Apply**.

Light Background

Dark Background

Tip Usually the option you select depends on whether the fabric is light or dark.

6 In the **Fill Angle** panel, adjust the stitching angle, if required, and click **Apply**.

Fill Angle 0°

Fill Angle 45°
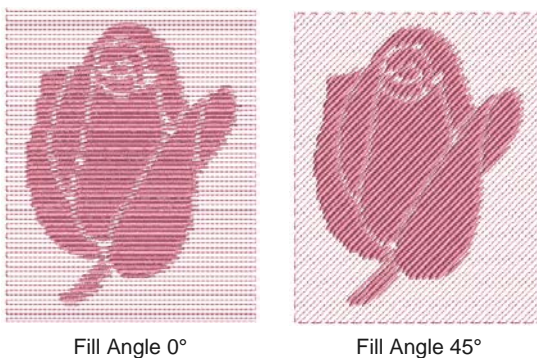
7 Select **Fill Stitch** tab and adjust **PhotoSatin** stitch values as desired.

Adjust stitching values
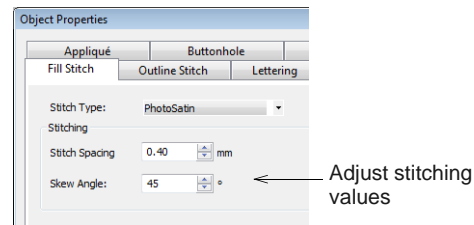
‣ **Stitch Spacing**: adjusts stitch density – to increase stitch density, enter a smaller value.

‣ **Skew Angle**: determines the angle of the stitches themselves (as distinct from the fill angle).

Fill Angle 45°
Skew Angle: 0°

Fill Angle 45°
Skew Angle: 45°
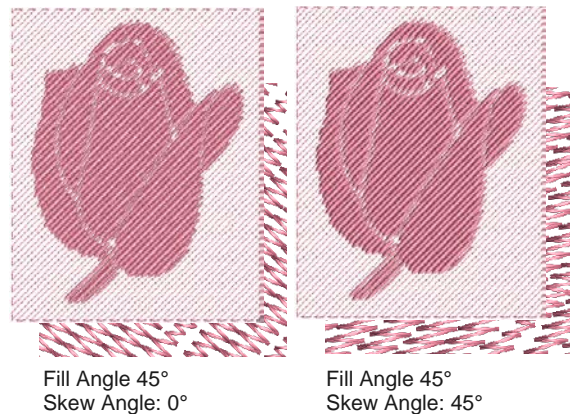
8 Click **Apply** to apply changes and **OK** to close.

PART IV

MODIFYING DESIGNS

After digitizing a design, you can modify it as a whole, edit individual objects or even individual stitches.

Combining and sequencing objects

This section describes how to combine objects and designs by copying and pasting, duplicating, and inserting whole designs and design elements. It also covers grouping and splitting objects, as well as sequencing objects using various techniques including Color Film. It also discusses auto-sequencing entire designs. See Combining & Sequencing Objects for details.

Arranging and transforming objects

This section describes how to position and align objects by both interactive and numeric methods. It also covers scaling, rotating and skewing objects. A variety of methods for mirroring objects are also described. See Arranging & Transforming Objects for details.

Reshaping and editing objects

This section describes how to reshape objects – including circle and pattern run objects – with reshape nodes. It also covers adjusting stitch angles – including multiple stitch angles – as well as changing entry and exit points. See Reshaping & Editing Objects for details.

Editing stitches

This section deals with selecting and editing stitches. See Editing Stitches for details.

<div align="right">

CHAPTER 16
COMBINING & SEQUENCING OBJECTS

</div>

BERNINA Embroidery Software lets you easily combine designs and design elements by inserting the contents of one file into another. You can also add to designs quickly by copying or duplicating existing objects. Group selected objects or entire designs to keep them together for moving, scaling or transforming purposes.

The embroidery objects in a design form a 'stitching sequence'. Initially, objects are stitched in the order they were created. However, you can change this by a variety of methods. For example, change the position of a selected object by cutting it, then pasting it somewhere else in the sequence. There are also techniques available to sequence objects 'as selected' or as 'color blocks'. You can also resequence objects using the Color Film.

The Stitch Sequence feature improves the quality and efficiency of the stitchout by minimizing the number of hoopings, color changes, and trims. All existing overlaps are preserved by the operation.

This section describes how to combine objects and designs by copying and pasting, duplicating, and inserting whole designs and design elements. It also covers grouping and splitting objects, as well as sequencing objects using various techniques including Color Film. It also discusses auto-sequencing entire designs.
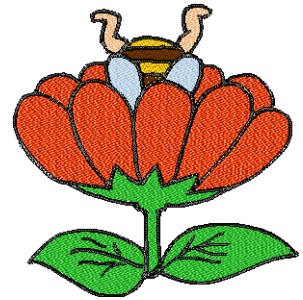
Combining objects

A design or design objects can be copied or cut and placed on the MS Windows® Clipboard for temporary storage. It can then be pasted any number of times, either within the same or another design, until replaced on the Clipboard. Objects also can be cloned or duplicated without copying to the Clipboard. See also Selecting Objects.

Inserting designs

> Select Insert Design (File menu) to combine designs.

BERNINA Embroidery Software lets you insert one design into another. The two (or more) designs can then be saved as a combined design. When you insert a design in another, the two color palettes are combined. Colors with the same RGB values are automatically identified as having the same thread color. If you want to preserve these as separate

colors, you need to change one or other before merging.

To insert designs

1. Open the first design.

2. Travel to the position in the stitching sequence where you want to insert the design. See Traveling by stitches for details.

3. Select **File > Insert Design**.

   The **Open** dialog opens.

4 From the **Look In** dropdown list, select the folder where the design you want to insert is stored, and select the required format from the **Files of type** dropdown list.

5 Select the design file to insert, and click **Open**.

The design is inserted at the current needle position.

6 Move the second design into the required position. See Positioning objects using click and drag for details.

Tip To ensure that all the objects in the inserted design stay together, group the design while working with it. See Grouping objects for details.

7 Save the combined design under the original or different name.

The designs you have inserted are now combined into one design.

Copying and pasting objects

	Click Copy (General toolbar) to copy selected objects to the clipboard.
	Click Paste (General toolbar) to paste copied objects in the design.

You can copy objects to create multiple, identical objects, or to insert objects from other designs. See also Sequencing objects with Color Film.

Note You can also remove objects from a design using the **Cut** command and paste them back in again. Cut and Paste changes the stitching sequence in the design. See Resequencing objects with cut and paste for details.

To copy and paste objects

1 Select the object(s) to copy.

2 Click the **Copy** icon.

The selected object is copied to the clipboard.

3 Travel to the position in the stitching sequence at which you want to paste the object. See Traveling by stitches for details.

You can paste between other objects in the sequence.

4 Click the **Paste** icon.

Petals copied and pasted
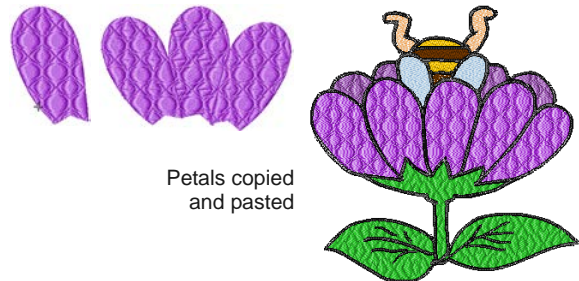
Note The object will be pasted exactly on top of the original object. Click and drag it off the object before deselecting.

The object remains on the clipboard and can be pasted repeatedly until the next **Copy** or **Cut** command.

Caution Make sure that there is only one copy of an object at any one position. If an object is pasted twice into the same position, it will be stitched twice.

Duplicating objects

Select Duplicate (Edit menu) to duplicate selected objects.

Objects can be duplicated rather than copied. When an object is duplicated, it is not copied to the clipboard. This leaves the clipboard free for you to cut or copy other objects. See also Sequencing objects with Color Film.
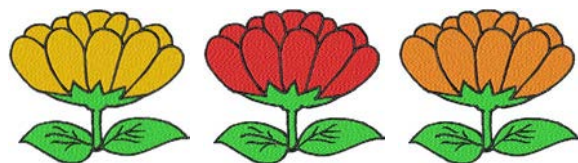
To duplicate objects

1 Travel to the point in the stitching sequence where you want to place the object(s). See Traveling by stitches for details.

You can place the duplicate(s) between other objects in the sequence.

2 Select the object(s) to duplicate.

3 Select **Edit > Duplicate**.

The duplicate object is placed directly on top of the original object, in the specified position in the stitching sequence. Be sure to click and drag it off the object before deselecting.

Cloning objects

Use Select Object (Edit toolbar) to select and clone objects.

The **Quick Clone** feature lets you quickly duplicate selected objects by right-clicking, dragging and releasing at a new position.

To clone objects

1 Select the object(s).

2 Holding down the right mouse button, drag the object(s) to a new position.

A black outline of the object(s) appears. The cursor icon includes a plus symbol.

Right-click object   Drag-and-drop
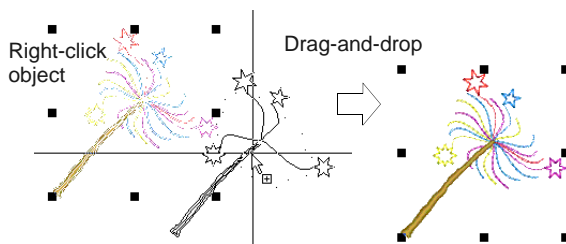
Tip For precise positioning, hold down the **Ctrl** key while dragging – movement is constrained to X or Y axes.

3 Release the mouse.

A duplicate object(s) is created at the release point.

Tip Clone objects to another window by the same method. An identical copy of the selection is created at the same coordinates as the first window, no matter where the mouse is released.

Grouping and splitting objects

You can group selected objects or an entire design to keep them together for moving, scaling or transforming purposes. BERNINA Embroidery Software makes a distinction between 'ungrouping' objects and 'breaking apart' objects. Generally speaking, objects which have been explicitly grouped by you, the digitizer, need to be 'ungrouped' in order to access their component objects. If you want to access objects which have been grouped during system operations – e.g. when generating open-object appliqué – you need to break them apart.

Note By default, designs are automatically grouped upon opening or insertion into another design. See Setting other general options for details.

Grouping objects

Click Group (Arrange toolbar) to group selected objects.

When you group objects, you can apply a change to all of them at once, saving time, and ensuring that any changes are consistently applied. Group selected objects or the whole design to keep them together for moving, scaling or transforming operations.

To group objects

1 Select the objects to group.

2 Click the **Group** icon or press **Ctrl+G**.
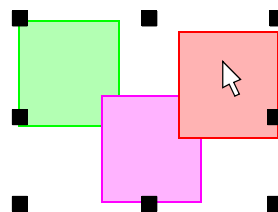
Select, move, resize or transform grouped objects as a single object

Selected objects are combined into a group. This can be selected, moved, resized and transformed as a single object. See also Arranging & Transforming Objects and Reshaping & Editing Objects.

Ungrouping objects

Click Ungroup (Arrange toolbar) to ungroup selected objects.

When you have finished making changes to a group, you can ungroup it and work with the objects individually.

Note You need to ungroup before you can set embroidery properties for any individual object in the group.

To ungroup objects

1 Select the grouped object.

2 Click the **Ungroup** icon.
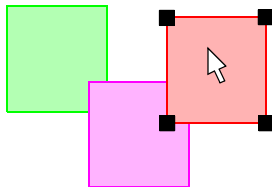
Ungrouped objects can be individually selected

The object is ungrouped and the component objects can be individually selected.

Splitting into component objects

Use Break Apart (Edit toolbar) to split monograms, appliqués, lettering, and Blackwork runs into component objects.

A **Break Apart** tool allows you to split Advanced Appliqué objects into their component objects. The command can also be used with monograms, Auto Appliqué, lettering and Blackwork runs. The effect on these objects is similar to the ungrouping operation.

Note When saved into earlier versions of the software, monograms, appliqués, lettering, and Blackwork runs may be subjected to the **Break Apart** procedure by default.

To split into component objects

1 Select the object you want to split – open-object appliqué, auto-appliqué, monogram, or lettering.

The **Break Apart** command is activated.
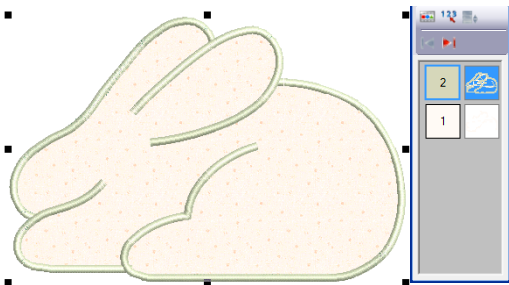
2 Click the **Break Apart** icon or select **Arrange > Break Apart**.

The object is split into its component source (primary) and any generated (secondary) objects.
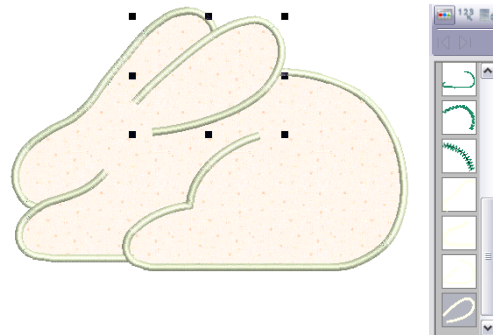
The operation ungroups open-object appliqué into its component groups – source (primary) objects, generated (secondary) objects. It also creates an auto-appliqué object from each piece of fabric in the design. These will have no stitching. See also Digitizing for Appliqué.

The operation ungroups monogram objects into their component groups – one lettering object, ornaments (each ornament set remaining as a group) and borders (also grouped). See also Monogramming.

Tip To modify individual objects – e.g. to change the stitching sequence of monogram borders – use the Color Film to ungroup objects and resequence.

Sequencing objects

The embroidery objects in a design form a 'stitching sequence'. Initially, objects are stitched in the order they were created. However, you can change this by a variety of methods. For example, change the position of a selected object by cutting it, then pasting it somewhere else in the sequence. There are also techniques available to sequence objects 'as selected' or as 'color blocks'. You can also resequence objects

using the Color Film. See also Sequencing objects with Color Film.

Note When working with embroidery designs, you need to understand the stitching sequence. You can check this by 'traveling' through the design stitch-by-stitch or by slowly redrawing it on screen. See Viewing the stitching sequence for details.

Resequencing objects with cut and paste

Click Cut (General toolbar) to cut a selected object or objects and place them on the clipboard.

Click Paste (General toolbar) to paste copied objects in the design.

You can resequence objects by cutting an object from the design and pasting it back at a different point in the sequence. This does not change the physical location of the object.

To resequence objects with cut and paste

1   Select the object(s) to resequence.

2   Click the **Cut** icon.

The selected object is removed from the design and moved to the clipboard.

Wrong sequence   Select and cut object
                        to be changed

3   Travel to the position in the stitching sequence where you want to paste the object. See Traveling by stitches for details.

You can paste between other objects in the sequence, or 'nest' the cut object within another object.

If your current needle position marker is at the end of the design, it will be pasted at the end of the sequence.

4   Click the **Paste** icon.

Travel to the end of   Paste the object
the design

The object is pasted back in the design.

Note The object remains on the clipboard and can be pasted repeatedly until the next **Copy** or **Cut** command.

Resequencing objects as selected

Select Sequence As Selected (Arrange menu) to resequence selected objects.

You can resequence objects by selecting them in the required stitching order.

To resequence objects as selected

1   Select the first object in the range you want to resequence.

2   Holding down **Ctrl**, select the subsequent objects to resequence.

Note Select each object in the order you want it to stitch out in.

3   With the objects still selected, select **Arrange > Sequence As Selected**.

The objects are resequenced in the order they were selected right after the first selected object. See also Sequencing objects with Color Film.
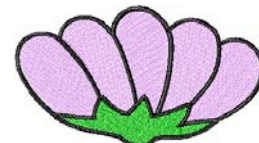
Wrong sequence   Correct sequence

Resequencing objects by color

Select Sequence By Color (Arrange menu) to resequence objects by color.

You can resequence objects by color. This reduces the number of color changes in a design. See also Sequencing objects with Color Film.

To resequence objects by color

1   Select the objects to resequence.

2   Select **Arrange > Sequence By Color**.

The **Sequence By Color** dialog opens listing the colors used in the selected objects.
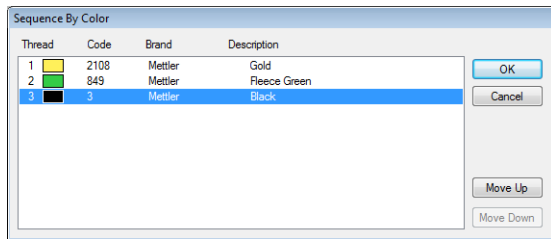
3 Select a color and click **Move Up** or **Move Down** to change its position in the sequence.

4 Click **OK**.
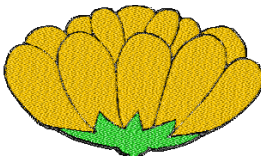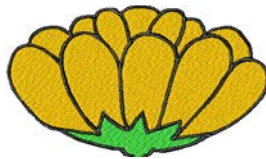
Black first   Black last

Resequencing objects to start or end

Select Sequence to Start (Arrange menu) to place selected object at start of stitching sequence.

Select Sequence to End (Arrange menu) to place selected object at end of stitching sequence.

You can resequence objects by selecting them and placing them at the start or end of the stitching sequence. See also Sequencing objects with Color Film.

To resequence objects to start or end

‣ Select the object(s).

‣ Select **Arrange > Sequence to Start**.

The design is resequenced with the selected object(s) placed first in the stitching sequence.

‣ Select **Arrange > Sequence to End**.

The design is resequenced with the selected object(s) placed last in the stitching sequence.

Sequencing objects with Color Film

Click Color Film (General toolbar) to open the Color Film. Resequence by dragging and dropping objects in the list.

Click Show Individual Objects (Color Film toolbar) to view individual objects in order of stitching sequence. Drag and drop object icons to resequence.

Select Sequence As Selected (Color Film toolbar) to resequence selected objects.

Select Sequence By Color (Color Film toolbar) to resequence objects by color.

Select Sequence to Start (Color Film toolbar) to place selected object at start of stitching sequence.

Select Sequence to End (Color Film toolbar) to place selected object at end of stitching sequence.

Designs are made up of individual embroidery 'objects' grouped by 'color block'. These are listed in stitch order in the **Color Film**. Use it to optimize your design by cutting, copying, pasting, duplicating, deleting, and resequencing selected color blocks. Generally, you should aim to keep objects of the same color together in the stitching sequence to minimize the number of color changes, trims, and frame movements. Once you have optimized the color sequence, you can optimize your design further by checking the order in which individual objects are stitched out. See also Viewing and selecting color blocks.

Note There are instances where colors have to be split, particularly when one object is an outline, since outlines are necessarily stitched above fills.

To sequence objects with Color Film

‣ Click the **Color Film** icon on the **General** toolbar.

The **Color Film** dialog opens displaying all color blocks in the design in order of stitching sequence.

‣ Drag and drop color blocks to change their position in the stitching sequence.

Click and drag color block

Drop color block in new position
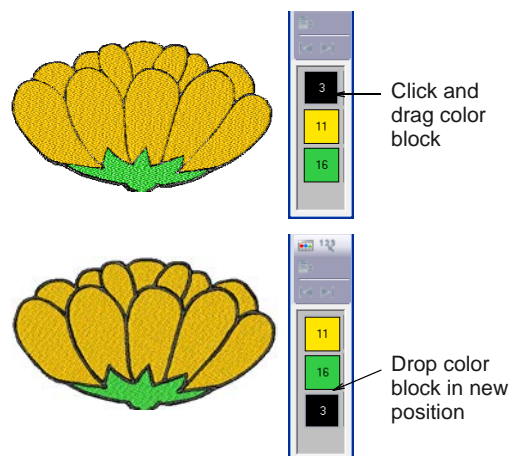
Note The **Color Film** is synchronized with the Design Window and vice versa. It dynamically updates whenever you select, modify or delete objects, or create new ones.

▸ Click the **Show Individual Objects** toggle to view individual objects.

All objects within each color block are displayed in their stitching order.

Consecutive objects of same color form single color block

All objects comprising color blocks shown in their stitching order
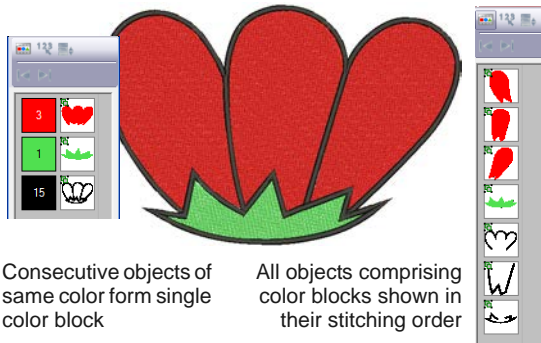
▸ Use the list to drag and drop object icons and resequence as required.

▸ To select a range, hold down **Shift** as you click.

▸ To select multiple items, hold down **Ctrl** as you click.

▸ Right-click any object in the list to invoke the popup menu. Use it to cut, copy, paste, or delete objects as required.

Use popup menu to cut, copy, paste objects as required

Group	Ctrl+G
Ungroup	Ctrl+U
Lock	K
Unlock	
Unlock All	Shift+K
Hide	
Hide Others	
Unhide	
Unhide All	
Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Duplicate	Ctrl+D
Delete	Del
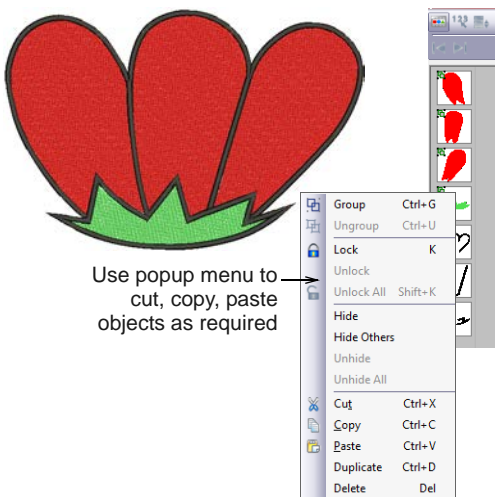
▸ Use the **Sequence** command buttons to reposition selected color blocks or individual objects in the stitching sequence.

Each **Sequence** command has the same functionality as its identical menu item in the **Arrange** menu – e.g. clicking the **Sequence By Color** icon while it is enabled causes the **Sequence By Color** dialog to open. See also Sequencing objects.

Auto-sequencing entire designs

Select Stitch Sequence (Arrange menu) to automatically arrange the stitch sequence to minimize hoopings, color changes and trims.

The **Stitch Sequence** feature improves the quality and efficiency of the stitchout by minimizing the number of hoopings, color changes, and trims. All existing overlaps are preserved by the operation. The system analyzes the design and calculates:

▸ hoopings (if there are more than one)

▸ color changes (the total number in the current Design Window), and

▸ uncovered objects (if any) – i.e. any stitched objects not covered within a hooping.

Grouped objects are not ungrouped by the **Stitch Sequence** operation, but differently colored objects are optimally sequenced regardless of grouping. Monogramming and open-object appliqué, however, are treated as single objects. In other words, they are not internally resequenced unless you break them up with the **Break Apart** command. See also Splitting into component objects.

To auto-sequence an entire design

1 Open or create a design.
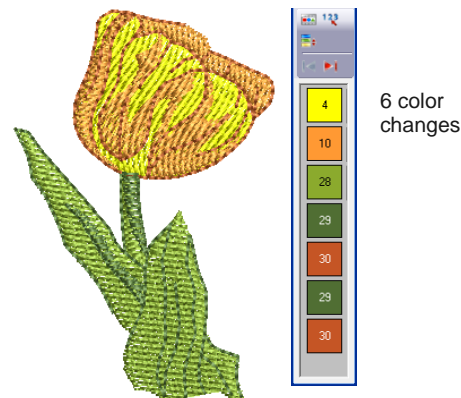
6 color changes

2 Select **Arrange > Stitch Sequence**.

The system analyzes all selected objects and calculates optimal hoopings, color changes and trims.

Stitch Sequence

This operation will produce

Hooping(s):	3
Color change(s):	30
Uncovered object(s):	7

Do you wish to continue?

Yes   No
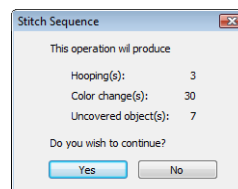
Note If your design does not fit in the current hoop, you will be alerted that there are uncovered objects. You can fix this by selecting a larger hoop or adding more hoopings. See also Hooping large designs.

3 Confirm whether you want to proceed with stitch sequence optimization by clicking **Yes**.

4 color changes
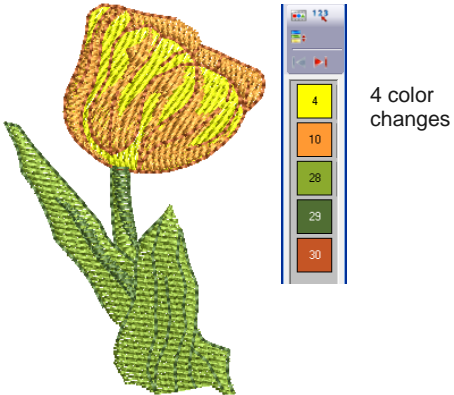
Note The **Undo** command will reverse the effect of any sequencing changes.

CHAPTER 17

ARRANGING & TRANSFORMING OBJECTS

BERNINA Embroidery Software allows you to arrange and transform objects by a variety of means, both interactive and numeric. Position objects by means of click and drag, arrow keys or object properties. Align objects relative to each other using the special tools available.

Scale objects directly on-screen or by setting exact dimensions or scale percentages. Rotate, skew and mirror objects by similar means.

Special tools allow you to duplicate and transform selected embroidery objects, as well as create mirrored and rotated objects around a central axis.

This section describes how to position and align objects by both interactive and numeric methods. It also covers scaling, rotating and skewing objects. A variety of methods for mirroring objects are also described.

Positioning objects

You can position objects in the Design Window by a variety of standard MS Windows® techniques including click and drag, as well as arrow keys to nudge them into position. You also have precise numeric control over object positioning by means of object properties.

Positioning objects using click and drag

The simplest way to move an object in your design is to click and drag it to a new position. Use the arrow keys to 'nudge' objects into position.

To position objects using click and drag

1 Select the object/s to move.

2 Click and drag the object to a new position.

Cross-hair cursor centers objects
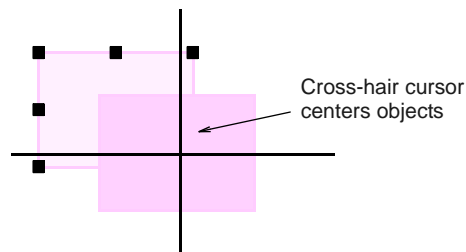
3 For more accurate positioning, press the arrow keys to 'nudge' the object into the required position.

Tip Zoom in to make it easier to make small adjustments. The distance the object moves depends on the current zoom factor. The greater the zoom factor, the smaller the distance moved.

Positioning objects using object properties

You can position selected objects relative to the center of a design by means of its object properties.

To position objects using object properties

1 Select the object/s to move.

2 Double-click or right-click the object/s to open the **Object Properties** dialog, and select the **General** tab.

Enter new coordinates
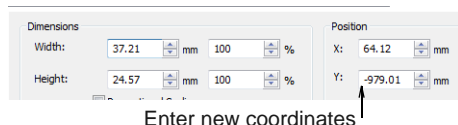
3 In the **Position** fields, enter the new coordinates for the object.

4 Click **Apply**.

The object is centered over the coordinates you set.

Aligning objects

	Use Select Object (Edit toolbar) to select an object.
	Click Align Left Vertical (Arrange toolbar) to align selected objects along their left sides.
	Click Align Centers Vertical (Arrange toolbar) to align selected objects vertically around centers.
	Click Align Right Vertical (Arrange toolbar) to align selected objects along their right sides.
	Click Align Top Horizontal (Arrange toolbar) to align selected objects along their top sides.
	Click Align Centers Horizontal (Arrange toolbar) to align selected objects horizontally around centers.
	Click Align Bottom (Arrange toolbar) to align selected objects along their bottom sides.
	Click Align Centers (Arrange toolbar) to align selected objects centers.
	Click Space Horizontally (Arrange toolbar) to evenly distribute three or more selected objects horizontally.
	Click Space Vertically (Arrange toolbar) to evenly distribute three or more selected objects vertically.

BERNINA Embroidery Software provides tools to precisely align objects relative to each other. You can align to the left, right, top, bottom or center of a 'reference object'.

To align objects

1 Select the objects you want to align.

2 Select the object you want to align with.

Note Objects are aligned with the **last** object selected. When we select all the objects in the design by using **Ctrl+A** or a marquee all the objects are aligned with the last object in the sequence.

3 Click one of the alignment icons on the **Arrange** toolbar.

Align Centers

Align Bottom   Align Left
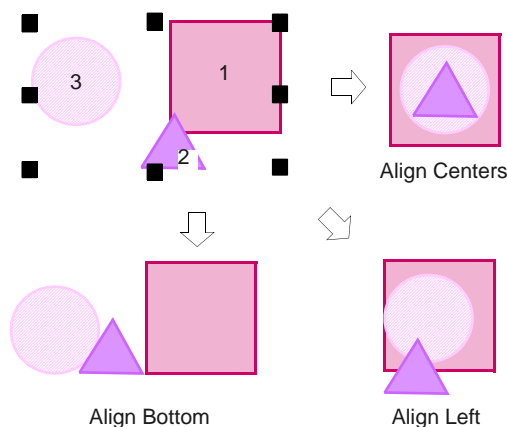
Scaling objects

You can scale objects directly on-screen or by setting exact dimensions or scale percentage. As an object is scaled, the stitch count changes to preserve current stitch spacing.

Note The scalability and stitching quality of a design ultimately depends on its original source – ART Grade A, ART Grade B, ART Grade C, or ART Grade D. Only native ART Grade A designs contain the complete set of design information required for 100% perfect scaling and transformation. See Embroidery design formats for details.

Scaling objects using Scale by 20% Down/Up

	Click Scale by 20% Down/Up (Edit toolbar) to reduce selected objects by 20%. Right-click to increase selected objects by 20%.

Use this technique when you need to make very quick changes that do not need to be precise.

To scale objects using Scale by 20% Down/Up

1 Select the object/s.

 Tip See Selecting objects by point and click for the methods used to quickly select more than one object or all objects in a design.

2 Click the **Scale by 20% Down/Up** icon.

- ▸ Click to make the object 20% smaller.
- ▸ Right-click to make the object 20% bigger.

Scaling objects using click and drag

You can change the height and width of an object, or scale it proportionally using the selection handles. Scale objects individually, or select multiple objects and scale them together.

To scale objects using click and drag

1 Select the object/s to scale.

Eight selection handles display around the object.

2 Click and drag a selection handle to resize the object.

- ▸ To scale height and width proportionally, use a corner handle.

Scale proportionally   Scale proportionally about center
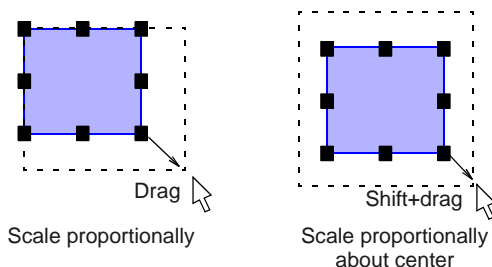
 Tip By default, objects scale proportionally. To scale freely in vertical and horizontal planes, hold down **Ctrl** as you drag.

▸ To change the height, use the handles at the center-top or center-bottom.
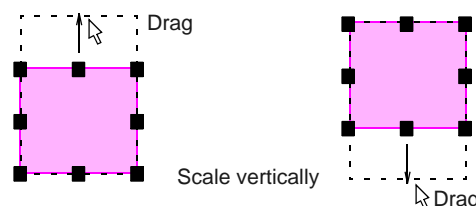
▸ To change the width, use the handles at the center-sides.
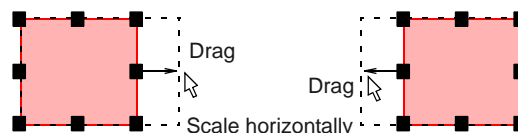
 Tip To resize around a center anchor, hold down **Shift** while you resize.
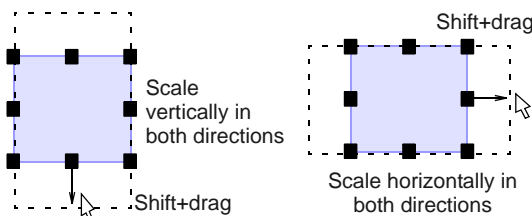
Scaling objects using object properties

You can scale the height and width of selected objects or a whole design using object properties.

 Caution If you scale a stitch or 'expanded' design by more than 5%, changes to stitch density will affect the design quality. See also Embroidery design formats.

To scale objects using object properties

1 Select the object/s to scale.

2 Double-click or right-click the object/s to open the **Object Properties** dialog, and select the **General** tab.

3 In the **Dimensions** panel, scale the object as required. Either:

- ▸ Enter exact height and width values, or
- ▸ Enter the new height and width as a percentage of the current dimensions.

Enter dimensions as absolute values or as percentage

Tip Use the **Proportional Scaling** checkbox to maintain proportional scaling of original object.

4 Click **Apply**.

Original object

Height scaled by 150%

Height scaled by 80%
Width scaled by 140%
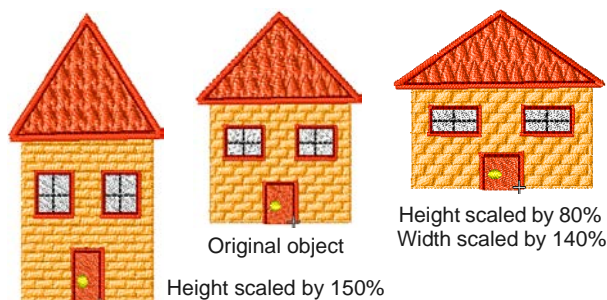
Note After scaling, the new object size is reset to 100%.

Rotating objects

You can rotate objects directly on-screen or by setting an exact rotation angle.

Rotating objects using click and drag

When you select an object, selection handles display at its extremities. When you click the object again, the handles change to rotation handles.

To rotate objects using click and drag

1 Select the object/s to rotate.

Eight selection handles display around the object.

2 Click the object/s a second time.

Rotation handles appear at the corners and an anchor point at the center of the object.

First click displays selection handles

Second click displays rotation handles
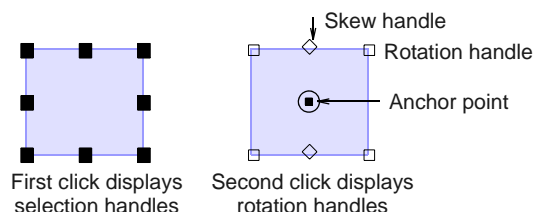
Caution If you click too quickly, the **Object Properties** dialog opens.

3 If required, drag the rotation anchor from the center to a new position.

4 Click a rotation handle, and drag it clockwise or counter-clockwise. An outline and cross-hairs display as you rotate.

Drag a corner to rotate about the anchor point

Drag the anchor point

Drag a corner to rotate about the anchor point
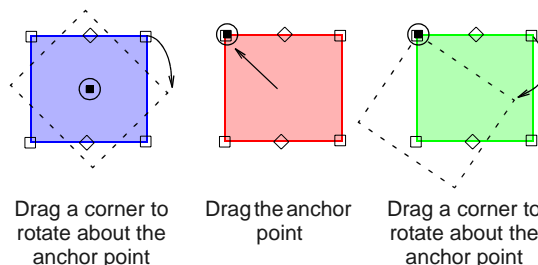
Rotating objects using Rotate CCW/CW

Use left/right-click Rotate CCW / CW by 45° (Edit toolbar) to rotate an object or design by 45° in either direction.

Use the **Rotate CCW / CW by 45°** tool to rotate objects by 45° rotations in either direction.

To rotate objects using Rotate CCW / CW by 45°

1 Select the object/s to rotate.

2 Click **Rotate CCW / CW by 45°** on the toolbar.

‣ Click to rotate 45° counter-clockwise.

‣ Right-click to rotate 45° clockwise.

Rotating objects using object properties

You can rotate selected objects by specifying an exact rotation angle.

To rotate objects using object properties

1 Select the object/s to rotate.

2 Double-click or right-click the object/s to open the **Object Properties** dialog, and select the **General** tab.

3 In the **Rotate By** field, enter the rotation angle you require.

4 Click **Apply**.

Enter rotation angle
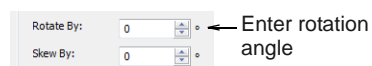
Skewing objects

You can skew objects directly on-screen or by setting an exact skew angle.

Skewing objects using click and drag

You can skew objects along the horizontal plane by clicking skew handles and dragging to the required angle.
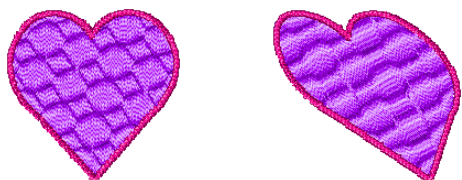
To skew objects using click and drag

1 Select the object/s to skew.

   Eight selection handles display around the object.

2 Click the object/s a second time.

   Rotation handles appear at the corners and skew handles at center-top and bottom of the object.

Skew handle
Rotation handle
Anchor point

First click displays selection handles   Second click displays rotation handles
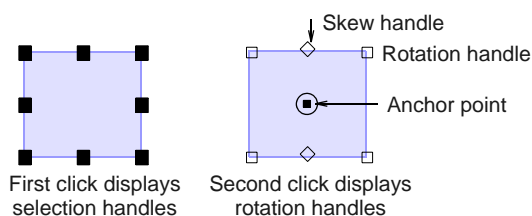
⚠ **Caution** If you click too quickly, the **Object Properties** dialog opens.

3 Drag the skew handles left or right.

   The object skews along the horizontal plane. An outline and cross-hairs show the change to the object's shape.

Drag skew handle left or right
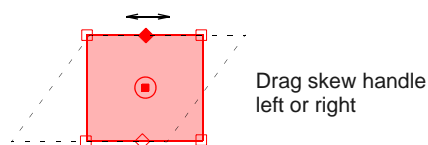
Skewing objects using object properties

You can skew selected objects by entering an exact angle in the **Object Properties** dialog.

Skewed 30° using Object Properties

To skew objects using object properties

1 Select the object/s to skew.

2 Double-click or right-click the object/s to open the **Object Properties** dialog, and select the **General** tab.

3 In the **Skew By** field, enter the skew angle you require.

4 Click **OK**.

Rotate By: 0 ° ← Enter skew angle

Mirroring objects

You can mirror objects horizontally or vertically using the mirroring tools or via object properties. Special tools allow you to duplicate and transform selected embroidery objects, as well as create mirrored and rotated objects around a central axis.
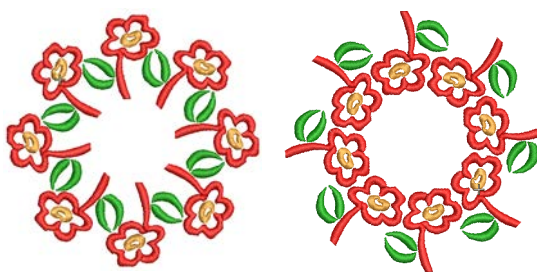
Mirroring objects horizontally or vertically

Click Mirror Horizontal (Edit toolbar) to flip an object or design horizontally.

Click Mirror Vertical (Edit toolbar) to flip an object or design vertically.

You can mirror selected objects horizontally or vertically using **Mirror Horizontal** or **Mirror Vertical**.

To mirror objects horizontally or vertically

1 Select the object/s to mirror.

Original object — Mirror horizontal (X)

Mirror vertical (Y) — Mirror horizontal and vertical (X and Y)
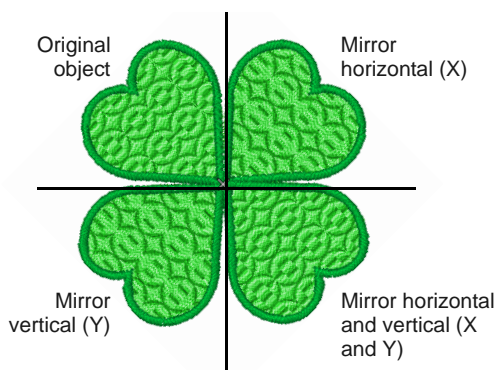
2 Click the **Mirror Horizontal** icon to flip horizontally or **Mirror Vertical** to flip vertically.

Mirroring objects using object properties

You can mirror selected objects horizontally or vertically using the **Object Properties** dialog.

To mirror objects using object properties

1 Select the object/s to mirror.

2 Double-click the object to open the **Object Properties** dialog, and select the **General** tab.

3 In the **Mirror** panel, select the **In X** or **In Y** checkbox.

‣ **In X** mirrors the object in the horizontal plane.

‣ **In Y** mirrors the object vertically.

Flip horizontally → In X
Flip vertically → In Y

Rotate By: 0 °
Skew By: 0 °
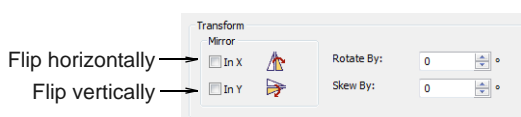
Tip Select both checkboxes to mirror horizontally and vertically at the same time.

4 Click **OK**.

Mirror-merging objects

Use Mirror-Merge Horizontal (Arrange toolbar) to mirror-merge horizontally.

Use Mirror-Merge Vertical (Arrange toolbar) to mirror-merge vertically.

Use Mirror-Merge Horizontal/Vertical (Arrange toolbar) to mirror-merge both horizontally and vertically.

The **Mirror-Merge** tools allow you to duplicate and transform selected embroidery objects, and merge them into a single object.
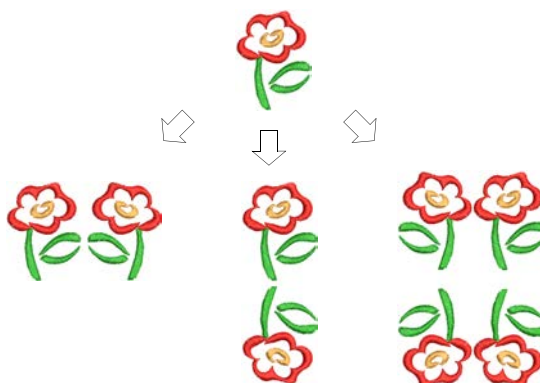
To mirror-merge objects

1 Select the object/s.

Note Make sure the source object/s are ungrouped otherwise colors will not be automatically resequenced during the mirror-merge operation.

2 Select a Mirror-Merge tool.

‣ Mirror-Merge Horizontal:
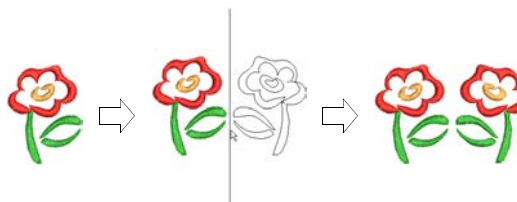
‣ Mirror-Merge Vertical:
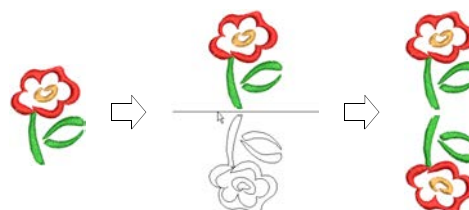
‣ Mirror-Merge Horizontal/Vertical:
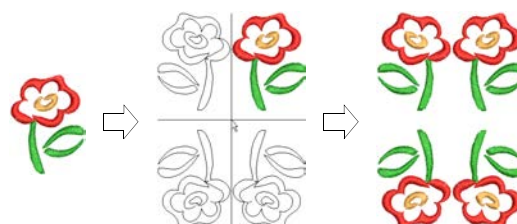
3 Move the reference line to the position you want to add the mirrored object and click to mark the anchor point.

The pointer attaches to the reference line. As you move the pointer around the object, the mirrored object moves also. A copy of the object is placed as a mirror image of the original.

Note If the mirrored copy overlaps the original object, you are asked if you want to merge the objects.

Creating wreaths

Use Wreath (Arrange toolbar) to duplicate objects around a central point.

Use Kaleidoscope (Arrange toolbar) to mirror objects around a central axis.

The **Wreath** tool duplicates objects around a central point. The **Kaleidoscope** tool works with **Wreath** to create mirrored objects around the central axis. Because the object is mirrored, **Kaleidoscope** only works with an even number.

Six-point wreath with   Six-point wreath with
Kaleidoscope OFF   Kaleidoscope ON

Tip Use the **Wreath** tool with alphabets and numbers to create fun designs.

To create a wreath

1 Select the object/s.

Note Make sure the source object/s are ungrouped otherwise colors will not be automatically resequenced during the mirror-merge operation.

2 Click the **Wreath** icon.

3 Enter the number of **Wreath** points.

Note Enter an even number to activate the **Kaleidoscope** icon.

4 Click the **Kaleidoscope** icon if required.

5 Move the reference line to the center of the wreath and click to mark the anchor point.
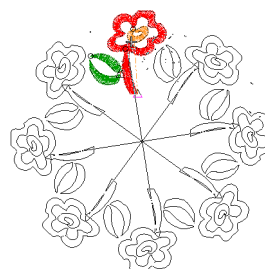
Move pointer to set
the center point

Tip Hold down **Ctrl** to constrain the line to 45° angles.

The pointer attaches to the center point. As you move the pointer around the object, the mirrored objects also move. The objects are copied and placed around this center point.

Eight point wreath with center
marked below original object

Eight point wreath with center
marked above original object
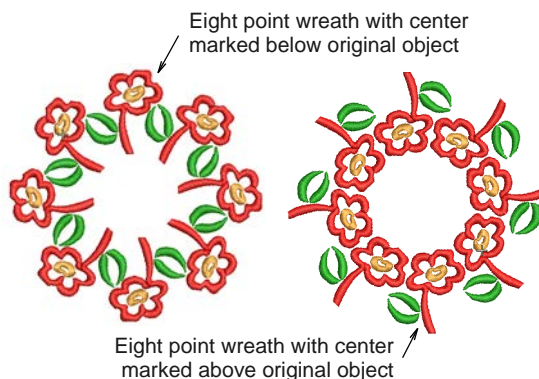
Note If the mirrored copy overlaps the original object, you are prompted to merge the objects.

CHAPTER 18

RESHAPING & EDITING OBJECTS

BERNINA Embroidery Software lets you modify object shapes, stitch angles and entry and exit points by means of reshape nodes. Stitch angle lines and entry and exit markers all appear around selected objects. Reshape nodes vary slightly with the object type.

Before modifying any design, a good practice is to save a copy under a new name and keep the original in case you want to discard your changes and start again.

This section describes how to reshape objects – including circle and pattern run objects – with reshape nodes. It also covers adjusting stitch angles – including multiple stitch angles – as well as changing entry and exit points. See also Editing Embroidery Lettering.
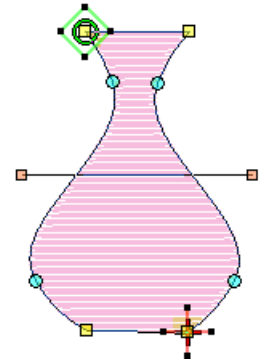
Reshaping objects

In BERNINA Embroidery Software you reshape objects by selecting them with the **Reshape Object** tool and moving, adding or deleting reshape nodes on the outline. With some objects, you can also change reshape nodes from corner points to curves. Reshaping operations do not affect stitch angles.

Note Stitches of all objects are now regenerated whenever a reshaping change is made.

Viewing and selecting reshape nodes

> Click Reshape Object (Edit toolbar) to view the reshape nodes of a selected object.

Reshape nodes can be selected individually or together, for repositioning or modification.

To view and select reshape nodes

‣ Select an object and click the **Reshape Object** icon.

Reshape nodes appear around the object.

Exit point
Curve reshape node
Corner reshape node
Entry point
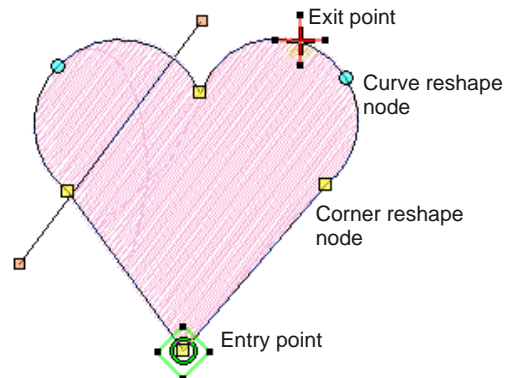
‣ Click to select a single reshape node.

‣ Holding down **Ctrl**, click to select multiple reshape nodes.

▸ Holding down **Shift** key, click to select a range of reshape nodes.

Tip Left-clicking or right-clicking in closed shapes reverses the direction of the selection.

▸ Click and drag a bounding box around a group of reshape nodes to select.
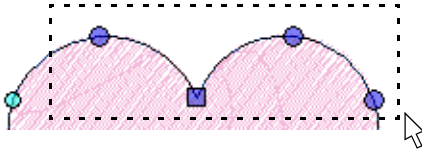
Reshaping objects using reshape nodes

Click Reshape Object (Edit toolbar) to reshape selected objects.

Change object shapes with the **Reshape Object** tool. Use it to add, delete, or move reshape nodes on the object outline. For some objects, you can also change between corner and curve points.

- -

To reshape objects using reshape nodes

1 Select the object to reshape.

2 Click the **Reshape Object** icon.

Reshape nodes appear around the object.

3 To add extra reshape nodes on the outline:

▸ Left-click to add a corner point.

▸ Right-click to add a curve point.

Right-click

Left-click
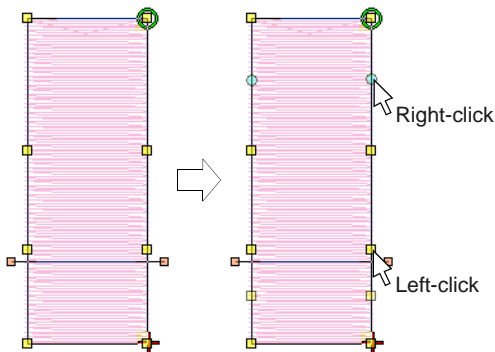
4 Select reshape nodes as required. See Viewing and selecting reshape nodes for details.

5 Adjust the position of selected reshape nodes by dragging them along the outline as required and press **Enter**.

Drag and press Enter
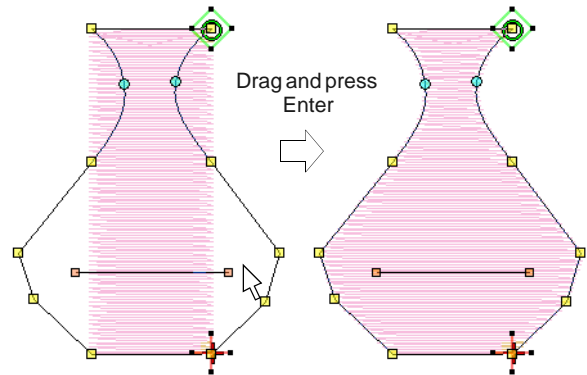
Tip Use the arrow keys to 'nudge' selected reshape nodes.

6 Press **Delete** to delete unwanted reshape nodes and press **Enter**.

Select, delete and press Enter
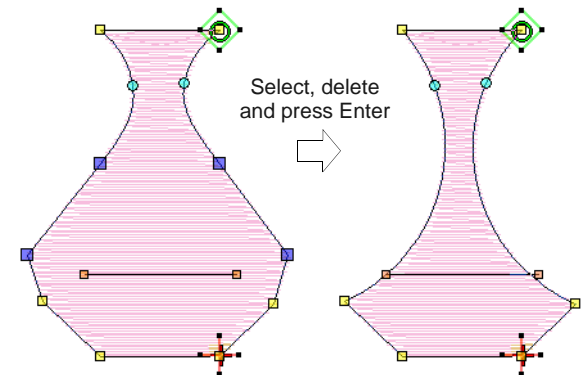
7 Press **Spacebar** to toggle between selected corner and curve reshape nodes and press **Enter**.

Tip If you make a mistake, press **Esc** to remove the changes, press **Esc** again to exit **Reshape Object** tool.

Select, press spacebar and press Enter
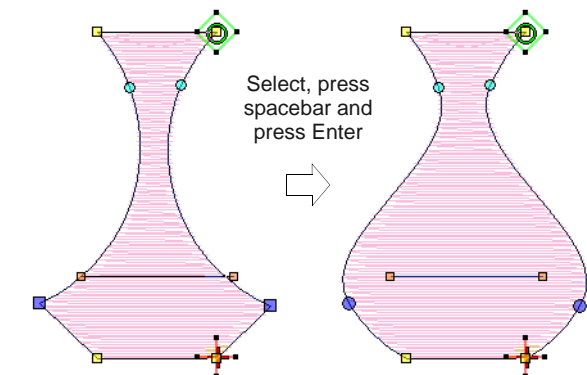
Note You can also adjust stitch angles as required, as well as change entry and exit points. See Adjusting stitch angles and Adjusting entry and exit points for details.

8 Press **Esc** to finish.

Reshaping next or previous objects

When editing an object in **Reshape** mode, use the Tab key to quickly jump between objects. See also Deselecting objects.

To reshape next or previous objects

▸ Press the **Tab** key to accept all changes to an object and jump to the **next** object in the stitching sequence.
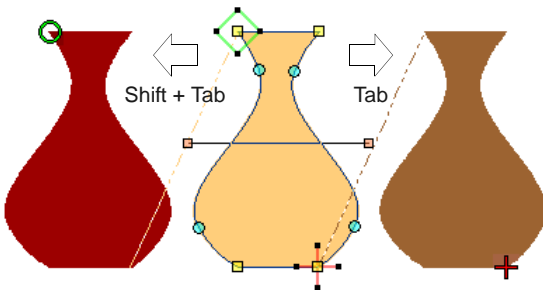
Shift + Tab   Tab

▸ Pressing **Shift + Tab** causes all changes to the object to be accepted and the **previous** object in the stitching sequence to be selected for reshaping.

Smoothing curves

Use Reshape Object in combination with Edit > Smooth Curves to remove unnecessary reshape nodes from embroidery objects.

Like vector objects, embroidery objects contain reshape nodes on their outlines. On shapes where the angle changes constantly, the software may insert hundreds of reshape nodes, making reshaping difficult. The **Smooth Curves** command lets you apply curve 'smoothing' to embroidery objects.
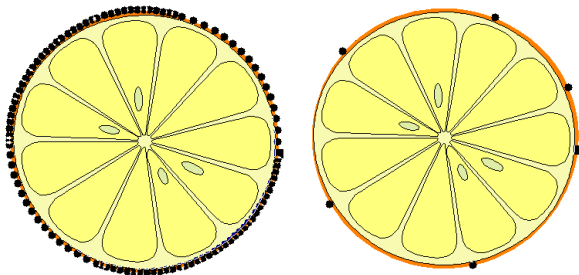
To smooth curves

1 Select the object (or objects) to smooth.

Note You can only smooth objects that have been ungrouped and selected. However, you can select multiple objects.

2 Click the **Reshape Object** icon.

Reshape nodes display around the outline.

3 Select **Edit > Smooth Curves**.

The **Smooth Curves** dialog opens.
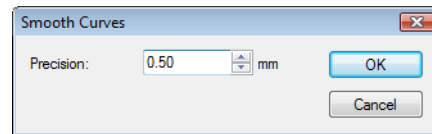
4 In the **Precision** field, enter the smoothing precision value.

This value controls how closely the smoothed outline follows the original. The larger the precision value, the fewer the reshape nodes.

5 Click **OK**.

Reshaping circle objects

Click Reshape Object (Edit toolbar) to reshape circle objects

For objects created with the **Circle** tool, you reshape using the existing reshape nodes only. You cannot add, change or delete reshape nodes in these objects. You can change Circle objects from circles to ovals using the **Reshape Object** tool. Circle objects have two reshape nodes (used to change the radius and orientation of the object), a center point (used to reposition it), and a stitch entry point.

Reshape node

Stitch angle

90°

Entry point   Center point   Reshape node
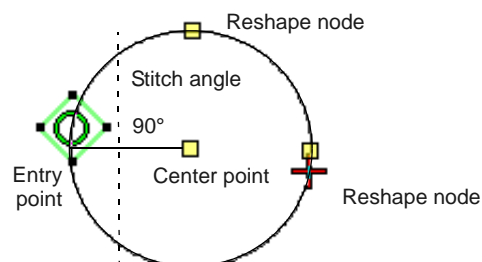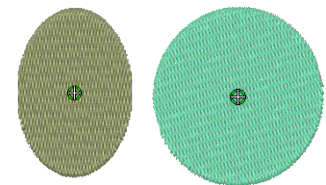
To reshape circle objects

1 Select a Circle object and click the **Reshape Object** icon.

Reshape nodes appear around the object.

2 To move a circle, click the reshape node in the circle's center, and drag it to a new position.

3 Click a reshape node on the circumference of the circle, and drag it to reshape the outline.

▸ To reshape without changing the orientation, use the reshape node at the top of the object.
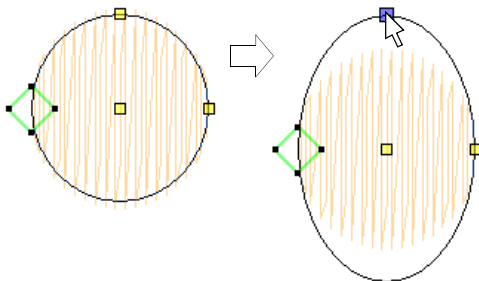
▸ To reshape and spin the object around its center point, use the reshape node at the side.
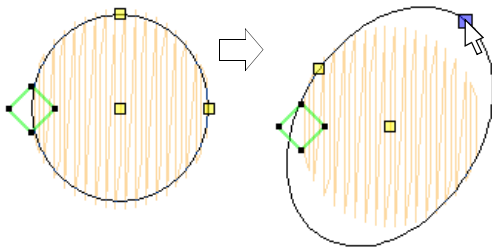
4 Press **Enter** to apply the changes, then **Esc** to finish.

Tip To scale a circle without changing it to an oval, select it with the **Select Object** tool, and use the corner selection handles to scale it.

Scale using corner selection handles
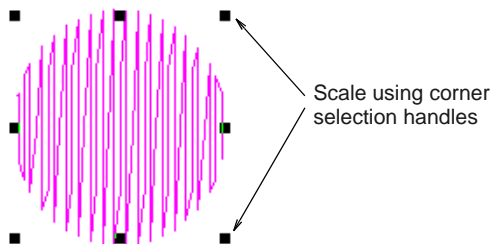
Reshaping pattern runs

Click Reshape Object (Edit toolbar) to view the reshape nodes of a selected object.

Reshape pattern runs with the **Reshape** tool in the same way as you reshape lettering objects. You can make pattern runs taller or narrower, rotate pattern runs, move individual patterns along the baseline or reshape the baseline. You can rotate, skew and mirror pattern runs just like other objects.
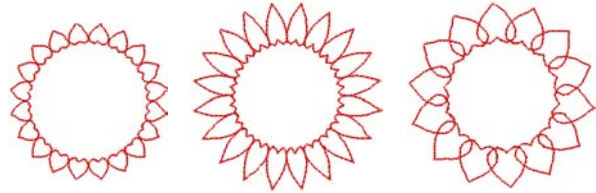
To reshape pattern runs

1 Select a pattern run and click the **Reshape** icon.

Reshape nodes appear around the object.

2 Drag the reshape nodes to change the appearance of the pattern run.

Drag to move individual patterns
Drag to scale pattern height
Drag to scale patterns proportionally
Drag to scale patterns horizontally
Drag to change baseline length and orientation

3 Press **Esc** to finish.

Default patterns — Pattern width decreased — Baseline length and orientation changed

Individual pattern moved — Pattern height increased — Pattern size increased proportionally
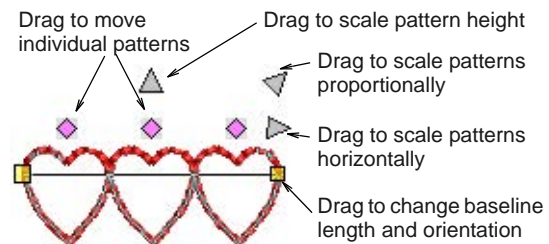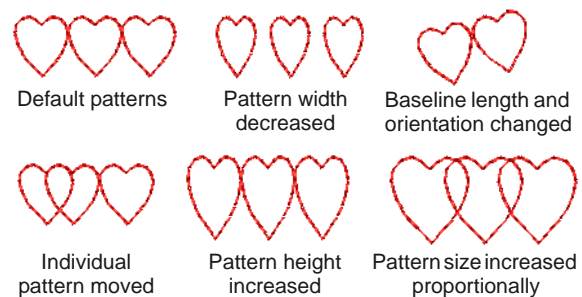
Adjusting stitch angles

Stitch angle adjustments depend on the type of object you are working with. With filled objects you can set a stitch angle for the entire object. Alternatively, you can add multiple stitch angles with the **Add Stitch Angles** tool. You can also adjust the stitch angle using the **Reshape Object** tool.

Note You can change the stitch angle of Circle objects by moving the stitch entry point.

Setting nominal stitch angles

Use Stitch and Color Bar > Add Stitch Angles to set the nominal stitch angles for closed objects with or without holes.

Use Stitch and Color Bar > Remove Stitch Angles to remove stitch angles from closed objects with turning stitches.

You can change the nominal stitch angles of filled objects using object properties.
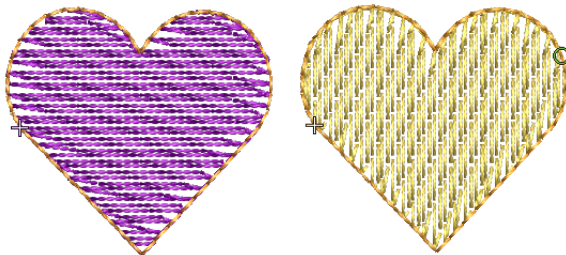
Note Whenever **Remove Stitch Angles** is applied to selected objects with turning stitch angles, the resultant object takes a single, nominal stitch angle.

- -

To set the nominal stitch angle

1 Select an closed object with or without turning stitches.
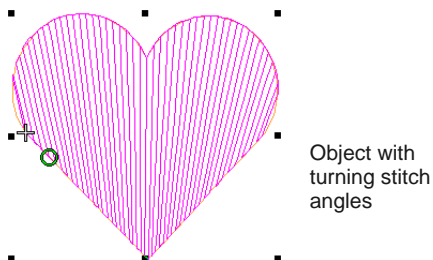
Object with turning stitch angles

2 If necessary, click the **Remove Stitch Angles** tool to return it to the current nominal stitch angle.

Nominal angle: 45°
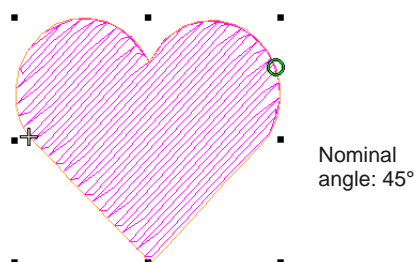
3 Right-click the **Add Stitch Angles** icon.

Alternatively, double-click or right-click the object itself.

The **Object Properties** dialog opens.

Enter required stitch angle

4 Select the **Stitch Angle** tab if not already selected.

5 In the **Angle** field, enter the required stitch angle.

Nominal angle: 0°   Nominal angle: 90°
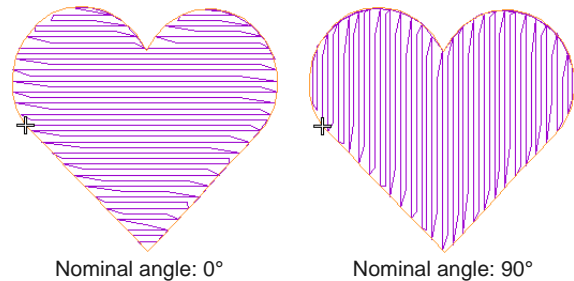
6 Click **Apply**.

Adding stitch angles

Use Stitch and Color Bar > Add Stitch Angles to add stitch angles to closed objects with or without holes.

Use Stitch and Color Bar > Remove Stitch Angles to remove stitch angles from closed objects with turning stitches.

The stitch angles of filled objects are all modified in the same way. Multiple stitch angles can be added or subtracted with the **Stitch Angles** tools.

Single stitch angle   Multiple stitch angles
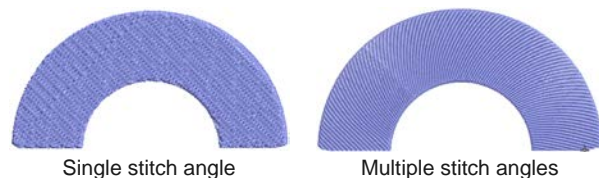
In BERNINA Embroidery Software, the **Add Stitch Angles** tool can be applied to closed objects with:

▶ turning stitch angles

▶ a single stitch angle, with or without hole(s).

Tip With the **Reshape** tool, you can add individual reshape nodes, modifying the shape **without** affecting the stitch angles. See Reshaping objects using reshape nodes for details.

- -

To add stitch angles

1 Select an closed object with or without turning stitches.
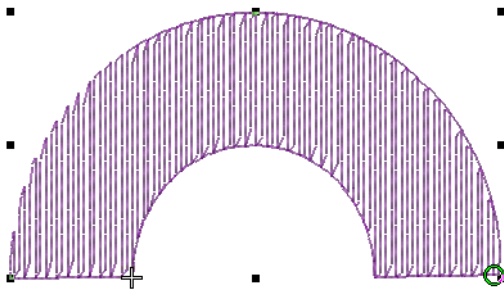
Note If a **Stitch Angles** tool is applied to an object with a **Star Fill** or **Wave Fill** effect, the effect is removed.

2 If necessary, click the **Remove Stitch Angles** tool to return it to the current nominal stitch angle.

3 Click the **Add Stitch Angles** icon.

You are prompted to enter stitch angles.
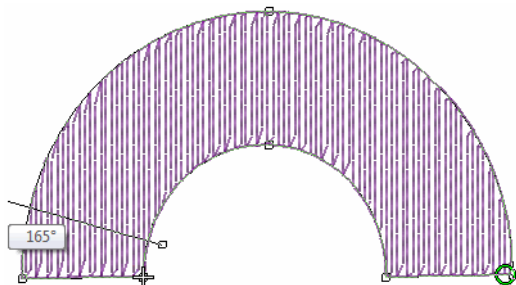
Tip If you press **Enter** without entering stitch angle lines after the **Add Stitch Angles** tool is activated, stitch angle line/s are automatically created. You either press **Enter** again to accept the angle lines or **Spacebar** to discard them so a single stitch angle is applied.

4 Digitize stitch angles – Points 1 and 2 – so that they intersect two sides of the object. Make sure that they do not intersect each other.
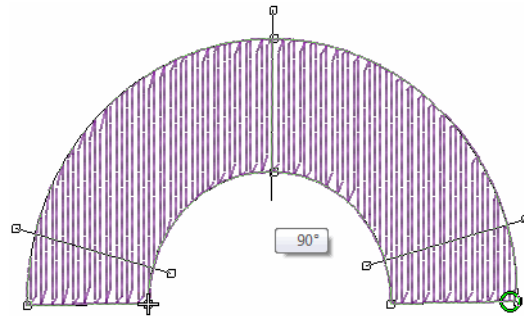
Caution New stitch lines should not intersect existing stitch lines or an error message displays. Press **Backspace** to delete.

5 Enter as many stitch angles as required to create a turning fill effect.

6 Press **Enter** to apply changes, then **Esc** to finish.

The object is re-stitched with the new angles.

Turning stitch angles applied
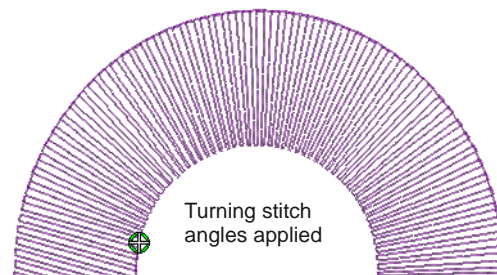
Tip Use the **Reshape Object** tool to adjust reshape nodes as required. See Adjusting stitch angles on-screen for details.
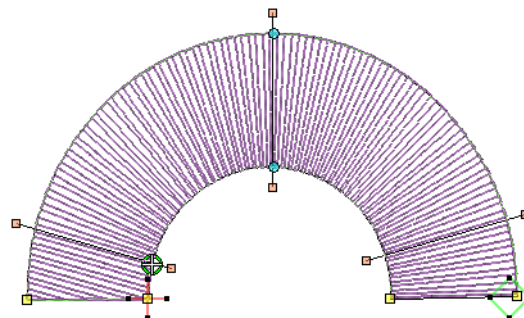
Adjusting stitch angles on-screen

Click Reshape Object (Edit toolbar) to adjust the multiple stitch angles of a selected object.

You can change stitch angles of filled objects using the **Reshape Object** tool.

The object is re-stitched with the new angles.
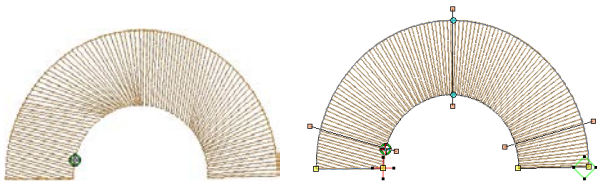
To adjust stitch angles on-screen

1 Select the filled object.

2 Click the **Reshape Object** icon.

Reshape nodes appear including stitch angle lines.
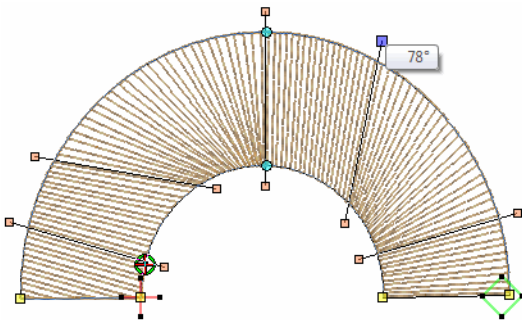
3 Select stitch angle nodes and press **Delete** to remove stitch angles.

Tip When you move the mouse pointer over the stitch angle point, a tooltip displays the stitch angle of the selected object.

4 Click and drag lines as required.

5 Press **Enter** to apply the changes, then **Esc** to finish.

Tip To set a precise stitch angle, use object properties. See Setting nominal stitch angles for details.

Adjusting entry and exit points

Click Reshape Object (Edit toolbar) to adjust the entry and exit points of a selected object.

The default **Closest Join** method automatically calculates the closest join between objects while digitizing – no need to think about object entry and exit points. The **Settings** > **Options > General** tab lets you deactivate the setting if so required. When deactivated, all newly digitized objects are joined by the **As Digitized** method. This means you are prompted to enter entry and exit points as you digitize. You can change these at any time with the **Reshape Object** tool. See also Setting other general options.

To adjust entry and exit points

1 Select the object.

2 Click the **Reshape Object** icon.

Reshape nodes appear, including entry and exit points.
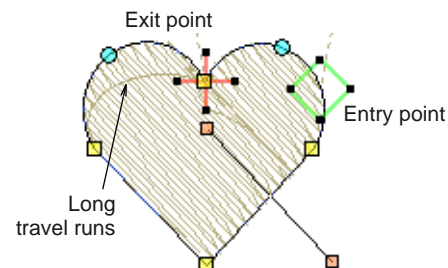
Note In Circle objects, only the entry point appears.

3 Select the entry or exit point as required, and drag it to a different position on the object outline.

4 Press **Enter** to apply the changes, then **Esc** to finish.
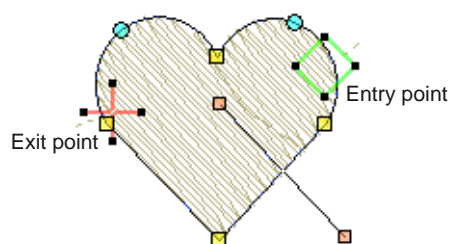
Note In Circle objects, the stitch angle is perpendicular to the line connecting the entry point to the circle center. Thus, changing the stitch entry point in a Circle object changes its stitch angle.
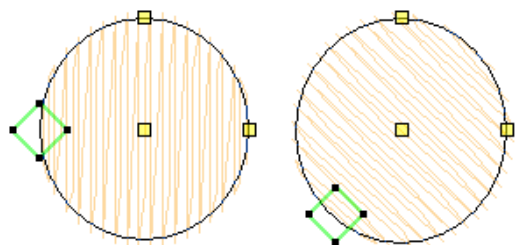
CHAPTER 19
EDITING STITCHES

With BERNINA Embroidery Software designs, stitches are automatically generated from design outlines and properties. This means you can scale, transform and reshape designs without affecting stitch density or quality. However, BERNINA Embroidery Software also lets you edit individual stitches. You simply select and manipulate them like any other object. For example, you can insert stitches in an object to fill gaps, or move and delete individual or clusters of selected stitches. You may need to do this, for example, when working with 'stitch files' which do not contain design outline data. Where possible, however, edit the object properties rather than individual stitches. See also Embroidery design formats.
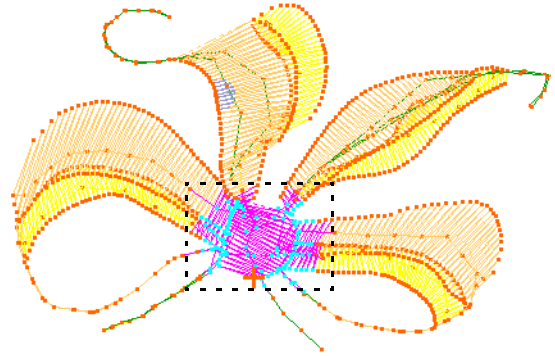
This section deals with selecting and editing stitches.

Selecting stitches

The **Stitch Edit** feature lets you select single stitches, several stitches, or a range of stitches by selecting their needle points, or dragging a bounding box around them. Selected stitches are highlighted in a different color.

Selecting stitches by needle point

Use Stitch Edit (Edit menu) to select individual stitches for editing.

You can select individual stitches in **Stitch Edit** mode by selecting their needle points.

To select stitches by needle point

1   Select **Edit > Stitch Edit**. Alternatively press **E**.

   Tip Zoom in and display the needle points for easier selection. See Zooming in and out and Viewing needle points.

2   Click a needle point.

The needle point and stitch colors change and the needle position marker moves to the selected stitch. All stitches after the needle position marker in the stitching sequence appear in black.

Selected stitch

Hold down Shift to select a range of stitches
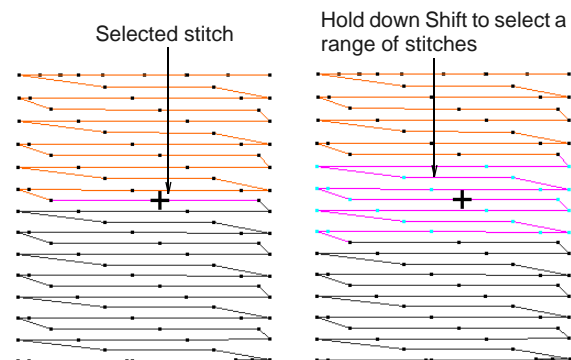
▸ To select a range, hold down **Shift** as you click.

▸ To select multiple items, hold down **Ctrl** as you click.

Selecting stitches with a bounding box

Use Stitch Edit (Edit menu) to select stitches with a bounding box.

You can quickly select all stitches in a group by dragging a bounding box around them.

To select stitches with a bounding box

1 Select **Edit > Stitch Edit**. Alternatively press **E**.

Tip Zoom in and display the needle points for easier selection. See Zooming in and out and Viewing needle points.

2 Drag a bounding box around the stitches you want to select.

Stitches are selected when you release the mouse button.

Bounding box   Stitches selected
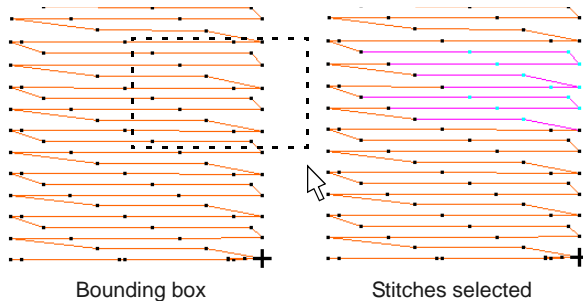
Inserting stitches

Use Stitch Edit (Edit menu) to insert stitches in an object.

You can insert stitches in an object to fill gaps. Inserted stitches are considered part of the object rather than independent objects. They will, however, be lost if the object's stitches are regenerated. Where possible, edit the object properties rather than individual stitches. For example, to increase stitch density, reduce spacing rather than insert stitches.

To insert stitches

1 Select **Edit > Stitch Edit**. Alternatively press **E**.

Tip Zoom in and display the needle points for easier selection. See Zooming in and out and Viewing needle points.

2 Select a needlepoint.
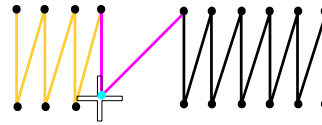
The needle point and stitch colors change and the needle position marker moves to the selected stitch. All stitches after the needle position marker in the stitching sequence appear in black.

3 Move the mouse pointer where you want to insert the new stitch, and right-click.

Right-click to insert new stitch

New stitch inserted and selected
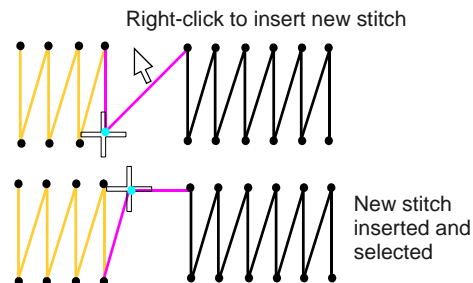
4 Move the mouse to where you want to insert the next stitch, and right-click.

Right-click to insert new stitch

New stitch inserted and selected
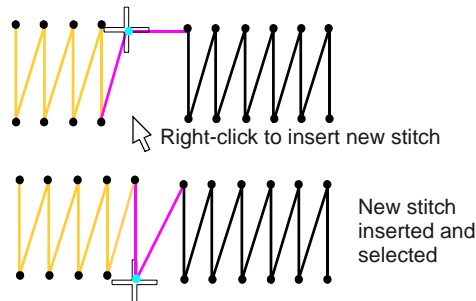
5 Continue right-clicking as required.

Moving stitches

Use Stitch Edit (Edit menu) to select individual stitches for moving.

You can move individual or groups of selected stitches.

Caution If an object's stitches are regenerated for any reason, all stitch editing functions are lost. Where possible, reshape the object rather than move individual stitches. See Reshaping & Editing Objects for details.

To move stitches

1 Select **Edit > Stitch Edit**. Alternatively press **E**.

Tip Zoom in and display the needle points for easier selection. See Zooming in and out and Viewing needle points.

2 Select stitches and drag them to a new position.

The stitch shadow outline shows the new position.

Drag stitch to new position

Shadow outline
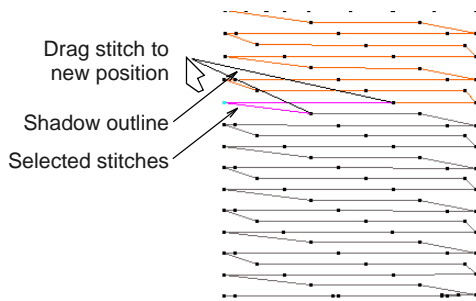
Selected stitches

3 Press **Enter**.
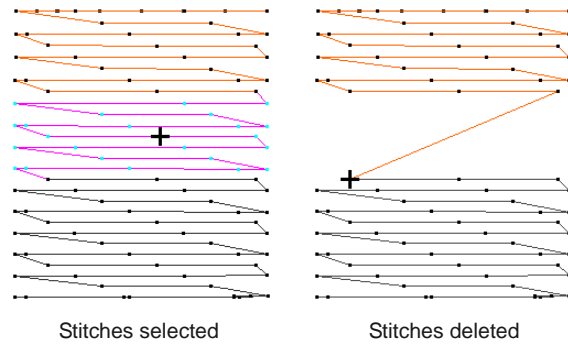
Deleting stitches

Use Stitch Edit (Edit menu) to select individual stitches for deletion.

You can delete individual or groups of selected stitches.

Caution If an object's stitches are regenerated for any reason, all stitch editing functions are lost. Where possible, edit the object properties rather than individual stitches. See Adjusting Satin fill spacing and Preserving long stitches for details.

To delete stitches

1 Select **Edit > Stitch Edit**. Alternatively press **E**.

Tip Zoom in and display the needle points for easier selection. See Zooming in and out and Viewing needle points.

2 Select a stitch or stitches.

3 Press **Delete**.

Stitches selected   Stitches deleted

PART V

ADVANCED DIGITIZING

BERNINA Embroidery Software provides specialized productivity features as well as special effects and digitizing techniques.

Specialized digitizing techniques

This section covers creating freehand embroidery as well as reinforcing outlines with Double Run and Blackwork Run techniques. It also discusses cutting holes and removing overlaps, as well as filling holes in objects and creating automatic outlines and borders. It also describes how to create buttonholes simply and quickly. See Specialized Digitizing Techniques for details.

Artistic stitch effects

This section describes how to apply artistic stitch types and effects to embroidery objects, and how to adjust their settings to get the results you want. See Artistic Stitch Effects for details.

Pattern runs and fills

This section describes how to insert patterns into your design, and how to adjust their settings to get the results you want. It also explains how to create your own patterns and pattern sets as well as how to create stitch patterns with carving stamps. See Patterned Stamps, Runs & Fills for details.

Craft stitch borders and fills

This section explains how to apply the various craft stitch types to outlines and fills, as well as change stitch settings to obtain the best results. See Craft Stitch Borders and Fills for details.

Digitizing for appliqué

This section covers creating closed-object appliqué as well as partial cover appliqué. It also discusses creating open-object appliqué. See Digitizing for Appliqué for details.

CHAPTER 20
SPECIALIZED DIGITIZING TECHNIQUES

BERNINA Embroidery Software provides specialized digitizing features to create special effects as well as save time while you digitize. There are tools for creating designs with a hand-drawn appearance, something which is difficult to achieve through conventional digitizing methods. There are tools for reinforcing outlines, cutting holes in objects, removing underlying stitching, as well as filling holes. Quickly create outline stitching around selected objects or entire designs with Single, Triple or Satin Line. There are also specialized tools for quickly and easily creating buttonholes.

This section covers creating freehand embroidery as well as reinforcing outlines with Double Run and Blackwork Run techniques. It also discusses cutting holes and removing overlaps, as well as filling holes in objects and creating automatic outlines and borders. It also describes how to create buttonholes simply and quickly.

Creating freehand embroidery

The **Freehand Embroidery** feature provides functionality similar to CorelDRAW® **Freehand** and **Polyline** tools. **Freehand Embroidery** has many benefits. It lets you easily and fluidly create designs with a hand-drawn appearance, something which is difficult to achieve through conventional digitizing methods. The aim is to mimic designs formed on an embroidery machine by freehand motion with the fabric secured in an embroidery hoop, allowing the needle to 'draw' on the fabric surface.

Other techniques include stitching on top of photographic images or detailed line drawings. For example, use the tools to manually trace a color photo-stitch design. This technique requires accuracy and control of corners, similar to the CorelDRAW® **Polyline** tool.
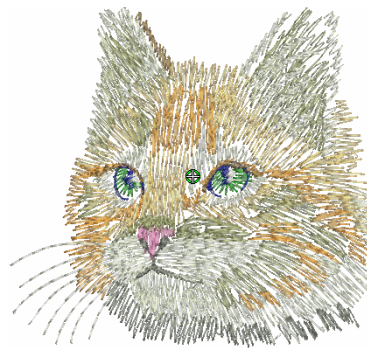
Alternatively, designs resembling pencil or charcoal sketches can be quickly digitized. Use the tools to create 'doodle' type drawing effects without following

detailed artwork – for example, adding to a basic clipart design or decorative text and so on.

Creating freehand lines

	Use Digitize > Freehand Embroidery - Open Object to draw embroidery outlines directly on screen and view a stitch simulation as they are drawn.
	Use Digitize > Freehand Embroidery - Closed Object to draw freehand filled embroidery objects on screen.

Accessed from the **Digitize** toolbar, the freehand feature is deployed in two forms: 'Open Object' and 'Closed Object'. As with other digitizing tools, freehand tools can be used in conjunction with all stitch types currently available. With these tools, however, you draw objects directly on screen and, in the case of outline objects, view a stitch simulation as you draw. It is thus possible to produce artistic effects similar to free-motion machine embroidery or 'thread painting'. Use the feature to preview designs you have in mind before attempting to sew them out manually. Alternatively, once designed on screen, sew them out automatically.

