

BERNINA Embroidery Software

Version 7



made to create **BERNINA**

REFERENCE MANUAL

BERNINA EditorPlus
BERNINA DesignerPlus

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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

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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 X6, 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 X6 and its sister product, Corel PHOTO-PAINT® Essentials X6 can also be run as standalone applications. For a full description of the 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, please read **Getting Started**. 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.

Update users

BERNINA Embroidery Software is an enhanced version of our earlier products. It has many new and expanded features. Please read the Release Notes available from the **Help** menu to quickly familiarize yourself with the scope of these improvements.

Product levels

There are two BERNINA Embroidery Software product levels:

- ▶ BERNINA EditorPlus
- ▶ BERNINA DesignerPlus.

BERNINA Embroidery Software users can purchase software upgrades directly from the Internet. See **Upgrades & access codes** for details.

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:

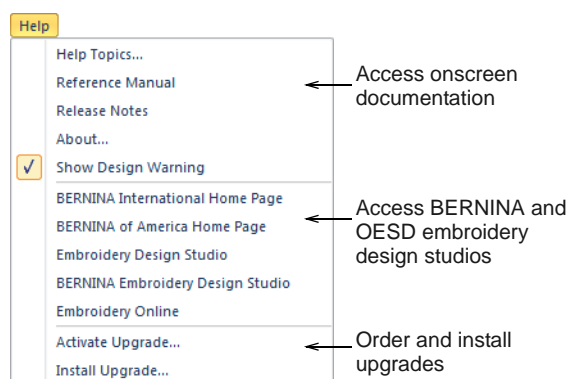
- ▶ Use scanned or imported artwork to digitize designs on-screen
- ▶ In addition to the automatic digitizing tools, use specialized digitizing tools, plus a wide range of artistic, decorative fill patterns
- ▶ Create appliqué
- ▶ Convert any Windows TrueType font to an embroidery alphabet
- ▶ Save all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



Note To identify features relevant to your specific model, see the [BERNINA Embroidery Software Product Feature List](#).

Resources & support

BERNINA Embroidery Software provides various ways to access information about the software and how to use it. It also provides links to sources of ready-made embroidery designs.



Printed documentation

Depending on your product level, together with your BERNINA Embroidery Software installation DVD you will have received this Quick Start Guide. This

contains installation instructions as well as an introduction to your BERNINA Embroidery Software. There is also a Quick Reference section which lists all commands and shortcut keys used in the software.

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 Reference Manual.

Reference manual

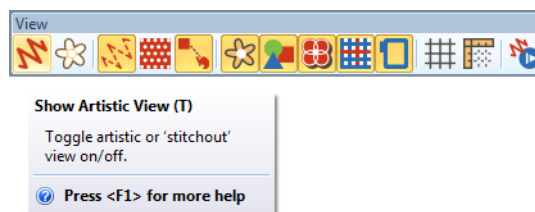
The Reference Manual provides detailed procedures covering all features of the BERNINA Embroidery Software 'Embroidery Canvas'. It contains step-by-step instructions together with samples and screen images. The BERNINA Cross Stitch and BERNINA Quilter applications are documented in separate supplementary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



Note For a full description of the CorelDRAW® tools available in Artwork Canvas, 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.

Onscreen help

Onscreen help provides quick access to general information on BERNINA Embroidery Software features and step-by-step instructions. An <F1> keypress accesses context-sensitive help.



Supplementary help

With your BERNINA Embroidery Software installation, you will have also received the following supplementary help:

- ▶ BERNINA Cross Stitch: This covers the capabilities of the special BERNINA Cross Stitch application. See also [Cross stitching](#).

- **BERNINA Quilter:** This covers the capabilities of the special BERNINA Quilter application. See also [Quilting](#).

Online resources

There are many other sources of ready-made embroidery designs which you can purchase and adapt as you wish. Your BERNINA Embroidery Software directs you to two rich sources – BERNINA and OESD embroidery design studios.

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 Colors' command in the 'View' menu is referred to as **View > Show all Colors**.



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.

Keyboard shortcuts

Shortcut	Action
 + 	While holding down the Control key (Ctrl), press the S key to save design.
For a complete list of keyboard shortcuts, see Keyboard Shortcuts .	

CHAPTER 2

INSTALLATION & SETUP

The BERNINA Embroidery Software V7.0 kits include some or all of the following components:

- ▶ BERNINA Embroidery Software Installation DVD
- ▶ USB dongle with tag attached
- ▶ BERNINA Embroidery Software Quick Start Guide



Note The BERNINA Embroidery Software installation DVD includes software for **all** products, including BERNINA DesignerPlus, BERNINA EditorPlus, BERNINA Portfolio, BERNINA Cross Stitch and BERNINA Quilter.

System requirements

You need to ensure that the following pre-requisite system requirements are met in order to run the BERNINA Embroidery Software.

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
CPU	Intel® Pentium® 4, AMD Athlon™ 64 or AMD Opteron™
OS	‡ Windows® XP SP3 (32-bit)
Browser	I.E. 7.0 or later
Internet connection	Required for installation, product registration and access to software updates.
Memory	1 GB (32-bit) or 2 GB (64-bit)
Hard disk size	40 GB
Free disk space	† 20 GB
Graphics card	Support for Highest Color (32bit) and resolution 1280 x 1024

Item	Minimum
Monitor	¥ 17" at native resolution of 1280 x 1024
Scanner, printer and plotter	Windows-compatible (any connection method – e.g. parallel, USB)
USB ports	Dedicated USB port for a USB dongle
Mouse	USB mouse
Data drives	DVD-ROM drive for software installation
Sound card	Required for multimedia training

Supported operating systems ‡

- ▶ Although Windows XP (32bit) is supported, BERNINA highly recommends that you consider updating to Windows 7 or Windows 8.

Free hard disk space †

BERNINA Embroidery Software occupies up to 1Gb of hard disk space, depending on the options installed.

Screen resolution ¥

Some controls may be hidden on the user interface if you run your monitor at low resolutions. The physical size of your monitor will have a bearing on the optimum screen resolution. Larger fonts will exacerbate the problem. If you experience visibility issues, try adjusting both screen resolution and font size. For example, a resolution of 1280 x 720 with a font size of 100% or 125% should be acceptable.

Security device

BERNINA Embroidery Software is controlled by a security device or 'dongle' attached to the computer, in conjunction with security access codes entered into the software. Each dongle has a serial number and identity code so your system can be uniquely recognized.



USB Port Dongle

All purchases of the latest software release, whether new or updates, are shipped with a USB type dongle. Whenever you update your software, you will be prompted to carry out a 'brain transplant' from your previous dongle to the latest one. Do not attach your dongle until prompted by the software installation. Otherwise the generic USB drivers will be used and will prevent the correct working of the security system.



Caution If the dongle is removed or loses connection while you are working in BERNINA Embroidery Software, error messages will display. Cancel the messages, then exit. You will lose any unsaved changes to your design. Re-attach the dongle to your computer, making sure that it is firmly secured, then restart BERNINA Embroidery Software.

Installation options

The Installation procedure lets you choose:

- ▶ where the software and sample designs will be installed on your PC or network
- ▶ which components will be installed – e.g. additional languages, BERNINA Portfolio
- ▶ which documentation files will be installed.



Note The BERNINA Embroidery Software checkbox is always selected. The 'Extra Languages' checkbox may not be present, depending on the software release you have purchased.

Merging software versions

You may choose to merge with an already installed version of software. Existing 'assets' are handled as follows:

Patterns

BERNINA Embroidery Software allows you to add patterns to your own custom pattern sets. There may also be changes to the latest factory versions of these

files. The installation examines all existing patterns on your PC and merges them with the new software installation.

Templates

BERNINA Embroidery Software also allows you to modify installed templates as well as create new ones. There may also be changes to the latest factory versions of these files. The installation examines all templates in the system and merges them with the new software installation.

Thread charts

If you have adjusted any settings in the thread charts, these are preserved.

Appliqué fabrics

Sample appliqué fabrics are now used both by BERNINA Embroidery Software and BERNINA Quilter applications. You may have added or modified fabrics in an existing BERNINA Quilter installation. When installing fabrics, the BERNINA Embroidery Software installation checks the existing fabrics file and merges it with the new installation.



Note Any changes that you may have made to your current BERNINA Quilter fabric library will be merged with the latest installation.

Dos & donts

- ▶ Never remove an existing BERNINA Embroidery Software installation manually by selecting program file folders and pressing the **Delete** key. This is true for all MS Windows® applications.
- ▶ Avoid removing an existing BERNINA Embroidery Software installation by choosing **Programs > BERNINA Embroidery Software > Uninstall** from the MS Windows® **Start** menu, or by using **Add/Remove Programs** from the Windows **Control Panel**.

Both of these methods will remove all of the files known to BERNINA Embroidery Software and you will lose all your user-defined settings.

- ▶ Instead, let the BERNINA Embroidery Software installation procedure merge all of your user-defined settings with the new installation.
- ▶ When you install the software, you will be prompted to reboot your PC to complete the installation. Make sure that you save any files and close all applications beforehand.
- ▶ Once the new installation is complete, you can safely remove your earlier BERNINA Embroidery Software installation using **Programs > ... > Uninstall** or **Add/Remove Programs**. The uninstall process may leave some files in the

installation folder. You can manually delete this folder and its contents using **Windows Explorer**.

Installing the software

The installation procedure lets you choose:

- ▶ where the software and sample designs will be installed on your PC or network
- ▶ which components will be installed – e.g. additional languages, BERNINA Portfolio
- ▶ which documentation files will be installed.



Caution If you are updating your software, do not uninstall the current version. Let the installation procedure do this for you. See also **Merging software versions**.

To install BERNINA Embroidery Software

- 1 Ensure your computer meets the technical requirements for BERNINA Embroidery Software. See **System requirements** for details.
- 2 Close all MS Windows® applications but leave Windows running.



Caution Don't attach your dongle until prompted. Otherwise correct working of the security system may be compromised.

- 3 Insert the BERNINA Embroidery Software Installation DVD-ROM.
The installation program should start within 30 seconds and a **Welcome** screen displayed.
- 4 Click **Next**.
- 5 Choose which product to install and click **Next**.



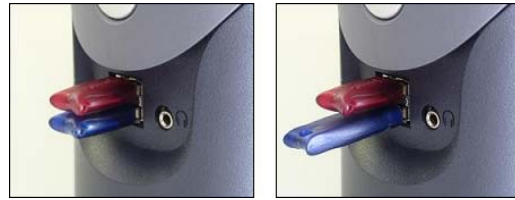
The **License Agreement** is displayed.



Tip You can print the license agreement by means of the **Print** button.

- 6 Select to accept and click **Next**.

You are prompted to attach your dongle. If you have an update kit, you will be prompted to attach your old dongle as well.



- 7 Click **Next**.

The **Setup Type** screen is displayed. Choose the complete installation if you are a new user.

- 8 Click **Next**.

The **Choose Destination Location** screen is displayed. This indicates where your BERNINA Embroidery Software will be installed.

- ▶ To accept the default folder, click **Next**.
- ▶ To change the location, click **Browse**, specify an existing folder or create a new one and click **Next**.

If you choose to install the software into the **same** folder as an earlier version, the new version is installed over the old and simultaneously merged.

- 9 Click **Next**.

When the **Sample Location** screen is displayed, choose the design folder where you want your designs to be saved.



The default location is My Designs - Embroidery Software 7. Sample designs included with the software are stored in this folder.

- ▶ To accept the default folder, click **Next**.
- ▶ To change the location, click **Browse** – locate or create a new folder and click **Next**.



Note Your own designs are not removed during installation, but old sample designs may be overwritten by new designs of the **same** name.

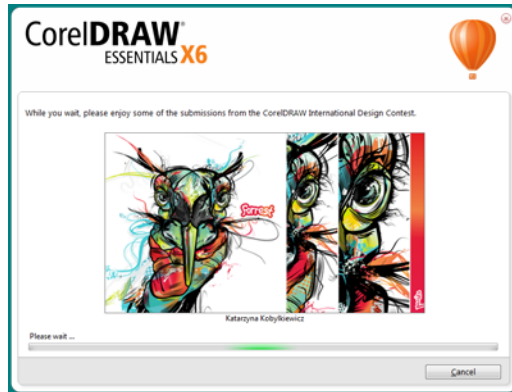
- 10 Click **Next**.

If your PC already contains one or more older versions of BERNINA Embroidery Software:

- ▶ You are prompted to choose a version to merge with.
- ▶ The older version will be merged with the new when the PC reboots.

11 Click **Install to proceed.**

The **Setup Status** screen keeps you informed of the progress of the installation. CorelDRAW® Essentials X6 is installed as part of the normal installation.



12 Click **Finish to complete the installation.**

You are given the option to restart with the new installation. Shortcut icons are placed on the MS Windows® desktop and in the **Start > Programs** group.



Note If you are updating from an earlier version, the merging process may take some time.

Any changes that you may have made to your old BERNINA Quilter fabric library will now be merged with the latest installation. The installation also merges any user-defined patterns or motifs. See [Merging software versions](#) for details.

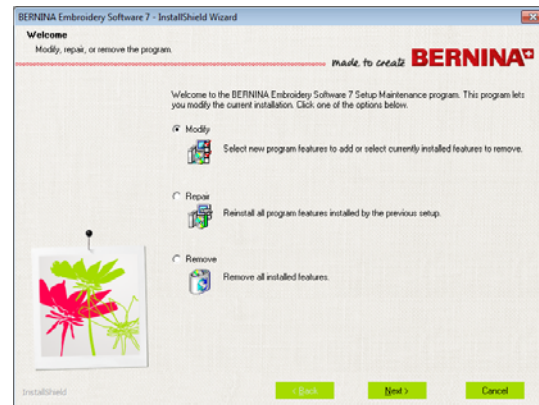
Modifying an existing installation

Whether you are updating your **current** BERNINA® Embroidery Software software or wanting to uninstall it, you follow the same procedure. When you run the installation program again, it will automatically detect if there is an existing copy of BERNINA® Embroidery Software on your system and give you the option to modify, repair or remove it. This will prevent the installation of more than one release version of BERNINA® Embroidery Software on your computer.

To modify an existing installation

- 1** Close all MS Windows® applications but leave Windows running.
- 2** Insert the BERNINA® Embroidery Software Installation DVD-ROM.

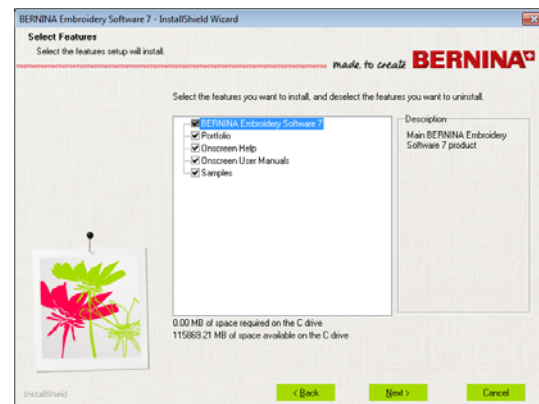
If BERNINA® Embroidery Software software is already installed on the computer, the following Welcome screen will appear.



3 Choose the option you require—Modify, Repair, Remove**—and click **Next**.**

- ▶ **Modify:** changes selection of installed components
- ▶ **Repair:** reinstalls the same components as already installed
- ▶ **Remove:** uninstalls the software.

If you choose to modify your current installation, the **Select Components** screen appears.



- 4** Select the features and languages to add or deselect to remove.
- 5** Click **Next**.
The **Ready to Install** screen appears.
- 6** Click **Install**.

Upon successful installation of the software and any additional MS Windows® files that need updating, the **Maintenance Complete** screen appears.



Note If you have selected **Repair** as your installation option, currently installed components will be reinstalled.

- 7 Click **Finish**.

Upgrades & access codes

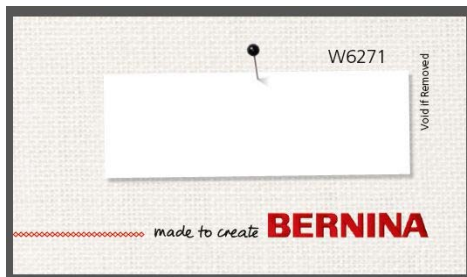
BERNINA Embroidery Software is controlled by a security device or 'dongle' attached to the computer, in conjunction with 'access codes' entered into the software. The **Dongle Number** is the most important number. It consists of a unique 7-character number appearing on the tag attached to your dongle. As well as the dongle number, each dongle has a unique **Serial Number** and **Identity Code** stored inside it so your system can be uniquely recognized. The identity code can be obtained via the BERNINA® Embroidery Software application. You may upgrade your software directly via the internet.

Identifying your security device

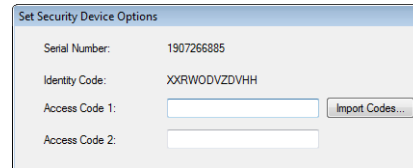
When referring to your system in correspondence or by telephone, you need to quote your **Dongle Number**. You may also need to quote the **Serial Number** and **Identity Code**. This information is found on the dongle itself, as well as the **Security Device** dialog.

To identify your security device

- ▶ Inspect the tag attached to your dongle. for the **dongle number** – this consists of a unique 7-character number starting with the letter 'A'.



- ▶ The information can also be found on **Security Device Options** dialog accessed via the **Settings** menu.



Note The **Serial Number** field displays the dongle's internal serial number (before the hyphen). This is a unique number that is read from the dongle attached to your computer. It is different to the number on the dongle tag or dongle itself. We recommend recording this number for support purposes.