Note The **Freehand Embroidery** tools can be operated with a mouse or WACOM pen.

To create freehand lines

▸ To create open objects, select the **Freehand Embroidery - Open Object** tool.

The current outline stitch type is selected. BERNINA Embroidery Software prompts you as follows:

  ▸ Click and drag to draw; and release to finish

BERNINA Embroidery Software displays the stitches as the mouse drags.
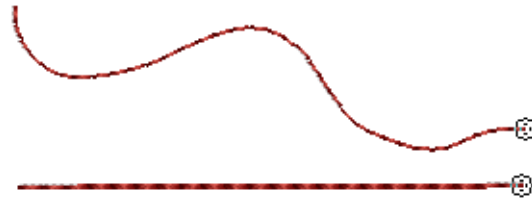
▸ To create closed objects, select the **Freehand Embroidery - Closed Object** tool.

  ▸ If **Outline** is selected in the **Stitch and Color Bar**, BERNINA Embroidery Software displays the stitches after each click or as the mouse drags.

  ▸ If **Fill** is selected, a wireframe outline is displayed after each click or as the mouse drags.
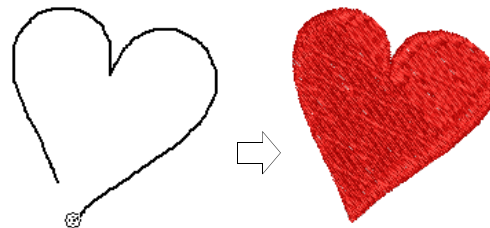
▸ Release the mouse button.

The last point of the curve is joined to the mouse position. BERNINA Embroidery Software closes and smooths the object outline and, in the case of a fill object, immediately displays the fill stitches.

Adjusting freehand line smoothness

	Use Digitize > Freehand Embroidery - Open Object to draw embroidery outlines directly on screen and view a stitch simulation as they are drawn.
	Use Digitize > Freehand Embroidery - Closed Object to draw freehand filled embroidery objects on screen.

The **Freehand Embroidery** tools have a special cursor. This is designed to provide a spacing guide as you use the tools. The number and spacing of the concentric circles is controlled by the **Freehand**

Embroidery Smoothing toolbar. This toolbar can be docked or floating.

- -

To adjust freehand line smoothness

▶ Create a freehand design using outline and/or filled objects. See Creating freehand lines for details.
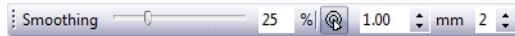
▶ Adjust the 'smoothness' of your freehand lines by means of the **Smoothing** controls.

The toolbar contains a **Smoothing** control which lets you specify, as a percentage, how closely the smoothed outline follows the original. By adjusting the percentage, you increase or decrease the number of control points BERNINA Embroidery Software uses to define an embroidery shape.

No smoothing

With smoothing
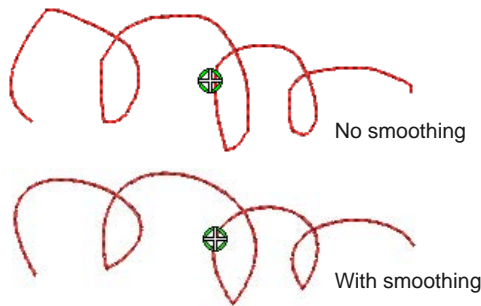
▶ Toggle display of the freehand cursor guide as reuqired:

Tool	Note
	Use Show Guide to toggle use of the freehand digitizing guide cursor. This tool provides more precise control over 'freehand' onscreen drawing than the default pointer cursor.
	Use the Guide Inner Circle Radius control to define the size of the center circle of the freehand digitizing guide.
	Use the Number of Guide Circles control to define how many offset circles, as multiples of the inner circle radius, comprise the freehand cursor – e.g. if the inner circle radius is 2mm, each additional guide circle is offset by 2mm.

▶ You can view and edit the control points generated by **Freehand Embroidery** tools in **Reshape** mode.

No smoothing

With smoothing
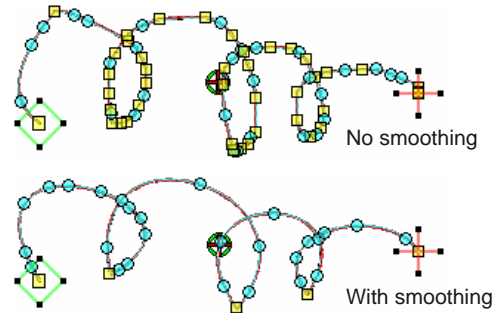
▶ If you want to erase a portion of a line, press and hold the **Shift** key while dragging backward over the line before releasing the mouse. On releasing the **Shift** key, the edited path is joined with a straight line to the mouse position.

Hold the Shift key
and drag back
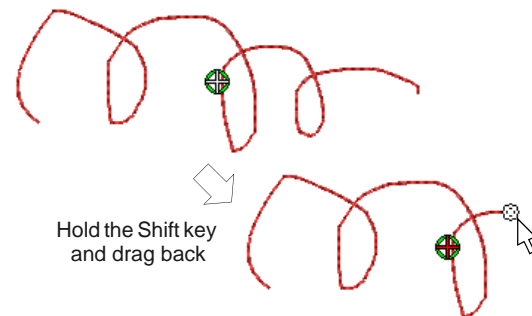
▶ Alternatively, press the **Backspace** key. The last point digitized is removed.

▶ Release the mouse to finish the outline at the last point digitized. Or press **Esc** to cancel input of the object.

Note Objects created using the **Freehand Embroidery** tools can be reshaped in the same way as objects created via conventional methods by selecting the object and clicking the **Reshape Object** tool in the **Edit** toolbar.

Reinforcing outlines

- -

Use the **Double Run** feature to reinforce outlines. Use **Blackwork Run** to join selected outlines to form a single grouped, reinforced outline, correctly sequenced for efficient stitchout.

Reinforcing outlines with Double Run

 Use Double Run (Edit toolbar) to reinforce outlines, stitching it in the opposite direction.

Use the **Double Run** feature to reinforce outlines. Double Run stitches in reverse direction to the original. It is typically used to make run stitch outlines thicker without creating unwanted connecting stitches.
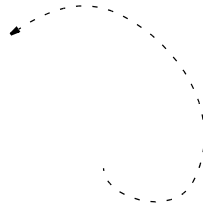
To reinforce outlines with Double Run

1 Select the object/s to reinforce an outline.

2 Click the **Double Run** icon, or press **Ctrl+B**.

The object is duplicated with the stitching reversed, and placed on top of the original. It is the same color as the original and is positioned after it in the stitching sequence.

3 Check that the object has been duplicated by using one of the following methods:

▸ Check the stitch count in the **Status Bar**.

▸ Use **Slow Redraw**. See Simulating design stitchouts for details.

▸ Travel through the stitches. See Viewing the stitching sequence for details.

Reinforcing outlines with Blackwork Run

 Use Blackwork Run (Craft Stitch toolbar) to automatically sequence selected embroidery objects.

Use **Blackwork Run** to join selected outlines to form a single grouped, reinforced outline, correctly sequenced for efficient stitchout. The resulting Blackwork Run object always follows the color of the first object in the sequence. See also Creating backstitch outlines.
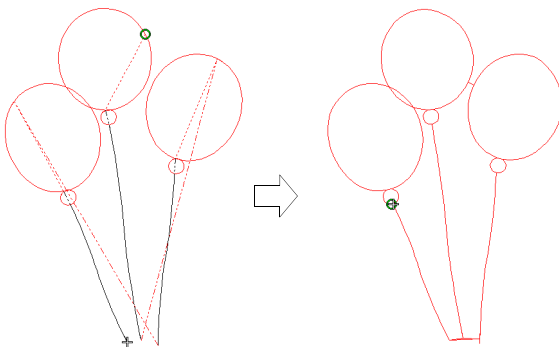
Blackwork Run works with embroidery outlines consisting of one or a combination of Open Object, Closed Object, Circle/Oval, or Rectangle object types.

All outline stitches can be used except for **Pattern Run**, **Blackwork Border** or **Candlewicking Border**.
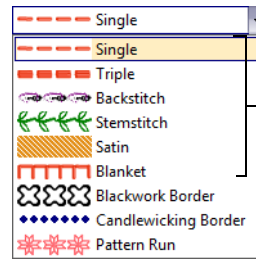
Use any of these outline stitches

 Note The **Ungroup** command is not available when a Blackwork Run object is selected. If you wish to access component objects, use the **Break Apart** tool. See Splitting into component objects for details.

To reinforce outlines with Blackwork Run

1 Select outline objects.

Long connectors between separate objects
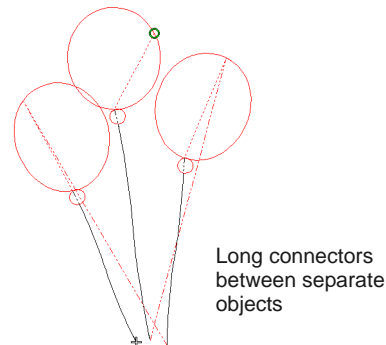
 Note The function is only available if more than one object of suitable type is selected. Any which cannot be automatically sequenced are excluded from the operation.

2 Click the **Blackwork Run** icon.

3 Digitize the entry point or press **Enter** to accept the default.

Stitches are regenerated. Component objects are grouped and take the color of the first object.

Objects resequenced, connectors minimized
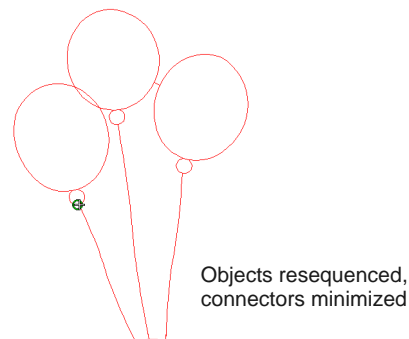
Tip Travel through the sequenced object to check stitching. See Viewing the stitching sequence for details.

4 Change the thread color of the entire sequenced object as required. See Changing thread colors for details.

5 Reshape the sequenced object as required.

Sequenced objects can be reshaped as a whole. There is only one entry and one exit point, but all component objects have individual reshape points. See Reshaping objects using reshape nodes for details.

Note You cannot see a big difference on screen after applying **Blackwork Run** as the reinforced outlines cover each other. To check that a Blackwork Run object, travel through the stitches. See Traveling by stitches for details.

Cutting holes and removing overlaps

When two objects overlap each other, two layers of stitching will be applied to the same area. The **Remove Overlay Stitching** feature allows you to maintain the shapes but remove one layer of stitching. Alternatively you can use fill or lettering objects as cutters to cut holes.

Cutting holes in objects

> Use Add Holes (Edit toolbar) to cut holes in objects.

With BERNINA Embroidery Software you can cut holes in selected closed objects with a single stitch angle using the **Add Holes** tool.

Note **Add Holes** is not designed to work with the block digitizing feature or the **Stitch Angle** tool. It must be used with objects created with the **Closed Object** tool.

To cut holes in objects

1 Select the Closed Object or Rectangle object to modify.

2 Click the **Add Holes** icon.

Reference points display around the object outline.

Tip Follow the instructions in the prompt bar to help digitize additional boundaries.

3 Digitize additional boundaries for the object. Press **Enter** after each boundary.
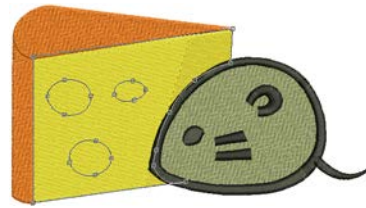
4 Press **Enter**.

Note To remove boundaries from a closed object, click the **Reshape Object** icon to display the object's reshape nodes. Select the reshape nodes on the unwanted boundary, and press **Delete**.

Removing underlying stitching

> Use Remove Overlaps (Edit toolbar) to remove underlying layers of stitching in overlapping objects.

Use the **Remove Overlaps** tool to remove underlying layers of stitching. This helps to reduce the stitch count and prevent a build-up of stitches where they are not needed. A cutting overlap is preserved between 'cut' objects and their 'cutters' in order to

prevent gaps forming. This can be adjusted for different fabric types.
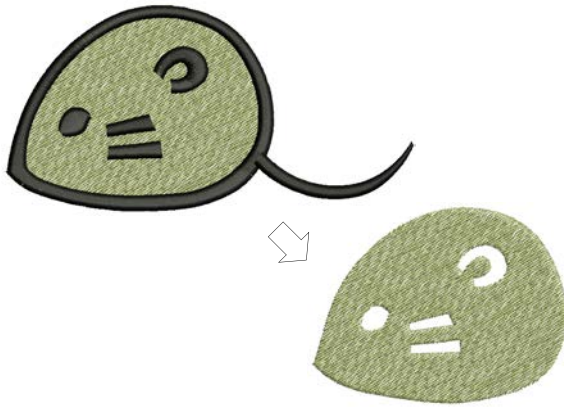
Valid cutters

Various embroidery objects can be used as cutters if not too small and with a stitch spacing of 1.00 mm or less. Examples include:

▶ Objects with Satin, Step or Fancy Fill fills
▶ Satin outlines
▶ Auto Appliqué objects with Satin cover stitching
▶ Lettering objects.

'Cuttable' objects

'Cuttable' objects include:

▶ Filled objects
▶ Auto Appliqué objects
▶ Outline objects.

Lettering and Buttonhole objects cannot be cut in **Remove Overlaps** operations although they can both be used as cutters. See also Creating buttonholes.

Stitches underlying see-through fills are not removed. These include fills such as Pattern Fill, Blackwork Fill, Candlewicking Fill, Lacework Fill, Gradient Fill, or stitches with more than 1.00 mm stitch spacing. Also any stitches underlying narrow sections of objects are not removed.

To remove underlying stitching

1 Select one or more 'cutters'.
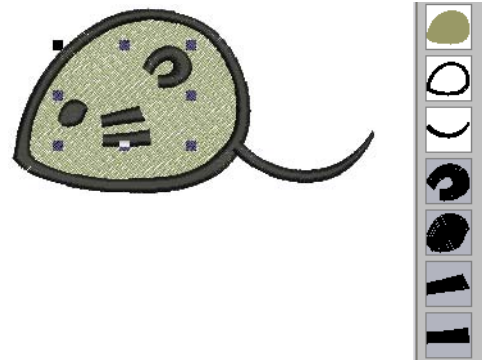
2 Click the **Remove Overlaps** icon or select **Arrange > Remove Overlaps**.

Stitching overlaps are removed according to the current setting. To change the setting, see Setting Remove Overlaps options.

Overlaps removed
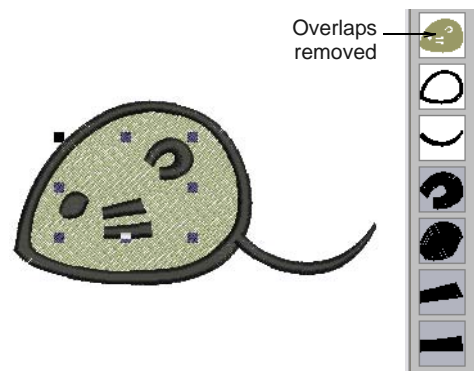
Note Multiple cutters can be simultaneously selected as part of a single cutting operation.
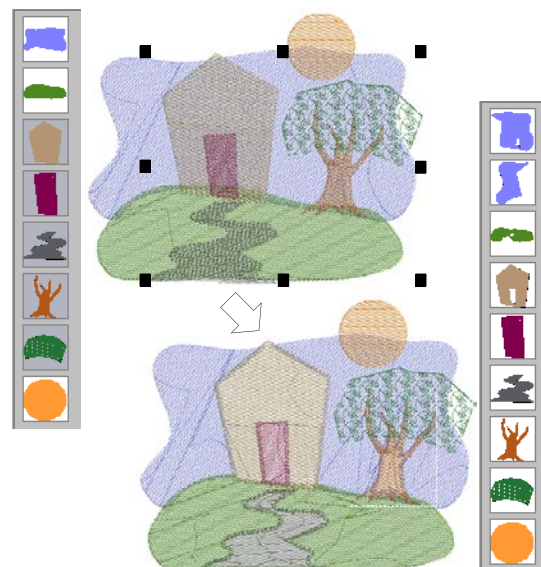
In the example above, note that:

▸ The sky object has been broken in two.

▸ The door and path have caused the removal of stitches in the house and hill objects.

▸ The tree stem and sky underlying the leaf object are preserved since Pattern Fill is not a valid cutter.

▸ The section of sky where the orange moon overlaps remains unchanged since the moon is not selected at the start of the operation.

Filling holes in objects

> Use Fill Holes (Edit toolbar) to fill holes in single objects.

The **Fill Holes** tool fills holes in single Closed Object or Rectangular objects containing holes. These can be removed altogether or new objects created.

To fill holes in objects

1 Select a source object.
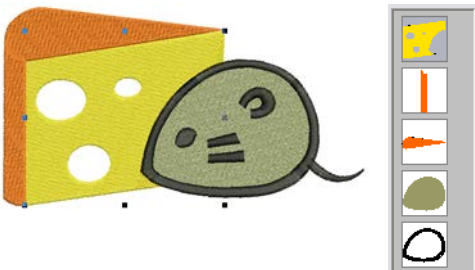
2 To use the default settings, simply click the **Fill Holes** icon.

3 To control overlaps or remove holes altogether, select **Arrange > Fill Holes**.

The **Fill Holes** dialog opens.
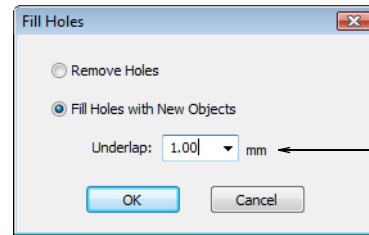
Adjust underlap value as required

4 Choose to remove holes altogether or create new objects.

5 If you choose to create new objects, adjust the **Underlap** value as required.

Underlap: -1.00
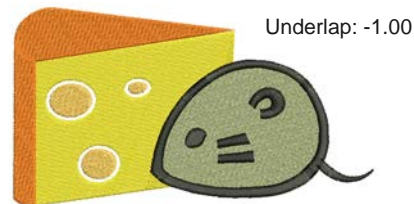
▸ To cover holes exactly, accept the default value of **0.00**.

▸ To overlap the filled holes and the original object, enter a positive offset – e.g. **1.00**. Overlapping the objects prevents gaps appearing.

▸ To leave a gap between the filled holes and the original object, enter a negative offset – e.g. **-1.00**.

6 Click **OK**.
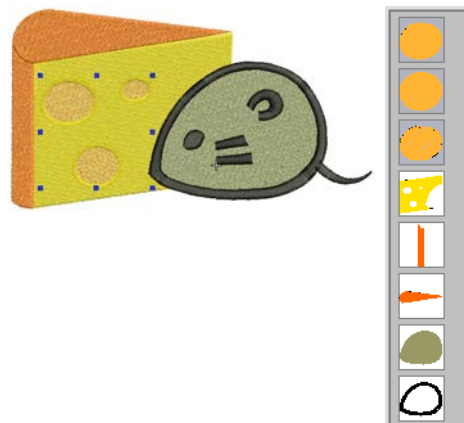
All newly created objects are filled with the current fill stitch settings, stitch angle and thread color. Each new object is an independent object and is placed immediately before the source object in the stitch sequence.

Creating outlines and borders

Use Digitize > Outline Design to stitch around groups of objects with Single, Triple or Satin Line.

Outline Design allows you to quickly create outline stitching around selected objects or entire designs with **Single**, **Triple** or **Satin Line**. See also Creating automatic outlines and borders.
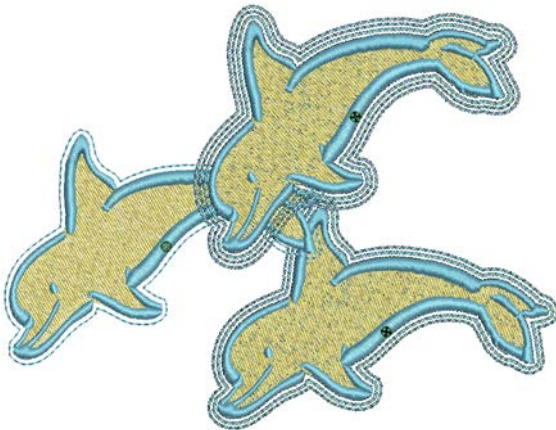
To create outlines and borders

1 Select the embroidery object/s or design to outline.
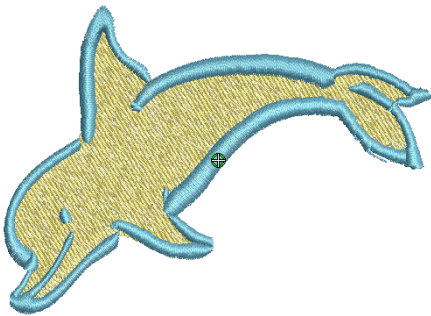
2 Click the **Outline Design** icon.

The **Outline Design** dialog is displayed.
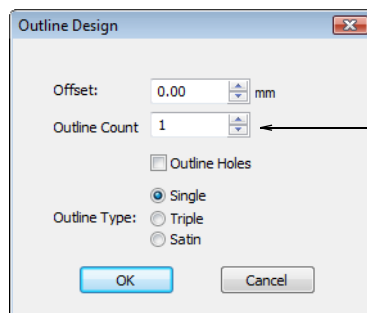
Set number of outlines

3 Adjust the settings as required:

Field	Description
Offset	Set an outline offset in mm. This may be zero or even a negative value.
Outline Count	Specify multiple outlines – up to 99.
Outline Holes	Option to exclude or include outlines for any holes in the selected object.
Outline Type	Choice of outline object types: Single, Triple or Satin Line.

4 Click **OK** to apply settings.

The design outline is stitched in the current palette color using current properties. The outline is put last if the whole design is selected, or after a design part, in cases where the selected part of the design is separated by 'whitespace' from the rest of the design.
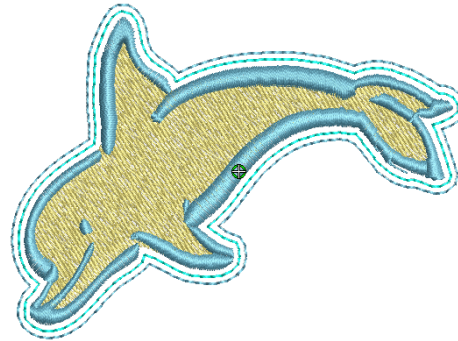
Creating buttonholes

Select Add Buttonhole (Arrange menu) to add buttonholes to your design.

BERNINA Embroidery Software allows you to insert preset buttonholes. You can specify their size and merge them into a design. Buttonholes are usually formed with Satin column stitches bordering a slit that is approximately the length of the button diameter. The satin stitch border protects the slit from

fraying. The buttonhole consists of a bead of satin stitches with a bar tack.

- Bar tack top
- Buttonhole
- Bead
- Bar tack end
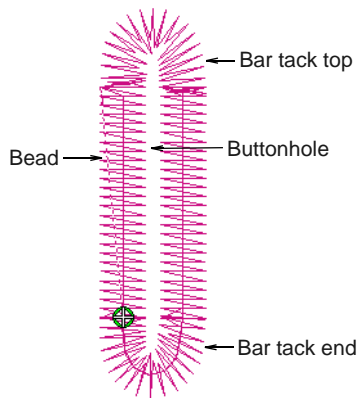
Adding buttonholes

Add buttonholes to a design.

- -

To add buttonholes

1 Open or create a design requiring buttonholes.

2 Select **Arrange > Add Buttonhole**.

The current buttonhole outline appears attached to the mouse pointer.
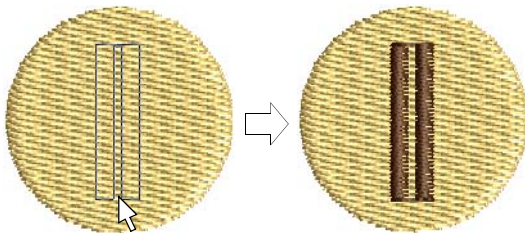
3 Click to place the buttonhole.

4 Repeat to add more buttonholes.

5 Press **Esc** to finish.

It is good practice to remove areas of stitching which underlie the buttonhole object. See Removing underlying stitching for details.

- Underlying stitching removed
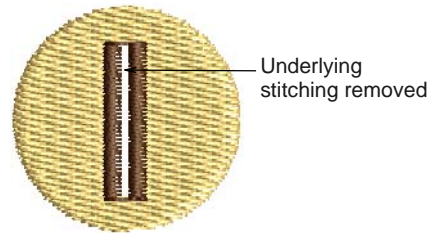
Tip If a buttonhole has been placed over other objects, some of the underlying stitches could unravel after the slit has been cut. To prevent this, objects under the buttonhole can be reshaped so that their boundaries line up along buttonhole slit. See Reshaping & Editing Objects for details.

Creating a line of buttonholes

Add a line of evenly spaced buttonholes to a design with the **Add Buttonholes** command.

- -
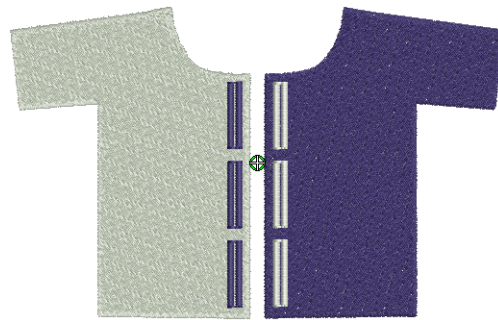
To create a line of buttonholes

1 Open or create a design requiring buttonholes.

2 Select **Arrange > Add Buttonholes**.

The **Buttonholes Settings** dialog opens.

- Enter number of buttonholes required
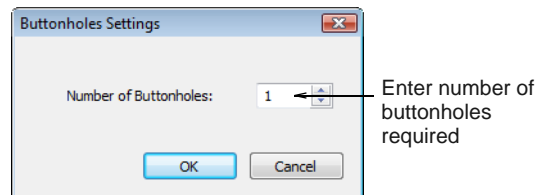
3 Enter the number of the buttonholes your design requires and click **OK**.

4 Click where you want to put the first buttonhole in your design.

5 Drag the line to where you want to put the last buttonhole.

Measure tooltip → 86.5 0°

Drag buttonhole line
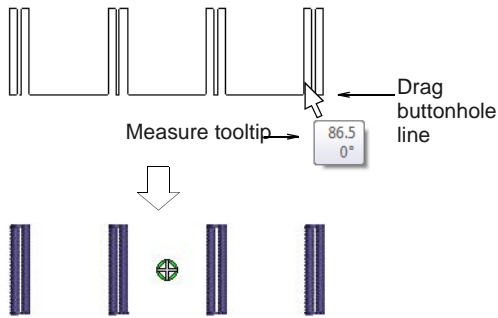
6 Use the measure tooltip as a guide and click to complete.

Changing buttonhole types

> Use Object Properties (General toolbar) to change buttonhole types.

Select the buttonhole type before or after digitizing. If you use buttonholes without selecting a buttonhole type, the default will be used.

To change a buttonhole type

1 Click the **Object Properties** icon and select the **Buttonhole** tab.

Select button hole type
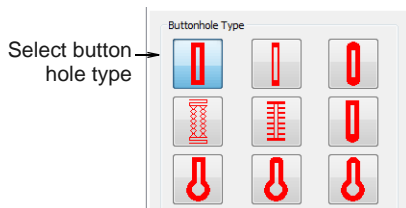
2 Select a buttonhole type.

3 Click **Apply**.

> **Tip** Double-click or right-click the buttonhole object to change the buttonhole type for that object only.

Adjusting buttonhole length and density

> Use Object Properties (General toolbar) to change buttonhole length and density.

Change the buttonhole length by changing the length of the slit. Use the **Object Properties** dialog to enter an exact length or use the **Reshape Object** tool.

> **Tip** You can also adjust the buttonhole length using the **Reshape Object** tool.

Increase or decrease the bead stitch density by decreasing or increasing the **Bead Stitch Spacing**.

To adjust buttonhole length and density

1 Click the **Object Properties** icon and select the **Buttonhole** tab.

> **Tip** Double-click or right-click the buttonhole object to change the stitch values for that object only.

Adjust button hole values
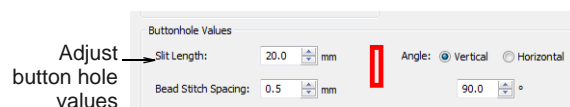
2 In the **Slit Length** field, enter a new value.

Slit length: 20mm

Slit length: 15mm

Slit length: 10mm
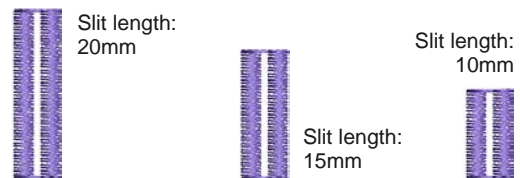
3 In the **Bead Stitch Spacing** field, enter a new value.

Bead Stitch Spacing: 0.3mm

Bead Stitch Spacing: 0.4mm

Bead Stitch Spacing: 1.0mm
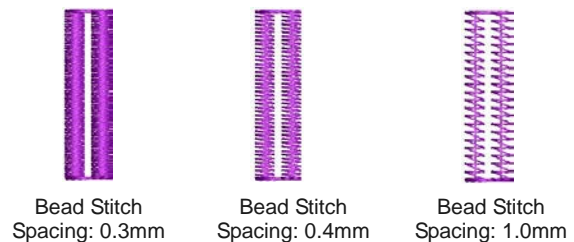
4 Click **Apply**.

Adjusting buttonhole orientation

You can rotate buttonhole objects just like any other embroidery objects by manipulating control points on-screen or via their object properties. Any of the following techniques will work:

▸ **Select Object** tool to rotate one or more buttonholes together. See Rotating objects for details.

Multiple buttonholes rotated
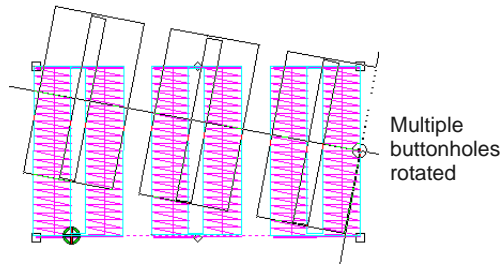
▸ **Reshape Object** tool to rotate single buttonholes. See Reshaping objects for details.

Buttonhole rotated and resized
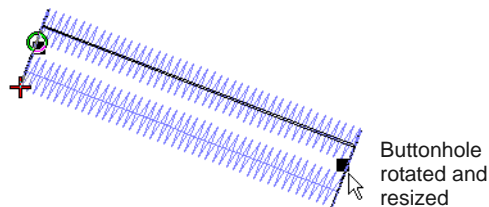
▸ **Rotate 45° CCW/CW** tool to rotate one or more buttonholes. See Rotating objects using Rotate CCW/CW for details.

▸ **Mirror Vertical** and **Mirror Horizontal** tools. See Mirroring objects for details.

▸ **Object Properties** dialog to rotate one or more buttonholes individually. See Rotating objects using object properties for details.

CHAPTER 21

ARTISTIC STITCH EFFECTS

BERNINA Embroidery Software provides many artistic effects and stitch types to create textured and patterned fill stitching.

Contour stitch provides back and forth stitching with a fixed number of lines with variable spacing depending on the object outline. Fancy Fill is a decorative fill stitch, based on Step Fill, in which the needle penetrations form a tiled pattern. Cross Stitch fill is something like Pattern Fill but it is generated differently and uses travel runs under and along the cross stitching.

Use Textured Edge to add rough edges to objects, create shading effects, or imitate fur or other fluffy textures in your design.

Wave Effect lets you contour fill stitches along a digitized guideline. Stitches follow the line but maintain uniform density and needle penetration patterns. Star Fill generates radial turning stitching in several stitch types such as Satin and Tatami stitch. Gradient Fill varies stitch spacing between dense and open fill, producing shading effects which are difficult to achieve manually. Apply Travel on Edges effect to force underlying travel runs to the edges of an object so that they can't be seen through open stitching.

Use the Color Blending effect to create different shading, perspective, three-dimensional and color effects by blending two colored layers in an embroidery object. The Morphing feature allows you to transform object outlines and stitches in a variety of novel and interesting ways.

This section describes how to apply artistic stitch types and effects to embroidery objects, and how to adjust their settings to get the results you want.

Creating contour fills

Use Fill (Stitch and Color Bar) to select a fill stitch type before or after digitizing.

Contour stitch provides back and forth stitching with a fixed number of lines with variable spacing depending on the object outline. It can only be applied to block digitizing objects, including **Circle** objects. Closed objects modified with the **Add Stitch**

Angles tool cannot be used with **Contour** stitch. See also Creating ripple fills.
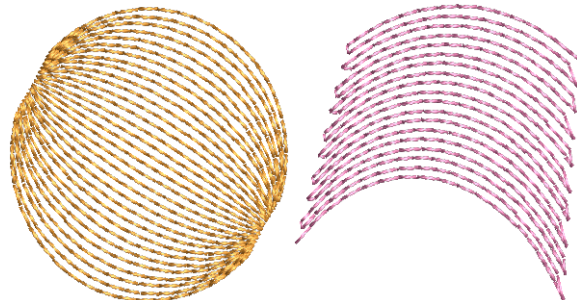
Contour stitch is accessed from the stitch list in the **Stitch and Color Bar** and the **Fill Stitch** object properties tab.

To create a contour fill

1 Click the **Fill** icon and choose **Contour** from the dropdown menu.
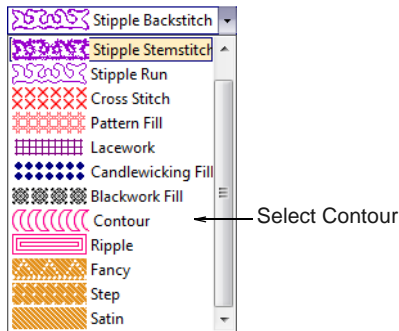
Select Contour

Tip You can digitize the shape before or after selecting the fill.

2 Create a block digitizing object and select. See Digitizing Methods for details.

The current **Contour** settings are applied to the selected object.
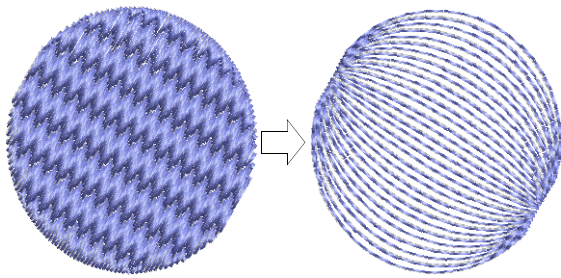
Note Stitch angle has no effect on the pattern layout.

3 To change settings, double-click or right-click the object.

The **Object Properties > Fill Stitch** dialog opens.

Adjust stitch settings as desired
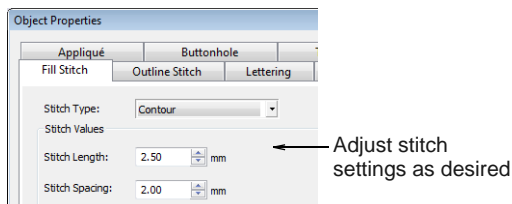
4 Adjust contour **Stitch Values** as desired:

▸ Adjust **Stitch Length** for smoother or sharper curves.
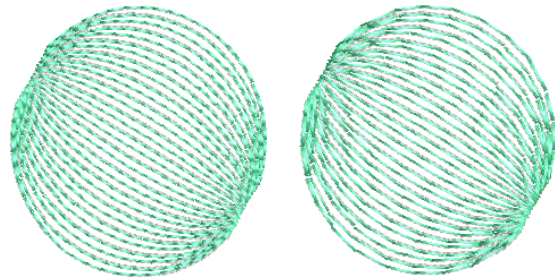
Stitch length: smaller   Stitch length: larger

▸ Adjust **Stitch Spacing** for denser or more open stitching.
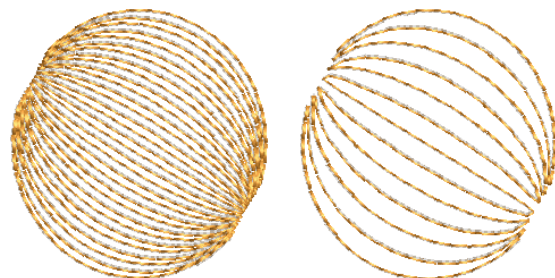
Stitch spacing: smaller   Stitch spacing: larger

5 Click **Apply** to preview the effect or **OK** to finish and close.

The selected settings are applied to the object.

Creating fancy fills

Use Fill (Stitch and Color Bar) to select a fill stitch type before or after digitizing.

Fancy Fill is a decorative fill stitch, based on Step Fill, in which the needle penetrations form a tiled pattern. Use Fancy Fill to fill wide and large areas with unique artistic effects while keeping the appearance of a solid field of stitching. You can select patterns, adjust settings, or change layouts at any time before or after digitizing. See also Applying Step patterns.
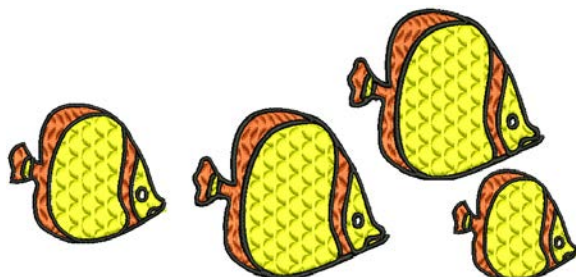
Tip You can also create artistic stitch effects with craft stitch and pattern fills. See Creating craft stitch fills and Creating pattern fills.

Tip The **Carving Stamp** feature allows you to define a pattern of needle penetrations using a 'carving stamp' as a template. See Creating stitch patterns with carving stamps for details.

- -

To create a fancy fill

1 Click the **Fill** icon and choose **Fancy** from the dropdown menu.
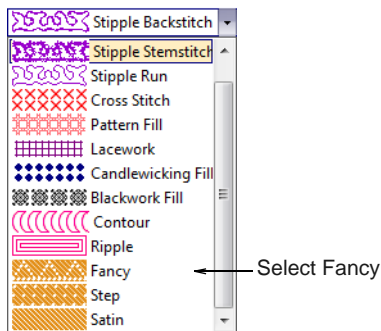
Select Fancy

Tip You can digitize the shape before or after selecting the fill.

2 Create closed-object/s – circle or square – and select. See Digitizing Methods for details.

The current **Fancy Fill** settings are applied to the selected object.

Note Stitch angle has no effect on the pattern layout.

3 To change settings, double-click or right-click the object/s.

The **Object Properties > Fill Stitch** dialog opens.

Click to select pattern
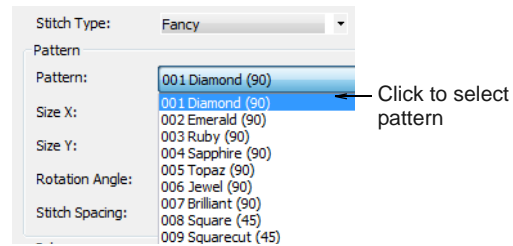
4 Select a pattern from the dropdown list. See also Fancy Fill Samples.

The selected pattern is displayed in the preview panel.

Preview displayed

Choose layout option
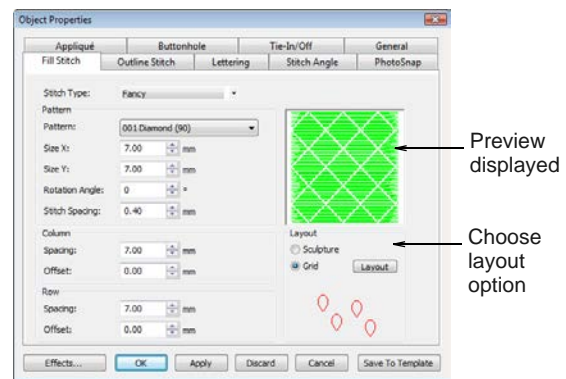
5 Change pattern layout by adjusting settings in the dialog or on-screen via the **Layout** button.

- ▶ By default, **Grid** is selected. Techniques for adjusting pattern layout are the same as for pattern fills. See Laying out pattern fills on-screen for details.

- ▶ For turning patterns, choose **Sculpture**. See also Creating Sculptured Fancy fills.
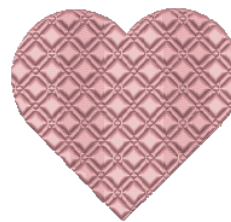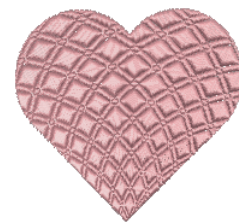
Grid layout   Sculpture layout

6 Click **Apply** to preview the effect or **OK** to finish and close.

The stitch is regenerated with the adjusted settings.

Tip **Wave Effect** lets you contour fill stitches along a digitized guideline. Wave Effect can be

applied to Fancy Fill objects. However, you need to first apply the effect to a Step fill before converting to a Fancy Fill. See also Creating wave effects.
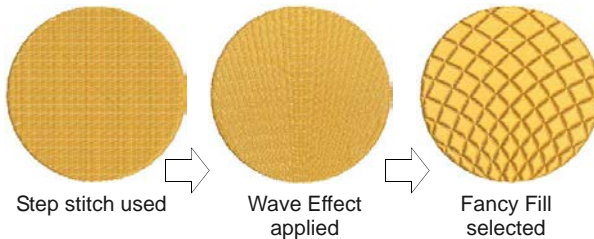
Step stitch used → Wave Effect applied → Fancy Fill selected

Creating cross stitch fills

Fill Use Fill (Stitch and Color Bar) to select a fill stitch type before or after digitizing.

Cross Stitch fill is a stitch type in its own right but does not replace the BERNINA Cross Stitch application available from the **Digitize** toolbar. It is something like **Pattern Fill** but it is generated differently and uses travel runs under and along the cross stitching. Crosses are horizontal to suit a global or standard grid for the whole design. See also Creating pattern fills.
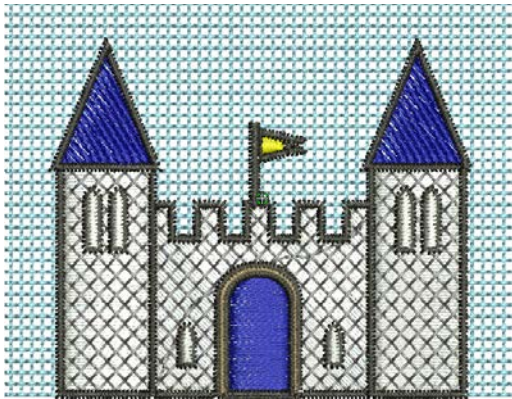
Tip You can also create artistic stitch effects with craft stitch and pattern fills. See Creating craft stitch fills and Creating pattern fills.

To create a cross stitch fill

1 Click the **Fill** icon and choose **Cross Stitch** from the dropdown menu.
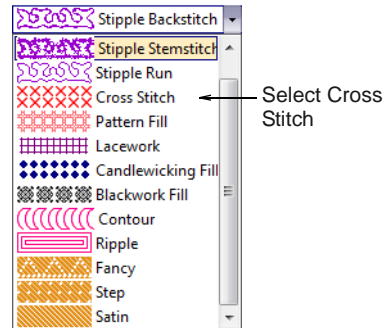
Select Cross Stitch

Tip You can digitize the shape before or after selecting the fill.

2 Create closed-object/s – circle or square – and select. See Digitizing Methods for details.

The current **Cross Stitch** settings are applied to the selected object.
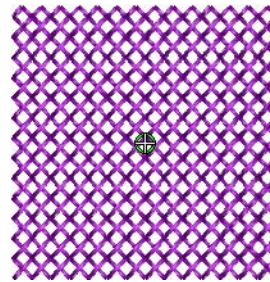
Note Stitch angle has no effect on the pattern layout.

3 To change settings, double-click or right-click the object/s.

The **Object Properties > Fill Stitch** dialog opens.

Cross Stitch settings
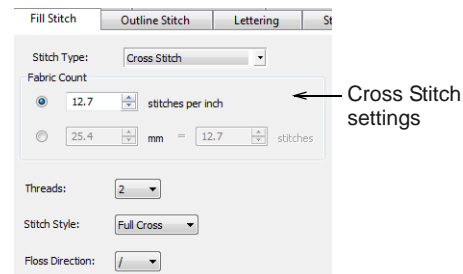
4 Adjust cross stitch settings as desired:

Field	Description
Fabric Count	Controls the size of cross specified as a counted fabric rather than an actual cross size.
Threads	Number of times – 2, 4 or 6 – thread passes over the same cross in order to make it bulkier.
Stitch Style	Full cross (X), diagonal, or upright (+).
Floss Direction	Controls which way top leg of the cross – i.e. full length stitch – is directed – forward or backward for diagonal full crosses and horizontal or vertical for upright full crosses.

5 Click **Apply** to preview the effect or **OK** to finish and close.
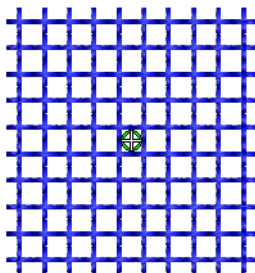
Stitch Style: Upright Cross   Stitch Style: Full Cross
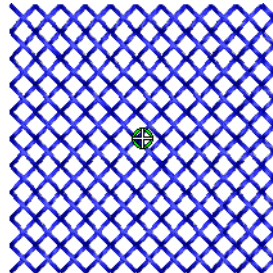
Tip The cross stitch grid is not displayed but you can set the background grid to the cross size to get a better idea of how the grid is used to generate the crosses. Use **Snap to Grid** to ensure that your object outlines line up with the cross stitch grid. See Setting grid options for details.

Creating textured edges

Use Textured Edge (General toolbar) to create rough edges and shading effects, or to imitate fluffy textures.

Use **Textured Edge** to add rough edges to objects, create shading effects, or imitate fur or other fluffy textures in your design. Textured Edge is applied based on current settings in the **Effects** dialog. Adjust settings to

change the degree of roughness, the side of the object to which the effect is applied and the textured edge margin. You can change these settings before or after digitizing.

To create a textured edge

1 Click the **Textured Edge** icon.

The effect will be applied to new or selected objects based on current settings.

Tip To modify current settings, right-click the **Textured Edge** icon to access **Effects** dialog with no objects selected. Adjust the settings as described below.

2 Create closed-object/s – circle or square – and select. See Digitizing Methods for details.

The current Textured Edge settings are applied to the selected object.
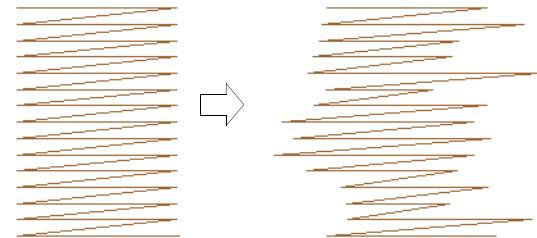
3 To change settings, right-click the **Textured Edge** icon with the object selected.

The **Effects > Textured Edge** dialog opens.

Select settings
Adjust values
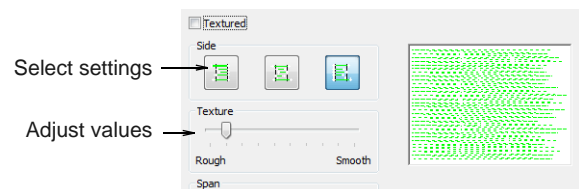
4 Use the buttons to choose the side of the object you want to apply the effect to.

Left side textured   Both sides textured   Right side textured
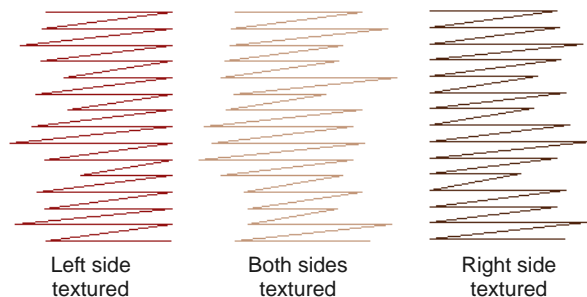
5 Use the **Texture** slider to select the degree of texture – left for a rougher texture and right for a smoother texture.

More variation in stitch length gives a rougher texture

Less variation in stitch length gives a smoother texture
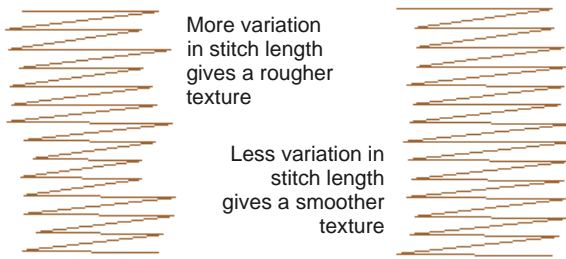
6 Use the **Span** slider to select a stitch range in which you want the stitches to fall.

Move the slider to the left for a short range and to the right for a longer range.
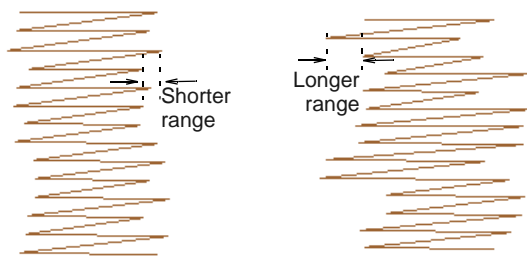
Shorter range

Longer range

7 Click **Apply** to preview the effect or **OK** to finish and close.

The stitch is regenerated with the adjusted settings.

Tip To better view the **Textured Edge** effect, press the ⬚ key to display needle points or use **Artistic View**.

Creating wave effects

Wave Effect lets you contour fill stitches along a digitized guideline. Stitches follow the line but maintain uniform density and needle penetration patterns.
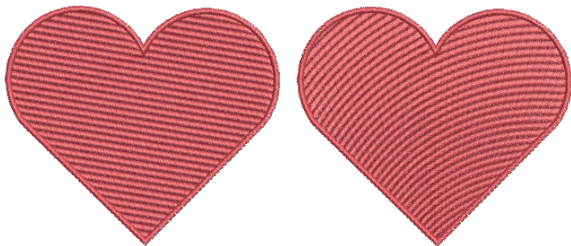
Wave Effect can be applied to closed-objects using Step, Fancy Fill, Pattern Fill or some of the craft stitch types.

Tip Use smaller stitch lengths – e.g. 4.00 mm or less – for best results.

To create Wave Effect

1 Double-click or right-click a selected closed-object.

The **Object Properties > Fill Stitch** dialog opens.

2 Click the **Effects** button and select the **Star & Wave Fill** tab.
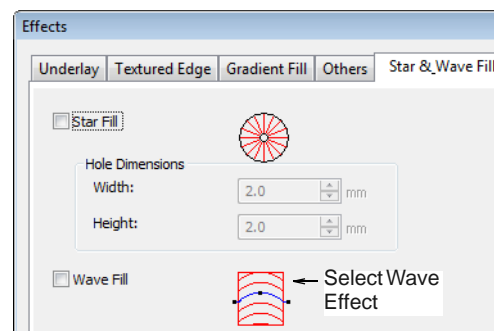
3 Select the **Wave Effect** checkbox and click **Apply**.
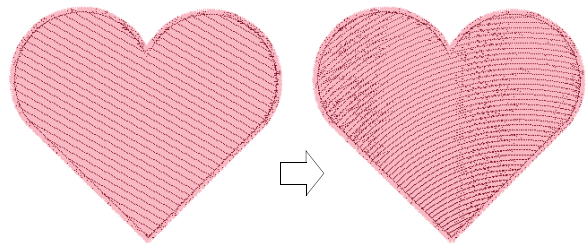
The effect is applied to the selected object.

4 To modify the effect, select the object and click the **Reshape Object** icon.
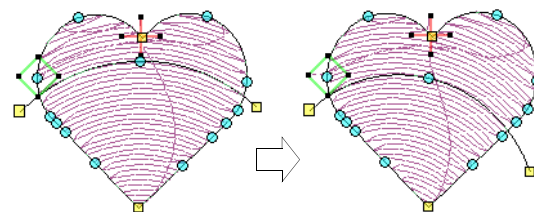
5 Click and drag the curve into the required shape and press **Enter**. See Reshaping objects for details.

6 Press **Esc** to finish.

Tip **Wave Effect** can be applied together with **Fancy Fill**, **Pattern Fill** and some of the craft stitch types. See also Creating fancy fills, Creating pattern fills, and Creating craft stitch fills.
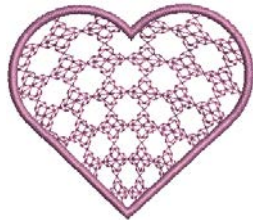
Wave Effect with Blackwork Fill

Wave Effect with Candlewicking Fill

Tip Don't alter stitch angles after applying **Wave Effect** as it can displace **Fancy Fill** patterns.

Creating star fill effects

Star Fill generates radial turning stitching in several stitch types such as **Satin** and **Tatami** stitch. Stitches are generated from the outside edge to the geometric center.

Star Fill is applicable to several object shapes – closed, circle and rectangle – with optional holes. The effect may be on or off while digitizing. All transformations, excepting morphing effects, preserve the **Star Fill** radial stitching but transform the hole shape. Shaping operations such as **Mirror Merge** or **Remove Overlaps** preserve **Star Fill** effect.

Tips for use

Not all patterns and stitch settings or objects (size specific) are suitable for **Star Fill**. In particular, if you are using it with larger objects, use one or a combination of the following to avoid bunching at the center:

- Increase the size of the hole, move the center into an existing hole in the object, or move it outside the object altogether.
- Add **Textured Edge** to the inside.
- Use larger stitch spacing – increase by about 20%.
- Avoid patterns which add needle penetrations close to the center of the object.
- Use **Edge Walk** underlay with smaller objects, to help reduce the number of stitches at the object center.
- For fewer problems and a better embroidery result, use an SUK or H/E embroidery needle.

Tip For best effect, use **Star Fill** with ring shapes. The size of ring should be about 20% of the outer diameter.

To create star fill effects

1 Double-click or right-click a selected closed-object.

The **Object Properties > Fill Stitch** dialog opens.

2 Click the **Effects** button and select the **Star & Wave Fill** tab.
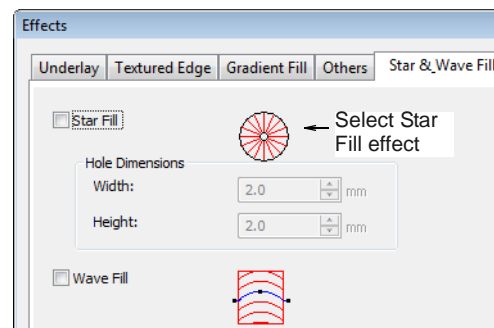
3 Select the **Star Fill** checkbox and click **Apply**.

The effect is applied to the selected object.
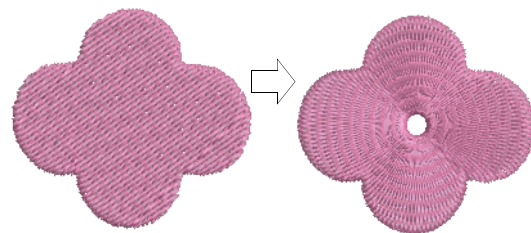
4 To modify the effect, select the object and click the **Reshape Object** icon. In **Reshape** mode, you can:

- Move the center point of the radial stitching.
- Set the size of the center hole.

‣ Edit the center hole shape as for a circle/ellipse object.
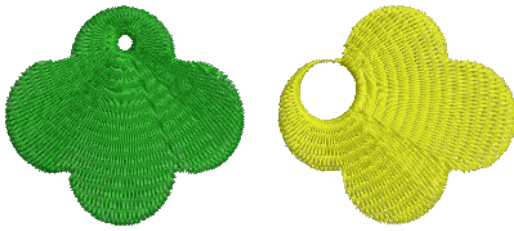
Tip Unlike **Ripple** stitch, the center of **Star Fill** effect can be moved outside the shape or into an included hole to achieve a different effect, without loosing the original object shape. When you move the center marker outside the shape, the center hole is removed but the radial stitching is preserved around the new center position.

5 Press **Enter** to apply, **Esc** to finish.

Tip **Star Fill** can be applied together with Satin Fill, Step Fill, and Fancy Fill. See also Creating fancy fills.

Star Fill with Satin Fill   Star Fill with Fancy Fill

Tip You are not able to directly edit the stitch angles automatically generated by **Star Fill** effect. However, you can apply **Break Apart** to an object with **Star Fill** effect and edit the resulting turning angle closed object. See also Splitting into component objects.

Creating gradient fills

Gradient Fill varies stitch spacing between dense and open fill, producing perspective and shading effects which are difficult to achieve manually. A number of different **Gradient Fill** effects are available. When you use **Gradient Fill**, the current stitch spacing settings are ignored. However, other stitch effects will still apply.

Tip You can use **Gradient Fill** with **Step** fill to create interesting shading effects.

To create a gradient fill

1 Double-click or right-click a filled object.

The **Object Properties > Fill Stitch** dialog opens.

2 Click the **Effects** button and select the **Gradient Fill** tab.

Select Gradient Fill
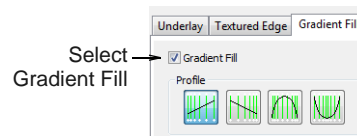
3 Select the **Gradient Fill** checkbox and choose a profile.

4 Click **Apply** to preview the effect.

5 Move the slider to adjust the values or enter new spacing values as required.

Adjust spacing values
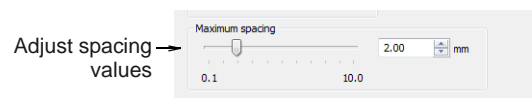
6 Click **Apply** to preview the effect or **OK** to finish and close.
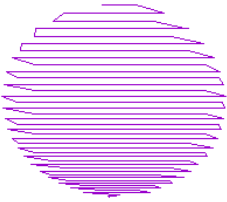
Max spacing: 2 mm   Max spacing: 4 mm

Tip To prevent underlay stitching from showing through, deselect the **Underlay** checkbox. See also Stabilizing with underlays. See also Creating open fills.

Creating open fills

Apply **Travel on Edges** effect to force underlying travel runs to the edges of an object so that they can't be seen through open stitching. This is often used for backgrounds.

Tip Use **Travel on Edges** effect with the **Gradient Fill** or **Color Blending** effect to eliminate travel stitches inside graded embroidery objects. See also Creating gradient fills and Creating color blending effects.

To create an open fill

1 Double-click or right-click a filled object.

The **Object Properties > Fill Stitch** dialog opens.
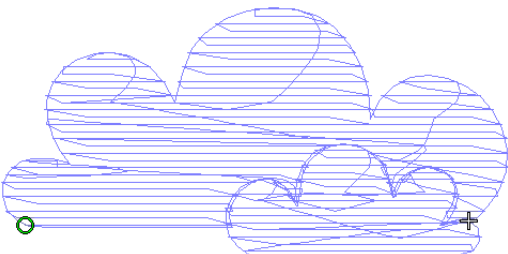
2 Click the **Effects** button and select the **Others** tab.

Select Travel on Edges ── ☐ Travel On Edges
🛈 Stitches travel along edge of object.
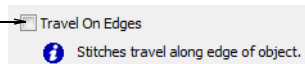
3 Select the **Travel on Edges** checkbox.

Travel runs and overlapping rows are removed, and consistent row spacing is applied.
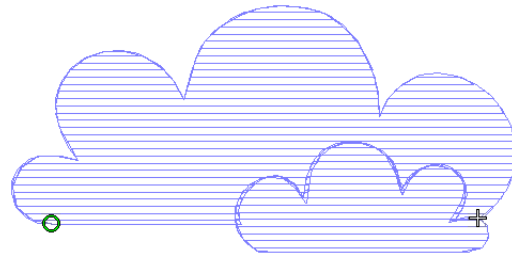
4 Click **Apply** to preview the effect or **OK** to finish and close.

Travel on Edges is applied to the selected object.

Tip Click **Save To Template** before closing this dialog to save settings permanently. Saved settings will be applied to all new designs based on the current template. See Object Properties & Templates for details.

Creating color blending effects

Use Color Blending (Edit toolbar) to create shading and perspective effects.

Use the **Color Blending** effect to create different shading, perspective, three-dimensional and color effects by blending two colored layers in an embroidery object. The effect is created by duplicating the object, then applying Gradient Fill and

Travel on Edges to both layers, which are then grouped.

There are two different Color Blending effects:

- linear stitch spacing
- curved stitch spacing.

Color Blending can be applied to objects filled with Satin, Step, or Fancy Fill stitch, or objects outlined with Satin or Blanket stitch.

Applying Color Blending

 Use Color Blending (Edit toolbar) to apply the effect to new or selected objects.

Use the **Color Blending** effect to create color blends, perspective effects and shading.
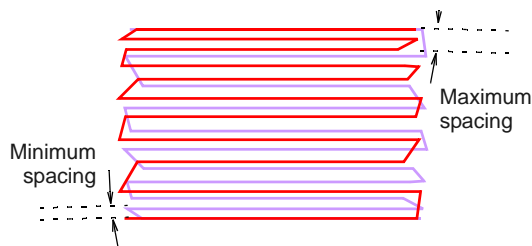
To apply Color Blending

1   Select a filled object.

2   Click the **Color Blending** icon.

The **Color Blending** dialog opens.
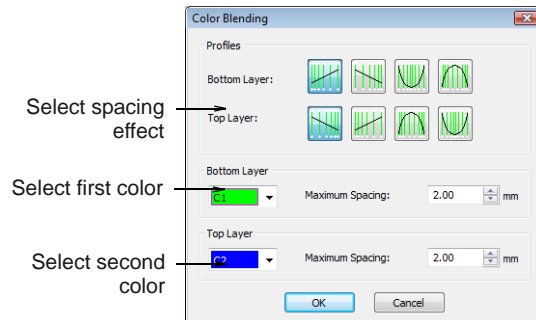
3   In the **Profiles** panel, select a spacing profile for top and bottom layers.
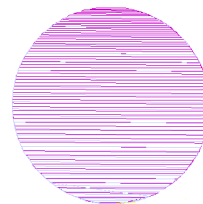
Bottom Layer: Profile1   Bottom Layer: Profile3
Top Layer: Profile1   Top Layer: Profile3

4   In the **Bottom Layer** panel:

- Select the color of the first layer.
- Adjust the maximum spacing value for the first layer as required.

5   In the **Top Layer** panel:

- Select the color of the second layer.
- Adjust the maximum spacing value for the second layer as required.

6   Click **OK**.
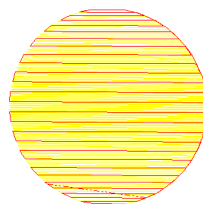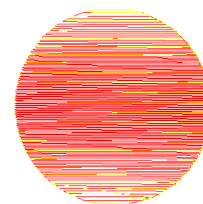
Bottom Layer: Red   Bottom Layer: Yellow
Top Layer: Yellow   Top Layer: Red

 Tip To prevent underlay stitching from showing through, deselect the **Underlay** checkbox. See also Stabilizing with underlays.

Editing color-blended objects

 Click Ungroup (Arrange toolbar) to ungroup selected objects.

Click Color Film (General toolbar) to view all color blocks and objects in a design.

Editing a Color Blending object is limited. The two objects must first be ungrouped and the separate objects edited according to **Gradient Fill** settings. See Creating gradient fills for details.

Note If you edit a grouped object the Color Blending effect will be lost as both layers will have the same settings.

- -

To edit color-blended objects

1 Select the blended object and ungroup it. See Grouping and splitting objects for details.
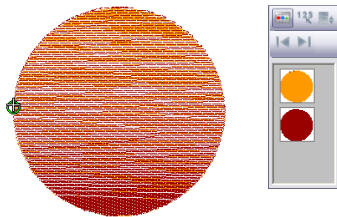
Tip Use the Color Film to view all color blocks and objects in the design. See Viewing and selecting color blocks for details.

2 Select one of the objects and change the color as required.

3 Double-click or right-click it to open the **Object Properties** dialog, click the **Effects** button, and select the **Gradient Fill** tab.

Select Gradient Fill →

Adjust maximum spacing →
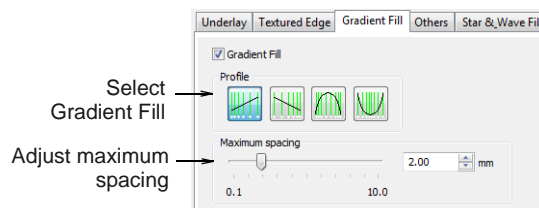
4 Select a profile.

5 Adjust spacing settings as required. See Creating gradient fills for details.

6 Click **Apply** to preview the effect or **OK** to finish and close.

7 Repeat the process for the second object and re-group the objects.
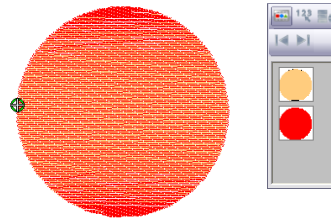
Creating morphing effects

- -

Use General > Morphing to create transformed object outlines and stitches.

The **Morphing** feature allows you to transform object outlines and stitches in a variety of novel and interesting ways. They are additive in the sense that more than one effect can be applied to a given selection.
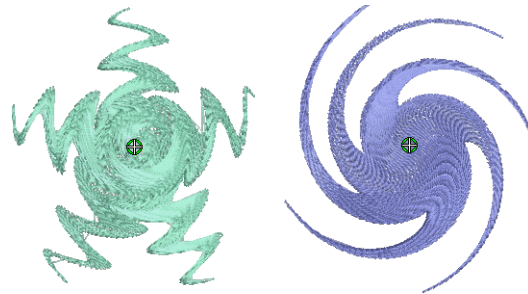
Tip Morphing is a powerful feature but don't overdo it. Keep in mind the following points when morphing objects/designs:

▸ To avoid poor quality embroidery, don't use too much of the effect. Less is more when it comes to morphing.

▸ Use larger stitch spacing – increase it by about 20%.

▸ Avoid morphing Satin stitches – in some objects they become too long.

▸ Increase the underlay margin to avoid it projecting outside the cover stitch.

- -

To create morphing effects

1 Select one or more objects.

Any object/s can have morphing effects applied.

2   Click the **Morphing** icon on the **General** toolbar.

The **Morphing Effect** docker opens with all morphing effect buttons enabled.
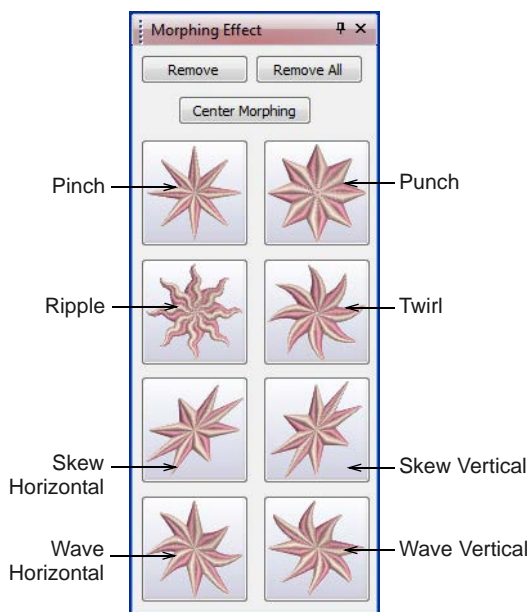
3   Choose a morphing effect:

	Use Pinch to pinch the object outlines and stitches together in the morphing center, while pulling outer stitches away from each other.
	Use Punch to punch the object outlines and stitches away from the morphing center, while stretching the object outlines and stitches around an imaginary sphere.
	Use Ripple to apply a wave pattern radiating from the morphing center, like dropping a stone into a pond.
	Use Twirl to twist the object outlines and stitches around the morphing center, creating a swirling effect like a whirlpool.
	Use Skew Horizontal to slant the object outlines and stitches horizontally to the left or right.
	Use Skew Vertical to slant the object outlines and stitches vertically up or down.

	Use Wave Horizontal to move the object outlines and stitches to follow a horizontal wave pattern
	Use Wave Vertical to move the object outlines and stitches to follow a vertical wave pattern.

The selected morphing effect is applied to the current selection with the morphing center (if any) defaulting to the center of the current selection.
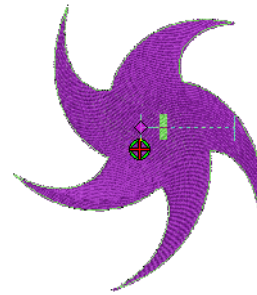
BERNINA Embroidery Software also does the following:

▸ Groups selected objects if they were not already grouped.

▸ Applies the morphing effect to selected objects as a whole, using the default morphing center and current parameters.

▸ Activates the **Reshape Object** tool for the resultant objects.

▸ Displays the available morphing graphical controls for the selected morphing effect.

4   Optionally, click the **Undo** button to undo the morphing transformation, or click and drag the available morphing controls to adjust the effect.

If you drag one of sliders, the resultant object outlines display dynamically in black until the mouse button is released.
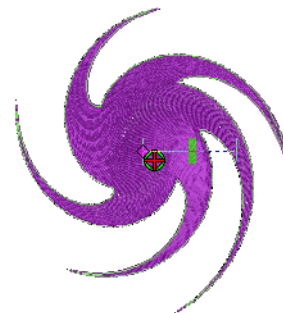
5   Optionally, if available, adjust the morphing center using the **Reshape Object** tool. (Not all morphing effects have a moveable center.)

The **Center Morphing** button in the **Morphing Effect** docker is enabled when the morphing

center is moved away from the center of the current selection. Clicking it causes the morphing center to be moved back to the center of the current selection.

Center moved to the left
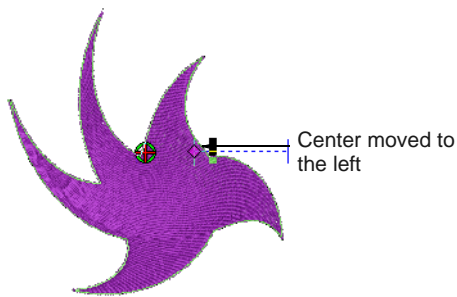
6 Apply as many effects to the current selection as desired.
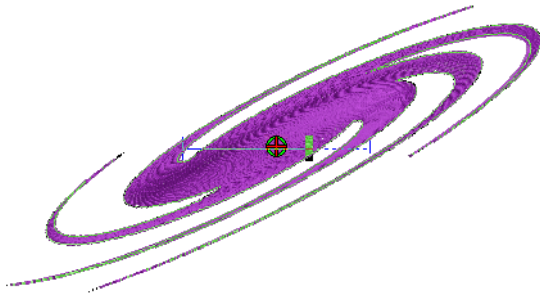
7 Optionally, remove one or more morphing effect/s by the following means:

‣ The **Remove** button is enabled if the current selection has one or more morphing effects applying. Clicking it causes the last-applied morphing effect to be deleted. The previous morphing effect (if any) becomes immediately available for reshape or removal.

‣ Clicking the enabled **Remove All** button causes all morphing effects to be removed from the current selection and the **Reshape** process to be stopped.

CHAPTER 22
PATTERNED STAMPS, RUNS & FILLS

Patterns are pre-defined design elements, such as hearts, leaves or border patterns, that can be quickly inserted into a design. They generally consist of one or more simple objects, and are stored in a special pattern set.

Use the patterns provided with the software or create your own. Patterns can be scaled, rotated and mirrored in the same way as other objects. You can use patterns along a digitized line. You can also fill shapes with rows of repeated patterns, and apply special effects.

You can also define a pattern of needle penetrations using a 'carving stamp' as a template. A carving stamp can be any vector and/or embroidery shape or shapes.

This section describes how to insert patterns into your design, and how to adjust their settings to get the results you want. It also explains how to create your own patterns and pattern sets as well as how to create stitch patterns with carving stamps.

Adding pattern stamps

Select Pattern Stamp (Arrange menu) to place single patterns in designs.

The **Pattern Stamp** feature allows you to place single patterns anywhere in the Design Window. You can access any pattern in any 'pattern set'. These include purpose-made Pattern Fill patterns as well as craft stitch patterns and monogramming ornaments.

To add a pattern stamp

1   Select **Arrange > Pattern Stamp**.

The **Select Pattern** dialog opens.

Select viewing mode

Select pattern set
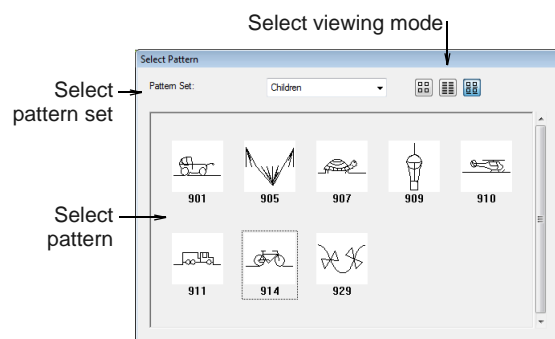
Select pattern

Tip Select a viewing mode – you can list patterns by picture, name, or both.

2 Select a pattern set from the dropdown list and select a pattern from the display panel.

This becomes the current pattern. See also Pattern Stamp, Run & Fill Samples.

3 Click **OK**.

The dialog closes and the pattern appears attached to the mouse pointer.

4 Move the pointer to the desired position and click to mark the guide point.

This becomes the rotating anchor point. You are prompted to place the second guide point.

5 Move the pointer until the pattern is orientated correctly, then click again for a guide point.

Insert anchor point

Insert guide point
(resized and rotated)
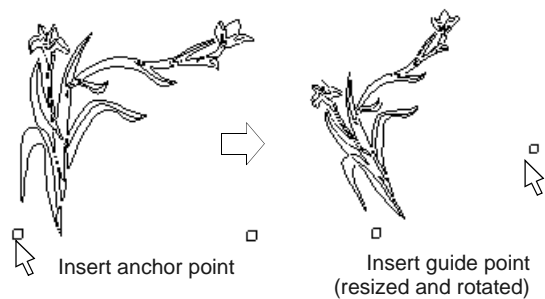
Tip You can resize the pattern on screen by holding down the **Shift** key before marking the second guide point.

6 Press **Enter**.

Stitches generate.

7 Repeat the step to insert another pattern.

You can rotate and scale patterns as you insert them.

Tip Right-click to mirror the pattern.

8 Press **Esc** to finish.

Note Each pattern is treated as a single grouped object. To edit only a section of a pattern, ungroup it first. See Grouping and splitting objects for details.

Creating pattern outlines

Pattern Run is a stitch type that creates pattern repeats along a digitized line. You can create decorative outlines using any pattern from the selection list. You can modify the rotation angle, orientation and scale, and vary the space between patterns.
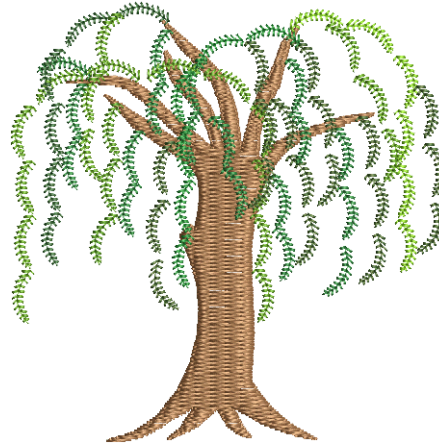
Applying pattern runs
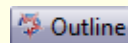
	Use Outline (Stitch and Color Bar) to digitize an outline of Pattern Run stitching.
⊡ Outline	

Select the pattern to use in the pattern run before or after digitizing.
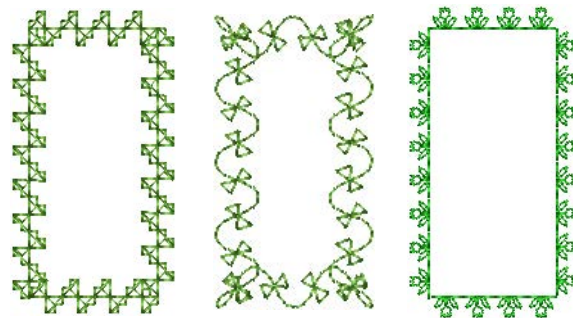
To apply a pattern run

1 Click the **Outline** icon on the **Stitch and Color Bar** and choose **Pattern Run** from the dropdown menu. See also Selecting or changing stitches.
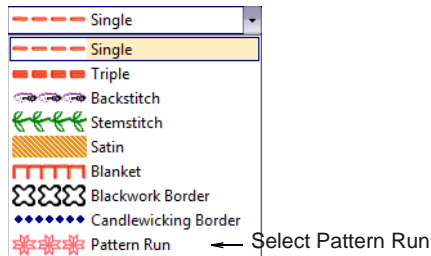
Select Pattern Run

Tip You can digitize the shape before or after selecting **Pattern Run**.

2 Digitize an outline for the run to follow. See Digitizing Methods for details.

Note The outline is created with default stitch settings. These can be adjusted before or after digitizing via **Object Properties**.

3 To change settings, double-click or right-click the object.

The **Object Properties > Outline Stitch** dialog opens.

Select Pattern Run

Click to select pattern
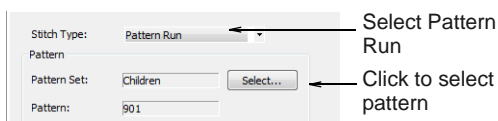
4 If not already selected, select **Pattern Run** from the **Stitch Type** list and click **Select**.

The **Select Pattern** dialog opens showing all available patterns in the current set.

Select viewing mode

Select pattern set
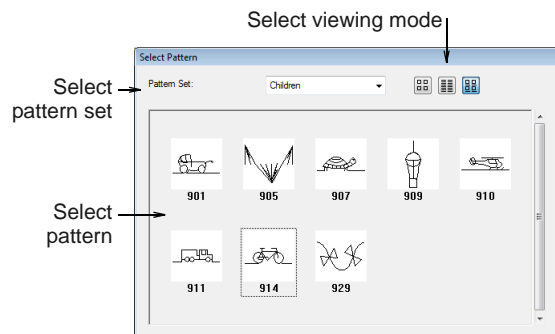
Select pattern

Tip Select a viewing mode – you can list patterns by picture, name, or both.

5 Select a pattern set from the dropdown list and select a pattern from the display panel. See also Pattern Stamp, Run & Fill Samples.

6 Click **OK**.

Adjust pattern run settings
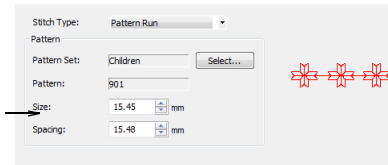
7 Adjust pattern run settings. See Adjusting pattern run settings for details.

8 Click **Apply**.

The digitized object is outlined with the selected pattern run. See also Reshaping pattern runs.
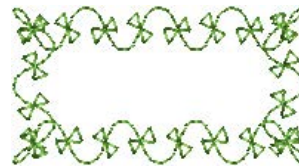
Tip If the pattern run does not pick up the color you have selected in the color palette when first digitized, select the outline after digitizing, then select a color.

Adjusting pattern run settings

You can insert a pattern run at its original size and orientation, and then adjust settings later. You can also set the exact size and spacing before you insert the pattern run. Spacing is the distance between each pattern repetition. See Applying pattern runs for details.

Initial spacing

Spacing increased
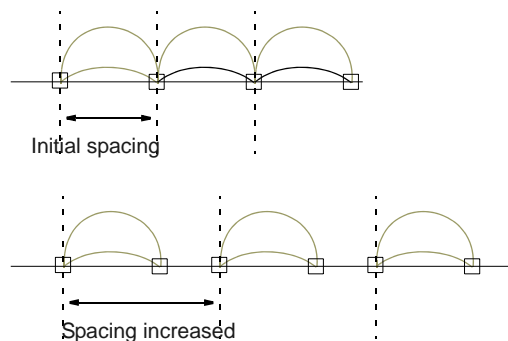
If they do not fit the baseline exactly, BERNINA Embroidery Software adjusts the spacing to make them fit:

▸ If the space remaining at the end of the baseline is less than half a pattern, the extra space is spread evenly between the patterns.

▸ If the space is larger than half a pattern, BERNINA Embroidery Software inserts an extra pattern, and slightly overlaps the patterns to distribute them evenly along the baseline.

Tip You can reshape the baseline to achieve the exact spacing you require. See Reshaping pattern runs for details.

To adjust pattern run settings

1 Select the pattern run object.

2 Double-click or right-click the object.

The **Object Properties > Outline Stitch** dialog displays.

Adjust pattern size and spacing

Pattern Set:	Children	Select...
Pattern:	901	
Size:	15.45	mm
Spacing:	15.48	mm
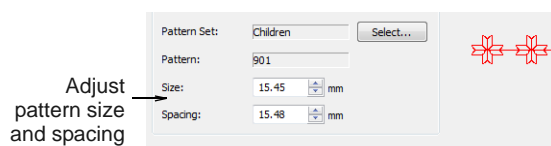
3 Enter the pattern size in the **Size** field.
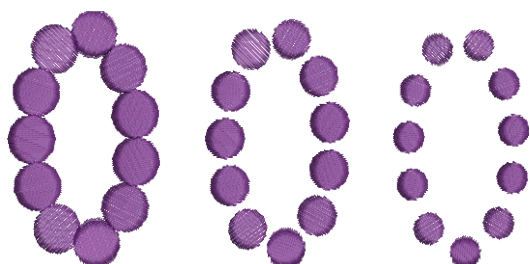
Size increased   Default size   Size decreased

4 Adjust the **Spacing**.
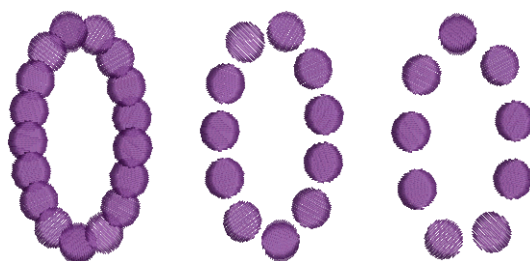
Spacing decreased   Default spacing   Spacing increased

5 Click **Apply**.

Tip You can also resize pattern runs using the selection handles. See Scaling objects for details.

Creating pattern fills

Pattern Fill is a decorative stitch used for filling closed objects. Patterns are repeated in parallel rows to fill a shape. You can design the pattern layout on-screen or by adjusting object properties.

Note You can also create artistic stitch effects with craft stitches and fancy fills. See Creating craft stitch fills and Creating fancy fills.

Adding pattern fills

Wi Fill Use Fill (Stitch and Color Bar) to select a fill stitch type before or after digitizing.

Use **Pattern Fill** with filled objects to create decorative fill stitching. Current values are set in the **Fill Stitch** tab of the **Object Properties** dialog. You can select patterns, adjust settings, or change layouts at any time before or after digitizing.

To add a pattern fill

1 Click the **Fill** icon and choose **Pattern Fill** from the dropdown menu.

Stipple Backstitch	
Stipple Stemstitch	
Stipple Run	
Cross Stitch	
Pattern Fill	← Select Pattern Fill
Lacework	
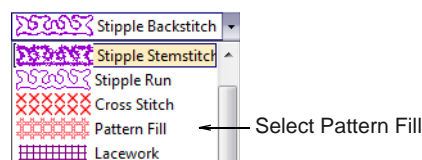
Tip You can digitize the shape before or after selecting Pattern Fill.

2 Create a closed shape and select. See Digitizing Methods for details.

Tip If the pattern fill does not pick up the color you have selected in the color palette when first digitized, select the outline after digitizing, then select a color.

3 To change settings, double-click or right-click the object/s.

The **Object Properties > Fill Stitch** dialog opens.

Click to select pattern
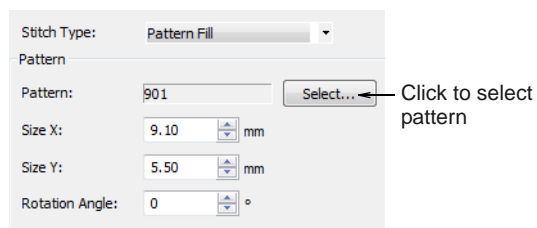
4 If not already applied, select **Pattern Fill** from the **Stitch Type** list and click **Select**.

The **Select Pattern** dialog opens showing all available patterns in the current set.

Select viewing mode

Select pattern set
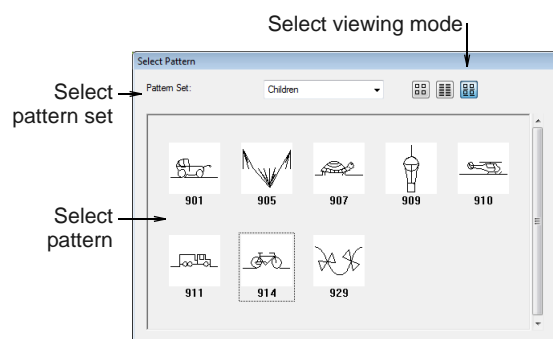
Select pattern

Tip Select a viewing mode – you can list patterns by picture, name, or both.

5 Select a pattern set from the dropdown list and select a pattern from the display panel. See also Pattern Stamp, Run & Fill Samples.

6 Click **OK**.

The selected pattern is displayed in the preview panel.

Preview displayed
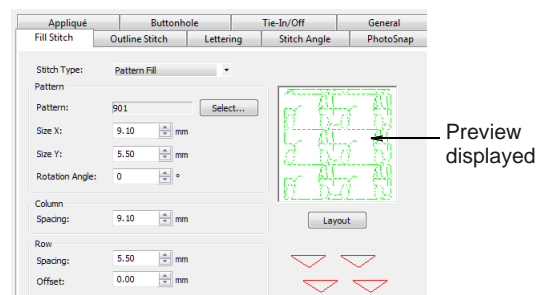
7 Adjust pattern layout by changing settings or on-screen. See Adjusting pattern fill settings or Laying out pattern fills on-screen.

Note Stitch angle has no effect on the pattern layout.

8 Click **Apply**.

The digitized object is filled with the selected Pattern Fill.

Tip Wave Effect lets you contour fill stitches along a digitized guideline. Wave Effect can be applied to Pattern Fill objects. However, you need to first apply the effect to a Step fill before converting to a Pattern Fill. See also Creating wave effects.

Step stitch used

Wave Effect applied

Pattern Fill selected
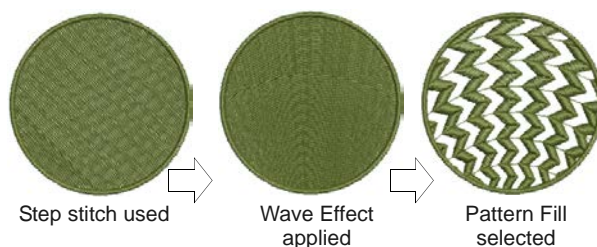
Adjusting pattern fill settings

You can insert a pattern fill at its original size and orientation, and then adjust settings later. You can also set the exact size and spacing as you insert the pattern fill. Spacing is the distance between each pattern repetition. See also Adding pattern fills.

To adjust pattern fill settings

1 Double-click or right-click a pattern fill object.

The **Object Properties > Fill Stitch** dialog opens with the current pattern in the preview panel.

Preview displayed
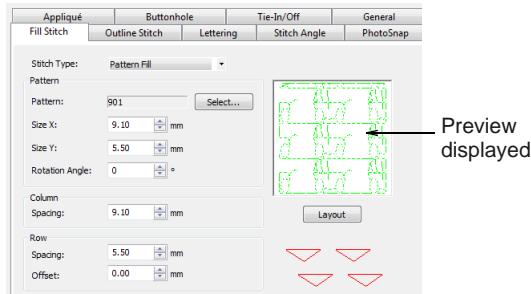
2 Change the current fill pattern as required. See Adding pattern fills for details.

3 Adjust **Size X**, **Size Y**, **Column Spacing**, **Row Spacing** settings as required.

X: 12, Col Sp: 12
Y: 12, Rw Sp: 12
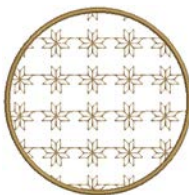
X: 9, Col Sp: 12
Y: 9, Rw Sp: 12

X: 9, Col Sp: 9
Y: 9, Rw Sp: 9

4 Adjust **Row Offset** as required (from -99.99mm to 99.99mm).

Row offset: 0.00

Row offset: 2.00

Row offset: 5.00

5 Adjust **Rotation Angle** as required (from -180° to +180°).

This field sets the current rotation angle of the fill pattern (default is zero), and defines the orientation of the entire pattern fill.

Rotation angle: 0°

Rotation angle: 15°

Rotation angle: 45°

6 Click **Apply**.

The digitized object is filled with the selected pattern fill, current settings applying.

Note If more than half a pattern is outside the boundary, it will be clipped along the boundary.

Laying out pattern fills on-screen

You lay out pattern fills on-screen by using 'guide-patterns' to scale, space, transform and offset the entire pattern fill. There are three blue guide-patterns. Other sample patterns appear in yellow. Each guide-pattern lets you change different elements of the layout. When you change a guide-pattern, all patterns in the fill change accordingly.

Tip You can also use this method to adjust the layout of **Blackwork Fill, Candlewicking Fill** and **Lacework**.

Use top guide-pattern to change row spacing, row offset, and to scale all patterns
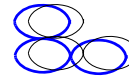
Use side guide-pattern to change column spacing, and to scale all patterns

Use middle guide-pattern to move, rotate, skew, and scale all patterns

Tip Generally you define the layout of the fill before digitizing the object. If it is important to align the patterns with the object boundary, digitize the object using the current settings, and change the layout afterwards.

To lay out pattern fills on-screen

1 Double-click or right-click a pattern fill object.

The **Object Properties > Fill Stitch** dialog opens.

Click to adjust pattern layout
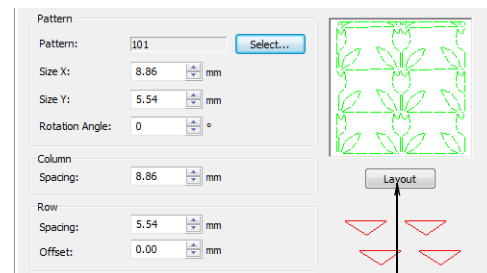
2 Click **Layout**.

The **Object Properties** dialog temporarily closes allowing you to see and edit the layout guides.

Yellow sample and blue guide-patterns appear in the Design Window. When you change a guide-pattern, all patterns in the fill change accordingly.

Tip Zoom in to select the correct guide-pattern.

3 Adjust the guide-patterns to achieve the effect you require.

▸ **Move** patterns by selecting the middle guide-pattern and dragging it to a new position.

▸ **Scale** patterns by selecting a guide-pattern and resizing it using the selection handles.

Scale proportionally

Scale horizontally

Scale vertically
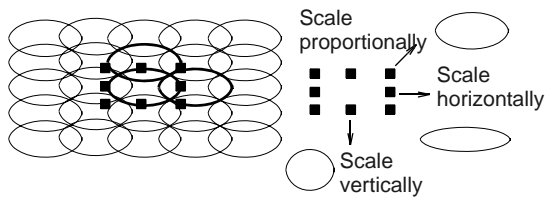
▸ **Rotate** patterns by clicking the middle guide twice to display the rotation handles. Click a corner handle and drag to rotate.

▸ **Skew** patterns by clicking the middle guide twice, then dragging the skew handles.

Rotate
Anchor
Skew
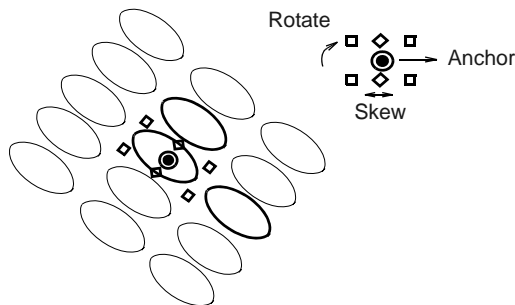
▸ **Change column spacing** by selecting the side guide and dragging it left or right.

Change column spacing
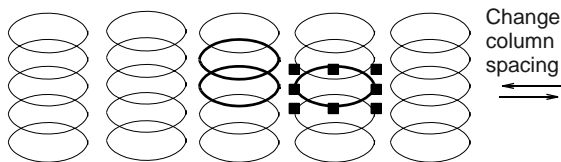
▸ **Change row spacing** by selecting the top guide and dragging it up or down.

▸ **Change row offset** by selecting the top guide and dragging it left or right. Changing the offset distorts the rows.

Change row spacing

Change offset
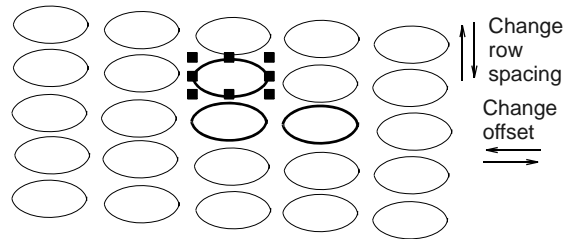
4 Press **Enter** to finish.

The **Object Properties** dialog re-opens allowing you to apply any other settings. The adjusted size and layout are applied to the selected object and become the current Pattern Fill settings.

Managing patterns

BERNINA Embroidery Software provides various ways to manage your patterns including making pattern sets, saving patterns, and deleting patterns.

Saving your own patterns

The **Create Pattern** function lets you save your own patterns for future use. Store them in your own or an existing pattern set. They can be used in pattern fills or runs, or even as pattern stamps.

To save a pattern

1 Select the embroidery object/s you want to save.

Tip To create objects with holes, see Cutting holes and removing overlaps for details.

2 Select **Settings > Create Pattern**.

The **Make Pattern** dialog opens.

Select pattern set

Enter name for new pattern
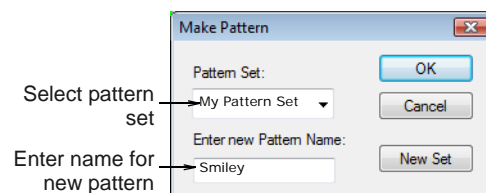
3 Select a pattern set from the dropdown list.

Note Choose the pattern set carefully so you remember where you have stored your patterns. See also Creating your own pattern sets.

4 Enter a name for your new pattern.

5 Click **OK**.

You are prompted to digitize reference points.

6 Click to mark two reference points for the pattern. These determine the default pattern orientation.
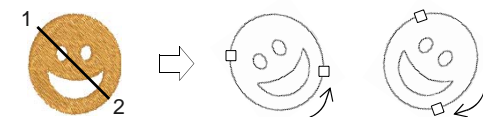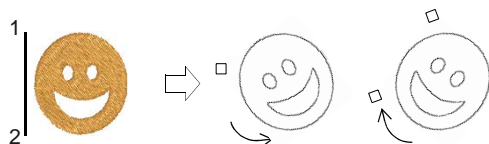
Reference points also determine default pattern spacing.
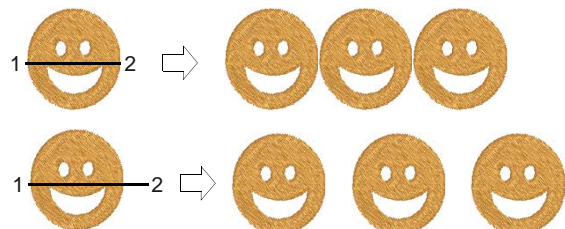
7 A confirmation message appears.

8 Click **OK**.

Tip Test your new pattern. See Adding pattern stamps, Creating pattern outlines, and Creating pattern fills.

Creating your own pattern sets

Use Create Pattern (Settings menu) to create your own pattern set.

The **Create Pattern** function lets you create your own pattern sets to organize and classify your patterns.

To create your own pattern set

1 Select the object/s you want to save as a pattern. See Saving your own patterns for details.

2 Select **Settings > Create Pattern**.

The **Make Pattern** dialog opens.
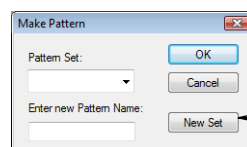
Click New Set to create new pattern set

3 Click **New Set**.

The **New Pattern Set** dialog opens.

Enter name for pattern set
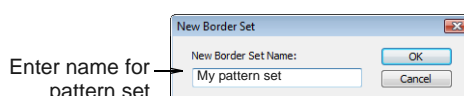
4 Enter a name for the new pattern set and click **OK**.

The **Pattern Set** is ready for use.

Note Pattern sets are stored in the **C:\..\Program Files\BERNINA\Embroidery Software 6\Userletw** folder.

Deleting patterns

Click Object Properties (General toolbar) to delete patterns.

Delete any patterns you no longer want from a pattern set. You can only delete your own patterns.

To delete a pattern

1 Click **Object Properties** icon.

2 Select **Pattern Run** from **Outline Stitch** tab or **Pattern Fill** from the **Fill Stitch** tab.
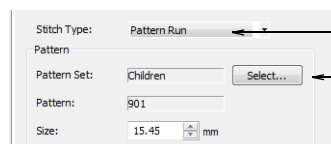
Select Pattern Run

Click to delete pattern

3 Click **Select**.

The **Select Pattern** dialog opens showing all available patterns in the current set.

Select pattern set

Select pattern to delete

Click to delete
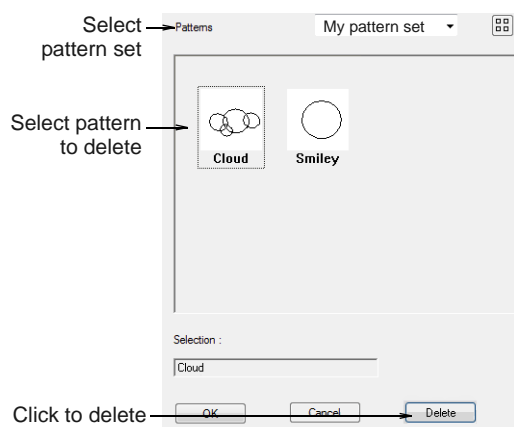
Tip Select a viewing mode – you can list patterns by picture, name, or both.

4   Select the pattern set you saved your pattern/s to.

5   Select the pattern you want to remove and click **Delete**.

A confirmation message appears.

6   Click **OK**.

Creating stitch patterns with carving stamps

The **Carving Stamp** feature allows you to define a pattern of needle penetrations using a 'carving stamp' as a template. A carving stamp can be any vector and/or embroidery shape or shapes. A needle penetration is placed wherever a stitch intersects with the vector or embroidery shape.
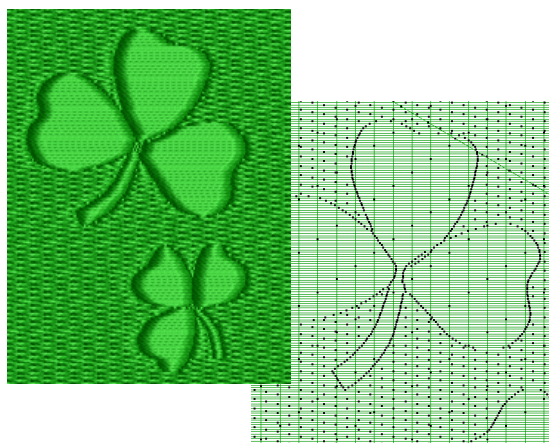
With the **Carving Stamp** feature, you can:

‣   Apply pre-defined or temporarily-selected or -digitized carving stamps to applicable objects.

‣   Move/rotate/scale/reshape/delete carving stamps associated with an applicable object while in **Reshape** mode.

‣   Create and manage your own user-defined carving stamps in a pattern library for future reference.

Selected carving stamps can be applied to outline objects with Satin stitch type, and closed objects with Satin/Step/Fancy stitch type.

Applying pre-defined patterns

Use General > Carving Stamp to define a pattern of needle penetrations using a 'carving stamp' as a template.

The **Carving Stamp** docker contains four tabs: Use Pattern, Use Object, Digitize, and Appearance. The **Use Pattern** tab lets you select and apply pre-defined stamp patterns to selected applicable objects only **or** to any applicable objects if nothing is selected.

To apply pre-defined patterns

1   Select an embroidery object or not as required.

Note You can start with or without embroidery objects selected. If one or more objects is selected, stamps are **only** applied to selected objects. If no object is pre-selected, stamps can be applied to any objects.

2   Click the **Carving Stamp** icon.

the **Carving Stamp** dialog opens. The **Use Pattern** tab is open by default.
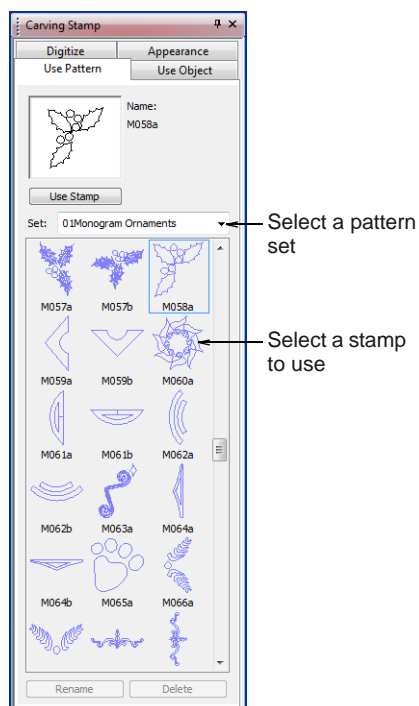
3   Select a pattern set from the **Set** list – e.g. 'Nature'.

The **Set** dropdown list contains pre-defined pattern sets as well as user-defined stamp pattern sets. See Pattern set: Carving Stamps for details.

4   Select a pre-defined stamp pattern.

A thumbnail appears in the preview panel and the **Use Stamp** button is enabled.

5   Click the enabled **Use Stamp** button and move the mouse pointer to the Design Window.

The pre-defined stamp is attached to the mouse pointer. You are prompted in the **Status Bar** to enter an anchor point.

6   Move the mouse pointer to the desired position over the target object/s.

▸ Right-click to mirror the stamp.

▸ Press **Shift** to prevent **Auto Scroll**.

7   Click the mouse button to fix the anchor point.

You are prompted to enter the guide point.

8   Swivel the pattern about the anchor point to the desired guide point position, optionally with the **Shift** key pressed.

BERNINA Embroidery Software resizes the stamp if the **Shift** key is pressed while moving the mouse pointer.

9   Click the mouse button.

▸ If you have pre-selected an object or objects, the stamp pattern is only applied to those objects, whether or not the pattern extends beyond the object borders.

▸ If no objects are pre-selected, the stamp pattern is applied to any applicable underlying objects.

Note If there are multiple overlapping objects in the area in which the stamp is applied, the stamp is applied to every overlapping applicable object.

10 Repeat as many times as necessary. Press **Esc** to proceed.

Note The **Rename** and **Delete** buttons are enabled whenever a user-defined stamp pattern is selected. When the **Rename** button is clicked, the **Rename Stamp Pattern** dialog opens. Use it to

rename user-defined stamp patterns. See also Adding stamps to a library.
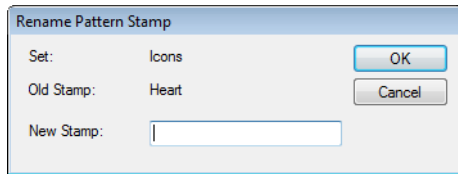
Tip Use the **Softened Stamp** and **Raised Stamp** options on the **Appearance** tab to soften or accentuate the effect. See Changing carving stamp appearance for details.

Using objects as carving stamps

The **Carving Stamp** docker contains four tabs: Use Pattern, Use Object, Digitize, and Appearance. The **Use Object** tab allows you to select object outlines from the Design Window and apply them directly as stamps or save them to a library for future reference.

- -

To use an object as a carving stamp

1 Select an embroidery object or not as required.

You can start with or without embroidery objects selected to be used as stamps.
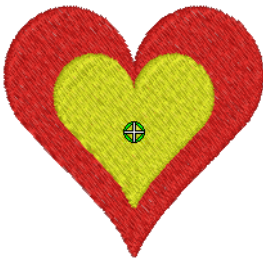
2 Click the **Carving Stamp** icon and select the **Use Object** tab.

Select Use Object tab
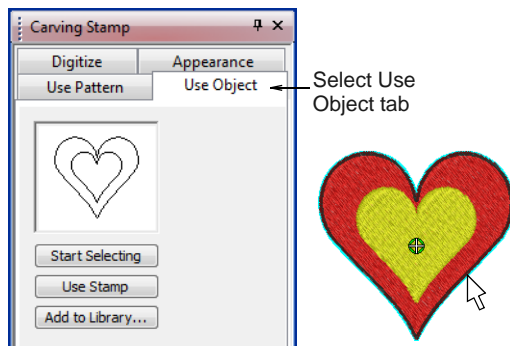
3 Click the **Start Selecting** button.

Any pre-selected objects remain selected.

4 Hover the mouse over any object in the Design Window.

The object outline is highlighted.

▸ Select object outlines to include in the stamp using any existing selection methods. The selected outlines appear in the preview panel.

▸ Deselect at any time by pressing the **Esc** key.

Tip Selectable objects can include vectors from **Art Canvas**. This is the only time vectors can be selected in the **Embroidery Canvas**.

5 Click the **Use Stamp** button to apply the selection as a carving stamp. See Applying pre-defined patterns for details.

6 Optionally, click the **Add to Library** button to add the selection to the library for future reference. See Adding stamps to a library for details.

Tip Use the **Softened Stamp** and **Raised Stamp** options on the **Appearance** tab to soften or accentuate the effect. See Changing carving stamp appearance for details.

Digitizing carving stamps

The **Carving Stamp** docker contains four tabs: Use Pattern, Use Object, Digitize, and Appearance. The **Digitize** tab allows you to digitize stamp outlines and either directly apply the digitized stamp where it was

digitized, or apply it to applicable objects in the Design Window.

You are prompted to enter a starting point for the stamp outline.
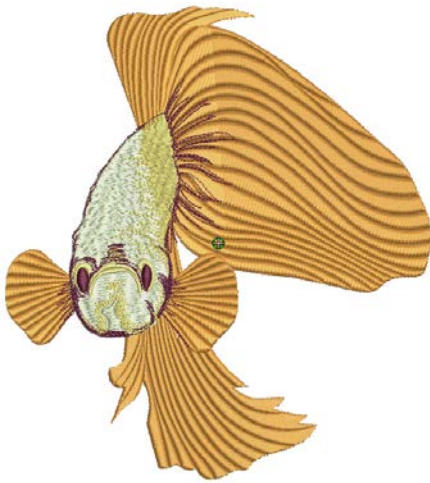
To digitize carving stamps

1   Select an embroidery object or not as required.

   If embroidery objects are pre-selected, digitized stamps will apply only to these objects.
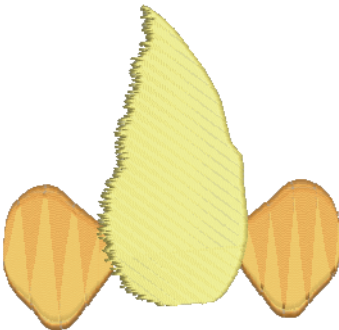
2   Click the **Carving Stamp** icon and select the **Digitize** tab of the dialog.

Click to start digitizing
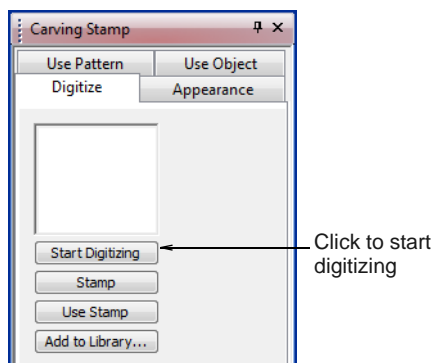
3   Click the **Start Digitizing** button.
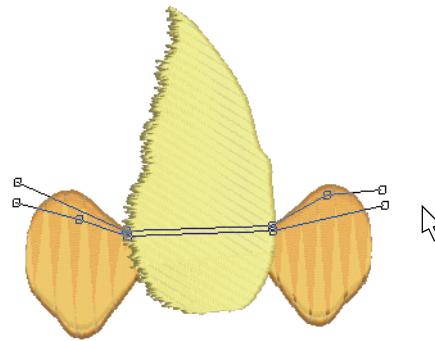
4   Digitize stamp outlines:
   ‣ Press **Enter** once to complete a boundary.
   ‣ Press **Enter** again to finish stamp digitizing.

5   Click the enabled **Stamp** button.
   ‣ Click the **Stamp** button to apply the stamp to selected applicable objects only.
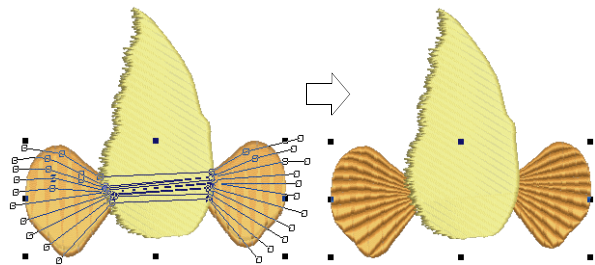
   Stamp applied with object/s selected

   ‣ Alternatively, use **Stamp** to apply the stamp to applicable objects with no object/s selected.
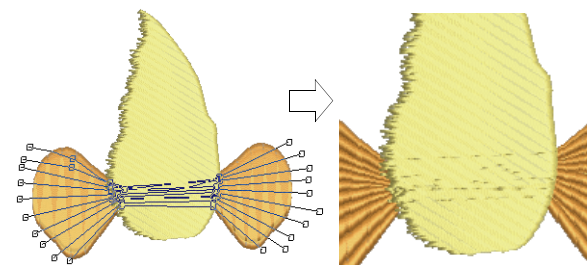
   Stamp applied with no object/s selected

   ‣ Click the **Use Stamp** button to position the stamp. You are prompted to enter an anchor

point as with pre-defined patterns. See Applying pre-defined patterns for details.
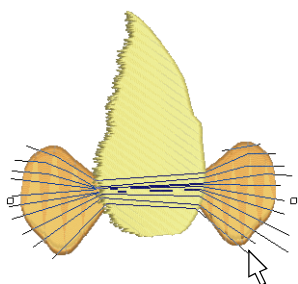
6 Optionally, click the **Add to Library** button to add the selection to the library for future reference. See Adding stamps to a library for details.

Changing carving stamp appearance

The **Carving Stamp** docker contains four tabs: Use Pattern, Use Object, Digitize, and Appearance. The **Softened Stamp** and **Raised Stamp** checkboxes and **Clear All Stamps** button in the **Appearance** tab are enabled when one or more objects with stamps are selected.

- -

To change carving stamp appearance

1 Select an embroidery object with stamps already applying.

2 Click the **Carving Stamp** icon and select the **Appearance** tab of the dialog.
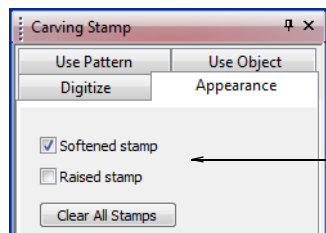
Choose an option

3 Choose an option to modify stamp appearance as desired:

▸ Checking the **Softened Stamp** checkbox causes any existing stamp/s to be softened.

▸ Checking the **Raised Stamp** checkbox cause any splits within the combined closed boundaries of a carving stamp to be removed. Self-intersecting boundaries and overlapping boundaries are combined.

Note Clicking the **Clear All Stamps** button will cause all existing stamps to be removed from selected objects.

Reshaping carving stamps

Carving stamps can be moved, rotated, scaled, reshaped, and deleted individually in **Reshape** mode. As you transform carving stamps, needle penetrations in the underlying object are automatically updated.

- -

To reshape a carving stamp

▸ In **Reshape** mode, select an embroidery object with carving stamps applied.

A diamond selection handle is displayed at the center of each stamp.

- Holding down the **Ctrl** key will scale the stamp proportionally.
- Holding down both **Ctrl** and **Shift** keys while dragging a corner sizing handle will scale the stamp proportionally about the center.

▶ Drag one of the stretching handles to stretch the stamp.

- Top and bottom stretching handles stretch the object vertically.
- Left and right stretching handles will stretch the stamp horizontally.
- Holding down the **Shift** key will stretch the stamp from the center.

Click a diamond selection handle

▶ Select the diamond selection handle.

Another set of sizing, stretching and rotation handles appears around the stamp as shown.

Drag stretching handle
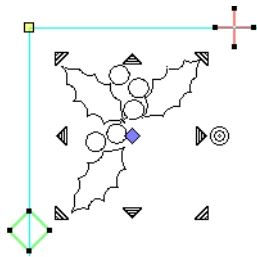
▶ Drag the diamond to move the stamp.
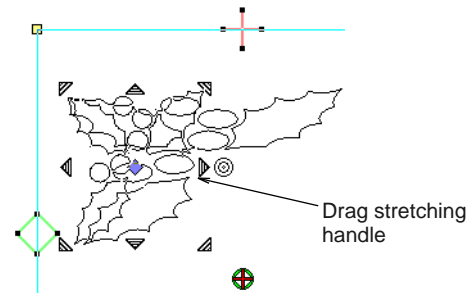
▶ Drag the rotation handle to rotate the stamp.

Drag diamond

Drag rotation handle

Tip Holding down the **Ctrl** key will constrain the movement to the horizontal or vertical axis.

▶ Drag one of the corner sizing handles to scale the stamp.
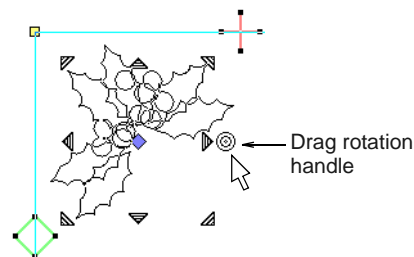
▶ Click the blue diamond handle to change it back into a green diamond handle with no nodes displayed.

▶ Click the curve of the stamp to display control points. Use these to reshape or delete the stamp in the same way as for other objects.

Drag corner sizing handle

- Holding down the **Shift** key will scale the stamp from the center.
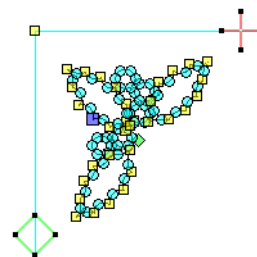
Note When an embroidery object with carving stamps is itself transformed, carving stamps are transformed accordingly.

Adding stamps to a library

This procedure starts when you click the enabled **Add to Library** button either on the **Use Object** tab or **Digitize** tab in the **Carving Stamp** docker.

- -

To add a stamp to a library

1   Select an object which you want to add to the library as a user-defined carving stamp.

▸ Define your own carving stamps using the **Carving Stamp > Use Object** tab. See Using objects as carving stamps for details.

▸ Digitize carving stamps on the spot using the **Carving Stamp > Digitize** tab. See Digitizing carving stamps for details.

Click to add to library →
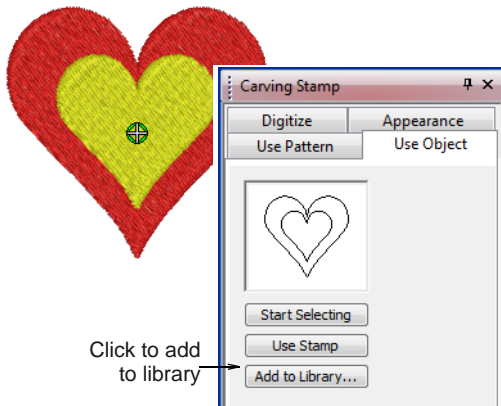
2   On either of these tabs, click the enabled **Add to Library** button.

The **Create Stamp Pattern** dialog opens.

Select library set from dropdown list

Enter name for new stamp
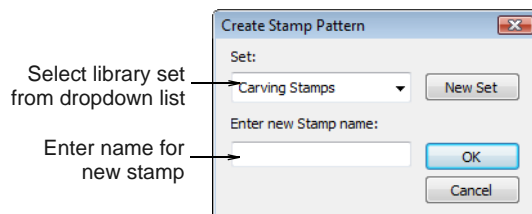
3   Select a set from the dropdown list or click the **New Set** button to create a new library.

If you chose to create a new library set, use the **New Stamp Set** dialog to create a new stamp set.

The newly created stamp set is displayed in the **Set** list when the **Use Pattern** tab is selected.

Enter name for new library set
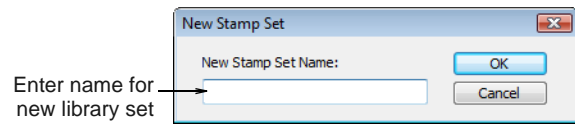
4   Enter a new stamp name and click **OK**.

You are prompted to digitize the first reference point in the Design Window.

5   Enter the first reference point:

▸ Press **Enter** to have the reference point created automatically.

▸ Move the mouse pointer to the position you want to use as the **anchor point** during manual stamp placement, and left-click.

Enter first reference point
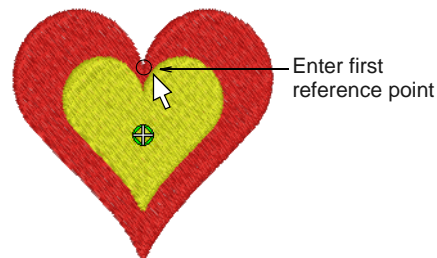
6   Enter the second reference point:

▸ Press **Enter** to have the reference point created automatically.

▸ Move the mouse pointer to the position you want to use as the **guide point** during manual stamp placement and left-click.

Enter second reference point
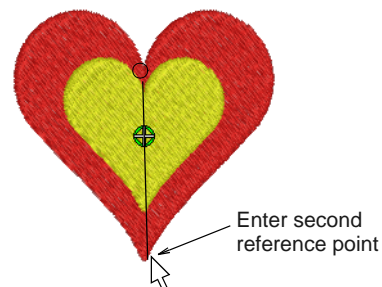
BERNINA Embroidery Software:

▸ creates the stamp

▸ registers the reference points either automatically or manually entered

▸ replaces any same name stamp with the newly created stamp

▸ displays a confirmation message.

7   Click **OK**.

The newly created stamp is displayed in the stamp list when the **Use Pattern** tab is selected.

Note The **Rename** and **Delete** buttons are enabled in the **Use Patterns** tab whenever a user-defined stamp pattern is selected. When the **Rename** button is clicked, the **Rename Stamp Pattern** dialog opens. Use it to rename user-defined stamp patterns. See also Applying pre-defined patterns.
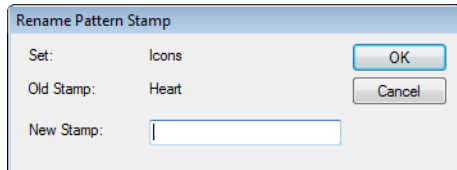
CHAPTER 23
CRAFT STITCH BORDERS AND FILLS

BERNINA Embroidery Software provides a range of craft stitches which you can use to mimic some traditional hand-worked embroidery. These include a large range of blackwork and candlewicking patterns suitable for both outlines and fills. See also Craft Stitch Pattern Samples.
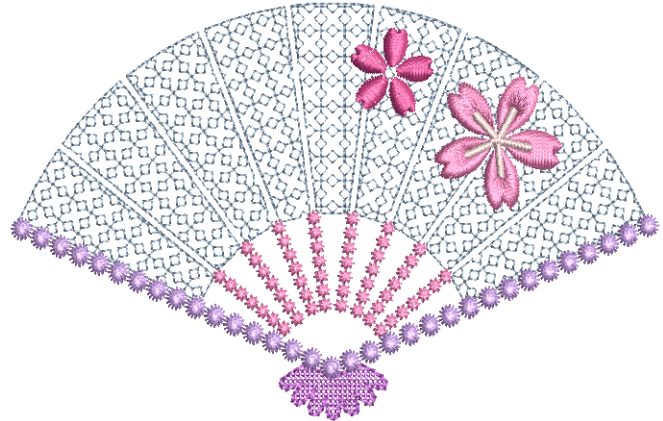
Backstitch and stemstitch are two versatile outline stitches. Backstitch forms a continuous thin line, similar to machine stitching, while stemstitch produces rope-like lines which can vary in thickness depending on stitch angle. Both can be used to make a smooth continuous row of stitching suitable for outlines and for blackwork.

Lacework and stipple are two decorative fill stitches. Lacework can be used to give a lacey look to objects such as flowers. Stippling, also known as vermicelli, is a free flowing run stitch that can be used for decorative effects or to produce quilting.

This section explains how to apply the various craft stitch types to outlines and fills, as well as change stitch settings to obtain the best results.

Creating craft stitch outlines

BERNINA Embroidery Software provides a range of craft stitches for use as borders. Available stitch types include blackwork, backstitch, stemstitch, and candlewicking. See also Craft Stitch Pattern Samples.
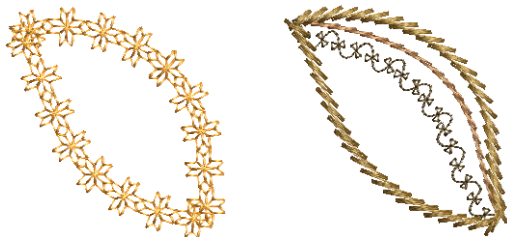
Tip You can also create decorative stitch effects with pattern runs. See Creating pattern outlines for details.

Creating craft stitch borders
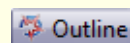
Outline	Click Outline (Stitch and Color Bar) to access outline stitches.
	Use Blackwork Border (Craft Stitch toolbar) to digitize blackstitch borders.
	Use Candlewicking Border (Craft Stitch toolbar) for candlewick borders.
	Use Backstitch (Craft Stitch toolbar) for backstitch borders.

Use Stemstitch (Craft Stitch toolbar) for stemstitch borders.

Different stitch types suit different shapes. When you digitize an object, it uses the current stitch type for the selected digitizing method. However, you can change stitch types at any stage. See also Setting current object properties.

- -

To create a craft stitch border

1 Select a craft stitch outline you want to use from the **Craft Stitch** toolbar.

Alternatively, click the **Outline** icon on the **Stitch and Color Bar** and choose a craft stitch outline from the dropdown menu. See also Selecting or changing stitches.
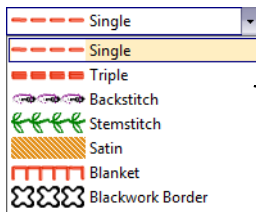
Select a craft stitch outline

2 Use the **Open Object**, **Closed Object**, **Circle** or **Rectangle** tools to create a line for the outline to follow. See Digitizing Methods for details.

Note The outline is created with default stitch settings. These can be adjusted before or after digitizing via **Object Properties**.

3 To change settings, double-click or right-click the object.

The **Object Properties > Outline Stitch** dialog opens.

4 Adjust settings as required:

- ▸ Blackwork Border: See Creating blackwork outlines for details.
- ▸ Backstitch: See Creating backstitch outlines for details.
- ▸ Stemstitch: See Creating stemstitch outlines for details.
- ▸ Candlewicking Border: See Creating stemstitch outlines for details.

Tip You can change between craft stitch fills and outlines quickly using the buttons on the **Craft Stitch** toolbar or the **Outline** dropdown menu. See also Creating craft stitch fills.

Creating blackwork outlines

Use Blackwork Border (Craft Stitch toolbar) to digitize blackstitch borders.

Blackwork gets its name from the black silk thread traditionally used in this form of embroidery. Early designs tend to be angular, whereas later designs use more diagonal stitches. Blackwork employs just a few simple stitches to create complex designs. It can be used to decorate articles of dress or furnishings such as hankies, table napkins, tablecloths, and doilies. See also Creating blackwork fills.

- -
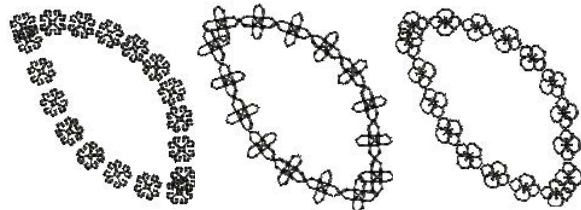
To create a blackwork outline

1 Select **Blackwork Border** from the **Outline** menu or **Craft Stitch** toolbar. See Creating craft stitch borders for details.

2 Digitize a line for the outline to follow. See Digitizing Methods for details.

3 To change settings, double-click or right-click the object.

The **Object Properties > Outline Stitch** dialog opens.

Click to change pattern

4   If not already applied, select **Blackwork Border** from the **Stitch Type** list.

5   Click the **Select** button.

The **Select Pattern** dialog opens.

Select viewing mode

Select pattern

Tip Select a viewing mode – you can list patterns by picture, name, or both.

6   Select a pattern from the display panel.

This becomes the current pattern. See also Craft Stitch Pattern Samples.

7   Click **Apply** to preview the effect.

The selected pattern is applied to the object.

8   Adjust the pattern **Size** as required and click **Apply**.

Size reduced
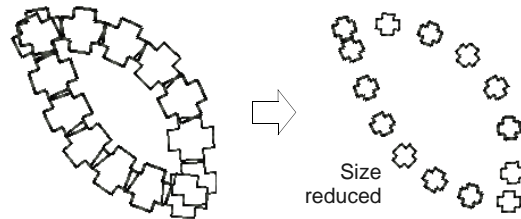
9   Adjust the pattern **Spacing** as required and click **Apply**.

▸ To increase stitch density, enter a smaller value.

▸ To reduce density for more open stitching, enter a larger value.
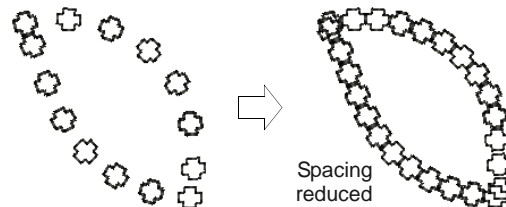
Spacing reduced

Tip If the border does not automatically pick up the color you have selected in the color palette, select it and re-select the color.

Creating backstitch outlines

Use Backstitch (Craft Stitch toolbar) to digitize back-stitch borders.

Backstitch is an old, adaptable stitch which can be used as a delicate outline. This small, even stitch follows intricate curves well. Backstitch can be used for blackwork and redwork designs. You can specify the exact stitch length, thickness and overlap values as well as the number of strokes.

To create a backstitch outline

1   Select **Backstitch** from the **Outline** menu or **Craft Stitch** toolbar. See Creating craft stitch borders for details.

2 Digitize a line for the outline to follow. See Digitizing Methods for details.

3 To change settings, double-click or right-click the object.

The **Object Properties > Outline Stitch** dialog opens.
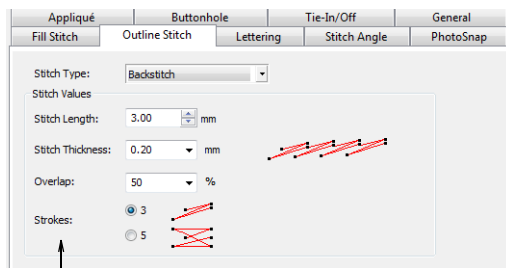
Adjust settings

4 If not already applied, select **Backstitch** from the **Stitch Type** list.

5 Adjust the **Stitch Length** as required and click **Apply**.

Stitch Length: 3.0 mm

Stitch Length: 1.5 mm
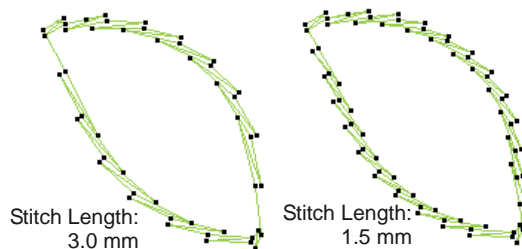
6 Adjust the **Stitch Thickness** as required and click **Apply**.

Stitch Thickness: 0.15 mm

Stitch Thickness: 0.2 5mm
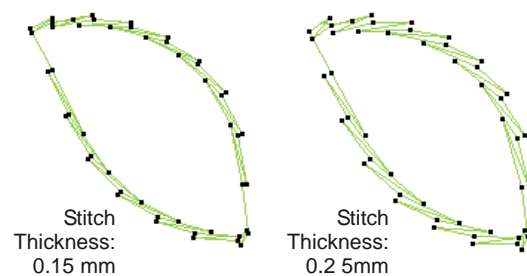
7 Adjust the **Overlap** as required and click **Apply**.

Overlap: 30%

Overlap: 70%
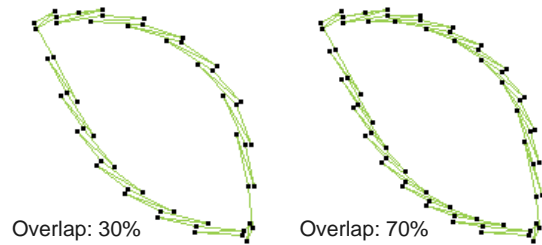
8 Adjust the number of strokes as required.

Strokes: 3

Strokes: 5
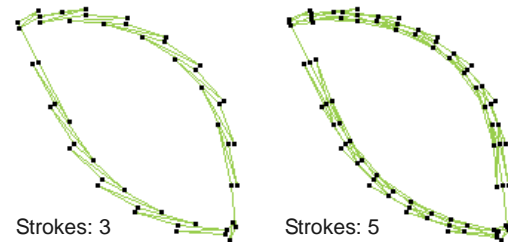
Creating stemstitch outlines

Use Stemstitch (Craft Stitch toolbar) to digitize stem-stitch borders.

Stemstitch is a detail stitch that can be used to outline items or fill in areas. It is used for stems and vines with other decorative stitches, or as an outline for stitches such as **Satin** fill or **Pattern Fill**. You can specify various settings including line thickness, spacing, angle, single or triple, and stitch thickness.

To create a stemstitch outline

1 Select **Stemstitch** from the **Outline** menu or **Craft Stitch** toolbar. See Creating craft stitch borders for details.

2 Digitize a line for the outline to follow. See Digitizing Methods for details.

3 To change settings, double-click or right-click the object.

The **Object Properties > Outline Stitch** dialog opens.
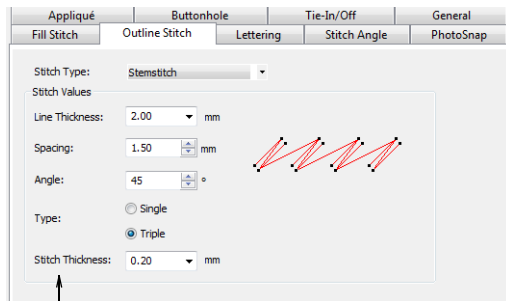
Adjust settings

4 If not already applied, select **Stemstitch** from the **Stitch Type** list.

5 Adjust the **Line Thickness** as required and click **Apply**.

Line Thickness: 2.0 mm

Line Thickness: 1.0 mm

6 Adjust the **Spacing** as required and click **Apply**.

Spacing: 0.8 mm

Spacing: 1.5 mm
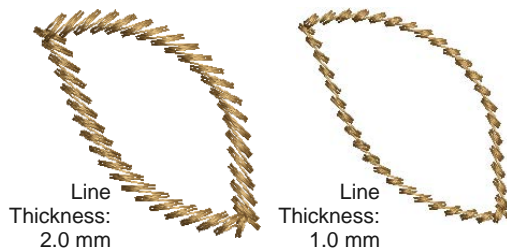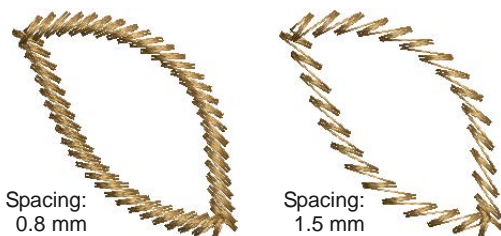
7 Adjust the **Angle** as required and click **Apply**.

Angle: 90°

Angle: 45°
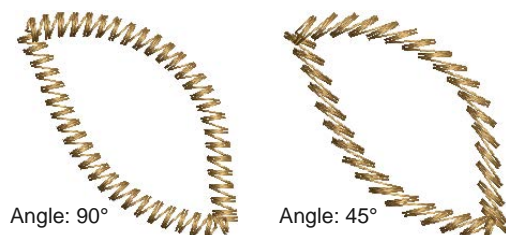
8 Select either **Single** or **Triple** and click **Apply**.

Type: Triple

Type: Single
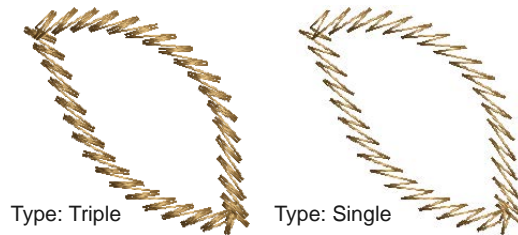
9 For **Triple** only, enter a **Stitch Thickness**.

Triple Stitch Thickness: 0.25 mm

Triple Stitch Thickness: 0.15 mm

Creating candlewicking outlines

Use Candlewicking Border (Craft Stitch toolbar) to digitize candlewicking outlines.

Candlewicking is a traditional white-on-white embroidery technique, usually done on white linen or cotton fabric with heavy cotton threads. Stitches used are mostly knots, both Colonial and French, as well as stemstitch. Candlewicking Border can be used for ornate borders. You can specify the exact size of each pattern as well as spacing between them. See also Creating candlewicking fills.

- -

To create a candlewicking outline

1 Select **Candlewicking Border** from the **Outline** menu or **Craft Stitch** toolbar. See Creating craft stitch borders for details.

2 Digitize a line for the outline to follow. See Digitizing Methods for details.

3 To change settings, double-click or right-click the object.

The **Object Properties > Outline Stitch** dialog opens.

Click to change pattern

4 If not already applied, select **Candlewicking Border** from the **Stitch Type** list.
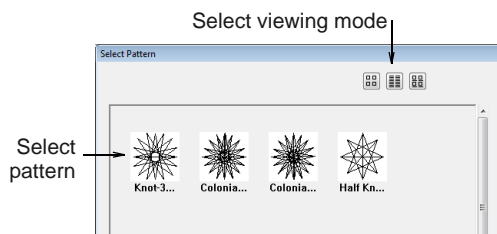
5 Click the **Select** button.

The **Select Pattern** dialog opens.

Select viewing mode

Select pattern

Tip Select a viewing mode – you can list patterns by picture, name, or both.

6 Select a pattern from the display panel.

This becomes the current pattern. See also Craft Stitch Pattern Samples.

7 Click **Apply** to preview the effect.

The selected pattern is applied to the object.

8 Adjust the **Size** as required and click **Apply**.

Size reduced
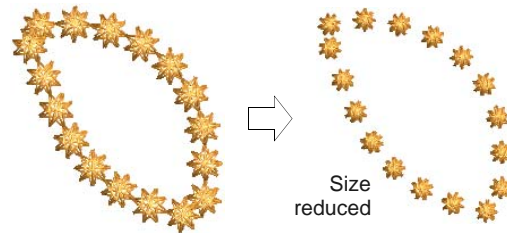
9 Adjust the **Spacing** as required and click **Apply**.
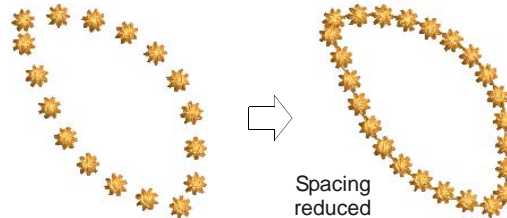
Spacing reduced

Tip If the border does not automatically pick up the color you have selected in the color palette, select it and re-select the color.

Creating craft stitch fills

BERNINA Embroidery Software provides a range of craft stitches for use as fills. Available stitch types include blackwork, candlewicking, lacework, and stippling. See also Craft Stitch Pattern Samples.
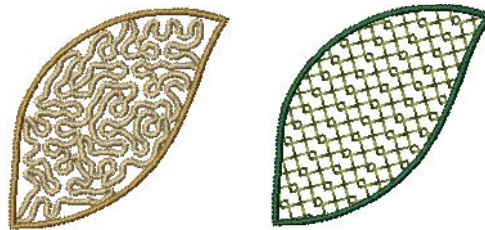
Tip You can also create decorative stitch effects with fancy and pattern fills. See Creating fancy fills and Creating pattern fills.

Creating craft stitch fills

Fill	Click Fill (Stitch and Color Bar) to access fill stitches.
	Use Blackwork Fill (Craft Stitch toolbar) to fill blackwork designs.
	Use Candlewicking Fill (Craft Stitch toolbar) for special candlewick effects.

Use Lacework (Craft Stitch toolbar) for special lacey effects.

Use Sculptured Fancy (Craft Stitch toolbar) to create turning tiled patterns using pre-defined needle penetrations.

Use Craft Stitch (Craft Stitch toolbar) to create spiral stitching from the center of any filled object.

Use Stipple Run (Craft Stitch toolbar) for special stippled effects.

BERNINA Embroidery Software provides four craft stitch fills – **Blackwork Fill**, **Candlewicking Fill**, **Lacework** and **Stipple**. Different stitch types are suited to different objects. You can select craft stitch fills by means of the **Stitch and Color Bar** or the dedicated **Craft Stitch** toolbar. See Craft Stitch Pattern Samples for details.

Note Stippling is a method of creating a fill made of run stitches which meander around within a border. It works a little differently to the other craft stitch fills. See Creating stippling fills for details.

- -

To create a craft stitch fill

1 Select the craft stitch fill you want to use from the **Craft Stitch** toolbar.

Alternatively, click the **Fill** icon on the **Stitch and Color Bar** and choose a craft stitch fill from the dropdown menu. See also Selecting or changing stitches.

Select a fill type
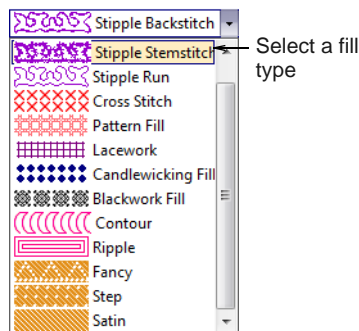
Tip You can digitize the shape before or after selecting the fill.

2 Create or select a closed shape. See Digitizing Methods for details.
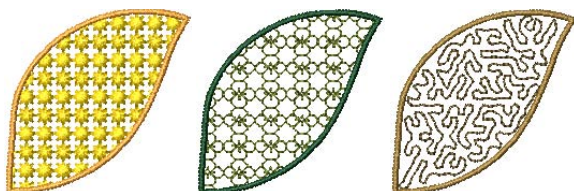
Note The fill is created with default stitch settings. These can be adjusted before or after digitizing via **Object Properties**.

3 To change settings, double-click or right-click the object.

The **Object Properties > Fill Stitch** dialog opens.

Tip You can change between craft stitch fills and outlines quickly using the buttons on the **Craft Stitch** toolbar or the **Fill** dropdown menu. See also Creating craft stitch borders.

4 Adjust settings as required:
   ▸ Blackwork Fill: See Creating blackwork fills for details.
   ▸ Candlewicking Fill: See Creating candlewicking fills for details.
   ▸ Lacework: See Creating lacework fills for details.

Tip Wave Effect lets you contour fill stitches along a digitized guideline. Wave Effect can be applied to some craft stitches. However, you need to first apply the effect to a Step fill before converting to a craft stitch fill. See also Creating wave effects.

Step stitch used   Wave Effect applied   Craft stitch selected
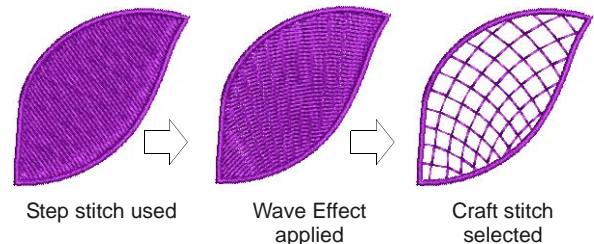
Creating blackwork fills

Use Blackwork Fill (Craft Stitch toolbar) to fill blackwork designs.

Blackwork gets its name from the black silk thread traditionally used in this form of embroidery. The most common blackwork fills employ simple stitches to create complex scrolling or geometric patterns. By using different blackwork fill patterns, you can create

light and dark tones in a design. See also Creating blackwork outlines.
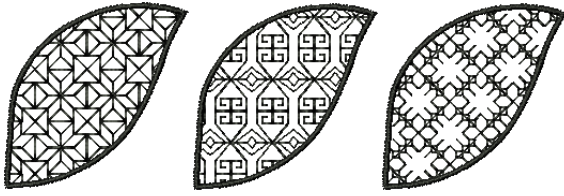
To create a blackwork fill

1 Click the **Blackwork Fill** icon or click the **Fill** icon and choose **Blackwork Fill** from the dropdown menu. See Creating craft stitch fills for details.

2 Create or select a closed shape. See Digitizing Methods for details.

Note Stitch angle has no effect on the pattern layout.
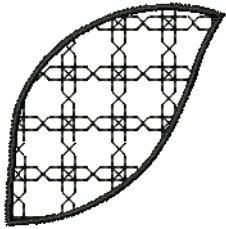
3 To change settings, double-click or right-click the object.

The **Object Properties > Fill Stitch** dialog opens.

Click to change pattern
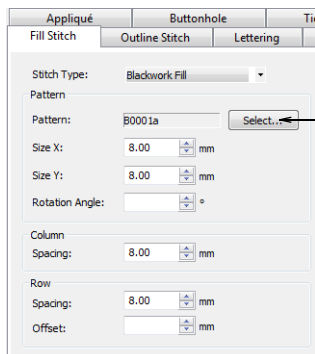
4 If not already applied, select **Blackwork Fill** from the **Stitch Type** list and click **Select**.

The **Select Pattern** dialog opens showing all available fill types.

Select viewing mode

Select pattern

Tip Select a viewing mode – you can list patterns by picture, name, or both.

5 Select the desired pattern from the display panel. See also Craft Stitch Pattern Samples.

6 Click **Apply** to preview the effect.

The selected pattern is applied to the object.
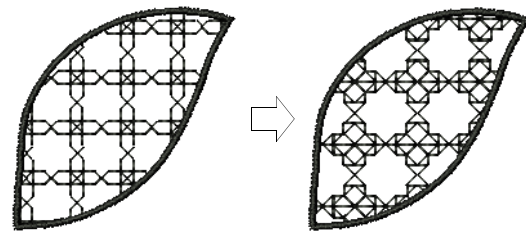
7 Change pattern layout by adjusting settings in the dialog or on-screen via the **Layout** button.

Techniques for adjusting pattern layout are the same as for pattern fills. See Creating pattern fills for details.

8 Click **Apply** to preview the effect or **OK** to finish and close.

Note If more than half a pattern is outside the boundary, it will be clipped along the boundary.

Creating candlewicking fills

Use Candlewicking Fill (Craft Stitch toolbar) for special candlewick effects.

Candlewicking is a traditional white-on-white embroidery technique, usually done on white linen or cotton fabric with heavy cotton threads. More use of color is becoming popular today. Stitches used are mostly knots, both Colonial and French, as well as stemstitch. Candlewicking can be used to embroider white bedspreads, pillows and clothing. See also Creating candlewicking outlines.
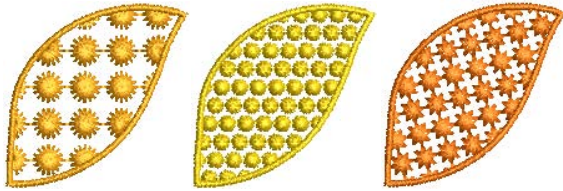
To create a candlewicking fill

1 Click the **Candlewicking Fill** icon or click the **Fill** icon and choose **Candlewicking Fill** from the dropdown menu. See Creating craft stitch fills for details.

2 Create or select a closed shape. See Digitizing Methods for details.

Note Stitch angle has no effect on the pattern layout.

3 To change settings, double-click or right-click the object.

The **Object Properties > Fill Stitch** dialog opens.
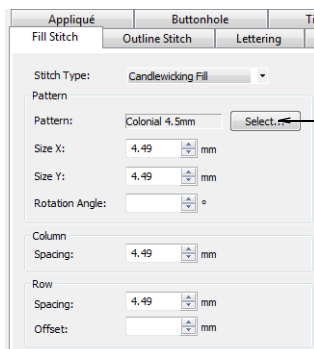
Click to change pattern

4 If not already applied, select **Candlewicking Fill** from the **Stitch Type** list and click **Select**.

The **Select Pattern** dialog opens showing all available fill types.

Select viewing mode

Select pattern

Tip Select a viewing mode – you can list patterns by picture, name, or both.

5 Select the desired pattern from the display panel. See also Craft Stitch Pattern Samples.

6 Click **Apply** to preview the effect.

The selected pattern is applied to the object.
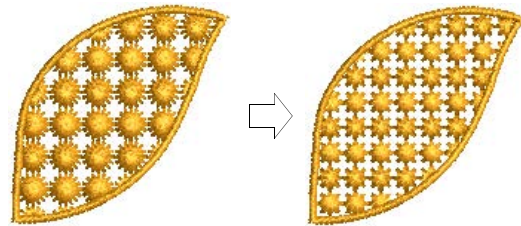
7 Change pattern layout by adjusting settings in the dialog or on-screen via the **Layout** button.

Techniques for adjusting pattern layout are the same as for pattern fills. See Creating pattern fills for details.

8 Click **Apply** to preview the effect or **OK** to finish and close.

Note If more than half a pattern is outside the boundary, it will be clipped along the boundary.

Creating lacework fills

Use Lacework (Craft Stitch toolbar) for special lacey effects.

Lacework stitch consists of an open square trellis-like pattern which gives objects a lacey look. With

Lacework fills you can adjust the layout of the preset patterns.
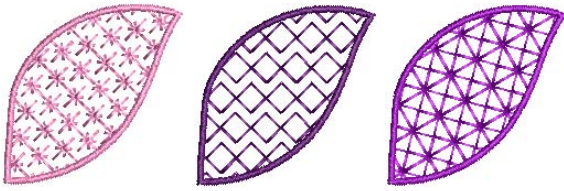
To create a lacework fill

1   Click the **Lacework** icon or click the **Fill** icon and choose **Lacework** from the dropdown menu. See Creating craft stitch fills for details.

2   Create or select a closed shape. See Digitizing Methods for details.
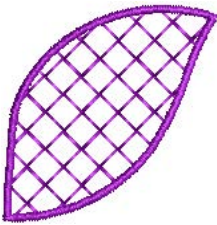
Note Stitch angle has no effect on the pattern layout.

3   To change settings, double-click or right-click the object.

The **Object Properties > Fill Stitch** dialog opens.
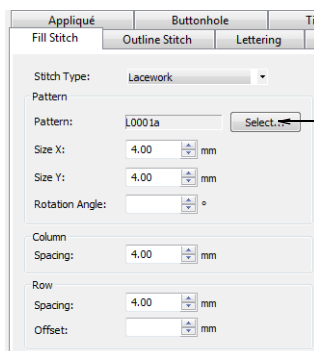
Click to change pattern

4   If not already applied, select **Lacework** from the **Stitch Type** list and click **Select**.

The **Select Pattern** dialog opens showing all available fill types.

Select viewing mode

Select pattern

Tip Select a viewing mode – you can list patterns by picture, name, or both.

5   Select the desired pattern from the display panel. See also Craft Stitch Pattern Samples.

6   Click **Apply** to preview the effect.

The selected pattern is applied to the object.
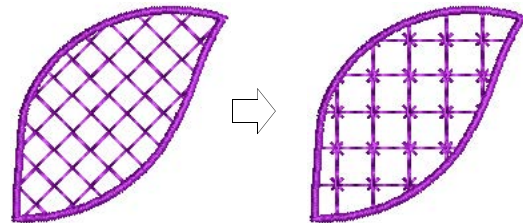
7   Change pattern layout by adjusting settings in the dialog or on-screen via the **Layout** button.

Techniques for adjusting pattern layout are the same as for pattern fills. See Creating pattern fills for details.

8   Click **Apply** to preview the effect or **OK** to finish and close.

Note If more than half a pattern is outside the boundary, it will be clipped along the boundary.

Creating Sculptured Fancy fills

Use Craft Stitch > Sculptured Fancy to create turning tiled patterns using pre-defined needle penetrations.

Sculptured Fancy stitch is related to **Fancy Fill** stitch using needle penetrations to form a tiled pattern. The difference is that **Sculptured Fancy**

stitch can be applied to objects with turning stitches creating three dimensional, turning pattern effects which can't be achieved by **Fancy Fill** alone. See also Creating fancy fills.

Tip If the object you are working with does not contain turning stitches, you can generally add them with the **Add Stitch Angles** tool. See Adjusting stitch angles for details.

- -

To create a Sculptured Fancy fill

1 Create or select a closed shape with turning stitching. See Digitizing Methods for details.

2 Click the **Sculptured Fancy** icon. See Creating craft stitch fills for details.

The Sculptured Fancy effect is applied using the current **Fancy Fill** pattern. See also Creating fancy fills.

Creating ripple fills

 Use Craft Stitch > Ripple to create spiral stitching from the center of any filled object.

Ripple stitch is related to **Contour** stitch, providing a similar look (with a fixed number of lines and variable spacing) but spiralling out from the center of a filled object. This stitch type works best for 'blobby' shapes but can be applied to longer shapes. With longer shapes it may generate stitches that go outside the perimeter of the object, but this can provide for some interesting visual effects. See also Creating contour fills.
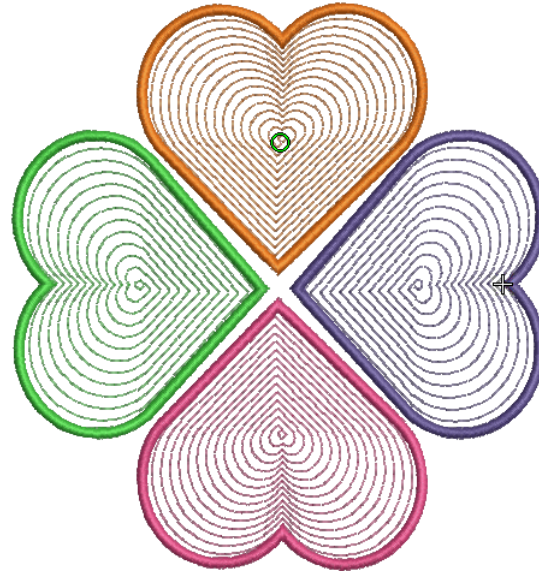
Ripple stitch can be applied to any filled object and is accessed from the stitch list in the **Stitch and Color Bar** and the **Fill Stitch** object properties tab as well as from the **Craft Stitch** toolbar. The center of the **Ripple** stitch can be moved with the **Reshape Object** tool.

- -

To create a ripple fill

1 Click the **Ripple** icon or click the **Fill** icon and choose **Ripple** from the dropdown menu. See Creating craft stitch fills for details.

2 Create or select a closed shape. See Digitizing Methods for details.

Note Stitch angle has no effect on the pattern layout.

3 To change settings, double-click or right-click the object.

The **Object Properties > Fill Stitch** dialog opens.

Adjust stitch settings as desired
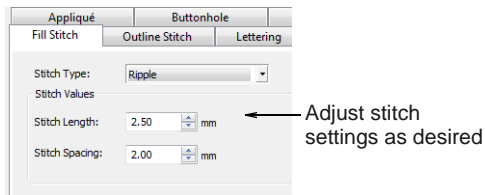
4 Adjust ripple **Stitch Values** as desired:
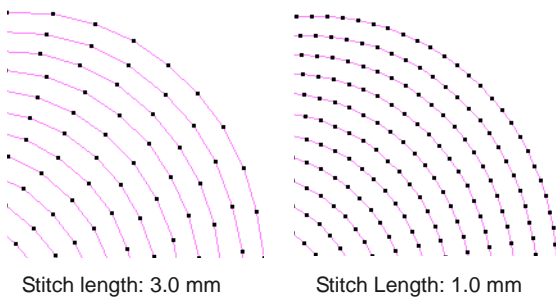
▸ Adjust **Stitch Length** for smoother or sharper curves.

Stitch length: 3.0 mm   Stitch Length: 1.0 mm

▸ Adjust **Stitch Spacing** for denser or more open stitching.

Stitch spacing: 3mm   Stitch spacing: 5mm
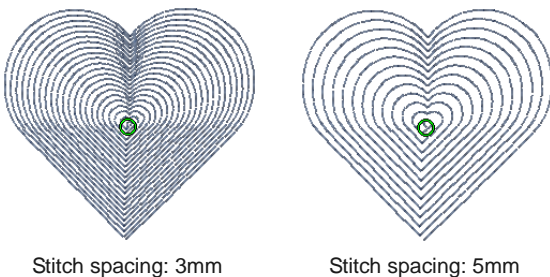
5 Click **Apply** to preview the effect or **OK** to finish and close.

The selected settings are applied to the object.

Note If the object has a hole, this is ignored when ripple is applied but still exists when other stitch types are applied.
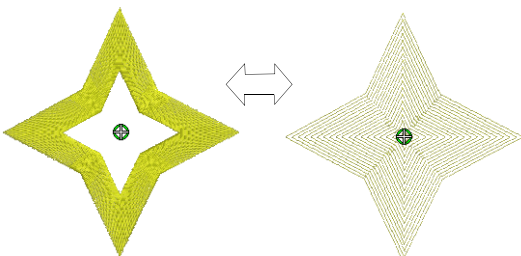
Tip Some interesting visual effects can be achieved by reshaping and moving the centre of the **Ripple** stitch outside the object outline.
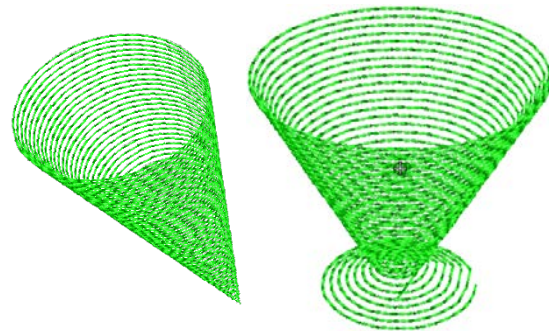
Creating stippling fills

Use Stipple Run (Craft Stitch toolbar) for special stippled effects.

Stippling creates a fill made up of run stitches which meander within a border. There are three types: **Stipple Run**, **Stipple Backstitch**, and **Stipple Stemstitch**. Stippling can be applied to the same objects as **Pattern Fill** – i.e. closed objects with or without stitch angles. It can't be applied to lettering, auto appliqué or composite objects.
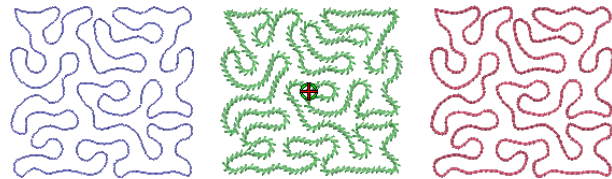
You can control stitch density in stippling objects by adjusting stitch length and loop spacing. You can reshape and scale stipple fill object outlines while preserving settings.

To create a stippling fill

1 Click the **Stipple Run** icon or click the **Fill** icon and choose **Stipple Run** from the dropdown menu. See Creating craft stitch fills for details.

2 Create or select a closed shape. See Digitizing Methods for details.
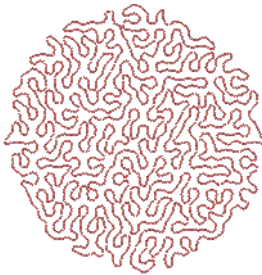
Note Stitch angle has no effect on the stipple run pattern.

3 To change settings, double-click or right-click the object.

The **Object Properties > Fill Stitch** dialog opens.
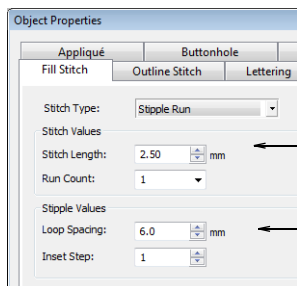
Adjust stitch values as required

Adjust stipple settings

4 Adjust run **Stitch Values** as desired:

▸ Adjust **Stitch Length** for smoother or sharper curves.

Stitch length: 1.0 mm   Stitch Length: 3.0 mm

▸ Adjust **Run Count** defines the number of stitch repetitions – e.g. 1, 3, 5, 7, 9 – and hence the stitch bulk.

5 Adjust **Stipple Values** as desired:

▸ Adjust **Loop Spacing** for tighter or more open stitching.

Loop Spacing: 1.5 mm   Loop Spacing: 2.5 mm

▸ Adjust **Inset Step** to offset stippling inwards from the object outline. To leave a larger gap between the stippling and the outline, enter a larger value. Note that the stipple fill cannot extend beyond the object outline.

6 Change stipple **Stitch Type** as desired. **Stipple Stemstitch** and **Stipple Backstitch** work the same way as **Stipple Run** except that they create a more ornate fill effect.
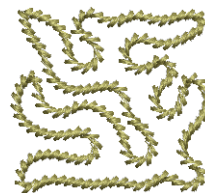
Stipple Stemstitch   Stipple Backstitch
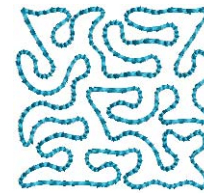
▸ **Stipple Stemstitch** settings are also controlled via **Object Properties**. See also Creating stemstitch outlines.
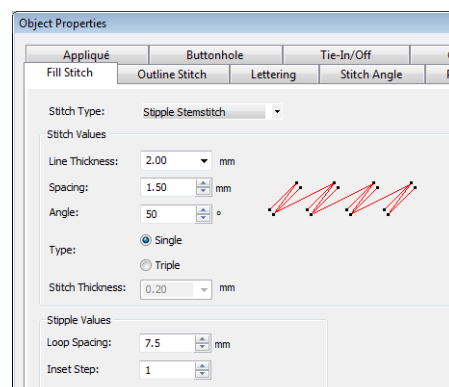
▶ **Stipple Backstitch** settings are also controlled via **Object Properties**. See also Creating backstitch outlines.
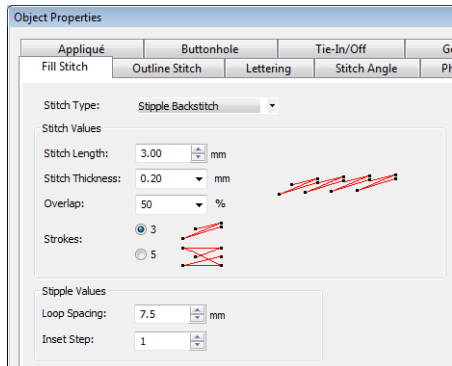
7 Click **Apply** to preview the effect or **OK** to finish and close.

Once a stipple fill is generated, you can adjust object properties of the generated stipple run at any time. You can also reshape and scale stipple fill object outlines while preserving settings. See Reshaping objects using reshape nodes for details.
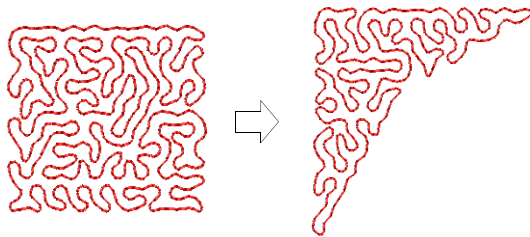
Tip The **Break Apart** command can be applied to stipple fill objects. As a result, you can edit the stipple run line directly. Apply **Pattern Run**, **Satin** and other outline stitch types as desired. See Splitting into component objects for details.
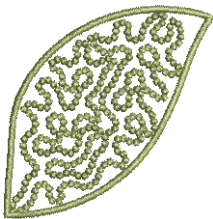
Stipple with Candlewicking   Stipple with Blanket
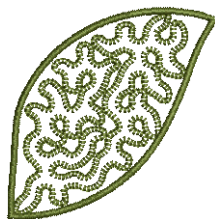
CHAPTER 24
DIGITIZING FOR APPLIQUÉ

Appliqué is an important craft in home sewing, and the Auto Appliqué feature provides an easy way to create high quality work. Use Auto Appliqué to generate the stitching you require for closed-object appliqué. Up to four layers of stitching – placement lines, cutting lines, tackdown and cover stitches – are generated. Using the Partial Appliqué tool, you can create appliqué objects with partial cover stitching to create overlaps without doubling-up borders.

Sometimes you require added flexibility to extend the range of designs that can be sewn. For instance, designs containing open objects cannot be handled by Auto Appliqué. In such cases, the special Advanced Appliqué tool allows you to generate 'open-object appliqué' from one or more source objects.

This section covers creating closed-object appliqué as well as partial cover appliqué. It also discusses creating open-object appliqué.
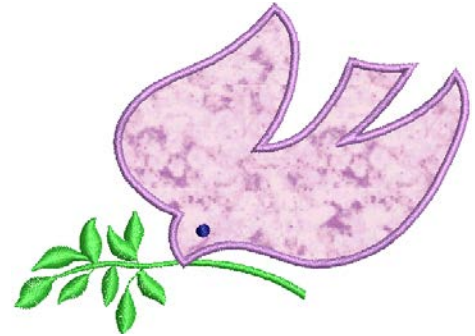
Creating closed-object appliqué

Use **Auto Appliqué** to produce the stitching you require for closed-object appliqué. You digitize the border around an appliqué shape in much the same way as an closed-object embroidery object. You can control various settings including cover stitch type – Satin or Blanket – width, stitch spacing, as well as offset. Up to three types of 'secondary object' can be automatically generated:

▸ **Placement lines**: Optionally, placement lines are used to position applique fabrics or pre-cut patches on the background fabric.

▸ **Cutting lines**: Optionally, cutting lines form a guide when trimming the fabric of an appliqué patch 'in situ'.

▸ **Tackdown**: This is a zigzag or run stitch placed after placement and cutting lines, and used to fix appliqué patches to the background fabric before cover stitching is applied.

Tip You can also create appliqué objects with partial cover stitching to create overlaps without doubling-up borders. See also Creating partial cover appliqué.

Creating appliqué with Auto Appliqué

Use Auto Appliqué (Digitize toolbar) to digitize closed-object appliqué objects.

Use **Auto Appliqué** to generate the stitching you require for closed-object appliqué. Up to four layers of stitching – placement line, cutting line, tackdown and cover stitch – are generated. Options determining single or multiple boundaries as well as frame-out position are set in the **Options** dialog. See Setting Auto Appliqué options for details.

Tip When you stitch out an appliqué object, the machine stops between layers. Before you begin to stitch the appliqué, lay the fabric over the design and start the machine. When the guideline has been stitched, trim the excess appliqué material and start the machine again for the tackdown and cover stitch.

To create appliqué using Auto Appliqué

1 Load a picture. See Loading pictures for details.

Tip By default, the tool allows you to digitize multiple appliqué objects. If you only want to digitize a single object, activate the **Single** option in the **Options** dialog. See Setting Auto Appliqué options for details.

2 Click the **Auto Appliqué** icon in **Design** or **Artistic View**.

3 Digitize the appliqué outline by marking reference points around the shape.

  ‣ Click to create a corner point.

  ‣ Right-click to create a curve point.
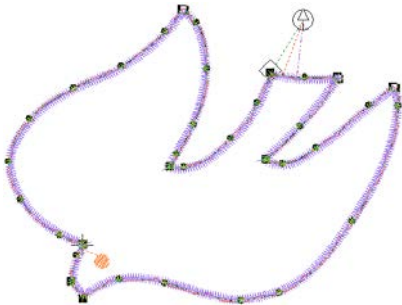
Tip Follow the prompts in the **Status Bar** to help you digitize. If you make a mistake, press **Backspace** to delete the last reference point, then continue digitizing.

4 Press **Enter** to close the shape.

5 Click the outline to set the stitch entry and exit points or press **Enter** to accept the defaults.

6 Depending on the selected frame-out method, you may be prompted to mark the frame-out position. See Setting Auto Appliqué options for details.

  ‣ **Automatic**: If activated, the frame-out position is determined automatically.

‣ **Manual**: If activated, click the point where the frame-out position is to be.
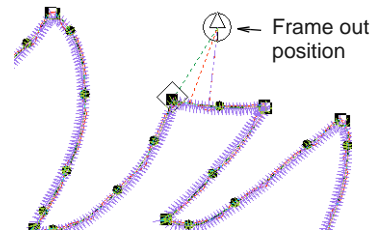
‣ **Place Under Cover Stitches**: If activated, the frame-out position is placed at the location of the last needle penetration before the frame-out would occur.

7 Press **Enter**.

The shape is closed and up to four layers of stitching generated – placement line, cutting line, tackdown and cover stitch – depending on current settings. See Adjusting Auto Appliqué settings for details.
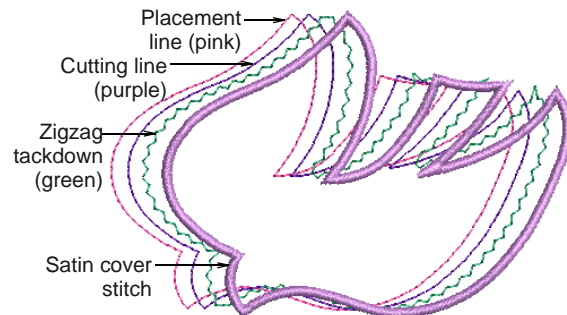
Note The **Ungroup** command is not available when an Auto Appliqué object is selected. If you wish to access component objects, use the **Break Apart** tool. See Splitting into component objects for details.

Adjusting Auto Appliqué settings

Use Object Properties (General toolbar) to set current properties.

The cover stitch is the border around the appliqué shape. You can control various settings including cover stitch type, width, stitch spacing, as well as the offset in relation to the digitized outline.

To adjust Auto Appliqué settings

1 Double-click or right-click an Auto Appliqué object.

The **Object Properties > Appliqué** dialog opens.
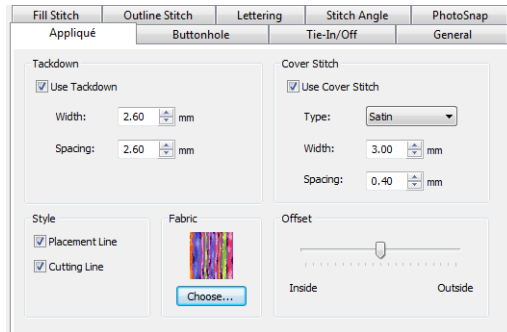
Tip To adjust settings prior to digitizing, with no objects selected, access the **Object Properties > Appliqué** dialog.

2 In the **Cover Stitch** panel, select the required cover stitch type – Satin or Blanket.

Note By default cover stitching is activated. This control allows compatibility between appliqués created in Explorations which has a 'No Border' option, and those created in BERNINA Embroidery Software.

3 Adjust cover stitch width and spacing as required:

  ▸ **Width**: Enter the width of the Satin or Blanket column.

Satin Width: 2.5 mm   Satin Width: 1.0 mm
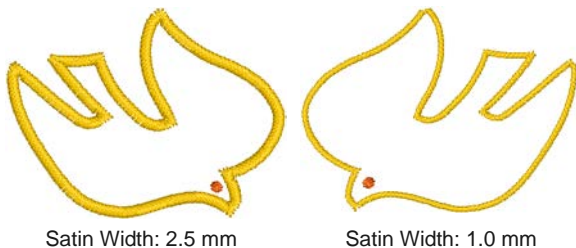
  ▸ **Spacing**: Enter the stitch spacing of the Satin or Blanket column.

Blanket Spacing: 1.3 mm   Blanket Spacing: 2.0 mm
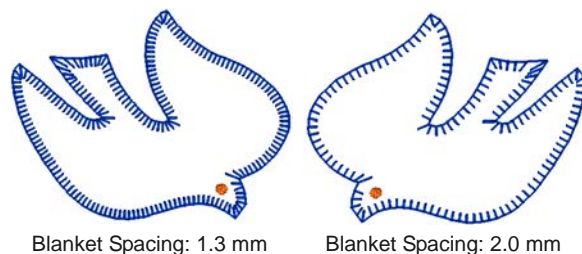
4 If using Satin cover stitch, select the **Use Tackdown** checkbox as required and adjust width

and spacing settings. Tackdown width cannot be greater than the cover stitch width.
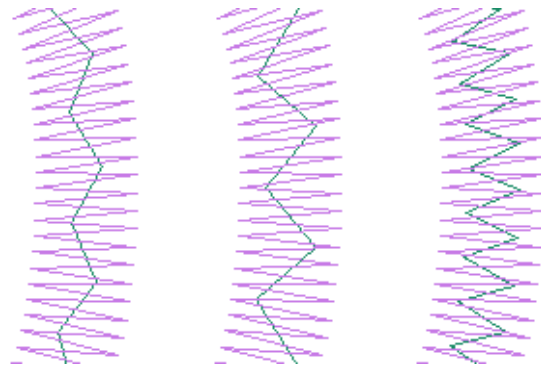
Tackdown stitch width: decreased spacing: increased

Tackdown stitch width: default spacing: default

Tackdown stitch width: increased spacing: decreased

Note Tackdown stitching is not available for Blanket cover stitch.

5 Select required appliqué styles.

Two options are available – Placement Line and Cutting Line. Use placement lines as a guide to place pre-cut fabric patches. Use cutting lines to hold down uncut patches so that they can be cut in place.
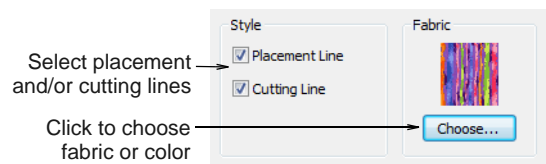
Select placement and/or cutting lines

Click to choose fabric or color

6 Click **Choose** to choose a fabric or plain color in the **Fabric** panel to assign to your appliqué patch. See Placing fabrics in Auto Appliqué designs for details.

7 Use the slider to offset the cover stitch relative to – inside or outside – the placement line.

Adjust cover stitch and tackdown offset
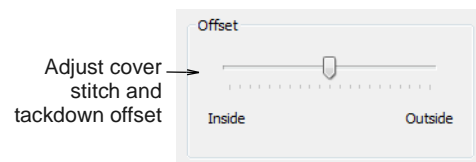
Satin defaults to none while Blanket defaults to 100% inside.