Upgrading BERNINA® Embroidery Software online

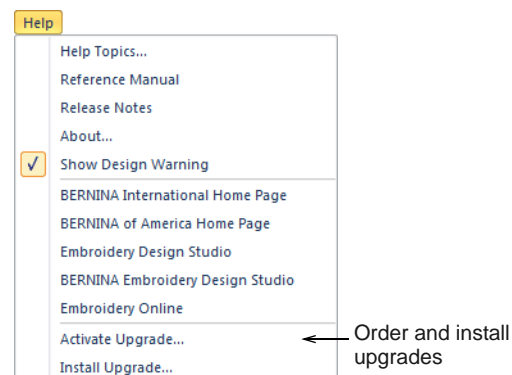
BERNINA Embroidery Software users can purchase software upgrades directly via the internet. The website offers you a choice of upgrade relevant to the current level of your dongle. If your dongle is at BERNINA EditorPlus level, the website will offer an upgrade to BERNINA DesignerPlus. If you have any problems, contact your dealer.



Caution If browser security is set too 'high', you may be unable to download software updates. If you experience this problem, try setting browser security to 'medium'.

To upgrade BERNINA® Embroidery Software online

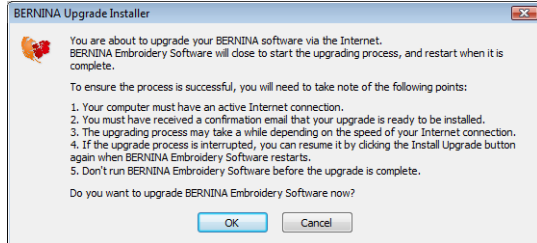
- 1 Make sure your internet connection is activated.



- 2 Select **Help > Activate Upgrade**.
You are connected to the website.
- 3 Follow the online instructions to activate your upgrade.

- ▶ You will be prompted to enter the unique access code on your Bernina Upgrade Card.
- ▶ The website will then send you a notification email.

- 4 After notification, select **Help > Install Upgrade**. The **Bernina Upgrader** dialog opens.



- 5 Click **OK**.
The access codes are downloaded to your dongle and the software upgraded.
- 6 When the upgrade process is complete, click **OK**.
BERNINA® Embroidery Software is restarted at its new level.

Entering access codes

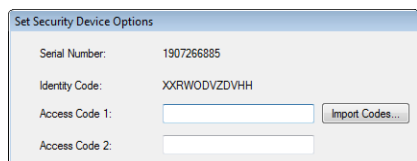
If for any reason you are unable to upgrade your software online, you can enter security access codes manually to upgrade to new **options** or software releases. Your dealer will supply these codes.



Tip You can also enter access codes by importing them from a text file. This saves time and helps avoid typing errors. See **Importing access codes** for details.

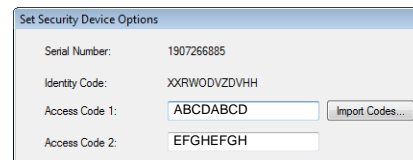
To enter access codes

- 1 Select **Settings > Security**.
The **Set Security Device Options** dialog opens.



- 2 Check that the **Serial Number** and **Identity Code** match those on the email containing the new access codes text file. The two codes **must** be identical.

- 3 Enter the access codes in the fields using **Tab** or **Enter** to move between them.



Tip When keying in your access codes, BERNINA® Embroidery Software adds a space between each four-character set automatically. You don't have to key spaces manually.

- 4 Click **OK**.
A message displays indicating that the access codes were successfully entered.

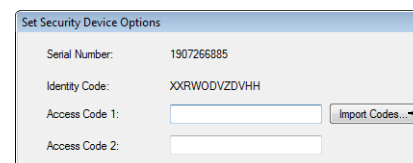
- 5 Restart BERNINA® Embroidery Software.

Importing access codes

Rather than entering access codes manually, you have the option of importing them from a text file. This saves time and helps avoid typing errors. Your dealer will supply the text file by email.

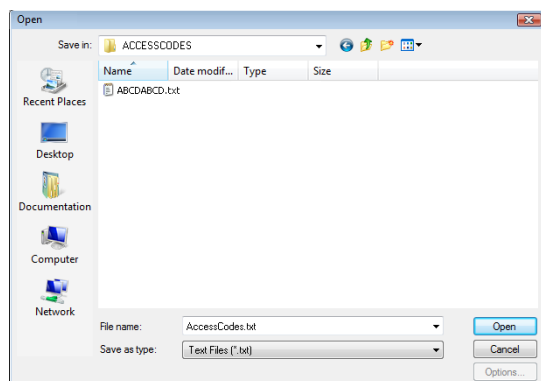
To import access codes

- 1 When you receive your access codes (as an email attachment), save the file to a safe location on your hard drive – e.g. your PC desktop.
- 2 In BERNINA® Embroidery Software, select **Settings > Security**.
The **Set Security Device Options** dialog opens.



- 3 Check that the **Serial Number** and **Identity Code** match those on the email containing the new access codes text file. The two codes **must** be identical.
- 4 Click **Import Codes**.
The **Open** dialog opens.

- 5 Navigate to the location where you saved the access codes text file – e.g. your PC desktop.



- 6 Select the text file containing the new access codes and click **Open**.
The codes are automatically updated.
- 7 Restart BERNINA® Embroidery Software.

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.

Getting started

BERNINA Embroidery Software provides embroiderers with a fast, flexible way of creating and editing embroidery designs. This section outlines the main uses you will make of your BERNINA Embroidery Software, together with references to the sections of the reference manual where you can obtain more in-depth information. See [Getting Started](#) 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 & 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

GETTING STARTED

If you are new to BERNINA Embroidery Software or machine embroidery, you are probably asking yourself 'where do I start?!'.

It's safe to say that you will spend many hours, both rewarding and at times frustrating, learning how to get the most out of your BERNINA machine and the design software which supports it. The two work together hand-in-hand and it takes practice and patience to master both the creation and production of fine embroidery.

The results, however, will speak for themselves, making the time you invest all the more valuable. With each project you complete, you will gain in experience and confidence and be ready to tackle the next challenge.

This section outlines the main uses you will make of your BERNINA Embroidery Software, together with references to the sections of the reference manual where you can obtain more in-depth information.



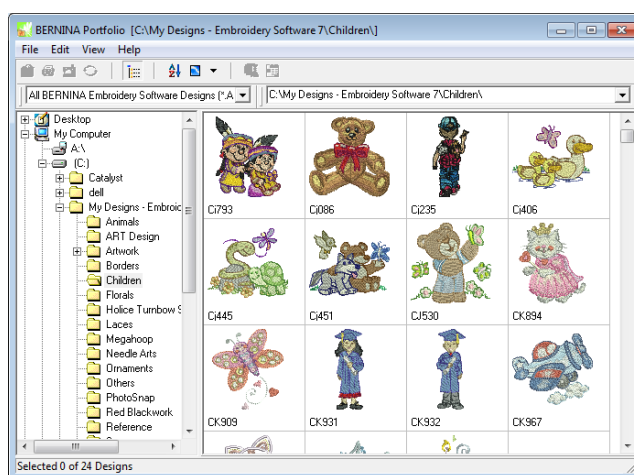
First things first

You don't need any experience to start with BERNINA Embroidery Software. You can simply open a design and send it to your machine to 'stitch out'. And this is the best place to start. As you gain experience, you will be able to 'read' designs and identify which are good and which may cause problems. See also **Tips & Tricks**.

Sample designs & artwork

BERNINA Embroidery Software contains hundreds of ready-to-stitch designs, including many 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 7** folder. The most valuable thing you can do when starting out as a new user, is to spend some

time exploring these designs and getting to know what's available.

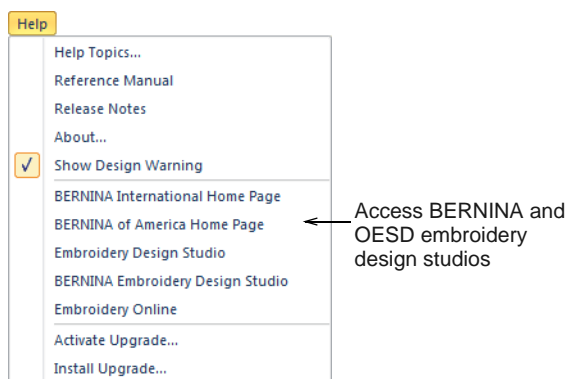




Note BERNINA Embroidery Software includes its own BERNINA Portfolio design management application to view and manage your embroidery designs. Alternatively, explore design folders using MS Windows® Explorer.

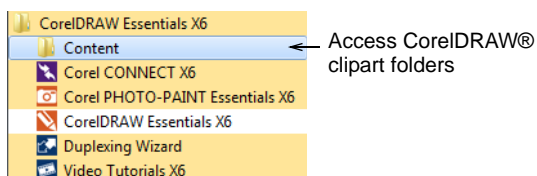
Other sources

There are many other sources of ready-made embroidery designs which you can purchase and adapt as you wish. Your BERNINA Embroidery Software directs you to two rich sources – BERNINA and OESD embroidery design studios.



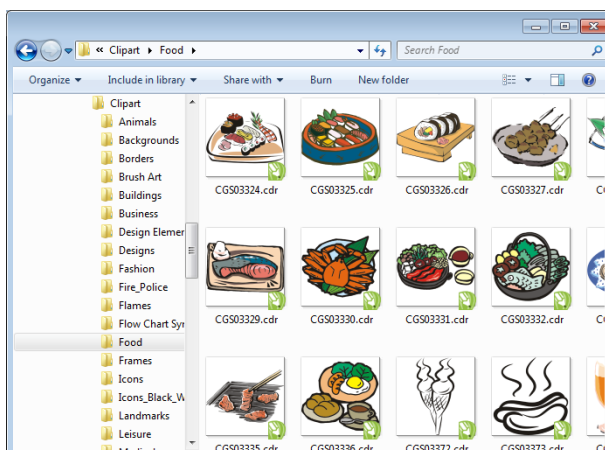
Clipart

CorelDRAW® Essentials X6 is packaged with a selection of clipart which can be accessed via the program group.



Make sure you get familiar with the many clipart samples. Many can be adapted for use with

embroidery design, either as digitizing backdrops or direct conversion. See also **Browsing clipart**.



It may be more convenient to take a copy of the entire CorelDRAW® Essentials X6 Clipart folder and copy it to **My Designs - Embroidery Software 7** folder for easy reference.



Caution Included artwork (clipart) and embroidery designs are only available for personal use – i.e. they cannot be commercially sold in any form.

Rules of good embroidery

Keep the following points in mind when looking at embroidery designs, both your own and others:

- ▶ Stitches are neat, smooth and even
- ▶ Design looks good – shapes, colors, balance
- ▶ 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.

The stitchout should also have the following characteristics:

- ▶ The design sews efficiently on the machine
- ▶ The fabric does not pucker around stitched areas
- ▶ The design is free of loose ends.

Good embroidery quality starts with good 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. Consult your machine manual for advice and get as much advice from other embroiderers as you can.

Working with embroidery

Before starting, let's take a look at the scenarios that you will find yourself working with. Typically, you will be involved in one or all of the following:

- ▶ Take a ready-made design and sew it out
- ▶ Make global changes to a design
- ▶ Create a lettering design
- ▶ Combine lettering with a design
- ▶ Adapt a design by changing parts
- ▶ Create new embroidery from artwork using automated techniques
- ▶ Create new embroidery manually
- ▶ Use special embroidery features

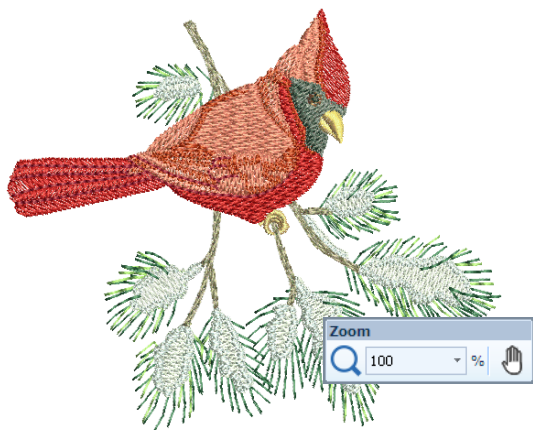
Let's look at those cases one by one.

Sew a ready-made design

For many embroiderers, it is enough to take an existing design and stitch it out. This is certainly where most will start. Once you have found a design you like, you will want to preview it to see how it will sew out. A number of steps are involved. We outline the main ones here with reference to the manual.

To sew out a design

- 1 Open the design in BERNINA Embroidery Software. See [Opening designs](#) for details.



- 2 Adjust viewing settings as desired. See [Viewing Designs](#) for details.
- 3 Check the fabric type and change as necessary. See [Status bar](#) for details.
- 4 Check thread colors and if necessary, change charts to suit the one you are using. See [Assigning thread colors](#) for details.

- 5 Preview the stitchout so you understand how the design will sew on the machine. See [Viewing stitch sequence](#) for details.
- 6 Choose a hoop and check location within the hoop. See [Selecting hoops](#) for details.
- 7 Preview the design and print out a design worksheet before sewing out as desired. See [Printing designs](#) for details.
- 8 Send the design to machine directly or via data media (usually memory stick). See [Stitching out designs](#) for details.

Check your BERNINA machine documentation for steps involved after transferring the design to machine.

Modify an entire design

Once you are used to the steps involved in sewing out designs – either clipart or ones you have purchased – you will soon want to make global design modifications such as resizing, or changing thread colors and fabric types. These are all relatively simple operations.

To modify an entire design

- 1 Open the design you want to use. See [Opening designs](#) for details.



- 2 Check design dimensions, and resize as required. See [Scaling objects](#) for details.

For example, if you are stitching a left chest design, maximum size will be approximately 4.25" or 108 mm square.

- 3 Adjust design thread colors as desired. See [Changing thread colors](#) for details.



- 4 Check the fabric type and change as necessary. See also [Changing fabrics](#).
- 5 Select a hoop of the required size. See [Selecting hoops](#) for details.
- 6 Visualize the design on a garment or article. See [Visualizing finished articles](#) for details.



- 7 Print a worksheet and send the design to machine. See [Printing designs](#) and [Stitching out designs](#) in the Reference Manual for details.

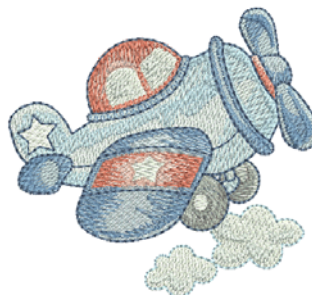
Create a simple lettering design

Once you are used to sewing out designs and resizing, changing colors and fabric types, you will definitely want to create your own lettering designs. While it takes practice to obtain a good quality lettering stitchout, it is as simple as typing letters on-screen to create attractive lettering in BERNINA Embroidery Software.

To create a simple lettering design

- Typically you'll want to add lettering to an existing design.

- Add embroidery lettering to designs quickly and easily, either on-screen using current settings or via 'object properties'. See [Adding lettering to embroidery designs](#) for details.



CHILDS PLAY

- It's then a simple matter to adjust baselines, formatting, spacing settings, and colors. See [Lettering Essentials](#) for details.



- Try stitching out your lettering design. Study the stitch quality. Be aware that different alphabets sew out better at different sizes. See also [Alphabet Samples](#).

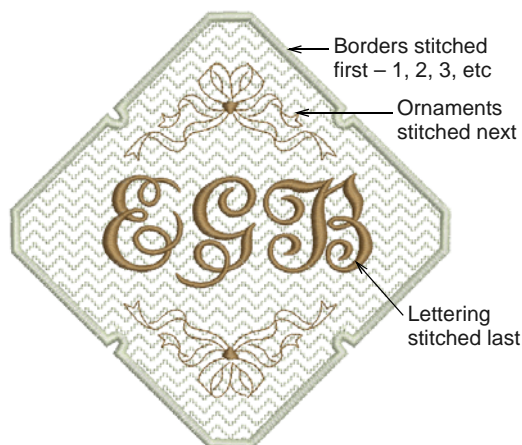
Create more advanced lettering

Once you have tried your hand at creating lettering designs and sewing them out, you will want to do more adventurous things, such as monograms, fancy lettering, flair scripts, raised lettering with trapunto, as well as special 'elastic lettering' effects. The creative possibilities are endless. Your appetite to try new things will be stimulated as you gain experience and confidence. Part of that involves becoming adept at using your BERNINA machine as well as sampling and checking design quality.

Monogramming

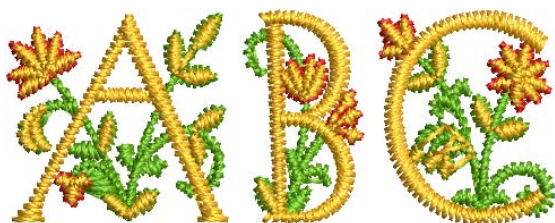
BERNINA Embroidery Software makes the creation of monogramming designs quite simple with the

'all-in-one' **Monogramming** tool. Optionally include lettering, ornaments, and/or up to four concentric borders in your monograms. See [Monogramming](#) for details.



Fancy alphabets

BERNINA Embroidery Software includes a number of fancy alphabets such as **Creative Cross** and **Secret Garden-Caps**. These alphabets include multiple colors and miniature designs. See [Adding fancy lettering](#) for details.



Flair script is a special font which allows you to add decorative flairs to the end of text objects, mimicking flamboyant handwriting flourishes. See [Adding flair script lettering](#) for details.



Lettering stitch effects

By default, lettering objects are filled with satin stitching. You can apply other fill stitch types, such as **Step** or **Fancy**, as with any [embroidery object](#). See

[Applying different stitch types & effects to lettering](#) for details.