Offset: inside   Offset: none   Offset: outside
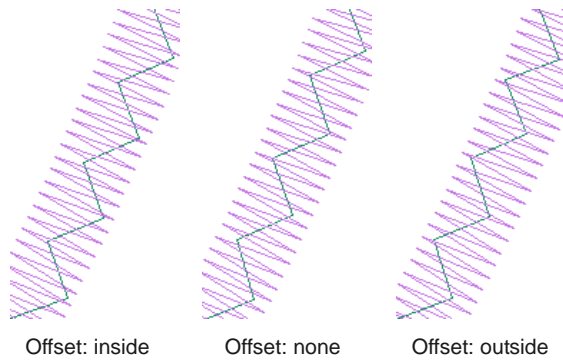
8 Click **Apply**.

Current settings are applied to selected objects.

Placing fabrics in Auto Appliqué designs

 Use Show Appliqué Fabric (General toolbar) to toggle appliqué fabrics/colors on/off.

The **Object Properties > Appliqué** dialog contains a **Fabric** panel which allows you to choose a fabric or plain color to assign to your appliqué patch.

To place fabric in an Auto Appliqué design

1 Double-click or right-click an Auto Appliqué object.

The **Object Properties > Appliqué** dialog opens.
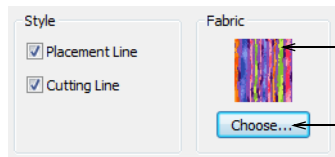
Swatch showing current fabric used for appliqué

Click to choose fabric or color

2 Click **Choose** to choose a fabric or plain color in the Fabric panel to assign to your appliqué patch.

The **Appliqué Fabric** dialog opens. The **Fabric/Color/None** options allow you to select

between fabrics or plain colors. By default the **Fabrics** option is selected.

Select between fabrics or plain colors

Click node to view available range
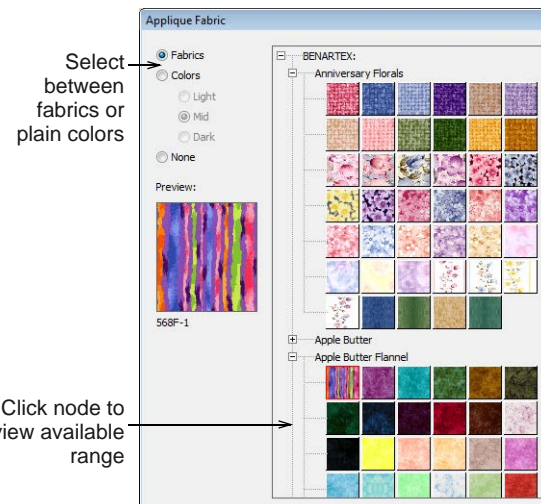
3 Scroll down the display panel to find a suitable category and click a node on the fabrics tree to view the available range – e.g. 'Anniversary Florals'.

4 Click **OK** to apply it to the selected appliqué object.
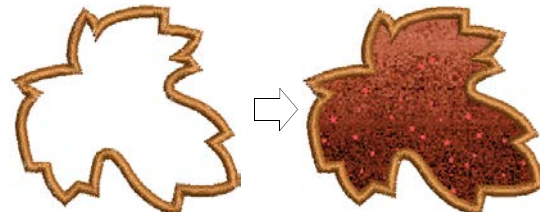
Note The Benartex range is displayed as in **Patch Properties** dialog. See Creating open-object appliqué for details.

5 If you prefer to assign a color to your appliqué patch, select the **Color** option.

The **Appliqué Fabric** dialog updates to display a range of colors.

Click to choose color

168,226,54
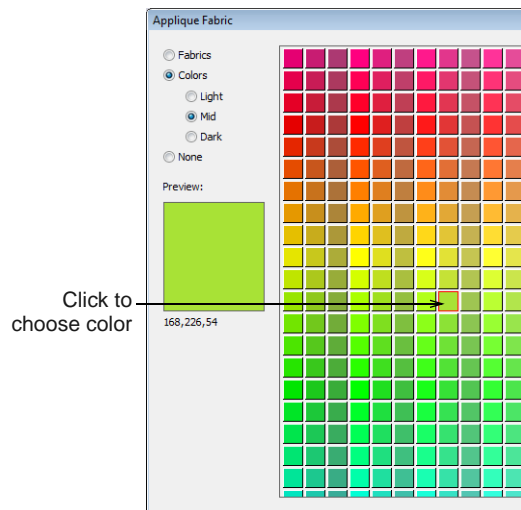
6 Select a tonal range – Light, Mid or Dark – and choose a color.
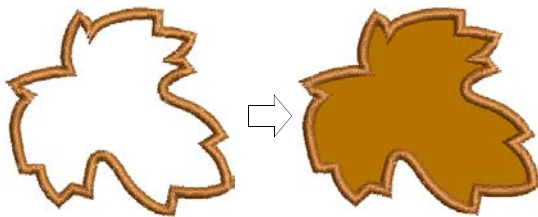
7 Click **OK** to close the dialog and put the fabric into the **Object Properties > Appliqué** dialog.

Swatch showing current fabric or color
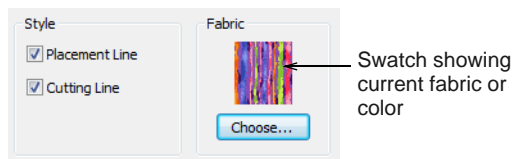
8 Click **Apply** to apply it to the selected appliqué object.

Tip Use the **Show Appliqué Fabric** toggle to turn appliqué fabrics/colors display on/off.

Creating partial cover appliqué

 Click Partial Appliqué (Digitize toolbar) to create appliqué objects with partial cover stitching.

Using the **Partial Appliqué** tool, you can create overlapping appliqué objects with partial cover

stitching without doubling-up borders. The lower layers will have partial appliqué applied to them.
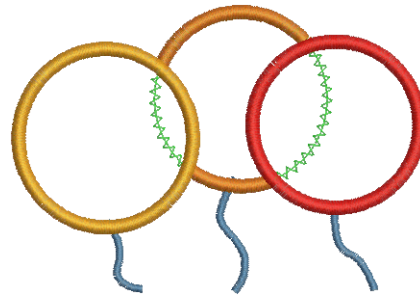
To create partial cover appliqué

1 Create appliqué shapes with Auto Appliqué. See Creating appliqué with Auto Appliqué for details.
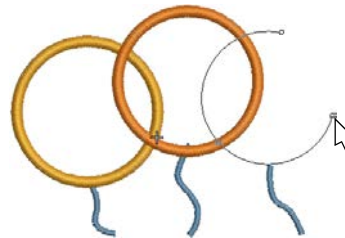
2 Select the appliqué objects.
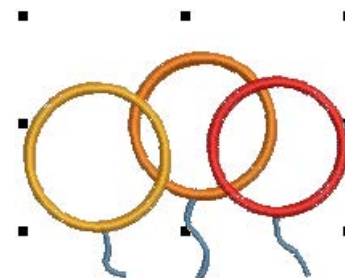
3 Click the **Partial Appliqué** icon.

Cover stitches are removed where objects overlap, leaving only the secondary objects – tackdown, placement and cutting lines.

Partial cover

Unstitched part of boundary
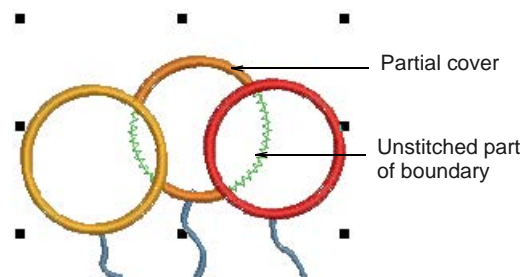
Creating open-object appliqué

Appliqué is an important craft in home sewing, and the **Auto Appliqué** feature provides an easy way to create high quality work. However, sometimes you require added flexibility to extend the range of designs that can be sewn. For instance, designs containing open objects cannot be handled by Auto Appliqué.

In this design, the stem in the center of the leaf must be sewn **after** the placement and cutting lines around the leaf outline but **before** the cover stitches. There may be one or two fabric areas. If there is only one patch, the stem will not require placement or tacking stitches. If there are two patches, the stem, as well as the outline, must have placement and tacking stitches.

Another problem is illustrated by the rabbit design below. The entire shape is composed of open curves whose stitching order is crucial – e.g. the left ear must be on top. The interior of the rabbit needs to be filled with fabric, even though **none** of its component curves is closed.
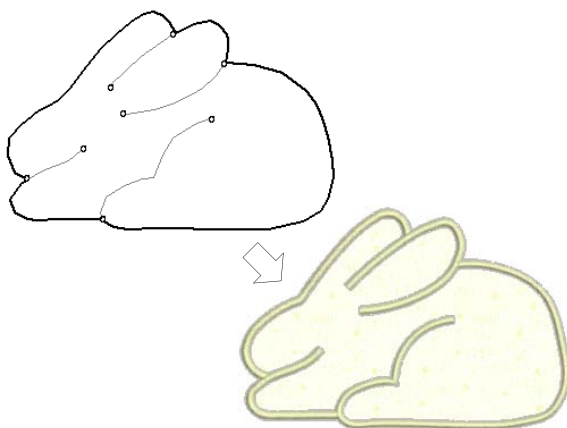
In both cases, you want to be able to enter the curves in as natural an order as possible **and** have the software correctly interpret where the enclosed areas

are to be. To this end the special **Advanced Appliqué** tool allows you to generate 'open-object appliqué' from one or more source or 'primary' objects. Boundaries can be defined by a mixture of objects as shown here:

Satin outline

Block Digitized Object (Block Digitizing)

Blanket stitch outline

Patch
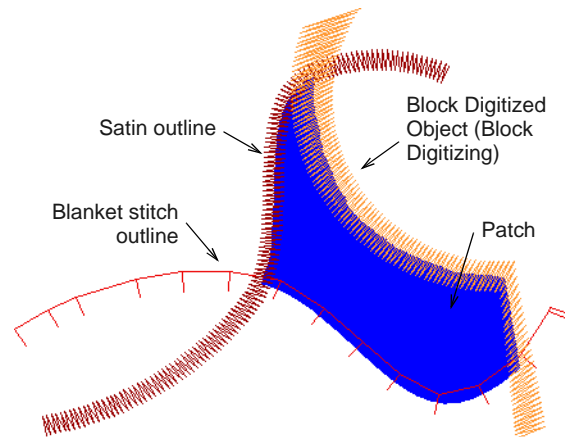
Primary objects

Source or 'primary' objects used in the creation of open-object appliqué must be created and sequenced **before** the feature is applied. These objects are not affected in any way by their incorporation into open-object appliqué. Several types of source object can be used:

▸ Any outline stitch type – Single Run, Satin Outline, etc,

▸ Any closed-object filled object, or

▸ Any block-digitized object.

Some other object types can be used as input in combination with the above objects. These include lettering objects, auto-appliqués and even other open-object appliqués.

Note If BERNINA Embroidery Software detects more than one area, you have the option of joining them into one patch. See Merging and unmerging patches for details.

Secondary objects

Up to three types of 'secondary object' can be automatically generated:

▸ **Placement lines**: These are, optionally, the first appliqué layer to be stitched. Placement lines are used to position pre-cut appliqué patches on the background material.

▸ **Cutting lines**: Again optionally, cutting lines form a guide when trimming the fabric of an appliqué patch 'in situ'.

▸ **Tackdown**: This is a zigzag or run stitch placed after placement and cutting lines, and used to fix

appliqué patches to the background fabric before cover stitching is applied.

Each 'boundary segment' will generate a placement line, cutting line and/or tackdown depending on current settings.

Note Secondary objects are stitched **before** primary objects and are therefore shown **beneath**. You can assign thread colors to each secondary object or let BERNINA Embroidery Software decide.

Creating open-object appliqué design

Use Advanced Appliqué (Digitize toolbar) to generate open-object appliqué from one or more source objects.

Several types of 'primary object' can be used in the creation of open-object appliqué, including any outline stitch type – Single Run, Satin Outline, etc – any filled object, or any block-digitized object. Additionally, some other objects can be used as input, including lettering objects, auto-appliqués or even other open-object appliqués.

Note By default, designs are automatically grouped upon opening or insertion into another design. When you open an appliqué design after saving, you will need to ungroup it before you can access appliqué properties. See Setting other general options for details.

To create an open-object appliqué design

1 Create the objects you want to include in your cover stitching of the appliqué design. See Digitizing open shapes for details.
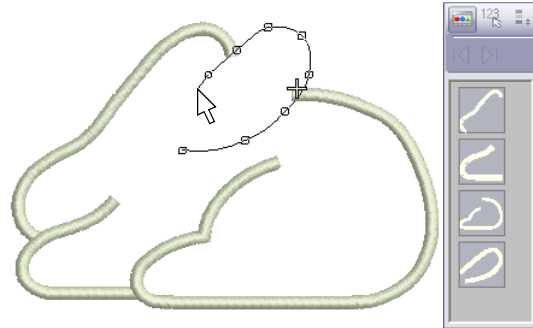
2 Set the stitching properties and sewing sequence of these objects.

3 Select all objects to be included in the open-object appliqué and click the **Advanced Appliqué** icon.

BERNINA Embroidery Software determines whether a selection contains at least one allowable boundary object and whether an area has been properly enclosed. If these conditions are met, an open-object appliqué object is created and the **Appliqué Properties** dialog opens.

Areas enclosed by allowable boundary objects marked with hashing in white
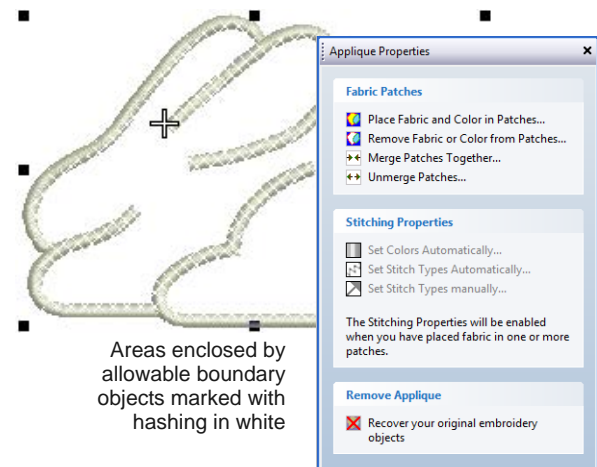
Note Shapes are 'corrected' when an open-object appliqué is first created. This may have the effect of removing small detail segments. However, primary objects are unaffected.

4 Click **Place Fabric and Color in Patches** option to add fabric or color. See Placing fabric in patches and Placing color in patches below for details.

5 Click **Back** when complete.

6 Click **Close** to close the dialog.

Tip Open-object appliqué objects can be selected and manipulated in the same way as a grouped object – i.e. they can be moved, resized, skewed or rotated, using the same click and drag method applying to all objects. Reshaping of open-object appliqué objects, however, is not possible. Nor is there any way to select individual objects, primary or secondary, within open-object appliqué unless the object is first 'broken apart'. See Splitting into component objects for details.

Placing fabric in patches

Use Show Appliqué Fabric (General toolbar) to toggle appliqué fabrics/colors on/off.

You can add fabric swatches to open-object appliqué when it is first created or at any later stage.

To place fabric in patches

1 If editing an existing open-object appliqué object, double-click or right-click the object.

The **Appliqué Properties** dialog opens (or will already be open if you have just created the object).
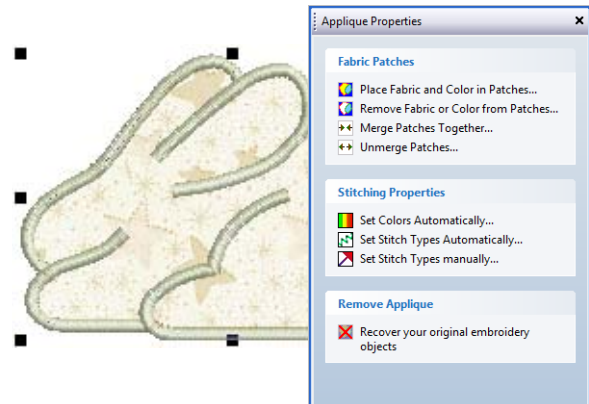
2 Click the **Place Fabric and Color in Patches** option.

The dialog changes to display the **Place Fabric in Patches** panel.
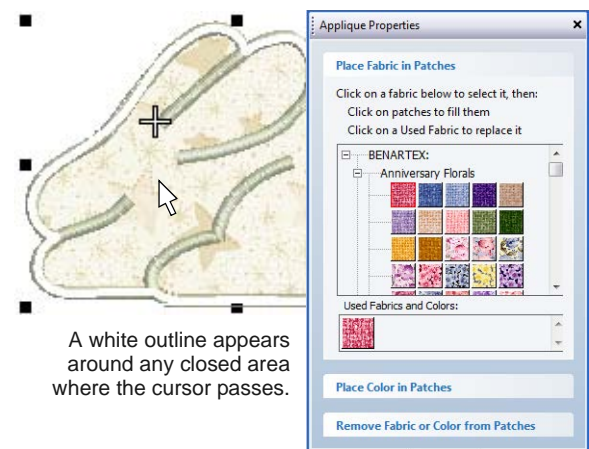
A white outline appears around any closed area where the cursor passes.

Note There may already be pre-selected entries in the **Used Fabrics and Colors** palette.

3 Select a fabric from the fabrics tree – e.g. 'Vintage Shirtings' – or from the **Used Fabrics and Colors** palette.

4 Move the cursor over the design area.

A white outline appears around any closed area over which the cursor passes.

5 Click an area which is currently hashed or filled.

The area is filled with the chosen fabric and a swatch added to the **Used Fabrics and Colors** palette.

Note For any new patches created, secondary stitching objects are created using default stitch types and automatic stitch colors. See Setting stitch colors and Setting stitch types for details.

6 Select other areas as required to add more patches.

7 Click **Back** when complete.

8 Click **Close** to close the dialog.

Alternatively, click **Place Color in Patches** or **Remove Fabric from Patches** for more options. See Placing color in patches and Removing fabric or color from patches below for details.

Tip Use the **Show Appliqué Fabric** toggle to turn appliqué fabrics/colors display on/off.

Placing color in patches

 Use Show Appliqué Fabric (General toolbar) to toggle appliqué fabrics/colors on/off.

You can add color, in place of fabric swatches, to open-object appliqué when it is first created or at any later stage.

- -

To place color in patches

1 If editing an existing open-object appliqué object, double-click or right-click the object.

The **Appliqué Properties** dialog opens (or will already be open if you have just created the object).
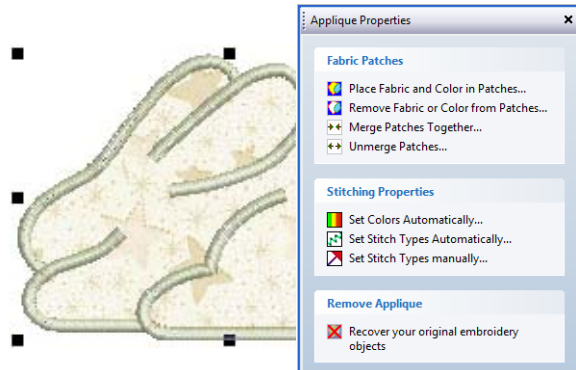
2 Click the **Place Fabric and Color in Patches** option.

The dialog changes to display the **Place Fabric in Patches** panel. There may already be pre-selected entries in the **Used Fabrics and Colors** palette.
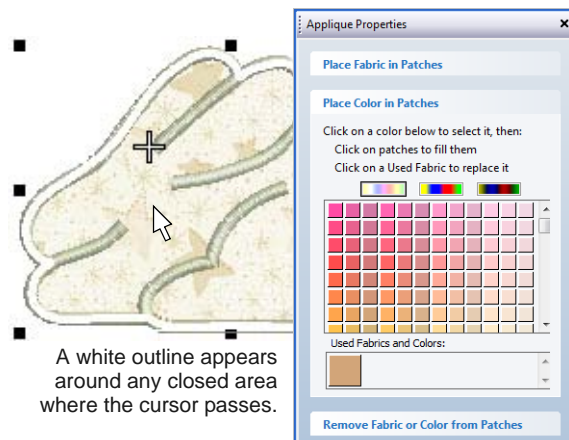
A white outline appears around any closed area where the cursor passes.

Note There may already be pre-selected entries in the **Used Fabrics and Colors** palette.

3 Select a tonal range – Light, Mid or Dark – using one of the three switches at the top of the palette.

4 Select a color from the palette.

5 Move the cursor over the design area.

A white outline appears around any closed area over which the cursor passes.

6 Click an outlined area which is currently hashed or filled.

The area is filled with the chosen color and a color sample added to the **Used Fabrics and Colors** palette.
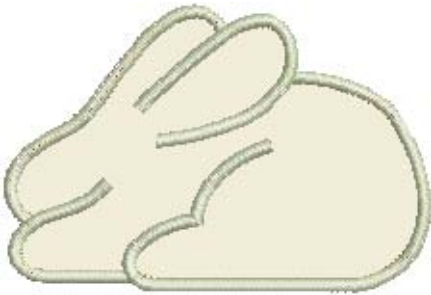
![Note icon]
Note For any new patches created, secondary stitching objects are created using the default stitch types and automatic stitch colors. See Setting stitch colors and Setting stitch types for details.

7 Select other areas as required to add more colors.

8 Click **Back** when complete.

9 Click **Close** to close the dialog.

Alternatively, click **Place Fabric in Patches** or **Remove Fabric from Patches** for more options. See Placing fabric in patches and Removing fabric or color from patches below for details.

![Tip icon]
Tip Use the **Show Appliqué Fabric** toggle to turn appliqué fabrics/colors display on/off.

Removing fabric or color from patches

You can remove colors or fabrics from open-object appliqué at any stage.

To remove fabric or color from patches

1 Double-click or right-click the open-object appliqué object.

The **Appliqué Properties** dialog opens.
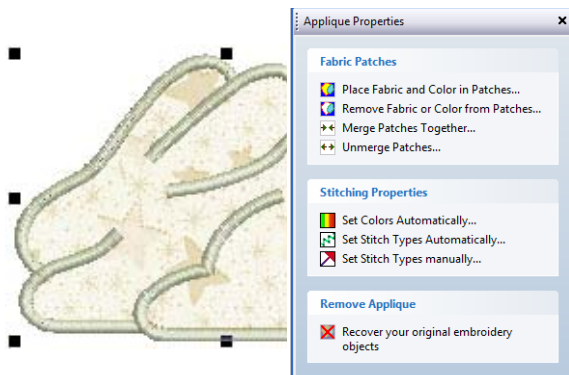
2 Click the **Remove Fabric from Patches** option.

The dialog changes to display the **Remove Fabric from Patches** panel.
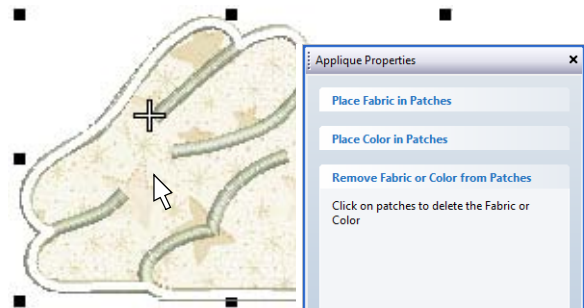
3 Move the cursor over the design area.

A white outline appears around any closed area over which the cursor passes.

4 Click an outlined area which is currently filled.

The patch fabric or color is replaced with white hashing and all associated secondary objects removed.
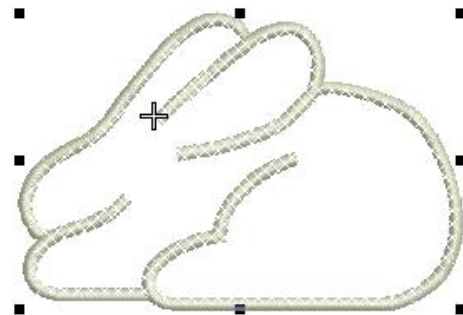
![Note icon]
Note The fabric or color is also removed from the **Used Fabrics and Colors** palette if this was the only instance of that fabric or color.

5 Select other areas as required to remove more patches.

6 Click **Back** when complete.

7 Click **Close** to close the dialog.

Alternatively, click **Place Fabric in Patches** or **Place Color in Patches** for more options. See Placing fabric in patches and Placing color in patches below for details.

Merging and unmerging patches

In the sample below, there may be one or two fabric areas. If there are two patches, the stem, as well as the outline, must have placement and tacking stitches. If there is only one patch, the stem will not

require placement or tacking stitches. In this case, the two fabric areas need to be merged into one.

To merge and unmerge patches

1 Double-click or right-click the Advanced Appliqué object.

The **Appliqué Properties** dialog opens.

2 Select the **Merge Patches Together** option.

The **Merge Patches Together** panel is displayed.

3 Select the patch to merge.

A red line appears around its border.

4 Hover the cursor over the second patch.

This patch may or may not be filled with fabric or color. A white line appears around its border.
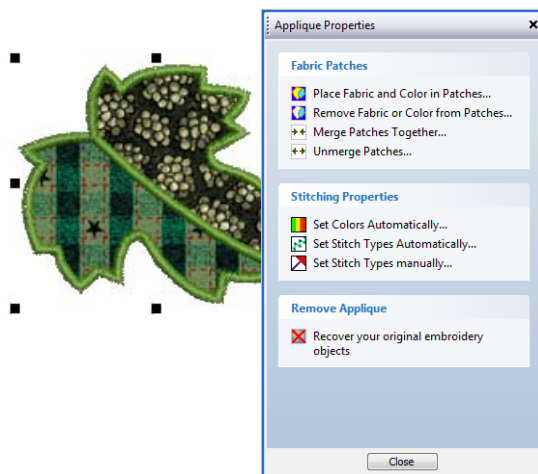
5 Click the patch.

The two patches are merged into a single patch taking the fabric or color of the first one. All secondary stitching is removed from the boundary segments previously shared by the patches.

Note Two patches are said to be adjoining when they share a boundary which is either a section of outline object – Run, Satin Outline, etc – or a section of filled object which collapses in the middle, forming a section of common boundary.

Patches 1 and 2 cannot be merged, because they are not adjoining
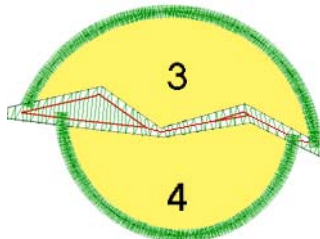
Patches 3 and 4 can be merged, because they are adjoining

6 Repeat as many times as required.

Tip To unmerge a merged patch, click the **Unmerge Patches** option at any stage and click a merged patch.
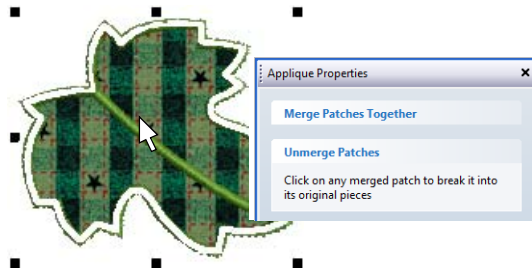
The merged patch is broken into its original individual patches, each with their current fabric or color (not the original fabric or color). New secondary objects are created for the shared boundaries between the newly unmerged patches. The stitch properties of these secondary objects are as they were before the areas were merged.

7 Click **Back** to complete.

8 Click **Close** to close the dialog.

Tip Use the **Show Appliqué Fabric** toggle to turn appliqué fabrics/colors display on/off.

Setting stitch colors

You can either set colors automatically or manually. For any newly created open-object appliqué, secondary objects are created using the automatic stitch colors. Two options are available: **Special colors for each layer** and **Match color of cover stitching**. See also Setting stitch types.

- -

To set stitch colors

1 Double-click or right-click the Advanced Appliqué object.

The **Appliqué Properties** dialog opens.
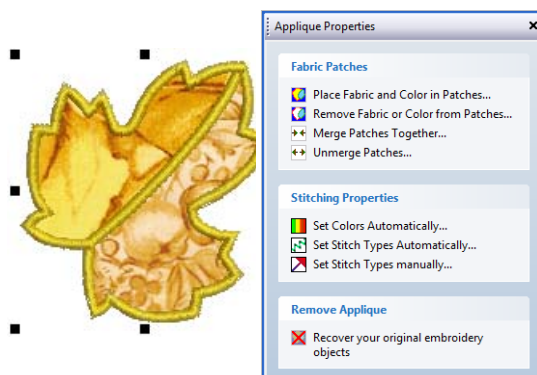
2 Select the **Set Colors Automatically** option.

The **Automatic Stitch Colors** dialog opens.
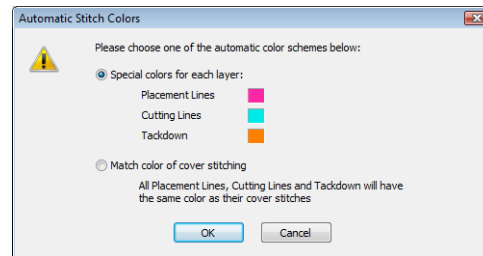
3 Choose an automatic color scheme from the available options:

- ‣ **Match color of cover stitching**: If selected, all secondary objects are shown in the color of their associated primary objects.

- ‣ **Special colors for each layer**: If selected, all secondary objects are shown and stitched in the colors displayed here (chosen for visual clarity on screen).

Note You would not normally use actual threads in the display colors but a single thread color for all secondary objects closely matching the fabric on which the appliqué is to be stitched.

4 Click **OK** to complete.

5 Click **Close** to close the dialog.

Setting stitch types

You have two options when it comes to setting stitch types to use for secondary objects: automatic or manual. To set stitch types automatically, you simply click the **Set Stitch Types Automatically** option in the **Appliqué Properties** dialog. Stitch types for all tackdowns are set according to the cover stitch type as follows:

- ‣ If the cover stitches are Satin Outline, Satin Fill, Step fill or Fancy Fill, the tackdown is set to Zigzag.

- ‣ If the cover stitches are anything else, the tackdown is set to Run stitch.

If you require greater control over stitch types used for placement lines, cutting lines, and tackdowns, use the following procedure. When you set colors manually, any change you make overrides automatically chosen colors.

- -

To set stitch types

1 Double-click or right-click the Advanced Appliqué object.

The **Appliqué Properties** dialog opens.
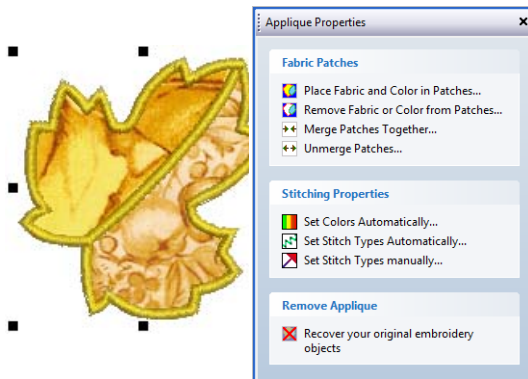
2 Select the **Set Stitch Types Manually** option.

The **Set Properties Manually** panel is displayed.
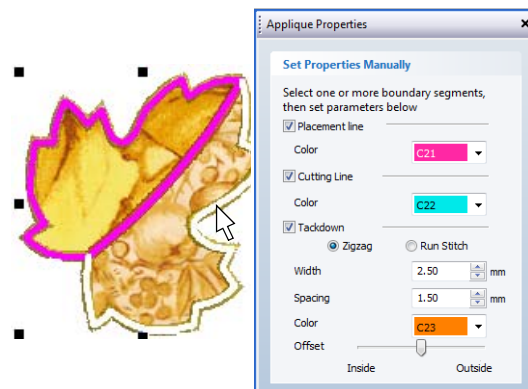
3 To make the **Set Properties Manually** panel activated, select boundary segments as follows:

- By placing the mouse cursor over an individual boundary segment, it is highlighted in white. If you place it over a filled patch, the entire boundary of the patch is highlighted in white. If you then click the mouse, the highlighted section is selected. Selected boundary segments appear in magenta.

- By holding down the **Ctrl** key while a boundary or boundary segment is highlighted, the highlighted section is added to the selection, if not already selected, or subtracted from the selection if already selected.

4 Select the secondary objects you want included in your open-object appliqué:

- **Placement lines**: These are, optionally, the first appliqué layer to be stitched. Placement lines are used to position pre-cut appliqué patches on the background material.

- **Cutting lines**: Again optionally, cutting lines form a guide when trimming the fabric of an appliqué patch 'in situ'.

- **Tackdown**: This is a zigzag or run stitch placed after placement and cutting lines, and used to fix appliqué patches to the background fabric before cover stitching is applied.

5 Set the display color for each of the secondary objects – placement lines, cutting lines, and/or tackdown – you have selected.

Note When you set colors manually, any change you make overrides automatically chosen colors. See Setting stitch colors for details.

6 If you have chosen to include tackdown stitches, select the required type:

Zigzag: This gives you control over:

- **Stitch width**: sets the column width for the Zigzag stitch.
- **Spacing**: sets the stitch spacing.
- **Color**: sets the stitch color.
- **Offset**: sets the cover stitching in relation to the secondary objects as shown:

| Tackdown stitch offset: outside spacing: decreased | Tackdown stitch offset: none spacing: default | Tackdown stitch offset: inside spacing: increased |
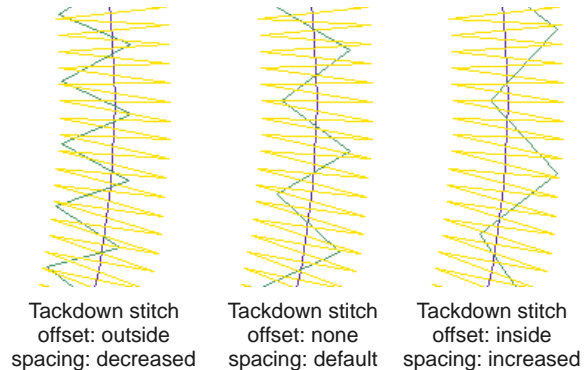
Run Stitch: This gives you control over:

- **Stitch length**: set the stitch length to suit the digitized shape – where the object has tight curves, select a shorter stitch length; to reduce the stitch count for flatter curves, increase the stitch length.
- **Color**: sets the stitch color.

7 Click **Back** to return.

8 Click **Close** to close the dialog.

Recovering the original embroidery objects

Primary objects can be recovered at any time. BERNINA Embroidery Software will remove all

secondary objects, ungroup the primary objects and return them as individual objects. See also Splitting into component objects.

- -

To recover the original embroidery objects

1 Double-click or right-click the Advanced Appliqué object.

The **Appliqué Properties** dialog opens.
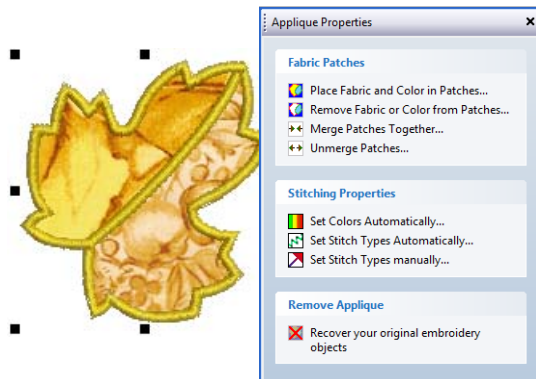
2 Click the **Recover your original embroidery objects** option.

All secondary objects are removed and all primary objects ungrouped.

3 Click **Close** to close the dialog.

Note If the whole open-object appliqué had been resized, moved, or skewed, the primary objects are returned in this transformed state.

PART VI
EMBROIDERY LETTERING

Create top-quality lettering quickly and simply. BERNINA Embroidery Software provides a large range of scalable closest-join alphabet styles and multi-color and fancy stitching alphabets to choose from.

Lettering essentials

This section describes how to add lettering to embroidery designs. It also covers applying lettering baselines, formatting lettering and adjusting letter spacing. See Lettering Essentials for details.

Editing embroidery lettering

This section describes how to edit lettering text. It also covers scaling lettering and removing underlay from small lettering. It also deals with transforming lettering objects, adjusting individual letters, as well as reshaping baselines. See Editing Embroidery Lettering for details.

Special lettering effects

This section describes how to convert TrueType fonts to embroidery fonts. It also explains how to add special characters as well as fancy and monogram lettering to your designs. It also covers applying different stitch types to lettering objects as well as creating special effects with Elastic Lettering. See Special Lettering Features for details.

Monogramming

This section details the creation of monogram lettering with initials or with a name, how to add ornaments to monograms, and how to create ornament layouts. It also covers adding and creating your own borders. See Monogramming for details.

CHAPTER 25

LETTERING ESSENTIALS

Add lettering to designs quickly and easily, either on-screen using the current settings or via object properties. Place lettering on a straight horizontal or vertical baseline, curve it around a circle or arc, or digitize your own baselines. You can apply formatting to lettering objects in the same way as a word processor, including italics, bolding, and right/left justification. Letter, word and line spacings can be determined before or after creating lettering objects and placing them in your design. See also Alphabet Samples.

This section describes how to add lettering to embroidery designs. It also covers applying lettering baselines, formatting lettering and adjusting letter spacing.

Adding lettering to embroidery designs

You can add lettering to a design by typing it directly on-screen. Adjust object properties to specify letter formatting before or after adding it to a design. BERNINA Embroidery Software provides an alphabet range suitable for many applications. Select from the supplied alphabets or convert TrueType fonts.

Creating lettering on-screen

> Use Lettering (Digitize toolbar) to add lettering directly on-screen.

If it is not essential to fit letters precisely to a certain area, you can type them directly on-screen. You can also modify lettering objects directly on-screen to achieve various artistic effects. Appearance and layout depend on current settings. You can change them at any time. See Editing Embroidery Lettering for details.

To create lettering on-screen

1   Click the **Lettering** icon.

2   Select a color from the color palette. See Changing current colors for details.

3   Click where you want to start typing.

An I-beam appears where you clicked.

Pre ←—I-beam

4   Type the letters you want to embroider.

Tip To start a new line, press **Shift+Enter**.

5   Press **Enter** to complete.

Stitches are generated immediately.

Prestige

Note Appearance and layout depend on current settings in the **Object Properties > Lettering** dialog. You can change them at any time. See Editing Embroidery Lettering for details.

Creating lettering with the Object Properties dialog

Right-click Lettering (Digitize toolbar) to enter text in the dialog and adjust settings for embroidery lettering.

You can specify letter formatting before adding it to the design. This is the more traditional method and is useful with more complex designs.

- -

To create lettering with the Object Properties dialog

1 Right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens.

Enter text

Adjust settings
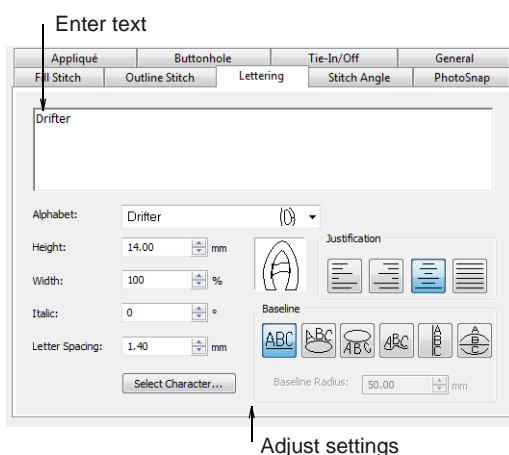
2 Enter the text you want to embroider in the text entry panel.

To start a new line of lettering, press **Shift+Enter**.

Tip You can insert a color change between two letters by keying a caret (^) symbol. Subsequent letters default to the next color in the palette.

3 Select alphabet and adjust formatting and baseline settings for the lettering as required. See Selecting alphabets and Formatting lettering for details.

4 Click **Apply**.

5 Click where you want to place the lettering, or mark reference points for the baseline you

selected. See Applying lettering baselines for details.

Note Letters are filled with stitches according to current stitch settings in the **Object Properties** dialog. You can change these at any time. See Applying different stitch types and effects to lettering for details.

Selecting alphabets

Right-click Lettering (Digitize toolbar) to select an alphabet for new or selected lettering objects.

BERNINA Embroidery Software provides an alphabet range suitable for many applications. Select from the supplied alphabets or convert TrueType fonts. The alphabet you select depends on where and on what your lettering is going to appear. If you are embroidering on a child's outfit you might use a simple alphabet like **Childs Play**. If you are embroidering on a ladies nightdress you might use an elegant script alphabet like Anniversary.

Note Be sure to check the minimum/maximum recommendations for each alphabet and stay within those recommendations for best results. See also Alphabet Samples.

- -

To select an alphabet

1 Right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens.

Preview window
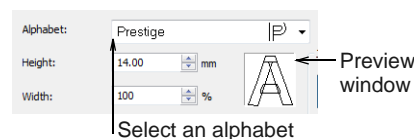
Select an alphabet

2 Select an alphabet from the **Alphabet** list. See also Converting fonts to alphabets.

A sample character of the chosen alphabet appears in the preview window. See also Alphabet Samples.

Tip Consider letter size before you change alphabets. Some alphabets look best in a smaller

size. Others can be stitched at a larger size. See also Adjusting letter height and width.

3 Click **Apply**.

The lettering alphabet is set.

Applying lettering baselines

Baselines determine the shape of lettering objects in a design. You can place lettering on a straight horizontal or vertical line, curve lettering around a circle or arc, or digitize your own baseline. Different reference points are needed depending on the baseline you use. You can digitize baselines on-screen.

Baselines use default settings to determine their size, spacing and angles. BERNINA Embroidery Software gives you both interactive and precise numerical control over many baseline settings. Techniques are available to modify baseline type, length, radius and angle, as well as baseline position.

Note BERNINA Embroidery Software will remember which baseline you used last and use this one if you type letters directly on-screen.

Selecting baselines

	Right-click Lettering (Digitize toolbar) to select baselines and adjust baseline settings.
ABC	Use Free Line (Lettering tab) to create straight horizontal baselines of no fixed or pre-determined length.
ABC	Use Circle CW (Lettering tab) to create clockwise baselines.
ABC	Use Circle CCW (Lettering tab) to create counter-clockwise baselines.
ABC	Use Any Shape (Lettering tab) to shape lettering around elements in a design.

ABC	Use Free Line Vertical (Lettering tab) to create straight vertical baselines of no fixed or pre-determined length.
ABC	Use Predefined (Lettering tab) to create multiple arching baselines.

Different baselines are available for use with new or selected lettering objects. Adjust baseline settings interactively or via properties.

To select baselines

1 Double-click or right-click a lettering object or right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens.
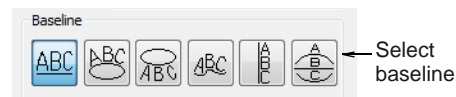
2 Select a baseline.

The baseline you choose depends on the effect you want to achieve. You need to digitize different reference points depending on the type of baseline you select. Options include:

- ▸ Straight Horizontal: See Creating horizontal baselines for details.
- ▸ Circle CW: See Creating circular baselines for details.
- ▸ Circle CCW: See Creating circular baselines for details.
- ▸ Any Shape: See Creating custom baselines for details.
- ▸ Vertical: See Creating vertical baselines for details.
- ▸ Multiple: See Creating custom baselines for details.

3 Click **Apply**.

The selected baseline is applied to any selected lettering object or newly created lettering objects.

Tip Create identical baselines by duplicating or copying them in your design.

Creating horizontal baselines

	Right-click Lettering (Digitize toolbar) to select baselines and adjust baseline settings.
ABC	Use Free Line (Lettering tab) to create straight horizontal baselines of no fixed or pre-determined length.

Free Line baselines do not have a fixed or pre-determined length. They extend as long as you keep adding letters.

Bamboo

- -

To create horizontal baselines

1 Right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens. See Creating lettering with the Object Properties dialog for details.

2 Enter your text in the text entry panel. See Creating lettering with the Object Properties dialog for details.

3 Select the **Free Line** icon.

4 Click **Apply**.

5 Click where you want to place the letters.

Creating vertical baselines

Right-click Lettering (Digitize toolbar) to select baselines and adjust baseline settings.

Use Free Line Vertical (Lettering tab) to create straight vertical baselines of no fixed or pre-determined length.

Free Line Vertical baselines are straight, vertical baselines. Free Line Vertical baselines do not have a fixed length, and extend to fit the letters you enter. Line spacing is calculated horizontally while letter spacing is calculated vertically. Letters, by default, are centered along vertical lines. New lines are placed by default from right to left to suit Asian languages. Vertical baselines are effective for embroidering on sleeves, as a decorative effect, and for Asian text.

ひらがな

Tip Vertical lettering best suited to uppercase for Western languages because descenders in lowercase letters are not accommodated in the letter spacing.

- -

To create vertical baselines

1 Right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens. See Creating lettering with the Object Properties dialog for details.

2 Enter your text in the text entry panel. See Creating lettering with the Object Properties dialog for details.

3 Select the **Free Line Vertical** icon.

4 Click **Apply**.

5 Click where you want to place the letters.

Creating circular baselines

Right-click Lettering (Digitize toolbar) to select baselines and adjust baseline settings.

Use Circle CW (Lettering tab) to create clockwise baselines.

Use Circle CCW (Lettering tab) to create counter-clockwise baselines.

Use Circle CW and Circle CCW baselines to place letters around a full circle or ellipse in clockwise or counter-clockwise directions. By default, letters are positioned **above** Circle CW baselines and **below** Circle CCW baselines. They are also centered by default.

Fortress (shown in circular arrangements)

- -

To create circular baselines

1 Right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens. See Creating lettering with the Object Properties dialog for details.

2 Enter your text in the text entry panel. See Creating lettering with the Object Properties dialog for details.

3 Select the **Circle CW** or **Circle CCW** icon and click **Apply**.

The **Status Bar** will prompt you.

4 Mark the center of the circle.

Click to mark center of circle

Click to set radius

1 ▢ ▢ 2

Press Enter to complete circle

Fortress
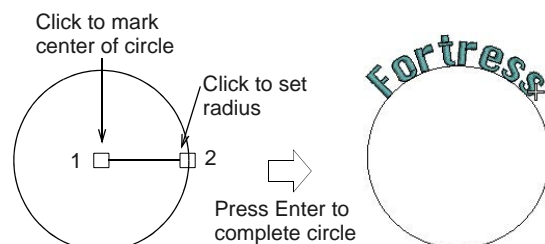
5 Mark a point to define the radius.

6 Press **Enter** to complete the circle.

Circle CW   Circle CCW

7 Alternatively, if you want to create an oval baseline, mark a third reference point.

Click to set oval radius

Press Enter to complete circle
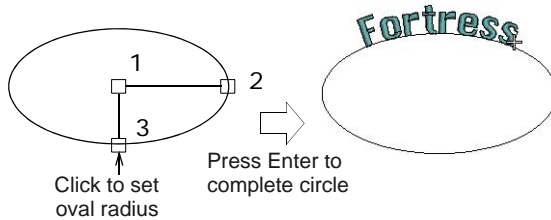
8 Press **Enter** to complete the oval.

Circle CW   Circle CCW

Tip Make a circle large enough for your lettering. If it is too small, or the lettering too big, the letters will be crowded. You can, however, adjust the baseline radius in the dialog. See also Reshaping baselines.

Adjust baseline radius

Baseline Radius: 10 mm   Baseline Radius: 20 mm
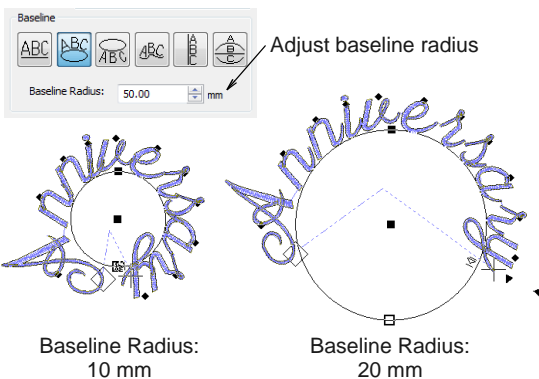
Tip Different effects can be achieved by changing the justification setting – left, right, center, full. See Setting letter justification for details.

Fully justified CW circle baseline

Left-justified CCW oval baseline

Right-justified CW circle baseline
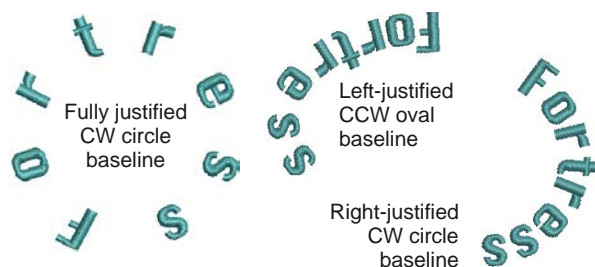
Creating predefined baselines

> Right-click Lettering (Digitize toolbar) to select baselines and adjust baseline settings.
>
> Use Predefined (Lettering dialog) to create multiple arching baselines.

Use Predefined baselines to arch lettering clockwise across the top, straight through the middle, and counterclockwise around the bottom of a circle, all in one action.

To create a predefined baseline

1 Right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens. See Creating lettering with the Object Properties dialog for details.

2 Type the text for the line around the top of the circle in the text entry panel.

3 Press **Enter**.

Type in texts for each line
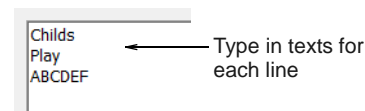
4 On the next line type the text for the line across the middle of the circle and press **Enter**.

5 On the third line type the text for the line around the bottom of the circle.

6 Select the **Predefined** icon.

7 Click **Apply**.

8 Mark the center of the circle. See Creating circular baselines for details.

9 Mark a point to define the radius.

10 Press **Enter** for a perfect circle, or click again to form an oval and press **Enter**.

Creating custom baselines

Right-click Lettering (Digitize toolbar) to select base-lines and adjust baseline settings.

Use Any Shape (Lettering tab) to shape lettering around elements in a design.

Use Any Shape baselines to shape lettering around elements in your design. Digitize Any Shape baselines by marking reference points to form the required line. The number of reference points and length of baseline are practically unlimited.

If the baseline has tight curves, or sharp corners, the letters may overlap. For best results, only mark curve points, and digitize lines which have shallow, gentle curves.

To create custom baselines

1 Right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens. See Creating lettering with the Object Properties dialog for details.

2 Enter your text in the text entry panel. See Creating lettering with the Object Properties dialog for details.

3 Select the **Any Shape** icon and click **Apply**.

The **Status Bar** will prompt you.

4 Click to mark the baseline reference points.

▸ Right-click for curve points.

▸ Left-click for corner points.
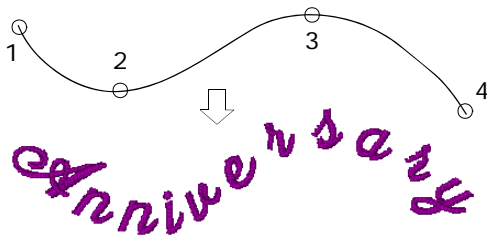
5 Press **Enter** to complete.

Formatting lettering

You can control the appearance of lettering by changing object properties before or after adding lettering, in the same way as other objects.

Making italic lettering

Right-click Lettering (Digitize toolbar) to adjust italic settings.

You can slant letters to the left or right for an italic effect. The default italic angle is 0° which is equivalent to no italics. The largest angle lettering can be inclined is 45°.

To make italic lettering

1 Double-click or right-click a lettering object or right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens.

Height:	14.00	mm
Width:	100	%
Italic:	0	° ← Enter angle value
Letter Spacing:	1.40	mm
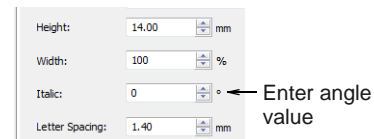
2 Enter an angle in the **Italic** field.

You can enter an angle anywhere between 45° and -45°.

3 Click **Apply**.

The setting is applied to any selected lettering object or to newly created lettering objects.

Italic angle: 0°

Italic angle: -45°

Italic angle: 45°

Making bold lettering

Right-click Lettering (Digitize toolbar) to adjust bolding settings.

You can create the effect of bold lettering by increasing the pull compensation settings for selected lettering objects.

To make bold lettering

1 Double-click or right-click a lettering object or right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens.

2 Click the **Effects** button.

The **Effects** dialog opens.
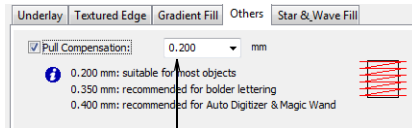
Increase pull comp

3 Select the **Others** tab.

4 Select the **Pull Compensation** checkbox and increase the setting to 0.4–0.6 mm.

⚠

Caution Do not use a value of more that 0.6 mm or letters may distort.

5 Click **Apply**.

The setting is applied to any selected lettering object or to newly created lettering objects.

Pull comp: 0.2 mm   Pull comp: 0.6 mm
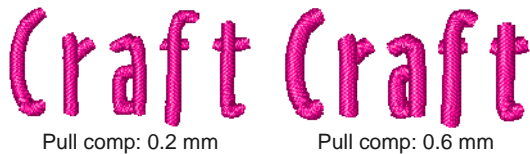
Setting letter justification

🅰 Right-click Lettering (Digitize toolbar) to adjust letter justification.

Justification is the way that lettering aligns itself on a baseline. You can justify lettering left or right, center it, or fully justify it. Full justification spreads the letters out to fill the length of the baseline.

To set letter justification

1 Double-click or right-click a lettering object or right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens.

2 Select a justification setting – **Left**, **Right**, **Center**, or **Full Justification**.
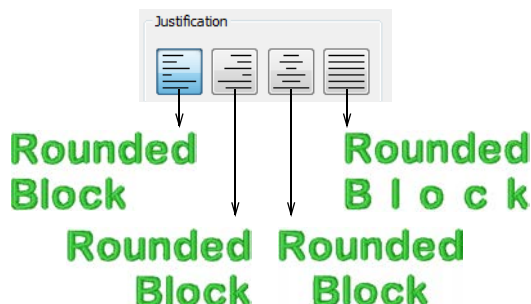
3 Click **Apply**.

The setting is applied to any selected lettering object or to newly created lettering objects.

Adjusting spacings

Letter, word and line spacings can be determined before or after creating lettering objects and placing them in your design. You can edit spacing directly on-screen or via object properties. Letter spacing is calculated automatically according to justification – Left Justification, Right Justification, Center Justification, or Full Justification. See also Setting letter justification.

Adjusting overall letter spacing on-screen

🔲 Click Reshape Object (Edit toolbar) to adjust letter spacing.

The spacing between letters is calculated automatically as a percentage of the letter height. In most cases the default spacing is adequate. Sometimes, however, you may want to change the overall letter spacing.

To adjust overall letter spacing on-screen

1 Select the lettering object and click the **Reshape Object** icon.

2 Drag the triangular letter spacing handle left or right.

Letters are redistributed proportionately along the baseline.

Drag letter spacing handle →

3 Release the mouse button to complete and press **Esc**.

💡

Tip When a lettering is set to Full Justification, the letters are evenly distributed along the baseline. To change the spacing for fully justified lettering, simply change the length of the baseline.

Adjusting individual letter spacing on-screen

Click Reshape Object (Edit toolbar) to adjust individual letter spacing.

Spacing between letters is calculated automatically as a percentage of letter height. In most cases the default spacing is adequate. Sometimes, however, spacing between certain letters may appear too large or too small, depending on the shape of neighboring letters. To compensate for this visual effect, you can move one or several selected letters closer or further apart along the baseline to improve spacing.

To adjust individual letter spacing on-screen

1 Select the lettering object and click the **Reshape Object** icon.

Click and drag diamond handle

2 Click the diamond handle at the center of a letter.

Tip To select multiple letters, hold down **Ctrl** as you select.

3 Drag selected letter/s along the baseline or use arrow keys to adjust the spacing.

Tip Alternatively, to move multiple letters, right-click the diamond handle of the first letter and drag. All letters to the end of the line move as one.

4 Release the mouse button to complete and press **Esc**.

Adjusting line spacing on-screen

Click Reshape Object (Edit toolbar) to adjust line spacing.

Change the space between lines in a multiple-line lettering object using the **Reshape** tool.

To adjust line spacing on-screen

1 Select the lettering object and click the **Reshape Object** icon.

2 Drag the triangular line spacing handle up or down to change line spacing.

Drag line spacing handle down to increase spacing

3 Release the mouse button to complete and press **Esc**.

<div align="right">

CHAPTER 26

EDITING EMBROIDERY LETTERING

</div>

BERNINA Embroidery Software gives you both interactive and precise numeric control over many attributes affecting lettering objects. You can adjust lettering objects as a whole as well as individual letters. Lettering text can be edited directly on-screen or by means of object properties. When you first create lettering, it may be too big or small. Size can be adjusted interactively or numerically. Small, narrow letters may not require underlay, depending on their size and the fabric to be used. Use the available tools to skew and rotate lettering objects. Adjust individual letters like any other embroidery object. Reshape letters, adjust stitch angles, and recolor letters individually. Baselines can be modified after placement directly on-screen or via object properties.

This section describes how to edit lettering text. It also covers scaling lettering and removing underlay from small lettering. It also deals with transforming lettering objects, adjusting individual letters, as well as reshaping baselines.

Editing lettering text

When you have created a lettering object, you can select it and make changes to the text directly on-screen or via object properties.

Editing lettering text on-screen

> **A** Click Lettering (Digitize toolbar) to edit lettering on-screen.

The easiest way to edit lettering is to change it directly on-screen.

To edit lettering text on-screen

1 Click the **Lettering** icon and then click inside the lettering object.

An I-beam appears.

Click here to edit

2 Edit the text as required.

Letter deleted
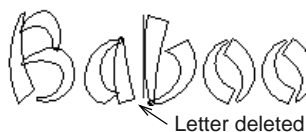
Tip Press **Shift+Enter** to start a new line.

3 Press **Enter** to complete.

Editing lettering text with the Object Properties dialog

When you have created a lettering object, you can select it and make changes to it via object properties.

To edit lettering with the Object Properties dialog

1 Double-click or right-click a lettering object.

The **Object Properties > Lettering** dialog opens.

Edit text

Adjust settings

2 Edit the text in the text entry panel as required.

3 Adjust settings as required. See Formatting lettering for details.

4 Click **Apply**.

Note Letters are filled with stitches according to current stitch settings in the **Object Properties > Fill Stitch** dialog. You can change these at any time. See Applying different stitch types and effects to lettering for details.

Scaling lettering

When you first create lettering, it may be too big or too small. Size can be adjusted in three ways:

‣ by scaling on-screen with **Select Object** or **Reshape Object** tools

‣ by adjusting width and height settings in the **Object Properties > Lettering** dialog

‣ by adjusting width and height settings in the **Object Properties > General** dialog.

Scaling lettering with Select Object

Use Select Object (Edit toolbar) to scale lettering objects on-screen.

You can scale your lettering objects vertically, horizontally and proportionally with the **Select Object** tool. See also Transforming lettering with Select Object.

To scale lettering with Select Object

1 Click **Select Object** and select the lettering object.

Resize vertically

Resize proportionally

Resize horizontally
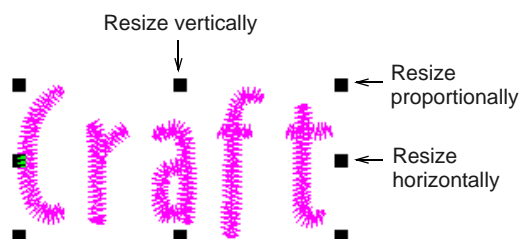
2 Click and drag a handle to resize the object horizontally, vertically or proportionally.

Drag
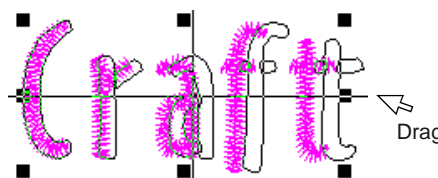
3 Release the mouse to complete.

Scaling lettering with Reshape Object

Use Reshape Object (Edit toolbar) to scale lettering objects on-screen.

You can scale your lettering objects vertically, horizontally and proportionally with the **Reshape Object** tool. See also Rotating lettering with Reshape Object.

To scale lettering with Reshape Object

1 Select the lettering object and click the **Reshape Object** icon.

2 Click and drag a dark triangular handle to scale the object horizontally, vertically or proportionally.

Drag

Resize vertically

Drag

Resize proportionally

Drag

Resize horizontally

3 Release the mouse button to complete and press **Esc**.

Resized vertically

Resized proportionally

Resized horizontally
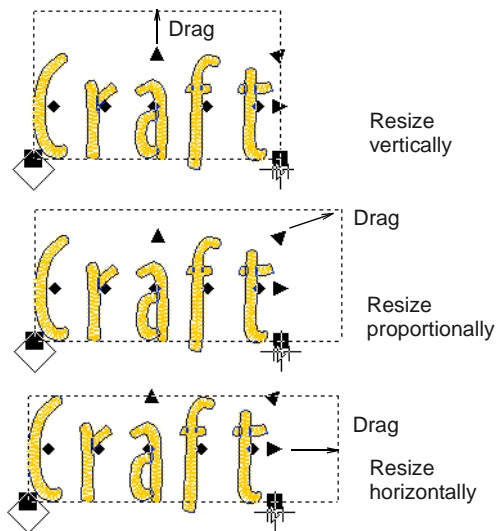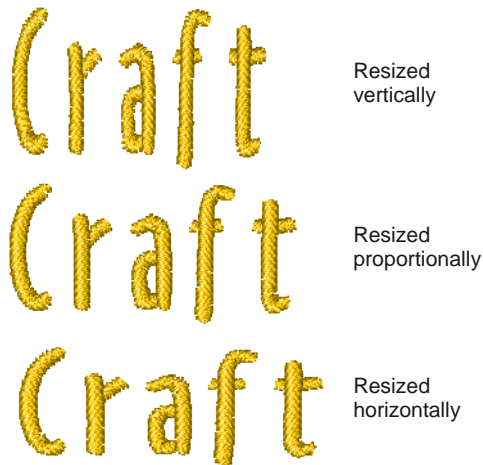
Adjusting letter height and width

Use Lettering (Digitize toolbar) to adjust letter height and width.

You can scale your lettering objects vertically, horizontally and proportionally via the **Object Properties > Lettering** dialog.

Tip Change the appearance of an alphabet by changing the letter width in proportion to the height. The original width value is 100%.

- -

To adjust letter height and width

1 Double-click or right-click a lettering object or right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens.

Height: 14.00 mm ← Enter height
Width: 100 % ← Adjust width percentage
Italic: 0 °
Letter Spacing: 1.40 mm
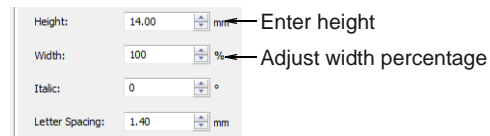
2 Enter the height in the **Height** field.

Note Letter height can be between 1 mm and 200 mm. See Alphabet Samples for details.

3 Enter the width as a percentage of height in the **Width** field.

4 Click **Apply**.

The setting is applied to any selected lettering objects or to newly created lettering objects.

Width 100%

Width 70%

Width 140%

Adjusting lettering dimensions

Use Lettering (Digitize toolbar) to adjust lettering dimensions.

You can scale your lettering objects vertically, horizontally and proportionally via the **Object Properties > General** dialog.

Tip Change the appearance of an alphabet by changing the letter width in proportion to the height. The original width value is 100%.

- -

To adjust lettering dimensions

1 Double-click or right-click a lettering object.

The **Object Properties > Lettering** dialog opens.

2 Select the **General** tab.

Dimensions
Width: 37.21 mm 100 % ← Adjust width and
Height: 24.57 mm 100 % height settings
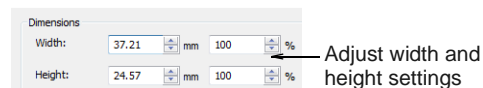
3 Adjust the width and height settings either as absolute values (mm) or as a percentage of the current settings.

4 Click **Apply**.

The setting is applied to any selected lettering objects.

Original
Height 140%

Width 140%

Removing underlay from small lettering

Use Auto Underlay (General toolbar) to strengthen and stabilize embroidery designs with automatic underlay.

The quality of most lettering can be improved with an underlay using the same methods as for other embroidery objects. Small, narrow letters, however, may not require underlay, depending on their size and the fabric to be used. See also Stabilizing with underlays.

To remove underlay from small lettering

1 Select the lettering object.

2 Click the **Auto Underlay** icon.

The underlay is removed.
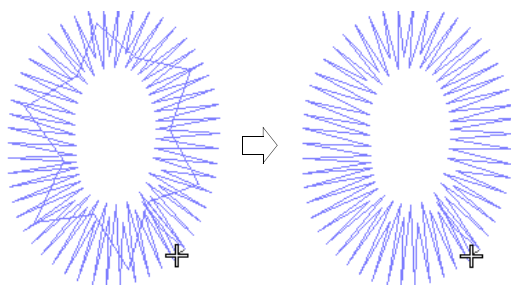
Transforming lettering objects

Use the available tools to skew and rotate lettering objects. See also Scaling lettering.

Transforming lettering with Select Object

Use Select Object (Edit toolbar) to transform lettering objects on-screen.

You can transform lettering objects by manipulating control points on-screen with the **Select Object** tool. See also Scaling lettering with Select Object.

To transform lettering with Select Object

1 Click **Select Object** and select the lettering object.

Selection handles appear – these let you scale the object. See Scaling lettering with Select Object for details.

2 Click the lettering object again.

Another set of selection handles appears – these let you rotate and skew the object.

Skew handle

Rotation handles
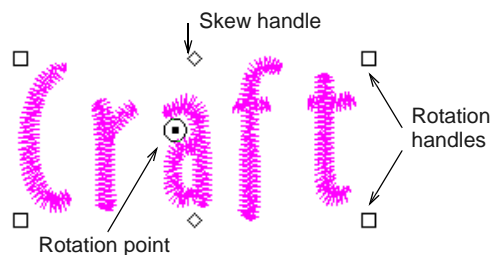
Rotation point

3 Click and drag one of the diamond-shaped handles to skew the lettering object horizontally.
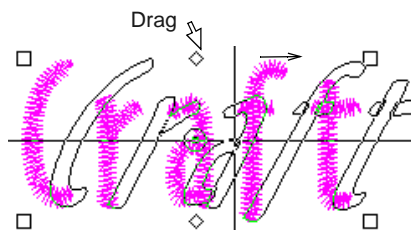
Drag

4 Click and drag one of the hollow square handles to rotate the object.

Drag
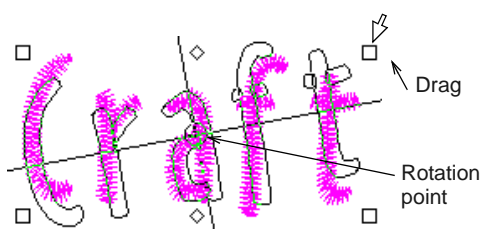
Rotation point

💡 **Tip** Drag the rotation point itself to a new location as required.

New rotation point
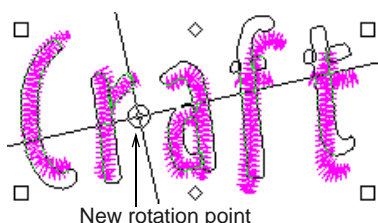
5 Release the mouse to complete.

Rotating lettering with Reshape Object

Use Reshape Object (Edit toolbar) to rotate lettering objects on-screen.

You can rotate lettering objects by manipulating control points on-screen. See also Scaling lettering with Select Object.

To rotate lettering with Reshape Object

1 Select the lettering object and click the **Reshape Object** icon.

Control points appear around the lettering object.

Rotate baseline selection handle

2 Click and drag a solid square handle to rotate the lettering object.

Drag

3 Release the mouse button to complete and press **Esc**.

Adjusting individual letters

As well as scaling and rotating lettering objects, the **Reshape Object** tool is used to manipulate individual letters. You can reposition letters in relation to each other, scale, rotate and skew them. You can also reshape individual letters, adjust stitch angles, and recolor them individually.

Repositioning letters on screen

Use Reshape Object (Edit toolbar) to reposition individual letters on screen.

You can reposition individual letters in a lettering object using the **Reshape Object** tool.

To reposition letters on screen

1 Select the lettering object.

2 Click **Reshape Object**.

3 Click the diamond control point in the centre of the letter.

Click diamond control points
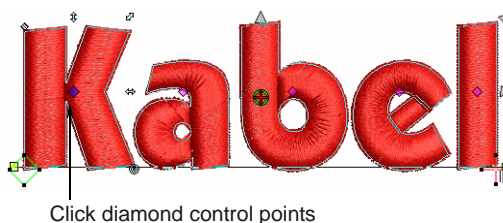
💡 **Tip** To select multiple or a range of letters, hold down **Ctrl** or **Shift** as you select.

4 Click-and-drag the letter to the new position:

▸ To move the letter horizontally, drag it along the baseline.

▸ To move the letter vertically, hold down **Shift** as you drag.

▸ To move the letter freely, hold down **Ctrl** as you drag.

5 Release the mouse to complete and press **Esc**.
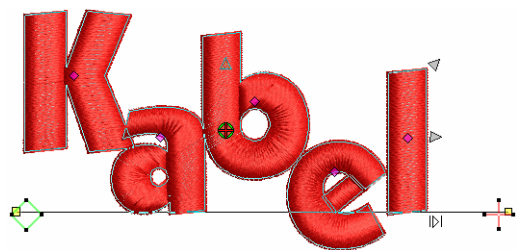
Transforming letters on screen

> Use Reshape Object (Edit toolbar) to transform individual letters on screen.

You can transform individual letters by manipulating control points on screen with the **Reshape Object** tool.

To transform letters on screen

1 Select the lettering object.

2 Click **Reshape Object**.

Control points appear.

3 Click the diamond control point of a letter.

Another set of reshape nodes appear around the letter.

Drag to scale letter height
Drag to skew
Drag to scale letter proportionally
Drag to scale letter width
Drag to rotate
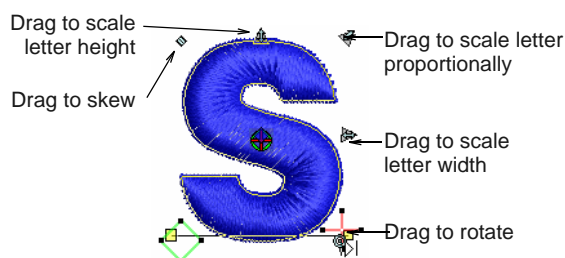
4 Click-and-drag a reshape node around the letter to transform it.
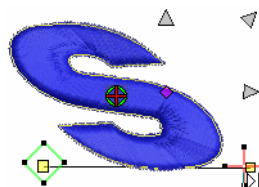
5 Press **Esc** to finish.

Reshaping letters on screen

> Use Reshape Object (Edit toolbar) to reshape individual letters.

Create special lettering effects by reshaping letter outlines with the **Reshape Object** tool.

To reshape letters on screen

1 Select the lettering object and click the **Reshape Object** icon.

Selection handles appear around the lettering object.

Click letter outline
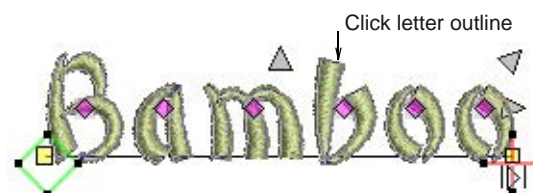
2 Click the letter outline.

Reshape nodes appear around it.
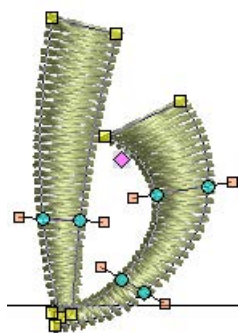
Tip Zoom in the letter for precise reshaping. See Zooming in and out for details.

3 Reshape the letter by adding, deleting, changing or moving reshape nodes. See Reshaping objects using reshape nodes for details.
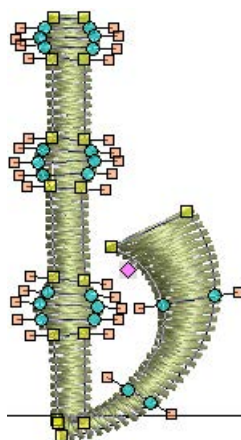
4 Turn on **Artistic View** to view the results.

Adding stitch angles to letters

> Use Add Stitch Angles (Stitch and Color Bar) to set different stitch angles for selected letters.

Set different stitch angles within letters with the **Stitch Angle** icon. Each segment of the letter can have a different stitch angle.

To add stitch angles to letters

1 Select a lettering object.

2 Click the **Add Stitch Angles** icon.

You are prompted to enter **angle point 1**.

3 Digitize stitch angles so that they intersect two sides of the object.
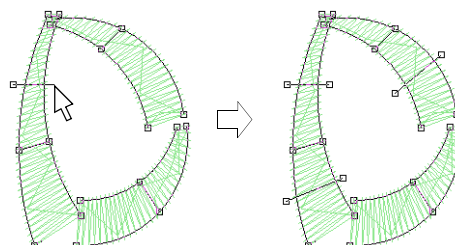
Note Make sure that the stitch angles do not intersect each other.

4 Press **Enter**.

Stitches are regenerated with the new angles.

Deleting stitch angles of letters

> Use Reshape Object (Edit toolbar) to delete individual stitch angles in lettering objects.

Delete individual stitch angles in lettering objects with the **Reshape Object** icon.

To delete stitch angles of letters

1 Select the lettering object and click the **Reshape Object** icon.

2 Click the diamond handle at the center of a letter.

3 Click the letter outline.

Reshape nodes appear around it.

4 Select and delete reshape nodes as required.
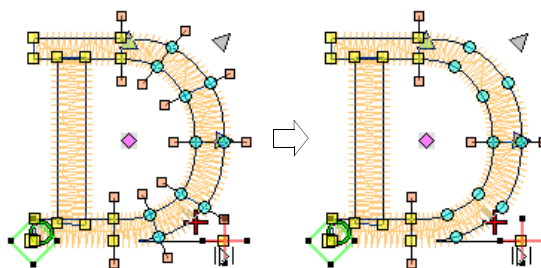
Note Lettering outlines are preserved after any angle deletion.

Recoloring letters

> Use Lettering (Digitize toolbar) to recolor letters.

BERNINA Embroidery Software lets you change the color of individual letters within a lettering object.

Tip You can also insert a color change between two letters by keying a caret (^) symbol. Subsequent letters default to the next color in the palette. See Creating lettering with the Object Properties dialog for details.

To recolor letters

1 Click the **Lettering** icon and then click inside the lettering object.

An I-beam appears.

Childs Play

I-beam

2 Select a letter(s) by dragging the cursor over the letter(s).

Childs Play

Drag the cursor over the letter

3 Click a color on the color palette.

4 Press **Enter**.

Childs Play

Reshaping baselines

> Use Reshape Object (Edit toolbar) to reshape lettering baselines.

Baselines can be adjusted on-screen after they have been placed in your design. Reshape straight baselines to place them on an angle. For **Vertical** baselines, you can also change baseline length and letter spacing. Reshape **Circle** and baselines to change curve depth, justification point and baseline length. Reshape **Any Shape** baselines by moving, changing, adding or deleting reshape nodes along the baseline. See also Applying lettering baselines.

To reshape a baseline

▶ Select the lettering object and click the **Reshape Object** icon.

Different control points display for different types of baseline.

Cursive

Baseline selection handles
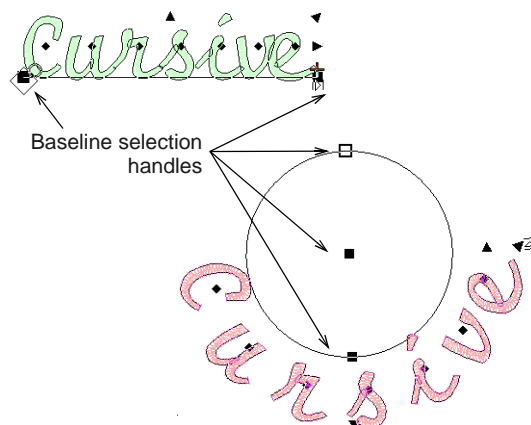
Tip The large diamond and cross represent start and end points. You may need to move them to access baseline selection handles. They will reposition themselves automatically based on changes you make.

▶ To change the angle of a straight or vertical baseline, click and drag one of the large solid squares.

Cursive

Drag up or down

▶ To adjust the baseline length, click and drag the open triangle handle.

Letter spacing adjusts accordingly.

Cursive

Drag triangle

Cursive
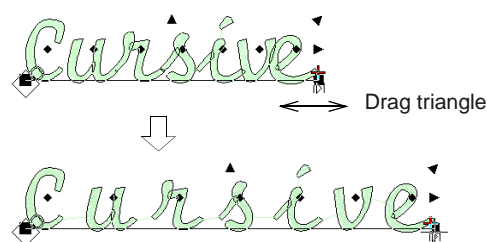
▸ To reshape lettering with a circular baseline, drag the handle at the circle center to adjust the radius.
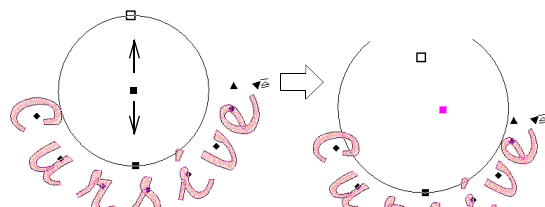
Drag up or down to change radius of circle

▸ On a circular baseline, there are actually two selection handles at the circumference of the circle, one on top of the other. Drag them apart to create an arc.
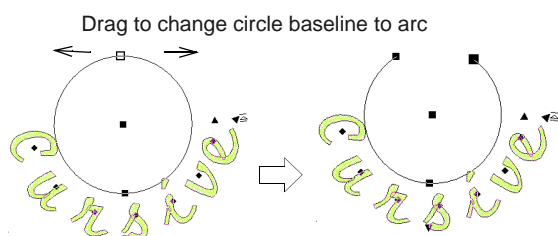
Drag to change circle baseline to arc

▸ To change letter spacing evenly around a circular baseline, click and drag the triangle.
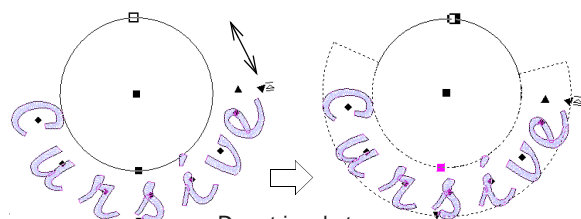
Drag triangle to change spacing evenly

Tip The exact letter positions depend on the justification – Left Justification, Right Justification, Center Justification, or Full Justification. If the baseline becomes too short, letter spacing is reduced, and letters may overlap. See Setting letter justification for details.

▸ To adjust Any Shape baselines, add, delete, change or move reshape nodes on the base line

like any embroidery object. See Reshaping objects using reshape nodes for details.

Click baseline to bend, then drag up or down

Press spacebar to change between corners and curves
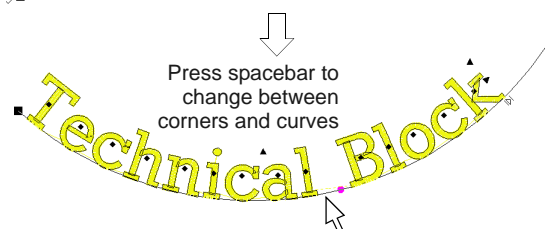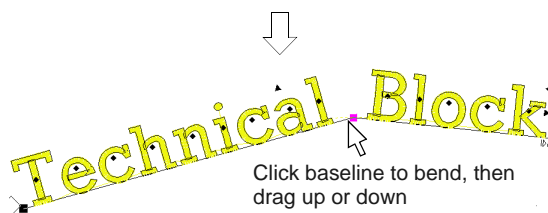
▸ Press **Esc** to finish.

CHAPTER 27

SPECIAL LETTERING FEATURES

All TrueType fonts installed on your computer are also available to you when placing lettering in your designs. BERNINA Embroidery Software lets you add special characters to your lettering which do not appear on the keyboard. BERNINA Embroidery Software also provides a number of special alphabets for fancy lettering as well as monogramming. Like all embroidery objects, each lettering object has its own properties. You can adjust these before or after creating lettering objects. BERNINA Embroidery Software also gives you precise control over the stitch angles of individual letters. Apply Elastic Lettering effects to lettering objects to make them bulge or arch, stretch or compress.

This section describes how to convert TrueType fonts to embroidery fonts. It also explains how to add special characters as well as fancy and monogram lettering to your designs. It also covers applying different stitch types to lettering objects as well as creating special effects with Elastic Lettering.

Converting fonts to alphabets

In addition to the professional embroidery alphabets included with the software, BERNINA Embroidery Software provides various techniques for converting any installed TrueType and OpenType font on your system to embroidery.

Broadway

小塚ゴシックプロ

TRAJAN PRO

Note Not all TrueType fonts are suitable for including in embroidery designs. Experiment with the ones you like and try different stitch settings.

Converting text to embroidery

Use Art Toolbox > Convert Text to Embroidery to convert text objects to Satin embroidery lettering with turning stitching.

The **Convert Text to Embroidery** tool converts selected CorelDRAW® text objects to:

▸ Satin embroidery lettering with turning stitching if the text is not enveloped and does not have an outline, or

▸ Non-lettering if the text is enveloped and has an outline.
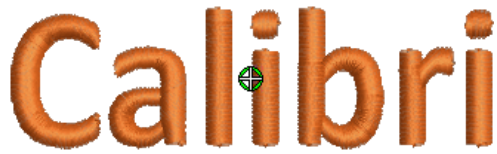
To convert text to embroidery

1 Select **Art Canvas** mode.
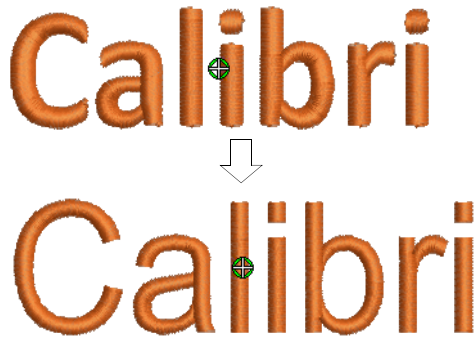
Calibri

2 Select one or more text objects and click the **Convert Text to Embroidery** tool.

BERNINA Embroidery Software automatically switches to **Embroidery Canvas** mode. Source objects are removed from the design.

Once converted to an embroidery alphabet, you can apply whatever font you prefer.

Tip You can also use the **Convert Text to Embroidery** tool with ordinary vector objects with different results to the **Convert to Embroidery** tool.

Converting fonts to embroidery

> Use Lettering (Digitize toolbar) to convert TrueType fonts to embroidery fonts. Right-click to select lettering options.

MS Windows® comes with a collection of TrueType and OpenType fonts installed and there are others available from various sources, including CorelDRAW® Essentials 4. All these fonts are available to you when placing lettering in your designs.

Tip Install new fonts using **My Computer > Control Panel**. Double-click the **Fonts** folder then select **File > Install New Font**. Before you can use the new fonts, you need to restart your computer and then BERNINA Embroidery Software will display the new fonts in the **Alphabet** list.

To convert a font to embroidery

1 Right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens.

Select TrueType font
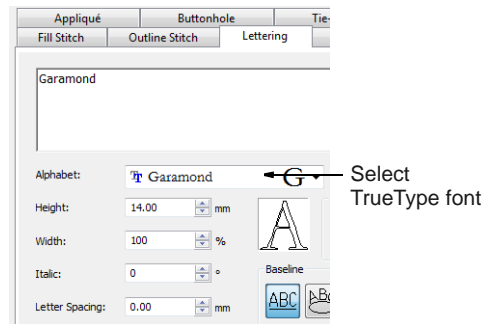
2 Select a TrueType font from the **Alphabet** list.

Any TrueType fonts installed on your computer are listed.

3 Enter the text you want to embroider in the text entry panel.

4 Click **Apply**.

5 Click on-screen where you want to place the letters.

The text is stitched using the selected font.

Tip Not all TrueType fonts are suitable for including in embroidery designs. Experiment with the ones you like and try different stitch settings.

Adding special characters

In BERNINA Embroidery Software, you can add special characters and symbols directly through the **Select Symbols** dialog or by means of the MS Windows® **Character Map**.

Selecting special characters

> Use Lettering (Digitize toolbar) to add special characters and symbols. Right-click to select lettering options.

You can quickly add special characters and symbols to your lettering designs. If you know the keyboard shortcut for a symbol, add it to your lettering by entering the combination on-screen or in the **Object Properties > Lettering** dialog.