Elastic lettering

Apply 'elastic lettering' effects to embroidery lettering to make it bulge or arch, stretch or compress. See [Creating 'elastic lettering' effects](#) for details.



Tip Remember to study the sample designs included with your BERNINA Embroidery Software installation.

Adapt a design

Adapting designs is perhaps the most common scenario in embroidery. You will sometimes want to create a new design, usually from artwork, but more often you will want to take an existing design and 're-purpose' it. We've already seen how to make global changes such as sizing, changing colors and fabrics. It won't be long before you want to try more 'invasive' changes such as reshaping, removing, combining, duplicating, resequencing, changing stitch

types and effects, etc. Here is a sampling of the things you may want to try.

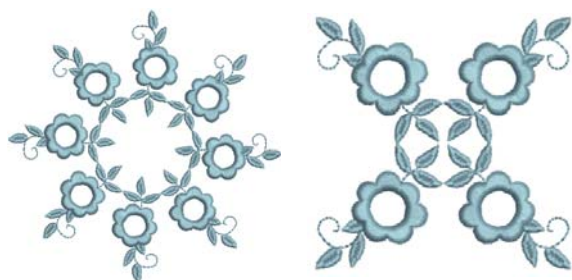
Combine designs

One technique you will undoubtedly use is combining design elements. This will in turn teach you a lot about other editing operations such as resizing, positioning, rotating, sequencing objects, as well as removing underlying stitching. See [Inserting designs](#) for details.



Transform design elements

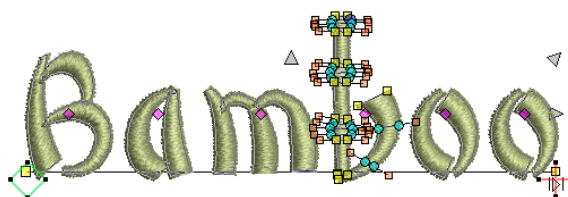
Depending on the type of design work you are doing, you can make use of BERNINA Embroidery Software tools for duplicating, rotating, and mirroring design elements to create wreaths, kaleidoscopes, and other effects. See [Mirroring objects](#) for details.



Reshape elements

Reshaping operations may be called on for anything from minor modifications to object shapes to reshaping letters for special effects.

is selectable, it can be reshaped. See [Reshaping & Editing Objects](#) for details.



Apply artistic stitch effects

It won't take long before you get bored with simple fills and outlines and want to try out some of the many artistic stitch types and effects BERNINA Embroidery Software provides. See also [Artistic Stitch Effects](#).



Tip Remember to study the sample designs included with your BERNINA Embroidery Software installation.

Create embroidery using automated techniques

If you have graduated this far in your exploration of your BERNINA machine and BERNINA Embroidery Software, you are doing well. You can already achieve a great deal without having to actually do your own design or digitizing work. However, if you have graduated this far, that is probably exactly what you want to do!

One of the quickest ways to get started is to use the automated techniques BERNINA Embroidery Software provides. While there are limitations to what can be done this way, it nevertheless allows you to prototype design ideas relatively simply and may be sufficient for your purposes. At least for now!

Vector artwork conversion

Special conversion tools in BERNINA Embroidery Software automatically convert **vector objects** and text to **embroidery** or lettering objects. These can be modified as required. See **Digitizing with vector artwork** for details.



Tip A good starting point is to use some of the many clipart samples packaged with CorelDRAW®. Many of these can be adapted for use in embroidery design.

Bitmap artwork conversion

The **Magic Wand** tool provides everything necessary to digitize shapes in **bitmap** images automatically. An extension of this technology, **Auto Digitizer** recognizes shapes in artwork and makes decisions about the most suitable stitch types to use. See **Auto-digitizing with Magic Wand** and **Auto-digitizing with Auto Digitizer** in the Reference Manual for details.



Photographic conversion

Use **PhotoSnap** to create embroidery from photographs and other images. See also **Auto-digitizing with PhotoSnap**.



Tip Remember to study the sample designs included with your BERNINA Embroidery Software installation. Try sewing out in order to understand better the techniques involved as well as the limitations.

Create new embroidery from scratch

If you have reached this point, you have already mastered 90% of the techniques that most embroiderers need. However, coming to grips with the 'black art' of manual digitizing is the next step in becoming an embroidery master. But you don't have to dive off the deep end. You can start with quite simple projects and work your way up to more complicated designs with more complicated stitch effects.

Start with good artwork

To create good quality embroidery, you need to choose suitable artwork for use as a digitizing backdrop. Unless you are an experienced digitizer, don't use complicated artwork.

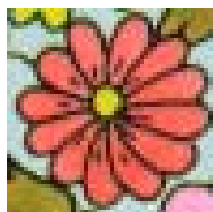


Image scanned in RGB color mode



Image scanned in 256 color mode

Artwork that is not in digital format needs to be scanned. This can be done via CorelDRAW® which is included with BERNINA Embroidery Software. Possible sources include:

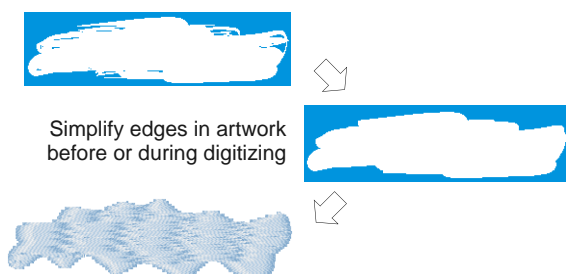
- ▶ books

- ▶ internet or CD clipart
- ▶ children's art
- ▶ your own original artwork.

And remember that a good starting point can be found with some of the many clipart samples packaged with CorelDRAW®. Many of these can be adapted as 'digitizing backdrops'.

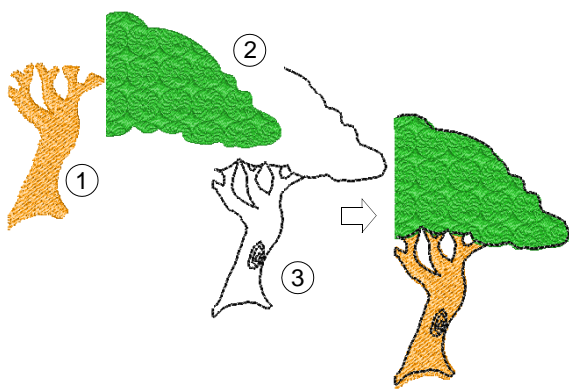
Prepare your artwork

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. See also [Digitizing with Backdrops](#).



Digitize your design

In BERNINA Embroidery Software, you build designs from basic shapes or 'embroidery objects'. The process of creating embroidery objects on-screen is called 'digitizing'.

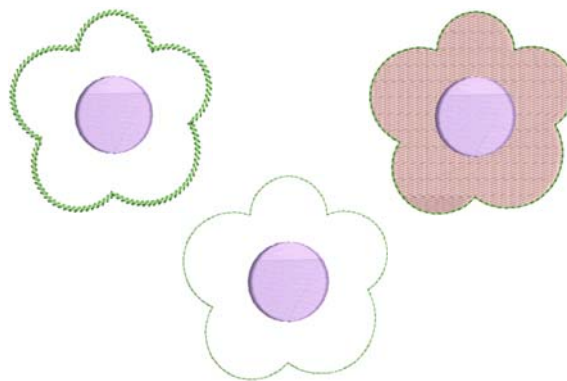


As with creating designs in graphics applications, embroidery digitizing involves the use of different tools or methods. These are used in conjunction with stitch types to create embroidery objects. See [Digitizing Methods](#) for details.

Choose stitch types

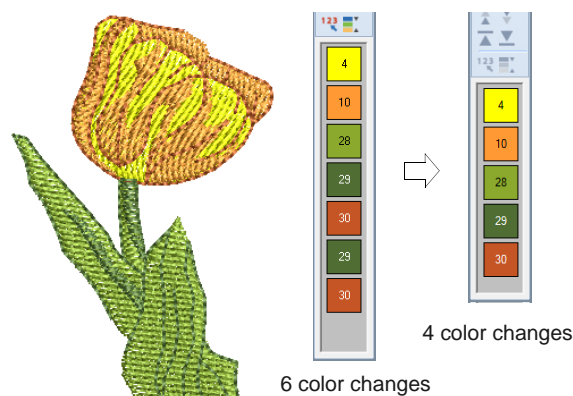
Decide which stitch types you will use for each design shape. BERNINA Embroidery Software lets you

change them at any stage. See also [Outline & Fill Stitches](#).



Sequence your design elements

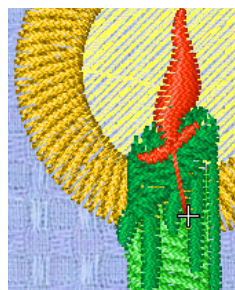
Design sequence is the order in which objects are created and therefore in which they are stitched out. You can change the object sequence to improve sewing – for example, to minimize color changes. Details should be stitched last. See also [Sequencing embroidery objects](#).



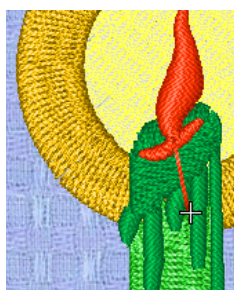
Improve stitch quality

Through trial and error you will get a feel for the issues that affect stitch quality. BERNINA Embroidery Software automates many of the quality issues such as stitch bunching, [push-pull](#) effect, and embroidery stability. This single most important setting in this

regard is choice of fabric type. See [Changing fabrics](#) for details.

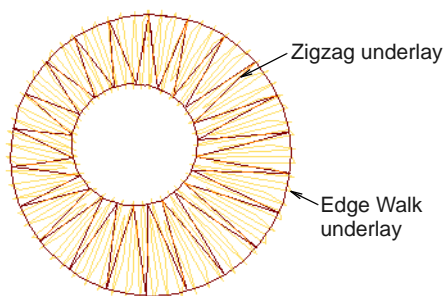


Woven Medium Weight

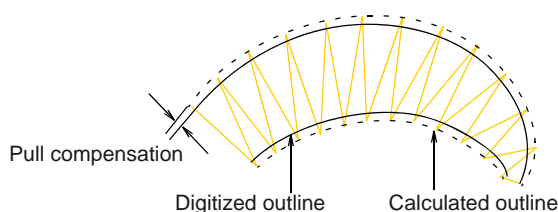


Woven Heavy Weight

Other factors come into play such as choice of [underlay](#) type. See [Stabilizing with underlays](#) for details.



[Pull compensation](#) is the other stitch quality setting which you may have to consider, although default settings are generally sufficient. See [Compensating for fabric stretch](#) for details.



Use special embroidery features

Once you have mastered manual digitizing, you are in a position to take advantage of the full range of stitch types and effects that BERNINA Embroidery Software offers. Many of them you will be familiar with, having already adapted existing designs for different purposes.

Freehand embroidery

Some of them, like **Freehand Embroidery**, cannot be applied to existing objects but must be digitized from scratch. This is a technique that lets you 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. The difference is that the fabric is secured in an embroidery hoop, allowing the needle to 'draw' on the fabric surface, exactly as you have drawn on-screen. See [Creating freehand embroidery](#) for details.



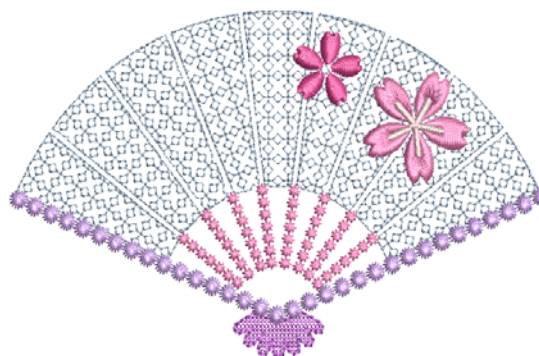
Patterned stamps, runs & fills

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 them to create patterned borders or fills, or use them standalone. See [Patterned Stamps, Runs & Fills](#) for details.



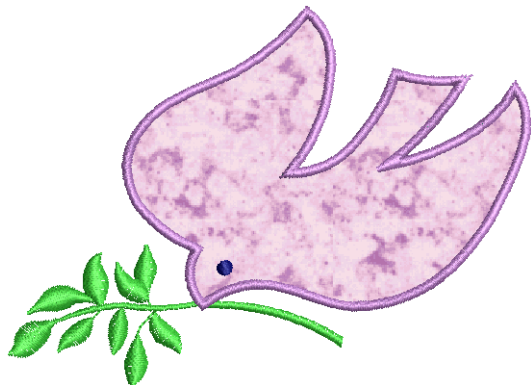
Craft stitch borders & fills

BERNINA Embroidery Software provides a range of craft stitches which you can use to mimic some traditional hand-worked embroidery. They include a large range of blackwork and candlewicking patterns suitable for both outlines and fills. See [Craft Stitch Borders & Fills](#) for details.



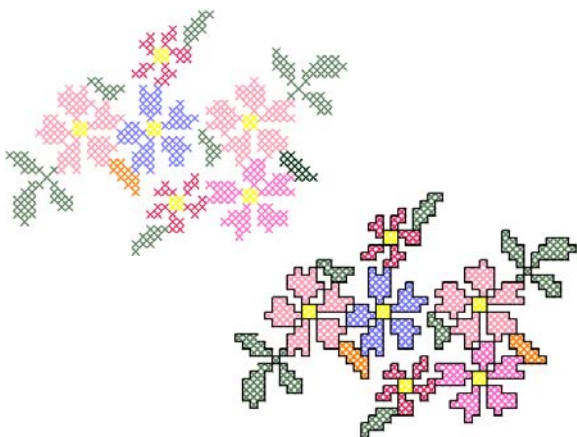
Appliqué

Appliqué is an important craft in home sewing, and the **Appliqué** feature provides an easy way to create quality work. Use it to generate the stitching you require for closed-object appliqué. See [Digitizing for Appliqué](#) for details.



Cross stitching

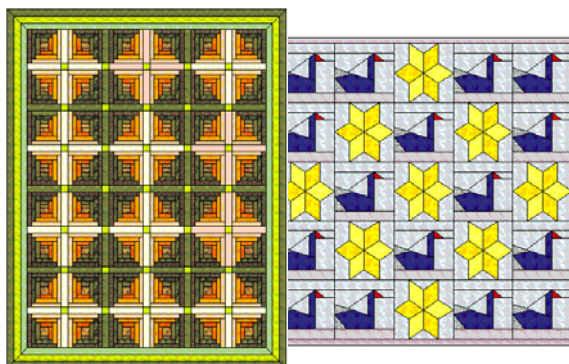
Cross stitching is a popular technique for filling large areas with low stitch counts. It can also be used for outlines and borders. It is suitable for homeware, tablecloths, children's clothes and folk designs. Cross stitch is sometimes combined with appliqué. The BERNINA Cross Stitch application lets you create dedicated cross stitch designs or add cross stitching to embroidery. See BERNINA Cross Stitch Supplement for details.



Quilting

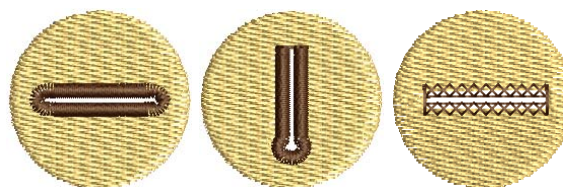
Patchwork is a popular technique for designing and sewing patches into blocks. BERNINA Quilter can be used to design patchwork quilts, either from existing designs or patterns, or from designs of your own making. Use BERNINA Quilter to experiment with patches and colors enabling you to create beautiful,

personalized quilts. See BERNINA Quilter Supplement for details.



Buttonholing

BERNINA Embroidery Software allows you to insert preset buttonholes, either singly or in a line. You can specify their size and merge them into a design. See [Creating buttonholes](#) for details.



Multi-decoration

With the inclusion of CorelDRAW®, BERNINA Embroidery Software supports multi-medium design. A popular technique is to combine digital print with embroidery to create multi-decoration work. This is intended to be both digitally printed and embroidered.



Typically, transfer paper is used together with a normal color printer. Images are reversed during printing and the transfer then ironed onto the

garment. Check the available options and use one that lets you reverse the image.

Raised embroidery

Finally, if you have exhausted all the techniques outlined above, or if you have a particular interest in fiber-arts crafts, you may be tempted to lift your embroidery right off the canvas so to speak, and venture into raised or 'sculpted' surfaces. Thankfully BERNINA Embroidery Software provides some smart methods to make this easier for you to achieve. See [Raised Embroidery](#) for details.



Happy embroidery!

Do good work with your BERNINA machine and BERNINA Embroidery Software. With this equipment you have everything you need to create top quality, fully professional embroidery. The only thing you lack is the capacity to mass produce!

Remember that Rome wasn't built in a day. It takes practice and patience to master all the techniques and approaches outlined above. But the results will more than reward the time you invest in the fascinating art and craft of embroidery decoration.

Remember to make good use of the packaged designs and clipart. When in doubt, go back to first principles. And when you find you want to expand and extend your repertoire, study the sample designs carefully to see how it's done.

As a final word of advice, try stitching out sample designs before you embark on your own creations. This will alert you to the key issues to consider when doing your own work.

All the best. And have fun!

CHAPTER 4

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.

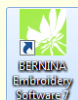


Note This section describes how to start BERNINA Embroidery Software and access the available commands and tools. It covers basic procedures to do with opening, creating and saving design files. It explains how to activate hoops and grids and it covers accessing object properties.