- - - - - - - - - - - - - - - - -

To select special characters

1 Right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens.
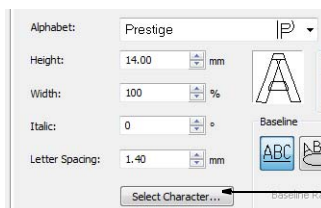
Click to select special characters

Tip If you know the **Alt** key code for the special character you require, you can key it directly into the text entry field. The Character Map gives you codes for all characters. See Using the Character Map for details.

2 Click **Select Character**.

The **Select Character** dialog opens.

Select viewing mode

Select alphabet

Select character

Corresponding keystrokes
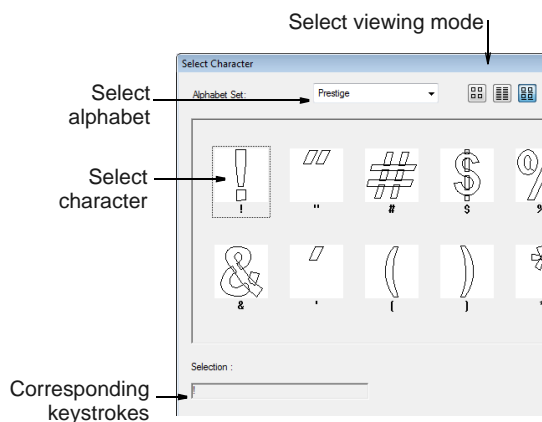
Tip Select a viewing mode – you can list alphabets by picture, character, or both.

3 Select an alphabet from the **Alphabet Set** list.

4 Select the character(s) you want to use.

Tip When you select a character, a keystroke appears in the **Selection** field. This indicates the

key combination required to type the character directly on-screen. For example, '**m**' means press the **m** key while '**M**' means press **Shift+M**.

5 Click **OK**.

The selected characters are displayed in the text entry panel.

6 Click **Apply**.

!"#$%&'()*

Using the Character Map

Use the MS Windows® **Character Map** to provide quick access to common symbols and letters. The Character Map is usually installed as part of the MS Windows® setup. See your MS Windows® documentation for more details.

Tip You can create special characters in each alphabet by holding down the **Alt** key on your keyboard and typing **0** (zero), its code, using the numbers on the keypad. For example, to type **è** with the code **232**, type **Alt+0232**. The character will appear when you release the **Alt** key. The Character Map gives you codes for all characters.

- -

To use the Character Map

1 Open the MS Windows® Character Map.

By default, you will find it under **Start > Programs > Accessories > System Tools > Character Map**.
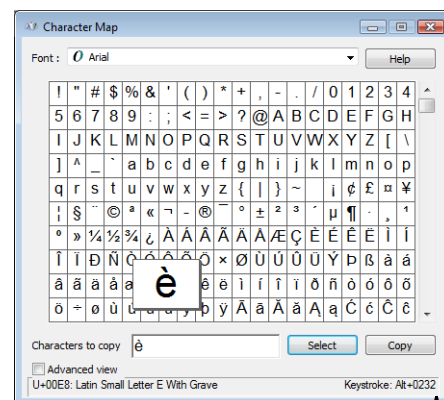
Alt key combination

2 Double-click a character, or select it and press **Select**.

The character appears in the **Characters to copy** box.

Note The equivalent **Alt** key combination is shown at the bottom of the dialog. This can be used to key the character directly on screen.

3 Click **Copy** to copy the character to the clipboard.

4 Paste it into the text entry panel by pressing **Ctrl+V**.

5 Click **Apply**.

Continue creating the lettering object in the normal way.

Using special alphabets

BERNINA Embroidery Software provides a number of special alphabets for fancy lettering as well as monogramming. See also Alphabet Samples.

Adding fancy lettering

Use Lettering (Digitize toolbar) to add fancy lettering. Right-click to select lettering options.

BERNINA Embroidery Software provides fancy alphabets such as **Creative Cross** and **Secret Garden-Caps**. Use these alphabets to add lettering objects to your design, each letter comes with a design or use the small design on its own.

Creative Cross
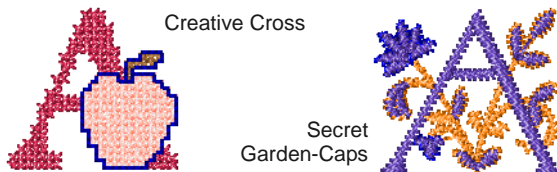
Secret Garden-Caps

Note If you edit the letters, you may lose the current object properties.

To add fancy lettering

1 Right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens.

Select Creative Cross or Secret Garden-Caps

Click to select fancy lettering characters
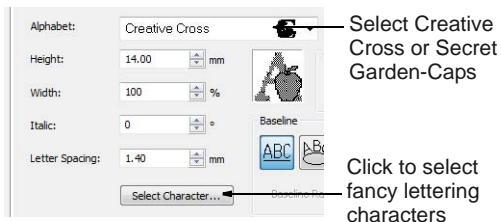
2 Select **Creative Cross** or **Secret Garden-Caps** from the **Alphabet** list.

A sample character appears in the preview window.

3 Click **Select Character**.

The **Select Character** dialog opens.

Select viewing mode

Select character

Corresponding keystrokes
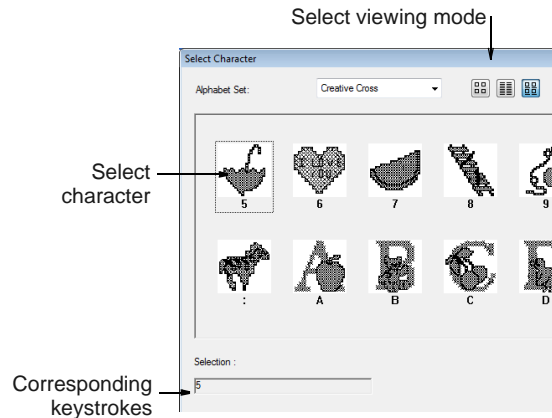
Tip Select a viewing mode – you can list alphabets by picture, character, or both.

4 Select the character(s) you want to use.

Tip When you select a character, a keystroke appears in the **Selection** field. This indicates the key combination required to type the character directly on-screen. For example, '**m**' means press the **m** key while '**M**' means press **Shift+M**.

5 Click **OK**.

The selected characters are displayed in the text entry panel.

6 Click **Apply**.

Tip To change the colors of the letters assign the required colors See Matching and assigning threads for details.
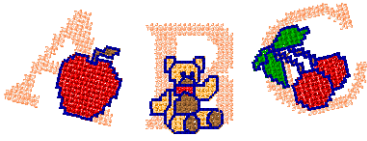
Letters and small designs
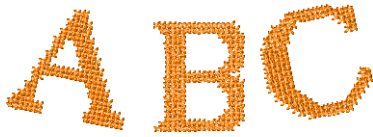
Letters only

Small design only

Adding flair script lettering

  Use Lettering (Digitize toolbar) to add embroidery lettering to designs or edit selected lettering.

Flair script is a special font which allows you to add decorative flairs to the end of text objects, mimicking flamboyant handwriting flourishes.

To add flair script lettering

1 Click the **Lettering** icon.

The **Object Details > Lettering** dialog opens.

Enter text

Select Flair Script font

Click to select special characters
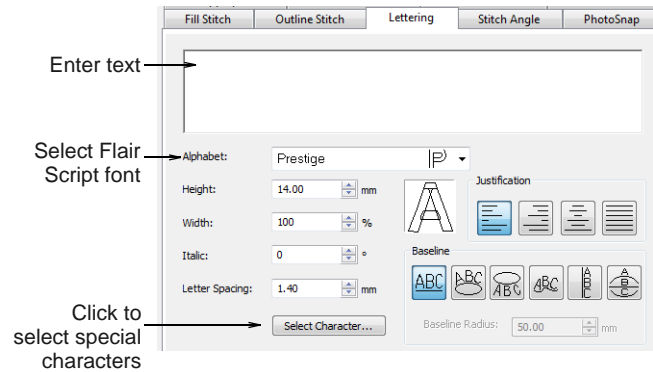
2 Select **Flair Script** from the **Font** list.

3 Enter the text you want to embroider in the text entry panel.

4 Click **Select Character**.

The **Select Character** dialog opens.

Select flare

Corresponding keystrokes
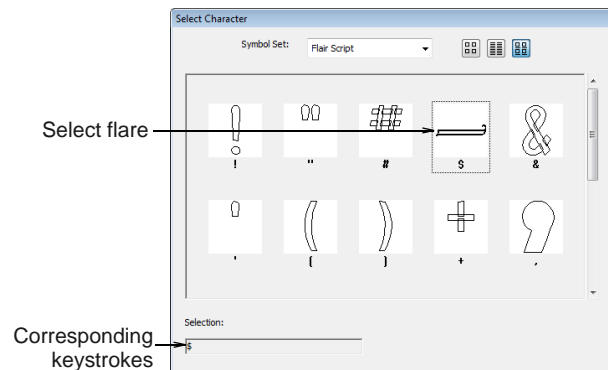
5 Select the flare character(s) you want to use.

Scroll down for more options. See also Selecting special characters.

6 Click **Make Current** to close the dialog.

The selected characters are displayed in the text entry panel.

7 Adjust lettering as required. See Adding lettering to embroidery designs for details.

8 Click **OK**.

9 Click where you want to place the lettering, or mark reference points for the selected baseline.

10 Press **Enter**.

Tip Experiment with different flare characters to obtain the look you want.

Adding monogram lettering

In addition to the dedicated Monogramming feature, BERNINA Embroidery Software allows you to create monogramming designs using special monogram alphabets. Use Diamond2 for 2-letter monograms and Diamond3 for 3-letter monograms. See also Monogramming.

- -

To add monogram lettering

1 Right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens.

Select Diamond2 or Diamond3

Click to select fancy lettering characters
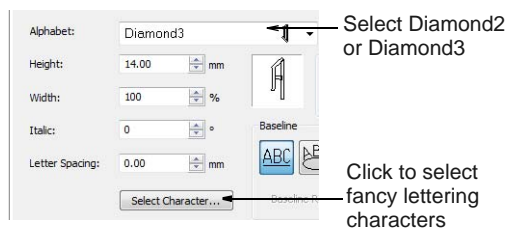
2 Select the desired monogram alphabet:

> **Diamond2** for a two-letter monogram: Diamond2 is a special alphabet which includes two versions of each letter for left and right positions, plus a border and flourish for two-letter designs. See Diamond2 for details.

> Use **Diamond3** for a three-letter monogram: Diamond3 is a special alphabet which includes three versions of each letter for left, center and right positions, plus a border and flourish for 3-letter designs. See Diamond3 for details.

3 Click **Select Character**.

The **Select Character** dialog opens.

Tip Select a viewing mode – you can list alphabets by picture, character, or both.
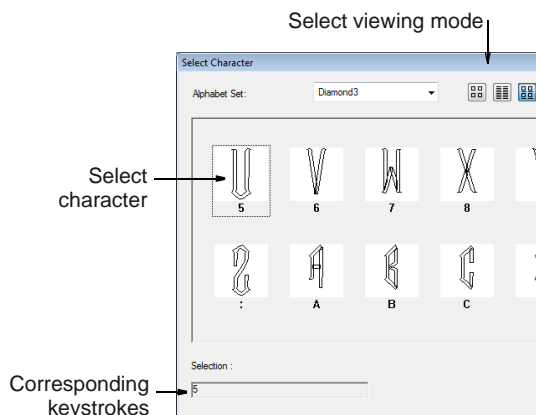
Select viewing mode

Select character

Corresponding keystrokes

Tip When you select a character, a keystroke appears in the **Selection** field. This indicates the key combination required to type the character directly on-screen. For example, '**m**' means press the **m** key while '**M**' means press **Shift+M**.

4 Select a left letter.

Note When selecting letters, make sure the letter orientation is correct. For example, Diamond3 has three sets of each letter, one for the left side, one for the middle and one for the right side.

5 Select the middle letter, if using Diamond3.

6 Select the right letter.

7 Select a border if required.

Select border
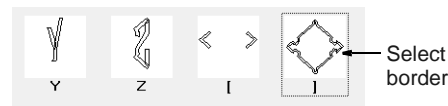
8 Click **OK**.

The selected characters are displayed in the text entry panel.

9 Click **Apply**.

Diamond2
monogram

Diamond3
monogram
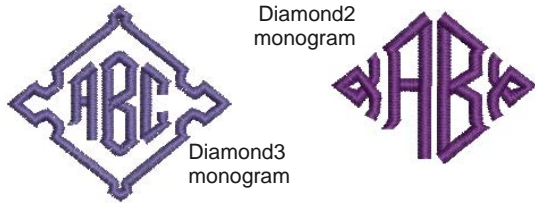
Tip If you want the letters in your monogram to be different styles, create each letter separately.

Applying different stitch types and effects to lettering

By default, lettering objects are filled with Satin stitch. You can also apply other basic fill stitch types, such as Step or Fancy, as with other embroidery objects. See Selecting outline stitches for details.

Adjusting Satin stitch settings for lettering objects

By default, lettering objects are filled with Satin stitch. Where a letter is narrow, stitches are tight, thus requiring fewer stitches to cover the fabric. Where a column is very narrow, stitches need to be less dense because too many needle penetrations can damage the fabric. You can fill lettering shapes with **Special Satin** stitching as well as the regular satin stitch. It is particularly suitable for filling large,

irregular lettering shapes that are too large for satin stitch. See also Creating fills with Satin fill.

To adjust Satin stitch settings for lettering objects

1 Double-click or right-click a lettering object.

The **Object Properties > Lettering** dialog opens.

Select Fill
Stitch tab

Adjust stitch
spacing
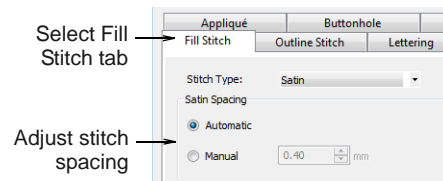
2 Select the **Fill Stitch** tab.

3 Select the type of satin spacing. See Adjusting Satin fill spacing and Applying automatic spacing to Satin fill.

4 If you chose **Manual** spacing, adjust the setting.

5 Click **Apply**.

Automatic Spacing

Manual Spacing

Note For larger lettering objects, various techniques are available for controlling long stitches. See Preserving long stitches for details. See also Splitting long stitches in Satin fills.

Adjusting Step stitch settings for lettering objects

You can fill lettering shapes with Step stitch. It is particularly suitable for filling large, irregular lettering shapes.

To adjust Step stitch settings for lettering objects

1 Double-click or right-click a lettering object.

The **Object Properties > Lettering** dialog opens.
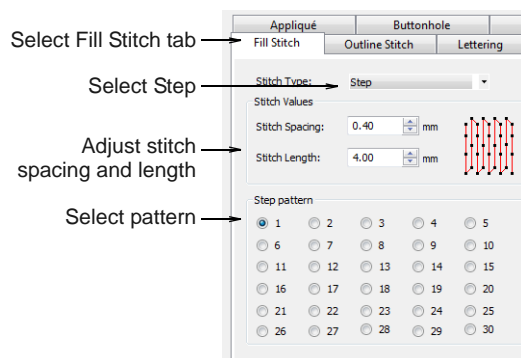
2 Select the **Fill Stitch** tab and **Step** from the **Stitch Type** list.

3 Adjust stitch spacing to increase or decrease density. See Adjusting Step fill spacing and length for details.

4 Adjust stitch length. See Adjusting Step fill spacing and length for details.

5 Select a Step pattern. See Creating fills with Step fill for details.

6 Click **Apply**.

Adjusting Fancy stitch settings for lettering objects

You can fill lettering shapes with **Fancy** stitching as well as the regular satin stitch. It is particularly suitable for filling large, irregular lettering shapes that are too large for satin stitch. The density is

determined by the stitch spacing setting. See also Creating fancy fills.

To adjust Fancy stitch settings for lettering objects

1 Double-click or right-click a lettering object.

The **Object Properties > Lettering** dialog opens.
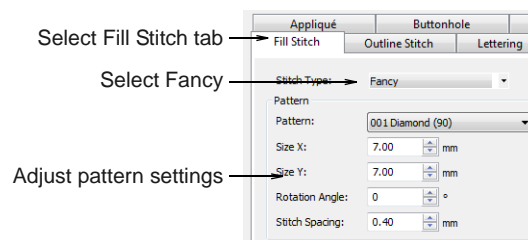
2 Select the **Fill Stitch** tab and **Fancy** from the **Stitch Type** list.

3 Select a pattern from the **Pattern** list and adjust the settings. See also Creating fancy fills and Laying out pattern fills on-screen.

4 Click **Apply**.

Creating special effects with Elastic Lettering

Apply **Elastic Lettering** effects to lettering objects to make them bulge or arch, stretch or compress. You can create slant or pennant lettering with straight Elastic Lettering. You can create bulges and arches with curved elastic lettering. Elastic Lettering can be used with any baseline.

⚠️

Caution If you get an 'Out of Memory' error on your A200 or A730 embroidery machine, there are two possible workarounds:

‣ Select the lettering object and click the **Break Apart** tool before sending the design. This will turn lettering into embroidery patches – i.e. no longer a lettering object. See Splitting into component objects for details.

‣ Save as EXP and send to the machine as an EXP file.

Distorting lettering objects

Use Elastic Lettering (Edit menu) to create special effects with letters.

Four types of **Elastic Lettering** effect are available – **Straight**, **Curved**, **Perspective** and **Diamond**.

To distort lettering objects

1 Select the lettering object you want to distort.

2 Select **Edit > Elastic Lettering**.

3 Select an elastic type from among the following alternatives:

Straight   Curved

Perspective   Diamond

Different handles display around the object outline depending on the **Elastic Lettering** type.

Curved reshape handles

4 Drag a handle to reshape the object:

‣ To move two handles in opposite directions, hold the **Shift** key down while dragging a handle.

Shift+drag
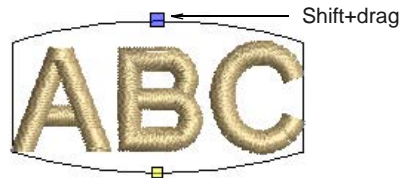
‣ To move the handles in the same direction, hold down the **Ctrl** key while dragging a handle.

Ctrl+drag
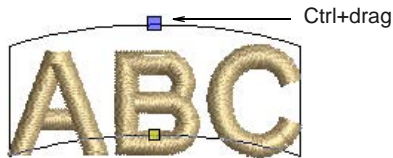
5 Press **Enter** to complete.

Editing lettering in Elastic Lettering

🅐 Click Lettering (Digitize toolbar) to edit letters in envelopes on-screen.

You can edit lettering in Elastic Lettering on-screen in the same way as normal lettering. When you click inside the lettering, a duplicate displays below the envelope.

To edit lettering in Elastic Lettering

1 Click the **Lettering** icon then click inside the lettering object.

Duplicate letters appear below the selected shape in their original form. The cursor changes to an I-beam and appears after the last letter.

2 Click inside the duplicate lettering object and edit text as required.
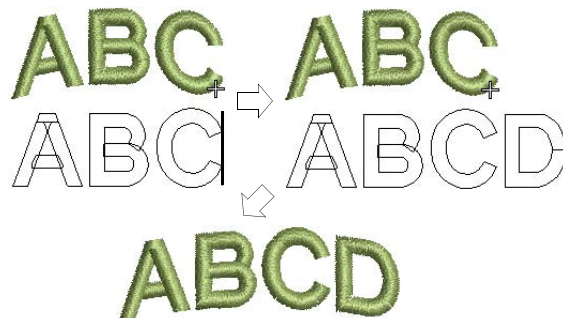
3 Press **Enter** to complete.

The lettering in the Elastic Lettering is updated.

Removing Elastic Lettering

Use Elastic Lettering (Edit menu) return an object to its original shape.

Return an object to its original shape by removing the Elastic Lettering.

- -

To remove Elastic Lettering

‣ Select the lettering object.

‣ Select **Edit > Elastic Lettering > None**.

The **Elastic Lettering** is removed and the letters return to their original shape.
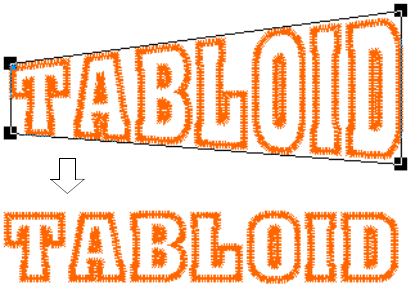
CHAPTER 28

MONOGRAMMING

A monogram is a design composed of one or more letters, typically the initials of a name, used as an identifying mark. The Monogramming feature offers a simple way to create personalized monograms using a selection of pre-defined monogramming styles, border shapes and ornaments, together with a set of tools to help you place these elements in creative and decorative ways.

This section details the creation of monogram lettering with initials or with a name, how to add ornaments to monograms, and how to create ornament layouts. It also covers adding and creating your own borders.

Creating monogramming designs

Use Monogramming (Digitize toolbar) to create personalized monograms using a selection of pre-defined monogramming styles, border shapes and ornaments.

The **Monogramming** feature offers a simple way to create personalized monograms with minimal manual digitizing, using a selection of pre-defined monogramming styles, border shapes and ornaments, together with a set of tools to help you place these elements. The **Monogramming** feature creates a single 'monogramming object' comprising some or all of the following elements:

‣ **Lettering**: a single lettering object (initials or name)
‣ **Ornaments**: up to ten ornament sets (each of which may comprise multiple copies of an ornament or embroidery design)

‣ **Borders**: up to four concentric borders.
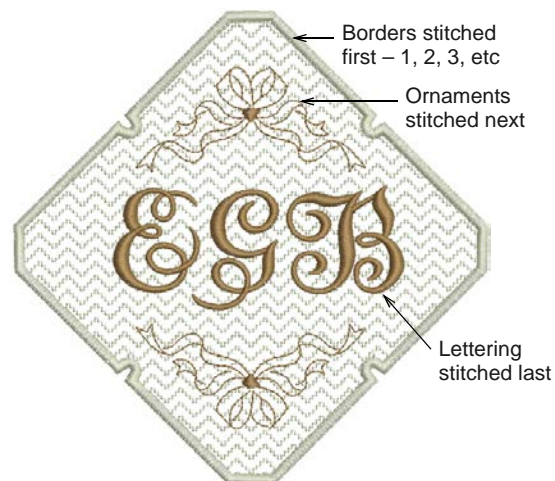
Assuming that all elements are present, the monogram is stitched in the following order: borders (1, 2, 3, and 4), ornament sets, and lettering object(s).

To create a monogramming design

1 Click the **Monogramming** icon.

The **Monogramming** dialog opens with the **Lettering** tab selected. This tab allows you to specify the characters in the lettering component of a monogram. Two options are available: **Initials** and **Name**.
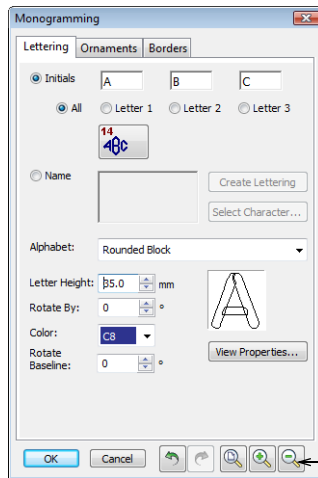
The **Monogramming** dialog is 'modal' meaning that you are **not** able to select objects or operate any controls outside the dialog while it is open. However, elements specified in the dialog are displayed instantly in the Design Window, and any changes made to settings inside the dialog are immediately visible. The dialog also contains **Undo**, **Redo** and **Zoom** buttons. **Undo** reverses any changes made **since** the dialog was opened. The normal shortcut keys – **Ctrl+Z**, **Ctrl+Y**, **Z**, **Shift+Z** – can also be used while the dialog is open.

2   Select the type of lettering object you want to make:

▸ **Initials**: Up to three initials can be entered, including special characters and symbols. See Creating monogram lettering with initials for details.
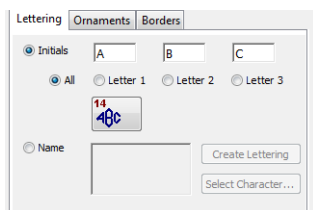
▸ **Name**: This option allows unlimited lines of characters to be entered. See Creating monogram lettering with names for details.
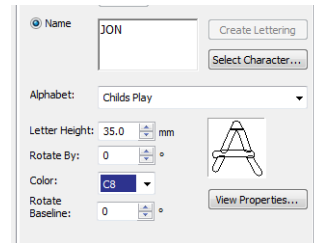
3   Click the **Ornaments** tab and specify the type of ornamentation you want by clicking **Add**.

You can add up to ten ornament sets around a monogram. See Adding ornaments to monograms for details.
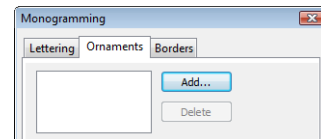
4   Click the **Borders** tab and specify the type of border you want by clicking **Add**.

You can add up to four borders of the same shape to a monogram design. See Adding borders to monograms for details.
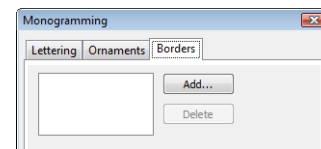
5   Click **OK** to close.

Tip You can modify selected monograms at any time by adjusting their settings in the **Monogramming** dialog. The dialog can be opened with a single monogram, and no other object, selected. Any modifications to the settings are applied directly to the selected monogram.

Note The **Ungroup** command is not available when a Monogramming object is selected. If you wish to access component objects, use the **Break Apart** tool. See Splitting into component objects for details.

Creating monogram lettering

The **Monogramming** tool allows you to create personalized monograms with up to three initials, including special characters and symbols, or unlimited lines of characters.

Creating monogram lettering with initials

> Use Monogramming (Digitize toolbar) to create personalized monograms using a selection of pre-defined monogramming styles, border shapes and ornaments.

Up to three initials can be entered into your monogramming design, including special characters and symbols. Change settings for each one or all together, or apply pre-defined layout styles.
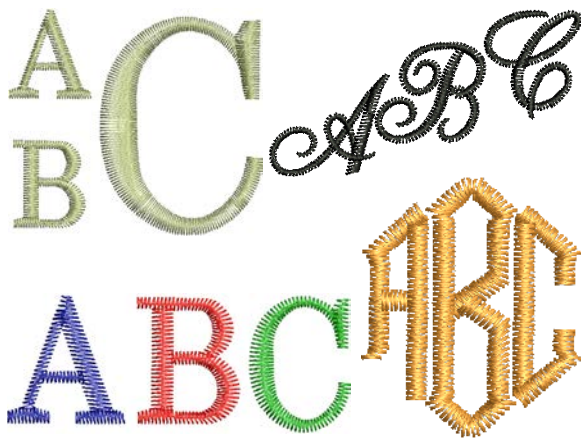
To create monogram lettering with initials

1 Click the **Monogramming** icon.

The **Monogramming** dialog opens with the **Lettering** tab selected. The **Initials** option is selected by default.

Enter initials in each field
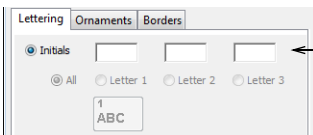
> **Note** The **All Letters** option is selected by default. This means that any changes to lettering properties will affect **all** initials in the monogram. If you want to specify different settings for each one, select the button corresponding to the letter you want to modify before proceeding. This step is repeated for each letter.

2 Enter the first initial for the monogram in the **Letter #1** field.

The letter simultaneously appears in the Design Window.

> **Note** When using a single letter, it should be placed in the **Letter #1** field.

3 Tab to the next fields and enter second and third initials as required.

These letters appear in the Design Window.

Enter initials in each field

Select layout style from flyout menu
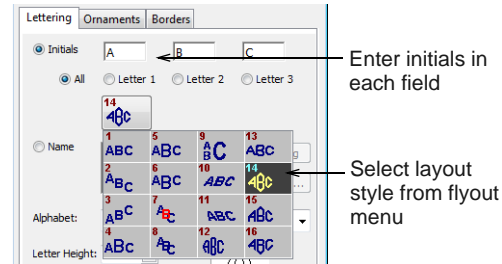
4 Optionally, click the **Style** button and select the style you want from the flyout menu – scroll to the desired item and release the mouse button.

The current height of Letter #1 is used as the 'base setting' for the style.

Style 7
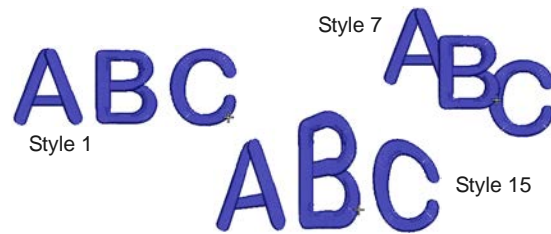
Style 1

Style 15

> **Note** The **Style** button is only applicable to initials. (Style 1 is applied by default.) When the **Name** option is selected, this button is disabled. See also Creating monogram lettering with names.

5 Select a thread color from the **Color** palette.

Select alphabet

Adjust letter height

Select thread color

Adjust lettering settings
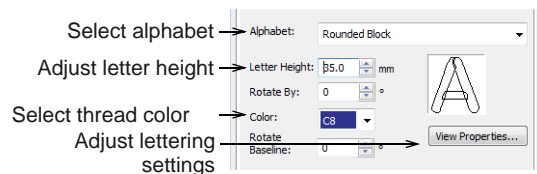
6 Use the **Alphabet** dropdown list to change alphabets.

> **Note** The default values for monogram lettering **Alphabet** and **Height** are distinct from those for conventional lettering. All settings can, however,

be controlled via the **Object Properties > Lettering** tab.

7 Adjust available lettering settings as desired:

▸ Adjust **Letter Height** and **Color** as desired. This height setting overrides the one in the **Object Properties > Lettering** tab.

Color changed   Height changed

▸ Adjust letter rotation via the **Rotate By** and **Rotate Baseline** controls. These allow you rotate individual letters or the entire baseline.
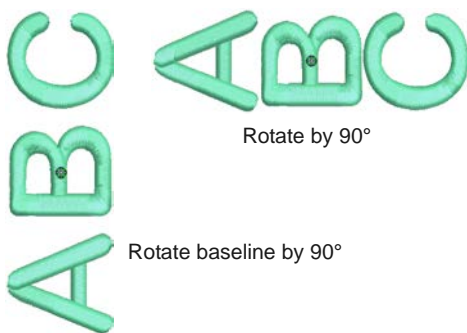
Rotate by 90°

Rotate baseline by 90°

8 Click **View Properties** to make any further adjustments to your lettering stitch properties. See Applying different stitch types and effects to lettering for details.

Style 1 with default properties   Italic 35%

Width 130%   Vertical baseline
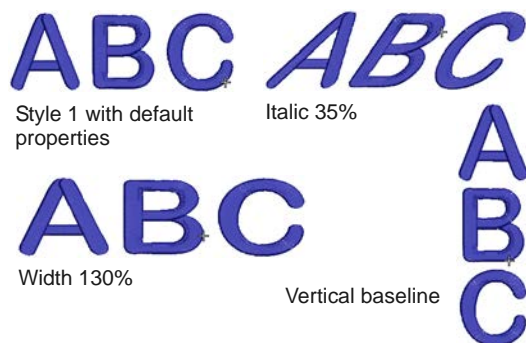
9 Define any ornaments and/or borders you want:

▸ Click the **Ornaments** tab to specify monogram ornamentation. See Adding ornaments to monograms for details.

▸ Click the **Borders** tab to specify a monogram border or borders. See Adding borders to monograms for details.

10 Click **OK** to complete.

Note The zoom factor is automatically adjusted to show the whole monogram.

Creating monogram lettering with names

Use Monogramming (Digitize toolbar) to create personalized monograms using a selection of pre-defined monogramming styles, border shapes and ornaments.

The monogram **Name** option allows unlimited lines of characters to be entered.

- -

To create monogram lettering with a name

1 Click the **Monogramming** icon.

The **Monogramming** dialog opens with the **Lettering** tab selected. The **Initials** option is selected by default.

2 Click the **Name** option.

The **Initials** option is disabled.

Initials option disabled

Select Name option
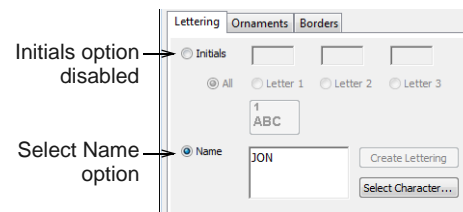
3 Enter your text in the **Name** field.

Pressing **Enter** starts a new line. When more than one line is created, the default baseline type is used.

4 Click the **Select Character** button if you want to add special characters and symbols. See Adding special characters for details.

5 Select a thread color from the **Color** palette.

Click to create lettering

Click to add special character

Select alphabet

Click to adjust lettering settings
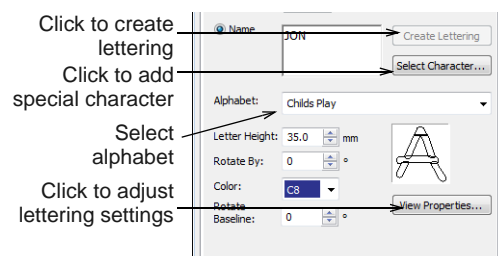
Tip You can edit the name using **Backspace** or **Delete** keys, using left and right arrow keys, or **Home** and **End** keys to move the insertion point.

6 Use the **Alphabet** dropdown list to change alphabets and adjust the **Letter Height** setting as required.

Note The default values for monogram lettering **Alphabet** and **Height** are distinct from those for conventional lettering. All settings can be controlled via the **Object Properties > Lettering** tab.

7 Click **View Properties** to make any further adjustments to your lettering stitch properties. See Applying different stitch types and effects to lettering for details.

Childs Play font with default settings

Italic -35%

Circle CW baseline

Tiffany font
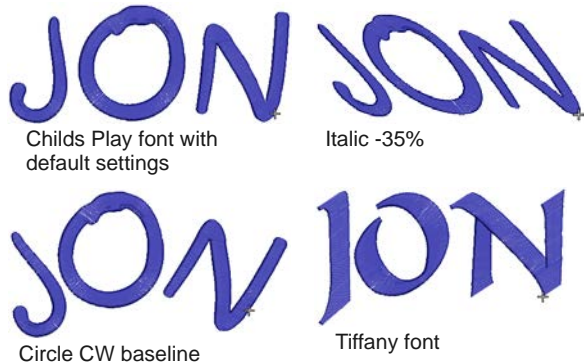
8 Click **Create Lettering**.

The monogram lettering object is added to the Design Window, replacing any that might already be there.

9 Define any ornaments and/or borders you want:

- ▸ Click the **Ornaments** tab to specify monogram ornamentation. See Adding ornaments to monograms for details.
- ▸ Click the **Borders** tab to specify a monogram border or borders. See Adding borders to monograms for details.

10 Click **OK** to complete.

Adding ornaments to monograms

Ornaments can be added to a monogram either from pre-defined patterns or from any design file.

Adding ornament patterns or designs

You can add up to ten ornament sets to a monogram design and change them at any time. There is a dedicated monogram ornaments pattern set although any available pattern set can be used. A set of ornamental designs is also available. These are stored in their own **Ornaments** folder.

Tip You can create your own ornament patterns as you would any other pattern using the **Create Pattern** tool. See Creating your own pattern sets for details.

To add ornament patterns or designs

1 Create the lettering object you want to use in your monogram:

- ▸ **Initials**: Up to three initials can be entered, including special characters and symbols. See Creating monogram lettering with initials for details.
- ▸ **Name**: This option allows unlimited lines of characters to be entered. See Creating monogram lettering with names for details.

2 Click the **Ornaments** tab.
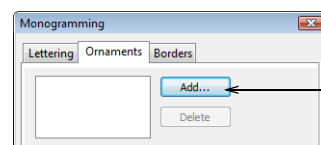
Click to add an ornament set

3 Click the **Add** button.

The **Select Source** dialog opens.

Add a pre-defined pattern

Add a design ornament
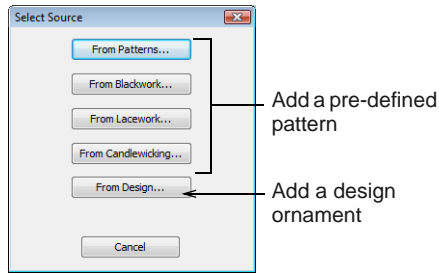
Note Up to ten ornaments can be added to the selection list. Any combination of positions can be used.

4 Choose an ornament source:

▸ If you choose **Patterns**, **Blackwork**, **Lacework**, or **Candlewicking**, the **Select Pattern** dialog opens offering a library of pre-defined ornamental patterns.
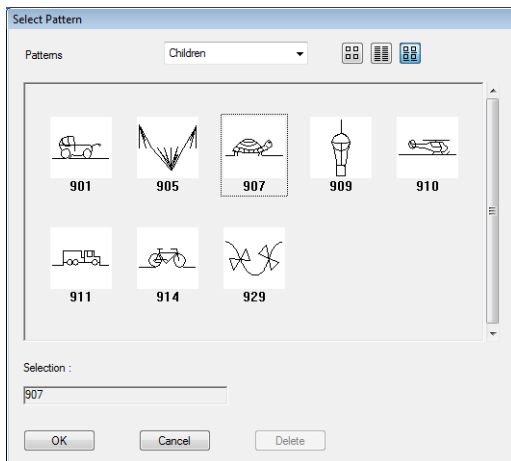
Note All pattern sets are available for selection as ornaments. You can even create your own pattern designs and save them to the ornament collection. See Creating your own pattern sets for details.

▸ If you choose the **From Design** option, an **Open** dialog opens onto the **Ornaments**

folder. Designs here are specifically intended for use as ornaments.
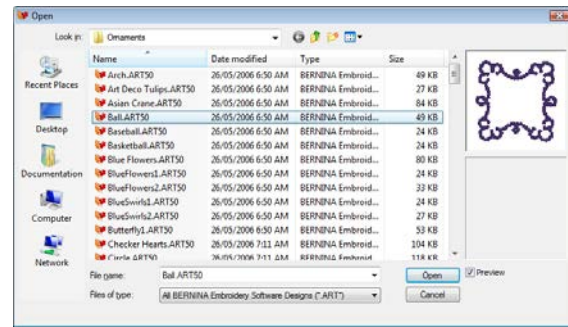
5 Select a pattern or design and click **OK**.

A new ornament set is created using the selected pattern and a new entry added to the list box.

6 Select an ornament set from the list box.
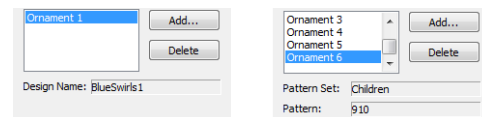
Note If you choose a pattern for the ornament set, the **Pattern Set** and **Pattern** fields give you the pattern identity. If you choose a design as the ornament set, a **Design Name** field appears.

7 Use the **Positions** checkboxes to add up to eight instances of a selected ornament.

The checkboxes are arranged to illustrate ornament placements relative to the lettering. Excluding Position #5, any combination of checkboxes can be used.

Note The **first** position selected serves as the 'anchor' position (highlighted in bold). All settings in the dialog relate to this ornament and all other ornaments are sized, rotated and mirrored in relation to it. See also Creating single ornament layouts and Creating multi-ornament layouts.

8 Use the **Width** and **Height** fields to change ornament dimensions.

Tip A **Resize Proportionally** checkbox (selected by default), forces width and height settings to resize in proportion to each other.

9 Use the **Rotate By** field to specify a rotation angle for the anchor object.

All other ornaments are sized, rotated and mirrored in relation to this object. See also Creating multi-ornament layouts.

10 Use the **Color Blocks** palette to change ornament colors.

The colors in the palette are shown in the sequence they occur in the ornaments. To change colors, select a slot in the **Color Blocks** list and select a color from the **Color** palette.

Note The **Sequence this Set by Color** checkbox is enabled if you include two or more repetitions of the selected ornament. When this option is checked, an ornament set containing two or more colors is resequenced so that all like colors are stitched together. When unchecked, each ornament is stitched out individually. This may result unnecessary thread color changes.

11 Click the **Borders** tab if you want to specify a border or borders for your monogram. See Adding borders to monograms for details.

12 Click **OK** to complete.

Creating single ornament layouts

You can insert an ornament as a standalone element within an ornament set. This single ornament can be used on its own or combined with other ornaments or patterns. See also Creating multi-ornament layouts.

To create a single ornament layout

1 Create the lettering object you want to use in your monogram. See Creating monogram lettering with initials and Creating monogram lettering with names for details.

2 Add the ornament you want to use.

Tip Usually for a single ornament layout, you will want to use one of the ornamental designs included in the dedicated **Ornaments** folder. This is accessed via the **From Design** option. See Adding ornaments to monograms for details.

3 Select Position #5 to insert an ornament as a standalone element within a set.

All other checkboxes are unchecked automatically. **Width**, **Height**, and **Rotate By** fields remain available and an **Offset** panel appears.
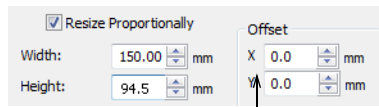
Specify ornament offset
from lettering object

4 Size and rotate the ornament as required. See Adding ornaments to monograms for details.

5 Use the **X** and **Y** fields in the **Offset** panel to position the ornament horizontally or vertically relative to the lettering object.

These settings specify the position of the ornament center relative to the center of the lettering object.

6 Click the **Borders** tab if you want to specify a border or borders for your monogram. See Adding borders to monograms for details.

7 Click **OK** to complete.

Creating multi-ornament layouts

You can add up to eight instances of a selected ornament to your monogram. Any combination of ornaments and ornament positions can be used.

Choose from a range of pre-defined layout styles, including **Mirrors**, **Duplicates**, and **Cycle**. You also have the option of flipping the anchor ornament horizontally or vertically.

- -
To create a multi-ornament layout

1 Create the lettering object you want to use in your monogram. See Creating monogram lettering with initials and Creating monogram lettering with names for details.

2 Add the ornaments you want to use. See Adding ornaments to monograms for details.

3 Use the **Positions** checkboxes to add up to eight instances of a selected ornament.

The checkboxes are arranged to illustrate ornament placements relative to the lettering. Excluding Position #5, any combination of checkboxes can be used.

Anchor position

Distance from lettering
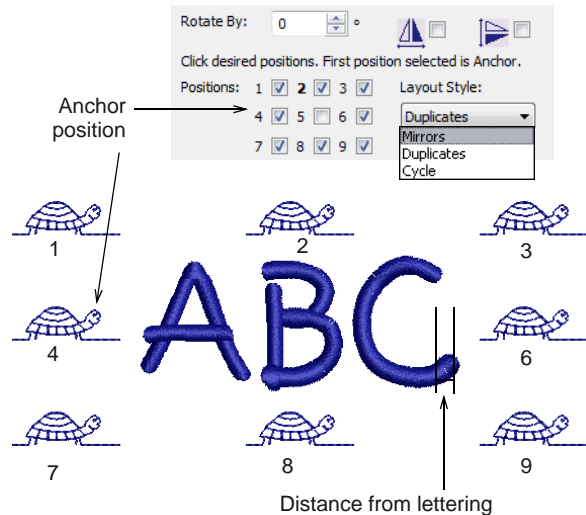
Note The **first** position selected serves as the 'anchor' position (highlighted in bold). All settings in the dialog relate to this ornament and all other ornaments are sized, rotated and mirrored in relation to it.

4 Size and rotate the anchor ornament as required. See Adding ornaments to monograms for details.

5 Use the **Distance From Lettering** field to specify the distance ornaments are offset from the lettering object.

Tip The software allows you to enter a negative offset.

6 Use the **Layout Style** dropdown list to select a style for the ornament arrangement – **Mirrors**, **Duplicates**, or **Cycle**.

Positions are laid out for each layout style in relation to the anchor object, regardless of any positions omitted from the set.

‣ **Mirrors**:

‣ **Duplicates**:

‣ **Cycle**:

‣ Horizontal:
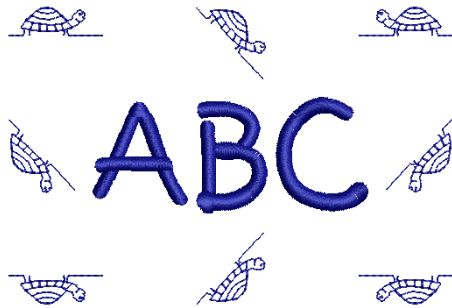
‣ Vertical:
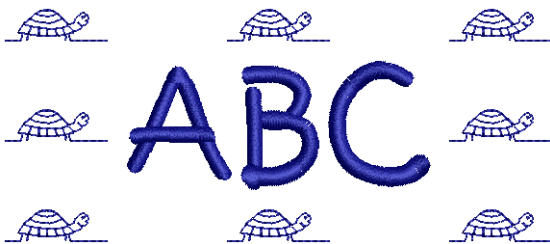
‣ Horizontal and Vertical:
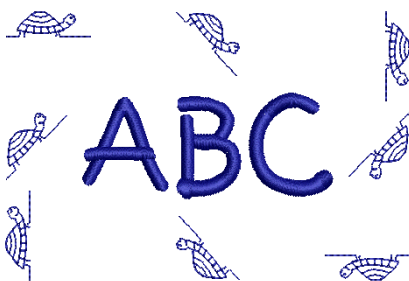
7 Flip the entire configuration horizontally and/or vertically as required.

Flip horizontally
or vertically
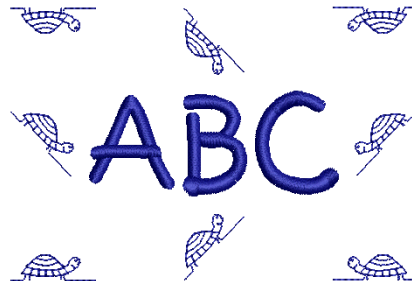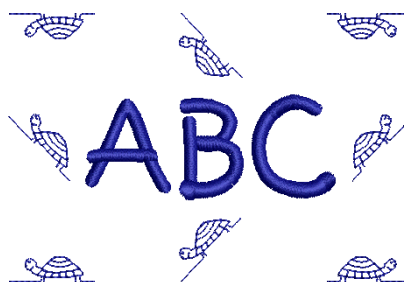
8 Click the **Borders** tab if you want to specify a border or borders for your monogram. See Adding borders to monograms for details.

9 Click **OK** to complete.

Adding borders to monograms

You can add up to four borders of the same shape to a monogram design.

Creating multiple borders

The **Select Border** dialog offers a list of pre-defined border shapes. You can also create your own to add

to the built-in collection. See Creating custom borders for details.

To create multiple borders

1 Create the lettering object you want to use in your monogram:

▸ **Initials**: Up to three initials can be entered, including special characters and symbols. See Creating monogram lettering with initials for details.

▸ **Name**: This option allows unlimited lines of characters to be entered. See Creating monogram lettering with names for details.

2 Add any ornaments you want. See Adding ornaments to monograms for details.

3 Click the **Borders** tab.
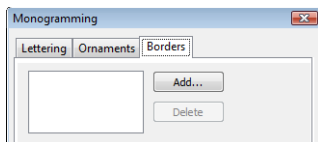
4 Click the **Add** button.

The **Select Border** dialog opens offering a library of pre-defined border shapes.

Select border
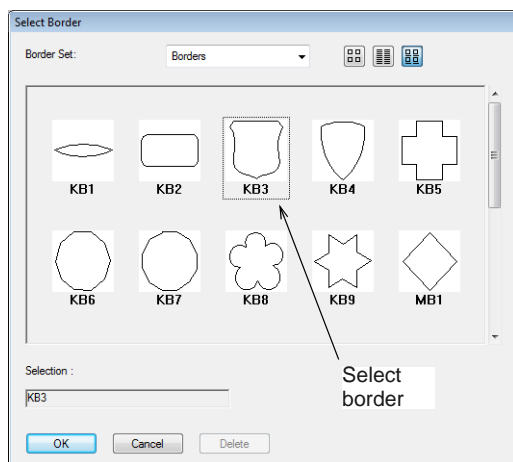
Tip You can create you own border shapes using the **Closed Object** tool and save them to the border collection. See Creating custom borders for details.

5 Choose a border from the dialog and click **OK**.

A new entry is added to the border list box and the selected border appears in the Design Window.

6 Use the **Offset** field to adjust space between lettering and border.

Adjust border offset

Offset from lettering object
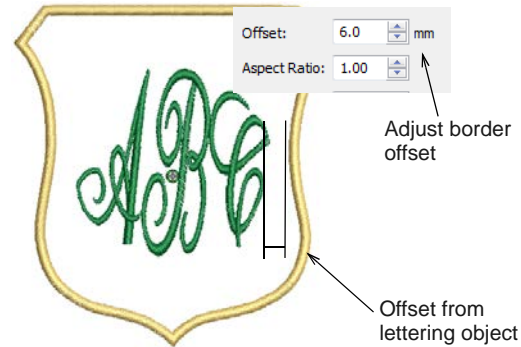
Tip The software allows you to enter a negative offset. This allows you to create multiple overlapping borders.

7 Click the **Add** button again to add up to four more borders.

Each time you click, a new entry is added to the list box and another border of the same shape is added to your design.

Click to add more borders

Click to change border shapes
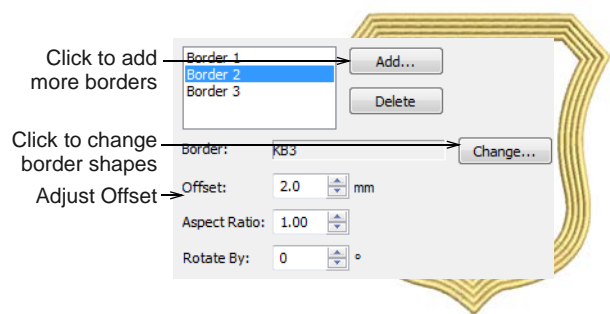
Adjust Offset

Tip If you want to change the border shape, click the **Change** button and select a different border from the **Select Border** dialog. Any change affects all borders in the design.

8 Use the **Offset** field to adjust spacing between borders.

2nd border offset: 4 mm
3rd border offset: 2 mm

2nd border offset: 4 mm
3rd border offset: 6 mm
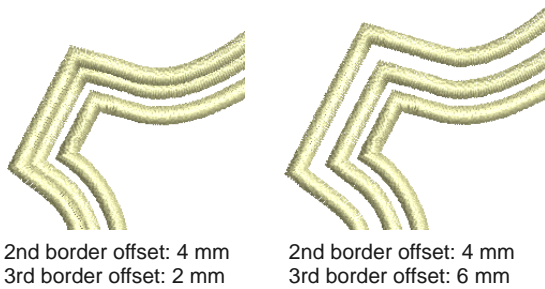
9 Use the **Color** palette to adjust the colors of selected borders.

Change outline or fill stitch types

Change colors
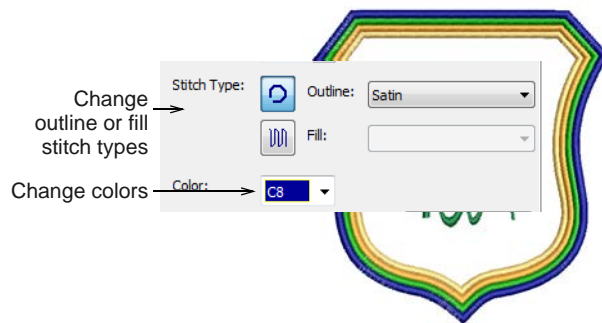
10 Use the **Outline** and **Fill** tool buttons to change outline or fill stitch type for selected borders.

By default, Satin Outline is the default stitch type. When **Fill** is selected, Step is selected as the default fill stitch. All outline and fill stitch types available in the software can be used as borders.

Fourth border: Pattern Run

First border: Pattern Fill
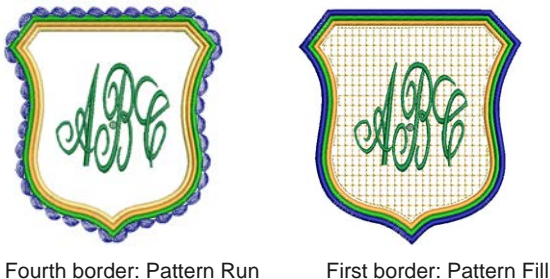
11 Use the **Aspect Ratio** field to change the ratio of height to width for all borders.

By adjusting this value, you adjust height and width in relation to one another and thereby make the border fatter or taller. The default is 1.00 which

means that the border height and width are as per the original.

Aspect Ratio: 1.30

Aspect Ratio: 0.70
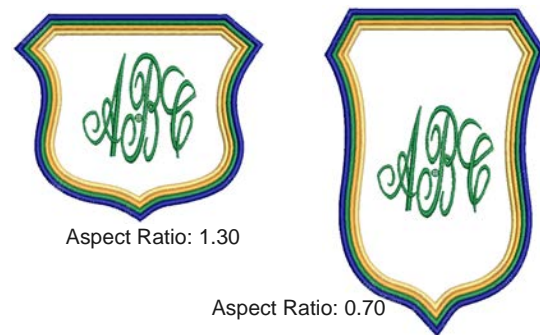
12 Click **View Properties** to make any further adjustments to your border stitch properties. See Outline & Fill Stitches for details.

13 Click **OK** to complete.

Creating custom borders

The **Select Border** dialog offers a list of pre-defined border shapes. You can also create your own to add to the library. These can be saved to the default 'Borders' set or one of your own creation. Borders must be closed and, by default, Satin is always used as the default border stitch type. This can be changed once the border is selected in the **Monogramming** dialog.

Tip Like borders, you can create your own ornament patterns for use in monograms using the **Create Pattern** tool. See Creating your own pattern sets for details.

- -

To create your own border

1 Select the closed embroidery object you want to save as a border.
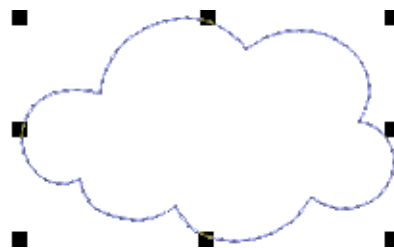
2 Select **Settings > Create Border**.

The **Make Border** dialog opens.

Select border set → Border Set:

Enter name for → Enter new Border name:
new border
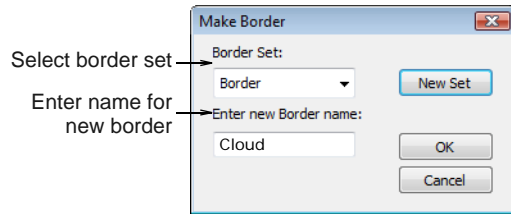
3 Select a border set from the list.

Optionally, click **New Set** to define a new border set. Enter a name and click **OK**.
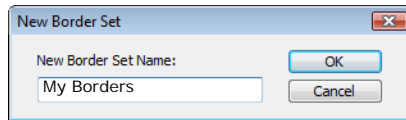
4 Enter a name for your new border and click **OK**.

You are prompted to digitize the start and end points of the border.

5 Click to mark two reference points on the border.

Reference points set the standard orientation of the border.

Mark reference points
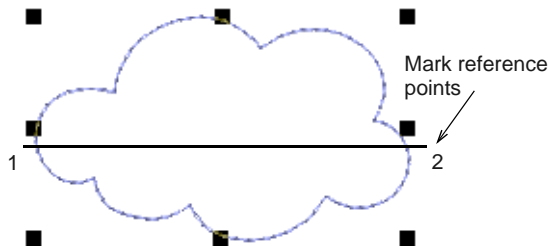
6 Click **OK**.

The new border is saved to the border set and a confirmation message displayed.

PART VII

DESIGN PROCESSING & OUTPUT

At some stage you will actually want to output your designs to printer, machine, or storage device. For this, you will need an understanding of the different print options, embroidery file types and the storage media available.

Outputting designs

This section describes how to print worksheets, appliqué patterns, color films, and thread charts. It also covers stitching out designs, both singly and as multi-hooped designs. See Outputting Designs for details.

Reading and writing design files

This section describes how to select conversion options for opening and saving different stitch and outline design formats. It also deals with storing designs to design card. It also discusses storing designs with Magic Box. See Reading & Writing Design Files for details.

CHAPTER 29

OUTPUTTING DESIGNS

You can output embroidery designs in a variety of ways – by printing as worksheets, as appliqué patterns, color films, or as thread charts. BERNINA Embroidery Software also allows you to save your designs as images for use with fabric and garment applications. You can also send them directly to machine for stitching. When working with designs that are larger than the available physical hoop, you can split them into parts, each containing an object or group of objects. The software automatically calculates which files are to be sent and shows you how they will look.

This section describes how to print worksheets, appliqué patterns, color films, and thread charts. It also covers stitching out designs, both singly and as multi-hooped designs.

Printing designs

You can create a hard copy of your designs using default or custom printer options. Preview designs before printing. Set print options to display the information you require. If you are using a color printer, you can print in Artistic View. Even print thread charts as a shopping reference when purchasing threads. See also Printing and publishing designs with BERNINA Portfolio.

Previewing and printing worksheets

Use Print Preview (General toolbar) to preview a design before printing.

Use Print (General toolbar) to print a design.

Use **Print Preview** to view stitching information. Use it to check the sewing sequence before you stitch out your design. You can create a hard copy of your designs using default or custom printer options.

To preview and print a worksheet

1 Click the **Print Preview** icon.

Your design displays as it will be printed. Large designs may be displayed over a number of pages if printed at actual size.

2 Use the **Preview** buttons as required:

Field	Description
Next Page	View the next page.
Prev Page	View the previous page.

Field	Description
Two Page	Display two pages in the Preview Window.
Portrait / Landscape	Toggle design display between landscape and portrait views.
Zoom In / Out	Use to examine portions of the design or to read production information.

3 Click **Options** to set any **Print Options**. See Setting print options for embroidery for details.

4 Click **Print Now** to proceed with printing.

The MS Windows® **Print** dialog opens allowing you to choose a printer and adjust any other print settings you require. See also Setting print options for embroidery.

5 Click **Close** to return to the Design Window.

Setting print options for embroidery

Print options provide precise control over your design printout. You can include information about design size, color sequence, and stitch count, together with a picture of the design. There are options to include or exclude start/end point crosshairs, connectors, background color/fabric and the current hoop in **Artistic View**. Design information includes author, estimated length of upper thread per color and total bobbin usage.

Note You have the option of printing the whole design or selected objects only. If the latter, you need to select the objects before accessing the **Print Options** dialog.

- -

To set print options for embroidery

1 Select **File > Print**.

The **Print** dialog opens.
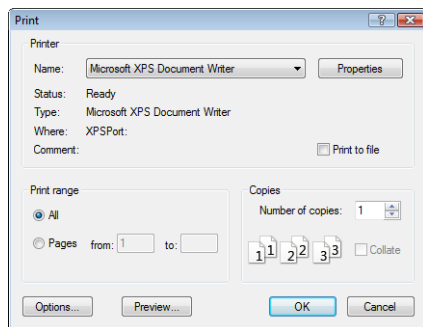
2 Select a printer from the **Name** list.

3 Type the number of copies you want to print and other printing information.

4 Click **Options** to change the size of the picture, the type of view or the items to be included.

The **Print Options** dialog opens.

Print whole design or selected objects

Select embroidery elements to print
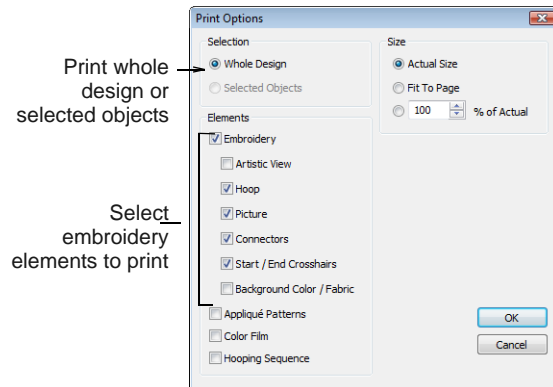
5 Choose whether to print the whole design or selected objects only.
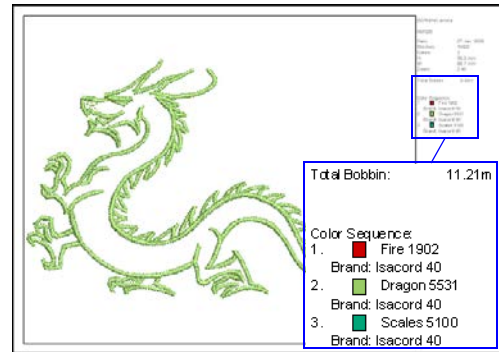
Note The **Selected Objects** option is only available if you have already selected the objects you want to print.

6 Select the **Embroidery** option in the **Elements** panel if not already selected.

All embroidery stitches are shown by default in normal (Stitch View) display mode.

7 Select **Artistic View** to print the design in Artistic View.

8 Include other options as required:

‣ **Hoop**: The hoop is included in the printout.
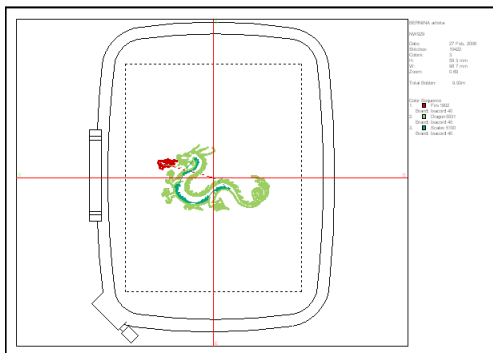
‣ **Picture**: The design is printed with the picture behind it.

‣ **Connectors**: All connecting stitches in the design are displayed even if the current **Selection** option is **Selected Objects**.
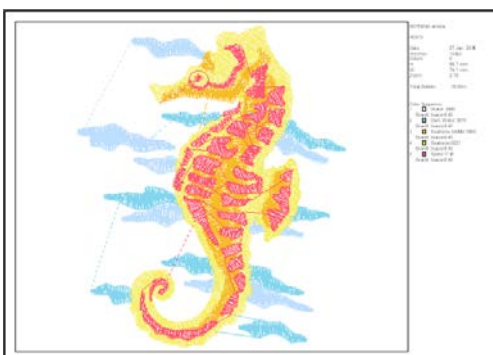
Tip Connectors may be used as a guide when you save an ART design into multiple files to be output for multi-hooped positioning.

Note In **Artistic View** the **Connectors** option is disabled – i.e. you cannot view connecting stitches in **Artistic View**.

‣ **Start/End Crosshairs**: The start/end needle position is included in the printout.

‣ **Background Color/Fabric**: The background page is filed with a color or a fabric image

according to the current **Fabric Display** setting. See Changing backgrounds for details.

9 Select a size option from the **Size** panel:

‣ **Actual Size**: the design is printed at the same size it will be stitched.

‣ **Fit to Page**: large designs will be reduced to fit the printing paper, small designs will be enlarged.

‣ **% of Actual**: The design view is resized according to this setting.
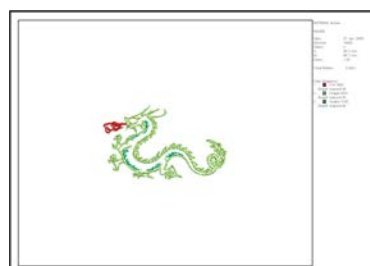
70 % of actual size
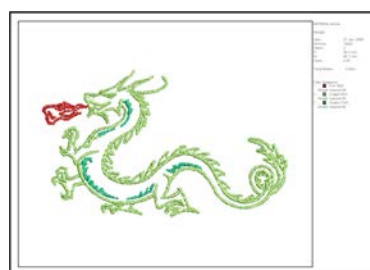
150 % of actual size

10 Click **OK**.

Printing appliqué patterns

Print a copy of the appliqué pattern to use to cut out the fabric pieces. Each appliqué pattern piece is numbered according to the stitching sequence.

To print an appliqué pattern

1 Select **File > Print Preview**.

2 Click **Options** icon.

Print Options dialog opens.

3 Select the **Appliqué Pattern** checkbox.

Select to print appliqué pattern
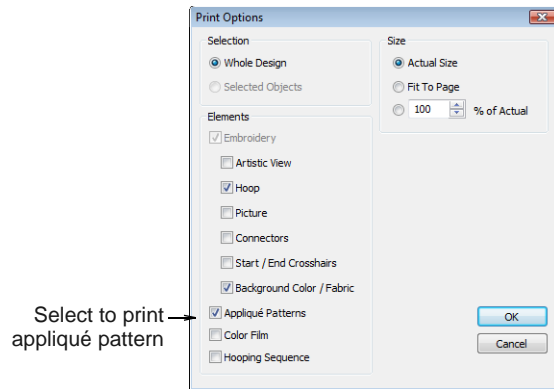
4 Click **OK**.

Each appliqué pattern piece is numbered according to the stitching sequence.
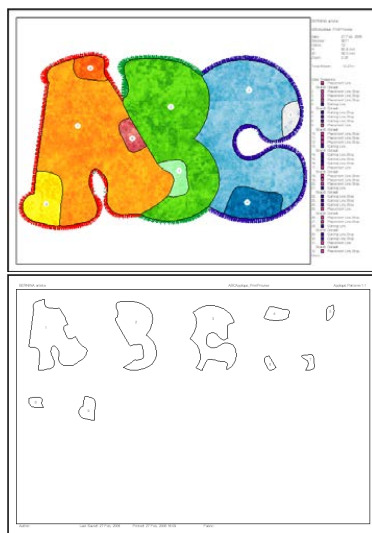
Appliqué Assembly page

Appliqué Patterns page

Note If the **Actual Size** option is selected, both an assembled appliqué layout and individual patterns in the actual size are created on separate pages. If the **Fit to Page** or **% of Actual** options are selected, the assembled appliqué layout is created in the selected size, but individual patterns are still printed in the actual size on separate pages.

5 Click **Print**.

Printing Color Film

The **Color Film** option lets you include a list of color layers in the current design, together with color and stitch information for each layer.

- -

To print a Color Film

1 Select **File > Print Preview**.

2 Click **Options** icon.

The **Print Options** dialog opens.

3 Select the **Color Film** checkbox.

Check to print color film

4 Click **OK**.

#: 3.
Color: Black
Code: 0020
Brand: Isacord 40
Stitches: 1214
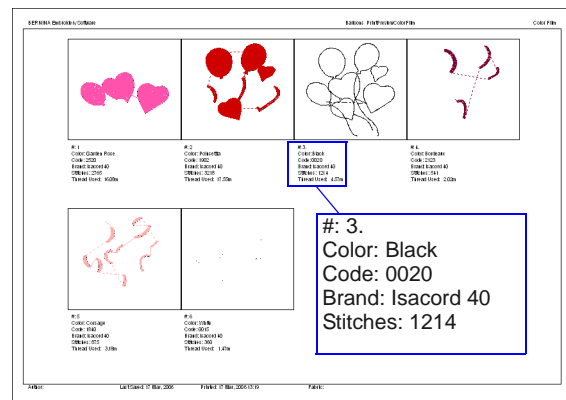
The following information is included:

Field	Description
Number	Number in the stitching sequence.
Color	Color name listed in the associated thread chart.
Code	Thread code for ease of ordering.
Brand	Thread brand – e.g. Isacord 40.
Stitches	Total stitch count for individual color layer.
Thread Used	Total stitch length of the individual color layer in the measurement unit currently set for the system – e.g. 'meters'.

Note The information displayed here is the same as the information displayed in the **Thread Colors** dialog. See Assigning thread colors for details.

Thread color details →
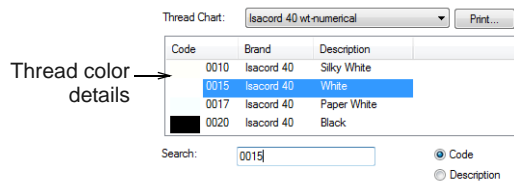
5 Click **Print**.

Printing multi-hooped designs

If there is more than one hooping in the design, you have the option of printing hoops in multi-hooping view in their correct color sequence. The **Hooping Sequence** option allows you to print a **Color Film** type printout showing the objects in each hooping. See also Creating multi-hoop designs.

- -
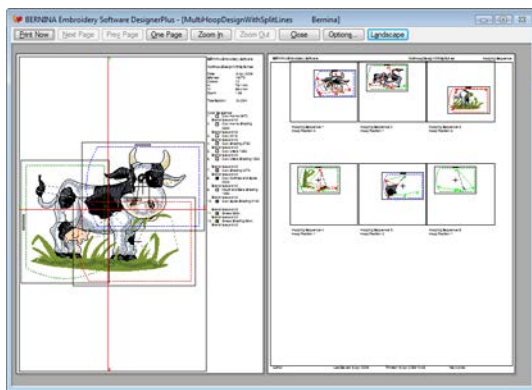
To print a multi-hooped design

1 Select **File > Print Preview**.

2 Click **Options** icon.

The **Print Options** dialog opens.

3 Select the **Hooping Sequence** checkbox.

Check to print hooping sequence →
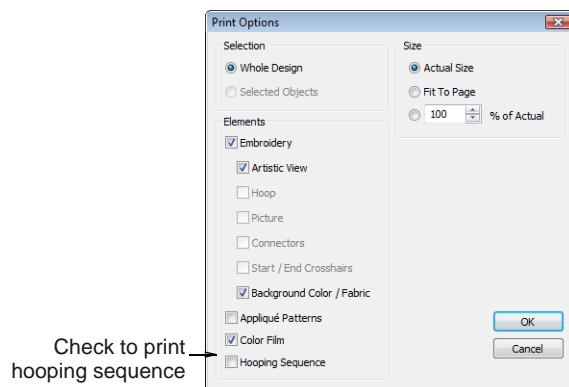
4 Click **OK**.
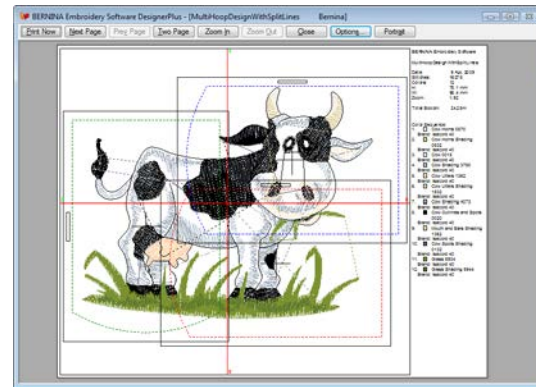
The following information is included showing the objects in each hooping.
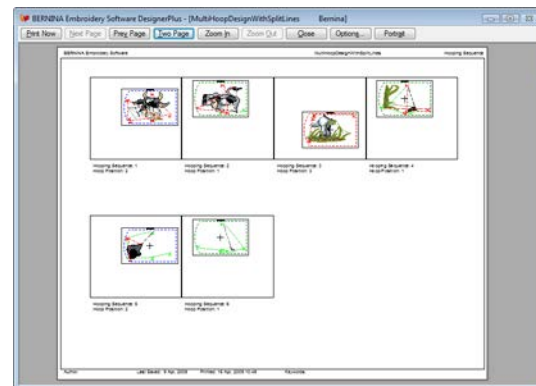
Note The information displayed here is the same as the information displayed in the **Hooping Sequence** dialog. See Saving multi-hooped designs for details.
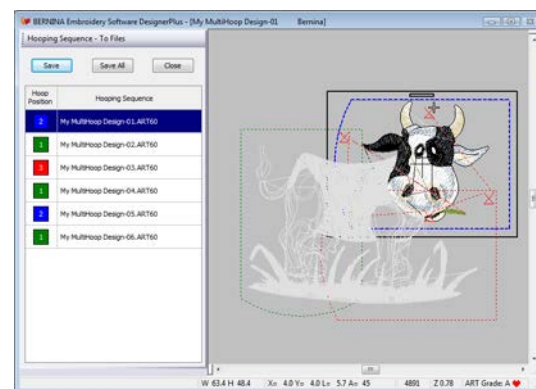
5 Click **Print**.

Printing thread charts

Select Thread Colors (Settings menu) to print thread charts.

The **Thread Chart > Print** option allows you to print the thread list in the current thread chart as a shopping reference when purchasing threads.

To print a thread chart

1 Select **Settings > Thread Colors**.

The **Design Properties > Thread Colors** dialog opens.

Select thread chart to print — Thread Chart: | Click to print chart
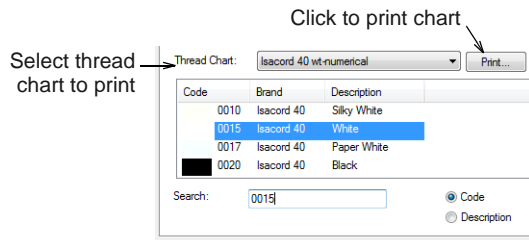
2 Select a thread chart from the **Thread Chart** list.

3 Click the **Print** button.

A **Print Preview** page opens displaying a printed form of the selected thread chart in the current sorting order.

This printable thread chart includes the Thread Chart name, Code, Brand, and Description.

4 Click **Print Now** to proceed with printing.

The MS Windows® **Print** dialog opens allowing you to choose a printer and adjust any other print settings you require.

5 Use the tick boxes in the printed document to mark off any threads you want to purchase. There is also a **Memo** field for notes.

6 Click **Print**.

Saving designs as images

The **Save Design as Image** command allows you to save design images for use with your fabric and garment application. The resulting image is exactly as it appears on screen, including connectors, stitch cursor, grid, as well as any backdrop. The hoop, however, does not appear in the image file even if it intersects objects within the design.

To save a design as an image

1 Switch to **Embroidery Canvas** mode.

2 With the design still open in the Design Window, select **File > Save Design as Image**.

The **Save Design as Image** dialog opens. By default, PNG is the selected file type.
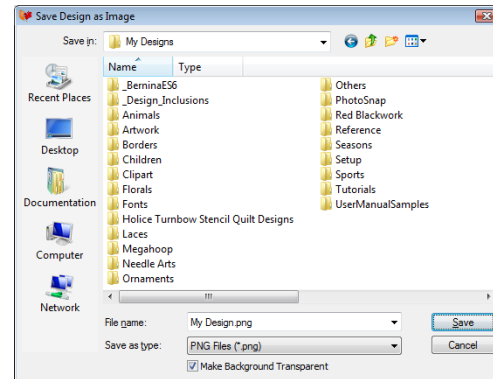
3 Deselect the **Make Background Transparent** option as required.

This option is only available when PNG is the selected file type. When checked (the default), the grid and background are excluded from the saved image and only design objects appear.

4 Click **Save**.

The current design is saved as an image file.
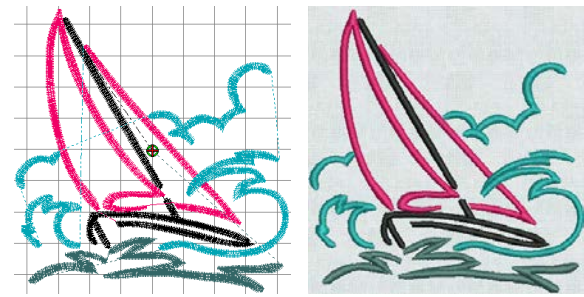
Stitch View with grid   Artistic View with fabric

Note If the Design Window is zoomed at the time of saving, the saved file still includes the whole design even if larger than the Design Window.

Stitching out designs

Use Write to Machine (General toolbar) to send a design to machine.

Use **Write to Machine** to send a design directly to your BERNINA embroidery machine ready to stitch. See also Writing designs to machine.

![tip icon]

Tip Check the sewing sequence before you stitch a design as you need to know the color sequence. Use **Print Preview** to view stitching information. See Previewing and printing worksheets for details.

- -

To stitch out a design

1 Switch to **Embroidery Canvas** mode.
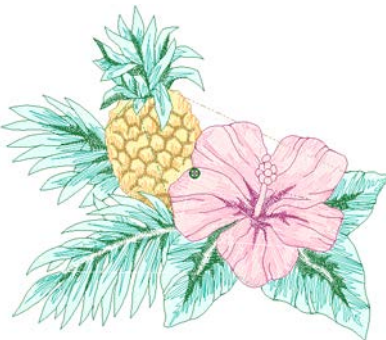
2 Check that the design fits the hoop. Use the smallest hoop possible. See Changing hoops for details.

3 Click the **Write to Machine** icon.

If this is the first time you have downloaded a design after turning on the machine or Reader box, the **Bernina Device Selection** dialog opens.

Select embroidery machine type
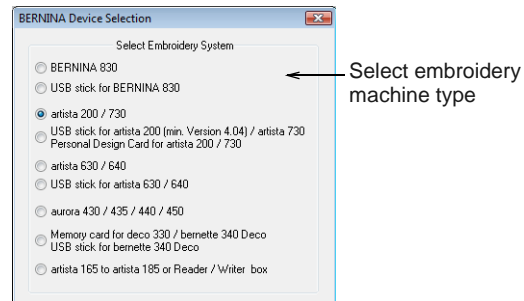
4 Select an embroidery machine type and COM port if prompted to do so.

5 Click **OK**.

If the machine connection is working, the **Write to Embroidery System** dialog opens. The name and the thumbnail of your design are displayed.

Click to stitch out selected design
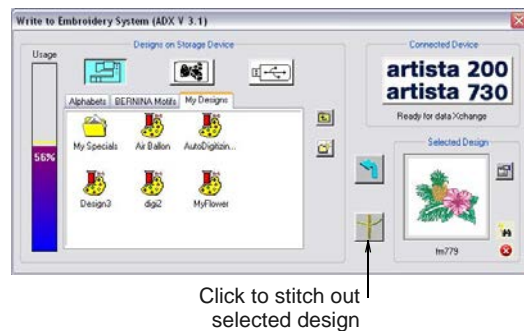
6 Click **Stitch out Selected Design**.

The **Writing file(s) to device** dialog displays, followed by a confirmation message. The design is sent to your embroidery machine ready for stitching.

![note icon]

Note When you send designs directly to machine, they will be lost when the machine is turned off. Apart from saving to hard disk, floppy disk or archiving to CD, you can also preserve designs by writing them to a variety of storage devices. Saved designs can then be retrieved for editing. See also Reading & Writing Design Files.

Outputting multi-hooped designs

- -

When working with designs that are larger than the available physical hoop, you can split them into parts in **Hoop Layout** mode, each containing an object or group of objects. When a multi-hooped design is

output, each part is stitched separately after the fabric has been re-hooped. See also Hooping large designs.

The following commands are all available in **Hoop Layout** mode:

- ▶ Save As
- ▶ Write to Machine
- ▶ Card/Machine Write
- ▶ Write to Magic Box

When any of these commands is invoked, multi-hoopings and split lines are applied. **Hooping Sequence** mode is activated, showing the separate hoopings. In the case of the **Save As** command, however, **Hooping Sequence** mode is only activated if you choose to export split files. See also Printing multi-hooped designs.
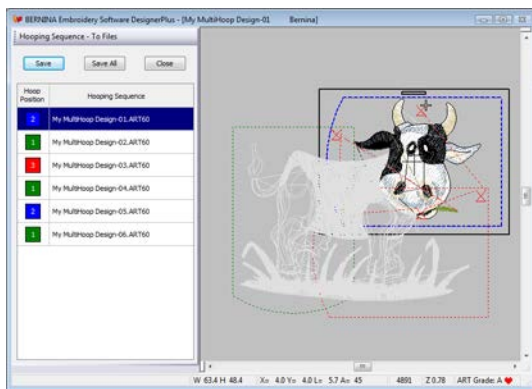
Sending multi-hooped designs to machine

Use Write to Machine (General toolbar) to send a design to machine.

With a multi-hooped design, you can send one or more stitch files to sewing machine or memory card. The software automatically calculates which files are to be sent and shows you how they will look. See also Hooping large designs.

To send a multi-hooped design to machine

1 Switch to **Hoop Layout** mode and create your multi-hooped design. See Hooping large designs for details.

2 Ensure that the embroidery machine or reader box have been correctly attached.
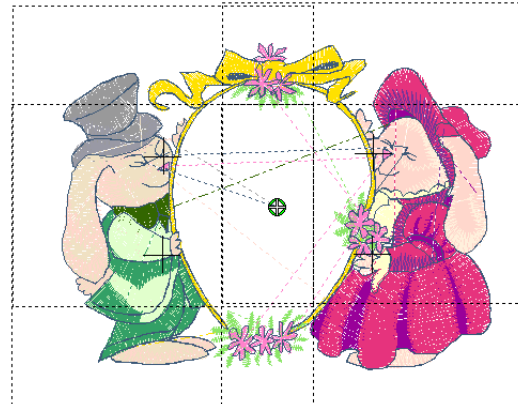
3 Click the **Write to Machine** icon.

The system checks whether there is only one hoop in the design and if all objects are covered.

- ▶ If some objects are uncovered, you are asked whether you want to continue or otherwise.
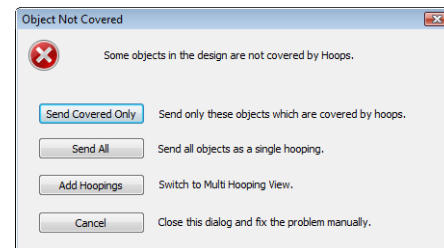
- ▶ If there is more than one hoop, the system checks that all objects are covered. All

hoopings needed to stitch the design are displayed in **Hooping Sequence** mode.

List of hoopings in current design

Hoop position colors match display colors of hoops

Objects to be sewn after this hooping shown as light grey outlines

Objects already sewn shown as dark grey outlines

Objects to be sewn in this hooping shown in actual stitch colors
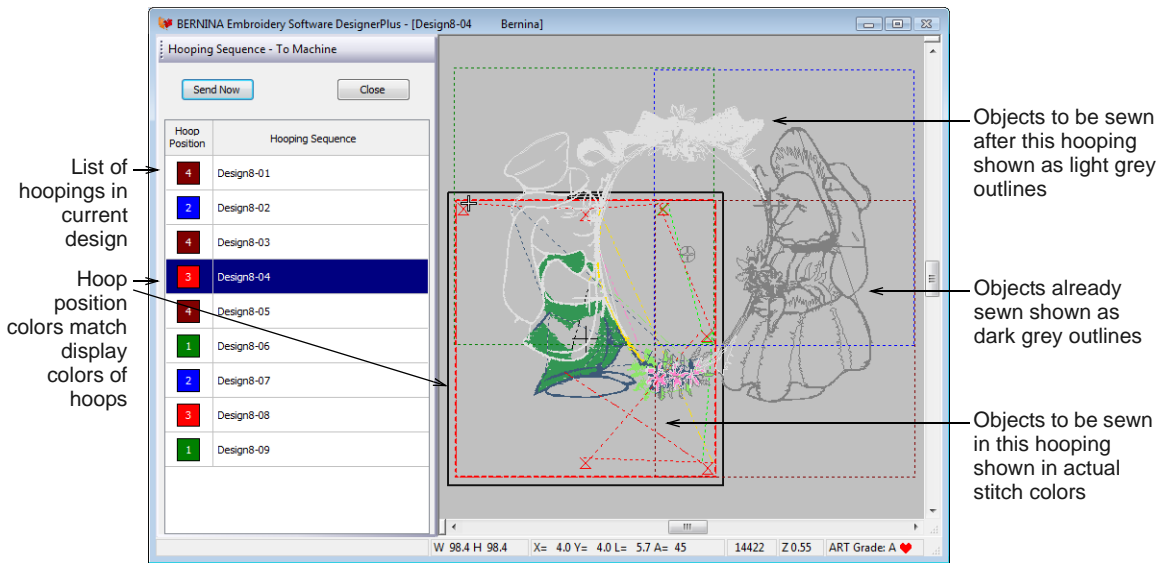
Once in **Hooping Sequence** mode, all toolbars are hidden, leaving only the **Hooping Sequence** dialog. This displays a list of all hoopings required to stitch the design.

Note Fabric in covered appliqués is hidden, leaving stitchable items only.

4 Select any hooping in the list.

The newly selected hooping is shown as a dotted line surrounded by a solid line, while the other hoop positions are shown as dotted lines only. Objects within the selected hooping are shown in their actual stitch colors. Objects to be stitched before or after are shown as mid- and light-grey outlines respectively.

5 Click the **Send Now** button.

The system outputs a file containing everything to be stitched within the current hooping.

6 Repeat this process as many times as necessary to send all hoopings.

7 Click **Close** to end.

Note Registration marks are red for the first file and green for any additional files.

Saving multi-hooped designs

If more than one hooping is needed to cover your design, you may split it into separate files for each one. See also Hooping large designs.
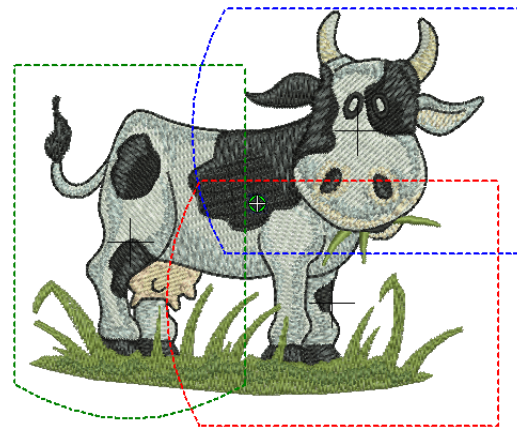
To save a multi-hooped design

1 Switch to **Hoop Layout** mode and create your multi-hooped design. See Hooping large designs for details.

2 Select **File > Save As**.

A standard MS Windows® **Save As** dialog appears allowing you to browse to any folder, choose any

name for the exported file, and choose a file format from a dropdown list.
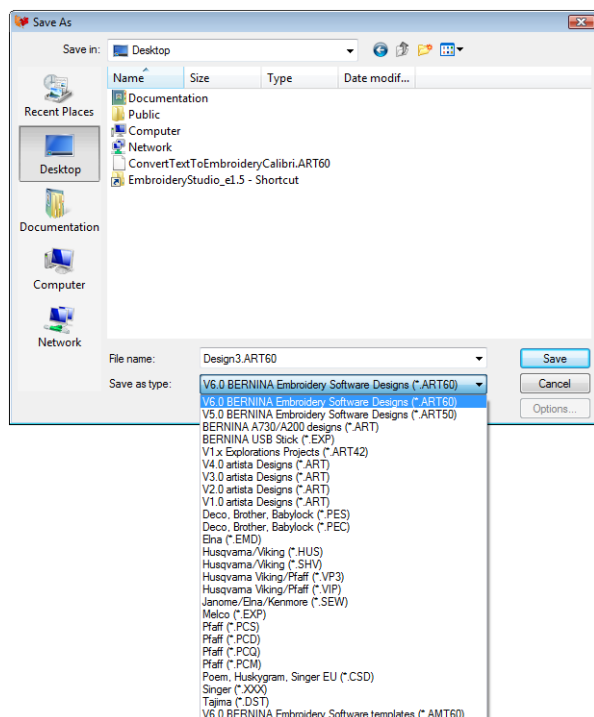
3 Change the file name as required, and choose a destination folder and/or file format, and click **Save**.

▸ If more than one hoop position is detected, you are prompted to split the design into multiple files, or export everything to a single file.
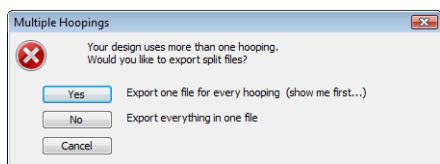
▸ If the system detects that not all objects in the design are covered by hoop positions, you are asked whether you want to continue.
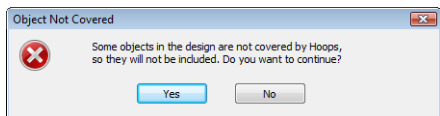
4 If you decide to export a file for every hooping, click **Yes**.

The system checks that all embroidery objects are covered. You will be warned if they are not. Otherwise, all hoopings needed to stitch the design are calculated and displayed in the

Hooping Sequence dialog. Hoopings are named as files with the chosen file extension.
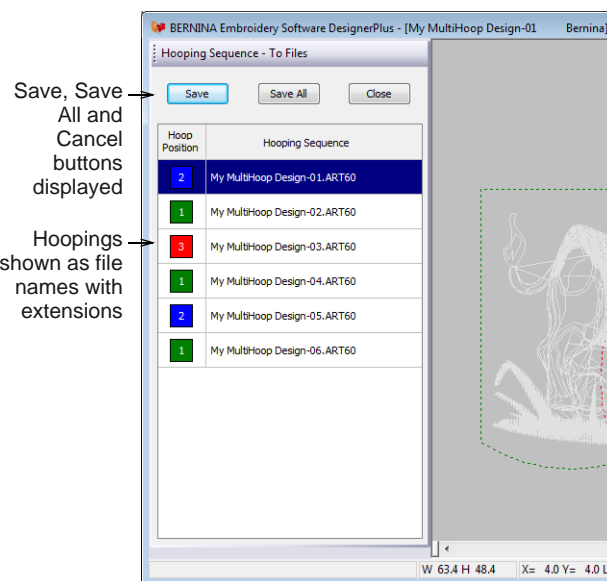
5 Select a hooping and click **Save**.

All embroidery objects associated with the chosen hooping are saved to file as named in the list. Alternatively, click **Save All**. All files in the list, named as shown, are saved.
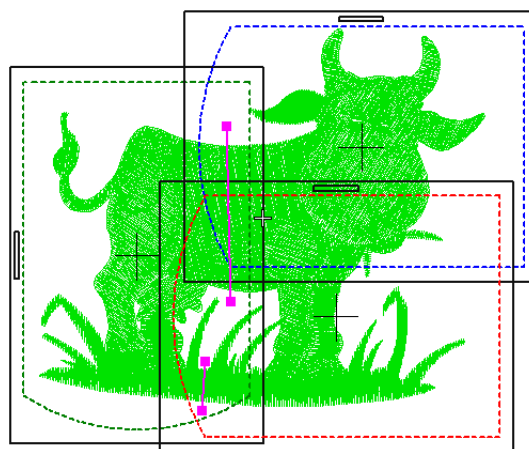
Outputting designs with split lines

The **Splitting Guide** tool allows you to digitize one or more split lines in a multi-hooped design prior to outputting to file, machine or memory card. Although split lines are only visible in **Hoop Layout**, they are maintained when switching to other modes. Split lines do not have any permanent effect on objects prior to output. See also Splitting objects between hoopings.

To output designs with split lines

1 Select the **Save As**, **Write to Machine**, or **Write to Magic Box** command.

If you select the **Save As** command, the **Multiple Hoopings** dialog is displayed.
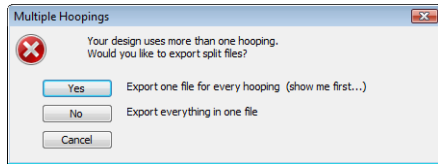
2 Click **Yes** to export one file for every hooping or **No** to export everything to a single file.

BERNINA Embroidery Software applies the split lines and activates the **Hooping Sequence** dialog, showing the objects in their split state in their respective hoops.
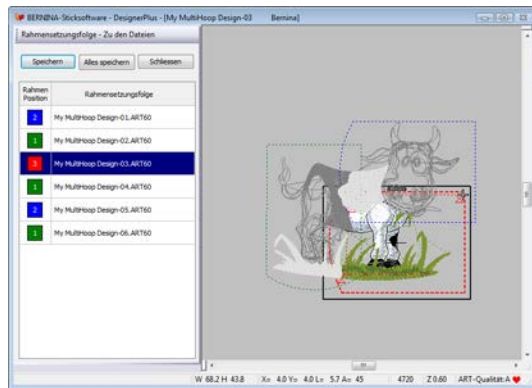
3 If you selected **Save As**, you can **Save** each split design individually or **Save All** at once.

BERNINA Embroidery Software outputs the split designs to their individual files.

4 Click **Close**.

BERNINA Embroidery Software exits **Hooping Sequence** mode and displays the design in the Design Window in its original state - with split lines but with objects un-split.

CHAPTER 30

READING & WRITING DESIGN FILES

By default BERNINA Embroidery Software saves designs to its native 'ART' file format. This format contains all information necessary both for stitching a design and for later modification. However, BERNINA Embroidery Software can open and save designs in other formats as well. When doing so, BERNINA Embroidery Software converts design data so you can modify it using the full range of software features.

When you send designs directly to machine, they will be lost when the machine is turned off. Apart from saving to hard disk, floppy disk or archiving to CD, you can also preserve designs by writing them to embroidery machine memory, design card, or USB memory stick. If you have a Magic Box, you can read from and write to other design cards as well.

Note If you intend to stitch a design immediately, send it directly to the machine. See Stitching out designs for details.

This section describes how to select conversion options for opening and saving different stitch and outline design formats. It also deals with storing designs to design card. It also discusses storing designs with Magic Box.

Embroidery design formats

BERNINA Embroidery Software opens and saves pure ART format designs as well as a number of non-native formats. Other format designs which can be read into BERNINA Embroidery Software are generally 'stitch-based'. This means they were not created object-by-object but stitch-by-stitch. When you open other formats into BERNINA Embroidery Software, the software reads the data and, depending on your settings, attempts to determine object outlines and properties so that you can modify the designs like native ones.

ART files

Native ART designs, called 'ART Grade A', contain a complete set of design information in a single file – object outlines and properties, actual stitches, thread colors, a picture icon and comments. There are three other grades of ART file, depending on how the ART file was created – Grade B is more reliable than Grade C, but not as good as Grade A format, and Grade D is the least reliable. It goes without saying that only ART Grade A files provide 100% perfect scaling and transformation.

File source	Description
Art Grade A	Pure ART file created in BERNINA Embroidery Software-based software. These files contain pure ART objects, outlines and stitches.
Art Grade B	Designs read from outline format such as GNC and saved in ART format. Such designs cannot be read directly in BERNINA Embroidery Software but once converted to ART in other software, BERNINA Embroidery Software reads them as Grade B designs.

File source	Description
Art Grade C	Designs read from stitch files – SEW, PCS, PES, etc – where stitches have been converted to objects. See Opening files with conversion for details.
Art Grade D	Designs read from stitch files – SEW, PCS, PES, etc – where stitches have NOT been converted to objects. See Opening files without conversion for details.

All files saved in ART format are automatically compressed when saved, and decompressed when re-opened. This reduces the storage space required, and makes it possible to save large files to floppy disk, or send them as email attachments.

Tip For information about the source of a design file, refer to the **Open** dialog or the **Design Properties** dialog. See Viewing design information for details. See also Opening designs.

Stitch files

Different embroidery machines understand different languages. Each has its own control commands for the various machine functions. Before you can stitch a design, it must be in a format which can be interpreted by the machine. Stitch or 'expanded' designs are low-level formats for direct use by embroidery machines. They contain only stitch coordinates and machine functions. They are generally created 'on the fly' when sending designs to machine. They can also be output to embroidery disk or design card.

When read into BERNINA Embroidery Software, stitch files do not contain object information such as outlines or stitch types, but present the design as a collection of 'stitch blocks'. Stitch blocks are created wherever colors change or trims are detected in the design. Stitch designs are generally not suited to modification because stitches are not regenerated. You will be warned if the design you are opening should not be scaled.

Tip You can make this warning display when opening designs by selecting **Help > Show Design Warning**.

Comparison of outline and stitch file formats

BERNINA Embroidery Software uses the native ART embroidery file format which combines the advantages of both outlines and calculated stitches.

The table below shows the type of data found in ART files compared with stitch files.

Included in file	Stitch files	ART files
Object properties	No	Yes
Stitch data	No	Yes
Stitch types	No	Yes
Includes stitch coordinates	Yes	Yes
Thread colors	Some	Yes
Comments	No	Yes
Pull compensation settings	No	Yes
Auto spacing settings	No	Yes

Converting stitch files

When you scale a pure ART design, you change the number of stitches needed to fill the shape. BERNINA Embroidery Software recalculates and redraws all stitches automatically. This is called 'stitch processing' and it ensures that the design you see on-screen appears as it will be stitched. While stitch designs are generally not suited to modification, BERNINA Embroidery Software can interpret object outlines, stitch types and spacing from stitch data with some success. When you open a stitch file, it is converted by default to a Grade C ART file. Converted designs can be scaled and stitches recalculated.

Opening without conversion

You can choose to open stitch files **without** conversion. Designs opened in this way can be output for stitching in other formats. Or you can edit stitches and add new elements. There is nothing to stop you scaling stitch format designs which have been opened without object conversion. However, because the stitch count does not change, the density increases or decreases with the design size. Thus you should not scale stitch designs by more than ±5% or some areas may be too thickly or too thinly covered.

Original stitch design

Scaled stitch design
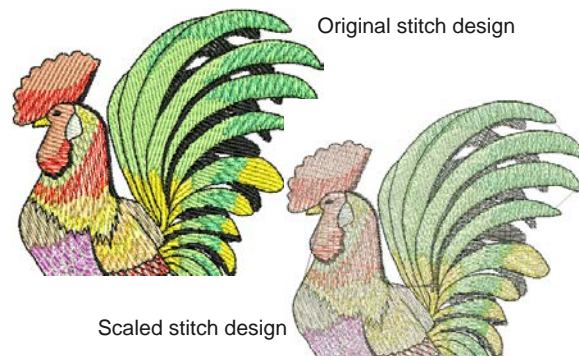
Note With or without object conversion, stitch files can be still saved in ART format once they are opened in BERNINA Embroidery Software.

Recalculating converted stitch files

When an ART design is created by opening a stitch file with stitch processing, the original stitches are maintained until you change them. You can guarantee that the design will stitch as originally made. However, if you scale the design or do anything which forces stitches to be recalculated from new estimated outlines, there may be significant differences from the original stitches.

Grade	Source	Open method	Contains
A	ART	Open normally	Outlines and stitches
B	non-native outline file saved as ART	Open normally	Converted outlines and stitches
C	EXP or DST file saved as ART	Open with object conversion on	Estimated outlines and converted stitches
D	EXP or DST file saved as ART	Open with object conversion off	No outlines and individual stitches

Supported embroidery file formats

BERNINA Embroidery Software supports the following specific file formats:

Format	File	Grade	Read	Write
V6.0 BERNINA Embroidery Software	ART60	A	●	●
V5.0 BERNINA Embroidery Software	ART50	A	●	●
BERNINA A730/A200 designs	ART	A	●	●
BERNINA USB Stick	EXP			●
V1.x Explorations Projects	ART42	A	●	●
V4.0 artista Designs	ART		●	●^
artista Cross Stitch	ARX	D	●	●‡
Deco, Brother, Babylock	PEC	C	●	●
Deco, Brother, Babylock	PES	C	●	●
Elna Xpressive	EMD	C	●	●
Husqvarna / Viking	HUS	C	●	●
Husqvarna / Viking	SHV	C	●	●*
Husqvarna Viking / Pfaff	VP3	C	●	●
Husqvarna Viking / Pfaff	VIP	C	●	●
Janome / Elna / Kenmore	SEW	C	●	●
Melco	EXP	C	●	●

^ V1, V2 and V3 ART no longer supported for write ‡ Cross Stitch program only † Quilter program only * Save back as SHV but not convert to SHV

Format	File	Grade	Read	Write
Pfaff	PCS	C	●	●
Pfaff	PCD	C	●	●
Pfaff	PCQ	C	●	●
Pfaff	PCM	C	●	●
Poem, Huskygram, Singer EU	CSD	C	●	●
Singer	XXX	C	●	●
Tajima	DST	C	●	●
artista Templates	AMT	A	●	●
V6.0 BERNINA Embroidery Software templates	AMT60	A	●	●
artista Quilter	ARQ	D	●†	●†

^ V1, V2 and V3 ART no longer supported for write ‡ Cross Stitch program only † Quilter program only * Save back as SHV but not convert to SHV

Note BERNINA Embroidery Software will convert designs to non-native home formats which are current at the time of development. Later releases of other-brand software may not produce compatible formats of the same file types.

Opening design files

BERNINA Embroidery Software can open supported design files stored on your PC from a variety of sources – hard disk, floppy disk, USB memory stick, or CD ROM. Once opened, they can be checked or edited before sending to machine for stitchout or storage. See also Supported embroidery file formats.

Opening files with conversion

Use Open (General toolbar) to open an existing design.

Stitch files are converted to outlines and objects by default upon opening. BERNINA Embroidery Software interprets object outlines, stitch types and spacing from stitch data with some success. When you open a stitch file **with** object conversion, the design is converted to a Grade C ART file. Converted designs can be scaled and stitches recalculated. While processing is effective for most stitch designs, it cannot produce the same level of quality as original outlines and may not handle some fancy stitches.

Tip To ensure object outlines, stitch types, stitch density and colors are correct, it is always a good idea to check and edit designs after conversion.

To open a file with conversion

1 Click the **Open** icon to open from your hard disk, or read from disk or design card.

The **Open** dialog opens.

Select stitch format

2 Select a folder from the **Look In** list.
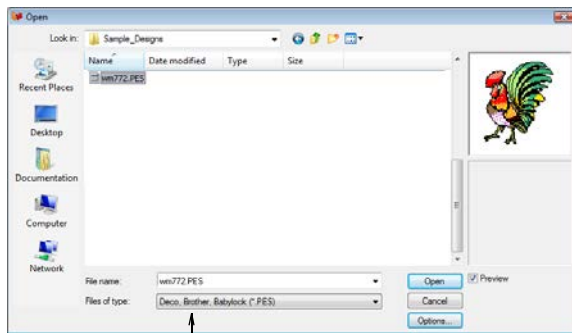
3 Select a stitch format from the **Files of Type** list and select a file to open. See Supported embroidery file formats for details.

4 Click **Options**.

The **Open Options** dialog opens.

Select to convert stitches into object shapes

5 Select the **Convert Stitches Into Object Shapes** checkbox.

6 Click **OK** and then **Open**.

Stitches processed (ART Grade C)
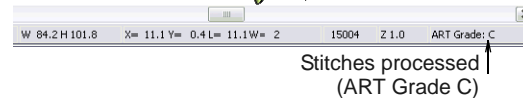
The selected design is processed and converted to objects with fill or outline stitch properties as well as general properties. If an object is not recognized, it has general properties only.

Opening files without conversion

Use Open (General toolbar) to open an existing design.

Occasionally you may want to turn off stitch processing. For example, you may have used special effects or made manual edits to stitches, which will be lost when stitch processing occurs as you scale the design. You can switch off stitch processing for each design as you open it. By opening a stitch file **without** object conversion, you can output the design without change, edit individual stitches, and perform minor scaling and transforming actions without losing the original stitch information. When you open stitch files without object conversion, the design is converted to a Grade D ART file.

To open a file without conversion

1 Click the **Open** icon to open from your hard disk, or read from disk or design card.

The **Open** dialog opens.

2 Select a folder from the **Look In** list.

3 Select a stitch format from the **Files of Type** list and select a file to open. See Supported embroidery file formats for details.

4 Click **Options**.

The **Open Options** dialog opens.

Select to leave stitches as individual
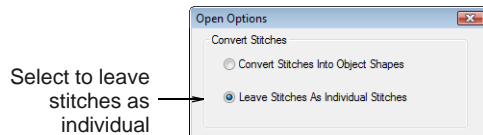
5 Select **Leave Stitches As Individual Stitches** to switch off stitch processing.

6 Click **OK** and click **Open**.

The design opens as a collection of stitches with only general properties.

W 84.2 H 101.8   15004   Z 1.0   ART Grade: D

Stitches processed (ART Grade D)

Reading designs from machine

You can read designs into BERNINA Embroidery Software from a variety of sources, both on your computer and embroidery machine. Once opened, they can be checked or edited before saving to hard disk, or sending to machine for stitchout or storage. When reading designs from machine, three options are available:

‣ **Embroidery machine**: Most machines allow designs to be stored to and read from machine memory. This is like having a built-in design card.

‣ **Design card**: Designs can also be stored on a design card attached to your embroidery machine

(or Embroidery Card Reader/Writer Box). See also Storing designs with Magic Box.

‣ **USB memory stick**: Designs can also be read from a USB memory stick attached to your machine. See also Writing designs to machine.

Note USB memory sticks can also be attached directly to your PC and designs read into BERNINA Embroidery Software. See Opening design files for details.

- -

To read designs from machine

1 Open a new, blank file.

2 If you intend to read designs from card or USB stick, insert the storage device in the machine (or Embroidery Card Reader/Writer Box).

Note For connection details, see the instructions which came with your Embroidery Card Reader/Writer Box.

3 Select **File > Card/Machine Read**.

If this is the first time you have downloaded a design after turning on the machine or reader box, the **Bernina Device Selection** dialog opens.
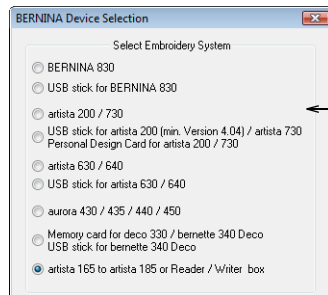
Select device type

4 Select an embroidery machine or reader box, as well as COM port if prompted to do so.

5 Click **OK**.

If the machine connection is working, the **Write to Embroidery System** dialog opens. The name and thumbnail image are displayed.

The **Read from Embroidery System and Design Manager** dialog opens.

Select storage device

Select design

Select hard drive destination

Click to download
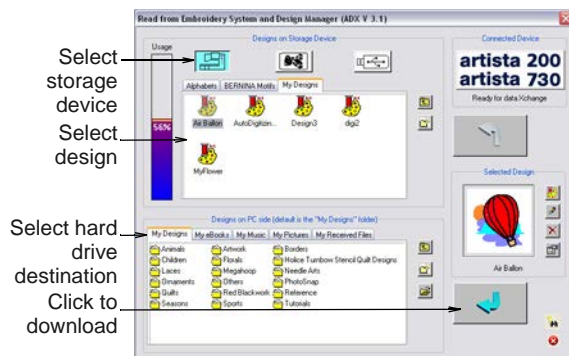
6 Select the required storage source by clicking the corresponding button – embroidery machine, design card, or USB memory stick.

When you select a button, all folders and designs currently stored on the device are displayed.

Select folder tab

Right-click to access popup menu
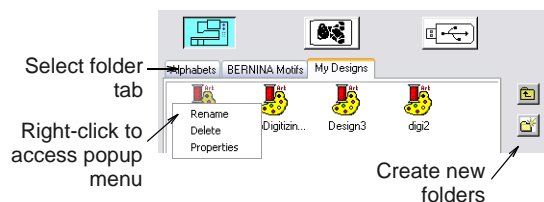
Create new folders

Tip Right-click the design icon to access a popup menu – use it to rename, delete, or view design properties.

7 Click a folder tab (if more than one) and/or folder to locate the design.

Tip Use the icons on the right of the display panel to create new folders or navigate the folder structure.

8 Select the design.

A preview image is displayed in the **Selected Design** panel.

Click to open design in BERNINA Embroidery Software

Click to access design properties

9 Use the display panel buttons as required to:

▸ Open the design directly into BERNINA Embroidery Software for editing.

▸ Rename the design.

▸ Delete the design.

▸ Access design properties.

10 Select a destination folder on the hard disk where the design is to be stored.

Select destination folder

Use folder buttons to navigate folders and create new ones
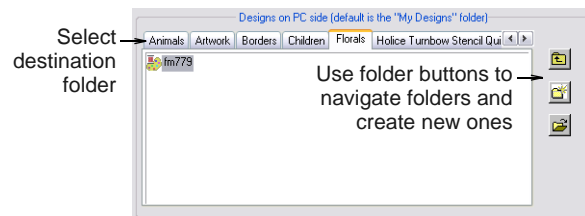
11 Click the **Download** arrow button to read the design and save to hard disk.

Note You can write designs of the appropriate format from hard disk to the storage device using the **Upload** arrow button.
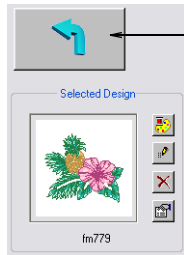
Use Upload arrow button to write selected designs from hard disk to storage device

fm779

Tip You can also open designs from design cards using the Magic Box. See Storing designs with Magic Box for details.

Writing designs to machine

Use Write to Machine (General toolbar) to write (save) a design to machine embroidery machine, design card, or USB memory stick.

Click Show Stitches (General toolbar) to toggle stitch view on/off.

If you intend to stitch designs only when the machine is connected to your computer, store them on your PC hard disk. However, you can also use the **Write to Machine** command to save designs for later use, independent of your PC. Designs from any storage device – embroidery machine, design card, or USB memory stick – can then be stitched out as many times as you like. This eliminates the need for the PC to be connected to the machine during stitchout. See your BERNINA embroidery machine documentation for details.

Note You can also store designs permanently using the Magic Box. See Storing designs with Magic Box for details.

To write designs to machine

1 Open the design and select Stitch View. See Opening designs for details.
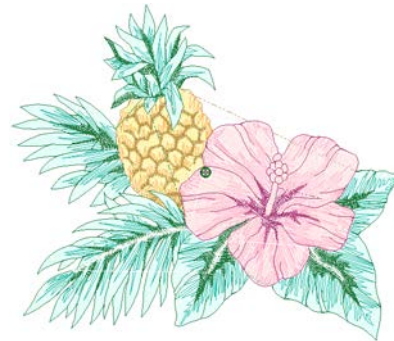
Note The machine (or external Embroidery Card Reader/Writer Box) must be switched on before you insert the card, otherwise designs will not display or be loaded to the machine.

2 If you intend to write the design to card or to USB stick, insert the storage device in the machine (or Embroidery Card Reader/Writer Box).

For connection details, see the instructions which came with your Embroidery Card Reader/Writer Box.

3 Click the **Write to Machine** icon.

If this is the first time you have downloaded a design after turning on the machine or reader box, the **Bernina Device Selection** dialog opens.

Select device type

4 Select an embroidery machine or reader box, as well as COM port if prompted to do so.

5 Click **OK**.

If the machine connection is working, the **Write to Embroidery System** dialog opens. The name and thumbnail image are displayed.
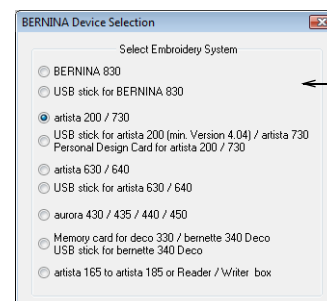
Write to memory module
Write to design card
Write to USB stick
Select folder tab
Indicates current storage device usage
Click to download selected design
Design to be stored
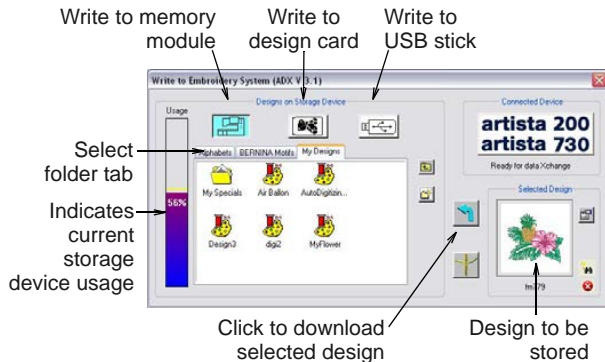
6 Select the required storage device by clicking the corresponding button – embroidery machine, design card, or USB memory stick.

When you select a button, all folders and designs currently stored on the device are displayed.

Select folder tab
Select folder
Right-click to access popup menu
Create new folders
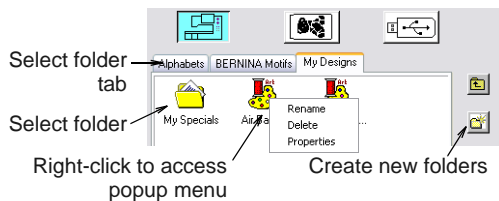
7 Click a folder tab (if more than one) and/or folder to select where the design is to be saved.

Tip Use the icons on the right of the display panel to create new folders or navigate the folder structure. Right-click the design icon to access a popup menu – use it to rename, delete, or view design properties.

Caution Make sure the needle arm on your machine is up before downloading designs.

8 Click the **Download** arrow button to write the design.

The machine touch screen goes blank while the download takes place. Once the design is saved to the selected device, you can stitch it at any time

without a PC connected to your machine. See your BERNINA embroidery machine documentation for details.

Writing designs directly to USB stick

Use Write to Machine (General toolbar) to write (save) a design directly to a memory stick.

Click Show Stitches (General toolbar) to toggle stitch view on/off.

Designs can be saved to a dedicated BERNINA or OESD USB memory stick attached directly to your PC. While you can copy designs directly from your hard disk to memory stick via MS Windows® Explorer, you should do so via BERNINA Embroidery Software. While saving the design, BERNINA Embroidery Software automatically converts it to the correct format for stitchout.

Note Other types of memory stick can be used but they are not recognized automatically by the software.

To write a design directly to USB stick

1 Open the design and select Stitch View. See Opening designs for details.
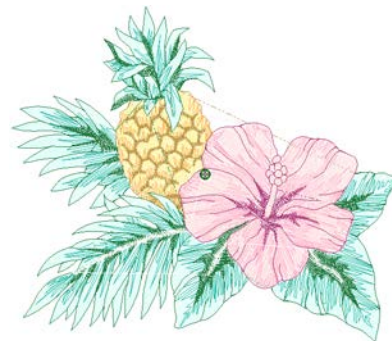
2 Insert a BERNINA or OESD USB memory stick directly into a USB port on your PC.

3 Click the **Write to Machine** icon.

If this is the first time you have downloaded a design after turning on the machine or reader box, the **Bernina Device Selection** dialog opens.

Select Bernina USB Stick
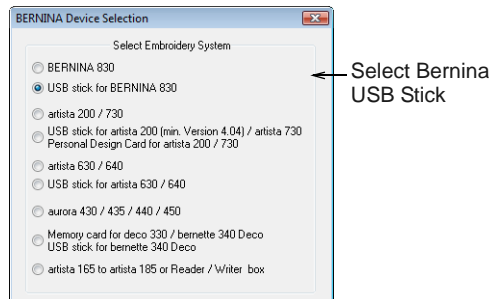
Tip If you are already connected to a embroidery system, click the **Connected Device** button in the **Write to Embroidery System** dialog in order to access the **Bernina Device Selection** dialog. See also Writing designs to machine.

Click to access the Bernina Device Selection dialog
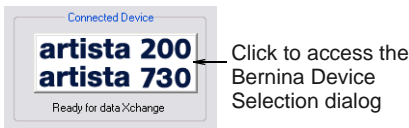
4 Select the appropriate **BERNINA USB Stick** option for the embroidery system that will be used to stitch out the design and click **OK**.

If you have inserted a memory stick other than BERNINA or OESD, the **Enter Drive Letter and Path** dialog opens prompting you for the device location.

Click to browse for the USB device
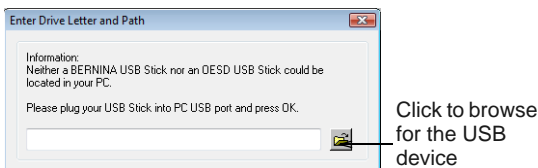
5 Browse for the device location on your PC as required.

If the machine connection is working, the **Write to Embroidery System** dialog opens. The name and the preview of your design are displayed. Folders

and designs currently saved on the device are also displayed.

Select folder

Click to download selected design

Design to be stored

6 Select the location the design is to be stored.

Tip Use the icons on the right of the display panel to create new folders or move up a level in the folder structure. Right-click design files already stored to access a popup menu – use it to rename, delete, or view design properties.

7 Click the **Download** arrow button to write the design to the memory stick.

While saving the design, BERNINA Embroidery Software automatically converts it to the correct format for stitchout. See the relevant BERNINA Embroidery Software documentation for details of how to stitch out from a USB memory stick.

Storing designs with Magic Box

Magic Box lets you convert between designs saved in a variety of 'non-native' formats. You can read a design from any supported design card into BERNINA Embroidery Software, edit it then write it to a Magic Card of any of four types each of which can support different file formats. You can also save designs read from Magic Card to your computer or write them to a design card other than Magic Card.

Note The Magic Box software is installed automatically when you install BERNINA Embroidery Software and only works with BERNINA Embroidery Software.

There are up to four color-coded card slots on the front of a Magic Box, corresponding to each of the available card types. (The mini Magic Box only has Slots 1 and 2.) Use Magic Box in conjunction with BERNINA Embroidery Software in order to:

- Read an ART file from CD, hard disk or floppy, make desired changes, and write to a Magic Card.
- Read a stitch file from one of the supported design card formats (including Magic Card), make desired changes, and write it to a Magic Card.
- Read a stitch file from a Magic Card, make desired changes, and write it to the storage media of your choice.

Once a design is in BERNINA Embroidery Software, you can add lettering, insert other designs stored on your computer, CD-ROM, or disk, and use all of BERNINA Embroidery Software editing features.

Note The procedures here only apply to the operation of the Magic Box with BERNINA Embroidery Software. Refer to the Magic Box User Manual for installation, setup and operating instructions.

Reading designs from design cards

Use Read from Magic Box (General toolbar) to read designs of other formats with Magic Box.

You can read a design from any supported design card, edit it, and then write it to one of the four types of Magic Card – Red, Blue, Yellow, or Green. You can select multiple designs to **write** to a Magic Card. However, you can only **read** and edit one design at a time into BERNINA Embroidery Software.

To read designs from a design card

1 Insert a design card in the Magic Box.

   The slot you choose will depend on the card format.

   Note Magic Box allows you to read many design formats. See the Magic Box documentation for details.

2 Click the **Read from Magic Box** icon.

The **Magic Box About** dialog opens.

3 Click **OK** to proceed.

   Refer to the Magic Box User Manual for operating instructions.

   Tip You can write designs read from Magic Box to your computer floppy disk or hard drive. Alternatively, write them to any supported design card, including of course Magic Cards.

Writing designs to Magic Card

Use Write to Magic Box (General toolbar) to write designs to Magic Cards with Magic Box.

From BERNINA Embroidery Software you can write designs to Magic Box using Magic Cards of any of four types. Use the Magic Card which supports the format you need. See the Magic Box documentation for details.

To write designs to Magic Card

1 Load an existing design from a design card or your computer. See Reading designs from design cards and Reading designs from machine.

   The **Magic Box About** dialog opens.
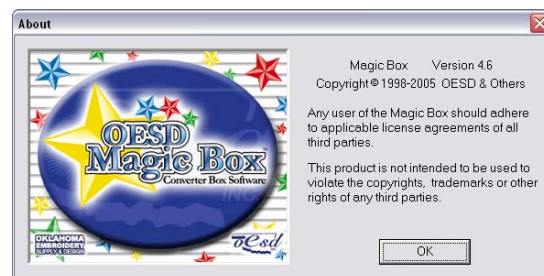
2 Click **OK** to proceed.

   Refer to the Magic Box User Manual for operating instructions.

Saving designs in PES format

PES is a Brother stitch file format which involves different combinations of hoop size and file version. Use the following procedure when saving PES designs.

To save a design in PES format

1 Select **File > Save As**.

Select PES
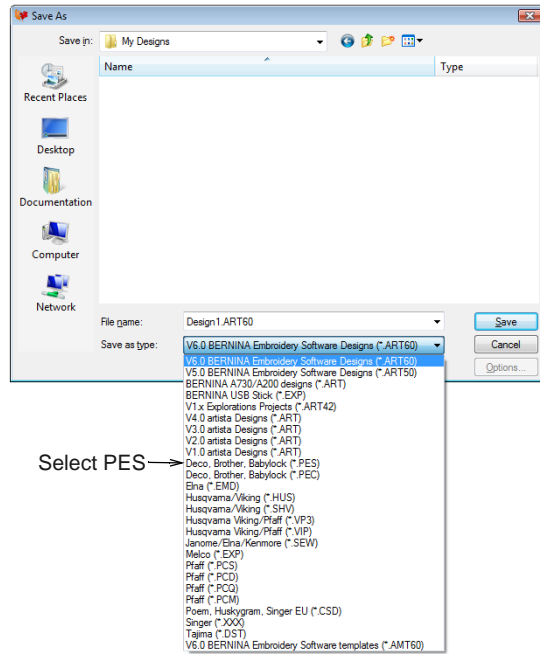
2 Choose PES as the file type and click **Save**.

The **PES Save Options** dialog opens.

Adjust height and width for user-defined hoops
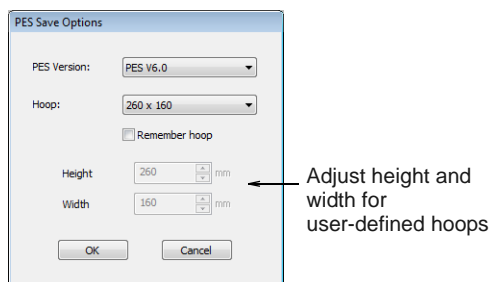
3 Select the PES version you want to save to from the dropdown list.

The hoop list updates according to the selected version – different hoops are available in different versions of PES.

Tip If the **Remember hoop** option is checked, the last hoop used is automatically selected next time around.

4 Select the required hoop type from the **Hoop** dropdown list.

Height and **Width** fields update automatically depending on the chosen hoop type.

Alternatively, select **User Defined** from the **Hoop** list. The **Height** and **Width** fields are enabled and you can set the values as required.

Note You will be warned if the design does not fit in the hoop.

PART VIII

DESIGN MANAGEMENT

BERNINA Portfolio provides an efficient way for viewing and managing embroidery designs. This design management tool can access design files stored on your computer hard disk, CD-ROM, or floppy disk. BERNINA Portfolio even lets you view design files in folders which have been archived by means of the popular WinZip utility. It recognizes all design file formats used by BERNINA Embroidery Software. See Converting design files for details.

BERNINA Portfolio Basics

This section describes how to open and view designs in BERNINA Portfolio as well as adjusting viewing settings. It also covers browsing for and accessing designs in folders. See BERNINA Portfolio Basics for details.

BERNINA Portfolio Advanced

This section describes the more advanced workings of BERNINA Portfolio including sorting files in folders, printing designs, and publishing design catalogs. It also covers stitching and converting designs. It describes how to archive dormant or unused designs as well as how to organize designs in folders. See BERNINA Portfolio Advanced for details.

CHAPTER 31
BERNINA PORTFOLIO BASICS

BERNINA Portfolio provides an efficient way for viewing and managing embroidery designs. This design management tool can access design files stored on your computer hard disk, CD-ROM, or floppy disk. BERNINA Portfolio even lets you view design files in folders which have been archived by means of the popular WinZip utility. It recognizes all design file formats used by BERNINA Embroidery Software.

This section describes how to open and view designs in BERNINA Portfolio as well as adjusting viewing settings. It also covers browsing for and accessing designs in folders.
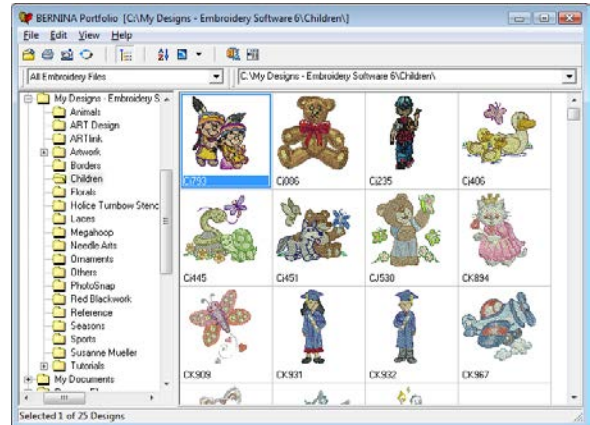
Opening BERNINA Portfolio and viewing designs

BERNINA Portfolio does not require a separate installation. It works as an integral part of BERNINA Embroidery Software. BERNINA Portfolio displays thumbnails and limited design information whenever a design folder is accessed. You can filter the contents of the Display Panel to show only certain file types. You can also rename folders, add sub-folders and delete folders without leaving BERNINA Portfolio.

Opening BERNINA Portfolio

Select Portfolio (File menu) to open BERNINA Portfolio.

BERNINA Portfolio can only be opened from within BERNINA Embroidery Software.

To open BERNINA Portfolio

▶ Select **File > Portfolio** to open BERNINA Portfolio.

▶ Use the folder tree to direct BERNINA Portfolio to the **My Designs - Embroidery Software 6** folder.

All your ART designs are displayed as thumbnail images.

Change Design View

Menu bar →

Toolbar →

Folders →

Design thumbnails contained in selected folder

Split bar →

Status bar → Selected 0 of 24 Designs
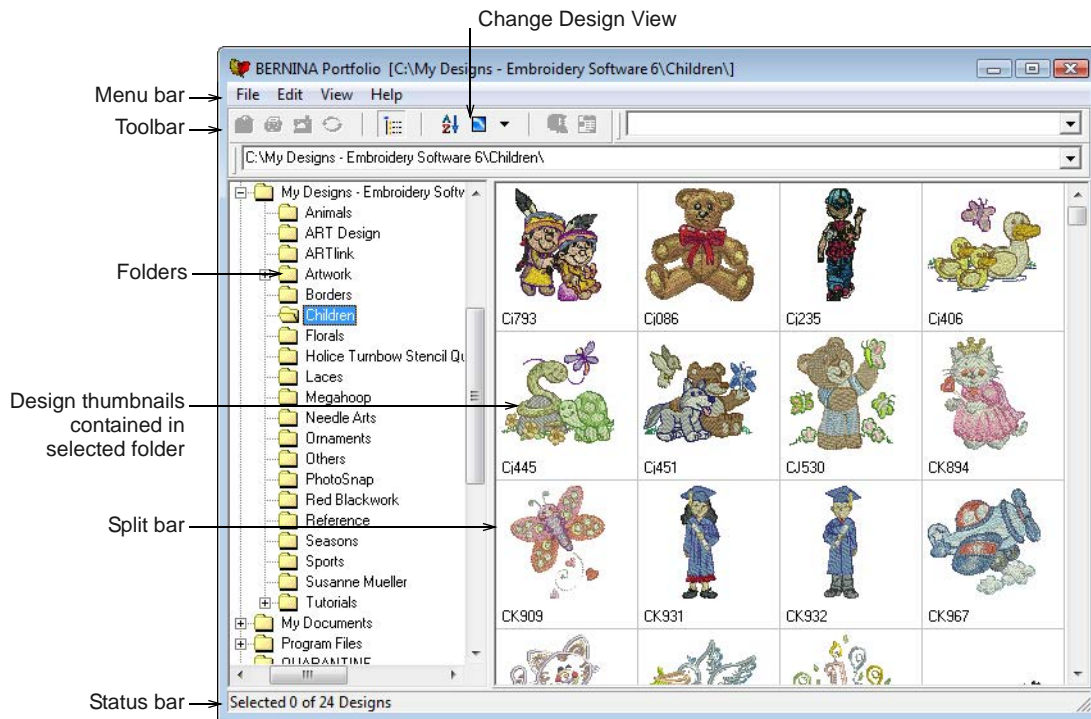
Tip If BERNINA Embroidery Software is hiding BERNINA Portfolio from view, switch between them using the MS Windows® **Alt+Tab** function.

Viewing designs in the Display Panel

Click Change Design View to select thumbnails only, thumbnails with stitching details, or summary information only.

The designs in BERNINA Portfolio can be listed as thumbnails only (the default), thumbnails and summary information, or design information only.

Tip Designs can also be displayed full screen using BERNINA Embroidery Software. See Opening designs in BERNINA Embroidery Software for details.

- -

To view designs in the display panel

1 Open BERNINA Portfolio and select a folder. See Browsing designs in folders for details.

The BERNINA Portfolio Display Panel updates to show the contents of the selected folder. See also Refreshing the display.

2 Use the viewing options to view the designs in the database in the display format you require:

▶ To display the designs as thumbnails only, click the **Change Design View** icon and select **Thumbnails** from the dropdown menu. Or, select **View > Design Thumbnails**.

▶ To display the designs as thumbnails with stitching details, click the **Change Design View** icon and select **Summary** from the dropdown menu. Or, select **View > Design Thumbnails and Summary**.

▶ To display the designs in a detailed list, click the **Change Design View** icon and select **List** from the dropdown menu. Or, select **View >**

Design List. By default, designs are listed showing design name, file size, file type, version, etc.

Design Name	File Size	File Type	Version	Last Changed	Stiches	Descriptio
Ci793.ART60	138.2 Kb	.ART60	6.0	18/06/2009 4:11:08	20962	
Cj086.ART60	136.2 Kb	.ART60	6.0	18/06/2009 4:11:08	25780	
Cj235.ART60	121.3 Kb	.ART60	6.0	18/06/2009 4:11:08	14901	
Cj406.ART60	75.3 Kb	.ART60	6.0	18/06/2009 4:11:08	10017	
Cj445.ART60	105.5 Kb	.ART60	6.0	18/06/2009 4:11:08	16223	
Cj451.ART60	108.0 Kb	.ART60	6.0	18/06/2009 4:11:08	14701	
CJ530.ART60	83.5 Kb	.ART60	6.0	18/06/2009 4:11:08	11373	

Note The number of selected designs is displayed in the **Status Bar** at the bottom of the BERNINA Portfolio window.

Viewing designs in the whole window

Click Hide/Show Folders to toggle the folder tree on and off.

It is often more convenient to view designs in folders and databases in the whole window. When doing so, you can always browse for designs using the **Look In** list or **Browse Location** option.

To view designs in the whole window

1 Click the **Hide/Show folders** icon.

Designs are now viewable across the window.
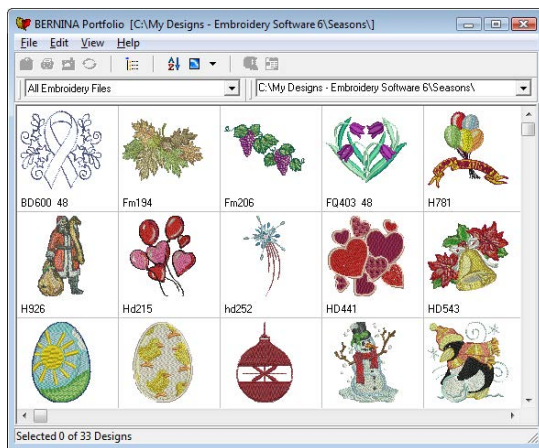
2 Select **View > Browse Location** to view designs in another folder.

The **Browse for Folder** dialog opens.
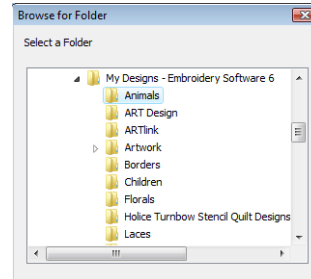
3 Search the folder tree for the folder or database you require and click **OK**.

The display area updates accordingly.

Tip Alternatively, select from the **Look in** dropdown list.

Viewing archived designs

BERNINA Portfolio lets you archive and view design files in folders which have been archived by means of the popular WinZip utility. This is a software program which bundles files into a single compressed file with the extension *.ZIP. This can be useful for sending or receiving multiple files via email. See also Archiving design files.

To view archived designs

1 Open BERNINA Portfolio and browse to the folder containing the zipped design files.

▸ If the folder contains individually zipped designs, these will appear in the Display Panel along with any other design files in the folder. The names of any zipped files are displayed in italics.
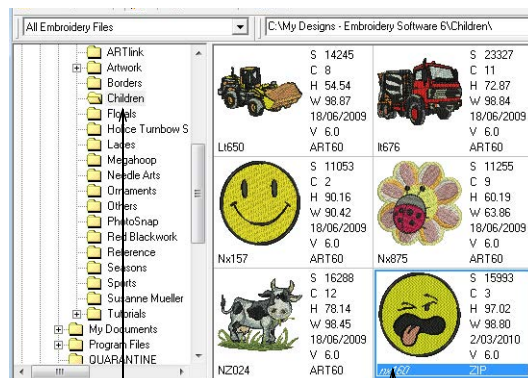
Folder containing individual zipped files

Zipped design – name appears in italics

▸ If the folder contains zipped files containing multiple designs, the entire contents of the file

will appear in the Display Panel. The names of any zipped files are displayed in italics.
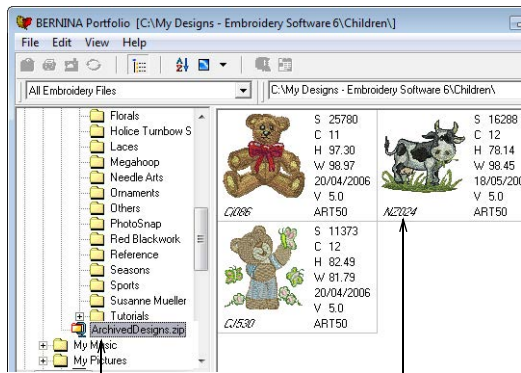
Zipped file appears in folder tree

Zipped design – name appears in italics

2 Select the zipped file to view its contents.

Locating missing files

If users incorrectly move files, the normal design thumbnail is usually replaced by a 'missing design' thumbnail when BERNINA Portfolio is next opened. Each color indicates the likely cause:

Icon	Description
	BERNINA Portfolio recognizes a pre-deter-mined set of file types as per the file type drop-down list. If it sees a design that has the required file suffix – ART, BMP, etc – but it is unable to read the file, it will display the green question mark. Locate the file and delete it.

Adjusting view settings

BERNINA Portfolio allows you to customize window settings. It lets you customize the toolbar layout. You can switch between 'locales' – English, German, etc – at any time. Occasionally you may need to refresh the display. You can also change the way selected designs are highlighted, whether thumbnail files are created, and so on. BERNINA Portfolio even lets you customize design lists to display only the fields you require in any order you prefer.

Changing locale

Select Change Locale (View menu) to open BERNINA Portfolio.

During installation of the BERNINA Portfolio software, optional languages (locales) can be selected for dialogs and messages – e.g. German. You can switch between these locales at any time after installation.

Caution If the default locale is not the same as the language of the Operating System, then this option will not work properly. See also 'locale' in MS Windows® Help for information about changing MS Windows® to suit different locales.

To change locale

1 Open BERNINA Portfolio. See Opening BERNINA Portfolio for details.

2 Select **View > Change Locale** to open the locale required.

The **Choose Locale** dialog opens.
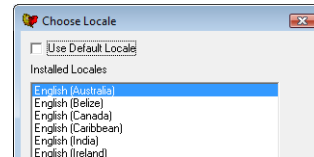
 Note Only those locales selected when BERNINA Portfolio was installed will be listed.

3 Select the locale required, and click **OK** to make the change.

 Tip See also 'locale' in MS Windows® Help for information about changing keyboards, fonts and so on to suit different locales.

Refreshing the display

Occasionally, your screen will not show changes you have made until you refresh the display. Changes to folders may not display either until you refresh the folder tree. If graphics and thumbnails still do not appear correctly, or if you have updated your BERNINA Embroidery Software installation, you may need to 'validate and refresh'.

To refresh the display

▸ To refresh the Display Panel, select **View > Refresh,** or press **F5**.

▸ To refresh folders in the folder tree, select **View > Refresh Folder**. Alternatively, select the node or folder you want to refresh, right-click and select **Refresh** from the popup menu.

▸ To validate and refresh files in folders, click the folder and select **View > Validate and Refresh**.

 Tip Occasionally, BERNINA Portfolio displays red, blue or green question marks and a short

description instead of a graphic thumbnail. See Locating missing files for details.

Modifying user preferences

Select User Preferences (View menu) to set design view user preferences.

You can change several default settings in BERNINA Portfolio, including the size of the design thumbnails. You can also change the way that selected designs are highlighted.

To modify user preferences

1   Open BERNINA Portfolio. See Opening BERNINA Portfolio for details.

2   Select **View > User Preferences**.

The **User Preferences** dialog opens.
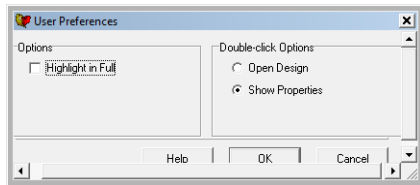
3   Select **Highlight in Full** to fully highlight each thumbnail as it is selected.

If you only require selected thumbnail borders to be highlighted, clear **Highlight in Full**.

Tip The color and intensity of highlights can be changed in the MS Windows® Control Panel to suit each user. See MS Windows® Help for details about 'Display Settings'.

4   Select **Open Design** in the **Double-click Options** panel to open designs when you double click on the selected design.

5   Select **Show Properties** in the **Double-click Options** panel to open **Design Properties** dialog when you double click on the selected design.

6   Click **OK** to apply the settings.

Tip If you need more space in the Display Panel for viewing thumbnails, click the **Hide/Show Folder Tree** button.

Customizing design lists

Select Customize Columns (View menu) to customize design lists.

BERNINA Portfolio lets you customize design lists to display only the fields you require in any order you prefer.

To customize design lists

1   To display the designs in a detailed list, click the **Change Design View** icon and select **List** from the dropdown menu. Or, select **View > Design List**.

By default, designs are listed showing design name, file size, file type, version, etc.

Select Customize Column

2   Right-click the column header and select the **Customize Column** from the popup menu. Alternatively, select **View > Customize Columns > Design List**.

The **Design List Columns** dialog opens.

Click to reorder selected fields

Click to hide selected fields
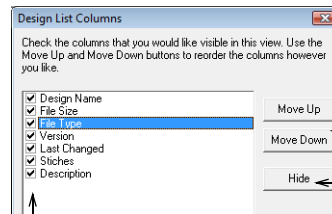
Select / deselect fields to include / exclude in listing

3   Exclude a field from the listing by deselecting the associated checkbox.

Alternatively, highlight the field and select **Hide**.

4   Adjust the order of selected fields with the **Move Up** and **Move Down** buttons.

Alternatively, select the column header in list view and drag-and-drop to a new location.

Drag-and-drop header to new location

Browsing designs in folders

Information about designs in folders can be viewed in BERNINA Portfolio. Designs can be browsed using navigation buttons and slide show buttons. You can

do this to both the whole folder or to selected designs. You can also filter the contents of any design folder to show only certain file types – e.g. only ART files. See Sorting files in folders and Limiting file types displayed for details.

Viewing design properties

Click Design Properties to view information about selected designs.

Information about designs in folders can be viewed in the **Properties** dialog. The data is extracted directly from design files created in BERNINA Embroidery Software. You cannot add, delete and edit these fields.

Tip Designs in folders can be browsed using navigation buttons and slide show buttons on the **Properties** dialog. See Sorting files in folders for details.

To view design properties

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio and viewing designs for details.

2 Right-click a design and select **Properties** from the popup menu, or click the **Design Properties** icon.

The **Properties** dialog opens.
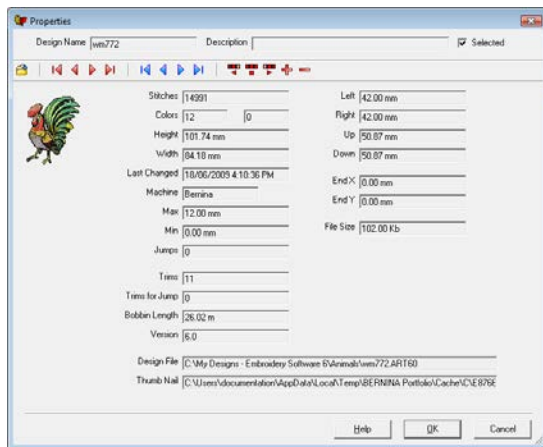
Stitch information from the design file appears grayed out and cannot be edited. The **Design**, **Description**, and **Selected** fields are ranged across the top of the dialog. Use the **Selected** field at the top of the dialog to select or deselect designs in the main window as you move between designs. See Sorting files in folders for details.

Tip If not all text is visible in a field, select the field and use the **Arrow**, **Home** and **End** keys to scroll. Alternatively, resize the dialog.

3 Click **OK** to close.

Browsing designs in folders

Navigation buttons on the **Properties** dialog allow you to move forwards, backwards, as well as to the start and end of all designs in the selected folder. Similarly, you can move forward and back through selected designs. As you browse, the **Properties** dialog displays a thumbnail together with relevant design information.

To browse designs in a folder

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio and viewing designs for details.

2 Select or sort the designs as required. See Sorting files in folders for details.

3 Open the **Properties** dialog. See also Viewing design properties.
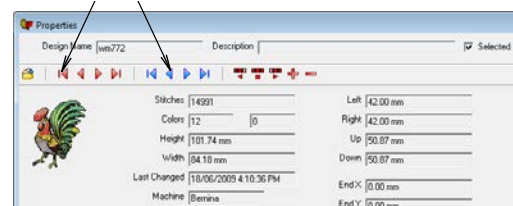
4 Browse through the entire folder or a selection of designs as required.

▸ If you want to browse the entire folder, use the red navigation buttons.

These allow you to move to the first design, last design, previous design and next design in the folder.

▸ If you want to browse through selected designs, use the blue navigation buttons.

These too allow you to move to the first design, last design, previous design and next design in the folder.

5 Click **OK** to close.

Browsing designs using slide show buttons

All designs in folder can be displayed as a slide show. The slide show is run from the **Properties** dialog which displays each design's thumbnail together with relevant information. You can control the speed and direction of the slide show.

To browse designs using slide show buttons

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio and viewing designs for details.

2 Select or sort the designs as required. See Sorting files in folders for details.

3 Open the **Properties** dialog. See also Viewing design properties.

Slide show buttons
Backwards   Stop   Forwards   Fast/Slow
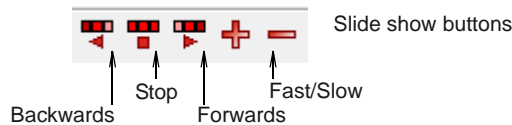
4 Click the **Forwards** or **Backwards** button to start the slide show.

The slide show automatically scrolls through every design in the folder, looping back to the beginning when it reaches the end.

5 Click **+** or **-** to increase or decrease the speed.

6 Click the **Stop** button to stop.

7 Click **OK** to close.

Accessing designs and artwork

BERNINA Portfolio lets you select designs and electronic artwork residing in folders. Once selected, you can manipulate them in a variety of ways – e.g. cutting, copying, pasting, editing the record, and converting designs to other formats. You can also open them in BERNINA Embroidery Software directly from BERNINA Portfolio for viewing or editing.

Tip With the file selected, right-click to open a popup menu which includes frequently used commands.

Selecting designs in folders

Designs and images must be selected before an action can be performed – e.g. view, open or copy a design. A group of designs, a range, or all the designs in a database can be selected. A group is made up of any selected designs. A range is a series of consecutive designs.

To select designs in a folder

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio and viewing designs for details.

2 Display designs as thumbnails or as a details list. See Adjusting view settings for details.

Tip The thumbnail image generation process can be very slow on older machines or if there are a lot of designs in the database. Holding down the **Alt** key will abort the redraw. The thumbnail will be drawn using a default yellow exclamation mark.

3 Sort designs by required category. See Sorting files in folders for details.

4 Select a design or designs:

▸ To select a range, hold down **Shift** as you click.

▸ To select multiple items, hold down **Ctrl** as you click.

▸ To select all designs in the current folder, select **Edit > Select All** or click **Ctrl+A**.

5 To deselect all selected designs, select **Edit > Deselect All**, or click any unselected design.

Tip To deselect a single design amongst a group of selected design, click it again while holding down the **Ctrl** key.

Opening designs in BERNINA Embroidery Software

Click Open Design to open a selected design or designs into BERNINA Embroidery Software.

Any designs selected in the BERNINA Portfolio Display Panel can be opened in BERNINA Embroidery Software for viewing or editing. Similarly, any artwork file can be opened in a third-party graphics package for viewing or editing.

Caution Occasionally BERNINA Portfolio may fail to connect with BERNINA Embroidery Software. See Reconnecting BERNINA Portfolio to BERNINA Embroidery Software for details.

To open designs in BERNINA Embroidery Software

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio and viewing designs for details.

2 Select a design or designs. See Selecting designs in folders for details.

Tip If you want to open several designs at once, select the details list view. See Adjusting view settings for details.

3 Click the **Open Design** icon or select **File > Open with BERNINA Embroidery Software**.

All selected files are opened.

Note If you wish to open selected artwork in a third-party graphics package for viewing or editing, select **File > Open**.

Tip Alternatively, double-click a design thumbnail.

Make sure **Open Design** in the **Double-click Options** panel is selected in the **User Preferences** dialog. See Modifying user preferences for details.

The selected design or designs are displayed in the BERNINA Embroidery Software window ready for editing.

4 To switch between BERNINA Embroidery Software and BERNINA Portfolio:
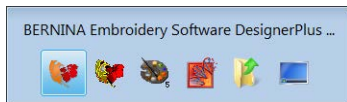
▸ Hold down the **Alt** key, then tap the **Tab** key until the BERNINA Embroidery Software icon is highlighted. Release the **Alt** key.

▸ Alternatively, click the BERNINA Embroidery Software icon on the MS Windows® taskbar.

Creating designs with custom templates

You can open a new design in BERNINA Embroidery Software from within BERNINA Portfolio.

- -
To create designs with a custom template

1 Select **File > New**.

BERNINA Embroidery Software opens with a blank design.

CHAPTER 32

BERNINA PORTFOLIO ADVANCED

Designs in BERNINA Portfolio folders can be sorted in various ways. This is useful when you want to select designs for stitching out, printing, archiving, and so on. Once a design is selected in an BERNINA Portfolio folder, you can send it direct to an embroidery machine. You can also convert ART and other design files to and from other file formats.

Catalogs of designs in a folder contain thumbnails and/or summary information. These can be sent to a printer and published in a variety of formats.

BERNINA Portfolio lets you archive and view design files in folders which have been archived by means of the popular WinZip utility. This can be useful for sending or receiving multiple files via email.

This section describes the more advanced workings of BERNINA Portfolio including sorting files in folders, printing designs, and publishing design catalogs. It also covers stitching and converting designs. It describes how to archive dormant or unused designs as well as how to organize designs in folders.
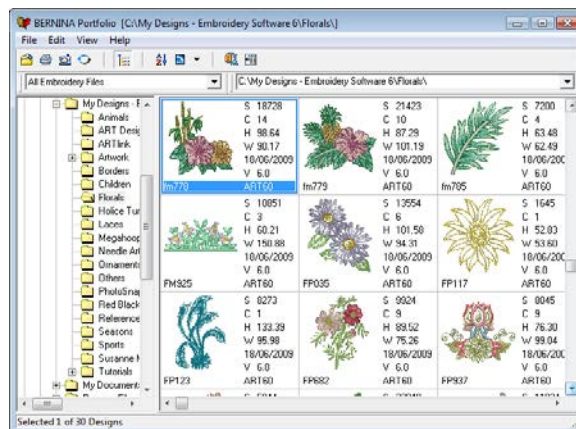
Sorting files in folders

The simplest way to sort files in BERNINA Portfolio folders is by file type – e.g. **ART** files only. Designs can be further sorted in the following ways:

▸ As simple sorts using **View > Sort by** (**Design Name**, **File Type**, **File Size**, or **Last Changed**). The designs are arranged according to the sort selection. The designs can be sorted whether they are displayed as thumbnails or as a details list.

▸ As simple sorts using details list headings: by **Design Name**, **File Size**, **File Type**, **Version**, **Last Changed**, **Stitches**, or **Description**. Designs are arranged according to the heading selected, and repeating the sort reverses the order. Designs must be displayed as a details list.

▸ As a complex sort in up to two levels in ascending or descending order: by **File Type**, **First Designed**, **Height**, **Last Changed**, **Stitches**,

Version, **Width** or **None**. Designs can be displayed as thumbnails, thumbnails with stitching details, or details lists.

Limiting file types displayed

With BERNINA Portfolio you can filter the contents of any design folder to show only certain types of file – e.g. All Embroidery files.

To limit file types displayed

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio and viewing designs for details.

2 Click the **Files** dropdown on the toolbar.
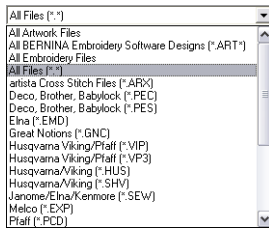
3 Select:

> **All Files** to show every file type in the folder.

> **All Artwork Files** to all supported artwork file types. See Digitizing with Backdrops for details.

> Any other option to display only files of that type – e.g. templates (AMT). See Supported embroidery file formats for details.

Running simple sorts using the View menu

You can sort your thumbnails or details lists by selecting any of four types of sort from the **View** menu.

To run a simple sort using the View menu

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio and viewing designs for details.

2 Display the designs in list or thumbnail fashion as preferred. See Viewing designs in the Display Panel for details.

3 Select **View > Sort by Design Name**, **Sort by File Type**, **Sort by File Size**, or **Sort by Last Changed**.

The designs will be sorted according to the option selected.

Running simple sorts using details lists

You can sort details lists by clicking the column headings.

To run a simple sort using details lists

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio and viewing designs for details.

2 List the designs as a details list. See Viewing designs in the Display Panel for details.

Click column heading to sort

3 Click the heading at a column to be sorted – e.g. **Design Name**.

The designs will be sorted in the order of the selection.

4 Click the heading again to reverse the order.

Running complex sorts using Sort

 Use Sort to run a complex sort using the Sort dialog.

You can sort designs by various criteria such as Colors, Design Date, Design Name, File Type, etc. BERNINA Portfolio lets you sort them by up to two levels, in ascending or descending order.

To run a complex sort using Sort

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio and viewing designs for details.

2 List the designs as a details list. See Viewing designs in the Display Panel for details.

3 Click the **Sort** icon or select **Sort > View** menu.

The **Sort** dialog opens.
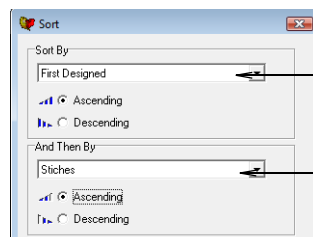
Select Level 1 criterion

Select Level 2 criterion

4 Select the first sort criterion:

> Select the main category you want from the **Sort By** list – e.g. **First Designed**.

> Select **Ascending** to sort letters from A to Z and numbers from lowest to highest, or **Descending** to sort in the reverse order.

5 Select the second level sort criterion:

> Select a different category from the **And Then By** dropdown – e.g. **Stitches**.

> Select **Ascending** or **Descending**.

6 Click **OK**.

In the above example, the details list will display all designs by first designed, together with stitches.

Printing and publishing designs with BERNINA Portfolio

Catalogs of designs in a folder contain thumbnails and/or summary information. These can be sent to a printer, published on your website or intranet, and exported in formats suitable for spreadsheet and database programs.

Tip Before printing, publishing or exporting, sort the designs into useful groups. See Sorting files in folders for details.

Printing designs with BERNINA Portfolio

Use Print Selected Designs to print selected design(s).

You can print a copy of designs for selected groups of designs in folders, and include thumbnails of each design. See also Setting print options for embroidery.

Note Unlike **Print Designs**, this option can provide all of the design and sewing information available, but it uses far more paper to do so. See also Printing design catalogs.

To print a design with BERNINA Portfolio

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio for details.

2 Filter the file types to display as required. See Limiting file types displayed for details.

3 Sort the designs to be printed using **Sort**. See Sorting files in folders for details.

4 Select the design(s) and click the **Print Selected Designs** icon.

The **Print Options** dialog opens.
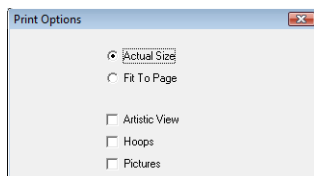
5 Select a size option:

* **Actual Size**: the design is printed at the same size it will be stitched.
* **Fit to Page**: large designs will be reduced to fit the printing paper, small designs will be enlarged.

6 Select **Artistic View** to print the design in Artistic View.

7 Include other options as required:
* **Hoop**: The hoop is included in the printout.
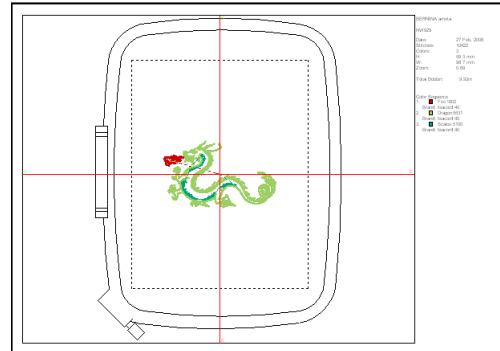
* **Picture**: The design is printed with the picture behind it.

8 Click **OK**.

The **Print Setup** dialog opens.
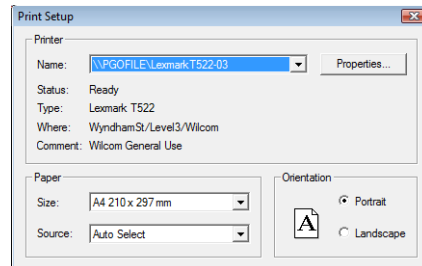
Note The dialog and the settings available will vary from printer to printer. See your printer manual for details.

9 Ensure that your printer settings are correct and click **OK** to print.

Printing design catalogs

Printed catalogs of your designs contain thumbnails of the designs plus limited text details. You can prepare catalogs of all your designs, and others to suit your needs.

To print a design catalog

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio for details.

2 Filter the file types to display as required. See Limiting file types displayed for details.

3 Sort the designs to be printed in the catalog using **Sort**. See Sorting files in folders for details.

4 Select **File > Print Catalog**.

The **Print Catalog Options** dialog opens.
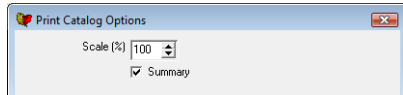
5 Change the **Scale (%)** amount if you want your thumbnails bigger or smaller.

6 Select **Summary** if you want design details to be printed.

7 Click **Preview** as required.
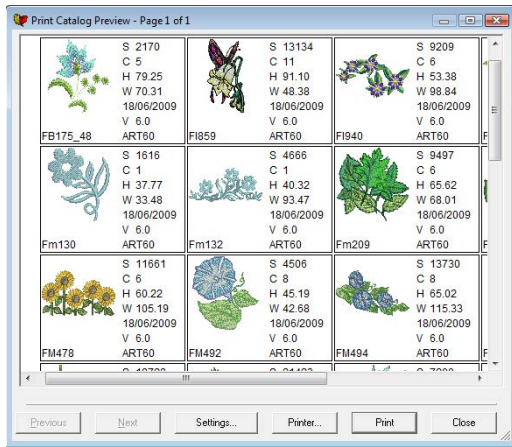
8 Click **Printer** to select a printer, paper size and other options in the MS Windows® **Print Setup** dialog for the printer attached to your PC.
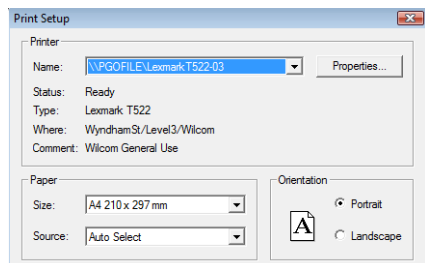
9 Click **OK** to print the catalog.

Tip If the catalog requires more than one page, you can select which page to print in the MS Windows® **Print Setup** dialog.

Publishing design catalogs for browser viewing

You can convert your designs to the HTML and PNG formats suitable for viewing by any browser, such as Microsoft Internet Explorer. This allows you to publish designs throughout the world via the internet.

To publish a design catalog for browser viewing

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio for details.

2 Filter the file types to display as required. See Limiting file types displayed for details.

3 Sort the designs to be published in the catalog using **Sort**. See Sorting files in folders for details.

4 Select **File > HTML Catalog**.

The **HTML Catalog Options** dialog opens.
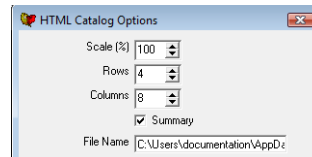
5 Change the **Scale (%)** amount if you want your thumbnails bigger or smaller.

6 Adjust the numbers of rows and columns for the final output, which will appear as a table.

7 Deselect **Summary** if you don't want design details to appear.

8 Enter a filename and location in the **File Name** field – e.g. C:\Designs\Catalogs\Crests.htm – or accept the default settings.

Tip Make a separate folder for each catalog – the catalog conversion will generate a PNG file for a thumbnail of each design, another PNG file for a Artistic View of each design, and an HTML file for each page.

9 Click **OK** to start converting the designs.

Your browser – e.g. MS Windows® Internet Explorer – will open automatically at the first page of designs when the conversion is finished.
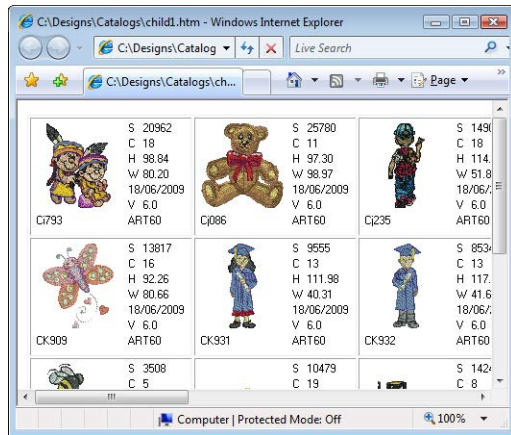
If your browser does **not** open automatically:

▸ Open your browser – e.g. MS Windows® Internet Explorer – via the MS Windows® **Start** button.

▸ Click the **Address** field, browse to the selected folder, and double-click the first HTM file containing thumbnails – e.g. Crests1.htm.

There will be at least two HTM files with similar names – e.g. Crests.htm, Crests1.htm, etc. The filename **without** a number is the index to all of the HTM files.

Your browser will display one or more design thumbnails in the window.

10 Examine the contents of the page.

Click **Next Page** to view the next screen of thumbnails.

Tip Click a thumbnail to view its Artistic View image in real size.

11 Repeat the procedure to adjust thumbnail size and table layout as required.

Exporting design catalogs

Design details can be converted to the Tab and CSV (Comma Separated Value files) formats suitable for use by most spreadsheets. See your spreadsheet program for details.

To export a design catalog

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio for details.

2 Filter the file types to display as required. See Limiting file types displayed for details.

3 Sort the designs to convert the design details to different formats using **Sort**. See Sorting files in folders for details.

4 Select **File > Export Designs List**.

The **Export to File Options** dialog opens.
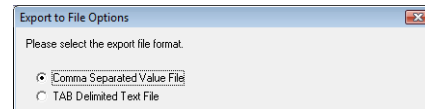
5 Click either **Comma Separated Value File** or **TAB Delimited Text File**, depending on your spreadsheet program's recommended format.

The **Save As** dialog opens.
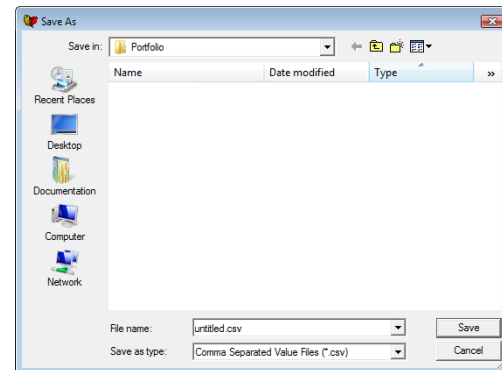
6 Select a folder and enter a filename to store the CSV or TXT file.

7 Click **Save**.

The designs will be generated and saved in the selected format.

Stitching out designs

Once a design is selected in a folder, you can send it direct to any embroidery machine connected to the BERNINA Embroidery Software system.

Tip When a file is selected, right-click to open a popup menu which includes the commands **Open**, **Print**, **Convert**, **Write to Card/Machine**, **Rename**, and **Delete**.

Stitching directly from BERNINA Portfolio

Use Stitch Selected Designs to stitch a design directly to machine.

Select one or more designs in a folder using BERNINA Portfolio. You can then stitch to any embroidery machine connected to your BERNINA Embroidery Software system.

To stitch directly from BERNINA Portfolio

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio and viewing designs for details.

2 Sort and select the design(s) to be stitched using **Sort** or **Search**. See Sorting files in folders and Selecting designs in folders for details.

3 Click the **Stitch Selected Designs** icon.

The **Stitch Options** dialog opens.

Select machine type and format
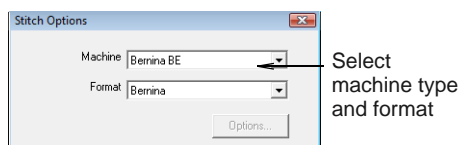
4 Select a machine type and format from the lists.

5 Click **OK**.

The **Bernina Device Selection** dialog opens. See Stitching out designs for details.

Converting design files

 Use Convert Selected Designs to convert from one design file type to another.

You can convert your ART and other design files to and from other file formats directly from BERNINA Portfolio.

Note You cannot convert design files to PES format in BERNINA Portfolio as the PES file type requires the hoop size be set.

To convert design files

1 Open BERNINA Portfolio and select a design folder. See Opening BERNINA Portfolio and viewing designs for details.

2 Select the file(s) to be converted. See Selecting designs in folders for details.

3 Click the **Convert Selected Designs** icon.

The **Convert Options** dialog opens.
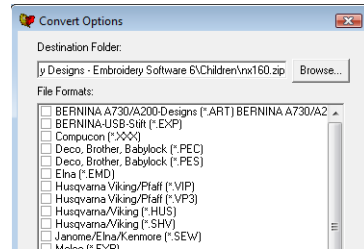
4 Select the file types you want to convert to.

5 Browse to the folder where you want to store the converted designs, using the **Browse** button and the **Browse for Folder** dialog.
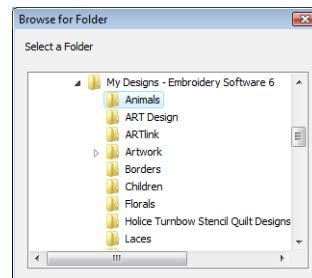
6 Click **OK** to start the conversion.

The converted designs will be stored in the nominated folder. You are prompted to record the results in a log file.

7 Click **OK**.

Archiving design files

BERNINA Portfolio lets you archive and view design files in folders which have been archived by means of the popular WinZip utility. This is a software program which bundles designs into compressed or 'zipped' files. This can be useful for saving on storage space or receiving multiple files via email. See also Viewing archived designs.

Saving designs to an archive file

 Use WinZip to archive selected designs to a single compressed file.

BERNINA Portfolio provides a shortcut to the WinZip utility via the toolbar. Use it to bundle designs into compressed or 'zipped' files. See also Viewing archived designs.

To save designs to an archive file

1 Open BERNINA Portfolio. See Opening BERNINA Portfolio for details.

2 Select a folder and select the design or designs you want to archive.

3 Click the **WinZip** icon.

4 If you have selected one design file, the system will create a ZIP file. Enter a name for the file and choose a location.
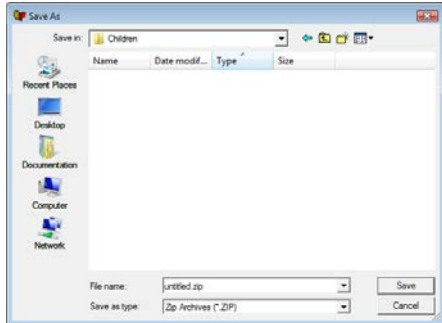
5 If you have selected more than one design file, choose whether to archive the selected files individually or as a single file.

▶ **Create one archive containing multiple designs**: creates a single ZIP file for all designs. Enter a name for the file and choose a location.
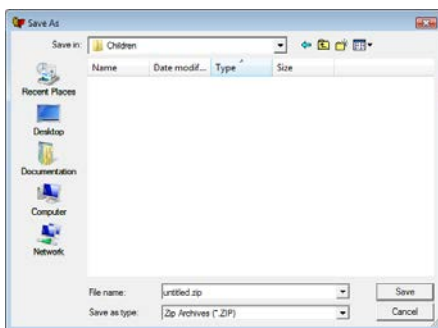
▶ **Create individual archives for each design**: opens the **Browse for Folder** dialog.

Choose a location and click **OK**. The ZIP files automatically take the name of the design.
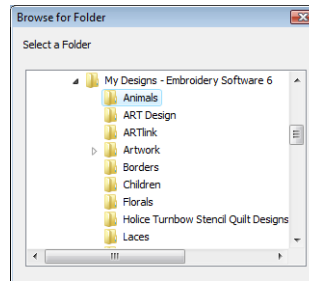
Tip You can view zipped files in the specified folder. See Viewing archived designs for details.

Extracting designs from an archive file

BERNINA Portfolio allows you to extract design files from a zipped archive directly to a folder. This is useful, for example, if you are receiving zipped designs via email. See also Viewing archived designs.

To extract designs from an archive file

1 Open BERNINA Portfolio. See Opening BERNINA Portfolio for details.

2 Select the folder which contains the design or designs you want to extract.
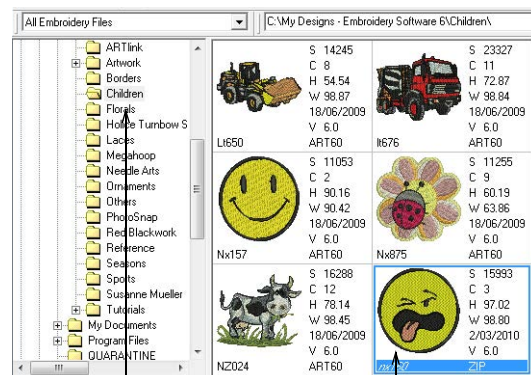
Folder containing individual zipped files   Zipped design – name appears in italics

3 Select the individual design to extract in the Display Panel or the zipped file in the folder tree.

4 Within the zipped file, select the design(s) you want.
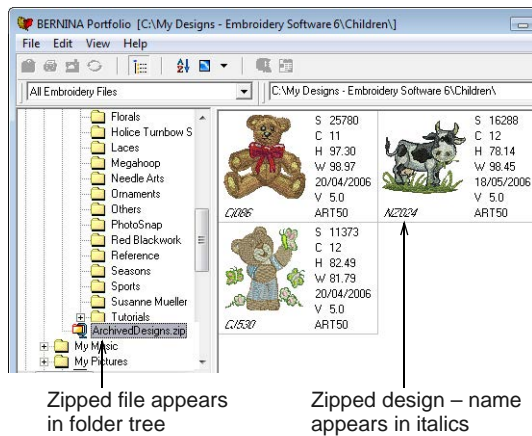
Zipped file appears in folder tree

Zipped design – name appears in italics

▶ To select a range, hold down **Shift** as you click.

▶ To select multiple items, hold down **Ctrl** as you click.

Tip If you leave designs unselected, all zipped files in the folder will be extracted.

5 Select **File > Extract Zip Archive.**

The **Browse for Folder** dialog opens.
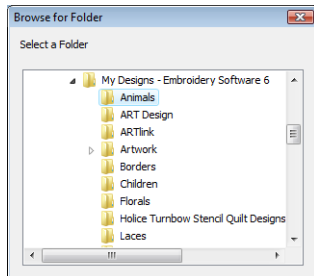
6 Choose a location and click **OK**.

The designs are extracted to the selected location. See also Viewing designs in the Display Panel.

Organizing designs in folders

You can rename and copy and paste designs in folders. You can also rename folders, add or delete folders without leaving BERNINA Portfolio.

Renaming, adding or deleting folders

You can rename, add and delete folders without leaving BERNINA Portfolio.

To rename, add or delete folders

1 Open BERNINA Portfolio. See Opening BERNINA Portfolio for details.

2 Browse to the folders you want to rename, delete or add sub-folders to. See Browsing designs in folders for details.

3 Add, rename, or delete folders as required:

▶ To add a sub-folder to another, select the folder and right-click. Select **Add Folder** and type in the name when the new sub-folder appears.

▶ To rename a folder, select it and right-click. Select **Rename** and type in the new name.

▶ To delete a folder, select and right-click it, and select **Delete**. You are prompted to confirm the deletion.

Copying and pasting designs

Once a selected design is copied, it can then be pasted to another location using **Paste**. A copied design can be pasted any number of times.

To copy and paste designs

1 Open BERNINA Portfolio. See Opening BERNINA Portfolio for details.

2 Select any number of designs. See Selecting designs in folders for details.

3 Select **Edit > Copy**.

4 Change to another folder using the folder tree as required.

A design can be pasted to the same folder as the original design.

5 Select **Edit > Paste**.

If the selected design – e.g. Bear.ART – is pasted into the current folder, and the current folder contains the original design, or a file of the same name, the new design is automatically named **Copy of Bear.ART**. You can then change the name of the new file by right-clicking its name, selecting **Rename** and typing the new name. Press **Enter** to complete the name change.

Note If you rename the file, ensure that the three letter extension – e.g. ART – is not altered.

Cutting and pasting designs

When a selected design is cut, the design is removed from the current folder. The design can then be pasted at another location using the **Paste** command.

To cut and paste designs

1 Open BERNINA Portfolio. See Opening BERNINA Portfolio for details.

2 Select any number of designs. See Selecting designs in folders for details.

3 Select **Edit > Cut**.

A confirmation dialog opens.

4 Click **Yes** to cut the design.

5 Browse to the folder where you want to paste the file or files.

6 Select **Edit > Paste** to paste the selected design into the new folder.

If a design of the same name already exists, you are prompted to overwrite the existing one with the new one.

Renaming designs in folders

Duplicate designs, designs with misleading names, and designs with misspelled names can be quickly renamed without opening them.