BERNINA Embroidery Software interface

BERNINA Embroidery Software integrates with CorelDRAW® Essentials X6 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: **Artwork Canvas** and **Embroidery Canvas**. A third mode, **Hoop Canvas**, is available for multi-hooping large designs.

Starting BERNINA Embroidery Software



Double-click to start BERNINA® Embroidery Software.

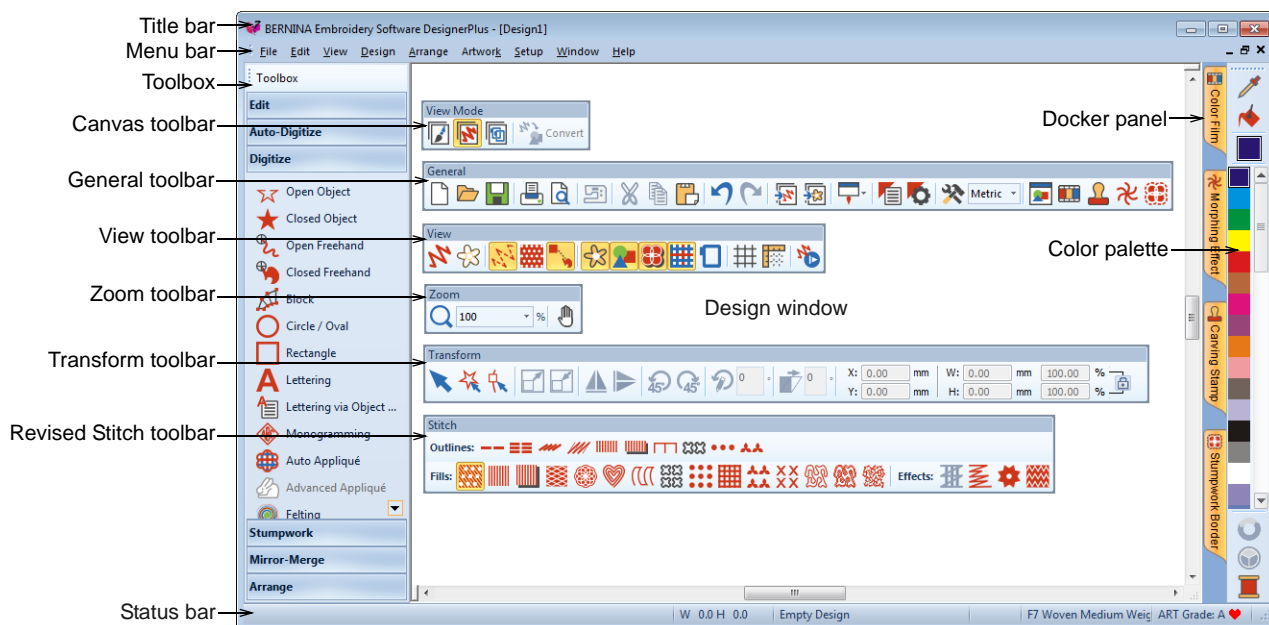
BERNINA Embroidery Software can be opened via the desktop icon or MS Windows® **Start** menu. It defaults to **Embroidery Canvas**. This allows you to create and edit **embroidery objects** using the embroidery **digitizing** toolset.

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** 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.



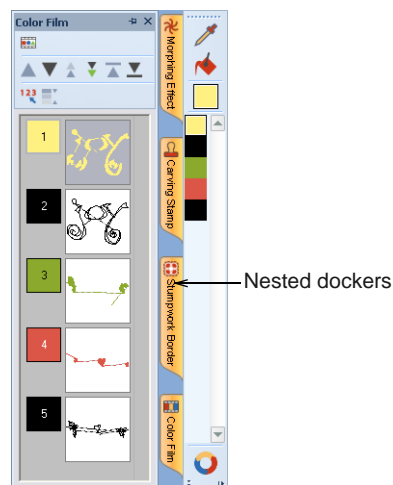
- ▶ Customize the design window by showing or hiding the grid, changing the grid dimensions, as well as showing and hiding toolbars. See [Displaying the grid](#) for details.
- ▶ Dock or 'float' toolbars and dockers in any configuration that suits.

Toolbars are dockable left, right, top and bottom, and can be 'floated' anywhere in the design window. The **Color Palette** and **Stitch** toolbars can be docked vertically for convenience. See also [Quick Reference](#).

Docking panes

BERNINA Embroidery Software includes 'dockers' for key functions. **Embroidery Canvas** has docking panes for **Color Film**, **Carving Stamps**, **Morphing Effects**, **StumpWork**, as well as an **Overview**

Window. All panes are dockable at the right side of the design window.

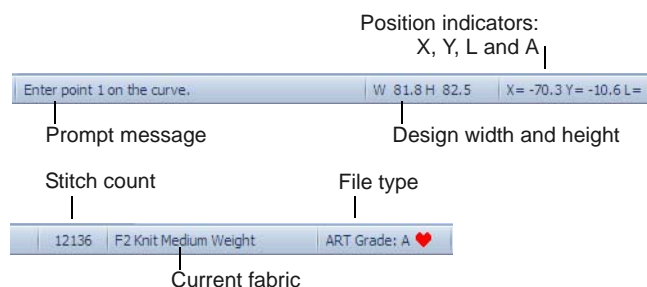


Dockers can be 'nested' to increase available workspace. When nested, tab buttons for each dialog appear to the side. All dockers can be fixed or minimized. By hovering the mouse over the tab, a minimized docker will 'fly out', allowing you to access its functions. It automatically minimizes when not 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.



Information displayed includes:

- ▶ Prompt message: guides you through use of selected functions
- ▶ Design size – 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
- ▶ Current fabric: fabric settings take into account the type of fabric you are stitching on. See also [Changing fabrics](#).
- ▶ 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.

Operating modes

BERNINA Embroidery Software has one workspace or 'design window' but you interact with it in different modes or 'canvases'. These are accessed via the **Canvas** toolbar.



Artwork Canvas



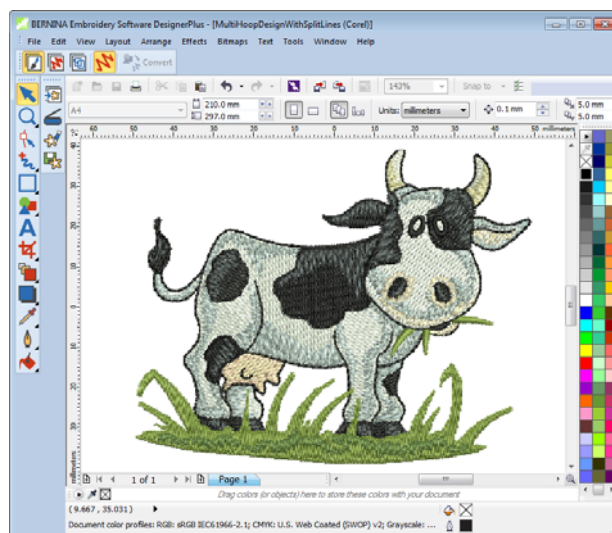
Use Canvas > Artwork Canvas to import, edit or create vector artwork as a backdrop for embroidery digitizing, manual or automatic.



In Artwork Canvas mode, click Canvas > Show Embroidery to Show or hide any embroidery components.

Below is a screen image of the **Artwork Canvas** workspace which is accessed via the **Canvas** toolbar. This mode allows you to create and edit **vector** graphics using the CorelDRAW® Essentials X6 toolset

which offer many sophisticated techniques for drafting outlines and shapes onscreen.



In addition to the CorelDRAW® Essentials X6 toolset, Artwork Canvas provides capabilities to convert **vectors** and vector text directly to **embroidery objects**. Vector graphics or text created or imported into the **Artwork Canvas** can be converted directly to embroidery designs. You can use **Artwork 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 vector artwork](#) for details.



Note For a full description of the CorelDRAW® Essentials X6 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.

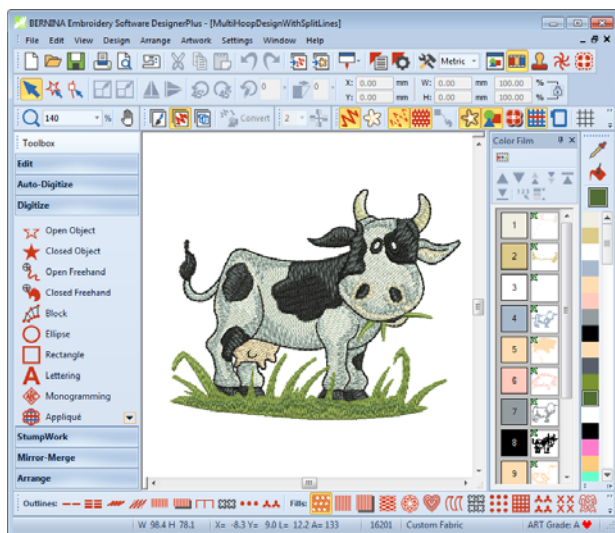
Embroidery Canvas



Use Canvas > Embroidery Canvas to digitize and edit embroidery designs. Display embroidery as well as artwork. View designs realistically in 3D simulation.

Below is a screen image of the **Embroidery Canvas** workspace which is accessed via the **Canvas** 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 [Backdrops & backgrounds](#).

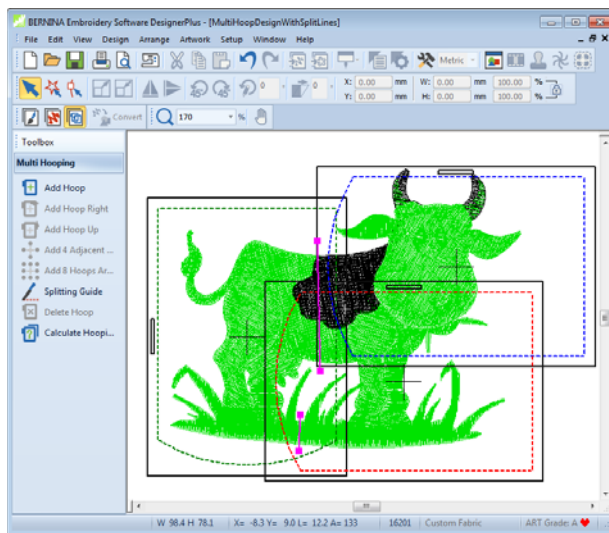
Hoop Canvas



Use Canvas > Hoop Canvas to 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 Canvas** workspace which is accessed via the **Canvas** 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 Canvas** allows

you to set up the position and sequence of each hoop. See [Hooping large designs](#) 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 General > Open 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](#).



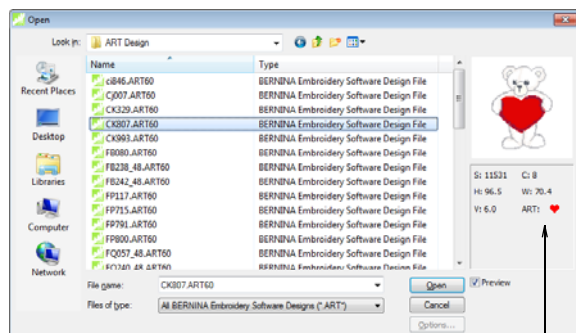
Note BERNINA Embroidery Software contains hundreds of ready-to-stitch designs, including many attractive ornaments, samples and digitizing backdrops. Design files (ART files) and images (BMP, JPG, and WMF files) can be found in your **My Designs - Embroidery Software 7** folder. The most valuable

thing you can do when starting out as a new user, is to spend some time exploring these designs and getting to know what's available.

To open a design

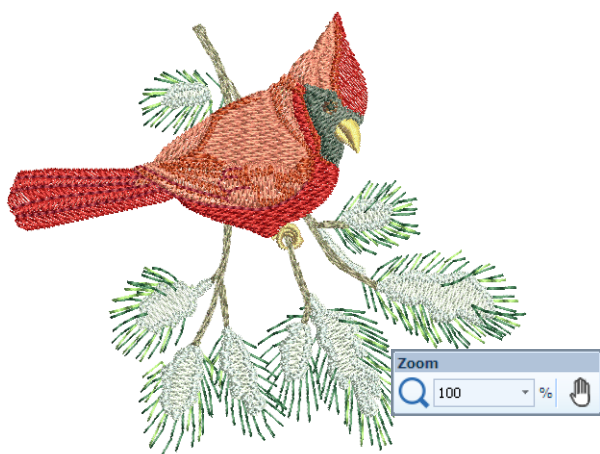
- 1 Click the **Open** icon.

The **Open** dialog opens.



Native ART design

- 2 Select a folder from the **Look In** list.
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. See also [Reading & Writing Design Files](#).
- 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 By default, designs are automatically grouped upon opening or insertion into another

design. See [Setting other general options](#) for details.

- 7 Check the design size in the **Status Bar**. See [Status bar](#) for details.
- 8 Set the zoom factor and other viewing settings as required. See [Viewing Designs](#) for details.



Note You can also read designs from your embroidery machine memory or BERNINA design card. See [Reading & Writing Design Files](#) for details.

Starting designs



Use General > New to create a new empty design.

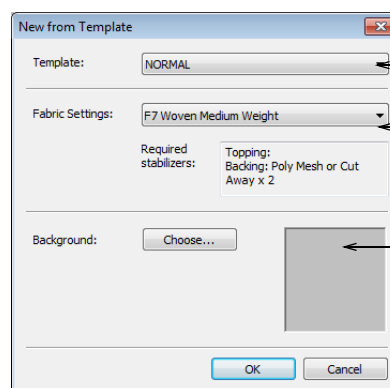
When you create a file, template settings are copied into the new design. Templates contain pre-set styles, defaults or objects, to make digitizing quicker and easier. You can choose to base default settings on a selected template as well as fabric settings. Optionally, choose a background fabric swatch to match selected fabric settings. See also [Properties](#), [Fabrics & Templates](#).

To start a design

- ▶ Click the **New** icon.

A blank design opens in the design window based on the NORMAL template.

- ▶ To use custom settings, select **File > New from Template**.



Choose a template

Choose a target fabric

Set background color and swatch

- ▶ Select a template from the list and click **OK**. See also [Properties](#), [Fabrics & Templates](#).
The only template available when the software is first run is the NORMAL template.
- ▶ Optionally, choose a fabric type from the droplist. Fabric settings are a subset of template settings, fine-tuned to different fabric types. Selecting a matching fabric automatically customizes object

properties for the intended fabric. See also [Changing fabrics](#).

- ▶ Optionally, choose a background fabric swatch to match selected fabric settings.

Saving designs



Use General > Save 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](#).

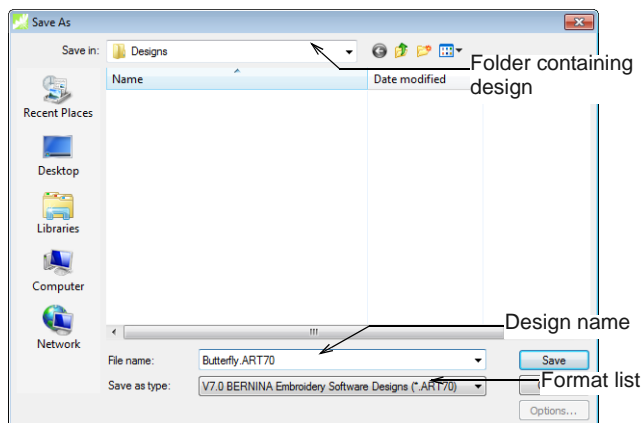


Tip Save your designs early and often. Do not wait until you finish working. To save changes to an existing file but preserve the original, use **Save As**. Once you have saved a design, every time you click **Save** on the toolbar the file will be updated.

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.



- 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. See [Reading & Writing Design Files](#) for details.

Hoops, grids & rulers

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

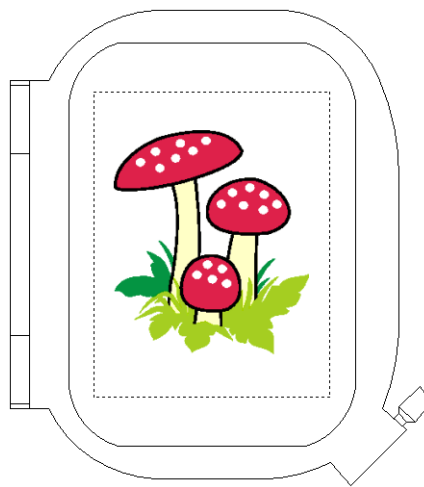


Click View > Show Hoop to show or hide hoop. Right-click for settings.

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 View > Show Grid to show or hide workspace grid. Right-click for settings.

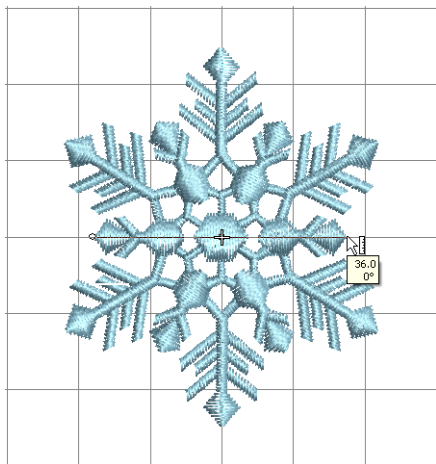
Use grid lines to help accurately align or size [embroidery objects](#). You can show or hide the grid.



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.

Displaying rulers & guides



Click View > Show Rulers & Guides to show or hide workspace rulers and guides. Right-click for settings.

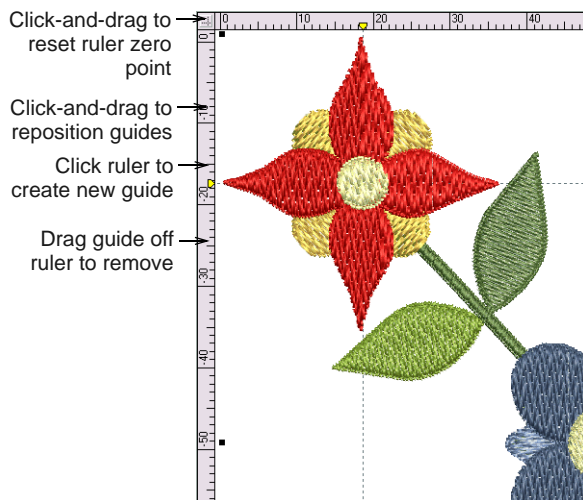


Drag the Ruler Zero Point to reset a new ruler zero point.

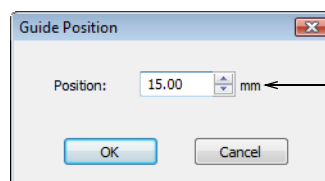
The software allows you to turn rulers on and off and create guides for more accurate digitizing. These make it possible to accurately position and size objects and whole designs. The unit of measurement – mm or inches – defaults to the regional settings in the MS Windows® Control Panel. These, however, can be changed from within the software. See also **Setting measurement units**.

To display rulers & guides

- ▶ Click the **Show Rulers & Guides** icon or press **Ctrl+R**.



- ▶ Reset the ruler zero point by clicking and dragging the box in the top left-hand corner to the required point in the design.
- ▶ To create a guide, click on either ruler – horizontal or vertical – and click-and-drag it into position. Multiple guides can be created and just as easily removed.
- ▶ For more accurate positioning of guides, double-click the yellow handle. In the **Guide Position** dialog, enter a precise distance from the zero point, and click **OK**.

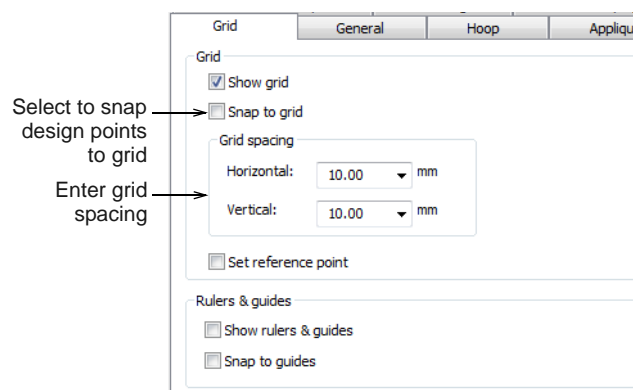


Enter precise position

- ▶ To remove a guide, drag the yellow guide handle off the design window.



Tip You can turn **Snap to Grid** and **Snap to Guide** on or off in the **Options** dialog. See also **Setting grid options**.



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.

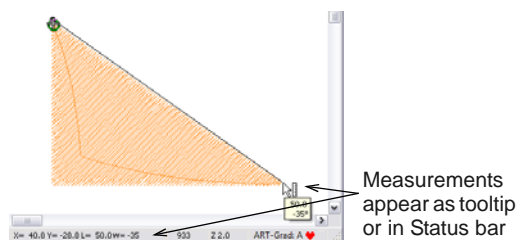
To measure a distance onscreen

- 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 current selection.



Tip If activated, length and angle measurements will also appear in a tooltip. See **Setting other general options** for details.

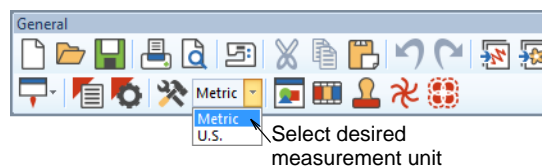
4 Press **Esc** to finish.

Setting measurement units

The first time you run BERNINA Embroidery Software, the measurement system will default to whatever the operating system is using. You can use different measurement units within BERNINA Embroidery Software without having to exit and change system settings.

Accessing the feature

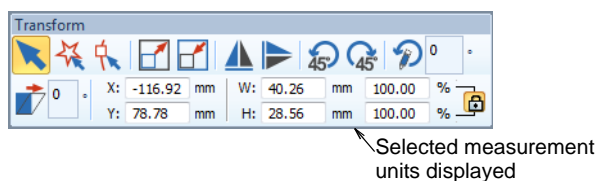
The measurement system may be changed via a droplist on the **General** toolbar:



Note Technically, when you select 'U.S.', you will get the imperial measurement system – inches, feet, and yards.

Ripple-on effects

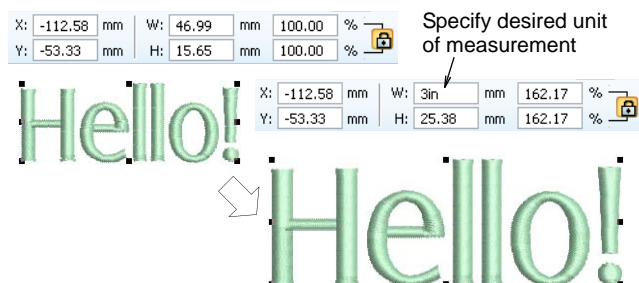
Changing the measurement system will change the units used by most controls – e.g. **Transform** toolbar units of measurement.



Specifying measurement units on-the-fly

As an alternative to changing the overall measurement system used in BERNINA Embroidery Software, you can specify units of measurement when typing values into a measurement control. The

software automatically converts the entered value into the units of the control.



Say, for example, you are using the metric measurement system so your lettering heights are in mm. Simply enter '3/4in' or '3/4 in' into the **Lettering Height** field and it is automatically converted to 19.05mm. Supported units include:

- ◀ millimeters, mm
- ◀ inches, in
- ◀ feet, ft
- ◀ yards, yd
- ◀ centimeters, cm
- ◀ meters, m



Tip BERNINA Embroidery Software also allows entering units in text form, both English and the language the software is currently running in.

Using commands & 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.

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



Note **Object properties** can be modified **with** or **without** objects selected. The former affects only selected objects. The latter affects current settings. See also [Working with object properties](#).

Undoing & redoing commands



Use General > Undo to cancel last command or series of commands.



Use General > Redo to re-apply cancelled commands.

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.

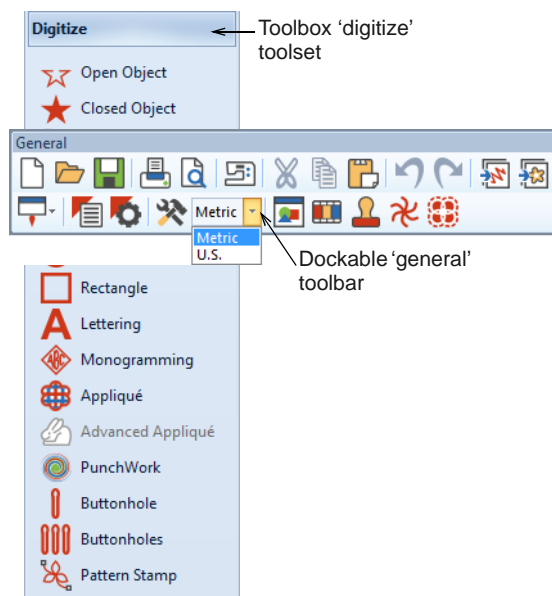
Toolbox & toolbars

BERNINA Embroidery Software contains a 'toolbox' which is permanently docked to the left of the design window. In addition, 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

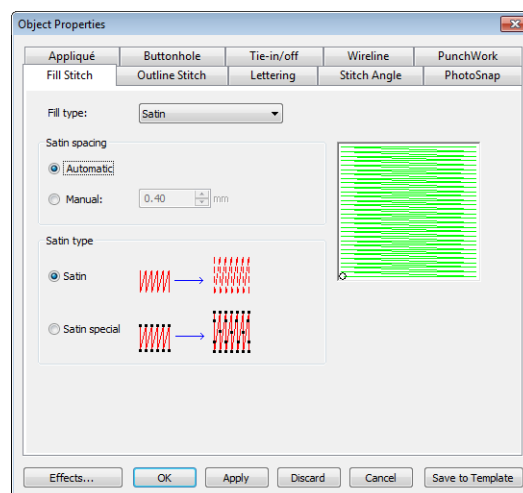
- ▶ To move a toolbar to a more convenient location, click and drag it:
 - ▶ Toolbars are dockable left, right, top and bottom.

- ▶ They can be 'floated' anywhere in the design window.



- ▶ To dock it in its normal position, double-click the toolbar title.

- ▶ 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.

Accessing object properties



Use General > Object Properties to set current properties or properties of selected objects.

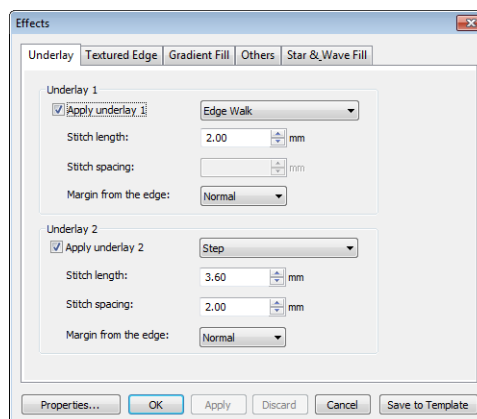


Use General > Effects to apply stitch effects to selected embroidery objects or preset with nothing selected.

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 **Working with object properties**.

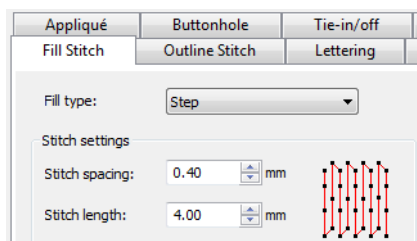
To access object properties

- ▶ Open the **Object Properties** dialog by any of the following means:
 - ▶ Click the **Object Properties** icon.



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.

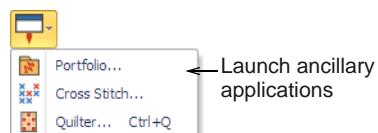
- ▶ Apply settings by means of the **Apply** button at the bottom of the dialog or by pressing **Enter**.
 - ▶ If one or more objects are selected, changes are applied to all relevant objects.
 - ▶ If no objects are selected, changes are made to the current settings – these will affect any newly created 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 [Working with 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.

Launching ancillary applications



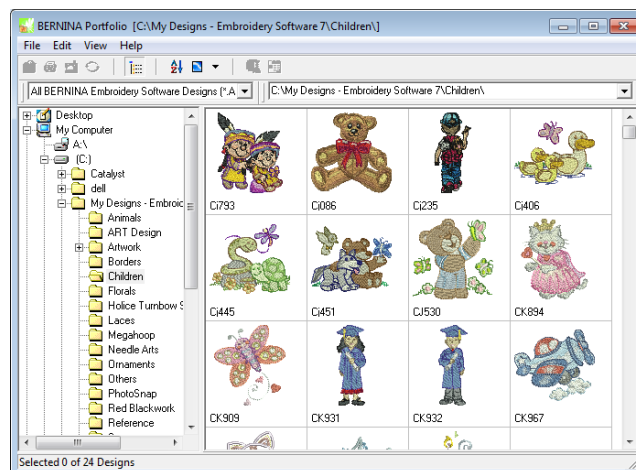
Use **General > Application Launcher** to access ancillary applications – Portfolio, Cross Stitch, and Quilter.

In addition to CorelDRAW®, BERNINA Embroidery Software includes a number of ancillary, standalone applications which can be launched from within **Embroidery Canvas**. They can be accessed from the **Application Launcher** on the **General** toolbar.



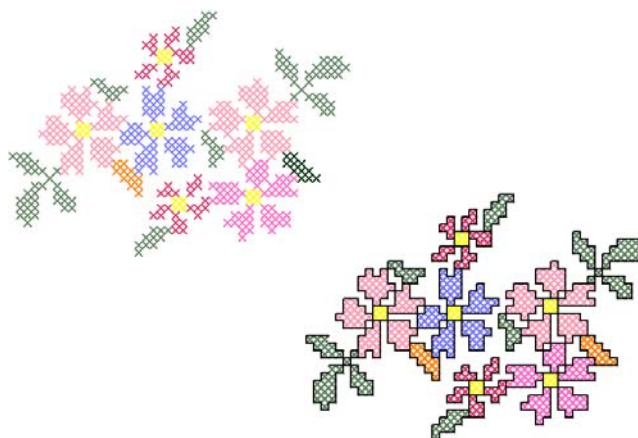
Design management with BERNINA Portfolio

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 Help for details.



Cross stitching with BERNINA Cross Stitch

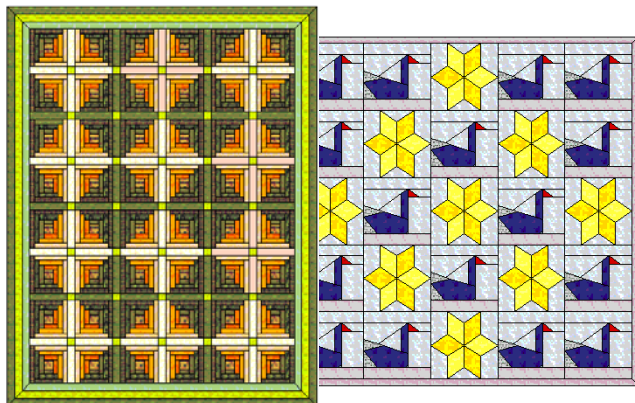
Cross stitching is a popular technique for filling large areas with low stitch counts. It can also be used for outlines and borders. It is suitable for homeware, tablecloths, children's clothes and folk designs. Cross stitch is sometimes combined with appliqué. The BERNINA Cross Stitch application lets you create dedicated cross stitch designs or add cross stitching to embroidery. See also [Ancillary Applications](#).



Quilting with BERNINA Quilter

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. See also [Ancillary Applications](#).



CHAPTER 5

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.

Embroidery view settings

You can show or hide embroidery 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 embroidery elements



Click View > Show Stitches to show or hide embroidery stitching.



Click View > Show Connectors to show or hide connecting stitches between embroidery objects.



Click View > Show Needle Points to show or hide the needle points in embroidery stitching.



Click **View > Show Artistic View** to show or hide simulation of stitched embroidery.

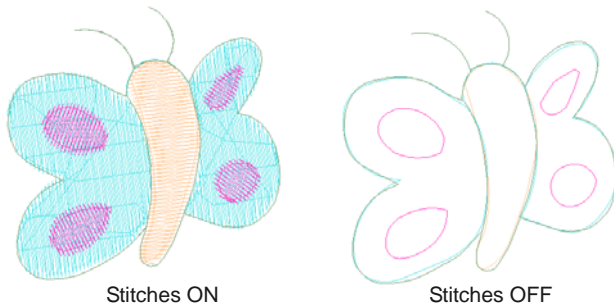
You can show or hide stitches and object outlines as you work. For instance, hide stitches to see outlines more clearly when reshaping. See [Reshaping & Editing Objects](#) for details.



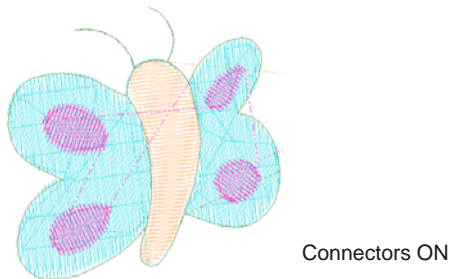
Note To make sure your design is being displayed correctly in **Artistic View**, calibrate your monitor. See [Calibrating the monitor](#) for details.

To view embroidery elements

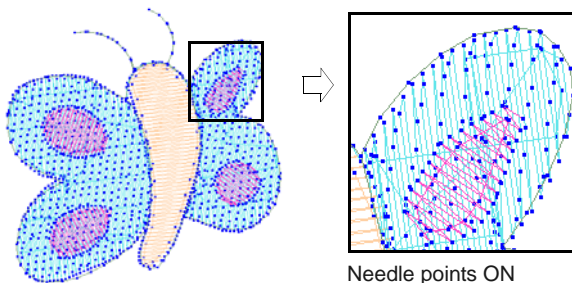
- Click **Show Stitches** to turn stitches on or off.



- Click **Show Connectors** to turn stitches on or off.



- Click **Needle Points** to show or hide needle points.



- To view simulated embroidery (Artistic View), toggle the **Show Artistic View** icon on.



Viewing objects 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 [Sequencing by color](#).



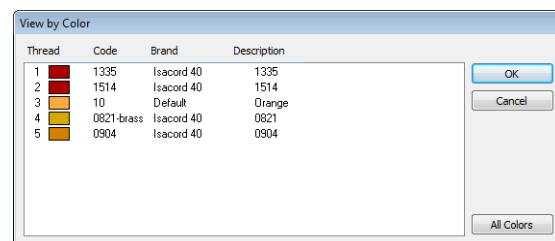
Note You will need to ungroup the design before you can view object by color.

To view objects by color

- Create or open a design.



- Select **View > View by Color**.
The **View by Color** dialog opens.



- 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.
- 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 > View by Color** again and click **All Colors**.

6 Click **OK**.



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

Zooming & 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



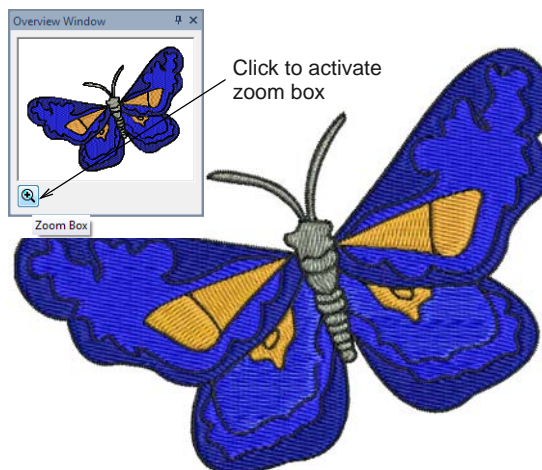
Click **General > Overview Window** to show or hide the docker. Use to zoom and pan thumbnail of current design.