To rename a design in a database or folder

1 Open BERNINA Portfolio. See Opening BERNINA Portfolio and viewing designs for details.

2 Ensure that the design you select is not currently open in BERNINA Embroidery Software.

3 Right-click and select **Rename** from the popup menu.

Rename selected design
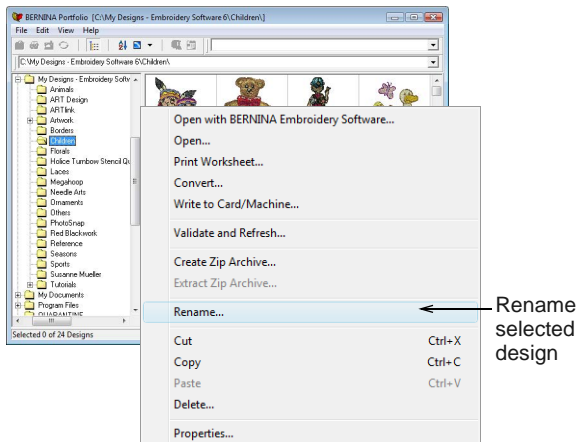
4 The **Rename Design** dialog opens.

Enter new design name
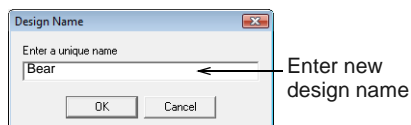
5 Enter the new name and click **OK**.

The original design name is overwritten.

Deleting designs

Delete designs to remove them permanently from your PC.

To delete designs from BERNINA Portfolio

1 Open BERNINA Portfolio. See Opening BERNINA Portfolio for details.

2 Select any number of designs. See Selecting designs in folders for details.

3 Select **Edit > Delete** or right-click and select **Delete** from the popup menu.

A confirmation dialog opens.

4 Click **Yes** to delete the design.

⚠️ **Caution** The file is removed permanently from the folder.

PART IX

QUICK REFERENCE

BERNINA EMBROIDERY SOFTWARE QUICK REFERENCE

BERNINA Embroidery Software integrates with CorelDRAW® Essentials 4 into a single application. The application has one workspace or 'Design Window' but you interact with it in separate operating modes: **Art Canvas** and **Embroidery Canvas**. A third mode is available for multi-hooping large designs. This Quick Reference Guide details all menu options and toolbars available in **Embroidery Canvas** mode. Not all options described here are relevant to all product levels. See also Product Feature List.

Embroidery Canvas Design Window

Digitize and edit embroidery designs. Show embroidery shapes as well as graphics. View designs realistically in simulated 3D.

The screen image below displays an exploded view of **all** toolbars in the BERNINA DesignerPlus **Embroidery Canvas** Design Window.
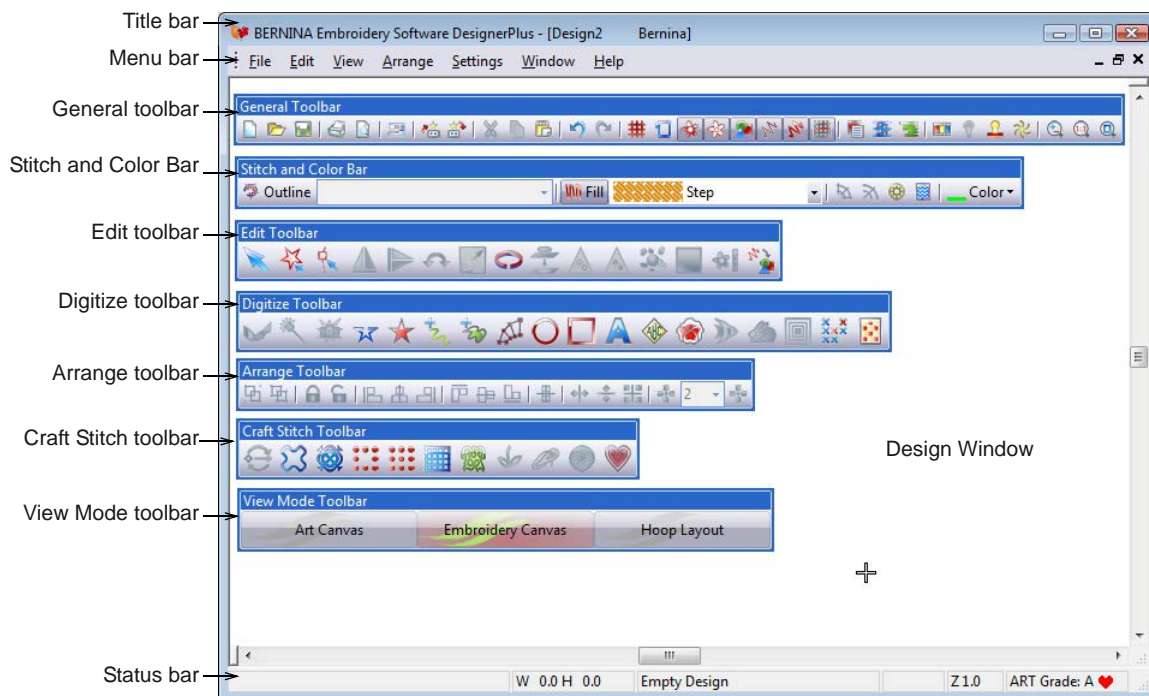
Art Canvas

Load, edit and save graphics as a back-drops for embroidery digitizing. Includes entire suite of CorelDRAW® Essentials 4 drawing tools. In addition, provides capabilities to convert vectors and vector text directly to embroidery objects.

Below is a screen image of the **Art Canvas** workspace. This replaces the old 'Picture Mode' and includes the entire suite of CorelDRAW® drawing tools

which offer many sophisticated techniques for drafting outlines and shapes onscreen.
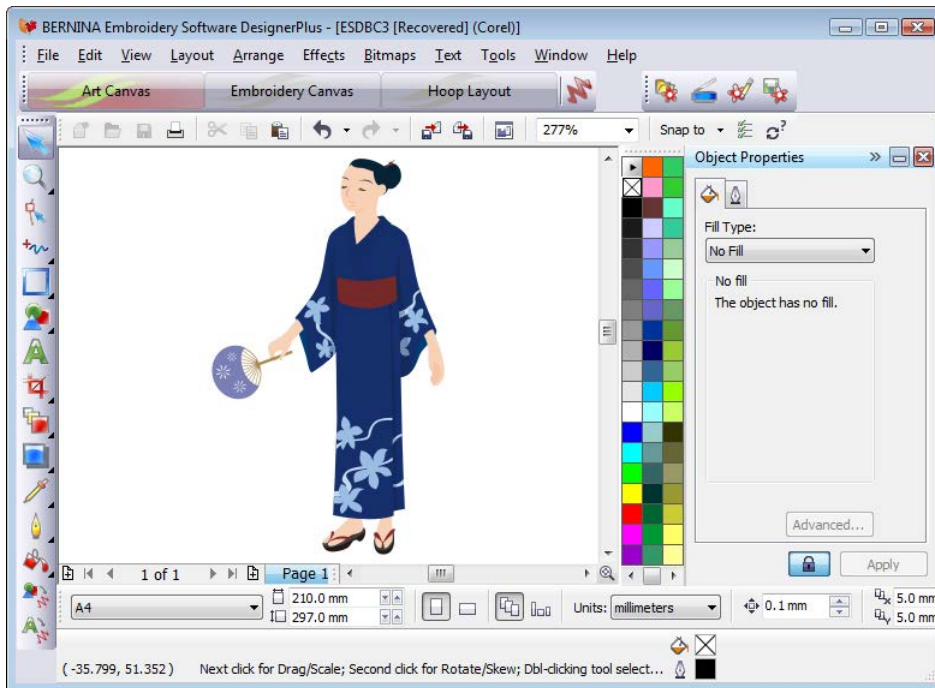
In addition to the CorelDRAW® Essentials 4 toolset, **Art Canvas** provides capabilities to convert vectors and vector text directly to embroidery objects. Vector graphics or text created or imported into the **Art Canvas** can be converted directly to embroidery designs. You can use **Art Canvas** to insert or paste third-party vector graphics such as clipart for use in embroidery designs. Alternatively, insert, paste or scan bitmap artwork for use as digitizing templates or 'backdrops'.

Note For a full description of the CorelDRAW® tools, refer to the electronic User Guide available via the Windows **Start > Programs** group. Alternatively, use the onscreen help available from the **Graphics** mode **Help** menu.

Hoop Layout

	View and edit multi-hoopings. If embroidery is too large or contains multiple designs spaced around an article, split into multiple hoopings.

Below is a screen image of the **Hoop Layout** workspace, previously known as **Multi-Hooping View**. If your embroidery is too large or contains a number of designs spaced around an article, you can split it into multiple hoopings. **Hoop Layout** allows

you to set up the position and sequence of each hoop.
See Hooping large designs for details.
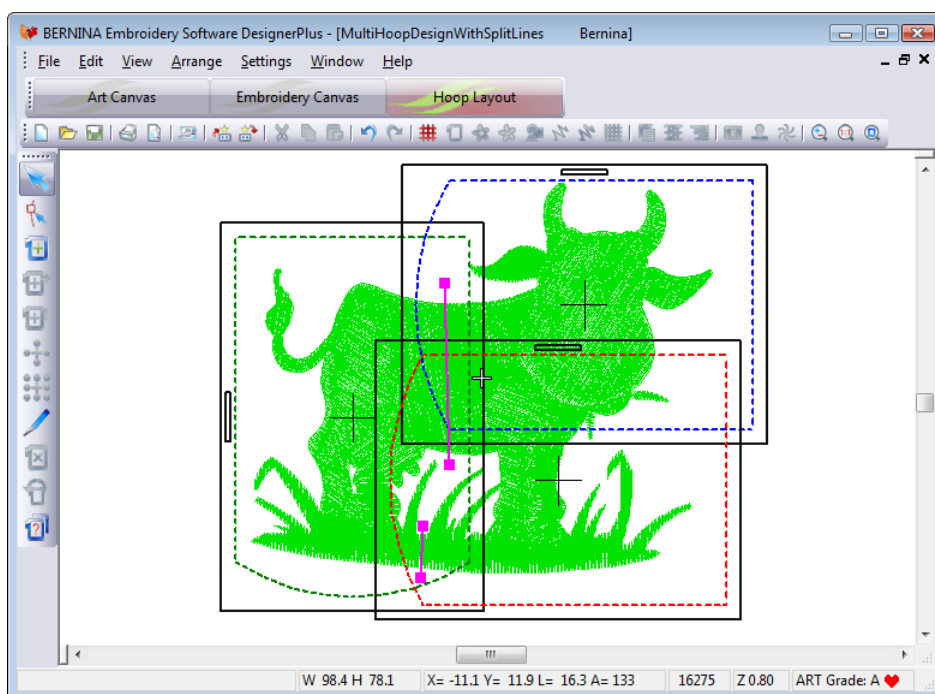
Embroidery Canvas menu bar

The **Embroidery Canvas** menu bar contains the
pulldown menus described below. Not all commands
are relevant to all product levels. Some are also
available as toolbar buttons.

Note Standard MS Windows® **Alt** key shortcuts
apply. Use the **Alt** key with the letter underlined in the
menu. To cancel an operation, press **Esc** twice.

File menu

New	Open new empty design.
Open	Open design.
Close	Close current Design Window.
Portfolio	Start BERNINA Portfolio and select design.
Cross Stitch	Start cross stitch program.
Quilter	Start Quilter program.
Insert Design	Insert existing design.
Save	Save current design.
Save As	Save current design with a different name, location or format.
Save Design As Image	Save design images in Stitch View or Artistic View. The resulting image is exactly as it appears in the Design Window.

Design Proper-ties	Show information about a design such as size or number of stitches, and add comments about design for printing on worksheet.
Print	Print design.
Print Preview	Show design worksheet. Print work-sheet from this window.
Card / Machine Read	Read (open) design from BERNINA Embroidery Software Design Card or BERNINA embroidery machine.
Card / Machine Write	Write (save) design to BERNINA Embroidery Software Design Card or BERNINA embroidery machine.
Write to Magic Box	Write (save) design to Design Card in Magic Box.
Read from Magic Box	Read (open) design from Design Card in Magic Box.
Recent File List	List most recently used files. Select to open a file.
Exit	Close all open designs and exit BERNINA Embroidery Software program.

Edit menu

Undo	Cancel last command.
Redo	Re-apply cancelled commands.

Cut	Deletes selection and places it on clipboard.
Copy	Copy selection to clipboard.
Paste	Paste contents of clipboard to Design Window.
Duplicate	Duplicate selection and place it on current selection.
Delete	Delete selection without placing it on clipboard.
Select All	Select all objects in design.
Deselect All	Deselect all selected objects in design.
Stitch Edit	Move insert point to selected point in design.
Smooth Curves	Apply curve 'smoothing' to embroidery objects. Selecting it opens the Smooth Curves dialog.
Lettering	Change lettering settings.
Elastic Lettering	Apply special effects to lettering objects to make them bulge or arch, stretch or compress.
Monogramming	Create personalized monograms with a selection of pre-defined monogramming styles, border shapes and ornaments.
Touch Up Picture	Open a third-party paint program to edit a selected bitmap graphic.
Crop Image	Crop a bitmap graphic for use with PhotoSnap.

View menu

By Color	Show only selected colors in design.
Needle Points	Show/hide needle points.
Picture	Show/hide background picture.
Artistic View	Toggle artistic view on/off.
Overview Window	Show/hide design thumbnails.
Show 1:1	Show design at actual size.
Show All	Show whole design.
Center Current Stitch	Center currently selected stitch in Design Window. Shortcuts C and F6 also available.
Previous View	Return to previous view. Shortcuts V and F5 also available.
Zoom Out 2X	Display design at 50% of current view. Shortcuts Shift+Z and F10 also available.
Zoom In 2X	Display design at 200% of current view. Shortcut Z also available.

Zoom	Zoom in and out of the Design Window and zoom in on bounded areas to full window size. Shortcut F8 also available.
Zoom Factor	Display design to scale as percentage of actual size. Shortcuts F and F3 also available.
Redraw	Redraw design.
Slow Redraw	Redraw design slowly to show stitching sequence.
Hoop	Show/hide hoop and set hoop size and position.
Grid	Show/hide grid and set grid size and spacing.
Measure	Measure design size.

Arrange menu

Start and End	Set start and end points in design.
Stitch Sequence	Automatically arrange the stitch sequence to minimize hoopings, color changes and trims.
Sequence as Selected	Set stitching sequence for selected objects in order of selection.
Sequence to Start	Place selected object at start of stitching sequence.
Sequence to End	Place selected object at end of stitching sequence.
Sequence by Color	Set stitching sequence of objects in selected color order.
Color Film	Open Color Film dialog.
Mirror Horizontal	Mirror selected object/s horizontally about center.
Mirror Vertical	Mirror selected object/s vertically about center.
Group	Group selected objects into one object.
Ungroup	Separate grouped object into component objects.
Break Apart	Split monograms, appliqués, lettering, and Blackwork runs into component objects.
Lock / Unlock All	Lock and unlock objects to protect them during digitizing or editing. Shortcut keys K and Shift+K also available.
Remove Overlaps	Remove underlying layers of stitching in overlapping objects.
Add Holes	Remove stitching from shape (leaving hole).
Fill Holes	Fill holes in single objects.

Add Button-hole	Add buttonhole to design.
Pattern Stamp	Place single patterns in the design.
Close Object	Close any open object with the option of using straight or curved points.

Settings menu

Thread Colors	Assign thread colors for use in design.
Fabric Settings	Adjust fabric types and settings.
Fabric Display	Select background fabrics and colors.
Object Properties	Adjust properties for selected shapes.
Options	Adjust settings for display window.
Security	Enter codes when upgrading or adding optional features.
Display Setup	Calibrate screen.
Scanner Setup	Set scanner options.
Create Pattern	Create and name patterns.
Create Border	Create and name borders.

Window menu

Cascade	Display any open windows in a 'cascaded' or stair-stepped fashion.
Tile Horizontally	Display any open windows in a horizontally 'tiled' (non-overlapping) fashion.
Tile Vertically	Display any open windows in a vertically 'tiled' (non-overlapping) fashion.
(Title of Open Window)	Choose from a list of open windows titles in the order in which they are stacked.

Help menu

Help Topics	List onscreen help topics.
Onscreen Manual	Onscreen documentation in Adobe Acrobat PDF format.
Quick Start Guide	Note: depending on your product level, documentation components may vary.
Release Notes	
About	Show BERNINA Embroidery Software version information.
Show Design Warning	Displays a warning when opening a design that should not be scaled.

BERNINA® International Home Page	Open BERNINA® International web site.
BERNINA® of America Home Page	Open BERNINA® of America web site.
Embroidery Online	Open Embroidery Online web site.
Access Code Order Form	Open Access Code online order form.
Purchase Upgrade on the Internet	Purchase software upgrades directly from the internet.
Install Upgrade	Downloads access codes to your dongle after email notification of successfully processed online upgrade purchase.

Viewing modes

There are three **View Mode** buttons in BERNINA Embroidery Software. The different modes display different toolbars.
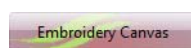
	Load, edit and save graphics as a backdrops for embroidery digitizing. Includes entire suite of CorelDRAW® Essentials 4 drawing tools. In addition, provides capabilities to convert vectors and vector text directly to embroidery objects.
	Digitize and edit embroidery designs. Show embroidery shapes as well as graphics. View designs realistically in simulated 3D.
	View and edit multi-hoopings. If embroidery is too large or contains multiple designs spaced around an article, split into multiple hoopings.
	In Art Canvas mode, the View Mode toolbar includes the Show Embroidery button.

BERNINA Embroidery Software window toolbars

The Design Window contains the toolbars described below. Not all tools are relevant to all levels of product. Some are shortcuts to the pulldown menu commands.

General toolbar

This toolbar is available in **Embroidery Canvas** mode.

	New	Same as File > New.
	Open	Same as File > Open.
	Save	Same as File > Save.
	Print	Prints design using current print settings.
	Print Preview	Same as File > Print Preview.
	Write to Machine	Same as File > Card / Machine Write.
	Read from Magic Box	Read designs from design cards using Magic Box.
	Write to Magic Box	Save designs to design cards using Magic Box.
	Cut	Same as Edit > Cut.
	Copy	Same as Edit > Copy.
	Paste	Same as Edit > Paste.
	Undo	Same as Edit > Undo.
	Redo	Same as Edit > Redo.
	Show Grid	Same as View > Grid.
	Show Hoop	Same as View > Hoop.
	Show Pictures	Same as View > Picture.
	Dim Artwork	Dim backdrops to show stitches more clearly when digitizing.
	Show Vectors	Toggle on/off display of vector graphics.
	Show Stitches	Toggle stitch view on/off.
	Show Artistic View	Toggle artistic view on/off.
	Show Appliqué Fabric	Toggle appliqué fabrics/colors on/off.
	Object Properties	Same as Settings > Object Properties.
	Auto Underlay	Add automatic underlay.
	Textured Edge	Add textured edge to object.
	Color Film	Same as Arrange > Color Film.

	Carving Stamp	Define a pattern of needle penetrations using a 'carving stamp' as a template.
	Morphing Effect	Create transformed object outlines and stitches.
	Zoom Box	Same as View > Zoom Box.
	Show 1:1	Same as View > Show 1:1.
	Show All	Same as View > Show All.

Image toolbar

This toolbar is available in **Art Canvas** mode.

	Load Picture	Load graphics – bitmap and vector – into BERNINA Embroidery Software for use as a digitizing backdrop or other.
	Scan Picture	Scan images into BERNINA Embroidery Software.
	Touch Picture	Touch up bitmap images in Corel PHOTO-PAINT® Essentials 4.
	Save Picture	Save backdrop as graphics file – bitmap or vector.

Art toolbox

This toolbar is available in **Art Canvas** mode.

	Convert Vectors to Embroidery	Convert selected vectors to fill or outline stitches.
	Convert Text to Embroidery	Convert text objects to Satin embroidery lettering with turning stitching.

Note For a full description of the CorelDRAW® Essentials 4 tools, refer to the electronic User Guide available via the Windows **Start > Programs** group. Alternatively, use the onscreen help available from the **Graphics** mode **Help** menu.

Edit toolbar

This toolbar is available in **Embroidery Canvas** mode.

	Select Object	Select embroidery object for sizing, moving, mirroring or rotating.
	Polygon Select	Select irregular areas or shapes.

	Reshape Object	Reshape selected embroidery and lettering objects.
	Mirror Horizontal	Same as Arrange > Mirror Horizontal.
	Mirror Vertical	Same as Arrange > Mirror Vertical.
	Rotate CCW / CW by 45°	Rotate selected objects in 45° increments. Click to rotate counter clockwise. Right-click to rotate clockwise.
	Scale by 20% Down / Up	Scale selected object in 20% increments. Click to reduce object/s. Right-click to increase object/s.
	Double Run	Repeat stitches in selected objects.
	Remove Overlaps	Same as Arrange > Remove Overlaps.
	Add Holes	Same as Arrange > Add Holes.
	Fill Holes	Same as Arrange > Fill Holes.
	Break Apart	Same as Arrange > Break Apart.
	Color Blending	Digitize blended objects.
	Image Preparation	Prepare bitmap artwork for automatic digitizing.
	Convert Selected Embroidery to Art Vectors	Convert selected embroidery objects to vectors.

Digitize toolbar

This toolbar is available in **Embroidery Canvas** mode.

	Auto Digitizer	Digitize prepared bitmap images automatically.
	Magic Wand	Digitize single shape in design.
	PhotoSnap	Turn grayscale or color photograph into embroidery.
	Open Object	Draw and digitize open shapes.
	Closed Object	Draw and digitize closed shapes.
	Free Hand Embroidery - Open Object	Draw embroidery outlines directly onscreen and view a stitch simulation as you draw.
	Free Hand Embroidery - Closed Object	Draw freehand filled embroidery objects onscreen.

	Block Digitizing	Digitize columns with turning stitches.
	Circle / Oval	Draw and digitize ovals or circles.
	Rectangle	Draw and digitize rectangles or squares.
	Lettering / Fill Values	Create lettering and change lettering properties.
	Monogramming	Create personalized monograms using a selection of pre-defined styles, border shapes and ornaments.
	Auto Appliqué	Digitize closed-object appliqué.
	Partial Appliqué	Create appliqué objects with partial cover stitching.
	Advanced Appliqué	Generate open-object appliqué from one or more source objects.
	Outline Design	Stitch around groups of objects with Single, Triple or Satin Line.
	Cross Stitch	Same as File > Cross Stitch.
	Quilter	Same as File > Quilter.
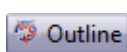
Craft Stitch toolbar

This toolbar is available in **Embroidery Canvas** mode.

	Blackwork Run	Automatically sequence selected embroidery objects.
	Blackwork Border	Digitize blackstitch borders.
	Blackwork Fill	Digitize fill blackwork designs.
	Candlewicking Border	Digitize candlewick borders.
	Candlewicking Fill	Digitize special candlewick effects.
	Lacework	Digitize special lacey effects.
	Stipple Run	Digitize special stippled effects.
	Backstitch	Digitize backstitch borders.
	Stemstitch	Digitize stemstitch borders.
	Sculptured Fancy	Create turning tiled patterns.
	Ripple	Create spiral stitching from the center of any filled object.
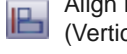
Stitch and Color Bar
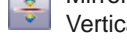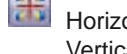
This toolbar is available in **Embroidery Canvas** mode.

Outline	Outline	Select outline stitch for new and selected objects.
Single		Show outline stitch types for selection.
Fill	Fill	Select fill stitch for new and selected objects.
Stipple		Show fill stitch types for selection.
	Stitch Angles / Values	Add stitch angles to closed objects with or without holes.
	Remove Stitch Angles	Remove stitch angles from closed objects with turning stitches.
	Star Fill	Generate radial turning stitching in several stitch types such as Satin and Tatami stitch.
	Wave Fill	Contour fill stitches along a digitized guideline maintaining uniform density and needle penetration patterns.
Color	Color list	List available thread colors.

Arrange toolbar
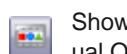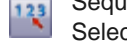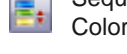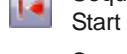
This toolbar is available in **Embroidery Canvas** mode.

	Group	Same as Arrange > Group.
	Ungroup	Same as Arrange > Ungroup.
	Lock	Lock selected object/s into position for protection.
	Unlock	Unlock selected locked object/s to remove protection.
	Align Left (Vertical)	Left-align selected objects.
	Align Centers (Vertical)	Vertically align centers of selected objects.
	Align Right (Vertical)	Right-align selected objects.
	Align Top (Horizontal)	Aligns top of selected objects.
	Align Centers (Horizontal)	Horizontally align centers of selected objects.

	Align Bottom (Horizontal)	Align bottoms of selected objects.
	Align Centers	Align centers of selected objects to design center.
	Space Horizontally	Evenly distributes three or more selected objects horizontally.
	Space Vertically	Evenly distributes three or more selected objects vertically.
	Mirror- Merge Horizontal	Mirror-merge horizontally.
	Mirror- Merge Vertical	Mirror-merge vertically.
	Mirror- Merge Horizontal & Vertical	Mirror-merge horizontally & vertically.
	Wreath	Duplicate objects around a central point.
	Kaleidoscope	Mirror objects around a central axis.
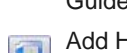
Color Film

This toolbar is available in **Embroidery Canvas** mode.

	Show Individual Objects	View individual objects in order of stitching sequence. Drag and drop object icons to resequence.
	Sequence As Selected	Resequence selected objects.
	Sequence By Color	Resequence objects by color.
	Sequence to Start	Place selected object at start of stitching sequence.
	Sequence to End	Place selected object at end of stitching sequence.

Multi-Hooping toolbar

This toolbar is available in **Hoop Layout** mode.

	Selection On	Select hoops in the Design Window.
	Reshape Splitting Guide	Reshape split lines in the Design Window.
	Add Hoop	Center a new hoop in the Design Window in an upright orientation.
	Add Hoop Right	Place a new hoop directly to the right of a selected hoop with a 10 mm overlap between sewing fields.

	Add Hoop Up	Place a new hoop directly above a selected hoop.
	Add Four Adjacent Hoops	Automatically add four hoopings around a selected hoop's perimeter.
	Add Eight Adjacent Hoops	Automatically add eight hoopings around a selected hoop's perimeter.
	Splitting Guide	Digitize one or more split lines in a multi-hooped design prior to outputting to file, machine or memory card.
	Delete Hoop	Remove selected hoops from the Design Window.
	Rotate Hoop Left / Right	Click left or right mouse buttons to rotate selected hoop 45° in either direction.
	Calculate Hoopings	Evaluate hoopings that will result from current hoop layout.

BERNINA Portfolio Quick Reference Guide

This Quick Reference Guide describes all menu options and toolbars available in BERNINA Portfolio.

BERNINA Portfolio Display Window

Change Design View

Menu bar
Toolbar
Folders
Design thumbnails contained in selected folder
Split bar
Status bar
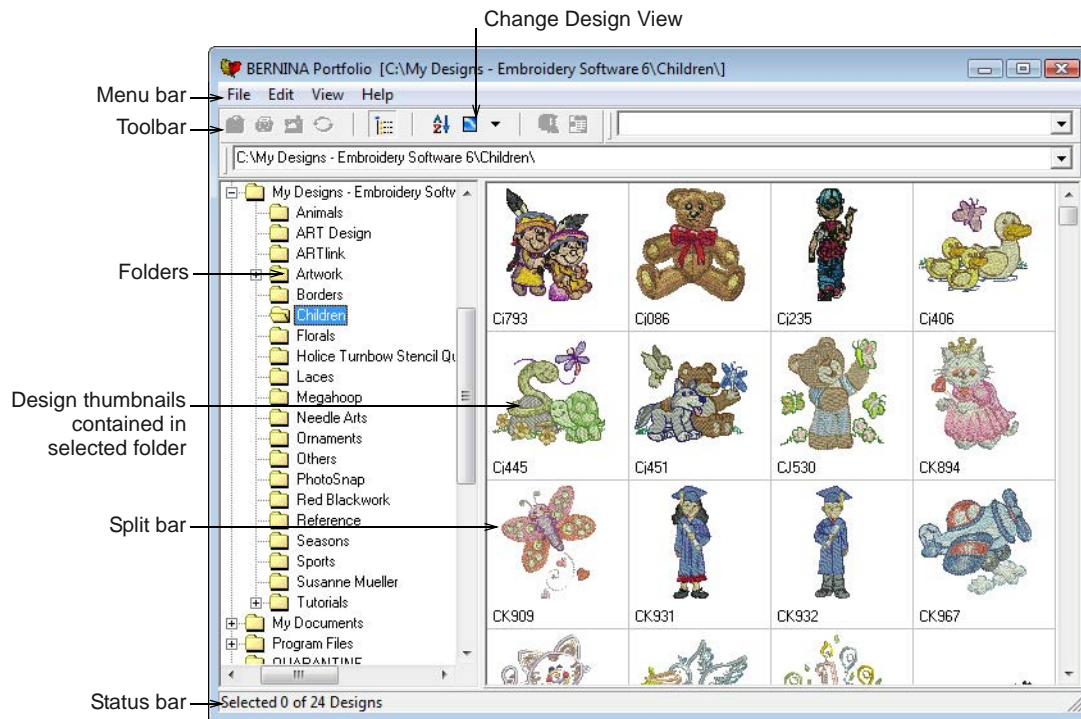
Portfolio menu bar

The Portfolio display window menu bar contains the pulldown menus described below. Some commands are reproduced as toolbar buttons. Underlined letters in a menu item allow you to select it without using the mouse, by first pressing the **Alt** key and then the underlined letter. To cancel the operation, press **Esc** twice.

File menu

New	Open new template in BERNINA Embroidery Software.
Open with BERNINA Embroidery Software	Open design with BERNINA Embroidery Software.
Open	Open design in BERNINA Embroidery Software or pictures in graphic programs.
Print Catalog	Print designs as thumbnails with or without descriptions.

HTML Catalog	Output design catalog as HTML file suitable for publishing on the Web.
Export Design List	Output design information as text file suitable for import to database or spreadsheet.
Create Zip Archive	Output design information as zipped file suitable for emailing or storing on disk.
Extract Zip Archive	Open design information as zipped file from for email or storage on disk.
Print Worksheet	Print selected designs.
Write to Card/ Machine	Write selected designs to Bernina design card.
Convert	Convert designs to selected formats.
Properties	Open Properties dialog of the selected design.
Exit	Close all open designs and exit Portfolio program.

Edit menu

Cut	Delete selected files and place on clipboard.
Copy	Copy selected files to clipboard.
Paste	Paste contents of clipboard to a folder.
Delete	Delete selected files without placing on clipboard.
Select All	Select all designs in folder.
Deselect All	Deselect all designs in folder.

View menu

Design Thumbnails	Show files in folder as thumbnails.
Design Thumbnails and Summary	Show thumbnails and summaries of files in folder.
Design List	Show file details such as design name, file size, file type and date.
Sort	Select method to sort designs.
Sort by Design Name	Sort designs by name. *
Sort by File Type	Sort designs by file type. *
Sort by File Size	Sort designs by file size. *
Sort by Last Changed	Sort designs by creation date. *
Refresh	Update design file display.
Refresh Folder	Update folder display.
Validate and Refresh	Validate and refresh folders.
Browse Location	Select folders from folder tree.
Folders	Toggle folder tree on/off.
Change Locale	Switch to other installed languages.
User Preferences	Adjust default settings.
Customize Columns	Customize design lists.

* Repeat to switch between ascending and descending order.

Portfolio General toolbar

The BERNINA Portfolio window contains only one toolbar described below. Some buttons are shortcuts to the pulldown menu commands.

General toolbar

	Open	Same as File > Open
	Print Selected Designs	Same as File > Print
	Stitch Selected Designs	Same as File > Write to Card/Machine
	Convert Selected Designs	Same as File > Convert
	Hide/Show Folders	Same as View > Folder
	Sort	Same as View > Sort
	Change Design View	Change design views (thumbnail, thumbnail and summary, and design list)
	WinZip	Same as File > Create Zip Archive
	Design Properties	Same as File > Properties

Keyboard Shortcuts

- -

You select commands in BERNINA Embroidery Software in the same way as other MS Windows® applications – from menus or toolbars. Keyboard shortcuts are also available for the most frequently used commands.

General functions

To	Press
Cancel command	[Esc]
Exit the program	[Alt] + [F4]
Open existing design	[Ctrl] + [O]
Print design	[Ctrl] + [P]
Redo command	[Ctrl] + [Y]
Save design	[Ctrl] + [S]
Start new design	[Ctrl] + [N]
Undo command	[Ctrl] + [Z]

Select objects

To	Press
Activate Select Object tool	[O]
Add next object to selection	[Ctrl] + [Tab]
Add previous object to selection	[Ctrl] + [Shift] + [Tab]
Deselect all objects	[Esc] or [X]
Select a range of objects	[Shift] + 🖱
Select all objects	[Ctrl] + [A]
Select multiple objects	[Ctrl] + 🖱
Select next object	[Tab]
Select object underneath	[2] + 🖱
Select previous object	[Shift] + [Tab]

View designs

To	Press	Or
Center current stitch	[C]	[F6]
Measure	[M]	
Redraw the screen	[R]	[F4]
Return to previous view	[V]	[F5]
Show needle points	[.] (period or full stop)	
Show outlines (BERNINA Quilter only)	[Shift] + [L]	
Show previous view	[V]	[F5]
Show selected objects only	[Shift] + [S]	
Show whole design	[0] (zero)	[F2]

To	Press	Or
Show/hide connectors	[Shift] + [C]	
Show/hide picture	[D]	
Show/hide vectors	[Shift] + [D]	
Specify zoom factor	[F]	[F3]
Turn on/off Artistic View	[T]	
Zoom (box)	[B] then 🖱	[F8]
Zoom factor	[F]	[F3]
Zoom in 2x	[Z]	
Zoom out 2x	[Shift] + [Z]	[F10]
Zoom to 1:1 scale (100%)	[1]	

View stitching sequence

To travel	Press	
	Keyb'rd	Keypad*
1 segment backward	[Ctrl] + [←]	
1 segment forward	[Ctrl] + [→]	
1 stitch backward	† [←]	[4]
1 stitch forward	† [→]	[6]
10 stitches backward	† [↑]	[8]
10 stitches forward	† [↓]	[2]
100 stitches backward		[-]
100 stitches forward		[+]
Activate Slow Redraw	[Shift] + [R]	
To next color	[PageDown]	[9]
To next object	[Ctrl] + [T]	
To next selected object	[Tab]	
To previous color	[Page Up]	[3]
To previous object	[Shift] + [T]	
To previous selected object	[Shift] + [Tab]	
To the end of a design	[End]	[1]
To the start of a design	[Home]	[7]

* Num Lock OFF † Select Object tool OFF

Digitizing & lettering

To	Press
Activate Double Run	[Shift] + [B]
Delete the last input point	* [←Bksp]
Finish digitizing an object	* [Enter ↵] or [Spacebar]
Turn underlay on/off	[U]

* BERNINA DesignerPlus only

To	Press
Display the lettering dialog	[A]
* BERNINA DesignerPlus only	

Manipulate objects and stitches

To	Press or click
Nudge selected designs	[↑] [↓] [←] [→]
Move an object horizontally or verti-cally	🖱+[Ctrl] Drag the object
Maintain an object's proportions while resizing	† [Shift]+🖱 Drag corner handle
Reshape selected object	[H]
Change reshape node type	🖱+[Space] Select reshape node and press spacebar
Group selected objects	[Ctrl]+[G]
Ungroup selected objects	[Ctrl]+[U]
Regroup ungrouped objects	* [Ctrl]+[R]
Lock selected objects	[K]
Unlock selected objects	[Shift]+[K]
Bring object to front	* [Shift]+[Page Up]
Bring object forward	* [Page Up]
Send object to back	* [Shift]+[PageDown]
Send object backward	* [PageDown]
Activate Stitch edit	[E]
† Use Alt+Drag with BERNINA Quilter * BERNINA Quilter only	

Cut & paste objects

To	Press
Cut object	[Ctrl]+[X]
Copy object	[Ctrl]+[C]
Paste object	[Ctrl]+[V]
Duplicate object	[Ctrl]+[D]
Clone object	🖱+🖱
Reinforce an outline	[Ctrl]+[B]
Delete selected object(s) or the last object	[Delete]

PART X
PRODUCT FEATURE LIST

BERNINA Embroidery Software Product Feature List

Capability	Feature Name	EditorPlus	DesignerPlus	Relevant topic in Onscreen Manual
View designs				Viewing Designs
View designs in Art Canvas mode	Art Canvas	⚚	⚚	Art Canvas mode
View designs in Embroidery Canvas mode	Embroidery Canvas	⚚	⚚	Embroidery Canvas mode
View designs in Hoop Layout mode	Hoop Layout		⚚	Hoop Layout mode
Working with hoops				Hooping Designs
Create multi-hooped designs	Hoop Layout		⚚	Creating multi-hoop designs
Split objects between hoopings	Splitting Guide		⚚	Splitting objects between hoopings
System setup				Hardware & Software Setup
Set automatic scrolling		⚚	⚚	Setting auto scroll options
Thread colors and thread charts				Thread Colors & Charts
Change colors in entire design		⚚	⚚	Changing entire design colors
Digitizing with backdrops				Digitizing with Backdrops
Scan bitmap images		⚚	⚚	Scanning artwork
Load bitmap and vector pictures		⚚	⚚	Loading pictures
Edit images in a graphics application	Touch Up Picture	⚚	⚚	Editing images in graphics applications
Prepare non-outlined images	Image Preparation	⚚	⚚	Preparing non-outlined images
Prepare outlined images	Outlined Image Preparation	⚚	⚚	Preparing outlined images
Automatic digitizing				Automatic Digitizing
Convert vectors to embroidery	Convert to Embroidery	⚚	⚚	Converting vectors to embroidery
Convert embroidery to vectors	Convert Selected Embroidery to Art Vectors		⚚	Converting embroidery to vectors
Create automatic outlines and borders	Auto Digitizer	⚚	⚚	Creating automatic outlines and borders
Combining and sequencing objects				Combining & Sequencing Objects
Manipulate color blocks and objects	Color Film	⚚	⚚	Sequencing objects with Color Film
Reshaping and editing objects				Reshaping & Editing Objects
Adjust stitch angles		⚚	⚚	Adjusting stitch angles
Specialized digitizing techniques				Specialized Digitizing Techniques
Create freehand embroidery	Freehand Draw Embroidery		⚚	Creating freehand embroidery
Create outlines and borders	Outline Design		⚚	Creating outlines and borders

● Included as standard   ⚚ New/improved feature/option

Capability	Feature Name	EditorPlus	DesignerPlus	Relevant topic in Onscreen Manual
Artistic stitch effects				Artistic Stitch Effects
Create contour fills	Contour		⅄	Creating contour fills
Create cross stitch fills	Cross Stitch		⅄	Creating cross stitch fills
Creating star fills	Star Fill		⅄	Creating star fill effects
Pattern runs and fills				Patterned Stamps, Runs & Fills
Create stitch patterns with carving stamps	Carving Stamp		⅄	Creating stitch patterns with carving stamps
Craft stitch borders and fills				Craft Stitch Borders and Fills
Create ripple fills	Ripple		⅄	Creating ripple fills
Create stippling fills	Stipple		⅄	Creating stippling fills
Embroidery lettering				Embroidery Lettering
Adjusting individual letters (reposition, transform, reshape)		●	⅄	Adjusting individual letters
Embroidery lettering – special				Embroidery Lettering
Convert text to embroidery			⅄	Converting text to embroidery
Monogramming				Monogramming
Create monogram lettering with initials	Monogramming	⅄	⅄	Creating monogram lettering with initials
Create monogram lettering with names		⅄	⅄	Creating monogram lettering with names
Design processing				Design Processing & Output
Print multi-hooped designs		⅄	⅄	Printing multi-hooped designs
Output multi-hooped designs			⅄	Outputting multi-hooped designs

● Included as standard   ⅄ New/improved feature/option

PART XI
APPENDICES, GLOSSARY & INDEX

APPENDIX A

TROUBLESHOOTING

This appendix provides help for solving problems in BERNINA Embroidery Software. It includes procedures for checking your system's requirements and settings, reverting to original values, and testing disks and connections. It also describes how to log errors, and lists causes for common error messages and problems.

Solving problems in BERNINA Embroidery Software

If you encounter a problem, refer to the following sources for help:

▸ BERNINA Embroidery Software Onscreen Manual – select **Help > Onscreen Manual** (or printed version)

▸ BERNINA Embroidery Software Online Help – select **Help > Help Topics**

▸ MS Windows® Online Help – select **Start > Help**

▸ MS Windows® manual

▸ Documentation supplied with your hardware.

Getting help

If you are unable to solve a problem, you should contact your dealer. Before seeking help, check that your PC meets the system requirements, and check the Security device messages and General problems sections in this chapter.

Reverting to factory settings

If you have made changes to the default settings in your software and you want to revert back to the factory settings, use the **Revert** utility.

To revert to factory settings

1 Exit BERNINA Embroidery Software.

2 On the MS Windows® Taskbar, click the **Start** button and select **Programs > BERNINA Embroidery Software > Revert**.

The **Revert to Factory Settings** dialog opens.
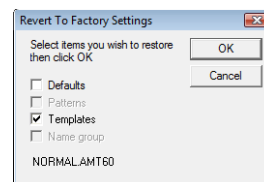
3 Select the items you want restored to factory defaults.

Note Reverting to the original settings removes any changes you have made to styles, templates and hardware settings. New styles, templates and hardware settings are unaffected as they are saved separately.

4 Click **OK**.

The selected items are restored to factory settings.

Note There is no confirmation message.

PC specifications

Check that your PC meets the system requirements. Check CPU/RAM as well as hard disk space. The table below provides minimum system requirements.

Item	Minimum Requirements
CPU	Single Core 1GHz or greater processor
Operating System	Windows XP® SP2 (Home or Professional)
Internet Connection	Optional: Internet connection for access to regular product information
Internet Browser	Internet Explorer 6.x
System Memory	1GB for running multiple applications
Hard Disk Size	30GB available before installation
Free Disk Space	2GB or more than 10% of the Hard Drive Size, whichever is greater
Data Drives	DVD-ROM drive for software installation
Graphics Card	Support for High Color (16 bit) and high resolution (1024 x 768)
Monitor	15" or larger for on-screen digitizing
USB Ports	Dedicated USB port for security device. Additional USB ports for Bernina Reader/Writer Box or direct machine connection.
Serial Ports	Additional serial port for artista Reader/Writer Serial Box connection (optional)
Scanner	MS Windows® XP compatible
Printer	MS Windows® XP compatible
Mouse	MS Windows® XP compatible
Sound cards	Not required

Checking CPU/RAM specifications

Check your CPU and RAM specifications, and the version of MS Windows® you are running to ensure they meet the BERNINA Embroidery Software requirements. See PC specifications for details.

To check CPU/RAM specifications

1 On the MS Windows® desktop, right-click the **My Computer** icon and select **Properties**.

The **System Properties > General** dialog opens.

2 Check the MS Windows® version, the CPU and the amount of RAM.

Checking your hard disk space

Check that your hard disk has enough space to run BERNINA Embroidery Software effectively. See PC specifications for details.

To check your hard disk space

1 Double-click the **My Computer** icon on your MS Windows® Desktop.

The **My Computer** window opens.

2 Right-click the hard-disk drive icon (usually C:) and select **Properties**.

The **Properties > General** dialog opens.

This tab shows the hard-disk capacity as well as any free space. This must be greater than 100 Mb or 10% of your total hard drive space, whichever is the greater amount.

Reconnecting BERNINA Portfolio to BERNINA Embroidery Software

Occasionally BERNINA Portfolio may fail to connect with BERNINA Embroidery Software. Follow the steps below to track down the problem.

To reconnect BERNINA Portfolio to BERNINA Embroidery Software

1 Check that your dongle security device is connected.

2 Close down BERNINA Embroidery Software, reopen it, then open BERNINA Portfolio.

3 If the problem persists, re-install BERNINA Embroidery Software.

Recovering from hardware or software failure

If your software crashes due to a hardware or software failure, recovery files are usually created. When you restart BERNINA Embroidery Software after such a failure, the design you were last working on is opened automatically or, if Auto Save was on, the backup file is retrieved. If a recovery file is opened, save the file to a new name with the ART extension.

Note Do **not** save to the **Backup** folder or it will be deleted.

Once your recovery file has been saved and re-named with the ART extension, delete the recovery files.

- -

To recover from hardware or software failure

1 Open MS Windows® Explorer.

2 Open the ..\Program Files\BERNINA\Embroidery Software 6 folder.

3 Open the **Backup** folder.
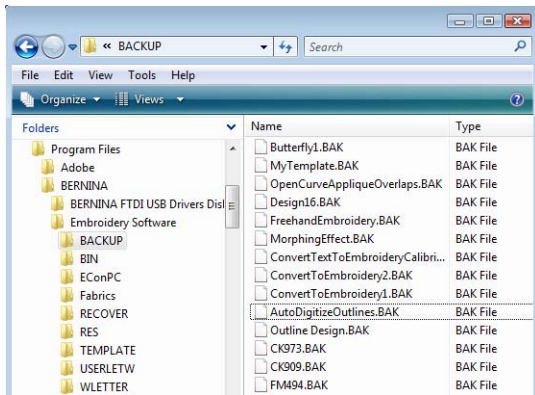
4 Select a BAK file and right-click.

5 Select **Rename** from the pop-up menu.

6 Change the BAK extension to ART.

7 Start BERNINA Embroidery Software.

8 Open the new file in BERNINA Embroidery Software.

9 **Save As** to a different location, not the **Backup** folder.

Unrecoverable errors

- -

Problem	The system fails and displays 'unrecoverable' error.
Cause	The design you tried to open is corrupt.
Suggestion	Delete any files in the C:..\Program Files\BERNINA\Embroidery Software 6\Recover folder using the Purge Recovery utility, or manually via MS Windows® Explorer, then restart BERNINA Embroidery Software. You can also delete files using MS Windows® Explorer. See Deleting files with Delete Recovery for details.

Deleting files with Delete Recovery

You can delete corrupt files using the **Delete Recovery** utility. **Delete Recovery** deletes files in the C:...\Program Files\BERNINA\Embroidery Software 6\Recover and C:...\Program Files\BERNINA\Embroidery Software 6\Backup folders. You should also periodically delete the backup files created by **Auto Save**.

Note Some files such as MLG and DMP files can build up over time and take up disk space. You can delete them manually from MS Windows® Explorer.

- -

To delete files with Delete Recovery

1 Exit BERNINA Embroidery Software.

BERNINA Embroidery Software must be closed before deleting recovery or backup files or it will NOT delete these files.

2 On the MS Windows® Taskbar, click the Start button, and select **Programs > BERNINA Embroidery Software > Delete Recovery Files**.

The **Purge Recover and Backup Directories** dialog opens.

3 Select **Delete Backup Files** if you want to delete back up files.
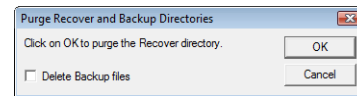
4 Click **OK**.

If some files cannot be deleted, a message will display. Delete these files from the C:...\Program Files\BERNINA\Embroidery Software 6\Recover and C:...\Program Files\BERNINA\Embroidery Software 6\Backup folders manually, from MS Windows® Explorer.

Tip If the errors persist, try reverting to factory settings. See Reverting to factory settings for details.

Security device messages

- -

This section describes the messages related to the security device. Most security device messages are caused by incorrect connection, access codes, interference or conflict from another hardware device on the PC.

To prevent security device errors, enter all access codes as soon as you receive them. If you skip any access codes, features may become unavailable, or BERNINA Embroidery Software may stop working altogether. See Installation Notes for details.

Invalid Access Code

Message	Invalid Access Code
Cause	• The access codes you are trying to enter are incorrect for your security device. • You are missing a set of codes.
Suggestion	Check the ID code on the access code sheet to see whether it matches the ID code in the Security Dialog. If they do not match, note your security device Serial Number and current ID code and contact your distributor.

Installing the dongle driver

If your system cannot locate the dongle connection, you may need to reinstall the dongle driver.

To install the dongle driver

1. From the MS Windows® Taskbar, click the **Start** button and select **Run**.

   The **Run** dialog opens.

2. In the **Open** field, enter:

   C:..\Program Files\BERNINA\Embroidery Software 6\BIN\haspdinst.exe -i -kp -av

3. Click **OK**.

   A message informs you that the dongle driver was installed successfully.

4. Restart your PC.

Invalid product

Message	Invalid product
Cause	The security device cannot be found, or is damaged.
Suggestion	Check the installation of the security device to ensure it is fitted correctly. Contact your distributor with your Dongle Serial Number.

Security Error

Message	Security Device Not Found (-3)
Cause	The hardware or security device is faulty, or the security device is not correctly plugged in.

Suggestion	Check the installation of the security device to ensure it is fitted correctly. Try using another port and restarting the software. If this does not work contact your distributor with your Dongle Serial Number.

General problems

The following section refers to general problems you may experience with your designs.

Design dimensions

Problem	Dimensions of design are incorrect.
Cause	If the design's dimensions are too large or too small, the system units of measurement may be set incorrectly. The units of measurement are set in MS Windows® Regional settings.
Suggestion	Change the units of measurement in MS Windows®. Select Start > Settings > Control Panel > Regional and Language Options.

Inconsistent output results

Problem	Problems when sending designs to embroidery machines for stitching. Inconsistent reading and writing.
Cause	Serial or USB communications problems. Inconsistent reading and writing may be caused by wrong port settings in the operating system. Other possible causes are that machine and software versions may not be compatible. In this case, contact your dealer.
Suggestion	Change the port settings.

Missing toolbar buttons

Problem	Buttons missing from toolbars or bottom of toolbars.
Cause	Screen resolution is set too low. Virus in computer.
Suggestion	Change the screen resolution to 800x600 or higher. Run your virus checker.

Resolving Exception Access Violation errors

The error message 'Exception Access Violation' can appear when zooming, using lettering, printing or scanning, saving designs, or viewing the Color Film. This problem generally relates to the display adapter driver and/or the display adapter itself. Try each of the following solutions in sequence.

Exception access violation at startup

Problem	An 'Exception Access Violation' error message appears when starting BERNINA Embroidery Software.
Cause	A corrupt design file in the RECOVER folder or a corrupt ..\Program Files\BERNINA\Embroidery Software 6\RES\defaults.dfl file.
Suggestion	Delete any files in the .....\Program Files\BERNINA\Embroidery Software 6\RECOVER folder. If BERNINA Embroidery Software still will not start, use MS Windows® Explorer to copy the default ...\BIN\defaults.dfl file to the ...\RES folder, overriding the corrupt defaults.dfl file. This will reset BERNINA Embroidery Software to 'new installation'.

Other exception setting violations

Problem	An 'Exception Access Violation' error message appears when zooming, using lettering, printing or scanning, saving designs, or viewing the Color Film.
Cause	This problem generally relates to the display adapter driver and/or the display adapter itself.
Suggestion	Try each of the listed solutions in sequence. See Check the display adapter for details. See also Resolving Exception Access Violation errors.

Check the display adapter

Use the System utility in the Control Panel to check your display adapter and drivers.

Use the following procedure to determine which display adapter make and model you have, and what drivers are installed for the display adapter.

To check the display adapter

1 From the MS Windows® **Start** menu, open the **Control Panel**.

Double-click System icon
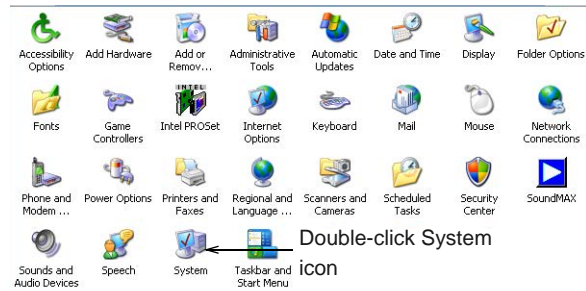
2 Double-click the **System** icon.

The **System Properties** dialog opens.

3 Select the **Device Manager** option.

The **Device Manager** dialog opens.

Note down display adapter
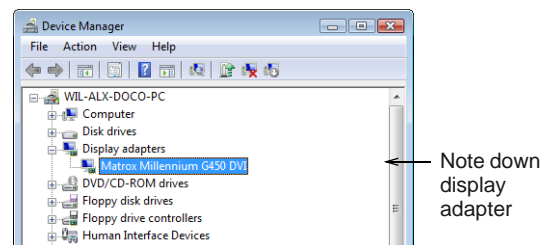
4 Click the **Display Adapters** node to open.

5 Note down the display adapter listed.

6 Right-click the adapter and select **Properties**.

Click to see the driver details
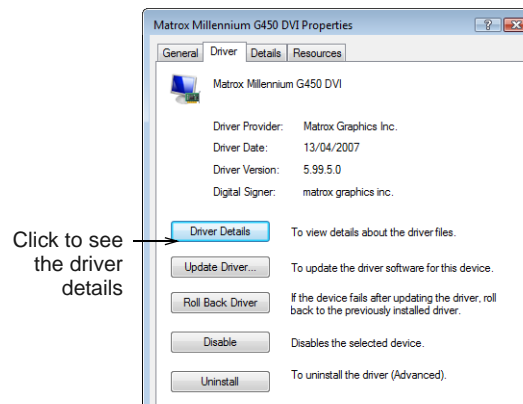
7 Select the **Driver** tab and note the date of the driver.

8 Click **Driver Details** option.

9 Note down **Provider** and **File Version** details.
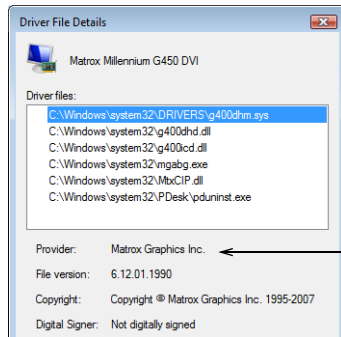
Note down provider and file version

10 Cancel out of the dialogs and close the Control Panel window.

11 Check the display adapter manufacturer's website for a more recent version of the driver. See Locate the latest display adapters for details.

Locate the latest display adapters

Some common problems are related to your PC's display adapter. These occur more frequently with on-board graphics chipsets. Check the display adapter manufacturer's website or a software driver download site for the latest display adapter driver. If there is a more recent driver available, download and install it. These are normally free from the provider. Some popular display adapter websites are:

▸ www.ati.com
▸ www.nvidia.com
▸ www.matrox.com
▸ www.diamondmm.com
▸ www.download.com
▸ www.intel.com
▸ www.helpdrivers.com
▸ www.neomagic.com
▸ www.oaktech.com
▸ www.s3graphics.com
▸ www.sis.com
▸ www.tridentmicro.com
▸ www.tucows.com
▸ www.windrivers.com

If your video card is integrated to your system board, please check the system board manufacturers website.

Reduce graphics acceleration

If you already have the latest driver installed, or if installing a newer driver does not solve the problem, you can reduce the MS Windows® graphics acceleration.

To reduce graphics acceleration

1 Access the **Hardware Acceleration** option in your system settings for Win 2000/XP:

▸ Right-click the Desktop and select **Properties**.
▸ Select the **Settings** tab and click **Advanced**.
▸ Select the **Troubleshoot** tab.
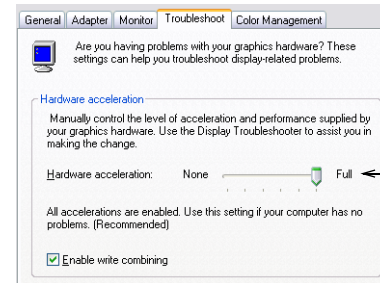
Reduce hardware acceleration

2 Reduce the hardware acceleration a 'notch'.

3 Click **OK**.

You will be prompted to restart your computer.

4 When MS Windows® has restarted, see how the software runs. If it has not improved, try dropping the acceleration another notch.

Usually you should not need to reduce the acceleration by more than two notches to correct the problem. However, in extreme cases, you may need to reduce it to 'None'.

Install a different model display adapter

In a very few cases updating the display adapter driver and/or reducing graphics acceleration will not solve the problem. The only solution is to install a different brand/model of display adapter. BERNINA International AG can advise on the type of display adapter to use. If you have another computer with a different display adapter, we recommended swapping the two. Often a 'problem' display adapter will work fine in another computer.

APPENDIX B
TIPS & TRICKS

This appendix provides tips and tricks for getting the most out of your BERNINA Embroidery Software in combination with your BERNINA embroidery machine. It includes tips for stabilizing designs, hooping, thread and needle recommendations, lettering and appliqué, stitch quality, design management, and many others.

Tips and tricks

▸ Add fabrics to appliqué designs created in the software.

▸ Add hoops to your software by specifying new sizes in Hoop options and saving them for later use.

▸ Adjust stitch width and spacing of blanket stitching on your appliqué designs.

▸ Remember to save while working. Start off with a 'Save As' as soon as you open a design so that you don't mistakenly save over the original.

▸ Always do a test sew-out on a similar fabric, stabilizer, and thread, before embroidering of your final design.

▸ Always print your design template using a hoop that includes the x-y axis. This provides reference points - start and center point – to verify the design position on the machine.

▸ Appliqué can be done as a trim-in-place or pre-cut.

▸ Ball Point needles should be used on knit fabrics. The slightly rounded needle tip will slip between the knit fibers and keep it from making runs or holes.

▸ Bernina artista machines and the 830 allow you to wind extra bobbins while embroidering.

▸ Click an object to select it, or hold down the #2 key while clicking to cycle through layered objects.

▸ Create advanced appliqués with the advanced open-object Advanced Appliqué function.

▸ Digitize reference lines to help position designs. Use lines saved with the template to position designs accurately on the project.

▸ Don't stretch fabric when placing in the hoop.

▸ Don't forget the underlay. Underlay attaches the fabric to the stabilizer to further stabilize the design. BERNINA Embroidery Software V6.0 automatically adds underlay to both automatically digitized and manually digitized designs.

▸ You can preset underlay settings before you digitize.

▸ Quickly send designs to your Bernina embroidery machines using File/Card Machine Write or the Write to Machine tool.

▸ For proper placement of a left chest design, lay your garment on a flat surface. Draw imaginary lines down from the top of the shoulder, then across through the middle of the sleeve. The center should be where the two lines intersect.

▸ Grade 'A' art files will retain their integrity when resizing and give more editing possibilities.

▸ If the start point is in the design center, select Arrange > Start and End to move it to the best reference point for perfect placement on the machine.

▸ If positioning manually, digitize a boundary line around the inside of the hoop. As the embroidery machine auto-centers, the boundary line will keep your arrangement in position. Simply skip the boundary line when stitching out.

▸ Press the (.) key to see all needle points in a design.

- It's easy to convert a Satin appliqué to a Blanket stitch.

- Large letters work better if the density is a little higher, whereas small letters work better at lower density.

- Lettering doesn't have to be Satin stitching. If it is to be stitched onto a gym bag or similar high-use item, consider changing the stitch type to, say, Tatami.

- Make sure the inner hoop is all the way into the outer one. The inner should be flat on the machine bed in order to form a proper stitch.

- Marking placement lines on your fabric or project is important. Make sure your project is always hooped straight.

- Once you have created your appliqué shape(s), the software will automatically create placement line, tack down, and cover stitching with color stops.

- Polyester embroidery thread is stronger than rayon thread and is colorfast, chlorine bleach resistant, UV resistant and will not take on other colors or bleed onto your project.

- Portfolio is a great tool for organizing designs in many formats.

- Portfolio allows you to view your designs several ways: design only, design with details, and list.

- Portfolio allows you to sort designs by name, size and date.

- Portfolio allows you to print a design catalog showing all designs on your computer.

- Portfolio allows you to zip and unzip designs.

- Portfolio allows you to batch convert your designs.

- You can send multiple designs from Portfolio to your embroidery machine.

- You can insert multiple designs directly from Portfolio.

- Print out the appliqué pattern when using the tools in artista for cutting appliqué fabric shapes.

- Scan pictures into the software and create decorative embroidery frames around them.

- Press the Escape key to deselect any current selection in the software.

- Slow Redraw simulates the actual design stitchout. With BERNINA Embroidery Software V6.0, you can set the stitch number to begin from.

- Stabilizing is the most important issue with embroidery. Your dealer has lots of information about choosing the right type of stabilizer for your embroidery projects.

- The Onscreen Manual has a list of shortcut keys to make using the software faster.

- The Blackwork Run tool makes outlining your design a snap. It automatically eliminates jump stitches by resequencing the stitching.

- BERNINA Embroidery Software V6.0 will automatically digitize TrueType fonts.

- The Partial Appliqué tool will remove overlapping appliqué stitches.

- The Polygon Select tool lets you easily select a portion of a design.

- The Remove Overlaps tool works to remove excess stitching under objects or lettering.

- The Stitch Resequence feature will give you the best sewing sequence, fewer color changes, and fewer hoopings.

- There are 30 Step Fill types.

- There are 55 fonts in EditorPlus and 70 fonts in DesignerPlus.

- There are several ways to get designs from computer to your machine: direct connection, via BERNINA USB stick, or using a Personal Design Card.

- To check if you have the right needle, pierce the fabric with the needle. It should go in easily and shouldn't leave a hole. A smaller rather than larger needle may be needed for denser designs.

- To keep your embroidery machine running smoothly, always keep it clean. Follow the manufacturer's instructions for cleaning and oiling. Take your machine in for service when needed. If you take care of it, it will take care of you.

- To place a design on the center front of a garment, use the sleeves as your guide. Fold the shirt down the middle to get the vertical placement, then use the center of the sleeves as your horizontal placement.

- To select a design color, select the color chip in the Color Film dialog. To view just that color, select View > By Color.

- Try a new colorway to perk up an old design. Do a design in a single color, or scale it back from many to only two or three colors. You'll get a totally different look. Use the new Color Wheel tool to test new colors. New thread colors will automatically be assigned to the design.

- Turn the hoop off when positioning multiple designs to avoid the distraction of watching it 'move' as you add to the composition. When satisfied with the design arrangement, turn the hoop on to verify that the design fits within the embroidery field.

▸ Undo is your friend – you can undo up to 256 times or to the last save.

▸ Use the 'hoop relocator' for easier threading on the embroidery machine.

▸ Use the Alignment tools to align selected objects to left, right, top, bottom, or center of the last object selected.

▸ Use the Multiple Spool Holder to ensure optimal threading of various brands of embroidery thread. The Multiple Spool Holder also allows you to view the colors you will use for the design.

▸ When using the Wreath tool, you can merge any overlapping objects, making the two objects into one.

▸ Use the Wreath tool with alphabets and numbers to create fun designs.

▸ When copying and pasting a design be sure to group it first. Check the Color Film for duplicate copies and eliminate them by pressing the Delete key.

▸ When stitching embroidery on stretchy fabric, always use cut-away stabilizer to stabilize the fabric.

▸ When embroidering on towels or anything with a nap, a topping should be used - generally a water-soluble one. This will keep the 'pokies' from coming through the embroidery as well as keep stitches on top of the fabric.

▸ When embroidering small lettering, use the smallest needle possible for smoother edges and easier reading.

▸ When the embroidery is finished, cut or tear away excess stabilizer by holding the project in your lap toward you. This will help you avoid those 'V' slashes in the project when you can't see it while removing the tear-away.

▸ When removing the excess tear-away, hold onto the stitches and don't tear into them. Remember it's tear 'away' not tear 'into'.

▸ When trimming the bobbin thread, don't trim it too close. Leave a little tail. This will keep stitches in front from coming loose. If they are close together, leave them alone – don't trim at all.

▸ Whenever possible, always hoop the project and stabilizer together in the hoop.

▸ With Color Film you can change the stitch order of your design.

▸ With Color Film you can easily change design colors.

▸ With Color Film you can view the design color-by-color.

▸ With Elastic® Lettering you can create unique lettering styles.

▸ With Arc Baselines you can set the lettering radius.

▸ You can adjust letter kerning, creating more or less space between letters – helpful especially when using a lower arc baseline.

▸ You can apply pull compensation to an object.

▸ You can change entry and exit points of an object simply by moving the green diamond (entry) and the red plus (exit) icons when using the Reshape tool.

▸ You can make a quick quilt label using the Rectangle tool and selecting from the many pattern outlines, then adding your message. The monogram program is also great for making labels.

▸ You can manually set Blanket stitch width and spacing through Object Properties.

▸ You can set or change the stitch angle of a fill through Object Properties.

▸ You can view what each font looks like together with recommended min and max sizes in your Onscreen Manual. Print these pages out for quick reference.

▸ Your Onscreen Manual is found under the 'Help' menu.

▸ Stitch count is displayed in the bottom right corner of the screen along with the height and width of design.

APPENDIX C

ALPHABET SAMPLES

The embroidery alphabets shown in this appendix are a part of your BERNINA Embroidery Software although not all alphabets are included in all product levels.

For the best results when stitching, do not exceed the maximum or minimum recommended sizes. Note, however, that recommended heights refer to UPPER CASE letters. Most embroidery alphabets are digitized from an original TrueType Font (TTF), some of which have lower-case letters – e.g. *a* and *c* – which are about 70% the height of a capital letter. As a result, these letters may be too small to embroider neatly at minimum sizes. You may need to increase the size of the lower-case characters to suit the embroidery. See also Adding lettering to embroidery designs.

For best results, always check that the correct type of underlay is selected. Apart from stabilizing, underlay helps give 'loft' or to raise your lettering off the fabric. The size of your lettering will determine the type of underlay you need to apply. Small, narrow letters may not require automatic underlay, depending on their size and the fabric to be stitched on. If auto underlay is used, it will show outside the stitched columns. Lettering with heights under 5 mm should not have underlay. Letters 6 mm to 10 mm can have a center-run underlay applied. Lettering larger than 10 mm is large enough for edge-run underlay. See Stabilizing with underlays for details. See also Removing underlay from small lettering.

Note You can create special characters in each alphabet by holding down the **Alt** key on your keyboard and typing **0** (zero), its code, using the numbers on the keypad. For example, to type **ê** with the code **234**, type **Alt+0234**. The accented letter will appear when you release the **Alt** key. See also Adding special characters.

Abby Script

Abby Script is a traditional one-color script alphabet. It is great for names. Use extra pull compensation at smaller sizes.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.50 in	13 mm
	Maximum	2.8 in	70 mm

Alice

Alice is a traditional decorative style suitable for initials/monograms and personalization.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.32 in	8 mm
	Maximum	2.0 in	50 mm

Anniversary

Anniversary is a stylish script with fine curves and flourishes. It is popular for personalizing garments. Use extra pull compensation at smaller sizes.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.50 in	13 mm
	Maximum	3.0 in	75 mm

Bamboo

Bamboo is an oriental style alphabet. It can be used as a decorative alphabet by restaurants or martial arts clubs to convey an Asian influence.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.32 in	8 mm
	Maximum	1.6 in	40 mm

Blackboard

Blackboard is a classic serif-style alphabet. It has been popular for many years and is common in logos and educational designs.

Blackboard
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890,./?!@#$%&*()-'";:¡¿
ÀÁÂÃÄÅÆÇÈÉÊËÌÍÎÏ
ÐÑÒÓÔÕÖØÙÚÛÜÝß
àáâãäåæçèéêëìíîï
ñòóôõöøùúûüý

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.32 in	8 mm
	Maximum	2.0 in	50 mm

Bodoni

Bodoni is a classic, high-contrast alphabet best suited to larger sizes or with very stable fabric.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.3 in	7 mm
	Maximum	2.0 in	50 mm

Border-CAPS

Border-CAPS is a two-color block alphabet. It is used on sporting, school or college wear.

Alphabet contains	Characters A - Z (caps only), 0 - 9, punctuation and symbols, and European/special characters		
Colors	2 color		
Stitching	Satin		
Recommended letter height	Minimum	0.5 in	13mm
	Maximum	1.5in	38mm

Broadsheet

Broadsheet has a Satin outline around the outside edge of the letter shapes. The letters have solid, heavy appearance, with a serif-effect. This alphabet should be used in larger sizes.

Alphabet contains	Characters A - Z (caps only), 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	CAPS - Satin		
Recommended letter height	Minimum	1.2 in	30 mm
	Maximum	3.0 in	75 mm

Castle

Castle is a classic romantic alphabet suitable for monograms or to convey a medieval or old world feel to restaurants or advertising material.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.75 in	10 mm
	Maximum	1.6 in	40 mm

Centurion

Centurion is a compact alphabet with strokes curving into serifs perpendicular to the letter strokes. It is more suited to medium-larger sizes.

Alphabet contains	Characters A - Z, a - z, 0 - 9, Punctuation and symbols, European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.5 in	13 mm
	Maximum	2.4 in	60 mm

Chicago

Chicago is a modern very squarish athletic-style alphabet, with half-serifs. Its solidity makes it well suited to large lettering on heavier fabrics, such as athletic wear and jeans.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.25 in	6 mm
	Maximum	3.0 in	75 mm

Childs Play

Childs Play is a fun alphabet, based on children's handwriting.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.5 in	13 mm
	Maximum	1.2 in	30 mm

Christopher

Christopher is a very rounded style. It suits children's wear, sportswear and modern designs.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.32 in	8 mm
	Maximum	1.2 in	30 mm

Craft

Craft is a modern narrow upright block, more suited for use on stable fabrics.

Craft
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
,./?!@#$%&*()-'";:¡¿£¥
ÀÁÂÃÄÆÇÈÉÊËÌÍÎÏ
ÐÑÒÓÔÕÖØÙÚÛÜÝÞß
àáâãäåæçèéêëìíîï
ðñòóôõöøùúûüýþÿ

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.4 in	10 mm
	Maximum	2.0 in	50 mm

Creative Cross

Creative Cross is decorative alphabet which can be used to embellish children's wear. Capital letters include a design whereas the lower case letters are plain.

Alphabet contains	Letters A - Z are letters with designs, a - z are letters only Designs only on keys ! " # $ % & ' ( ) * + , - . / 01234567890
Colors	Multi-color
Stitching	Manual/cross stitches

Recommended letter height	Minimum	1.2 in	30 mm
	Maximum	4.0 in	100 mm

Croissant

Croissant is a specialist fancy style, giving a completely different look from most other alphabets. It is suitable for restaurants, homewear and other people-oriented designs.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.25 in	6 mm
	Maximum	2.0 in	50 mm

Cursive

Cursive is a basic script-style alphabet, with simply-formed capital letters. The thickness of the strokes is reasonably uniform, making this style usable across a wide range of sizes.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.28 in	7 mm
	Maximum	2.4 in	60 mm

Detex Normal

Detex Normal is a distinctive style. It has squarish letters in upper-case, with the effect of an open bar on the left size. It makes an attractive monogram.

DEXTOR NORMAL
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567090 ,./?!@#$%&*()
-=+"'||°°
'°

Alphabet contains	Characters A - Z, 0 - 9, Punctuation and symbols, European/special characters		
Colors	1 color		
Stitching	CAPS - Satin		
Recommended letter height	Minimum	0.35 in	9 mm
	Maximum	2 in	50 mm

Diamond2

Diamond2 is a special alphabet which includes two versions of each letter for left and right positions, plus a border and flourish for two-letter designs.

For left-hand letters, type uppercase

For right-hand letters, type lowercase

Alphabet contains	Left and Right letters for 2-letter monogram, 2 Borders as shown. To create a monogram, use upper case for the left letter, and lower case for the right letter, and either left square bracket [or right square bracket] for the border. For example, to create the first monogram shown above type Ab[.
Colors	1 color
Stitching	Satin
Recommended letter height	Minimum 0.7 in 18 mm
	Maximum 4.0 in 100 mm

Diamond3

Diamond3 is a special alphabet which includes three versions of each letter for left, center and right positions, plus a border and flourish for 3-letter designs.

For left-hand letters, type uppercase

For right-hand letters, type lowercase

Alphabet contains	Left, Center and Right letters for 3-letter monogram, plus 2 borders as shown. To create a monogram, use upper case for the left letter, the symbol key shown above for center letter, and lower case for the right letter, with either left square bracket [or right square bracket] for the border. For example, to create the first monogram shown above type A"c[.		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.7 in	18 mm
	Maximum	4.0 in	100 mm

Drifter

Drifter is a bold, relaxed style, with curves throughout. It has an Art Deco feel, and can be used in most situations.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.25 in	6 mm
	Maximum	1.6 in	40 mm

Easy Appliqué

Easy Appliqué makes appliqué letters which have uneven stroke width and rounded serifs. Each letter includes three stitching layers – first a placement line, then a zigzag tackdown, and finally a Satin cover stitch.

Alphabet contains	Characters A - Z (caps only), 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color (cover stitch)		
Stitching	Appliqué		
Recommended letter height	Minimum	1.2 in	30 mm
	Maximum	2.8 in	70 mm

Eliza

Eliza is a one-color script alphabet designed for monogramming.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.8 in	20 mm
	Maximum	3.2 in	80 mm

Empress

Empress is an elegant calligraphic script style with a rich, classical look and small lower-case letters. It is reminiscent of wedding and similar invitations, and is suitable for gifts and special occasions.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.5 in	13 mm
	Maximum	2.4 in	60 mm

Energy

Energy is a fun, fast-paced style, which looks like quickly-written, hand-printed notes. It is suitable for larger lettering in youth-oriented designs.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.3 in	8 mm
	Maximum	2.4 in	60 mm

Erica

Erica is a graceful script alphabet based on Espania font and designed for monogramming.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.6 in	15 mm
	Maximum	2.3 in	55 mm

Felt Tip

Felt Tip is a Gothic alphabet in the style of historic English fonts. It can be applied to gifts and personalised items.

Alphabet contains	Characters A - Z, 0 - 9 Punctuation and symbols European/special characters		
Colors	1 color		
Stitching	Normal - Satin		
Recommended letter height	Minimum	0.4 in	10 mm
	Maximum	2 in	50 mm

Flair Script

Flair Script is a graceful script with added flairs underneath. Flairs either fit snugly under the letters or are lowered to accommodate descenders. For Flair characters type keys as shown. Flairs can be for letters with or without descenders. For example, for the first example, type 4 abc[. See Adding flair script lettering for details.

Alphabet contains	Characters A - Z, a - z, 0 - 9, Punctuation and symbols, Flair characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.75 in	10 mm
	Maximum	3.2 in	80 mm

Fortress

Fortress is solid block-style alphabet with simple clean lines. It is suitable for use on heavier fabrics.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.25 in	6 mm
	Maximum	1.6 in	40 mm

Greek

Greek is a classic serif-style. It is suited for educational institutions, restaurants, and events such as marriages and births in Greek communities.

Alphabet contains	Greek letters, 0 - 9, and some punctuation and symbols		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.3 in	8 mm
	Maximum	2.0 in	50 mm

Greek Ionic

Greek Ionic is a san-serif style alphabet. As it is an easy to read alphabet, it can be applied to a wide range of personal and corporate uses in Greek communities.

Alphabet contains	Greek letters, 0 - 9, and some punctuation and symbols		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.4 in	10 mm
	Maximum	2.0 in	50 mm

Guinevere

Guinevere is based on the old writing styles of Welsh and Irish texts. It is decorative and suited for a wide range of uses such as souvenirs, linen, restaurants, some ethnic designs, etc.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.5 in	13 mm
	Maximum	2.0 in	50 mm

Hebrew 2

Hebrew 2 is a modern square Hebrew alphabet. It is a compact alphabet which can be applied to a wide range of uses in Hebrew communities.

Alphabet contains	Hebrew letters, 0 - 9, and some punctuation and symbols		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.3 in	8 mm
	Maximum	1.6 in	40 mm

Hebrew David

Hebrew David is a modern Hebrew alphabet with rounded letters. As it is an easy to read alphabet, it can be applied to a wide range of uses in Hebrew communities.

Alphabet contains	Hebrew letters, 0 - 9, and some punctuation and symbols		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.28 in	7 mm
	Maximum	1.6 in	40 mm

Hiragana

This is a special alphabet with Japanese Hiragana symbols for each letter.

ひらがな
あいうえお
かきくけこ　さしすせそ　たちつてと
なにぬねの　はひふへほ　まみむめも
やゆよ　らりるれろ　わをん
がぎぐげご　ざじずぜぞ　だぢづでど
ばびぶべぼ　ぱぴぷぺぽ
あいうえお　っやゆよ
゛゜「」ー!?

Alphabet contains	Japanese Hiragana characters. See print manual Alphabets appendix for details of input keys.		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.50 in	13 mm
	Maximum	2.0 in	50 mm

Impact 3D

Impact 3D is a raised 3D alphabet to be stitch out with 3 mm thick foam only. It looks good if you follow the recommended lettering heights. It can be applied to items that don't require frequent washing as this will tend to damage the foam.

Impact 3D
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
abcdefghijklm
nopqrstuvwxyz
0123456789

Alphabet contains	Characters A - Z, 0 - 9		
Colors	1 color		
Stitching	Normal - Satin, additional underlay not required		
Recommended letter height	Minimum	0.8 in	20 mm
	Maximum	1.4 in	35 mm
Special	Foam	3 mm	
	Thread tension setting	-2	

Island

Island is a bold script-style alphabet, with connecting lower-case letters. The thickness of the strokes is even throughout. It is popular and versatile.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.32 in	8 mm
	Maximum	2.0 in	50 mm

Jikharev

Jikharev is based on the Russian Cyrillic alphabet. It is easy to read and can be used for many purposes, both personal and corporate.

Alphabet contains	Russian/Cyrillic letters, 0 - 9, and some punctuation and symbols		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.3 in	8 mm
	Maximum	2.0 in	50 mm

Katakana

This is a special alphabet with Japanese Katakana symbols for each letter.

カタカナ
アイウエオ
カキクケコ サシスセソ タチツテト
ナニヌルノ ハヒフヘホ マミムメモ
ヤユヨ ラリルレロ ワヲン
ガギグゲゴ ザジズゼソ ダヂヅデド
バビブベボ バビブベボ
アイウエオ ヤユヨ !?

Alphabet contains	Japanese Katakana characters. See print manual Alphabets appendix for details of input keys.		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.50 in	13 mm
	Maximum	2.0 in	50 mm

Ketchikan

Ketchikan is an ornate all caps alphabet which is commonly used for restaurant, clothing and other business names where style and fashion are important.

Alphabet contains	Characters A - Z (caps only), 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.3 in	8 mm
	Maximum	1.2 in	30 mm

Kindergarten Block

Kindergarten Block is a fun alphabet which has many applications for children's wear.

KINDERGARTEN BLOCK
ABCDEFGHIJKLM
NOPQRStuvwXYZ
ABCDEFGHIJKLMNOPQRStuvwXYZ
1234567890

Alphabet contains	Characters A - Z (caps only), 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	CAPS - Satin		
Recommended letter height	Minimum	0.4 in	10 mm
	Maximum	3.6 in	90 mm

King Charles

King Charles is a fancy alphabet style with proportionally large lower-case and long ascenders. It creates an old-style formal and elegant impression.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.32 in	8 mm
	Maximum	2.0 in	50 mm

Lazer

Lazer is a modern techno-style alphabet with rounded corners consisting only of upper case letters, small and large. It looks good when applied to modern, clean designs, particularly with a techno theme.

Alphabet contains	Characters A - Z, a - z, 0 - 9, Punctuation and symbols, European/special characters		
Colors	1 color		
Stitching	Normal - Satin		
Recommended letter height	Minimum	0.24 in	6 mm
	Maximum	2 in	50 mm

Lisa

Lisa is a hand-writing style where lower-case letters join together. It is popular for monograms, but is not suitable for use with many capital letters together.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.50 in	13 mm
	Maximum	3.0 in	75 mm

London

London is an easy-to-read sans-serif style alphabet with large lower-case letters. The stylish look suits both corporate and personal text.

London
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890 ,./?!@#$%&*()
-=+'"";:¡¿₵£¥€©®™''""
ÀÁÂÃÄÆÇÈÉÊËÌÍÎÏ
ÐÑÒÓÔÕÖØÙÚÛÜÝÞŒŸß
àáâãäåæçèéêëìíîï
ðñòóôõöøùúûüýþÿœ

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.32 in	8 mm
	Maximum	2.0 in	50 mm

Mandarin

Mandarin is an alphabet consisting of upper-case characters, with an Asian influence. It is used for Asian restaurants, martial arts clubs, etc.

Alphabet contains	Characters A - Z (caps only), 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.3 in	8 mm
	Maximum	2.0 in	50 mm

Medley

Medley has a hint of serif created by the flared ends of the strokes. It is very stylish, and suitable for masculine monograms.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.28 in	7 mm
	Maximum	1.6 in	40 mm

Meegan

Meegan is a one-color script alphabet designed for monogramming.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.6 in	15 mm
	Maximum	2.2 in	55 mm

Microgramma

Microgramma is a slightly boxy, wide, sans-serif alphabet.

Alphabet contains	Characters A - Z, a - z, 0 - 9, Punctuation and symbols, European/special characters		
Colors	1 color		
Stitching	Satin		
Default Letter Spacing	10%		
Recommended letter height	Minimum	0.25 in	6 mm
	Maximum	2.4 in	60 mm

Neon-CAPS

Neon-CAPS is an alphabet which mimics the effect of neon lights. It can be used to give a modern hi-tech look in a wide variety of applications.

Alphabet contains	Characters A - Z (caps only), 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.7 in	18 mm
	Maximum	3.0 in	75 mm

Nightowl

Nightowl is a modern sans-serif alphabet with a noticeable italic slant and rounded ends. It is a popular style for advertising and designs with a carefree feeling.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.25 in	6 mm
	Maximum	2.0 in	50 mm

Olde English

Olde English is based on traditional medieval English calligraphy script. It is used for specialist lettering, and is especially popular for school, college and university badges.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.5 in	13 mm
	Maximum	2 in	50 mm

Phoebe Curls

Phoebe Curls is an ornamental capital-serif alphabet with floral background designed for monogramming.
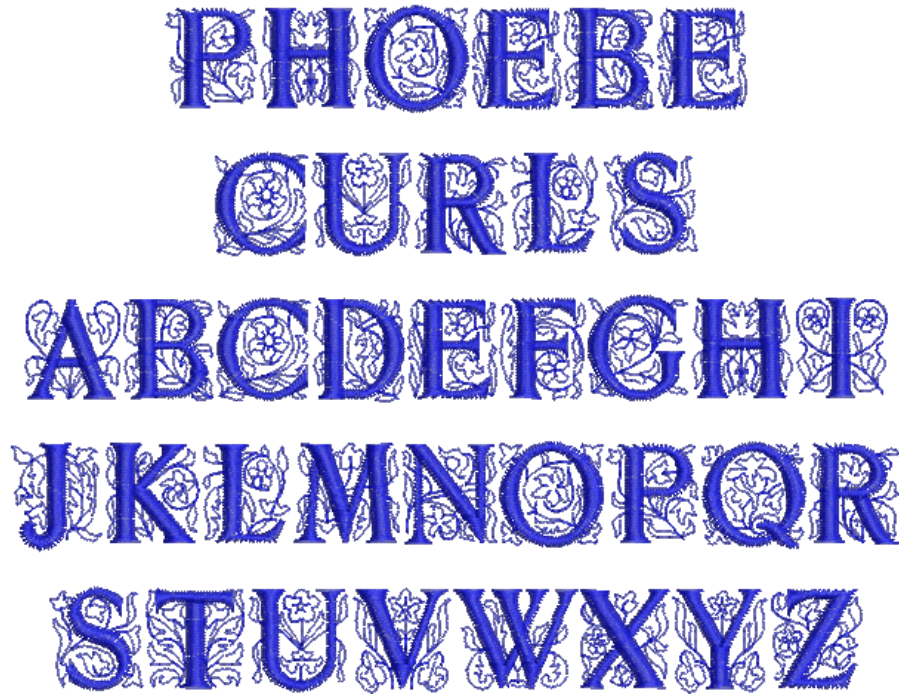
Alphabet contains	Characters A - Z (caps only)		
Colors	1 colors		
Stitching	Satin		
Recommended letter height	Minimum	0.6 in	15 mm
	Maximum	1.4 in	35 mm

Prestige

Prestige is a traditional block-style alphabet, popular for corporate logo work. It is quite bold and usually does not require additional pull compensation. It also works well with **Elastic Lettering** effects. See Creating special effects with Elastic Lettering for details.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.2 in	5 mm
	Maximum	2.0 in	50 mm

Quilting Text

Quilting Text gives a feel of hand stitching and is used to personalize blocks in quilts. It is a very small alphabet made of simple running stitches, as it is required to be subtle and blend into the quilt.
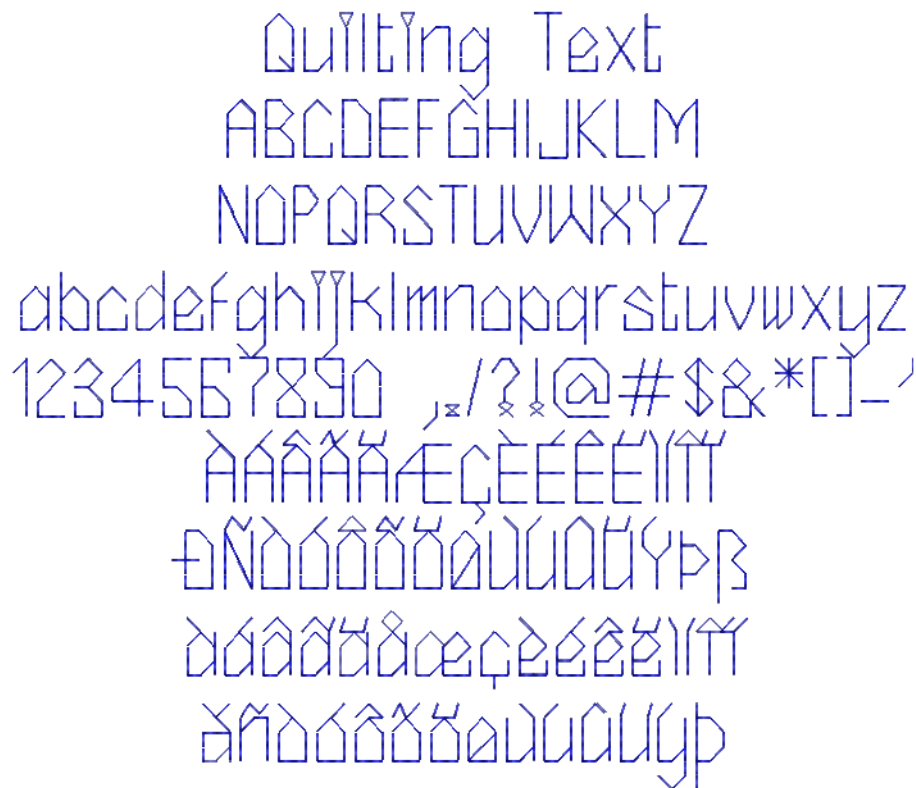
Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Run stitching		
Recommended letter height	Minimum	0.16 in	4 mm
	Maximum	0.25 in	6 mm

Racer

Racer is a streamlined script alphabet with emphasized balled top ends. It recalls the chrome-strip lettering used on industrial goods of the 1930s and 40s, such as enamelled refrigerators and automobile trunks. It looks good when applied to racing and sporting uniforms.