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.

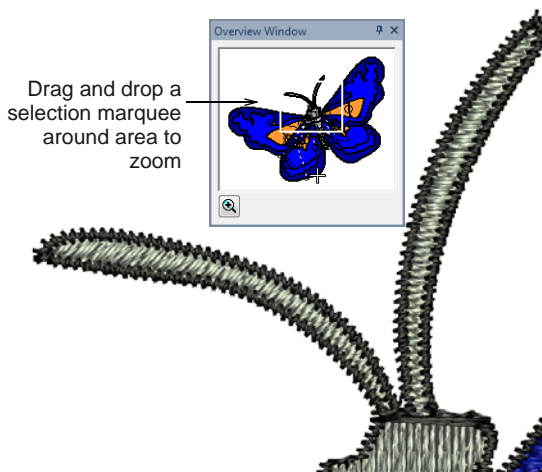
To view designs in overview

1 Click **Overview Window** icon.

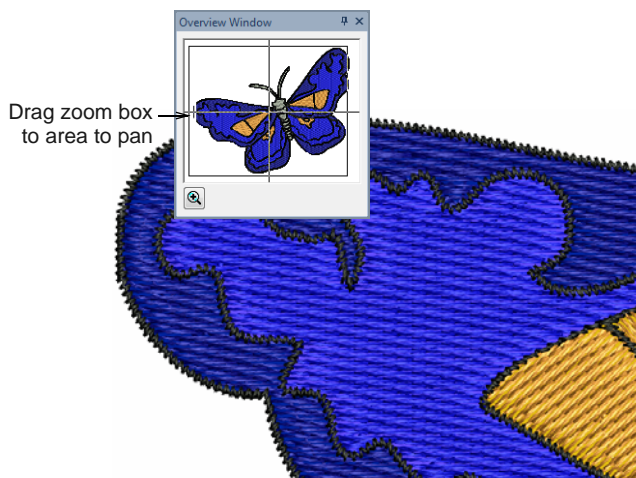
The **Overview Window** opens.



2 To zoom in or out, click the **Zoom** button on the Overview Window and drag a **selection marquee** around the area to zoom and drop.



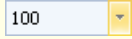
3 To pan across the design, move the cursor inside the zoom box – it changes to a four-way arrow cursor – and drag and drop.



Zooming in & out



Click Zoom > Zoom to left-click to zoom in, right-click to zoom out, or drag a 'zoom box'.



Use Zoom > Zoom Factor to select a preset zoom scale from the droplist or key in your own zoom scale and press Enter.



Click Zoom > Pan to Drag to pan across the design at high zoom factors.

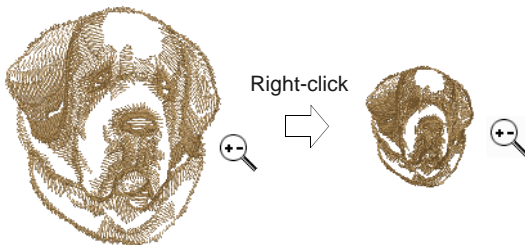
Magnify your view of the design by zooming in on individual stitches or details, or zoom out to display more of the design in the window. See also [Keyboard Shortcuts](#).



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

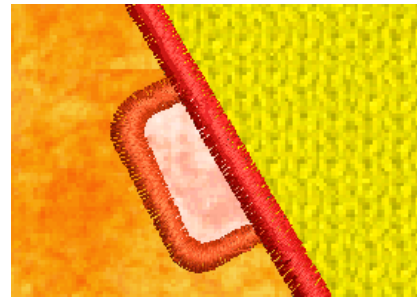
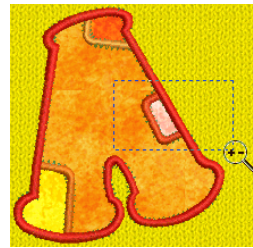
To zoom in and out

- ▶ Click the **Zoom** icon or press shortcut key **B**. The cursor becomes a magnifying glass.
- ▶ Left-click to zoom in, right-click to zoom out.

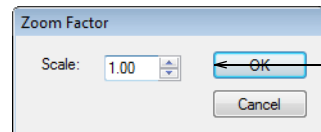


Tip The **Zoom Factor** field updates accordingly.

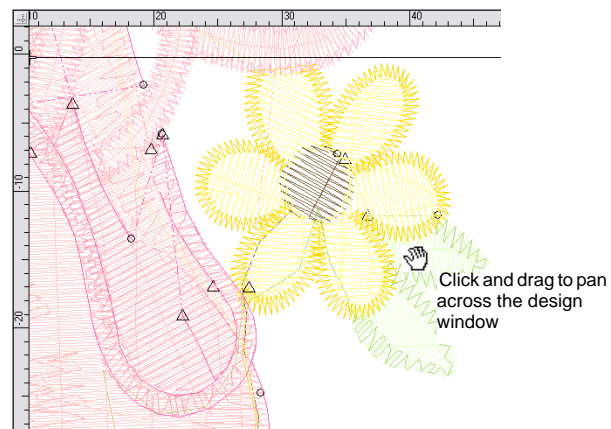
- ▶ Click-and-drag a **selection marquee** around the zoom area and release.



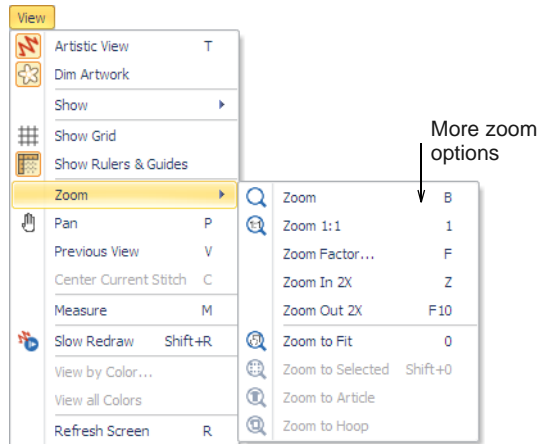
- ▶ To display the design at a particular scale, enter a scale factor in the **Zoom Factor** field as a percentage of the actual size and press **Enter**. Alternatively, press **F** on the keyboard. Enter a scale as a ratio and click **OK**.



- ▶ To pan across a design in the design window, use the scroll bars. Alternatively, select **Pan** or press **P** and use the 'grabbing hand' tool. Click to 'hold' the design window and drag it around.



- ▶ Alternatively, use the **View > Zoom** commands to access more zoom options.



- ▶ Select **Zoom > Zoom to Fit** to display the whole design. Alternatively, press shortcut key **0** (zero).
- ▶ To display the design at actual size, select **Zoom > Zoom 1:1**. Alternatively, press shortcut key **1**. See also [Calibrating the monitor](#).
- ▶ Press **Esc**, **Enter** or **Spacebar** keys to exit **Zoom** mode.



Tip Use **Auto Scroll** to scroll the design automatically while digitizing. This can be more convenient than using panning or scroll bars. See also [Setting auto scroll options](#).

Viewing stitch 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 & selecting color blocks](#).

Traveling through designs



Click **View > Show Stitches** to show or hide embroidery stitching.



Click **View > Show Artistic View** to show or hide simulation of stitched embroidery.

Use the keyboard shortcuts to travel through designs by object or color block. Use arrow keys to travel through the design one or more stitches at a time. See also [Keyboard Shortcuts](#).

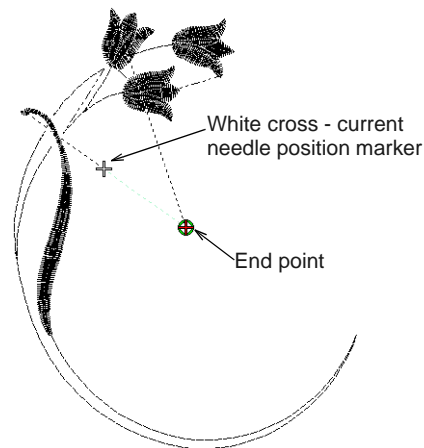
To travel through the design

- ▶ Ensure that **Show Stitches** is on and **Artistic View** is off. See [Viewing embroidery elements](#) for details.
- ▶ Press **Esc** to ensure that **Select Object** is deselected.

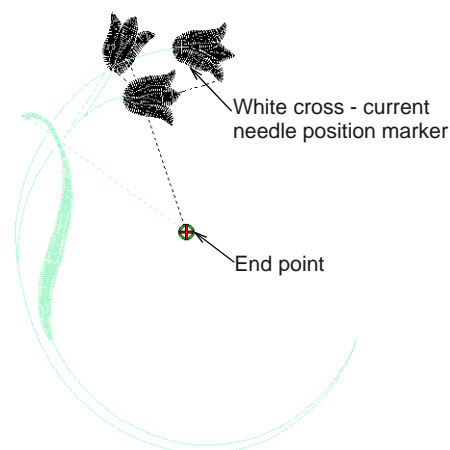
The current needle position is indicated by a large white cross or 'needle position marker'. Initially, this is located at the end of the design. The current stitch number appears in the **Status Bar**.

- ▶ To travel to the start of the design, press the **Home** key.

The white cross moves to the first stitch and the whole design appears black. As you travel through the design, the needle position marker moves accordingly.

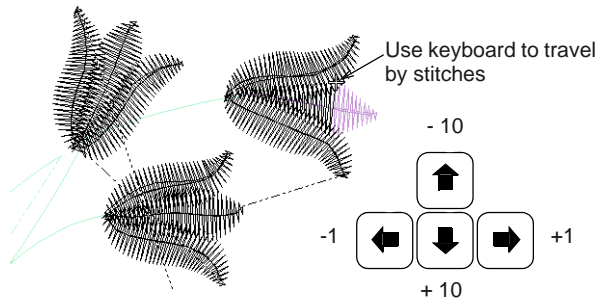


- ▶ To travel to the next object, press **Ctrl+T**.
- ▶ To travel to the previous object, press **Shift+T**.
- ▶ To travel to the next color, press **Page Down**.



- ▶ To travel to the previous color, press **Page Up**.

- ▶ Use the keyboard to travel by stitches.



- ▶ Press left or right arrows to travel backwards or forwards 1 stitch at a time.
- ▶ Press up or down arrows to travel 10 stitches at a time.
- ▶ Press + or - keys on the keypad to travel 100 stitches at a time.
- ▶ To travel to the end of the design, press the **End** key.



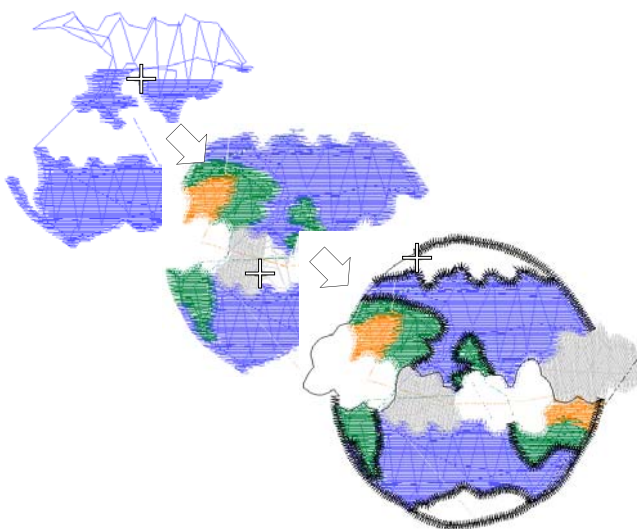
Tip If you travel outside the visible area, press the **C** key to center the current stitch on the screen.

Simulating design stitchouts



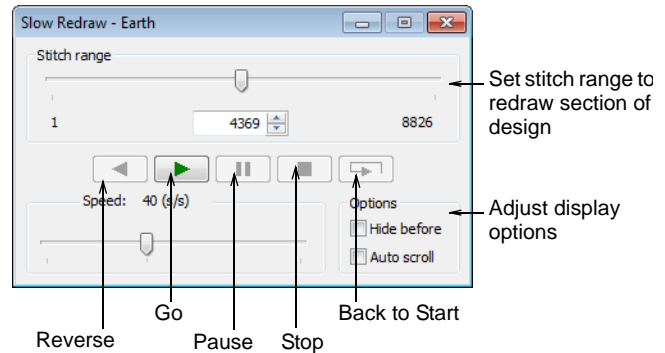
Use **View > Slow Redraw** to simulate embroidery design stitchout onscreen in either stitch or artistic view.

Slow Redraw is an important tool in BERNINA Embroidery Software. It lets you simulate the actual embroidery design stitchout on screen. 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.



To simulate the design stitchout

- ▶ Choose a design view to visualize your design.
Slow Redraw can be run in both **Artistic View** and normal stitch view.
- ▶ Select **View > Slow Redraw** or press **Shift+R**.
The **Slow Redraw** dialog opens.



- ▶ To redraw only a section of design, specify the start and end stitch in the **Stitch Range** field.
- ▶ Use the slider bar to adjust redraw speed.
- ▶ Adjust options as required:
 - ▶ **Hide Before**: Hide all sections of the design prior to the current cursor position.
 - ▶ **Auto Scroll**: With larger designs, scroll automatically so that the area being stitched remains on screen.
- ▶ Use the controls to stitch forwards or backwards through the design.

Backdrops & 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.



Displaying backdrops



Use View > Show Bitmap Artwork to show or hide any bitmap artwork included in the design.



Use View > Dim Artwork to dim backdrops in order to show stitches more clearly when digitizing.



Use View > Show Vector Artwork to show or hide any vector artwork included in the design such as CorelDRAW® clipart.

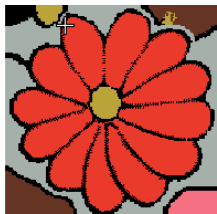


Use View > Show Appliqué Fabric to show or hide background fabric / color of any appliqué objects in the design.

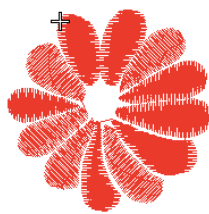
You can display a **backdrop**, **bitmap** or **vector**, while you digitize, or hide it temporarily. Hiding backdrops does not delete them from the design. You can also dim backdrops to make it easier to view stitches. See also **Digitizing with Backdrops**.

To display a backdrop

- ▶ To toggle backdrops on/off – both bitmap and vector graphics – click the corresponding icon. See also **Importing artwork**.

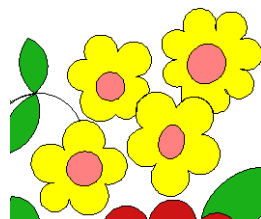


With background ON

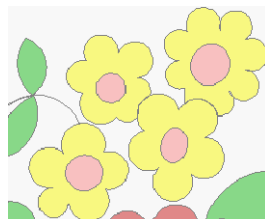


With background OFF

- ▶ To dim a backdrop, click the **Dim Artwork** icon.



Original bitmap image

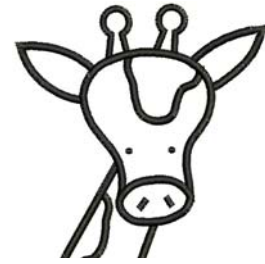


Dimmed bitmap image

- ▶ Click the **Show Appliqué Fabric** icon to toggle appliqué fabrics/colors on or off. See also **Digitizing for Appliqué**.



With appliqué fabric ON



With appliqué fabric OFF

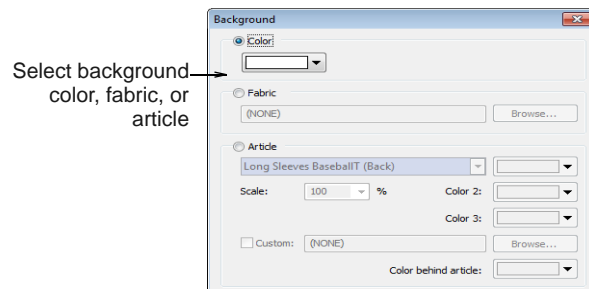
Setting backgrounds

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.

To set a background

- 1 Select **Design > Background**.

The **Background** dialog opens.

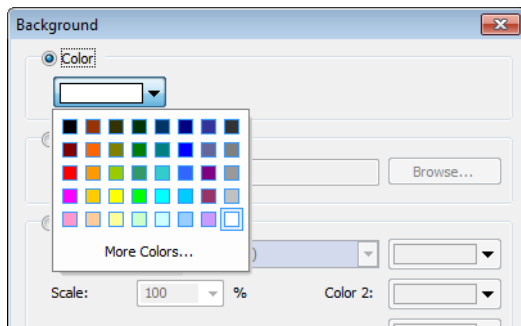


- 2 Select the background type you want:

Option	Purpose
Color	Set background color of design window
Fabric	Select a fabric texture corresponding to your target fabric.
Article	Select a product image that represents the article you will be embroidering. This can also be displayed on the design worksheet.

- 3 Select the color or fabric you want to use:

- To select a background color, select a color from the droplist. **4 Click OK.**

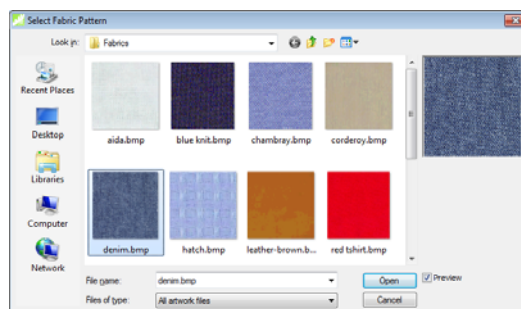


Brown background

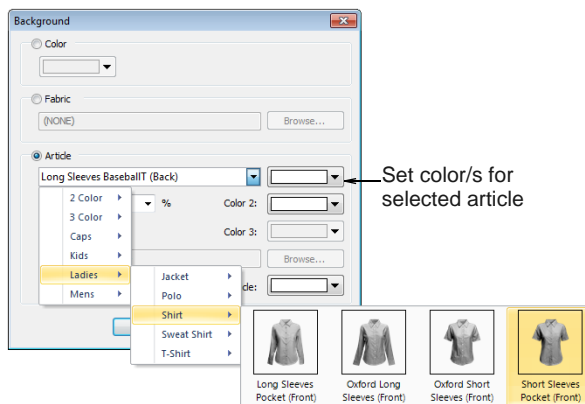


Denim background

- To select a fabric, click **Browse** and choose from the **Select Fabric Pattern** dialog.



- To select a product image that represents the article you will be embroidering, select **Article**. See also [Visualizing finished articles](#).



Tip Design worksheets include an option to print designs with or without backdrops. See also [Printing designs](#).



Tip You can also access this dialog via the **Design Properties > Thread Colors** tab. See [Thread Colors & Charts](#) for details.

Design Properties			
Design		Thread colors	Summary
Threads in design:		59	Threads used in design:
Color	Code	Brand	Description
BKG			R255 G255 B255
1*	1	BERNINA	Blue
2*	2	BERNINA	Cyan
3	3	BERNINA	Green
4	4	BERNINA	Yellow

Double-click to change background

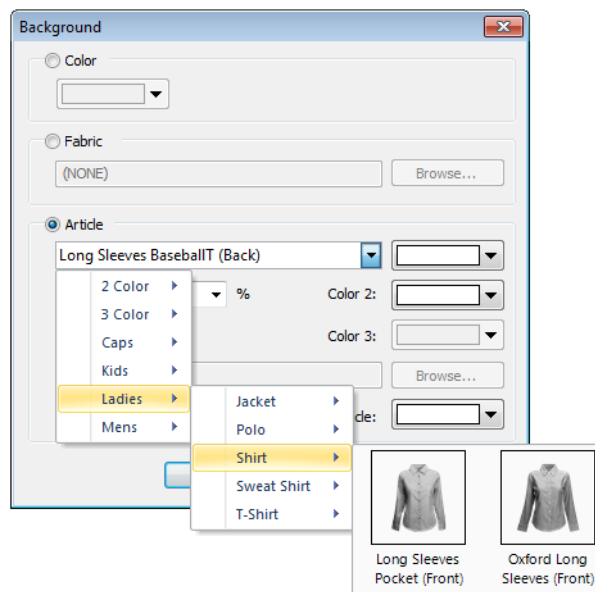
Visualizing finished articles

BERNINA Embroidery Software lets you choose an article as a backdrop on which to position your decorations. Use it to visualize location, size and overall appearance. The software provides a library of articles to choose from, including multi-color garments. Alternatively, insert your own photo or image.

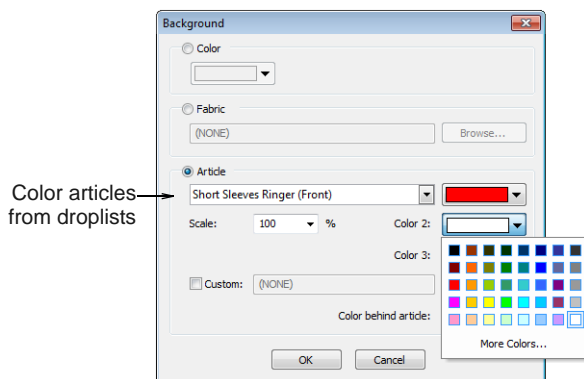
To visualize finished articles

- Select **Design > Background**.

The **Background** dialog opens.



- ▶ Choose an article from the **Article** droplist.
- ▶ Color it using the droplist color palette. If you have chosen a 2- or 3-color article, more droplists become available.



- ▶ Scale the article as required.
Scale should be adjusted according to garment size – XS, S, M, L, XL, or XXL. Rule of thumb: L = 100%. For a small size garment, scale down to approximately 70%.



Tip Measure the garment using the **Measure** command. See also [Measuring distances onscreen](#).

- ▶ If you have an electronic image of your own article, select the **Custom** option and click **Browse** to locate.



Tip Design worksheets include an option to print designs with or without backdrops. See also [Printing designs](#).

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

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

- ▶ Select **Design > 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.

The Design tab shows the following information:

- Design name: Design6
- Version: 7.0
- Stitches: 7038
- Color changes: 5
- Colors: 6

From start point ...

Left:	44.6 mm	Right:	44.6 mm
Up:	48.6 mm	Down:	48.6 mm
End X:	0.0 mm	End Y:	0.0 mm
Height:	97.3 mm	Width:	89.3 mm

ART grade: A ♥ Pure ART Outlines
Pure ART Stitches

The **Design** tab also 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.

- ▶ Select the **Thread Colors** tab to view or modify colors and thread charts used in the current design. See also [Assigning thread colors](#).

The Thread colors tab shows the following information:

Threads in design: 59 Threads used in design: 7

Color	Code	Brand	Description	Thickness
BKG			R255 G255 B255	
1*	1	BERNINA	Blue	A
2*	2	BERNINA	Cyan	A
3	3	BERNINA	Green	A
4	4	BERNINA	Yellow	A
5	5	BERNINA	Red	A
6	6	BERNINA	Brick Red	A
7	7	BERNINA	Magenta	A
8	8	BERNINA	Purple	A

Thread chart: Isacord 40 wt-numerical Print... Create/Modify...

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

The Summary tab shows the following information:

Author: Bon Howard

Keywords: Fall, Autumn, Red, Leave

Comments: Used on gardening apron

Title: Design6

Subject:

- ▶ 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.

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 [Launching ancillary applications](#).

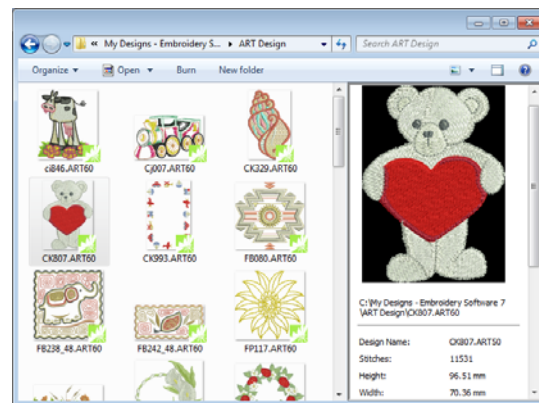


Note This same dialog can be accessed from within the **Open** dialog in BERNINA Embroidery Software. See also [Opening designs](#).

To view design information in Windows Explorer

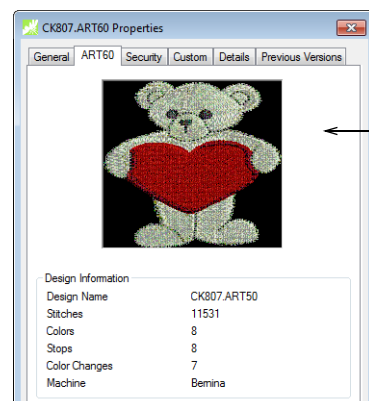
- 1 In Windows Explorer, select the folder you are interested in.

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



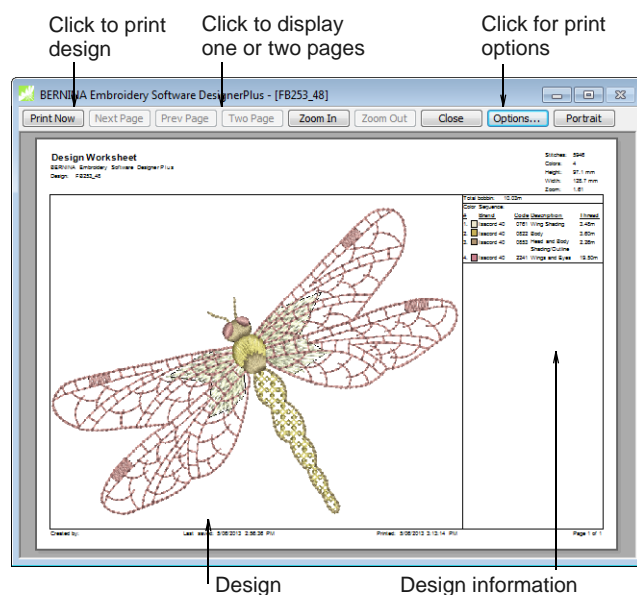
Click **General > Print Preview** to preview the print preview onscreen.

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.



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 6

SELECTING OBJECTS

BERNINA Embroidery Software provides various means for selecting the objects comprising an embroidery design. These include techniques such as point and click, selection marquee, 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 [Grouping & 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 & click



Click Transform > Select Object 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.

► Click an outline to select the object.



► Click the fill behind a outline object to select the filled object.



To select objects by point & click

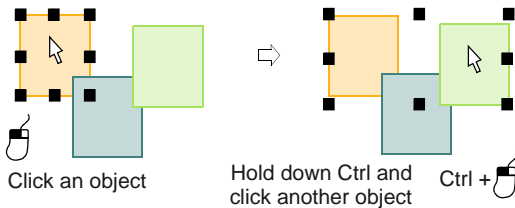
► Click the **Select Object** icon.

- ▶ Click the fill to select an object even if it lies within the bounds of a larger object.

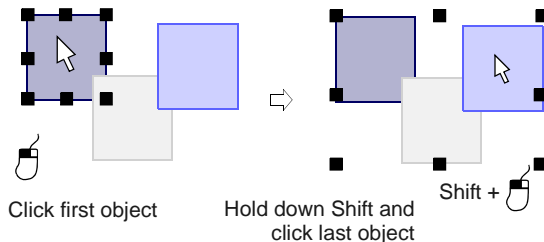


Tip To select an object which is behind another object, zoom in and click the outline. Alternatively, position the pointer over the object, hold down the **2** key, and click until the object is selected. Each click selects the next overlapping object.

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



- ▶ Select a range of objects by holding down **Shift** while you click the first and last objects in the range.



Selecting objects by selection marquee



Use Transform > Select Object to select objects or drag a selection marquee to enclose.

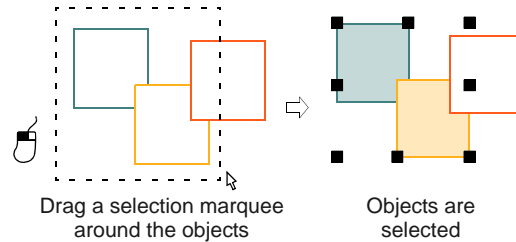


Use Transform > Polygon Select to select irregular areas or shapes – click reference points to demarcate.

With the **Select Object** tool activated, you can select objects by dragging a **selection marquee** around them. Use **Polygon Select** to select multiple objects.

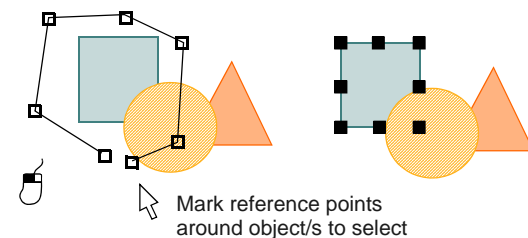
To select objects by selection marquee

- ▶ Click the **Select Object** icon.
 - ▶ Drag a selection marquee around the objects you want to select.
- Objects are selected when you release the mouse button.



Note Unless they have already been grouped, only objects completely within the selection marquee will be selected when you release the mouse button. See also **Grouping & ungrouping objects**.

- ▶ Alternatively, click the **Polygon Select** icon.
- ▶ Mark reference points around the object/s you want to select.
- ▶ Press **Enter** to select.



Selecting objects by Tab



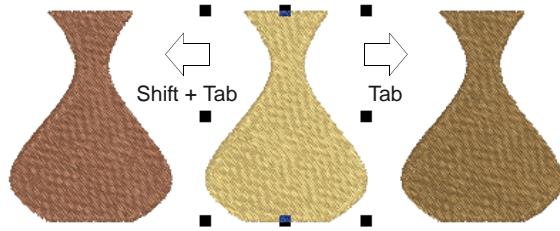
Click Transform > Select Object and press Tab or Shift + Tab to tab between objects.

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

- ▶ 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.



- ▶ 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.



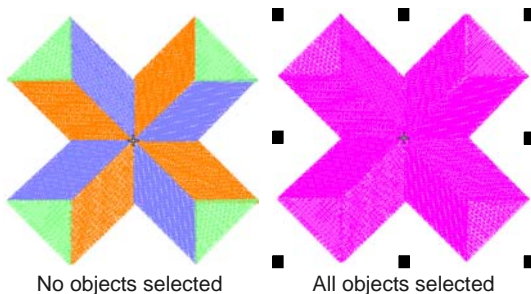
Tip Hold down the **Ctrl** key to select multiple items as you tab between them.

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.



- ▶ To deselect, select **Edit > Deselect All**, press **X** or **Esc**.

Deselecting & deleting objects

Deselecting and deleting objects are basic operations which rapidly become second-nature. You can cancel all selections in the design, or remove individual objects from a group of selected objects. Various methods are available for deleting objects. See also [Sequencing with the Color Film](#).

To deselect or delete 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.
- ▶ 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 & selecting color blocks](#) for details.

Viewing & selecting color blocks



Click **General > Color Film** to view all color blocks and objects in a design.



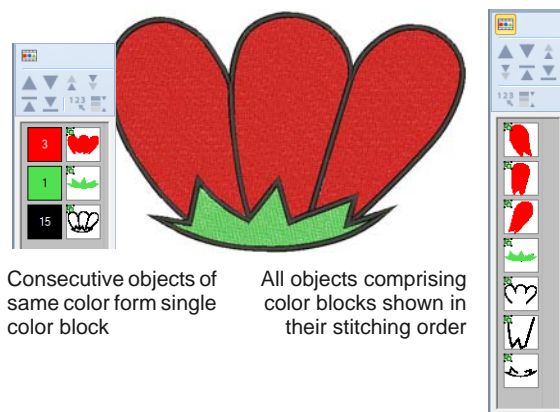
Click **Color Film > Show Individual Objects** to view individual objects in order of stitching sequence.

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 with the Color Film](#).

To view & 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.



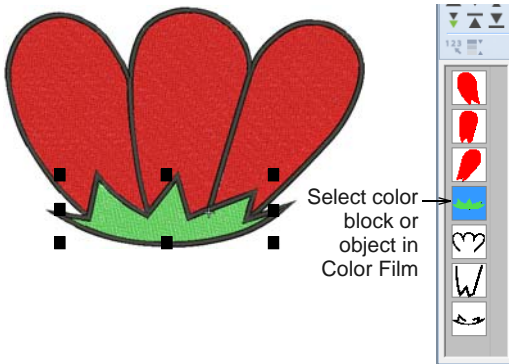
Consecutive objects of same color form single color block

All objects comprising color blocks shown in their stitching order

- ▶ Click the **Show Individual Objects** toggle to view individual objects.

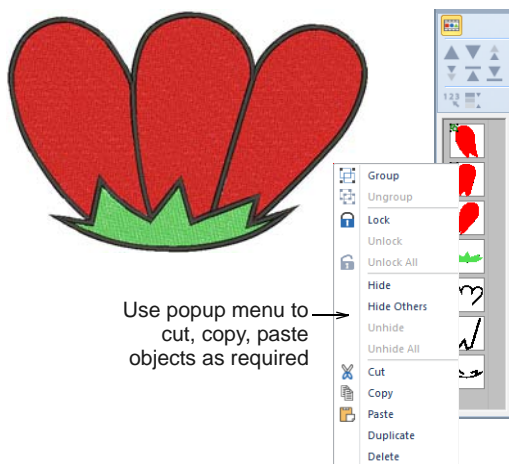
All objects within a color block are displayed in stitching order.

- ▶ 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.

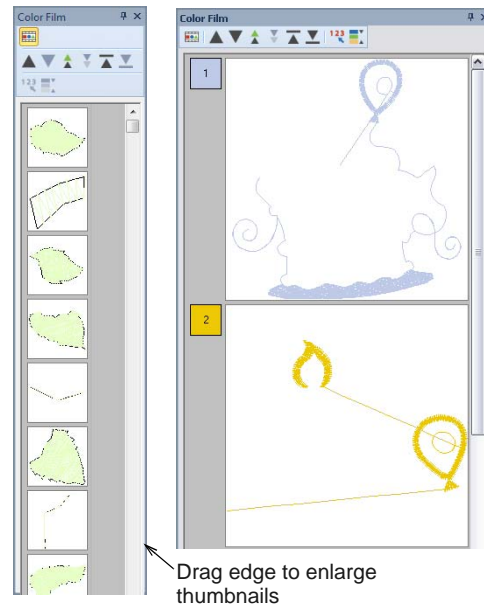


- ▶ Manipulate the color blocks as required. See also [Sequencing with the Color Film](#).