Alphabet contains	Characters A - Z, a - z, 0 - 9, Punctuation and symbols, European/special characters		
Colors	1 color		
Stitching	Normal - Satin		
Recommended letter height	Minimum	0.3 in	8 mm
	Maximum	1.4 in	35 mm

Roman-Small

Roman-Small is a variant of Times Roman, specifically designed for use in smaller sizes.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.2 in	4 mm
	Maximum	0.25 in	6 mm

Rounded Block

Arial Rounded is based on the widespread 20th century realist sans-serif.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.32 in	8 mm
	Maximum	1.8 in	45 mm

Russian Textbook

As the name suggests, Russian Textbook is a standard textbook font based on Russian/Cyrillic letters, suitable for general use in logos, etc.

Рюссиан Техтбоок
АБЦДЕФГЧИЙКЛМ
НОПЯРСТЮВЖХУЗ
абцдефгчийклмнопярстювжхуз
1234567890
„,./?!@#$%&*()ьъЪыЫІёЁ
ЎЇЄГЃЈЛЬНЬЌЏЂЋ
ўїєгѓѕјљнькцҕ

Alphabet contains	Russian/Cyrillic letters, 0 - 9, and some punctuation and symbols		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.3 in	8 mm
	Maximum	1.8 in	45 mm

Scanner

Scanner has a modern, 'hi-tech' look. It is suitable for a wide variety of applications.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.28 in	7 mm
	Maximum	1.6 in	40 mm

Secret Garden-CAPS

Secret Garden-CAPS is a floral alphabet which can be used to decorate many items of clothing. Only the capital letters are embellished with flowers, the lower case letters are a plain sans serif.

Alphabet contains	Letters A - Z (caps only), dash, and brackets		
Colors	Multi-color		
Stitching	Satin		
Recommended letter height	Minimum	1.5 in	38 mm
	Maximum	3.6 in	90 mm

Speedy

Speedy is a bold, fast-paced modern alphabet.

Alphabet contains	Characters A - Z, 0 - 9		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.3 in	8 mm
	Maximum	1.2 in	30 mm

Swiss Block

Swiss Block is based on Helvetica, the great all-purpose sans-serif alphabet. It is clean and simple, and suitable for any fabric.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.25 in	6 mm
	Maximum	2.4 in	60 mm

Tabloid

Tabloid has a Satin outline around the outside edge of the letter shapes. The letters have solid, heavy appearance, with a serif-effect. This alphabet should be used in larger sizes.

Alphabet contains	Characters A - Z (caps only), 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	1.2 in	30 mm
	Maximum	3.0 in	75 mm

Technical Block

Technical Block is a medium weight alphabet with squared serifs which stitch cross-ways. It is suitable for lettering in logos at a variety of sizes.

Technical Block
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
„./?!@#$%&*()-=+'";:¡¿£¥
ÀÁÂÃÄÆÇÉÊÈÌÍÎÏ
ÐÑÒÓÔÕÖØÙÚÛÜÝÞß
àáâãäåæçèéêëìíîï
ðñòóôõöøùúûüýþÿ

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.32 in	8 mm
	Maximum	2.0 in	50 mm

Tiffany

Tiffany is an upright calligraphy script style where the letters do not join. The style is bold and extended, and suited for monograms, homewares, etc.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.28 in	7 mm
	Maximum	1.4 in	35 mm

Varsity Appliqué-CAPS

Varsity Appliqué-CAPS is a large alphabet suitable for making appliqué letters for college, school and university wear. Each letter includes three stitching layers – first a placement line, then a zigzag tackdown, and finally a Satin cover stitch.

Alphabet contains	Characters A - Z (caps only), 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Appliqué		
Recommended letter height	Minimum	1.2 in	30 mm
	Maximum	3.0 in	75 mm

Varsity Block-CAPS

Varsity Block-CAPS is a bold serif block alphabet. It is suitable for athletic-style lettering on garments, and for general use in logos, etc.

Alphabet contains	Characters A - Z (caps only), 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.25 in	6 mm
	Maximum	1.4 in	35 mm

Verdana

Verdana is a modern sans-serif alphabet that is very popular with web designs but lends itself to embroidery as a substitute, for example for Swiss Block.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.25 in	6 mm
	Maximum	2.4 in	60 mm

Victoria

Victoria is an opulent alphabet reminiscent of late 19th century stylings.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.4 in	10 mm
	Maximum	2.0 in	50 mm

Zurich

Zurich is based on one of the most popular calligraphy hand-written styles. It is often used in logos and is very popular for personalization.

Alphabet contains	Characters A - Z, a - z, 0 - 9, punctuation and symbols, and European/special characters		
Colors	1 color		
Stitching	Satin		
Recommended letter height	Minimum	0.25 in	6 mm
	Maximum	Letters	60 mm

APPENDIX D
STEP FILL SAMPLES
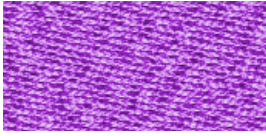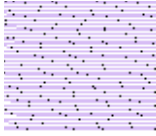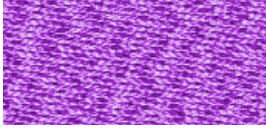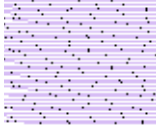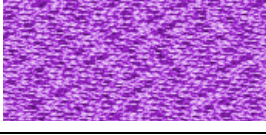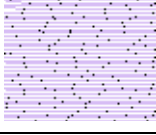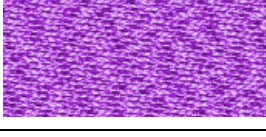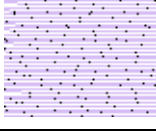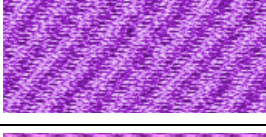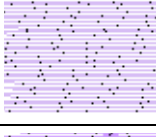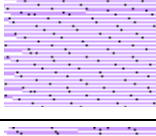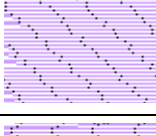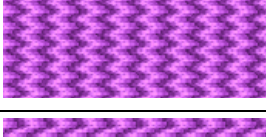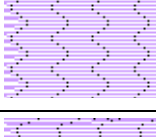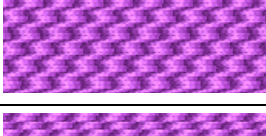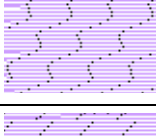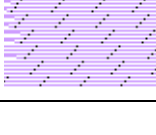
The Step fill patterns shown in this appendix are a sample of those included with your BERNINA® Embroidery Software program. For actual Step fills and instructions on how to use them, see Creating fills with Step fill.
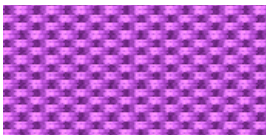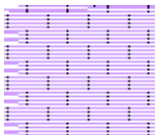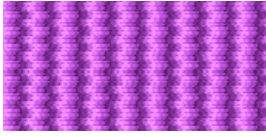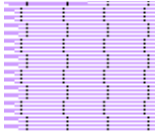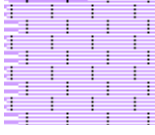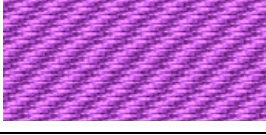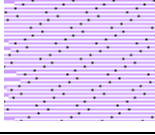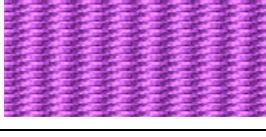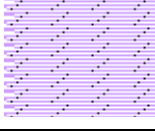
Note Make sure you apply the correct stitch angle to each Step fill. The following samples have been digitized with a stitch angle of 0°. Experiment with different stitch angles to get new effects.

No.	Stitch sample	Preview	No.	Stitch sample	Preview
1			8		
2			9		
3			10		
4			11		
5			12		
6			13		
7			14		

No.	Stitch sample	Preview	No.	Stitch sample	Preview
15			26		
16			27		
17			28		
18			29		
19			30		
20					
21					
22					
23					
24					
25					

APPENDIX E

FANCY FILL SAMPLES

The Fancy fill patterns shown in this appendix are a sample of those included with your BERNINA Embroidery Software program. For actual Fancy fill patterns and instructions on how to use them, see Creating fancy fills.

ID & Angle	Fancy Fill
001 Diamond (90)	
002 Emerald (90)	
003 Ruby (90)	
004 Sapphire (90)	
005 Topaz (90)	
006 Jewel (90)	
007 Brilliant (90)	
008 Square (45)	
009 Squarecut (45)	
010 Brick1 (45)	
011 Brick2 (45)	

ID & Angle	Fancy Fill
012 Brick3 (45)	
013 BabyBlock (120)	
014 3DBlock (0)	
015 Roman (90)	
016 Capri (45)	
017 Frame (45)	
018 Quilt1 (45)	
019 Quilt2 (45)	
020 Quilt3 (45)	
021 Circle (90)	
022 Wattle (90)	

ID & Angle	Fancy Fill	ID & Angle	Fancy Fill
023 Oval (90)		038 Honey-comb (90)	
024 Whirlpool (90)		039 Beeswax (30)	
025 Dance (90)		040 Wave (90)	
026 Heart (90)		041 Dunes (0)	
027 Heart2 (90)		042 Chevron (90)	
028 Valentine (90)		043 Chevron2 (90)	
029 Scallop (90)		044 Chevron3 (90)	
030 Shell (90)		045 Wedge (90)	
031 Smile (90)		046 Crazy (90)	
032 Flower (90)		047 Arrow (20)	
033 Ribbon (30)		048 Weave (48)	
034 Sunny (90)		049 Weave2 (90)	
035 Shine (90)		050 Stream (90)	
036 Star (90)		051 Bowtie (0)	
037 Stardust (90)		052 Chain (90)	

ID & Angle	Fancy Fill	ID & Angle	Fancy Fill
053 Glitter (90)		068 Letter H (45)	
054 Cross (45)		069 Letter I (45)	
055 Double-cross (90)		070 Letter J (45)	
056 Galaxy (90)		071 Letter K (30)	
057 Ring (90)		072 Letter L (45)	
058 Ramble (90)		073 Letter M (45)	
059 Florastar (90)		074 Letter N (45)	
060 Stripes (90)		075 Letter O (30)	
061 Letter A (90)		076 Letter P (45)	
062 Letter B (45)		077 Letter Q (30)	
063 Letter C (90)		078 Letter R (45)	
064 Letter D (45)		079 Letter S (45)	
065 Letter E (45)		080 Letter T (45)	
066 Letter F (45)		081 Letter U (45)	
067 Letter G (45)		082 Letter V (45)	

ID & Angle	Fancy Fill	ID & Angle	Fancy Fill
083 Letter W (45)		098 Knuckled frame (45)	
084 Letter X (90)		099 Tile (0)	
085 Letter Y (30)		100 Alarm Tile (83)	
086 Letter Z (30)		101 Turtle-back (79)	
087 Paver (90)		102 Stepped Wave (45)	
088 Picasso (135)		103 Crayon (0)	
089 Ziggy (0)		104 Diamond Inlay (0)	
090 Spirali (90)		105 Corduroy (0)	
091 Manchu (45)		106 Diamond Punch (0)	
092 Grilles (45)		107 Inlay Print (0)	
093 Wooden Lattice (82)		108 Snowflake (0)	
094 Han Line (45)		109 Inlay Maze (45)	
095 Dart (10)		110 Quilt Diamond 1 (0)	
096 T-frame (45)		111 Quilt Diamond 2 (0)	
097 Double-arm (87)		112 Quilt Diamond 3 (0)	

ID & Angle	Fancy Fill	ID & Angle	Fancy Fill
113 Zig-Zag Inlay (0)		128 Star (18)	
114 Shell Inlay (0)		129 Web (0)	
115 Music 1 (0)		130 Tear Drop (0)	
116 Music 2 (0)		131 2-way zig-zag (87)	
117 Four Square (45)		132 Quilt Square 1 (45)	
118 Symbol 1 (45)		133 Quilt Square 2 (0)	
119 Symbol 2 (50)		134 Quilt Square 3 (0)	
120 Symbol 3 (82)		135 Quilt Square 4 (0)	
121 Wave 2 (0)		136 Quilt Square 5 (45)	
122 Wave 3 (0)		137 Quilt Square 6 (18)	
123 Honey-comb 2 (45)		138 Cloud Band 1 (25)	
124 Rope (0)		139 Cloud Bands 2 (0)	
125 Tree (142)		140 Cloud Bands 3 (0)	
126 Wings (135)		141 Arrow 2 (0)	
127 Leaf (0)		142 Rusty Ice (0)	

ID & Angle	Fancy Fill	ID & Angle	Fancy Fill
143 Ice Rays (0)		159 Ellipse (0)	
144 Dynasty (0)		160 Flame (90)	
145 Windwheel (0)		161 Jem (90)	
146 Tea Tray (0)		162 Leaf (0)	
147 Cash Bars (45)		163 Melody (0)	
148 Chengtu (0)		164 Metal (0)	
149 Chihli (86)		165 Passage (0)	
150 Ming (135)		166 Piccolo (0)	
151 Arrowhead (89)		167 Roma (0)	
152 Basket2 (40)		168 Rope (10)	
153 Bird (90)		169 Seville (0)	
154 Blocks2 (0)		170 Star5 (10)	
155 Chain (90)		172 Tick (0)	
157 Circle (0)		173 Tile1 (135)	
158 Cube (48)		174 Tile3 (0)	

ID & Angle	Fancy Fill
175 Vine (0)	
176 Wave2 (90)	
177 Wave3 (90)	
178 Whirl (90)	
179 Wild (48)	
180 Xmastree (48)	

APPENDIX F
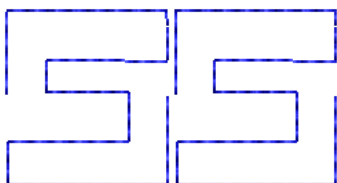
PATTERN STAMP, RUN & FILL SAMPLES
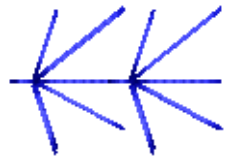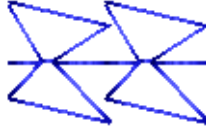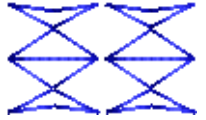
Below are samples of the Pattern Stamps, Runs and Fills included with your BERNINA Embroidery Software. See also Patterned Stamps, Runs & Fills.
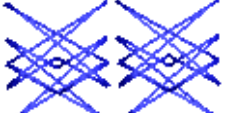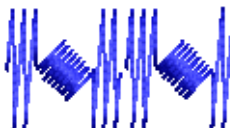
Pattern set: BerninaV5

Name	Pattern
NP005-01	
NP005-02	
NP005-03	
NP005-04	
NP005-05	
NP005-06	
NP005-07	
NP005-08	
NP005-09	
NP005-10	

Name	Pattern
NP005-11	
NP005-12	
NP005-13	
NP005-14	
NP005-15	
NP005-16	
NP005-17	
NP005-18	
NP005-19	

Name	Pattern		Name	Pattern
NP005-20			NP005-35	
NP005-21			NP005-36	
NP005-22			NP005-37	
NP005-23			NP005-38	
NP005-24			NP005-39	
NP005-25			NP005-40	
NP005-26			NP005-41	
NP005-27			NP005-42	
NP005-28			NP005-43	
NP005-29			NP005-44	
NP005-30			NP005-45	
NP005-31				
NP005-32				
NP005-33				
NP005-34				
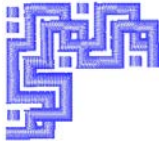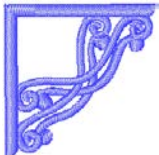
Name	Pattern
NP005-46	
NP005-47	
NP005-48	
NP005-49	
NP005-50	

Pattern set: Children

Name	Pattern
901	
905	
907	
909	
910	
911	
914	

Name	Pattern
929	

Pattern set: Corners
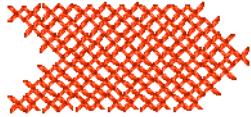
Name	Pattern
Cnr001	
Cnr002	
Cnr003	
Cnr004	
Cnr005	
Cnr006	
Cnr007	

Name	Pattern
Cnr008	
Cnr009	
Cnr010	
Cnr011	
Cnr012	
Cnr013	
Cnr014	
Cnr015	
Cnr016	
Cnr017	

Name	Pattern
Cnr018	
Cnr019	
Cnr020	
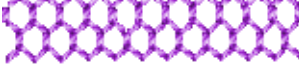
Pattern set: Cross

Name	Pattern
301	
302	
303	
305	
309	
311	
313	
b301	
b302	

Name	Pattern
b303	
b304	
b305	
b306	
b307	
b308	
b309	
b310	

Pattern set: Embellishment

Name	Pattern
601	
605	
608	
610	
612	

Name	Pattern
614	
618	
623	
629	
637	
641	
644	
648	
653	

Pattern set: Heirloom

Name	Pattern
705	
706	
709	
710	
711	
717	

Name	Pattern
718	
719	
724	
726	
728	
732	
733	
738	
a701	
a702	
a703	
a704	
a705	
a706	

Pattern set: Home Dec

Name	Pattern
401	
402	
403	
405	
406	
407	
409	
411	
412	
413	
414	
415	
416	
417	
422	

Name	Pattern
424	
425	
426	
427	
429	
430	
431	
a401	
a402	
a403	
a404	
a405	
a406	
a407	

Name	Pattern
a408	
a409	
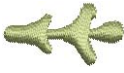
Pattern set: Misc
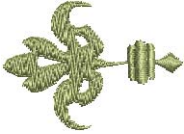
Name	Pattern
10	
11	
12	
13	
21	
29	
Star	
3wave	
Heart	
Wedge	
Blanket	
Feather	
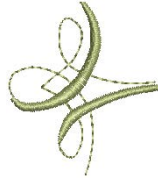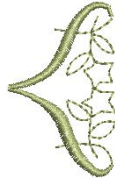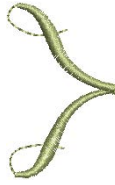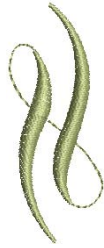
Name	Pattern
Pinstit	██████████████████████

Pattern set: Monogram Ornaments

Name	Pattern
M001a	
M001b	M001a pattern oriented horizontally and mirrored
M002a	
M002b	M02a pattern oriented horizontally
M003a	
M004a	
M004b	M004a pattern oriented horizontally
M005a	
M005b	M005a pattern oriented horizontally and mirrored
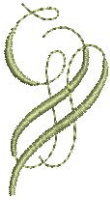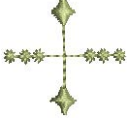
Name	Pattern
M006a	
M006b	M006a pattern oriented horizontally
M007a	
M008a	
M008b	M008a pattern oriented vertically
M009a	
M009b	M009a pattern oriented horizontally
M010a	
M010b	M010a pattern oriented horizontally
M011a	
M011b	M011a pattern oriented horizontally
M012a	
M012b	M012a pattern oriented horizontally

Name	Pattern	Name	Pattern
M013a		M020a	
M013b	M013a pattern oriented horizontally	M020b	M020a pattern oriented horizontally
M014a		M021a	
M014b	M014a pattern oriented vertically and mirrored	M021b	M021a pattern oriented horizontally
M015a		M022a	
M015b	M015a pattern oriented horizontally	M022b	M022a pattern oriented diagonally
M016a		M023a	
M016b	M016a pattern oriented horizontally	M023b	M023a pattern oriented horizontally
M017a		M024a	
M018a			
M018b	M018a pattern oriented vertically	M024b	M024a pattern oriented diagonally
		M024c	M024a pattern oriented horizontally
M019a		M025a	
M019b	M019a pattern oriented horizontally	M025b	M025a pattern oriented horizontally

Name	Pattern
M026a	
M026b	M026a pattern oriented horizontally
M027a	
M027b	M027a pattern oriented vertically
M028a	
M028b	M028a pattern oriented diagonally
M029a	
M029b	M029a pattern oriented horizontally
M030a	
M030b	M030a pattern oriented horizontally
M031a	
M031b	M031a pattern oriented horizontally
M032a	
M032b	M032a pattern oriented horizontally

Name	Pattern
M033a	
M033b	M033a pattern oriented horizontally
M034a	
M034b	M034a pattern oriented vertically
M035a	
M035b	M035a pattern oriented horizontally
M036a	
M036b	M036a pattern oriented horizontally
M037a	
M037b	M037a pattern oriented horizontally
M038a	
M038b	M038a pattern oriented horizontally

Name	Pattern
M039a	
M039b	M039a pattern oriented horizontally
M040a	
M040b	M040a pattern oriented horizontally
M041a	
M041b	M041a pattern oriented horizontally
M042a	
M042b	M042a pattern oriented vertically
M042c	M042a pattern oriented diagonally
M043a	
M043b	
M043c	M043a pattern oriented horizontally
M044a	
M044b	M044a pattern oriented vertically
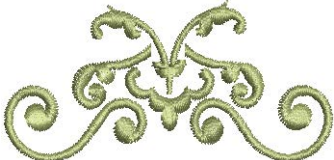
Name	Pattern
M045a	
M045b	M045a pattern oriented horizontally
M046a	
M046b	M046a pattern oriented horizontally
M047a	
M047b	M047a pattern oriented horizontally
M048a	
M048b	M048a pattern oriented horizontally
M049a	
M049b	M049a pattern oriented horizontally
M050a	
M050b	M050a pattern oriented horizontally
M051a	
M051b	M051a pattern oriented diagonally
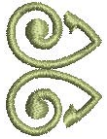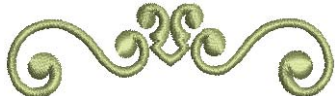
Name	Pattern
M052a	
M053a	
M054a	
M055a	
M055b	M055a pattern oriented vertically
M056a	
M057a	
M057b	M057a pattern oriented diagonally and mirrored
M058a	
M059a	
M059b	M059a pattern oriented horizontally
M060a	
M061a	
M061b	M061a pattern oriented horizontally
M062a	
M062b	M062a pattern oriented horizontally

Name	Pattern
M063a	
M064a	
M064b	M064a pattern oriented horizontally
M065a	
M066a	
M066b	M066a pattern oriented horizontally
M067a	
M067b	M067a pattern oriented vertically
M068a	
M069a	
M069b	M069a pattern oriented vertically
M070a	
M071a	
M071b	M071a pattern oriented vertically

Name	Pattern
M072a	
M072b	M072a pattern oriented horizontally
M072c	M072a pattern oriented diagonally
M073a	
M073b	M073a pattern oriented vertically
M073c	M073a pattern bigger sized
M073d	
M073e	M073d pattern oriented vertically
M073f	
M073g	M073f pattern oriented horizontally
M073h	
M073i	M073h pattern oriented horizontally
M073j	
M073k	M073j pattern oriented diagonally
M073l	M073j pattern oriented vertically
M074a	
M074b	M074a pattern oriented horizontally
M074a	M074a pattern oriented vertically

Name	Pattern
M074g	
M075a	
M075b	
M075c	M075b pattern mirrored
M075d	M075b pattern oriented vertically
M076a	
M076b	M076a pattern oriented vertically
M077a	
M077b	M077a pattern oriented vertically
M078a	
M078b	M078a pattern smaller sized
M078c	M078b pattern oriented vertically
M079a	
M079b	M079a pattern smaller sized
M079c	M079b pattern oriented vertically
M080a	
M080b	M080a pattern smaller sized
M080c	M080b pattern oriented vertically
M081a	
M081b	M081a pattern smaller sized
M081c	M081b pattern oriented vertically
M082a	
M082b	M082a pattern oriented vertically

Name	Pattern
M083a	
M083b	M083a pattern oriented vertically
M084a	
M084b	M084a pattern oriented vertically
M085a	
M085b	M085a pattern smaller sized
M085c	M085b pattern oriented vertically
M086a	
M086b	M086a pattern oriented vertically
M087a	
M087b	M087a pattern smaller sized
M087c	M087b pattern oriented vertically
M088a	
M088b	M088a pattern oriented horizontally
M088c	M088a pattern oriented diagonally
M089a	
M089b	M088a pattern oriented vertically
M089c	

Name	Pattern
M090a	
M090b	M090a pattern oriented horizontally
M090c	M090a pattern oriented diagonally
M090d	
M090e	M090d pattern oriented vertically
M091a	
M091b	M091a pattern oriented vertically
M091c	M091a pattern oriented diagonally
M092a	
M092b	M092a pattern oriented vertically
M092c	
M092d	M092e pattern mirrored vertically and horizontally
M092e	M092e pattern mirrored horizontally
M093a	
M093b	M093a pattern oriented vertically
M093c	
M093d	M093c pattern oriented diagonally
M093e	M093c pattern oriented vertically
M093f	
M094a	
M094b	M094a pattern oriented vertically
M094c	M094a pattern oriented diagonally

Name	Pattern
M095a	
M095b	
M096a	
M096b	M096a pattern oriented vertically
M096c	
M096d	
M097a	
M097b	M097a pattern oriented vertically
M097c	
M097d	M097c pattern oriented horizontally
M097e	M097c pattern oriented diagonally
M098a	
M098b	M098a pattern oriented vertically
M098c	
M098d	M098c pattern oriented vertically
M099a	
M099b	M099a pattern oriented right
M099c	M099a pattern oriented downwards
M099d	M099a pattern oriented left
M099e	M099a pattern oriented diagonally

Name	Pattern
M0100a	
M0100b	M0100a pattern bigger sized

Pattern set: NP004a

Name	Pattern
K0001a	
K0002a	
K0003a	
K0004a	
K0005a	
K0006a	
K0007a	
K0008a	
K0009a	
K0010a	
K0011a	
K0012a	

Name	Pattern
K0013a	
K0014a	
K0015a	
K0016a	
K0017a	
K0018a	
K0019a	
K0020a	
K0021a	
K0022a	
K0023a	
K0024a	
K0025a	
K0026a	
K0027a	
A200026	
A200150	
A200446	
A200602	

Name	Pattern
A200606	
A200609	
A200615	
A200749	

Pattern set: NP005a

Name	Pattern
151a	
151b	
152a	
437a	
660a	
663a	
701a	
1023a	
1024a	
1026a	

Name	Pattern
1027a	

Pattern set: Nature

Name	Pattern
101	
102	
103	
106	
111	
112	
113	
114	
115	
117	
118	
119	
124	

Name	Pattern
129	
135	
136	

Pattern set: Quilting
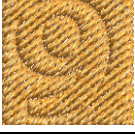
Name	Pattern
327	
328	
330	
332	
333	
334	
336	
337	
338	
339	
340	
342	
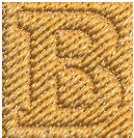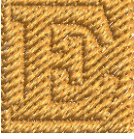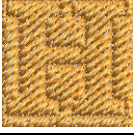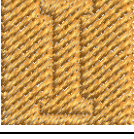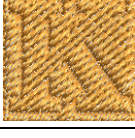
Name	Pattern
343	
a301	
a302	
a303	
a304	
a305	
a306	
a307	
a308	
a309	
a310	
a311	
a312	
a313	
a314	
a315	
a316	
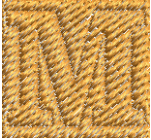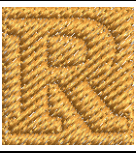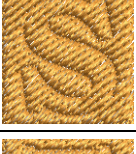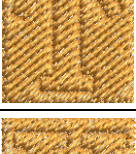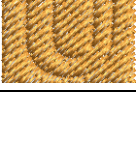
Pattern set: Satin-Quilt
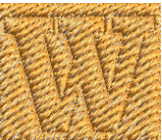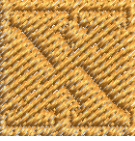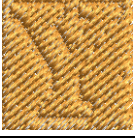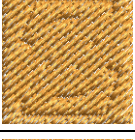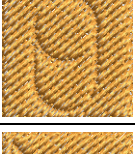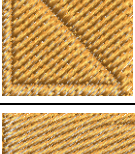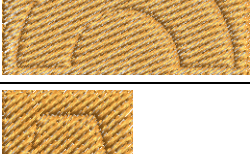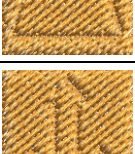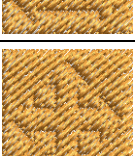
Name	Pattern
501	
503	
506	
507	
508	
509	
511	
512	
513	
514	
515	
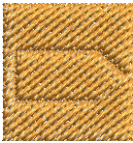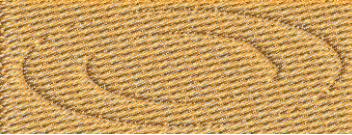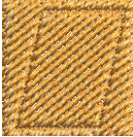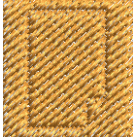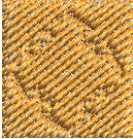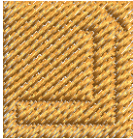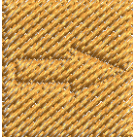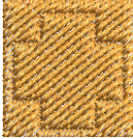
Pattern set: Carving Stamps
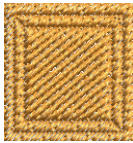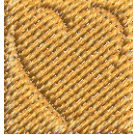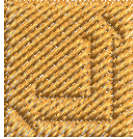
Name	Pattern
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

Name	Pattern
A	
B	
C	
D	
E	
F	
G	
H	
I	
J	
K	

Name	Pattern
L	
M	
N	
O	
P	
Q	
R	
S	
T	
U	

Name	Pattern
V	
W	
X	
Y	
Z	
Cylinder	
Triangle	
Ring_Half	
Trapezoid	
Arrow_3_Way	
Arrow_4_Way	

Name	Pattern		Name	Pattern
Arrow_Block			Flame	
Ring_Ellipse			Heart	
Parallelogram			Banned	
Page			Smiley	
Tear			Arrow_Double_Right_Angle	
Arrow_4_Way_Block			Polygon	
Arrow_Right_Angle				
Arrow_Double_Block				
Arrow				
Cross				
Flash				

APPENDIX G

CRAFT STITCH PATTERN SAMPLES

The Craft Stitch patterns shown in this appendix are a sample of those included with your BERNINA Embroidery Software program. For actual Craft Stitches and instructions on how to use them, see Craft Stitch Borders and Fills.

Blackwork patterns

Blackwork gets its name from the black silk thread traditionally used in this form of embroidery. Blackwork patterns can be used either as borders, as fills, or even pattern stamps. The most common blackwork fills employ simple stitches to create complex scrolling or geometric patterns. See Creating blackwork outlines and Creating blackwork fills.

ID	Sample
B0001a	
B0002a	
B0003a	
B0004a	
B0005a	
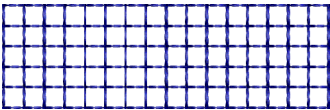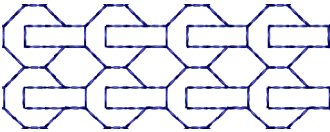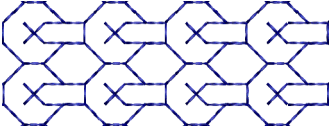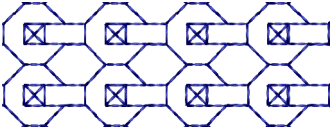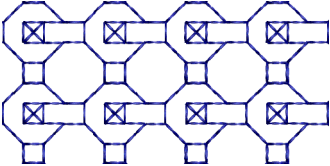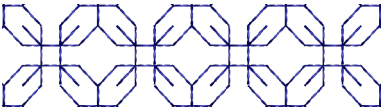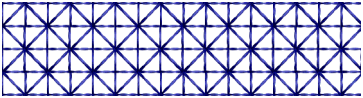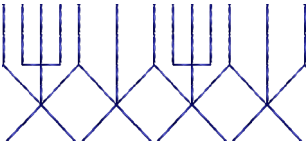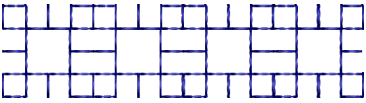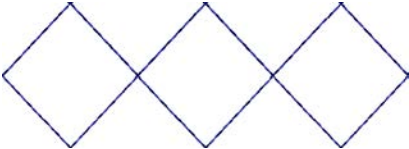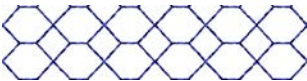
ID	Sample
B0005b	
B0006a	
B0007a	
B0008a	
B0009a	
B0010a	
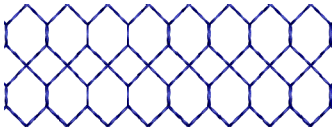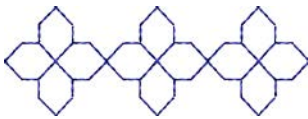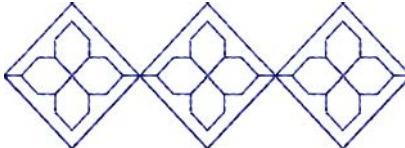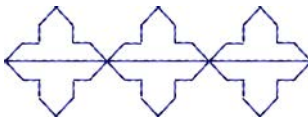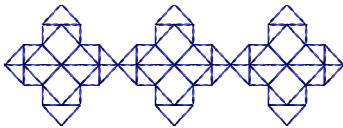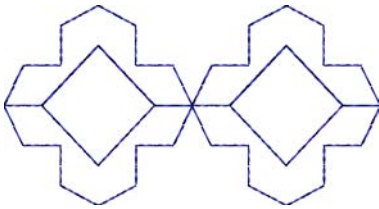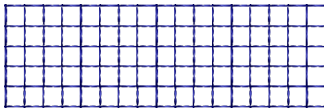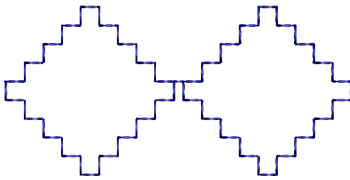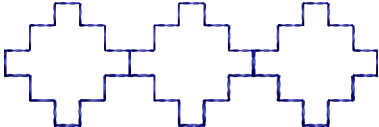
ID	Sample	ID	Sample
B0011a		B0022a	
B0012a		B0023a	
B0013a		B0024a	
B0013b		B0025a	
B0014a		B0026a	
B0015a		B0027a	
B0016a		B0028a	
B0017a		B0029a	
B0018a		B0030a	
B0019a			
B0020a			
B0021a			
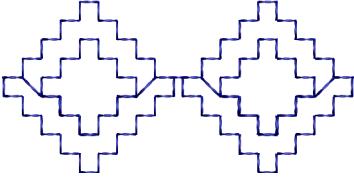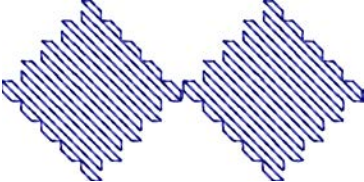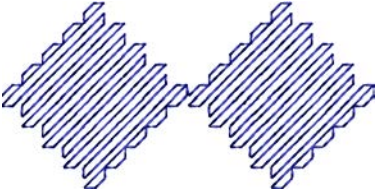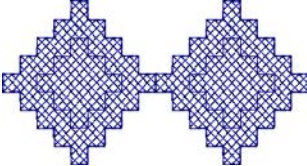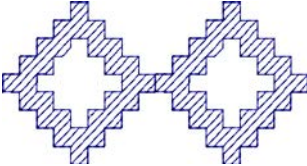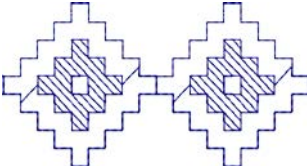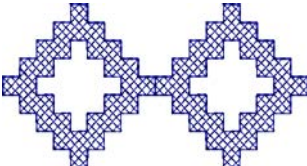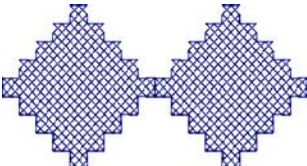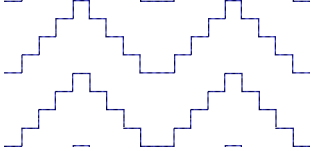
ID	Sample		ID	Sample
B0031a			B0041a	
B0032a			B0042a	
B0033a			B0043a	
B0034a			B0044a	
B0035a			B0045a	
B0036a			B0046a	
B0037a			B0047a	
B0038a			B0048a	
B0039a			B0048b	
B0040a			B0049a	
			B0050a	

ID	Sample	ID	Sample
B0051a		B0062a	
B0052a		B0063a	
B0053a		B0064a	
B0054a		B0065a	
B0055a		B0066a	
B0056a		B0067a	
B0057a		B0068a	
B0058a		B0069a	
B0059a		B0070a	
B0060a		B0071a	
B0061a			
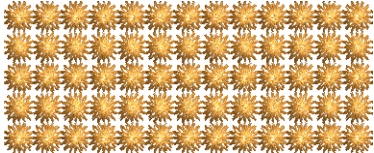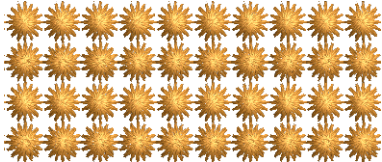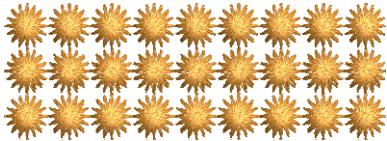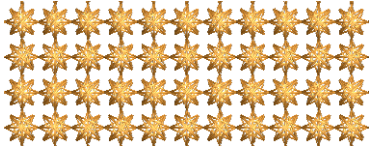
ID	Sample
B0072a	
B0073a	
B0074a	
B0075a	
B0075a	
B0075a	
B0075a	
B0075a	

ID	Sample
B0075a	

Candlewicking patterns
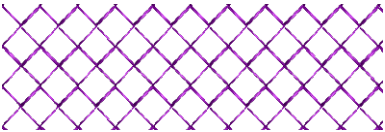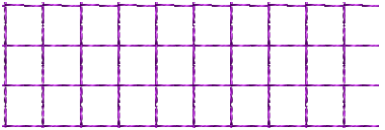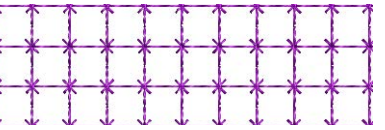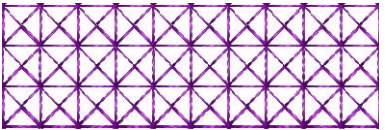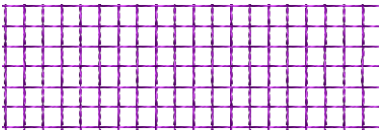
Candlewicking is a traditional white-on-white embroidery technique, usually done on white linen or cotton fabric with heavy cotton threads. Candlewicking patterns can be used either as borders, as fills, or even pattern stamps. See Creating candlewicking outlines and Creating candlewicking fills.

ID	Pattern
Knot-3mm	
Colonial-4mm	
Colonial-4.5mm	
Half Knot	

Lacework patterns

Lacework stitch consists of an open square trellis-like pattern which gives objects a lacey look. Lacework

can only be applied to filled objects with a single stitch angle. See Creating lacework fills for details.

ID	Pattern
L0001a	
L0002a	
L0003a	
L0004a	
L0005a	

Glossary

Active window: The active window is one to which the next command or action will apply. If a window is 'active', its title bar changes color to differentiate it visually from other open windows.

Alphabet: A set of characters of the same design or style including letters, numbers and typographical symbols.

Anchor point: A fixed point used when rotating, scaling, skewing or mirroring a design.

Anti-aliasing: A software technique similar to dithering which is used to soften hard outlines where color blocks intersect. It produces smoother outlines by 'blurring' the pixels where colors join.

Appliqué: Decoration or trimming cut from one piece of fabric and stitched to another to add dimension and texture. Designs with appliqué can be more economical than embroidery alone, if appliqué occupies a significant amount of the design, thereby lowering stitch count.

Appliqué cutter: A device that can cut fabric along a line, somewhat like old pen plotters. It requires a vector file as input. In MS Windows they can be set up as a type of printer device.

ARQ: BERNINA Quilter format.

ART: BERNINA Embroidery Software format.

Artistic View: A realistic, 'three dimensional' preview of a stitched embroidery design.

Artwork: Bitmap or vector graphic used as a backdrop for digitizing. See also Bitmap image and Vector graphic.

Image Preparetion: See Image preparation.

ARX: BERNINA Embroidery Software Cross Stitch format.

Auto Appliqué: Auto Appliqué is an embroidery object associated with an appliqué which provides automatic stitching to place it, tack it down, and cover its edges.

Auto Center: Auto Center automatically centers the start and end points of a design.

Automatic digitizing: Digitize complete images automatically. Auto Digitizer automatically converts artwork to embroidery objects and generates stitches.

Auto Jump: Preserves long stitches in an object by splitting them into a series of jumps. This prevents the machine from inserting unwanted needle penetrations when the maximum frame movement is exceeded.

Auto Scroll: The Auto Scroll feature automatically scrolls the screen while you are digitizing.

Auto-sequencing: The Auto-sequencing feature lets you digitize like objects – e.g. the fingers of a hand – without having to think about the most efficient stitching sequence and joins.

Auto Spacing: Auto Spacing only affects Satin stitch. It adjusts stitch spacing according to column width.

Automatic color change: Ability of multi-needle embroidery machine to follow a command to change to a specified needle with a different thread color.

Automatic pull compensation: Embroidery stitches pull the fabric inwards where the needle penetrates. This can cause the fabric to pucker, and gaps to appear in the embroidery. Automatic pull compensation counters this effect by 'overstitching' outlines of filled shapes on the sides where the needle penetrates. This means the design can be optimized for different fabrics. See Pull compensation.

Back appliqué: A fabric piece used behind a design where the front fabric will be cut away to reveal the fabric beneath it.

Backdrop: An electronic image used as a guide for digitizing designs on-screen. Two types are used – vector or bitmap. Insert them from various file sources, or copy and paste them via the Windows clipboard.

Background: BERNINA Embroidery Software lets you change the background color of the Design Window to match the color of your fabric. Or you can select a background fabric for more realistic previews and presentations. The background is saved with the colorway.

Backing: Also known as 'stabilizers', backings are woven or non-woven materials placed beneath the item or fabric being embroidered for stability and support. The more stitches a design has, the heavier the backing required. Backings are available in various weights and types such as cut-away, tear-away and wash-away (soluble). Professional embroiderers use tear-away stabilizers for woven fabrics and cut-away stabilizers for knits. See Topping.

Backstitch: Backstitch is an input method which can be used for delicate outlines. This stitch follows intricate curves well. It is also is the term used for every second row of stitches in a Tatami fill. See also Standard backstitch, Borderline backstitch, and Diagonal backstitch.

Backup: The copying of files onto floppy disk or other storage media in order to duplicate and secure data. Usually two copies are made and kept separately.

Baseline: The notional line on which the letters of an alphabet sit. Only descenders extend below it. Baselines determine the shape of lettering objects in a design. Place it on straight horizontal or vertical lines, curve it around a circle or arc, or digitize your own baselines.

Baseline Angle: The baseline angle determines the absolute angle of the

baseline relative to the horizontal axis. You use it to align letters to a significant part of the design.

Batting: A layer of padded material between the front and back fabric to add thickness and substance.

Bitmap: An electronic image made up of dots or 'pixels', in contrast to vector 'outlines'. Typically created in paint programs, bitmaps have file extensions such as BMP, JPG, GIF, TIF and PCX. When enlarged or scaled down, vector graphics preserve image quality while bitmap images generally cause problems of pixilation and image degradation. See also Pixel.

Blackwork: Blackwork gets its name from the black silk thread traditionally used in this form of embroidery. It can be used to decorate articles such as hankies, table napkins, table clothes, and doilies.

Blanket stitch: Widely used for tacking down appliqués as a decorative border. The stitches form a comb pattern.

Block: The basic unit of a quilt top.

BMP: Windows bitmap image format. See also Bitmap.

Bobbin: Spool or reel that holds the bobbin thread, which helps form stitches on the underside of the fabric.

Bobbin embroidery: Designs worked with the fabric hooped facedown and the specialty thread or ribbon wound onto the bobbin. Most effective for simple designs such as leaves and vines, or special effects with threads too heavy to be threaded through the needle.

Bonding: Permanently joining two fabrics together with a bonding agent. Heat sealing.

Border: Single closed-curve object which can be optionally added to a monogram. Also, a strip of fabric that is joined to an inner quilt to enhance it.

Bounding box: The dotted rectangle that appears when you select a range of items.

Candlewicking: A traditional white-on-white embroidery technique, usually done on white linen or cotton fabric with heavy cotton threads.

Cascade: A way of arranging open windows on the desktop so that they overlap each other, with the title bar of each window remaining visible.

Checkbox: A small square box that appears in a dialog box and that can be selected or cleared. When selected, a tick or a cross appears. A checkbox represents an option that you can set.

Click: Press and release the left mouse button. See also Right-click.

Click-and-drag: Click to select, hold down the left mouse button, move the cursor and release.

Clipboard: A temporary storage area in PC memory for what was last cut or copied. Images on the clipboard can be pasted into designs any number of times.

Close button: Used to close a window or an application. In MS Windows, it appears as a small box with an 'X' in it at the top-right of the title bar.

Color depth: Color depth, also called 'pixel depth', refers to the amount of color information available to each pixel in an image. An image with a color depth of 1-bit can display only two colors. As the color depth increases, more colors are available – 16 Colors (4 bit), 256 Colors (8 bit), High Color (16 bit), True Color (24 bit).

Color palette: The color palette contains a selection of thread colors tailored for each design. This color scheme, or 'colorway', represents the actual thread colors in which a design will be stitched. See also Thread chart.

Color Reduction: See Image preparation for details.

Colorways: Colorways are multiple color schemes for the same design. They are made up of colors defined in 'color books' which may be created in Wilcom BERNINA Embroidery Software or similar design program, or may be selected from

a patent color system such as Chromatone or Pantone.

Column: Narrow, long, curving shape.

COM port: A standard serial port used as a connection point for peripherals. Other ports may be present if the appropriate internal option cards have been installed. The computer must be informed which port is being used by which peripheral – e.g. COM1, COM2, etc.

Command: An instruction issued to the software in order to carry out an action. It may be as simple as 'paste an object' or as complex as 'regenerate stitches'. It is usually activated via a menu item, toolbar icon, or command button in a dialog.

Command button: A button in a dialog which executes or cancels the selected action. Two common command buttons are Cancel and OK.

Closed Curve: Input method, used to digitize large and complex shapes. Allows holes to be designated at the same time the object outline is digitized. The object is thus digitized as one fill area, instead of being broken down into multiple sections. Objects so created are known as Closed Curve objects.

Condensed file: See Outline file for details.

Configuration: The size and type of computer hardware. Can also be used to mean the options provided with your software.

Confirmation message: A message displayed by the software asking you if you are sure you want to proceed – e.g. when you want to delete a design.

Connector stitches: Connector stitches link objects in a design. They can be run stitches or jumps. You can use automatic settings to generate connectors, trims and tie-offs, or add them manually.

Connectors: Hardware devices to connect cables to ports. If the connection is male, the port is female, and vice versa. The wiring configuration of each device is determined by its function.

Copy: To place a copy of a selection onto the clipboard. See also Duplicate.

Control points: Control points are used to modify object shapes, stitch angles and entry and exit points. You can change the shape of an object by moving, adding or deleting control points on the outline. For most objects, you can also change control points from corner points to curves.

Contour stitch: Contour is a curved fill stitch type – stitches follow the contours of a shape, creating a curved, light and shade effect. It only works on columnar shapes. There are two types – Standard and Spiral – both of which can be applied to Input A, Input B, Input C or Ring objects. Standard Contour can also be applied to Circle objects.

Copyright: A right granted by the government or by international agreement giving the owner the exclusive privilege to publish and sell artistic work during the life of the creator plus 50 years.

Corner points: In standard digitizing, corner points indicate where a curve changes direction. The user digitizes a line segment with two consecutive corner points. The run and turning fill stitch generation algorithms interpret corner points as subdividing the curve, and so always generate a stitch penetration at corner points.

Cover stitch: Cover stitch is the border around an appliqué shape. You can control various settings including cover stitch type – Satin or Blanket – width, stitch spacing, as well as the offset.

Conversion software: Programs that read information, other than from a card, and translate it from one sewing machine format to another.

Converter box: A converter box acts like a translator from one memory card format to another, via computer. Various companies offer this technology under names like the Magic Box™ from Oklahoma Embroidery. They translate designs from memory cards in other formats or from a hard drive, disk, or CD and write the design to a blank card.

CPU: Central Processing Unit.

Cross stitch: Two stitches that cross at the center to form an X. Laid in rows or within a box shape to form geometric designs. Creates a handmade appearance.

Current property settings: Current property settings override the template defaults. Unless you deliberately change them, these take the default values. You generally change them to save time when digitizing. For example, you may preset Tatami stitch spacing to use a specific density for all new Tatami objects you create. See also Object properties.

Curve smoothing: Curve smoothing is used to filter out 'mouse jaggies' generated by freehand techniques and to convert the generated path into a relatively smooth curve. Advanced curve smoothing typically works on an entire outline, and includes corner detection to better approximate the intended curve.

Custom designs: Designs created by digitizing artwork or manipulating existing patterns.

Cut: An editing function. To remove a selection from a design. The cut selection is stored in memory (on the 'clipboard') and can be pasted into the same or different design.

Cutting line: A second line of run stitches that forms a guide when trimming the fabric of an appliqué patch.

Default object properties: See Default values for details.

Default values: Pre-defined settings which determine object properties such as stitch spacing, as well as certain system settings. These are stored in the design template. They are automatically applied to any newly created objects. They remain 'current' unless you override them with new settings. See also Current property settings.

Defects: See Stitching defects for details.

Density: See Stitch density or Thread density.

Design: A 'design' is a file in the native embroidery format – e.g. EMB, JAN, ART

– of embroidery digitizing software. The design source may be a stitch format design. The design contains stitching information such as fabric type in addition to stitched shapes.

Design card: Disk containing computerized embroidery designs read by the embroidery machine's computer.

Design elements: The decorative design components that make up a monogram (including ornaments and borders).

Design file: See File for details.

Design object: See Object for details.

Design properties: Designs themselves have properties, some of which can be modified, others not. The most important design property is its source – Native Design, Imported Outlines, Processed Stitches, or Imported Stitches. Other properties include the software version number, stitch count, and so on. Colorways too are properties of the whole design.

Design sequence: See Stitching sequence for details.

Design source: While embroidery files are broadly classified as 'outline' (condensed) or 'stitch' (expanded), BERNINA Embroidery Software internally tags files as belonging to one of four types–Native Design, Imported Outlines, Processed Stitches, or Imported Stitches. See also Design properties.

Design template: See Template for details.

Design Window: The Design Window is where designs are displayed for viewing and modification.

Desktop: MS Windows terminology for the screen background on which program icons are displayed.

Destination folder: The folder (directory) where you intend to copy or move one or more files.

Detail: An outline, a border, a pickout run, or a small area of the design you

want to be stitched out last when using Auto Digitizer.

Dialog: An on-screen box that either requests or provides information. Many dialogs present options to choose among before a command is carried out. Some dialogs present warnings or explain why a command cannot be completed.

Digitizing: Process of encoding a design. Artwork is converted into a series of 'embroidery objects' to be read and manipulated by a specialist CAD/CAM application. Before outputting to embroidery machine, it is converted into 'stitch data'.

Digitizing tool: Digitizing tools, sometimes referred to as 'input methods', are similar to drawing tools except that the end result is an embroidery object rather than a vector object. Different digitizing tools are suited to creating different shapes or design elements.

Disk: See Floppy disk for details.

Disk drive: Computers usually have three types of disk drive: a hard disk (or fixed disk) which usually supports the mass storage of information and applications, a floppy disk drive, and a CD ROM drive.

Display: A screen used to display the output of a computer. Also known as the monitor.

Dithering: A software technique which combines existing colors in a checkerboard arrangement of pixels. It is typically used to simulate colors that are missing from an image palette. A type of optical illusion created by placing two pixels of different color next to each other. The human eye automatically resolves the two colors into a third color.

Dongle: A security hardware device required to run protected software. Some are attached to a parallel port, others to a USB port.

Dots Per Inch (DPI): A measurement of screen or printer resolution; the number of dots in a line of 1".

Double-click: Click the left mouse button twice without moving the mouse.

Double-clicking carries out actions such as opening a program from an icon.

Download: The process of transferring a copy of a file from a remote computer or the internet to a computer or other device such as an embroidery machine.

Drag: An operation of the mouse. Holding the (left) mouse button while moving the mouse. Typically used for moving something on the screen.

Dropdown list : A single-line dialog box control that opens to display a list of choices.

Duplicate: When an object is duplicated, it is not copied to the clipboard. This leaves the clipboard free for you to cut or copy other objects.

Editing: Changing aspects of a design via a computerized editing program. Most programs allow you to scale designs up or down, edit stitch-by-stitch or block-by-block, merge lettering with the design, move aspects of the design around, combine designs and insert or edit machine commands.

Elastic Lettering: Special effects applied to lettering objects to make them bulge, stretch or compress.

Emblem: Embroidered design with a finished edge, applied to a garment after stitching, commonly an insignia of identification. Also known as a 'crest' or 'patch'.

Embroidery: Decorative stitching on fabric. Generally involves non-lettering designs, but can also include lettering and/or monograms. Evidence of embroidery exists during the reign on Egyptian pharaohs, in the writings of Homer and from the Crusaders of the 12th century. Has evolved from hand-work to manual sewing machines and from hand-looms and Schiffli machines with hundreds of needles to high-speed, computerized multihead machines.

Embroidery object: See Object for details.

Embroidery thread: See Thread for details.

EMF: Enhanced Metafile vector graphic format.

Entry point: The entry point is the point where the thread enters the embroidery object. This should coincide with the exit point of the preceding object.

Exit: To leave a current window or application.

Exit point: The exit point is the point where thread leaves the embroidery object. This should coincide with the entry point of the next object.

EXP: Stitch or 'expanded' file format native to Melco machines.

Extension: See File extension for details.

Fabric: Fabrics have many properties, the main one being elasticity or 'fabric stretch'. Surface texture, if present, is another property that requires different underlay types. The system can automatically compensate for the pull-push effect of different fabrics. Push, warping, and shearing are reduced by suitable underlay for the stitch type and fabric.

Fabric stretch: Embroidery stitches pull the fabric inwards where the needle penetrates. This can cause the fabric to pucker, and gaps to appear in the embroidery. Use automatic pull compensation to counter this effect by 'overstitching' outlines of filled shapes.

Facing: See Topping for details.

Factory settings: These are the initial system settings as installed. They are a standard known setting that you can return to. Some customers want to create custom settings tailored to the exact fabric they are using most frequently. The 'My Fabric' settings are those retained in the design and can be saved to the template file.

Fancy Fill: A decorative fill stitch which can be applied to various object types where needle penetrations form a tiled pattern. Different preset patterns are available for use.

File: A named collection of specifically related information stored on a disk.

Designs that have been saved are stored as files.

File extension: The dot and three letters at the end of a filename such as '.BMP'. The extension identifies the file as a certain type, readable by certain applications.

Filename: The name of a file, including the extension, e.g. Cat.BMP.

Fill stitch: Series of running stitches commonly used to cover large areas. Different fill patterns can be created by altering the angle, length and repeat sequence of the stitches. Also known as Geflect stitch.

Finishing: Processes done after embroidery is completed. Includes trimming loose threads, cutting or tearing away excess backing, removing facing or topping, cleaning any stains, pressing or steaming to remove wrinkles or hoop marks and packaging for sale or shipment.

Flagging: Up and down motion of fabric under action of the needle, so named because of its resemblance to a waving flag. Often caused by improper framing of goods. Flagging may result in poor registration, unsatisfactory stitch formation and birdnesting.

Floppy disk: A flexible disk permanently sealed in a square plastic jacket – e.g. HD/DD 3.5" floppy disk. Used for information storage 'off-line' for security and/or infrequently used data. Also used for transferring punched embroidery design (stitch file) data from computer to embroidery machine.

Folder: A collection of files and subfolders that are stored together on a disk. Part of structure for organizing files on a disk.

Font: A set of characters, including letters, numbers and other typographic symbols, of the same design and style. Also called Alphabet, even if it includes non-letter characters. See also Alphabet and Lettering.

Free motion machine embroidery:
See Thread painting for details.

French knot: A stitch featuring a raised knotted center.

Fringe: Threads that are cut and hang loosely from the edge of a design.

Gradient Fill: artistic stitch effect that gradually varies stitch spacing between dense and open fill along an embroidery object, producing shading and color effects which are difficult to achieve manually.

Graphics application: Software application that creates or allows you to edit bitmap images and/or vector graphics. Vector graphics can be scaled with no loss of sharpness. Examples of vector editing programs are Adobe Illustrator, MacroMedia Freehand and CorelDRAW®. See also Paint package and Drawing package.

Grayscale: A grayscale picture is made up of 254 different shades of gray, plus solid black and solid white for a total of 256 different tones. Black and white photographs are grayscale.

Grid: Grid lines provide visual cues to help you accurately place a design. When you start the software for the first time, grid lines appear by default.

Guide run: Series of stitches used to align embroideries in multi-hooping situations or to assist in fabric placement for appliqué. It is the first appliqué layer stitched and is used to position the appliqué fabric on the background material. See also Appliqué.

Handle: See Selection Handle.

Hard disk: A device for mass information storage. Usually the disk is fixed inside the system unit, and a second hard disk can be added. When you store information on the hard disk it will remain there until you delete it. As it has a finite capacity, file management is required.

Hardware: Computer componentry, including monitor, keyboard, digitizing tablet, printer, scanner, sewing machine, etc.

Heirloom embroidery: Embroidered goods designed to be passed down from generation to generation.

I-beam: One shape taken by the PC pointer, it indicates that text can be input at the point selected. The shape is like the capital letter 'I'.

Icon: Miniature picture used in the screen display instead of, or as well as, text. The file list can be displayed as icons with the filenames underneath; the toolboxes which appear in the left of the screen are composed of icons.

Image preparation: Cleaning up scanned images as input to embroidery digitizing. This may involve any one or a combination of the following techniques: reducing the number of colors, adding or emphasizing outlines, removing noise, dithering or anti-aliasing, eliminating unnecessary detail, cropping sections or eliminating backgrounds.

Input method: See Digitizing tool for details.

JPG: JPEG file interchange bitmap image format.

Jump: A frame or hoop movement without a needle penetration, commonly used to get from one point in a design to another.

Justification: The position of lettering on the embroidery baseline.

Lacework: Lacework involves the use of threads to produce overall embroidery of full-length fabrics. Most often used to embellish women's apparel and home fashions. It is the most widely used application for Schiffli machines.

Letters: Initials or name making up a monogram. Letters of an alphabet or font.

Lettering: Embroidery using letters or words. Lettering commonly called 'keyboard lettering' may be created from pre-defined alphabet styles or fonts, allowing variance of size, height, spacing, density and other characteristics.

Line art: A drawing with only two colors – usually black and white.

List box: A single-line dialog that opens to display a list of choices.

Lockstitch: Commonly referred to as a lock-down or tack-down stitch, a lockstitch is formed by three or four consecutive stitches of at least a 10-point movement. It should be used at the end of all columns, fills and at the end of any element in your design where jump stitches will follow, such as color changes or the end of a design. May be stitched in a triangle, star or in a straight line. Lock stitch is also the name of the type of stitch formed by the hook and needle of home sewing machines, as well as computerized embroidery machines.

Logo: Name, symbol or trademark of a company or organization. Short for logotype.

Looping: Loops on the surface of embroidery generally caused by poor top tension or tension problems. Typically occurs when polyester top thread has been improperly tensioned.

Magic Wand: Technique for creating embroidery designs by automatically digitizing color blocks in electronic images.

Max/Min stitch length: The minimum and maximum stitch lengths allowable in a design determine the outside limits as measured between needle penetration points. They are governed by the minimum and maximum frame movements that the machine can make.

Maximize button: For Windows, the small box in the center of the group of three at the right of the title bar. Click the Maximize button to enlarge a window to its maximum size.

Memory: The place in the computer's system unit that stores information while you are working with it. If you exit without saving information in memory, it will be lost.

Menu bar: The menu bar contains dropdown menus of commands. Some of the same commands are available on the toolbar.

Menu chart: The menu chart provided with the software lets you select commands directly from the digitizing tablet using the puck. You need to 'register' it before use.

Minimize button: For Windows, the small box to the left of the group of three at the right of the title bar. Click the Minimize button to reduce a window to its minimum size.

Modal dialog: A dialog which, while open, prevents the user from selecting any control or object outside it. Changes made to settings inside the dialog are not effective until it is closed.

Modeless dialog: A dialog which, while open, allows the user to select objects freely. Controls in the dialog change to conform to the values of selected objects, or show relevant system information when no object is selected. Changes made to settings in the dialog may be applied while it remains open. Other dialogs and commands may be opened and used while the modeless dialog remains open.

Modem: Unit to telegraphically send computer information from one computer to another.

Monogram: Embroidered design composed of one or more letters, usually the initials of a name. Can also consist of borders or designs to mark ownership of items such as clothing, caps, handkerchiefs, etc.

Multi-appliqué: A type of appliqué object composed of more than one piece of fabric and bordered by various types of embroidery objects.

Native file format: A design saved in the original format of the application you are working with is said to be the 'native' file format. It can also refer to the stitch file format required by a specific embroidery machine. When saved to another format, it is known as a non-native format.

Needle: Small, slender piece of steel with a hole for thread and a point for piercing fabric. A machine needle differs from a handwork needle; the machine needle's eye is found at its pointed end. Machine embroidery needles come with sharp points for piercing heavy, tightly woven fabric; ball points which glide between fibers of knit; and variety of specialty points, such as wedge points, which are used for leather.

Needle points: You can view needle points in a design to check density or, for instance, to select stitches for editing.

Noise filtering: Noise filtering means restoring the solid color blocks of original artwork in scanned images. This is achieved by merging different shades into one solid color. Noise filtering is important for automatic digitizing because it makes it easier for the software to identify solid color blocks which become embroidery objects in the resulting design. It also cleans up blurred or mottled areas of color.

NORMAL template: Default template. See also Template.

Object: In embroidery design terms, an object is an individual 'element' of a design. An object has many properties, such as its size, color, sequence in the design, stitch type and values, including the rules for stitching. See also Vector object.

Object outline: See Outline file for details.

Object properties: All embroidery objects in BERNINA Embroidery Software contain defining settings or 'values'. The values stored with an object become its 'properties'. All objects have certain properties in common such as size and position. There are other, more specific properties of objects which depend on the object type.

Object type: An object has a type, shape, thread type and color, stitching settings and a position in the stitching order. The object type may or may not determine the intended final appearance of the stitching.

Ornament: A grouped embroidery design which may consist of one or more objects of any type and one or more colors. Ornaments may be placed in up to eight positions around letters, or centered behind letters.

Outline file: Outline or 'condensed' files are high-level formats which contain object outlines, object properties and stitch data. When you open an outline file in BERNINA Embroidery Software, corresponding stitch types, input

methods and effects are applied. Outline files can be scaled, transformed and reshaped without affecting stitch density or quality. See also Stitch file.

Outline stitch: Stitch such as Run or Satin used to outline an embroidery object.

Overview window: Use the Overview window to view a thumbnail of the design. The window is updated whenever you make a change, and can be used to zoom in or pan across the Design Window.

Paint package: Software application that creates or allows you to edit image files. You can create lines and filled areas as well as edit the image pixel-by-pixel using paintbrushes, erasers and spraypaint tools. Examples of image editing programs are Adobe Photoshop, Jasc PaintShop Pro and Corel PHOTO-PAINT® Essentials 4. See also Graphics application.

Pan: Use Pan to view parts of a design which are not currently visible in the Design Window.

Parallel port: A connection on a computer, usually LPT1, where you plug in the cable for a parallel printer and/or a dongle. Parallel ports are used to connect some embroidery machines. They are named LPT1, LPT2, etc. When you set up a parallel machine connection, select the parallel port and the required protocol, and complete the machine setup procedure.

Paste: To insert an object, which has previously been placed on the clipboard by cutting or copying selected objects, into a design. You can paste from the clipboard as many times as you like.

Patch: The fabric piece use in appliqué.

Patchwork: The composite of pieces sewn together to form a large piece, such as a quilt.

Patchwork block: A collection of patches sewn together, usually forming a regular shape such as a rectangle. These are then sewn together to make a quilt.

Pattern Fill: Pattern Fill is a decorative fill stitch with which you can fill Closed Curve objects. You can also create special or three dimensional effects.

Pattern Run: Patterns which are linked together along a digitized line. You can create decorative outlines using any pattern from the list.

PCX: PC Paintbrush bitmap image format.

PDF: Portable Document Format. Used to view the Online Manual in Acrobat Reader.

Pencil rub: Low-cost way of producing an embroidery design sample. Consists literally of a piece of tracing paper placed over a stitchout and rubbed lightly with a pencil to produce an impression of the embroidery.

Peripheral: Any device connected to a computer which is to some degree controlled by the computer – e.g. an embroidery machine or printer.

PhotoSnap: Technique for creating embroidery designs directly from photographs and other grayscale bitmap images. PhotoSnap designs consist of rows of Satin or Contour stitches of varying spacing. The effect resembles the output of a line printer.

Pixel: A dot. For example, dots of light that make up the picture on a computer screen. The more pixels there are in a given area – that is, the smaller and closer together they are – the higher the resolution.

Pixilation: An effect which occurs when a bitmap image is enlarged so that the individual pixels are obvious to the eye.

Placement line: The first appliqué layer stitched – placment lines are used to position appliqué fabric on background material. See also Appliqué.

PNG: Portable Network Graphics vector graphic format.

Pointer: A part of the screen display, the pointer can take various shapes. It is moved by moving the mouse and can be used to point to anything on the screen to make selections and indicate points for input. It also indicates when the computer is working and no input is possible.

Point: Unit of measurement, with 10 points equal to 1 mm.

Port: A connection on a computer where you plug in the cable that carries data to another device. Ports which are used to attach peripherals have names like COM1 or LPT1 so that you can specify where the peripherals are attached.

Position: The Position indicator shows position of the design (X, Y) in the Design Window.

Print Preview: Use to preview design and design information before printing a Production Worksheet. The design is displayed as it will be printed.

Production worksheet: The production worksheet is the link between the designer and the embroidery machine operator. It contains a design preview as well as essential production information, including the design size, the color sequence and any special instructions.

Program: A computer program or 'application' is generally used for a particular kind of work, such as word processing or database management.

Properties: See Object properties for details.

Protocol: The communications protocol depends on the connection type between the computer and the embroidery machine. This will be one of: standard serial, parallel, serial to parallel converted (DCi), or interface card.

Puckering: Result of the fabric being gathered by the stitches. Many possible causes include incorrect density, loose hooping, lack of backing, incorrect tension or dull needle.

Pull compensation: Digitizing technique that takes into account the distortion of a design that will occur because of the interaction of thread with fabric. 'Push and pull' will cause a circle digitized perfectly round to sew with the sides pushed out, resulting in an egg

shape. Generally, it is necessary to extend horizontal elements and reduce vertical elements. See also Automatic pull compensation.

Push-Pull: When any stitch is sewn into fabric, the tension in the thread between needle penetrations can build up and result in a 'push-pull' effect. This can cause distortions in your sewn designs, poor stitch registration and even the bunching of the fabric. The degree of distortion can be affected by the following factors: stitch density, fabric type, underlay, backing type, thread type and garment orientation. See also Stitch-Pull.

Quilting: In general, the process of making a quilt; in specific, the stitching of patterns into the quilt layers to add strength and decoration to the quilt - top, batting and backing -- to form decorative patterns on the surface of the quilt and to hold the layers together.

RAM: Random Access Memory, computer chip maintaining memory.

Read: To open a design which has been written on a design card or to an embroidery machine.

Redraw: The screen display is refreshed. This is useful when parts of the display have become obscured in the course of editing. See also Slow Redraw.

Refresh: See Redraw for details.

Resequence: You can change the position of a selected object by cutting it, then pasting it somewhere else in the stitching sequence, or by using the Resequence command. You can also resequence objects by color or using the Color Film.

Resizing: See Scaling for details.

Resolution: Resolution determines the number of dots per inch (dpi) used to create an image. The higher the value, the clearer the image, but the more storage space required. A resolution of 75 dpi generally produces good results.

RGB: RGB stands for red, green, and blue. It is the system used by computer monitors to create color.

Right-click: To press and release the right mouse button. See also Click.

Rotation handles: When you select an object, selection handles display at its extremities. If you click the object again, rotation and skew handles appear around the object. Rotation handles appear at the corners of the object and an anchor point displays at the object's center. Skew handles are diamond-shaped and appear at the center-top and bottom of the object. See also Selection handles.

Run stitch: Run stitch (also called Walk stitch) places a single row of stitches along a digitized line. The needle penetrations are placed in consecutive order. Run is generally used for stitching outlines and connector stitches. Run stitch length can be set to automatically vary in order to follow tight curves.

Satin Special: Satin Special only affects Satin stitch. When applied, it breaks any long Satin stitches into shorter ones. It also distributes needle penetrations in a random pattern so that they do not form a line in the middle of the shape. Used primarily to prevent long stitches in wide columns, it can also be used as an alternative to Tatami fill. Auto Split looks more Satin-like and works well with turning stitches, creating soft lines and a little more depth.

Satin stitch: Type of fill stitch. Formed by closely arranged zigzag stitches, it can be stitched at any angle and with varying lengths. The thread is laid across a shape with a zigzag sewing action where two stitches form a column. Hence it is only suitable for small or narrow shapes. As the stitches are almost parallel, Satin provides good coverage. It is often used for lettering, outlining, and details. Because there are generally no needle penetrations breaking up the fill, Satin stitch creates a glossy effect.

Save: To store (design) information in a file. Each time you save a design, you replace the previous version using the filename. You should save your design frequently.

Scalability: Ability to enlarge or reduce a design. In expanded format, most scaling is limited to 10 to 20%, because the stitch count remains constant despite

final design size. In condensred formats, on the other hand, scale changes may be more dramatic, because stitch count and density may be varied.

Scaling: Ability to enlarge or reduce a design in size. In stitch or 'expanded' format, most scaling is limited to ±5% because the stitch count remains constant despite final design size. In outline or 'condensed' formats, scale changes may be more dramatic because stitch count and density are recalculated.

Scanner: A device that converts physical images into digital form so that they can be stored and manipulated by computer. Scanning allows you to take scanned images as a basis for embroidery design.

Screen calibration: You need to calibrate your monitor so that designs at 1:1 scale appear at real size. Do this when you first install BERNINA Embroidery Software, whenever you change your monitor, or adjust your monitor's horizontal or vertical controls.

Screen resolution: See Pixel for details.

Scroll bar: The bar at the bottom and right edge of a window whose contents are not entirely visible. Each scroll bar contains a small box, called a scroll box, and two scroll arrows to allow different types of scrolling.

Security code: Options in BERNINA Embroidery Software are controlled by a security device installed on the computer. Security access codes entered into the software are sent to this security device. Each security device has a unique serial number and identity code.

Security Device: See Dongle for details.

Select: To highlight an object or group of objects for the purpose of editing. Only selected items can be edited.

Selection handles: Eight small squares that appear symmetrically at the corners and edges of a selected object. Use them to position and resize objects. See also Rotation handles.

Sequence: See Stitching sequence for details.

Serial port: A connection point on a computer where you plug a serial communications device such as a modem. PC serial COM ports are male connectors, and can be either 9-pin or 25-pin. They are named COM1, COM2, COM3, etc. The number of available ports limits the number of devices you can connect. If additional ports are required, you can add them. Multi-port serial cards can also be used.

Serial Port Setup: Here you can adjust Baud, Data Bits, Stop Bits, Parity values. These settings must be identical to those of the embroidery machine. The type of handshaking must match the type of cable you are using.

Short stitch: Digitizing technique that places shorter stitches in curves and corners to avoid an unnecessarily bulky build-up or stitches.

Shortcut key: A key stroke or a series of keystrokes you can use to perform a task instead of using the mouse. For example, Ctrl+C actions the Copy command.

Sizing handles: See Selection handles for details.

Skew handles: See Rotation handles for details.

Slow Redraw: Use to redraw your design slowly. Slow Redraw lets you view the stitching and color sequence of a design in slow motion.

Software: Programs, such as MS Windows and BERNINA Embroidery Software, which run your computer.

Specialty fill: A fill stitch capability that produces a fill with a 'relief' or ornament within the fill-stitch area – e.g. Pattern Fill.

Specialty threads: Threads designed for effects such as shine, glitter, iridescence or thickness. The threads often are made from synthetic materials including rayon, mercerized cotton, metallics and textured nylon.

Status bar: Provides information about the whole design: number of stitches, position of the design (X, Y), number of colors (C), number of stops (S), etc.

Stemstitch: A detail stitch that can be used to outline items or fill in areas. It is used for stems and vines with other decorative stitches, or as an outline for Satin or Stipple fills.

Step stitch: Series of parallel stitches commonly used to cover large areas. Different step patterns can be created by altering the angle, the length and repeat sequence of the stitches.

Stippling: A method of creating a fill made of run stitches which meander around within a border. Often used in quilting.

Stitch: A stitch is one needle penetration; also used to refer to the thread laid down from one needle penetration to the next.

Stitch angle: The stitch angle is the angle the overall stitching follows within a shape. The shape may have a fixed stitch angle – e.g. 45° to the horizontal – or multiple stitch angles.

Stitch bunching: Standard stitch spacing is calculated at the outside edge of a shape. With sharp curves, spacing which provides adequate coverage on the outside edge may cause bunching along the inside edge. This may cause thread breakage when stitching out.

Stitch count: Stitch count refers to the number of stitches in a design. In BERNINA Embroidery Software one stitch is considered one machine revolution. See also Design properties.

Stitch density: The number of stitches per given area (or stitch lines per distance in a fill).

Stitch editing: Digitizing feature that allows one or more stitches in a pattern to be deleted or altered.

Stitch file: Stitch or 'expanded' designs are low-level formats for direct use by embroidery machines. They contain only stitch coordinates and machine functions. Stitch designs are generally not suited to scaling because stitches are not regenerated during rescaling. See also Outline file.

Stitch length: The distance between two needle penetration points. For maximum stitch length, the length is measured according to the X and Y co-ordinates, whichever is greater. Run stitch length can be set to automatically vary in order to follow tight curves. See also Max/Min stitch length.

Stitch-Pull: When any stitch is sewn into fabric the tension in the thread between needle penetrations can build up and result in Stitch-Pull. Stitch-Pull can cause distortions in your sewn designs, poor stitch registration and even the bunching up of fabric. The amount of Stitch-Pull that results in your design can be affected by the following factors: Stitch Density, Fabric Type, Underlay, Backing Type, Thread Type and Garment Orientation. See also Push-Pull.

Stitch type: Three basic stitch types are available with lockstitch machines – Run, Satin and Tatami (Weave). BERNINA Embroidery Software provides many variants of these.

Stitch spacing: Spacing between two consecutive needle penetrations on the same side of a column. The smaller the value, the greater the stitch density. For more open stitching, use larger values.

Stitching defects: Stitching defects may appear in the form of gaps between filled areas, fabric show-through and thread breaks. These are often caused by incorrect stitching settings – e.g. setting pull compensation too small for the fabric stretchiness.

Stitching sequence: The embroidery objects in a design form a stitching sequence. Initially, objects are stitched in the order in which they were created. You can change the position of a selected object by cutting it, then pasting it somewhere else in the sequence, or by using the Resequence command. You can also resequence objects by color or with the Color Film.

Stock designs: Embroidery designs readily available on disk or proprietary embroidery card. Digitized embroidery designs that are commercially available for general use by embroiderers.

System requirements: What your computer's hardware and software, operating together, can support. System requirements are printed on software packages, design disk cards and packs, CDs and other computer accessories. You need to know what your system can and cannot support, as sometimes a system is not capable of handling new software without adding memory or disk space.

Tackdown: Zigzag stitch, placed after placement and cutting lines, and used to fix appliqué patches to the background fabric before cover stitching is applied.

Tatami stitch: Series of run stitches, commonly used to cover large, irregular shapes. Stitches are laid in rows traversing back and forth across the shape. These can be parallel or slightly turning. Different fill patterns can be created by varying the stitch length, angle or sequence. Also known as Weave stitch.

Template: Special files used to store styles and default property settings. Use templates when digitizing frequently-used design types to save time re-adjusting the current property settings.

Tension: Tautness of thread when forming stitches. Top thread tension, as well as bobbin thread tension, need to be correctly set. Proper thread tension is achieved when about one third of the thread showing on the underside of the fabric on a column stitch is bobbin thread.

Textured Edge: Use Textured Edge to create rough edges, to create shading effects, or to imitate fur or other fluffy textures in your design.

Thread: Fine cord or natural or synthetic material made from two or more filaments twisted together and used for stitching. Machine embroidery threads come in rayon (high sheen), cotton (duller finish), polyester (strong and colorfast), metallics (synthetic core wrapped with metal foil or thin slivers of metal foil) and acrylic (sheen similar to rayon).

Thread chart: Thread charts are lists of pre-defined thread colors. They may be based on commercially available thread charts, or charts you define yourself. You can copy colors between different thread charts to create your own charts from existing colors. See also Color palette.

Thread code: Code is the identification number of a thread color in a brand.

Thread painting: The technique of forming designs on an embroidery machine by simultaneously running the machine and using a freehand motion with the fabric secured in an embroidery hoop, allowing the needle to 'draw' on the fabric surface.

Thread density: Different thread density systems are used by different thread manufacturers. Density A is normal embroidery thread (density 120/2, or 40). Density B is thicker, Density C is finer, and Density D is very fine.

Thread thickness: See Thread density for details.

Thread type: Embroidery thread varies in thickness. Types are A, B, C and D. Stitch density should be set according to the thread type. See also Thread thickness.

Tie-ins: Tie-in stitches are inserted at the start of objects to prevent stitches from unraveling. They are inserted inside the shape on the second stitch. You generally use them when the previous connector is trimmed.

Tie-offs: Tie-offs are generally placed before trims to prevent stitches from unraveling. You can adjust connector settings to automatically add tie-offs under certain conditions, or add them manually. You can also include trim functions so machines with trimmers cut the thread automatically.

Title bar: The horizontal bar located at the top of a window and containing the title of the window. On many windows, the title bar also contains the Control menu box and Maximize and Minimize buttons.

Toolbar: Toolbars provide quick and easy access to BERNINA Embroidery Software commands. Click a toolbar button to activate a command or, where applicable, right-click to view and adjust its settings.

Topping: Material hooped or placed on top of fabrics that have definable nap or surface texture, such as corduroy and terry cloth, prior to embroidery. The topping compacts the wale or nap and holds the stitches above it. It includes a variety of substances, such as plastic wrap, water-soluble plastic 'foil' and open-weave fabric that has been chemically treated to disintegrate with the application of heat. Also known as 'facing'.

Travel on Edges: In BERNINA Embroidery Software, Travel on Edges effect forces travel runs to the edges of objects so they do not show through open or loose stitching.

Travel run: Travel runs are typically used to connect segments of complex shapes. They can also connect adjacent objects. Because runs are not trimmed, they may be visible in the final embroidery. For this reason, they are less commonly used as connectors between objects than jumps. If objects are adjacent and connectors will be hidden, they can be used.

Traveling: You generally check a design's stitching sequence by 'traveling' through it by stitches, segments, functions or objects.

Trims functions: If you are using a machine with an automatic trimmer, the trim code causes the thread to be cut after a tie-off. In the software, trims are represented by a triangle with a small circle at the point where stitching starts again. The trimmed connector appears as a dotted line. You can adjust connector settings to automatically add trims, or add them yourself.

Trimmers: Devices built into an embroidery machine to automatically trim or cut remaining thread when the design jumps from one area to another or performs a color change.

Trimming: Action of cutting loose thread, removing backing, etc, from the final embroidered product.

TrueType Font: Digital font technology designed by Apple Computer and now used by both Apple and Microsoft in their operating systems.

TWAIN: Industry standard which allows devices (such as scanners) to communicate directly with design and layout programs. Both device and program must be TWAIN-compliant. This lets you use any TWAIN-compliant scanner with your software.

Underlay: Stitches sewn before other design elements to help stabilize fabrics. The stitching action that will attach the backing to the fabric being embroidered. It also supports the top embroidery for a more lofty, dimensional look. Underlay stitches are made up of a series of single run stitches, usually with a very short stitch length, and are digitized manually or placed automatically under the column (satin) or fill stitch areas of your embroidery design.

Underlay margin: The distance between an object outline and the edge of the underlay. Increase this margin to prevent underlay stitches from extending outside the cover stitches.

USB port: Universal Serial Bus Connector, a connection on a computer where you plug in the dongle.

Values: The actual settings – letters and numbers – that you enter into dialogs. See also Object properties.

Variable sizing: Ability to scale a design to different sizes.

Vector graphic: Any image displayed and stored mathematically as lines. Vector 'objects' include rectangles, ellipses, curves, polygon stars, complex stars and perfect-shape objects created in graphics applications such as CorelDRAW®. Unlike raster images, vector graphics contain geometric shapes and lines that combine to form the image. Vector graphics are scalable without distortion, and usually form small files. See also Bitmap image.

Vector object: Vector objects are derived from vector graphics and can be created in BERNINA Embroidery Software or imported. In BERNINA Embroidery Software they can be converted to and from embroidery objects. You can set general properties such as size and position, and arrange and transform them in the same way as other objects. See also Bitmap.

Wave Effect: With Wave Effect you can curve Closed Fill stitches along a digitized line to create flowing stitch effects. The stitches follow the digitized line but maintain uniform density and needle penetration patterns.

Weave stitch: See Tatami stitch for details.

Weight: When referring to T-shirts, the three standard weight divisions are mid-weight/value, heavyweight/premium, and super heavyweight.

WMF: Windows Metafile vector format.

Write: To send design information to an embroidery disk, design card or embroidery machine for immediate stitchout or storage.

X/Y coordinates: The horizontal (X) and vertical (Y) distances on a graph or computer screen. Use X values to measure width, and Y values to measure height.

Zigzag stitch: Zigzag stitch is similar to Satin but is generally used where fewer stitches are required. The needle penetrates each side of the column, laying the thread across in an open zigzag pattern. The density is determined by the stitch spacing setting. The settings for Zigzag fill stitches are stored separately from Zigzag and Double Zigzag underlay settings.

Zigzag underlay: Zigzag and Double Zigzag underlay stitching is used to support wide columns.

Zoom factor: The scale at which the design is currently displayed.

INDEX