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



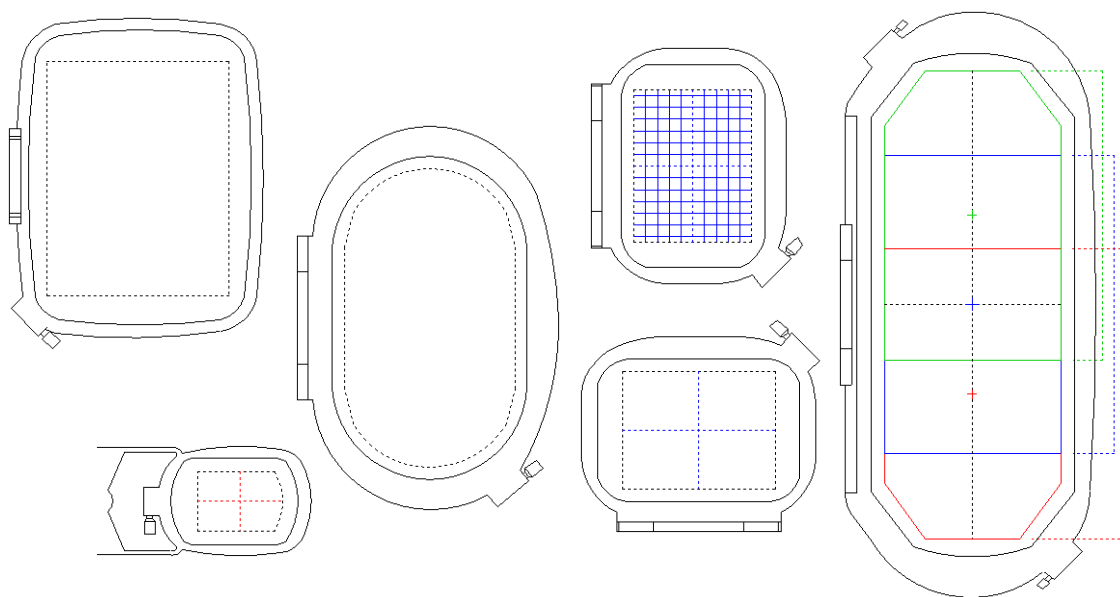
Tip To enlarge thumbnail images of color blocks or objects, click and drag the edge of the dialog.



CHAPTER 7

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](#).

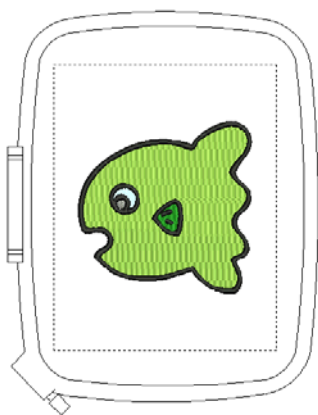
Changing hoops



Click View > Show Hoop to show or hide hoop. 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](#).

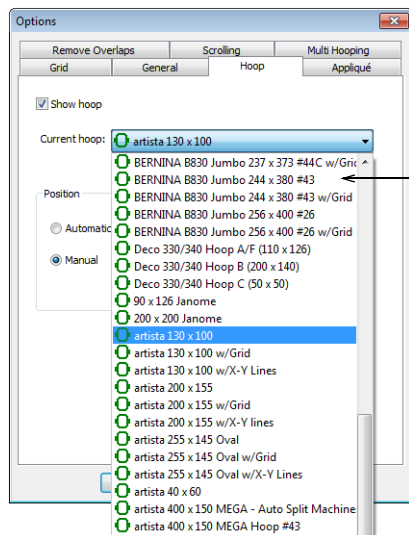


Note When you choose a new hoop, it becomes the 'current' hoop until changed in the present or a future session.

To change hoops

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

The **Options > Hoop** dialog opens.



- 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



Click **View > Show Hoop** to show or hide hoop. 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-centering back on to check that the design will fit within the hoop when it gets to the machine.



Automatic Centering



Manual

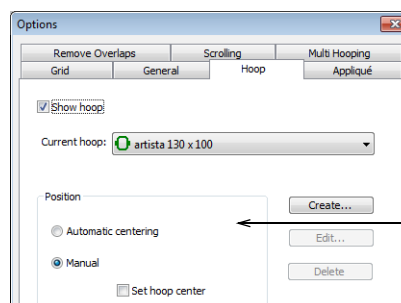


Note These settings are digitizing functions only as the embroidery machine will always center the design. See also [Setting automatic start & end points](#).

To set the hoop center

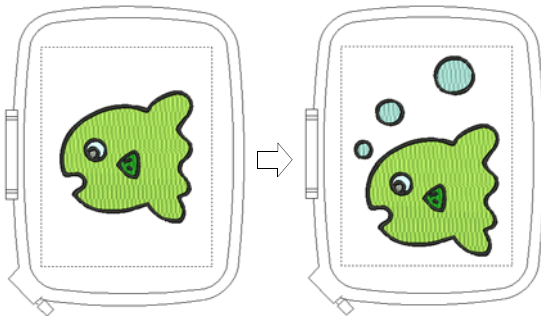
- 1 Right-click the **Show Hoop** icon or select **View > Hoop**.

The **Options > Hoop** dialog opens.

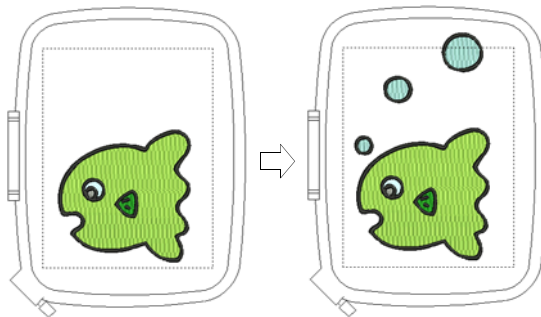


- 2 In the **Position** panel, select how to center the hoop.

- **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.

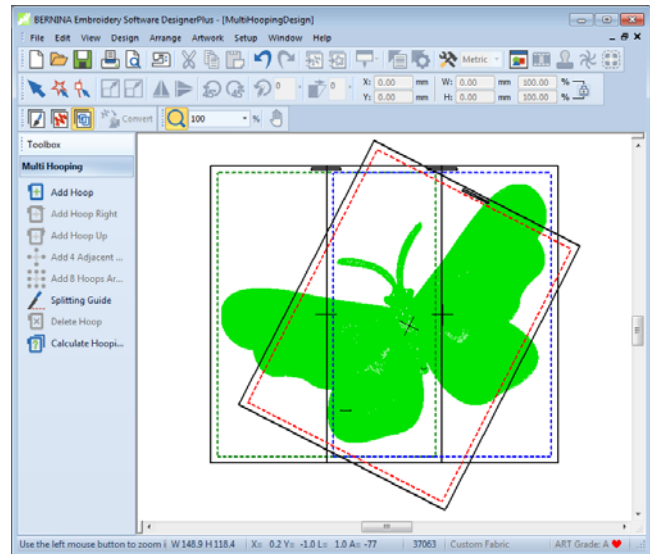
Hooping large designs



Click **Canvas > Hoop Canvas** to view and edit multi-hoopings. If embroidery is too large or contains multiple designs spaced around an article, split into multiple hoopings.

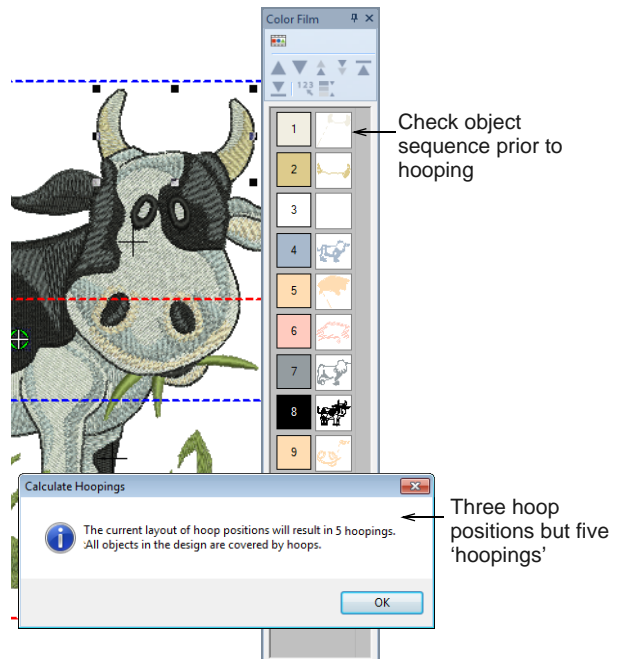
If your embroidery is too large or contains a number of designs spaced around an article, you can split it into multiple hoopings. Each one contains an object or group of objects that can be stitched out in a single hooping. These can be stitched consecutively to form the whole design. They can be sent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



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.



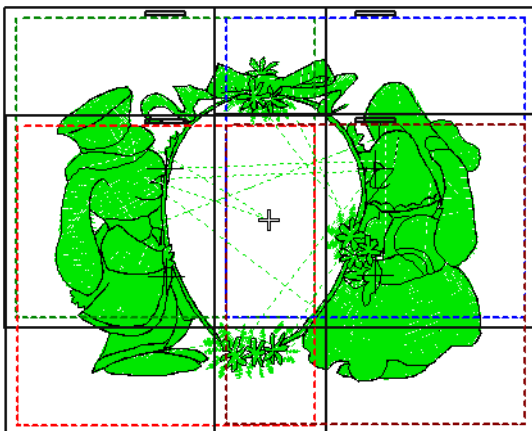
Note 'Hooping' is not the same thing as 'hoop position' – you can have more hoopings than hoop positions but you can never have less. In other words, a single hoop position may involve more than one hooping in order to preserve the design sequence.

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

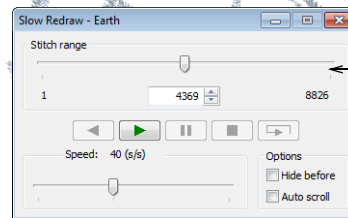
In the unlikely event that you use more than eight hoopings, the color sequence is repeated, as long as none of the previously created hoop positions is deleted.



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 & 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 Multi-Hooping > Add Hoop to add a new hooping to a multi-hooping layout.
-  Use Multi-Hooping > Add Hoop Right to place a new hooping to right of selected hoop. Allows a 10mm overlap between sewing fields.
-  Use Multi-Hooping > Add Hoop Up to place a new hooping above selected hoop.
-  Use Multi-Hooping > Add 4/8 Hoops Around to generate 4/8 hoopings around a selected hoop's perimeter. Allow a 10mm overlap between sewing fields.
-  Use Multi-Hooping > Splitting Guide to digitize one or more guides in a multi-hoop layout to split objects between hoopings.
-  Use Multi-Hooping > Delete Hoop to remove selected hoop from hooping layout.
-  Use Multi-Hooping > Calculate Hoopings to calculate hoopings resulting from current layout.

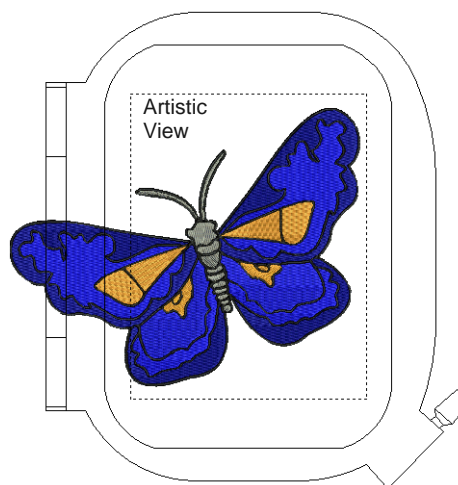
BERNINA Embroidery Software provides a dedicated **Hoop Canvas** which allows you to create multiple hoopings. This means you can stitch out embroidery designs that are larger than can be accommodated within a single hoop. **Hoop Canvas** allows you to define multiple hoop positions. The aim is to add 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 & selecting color blocks** for details. See also **Simulating design stitchouts**.

To create a multi-hoop design

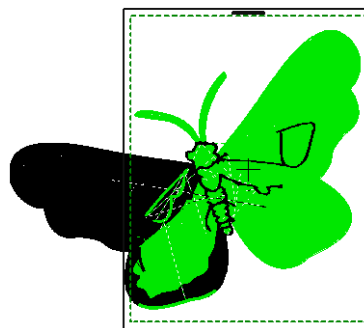
- 1 In **Embroidery Canvas**, choose the hoop you want to use. See **Changing hoops** for details.



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.

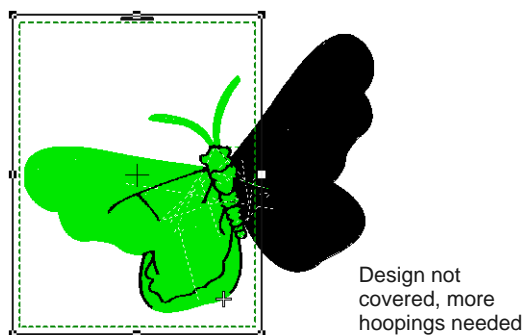
- 2 Switch to **Hoop Canvas** mode. See **Operating modes** for details.

When you enter **Hoop Canvas**, 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 Canvas**.

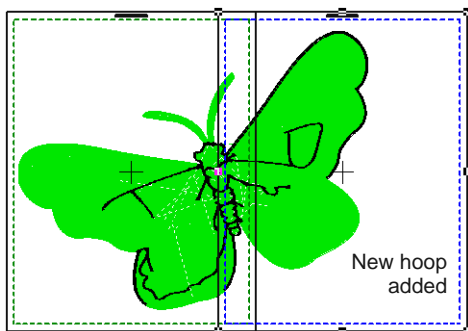
- 3 Select a hoop outline, and drag it till it covers the largest object in the design.



- 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.

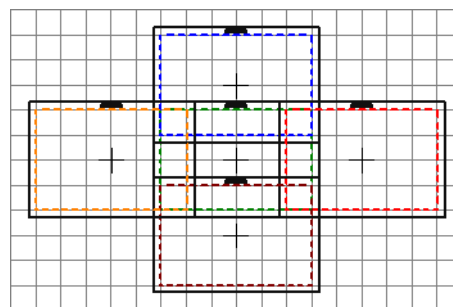
- ▶ Click the **Add Hoop** icon to add a new hoop to the design window in an upright orientation.
- ▶ Use the **Add Hoop Right** tool to place a new hoop directly to the right of a selected hoop with a 10 mm overlap between sewing fields.



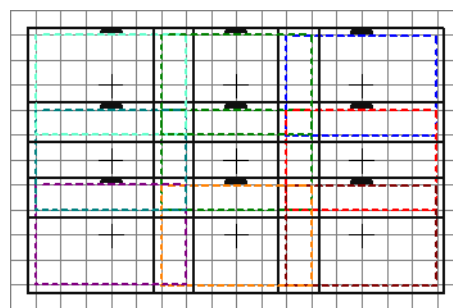
- ▶ Similarly, use the **Add Hoop Up** tool to place a new hoop directly above a selected hoop.

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.



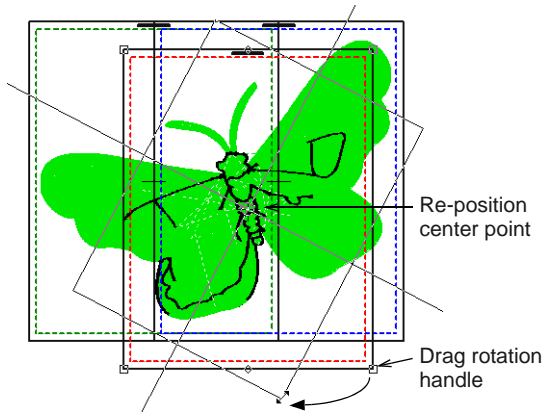
Note If you remove all hoops in a design and create a new one, automatic centering is re-activated.



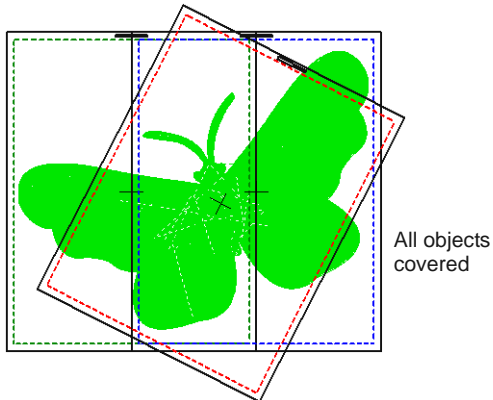
Tip To select more than one hoop at a time, use one of the following techniques:

- ▶ 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. See also [Rotating objects](#).

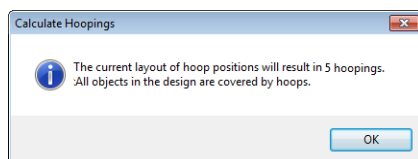


Tip Nudge selected hoops into position using the arrow keys.



Note While a design may be entirely covered by separate hoop positions, some objects may remain uncovered, as indicated by black stitching. 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.



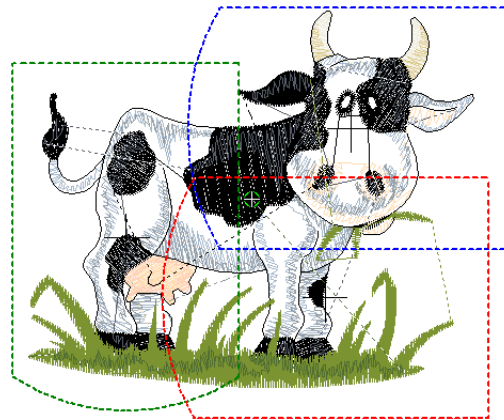
Tip Print a copy of the design showing the hoop positions to help you stitch it in the correct hooping order. See [Printing multi-hooped designs](#) for details.

Splitting objects between hoopings



Use Multi-Hooping > Splitting Guide to digitize one or more guides in a multi-hoop layout to split objects between hoopings.

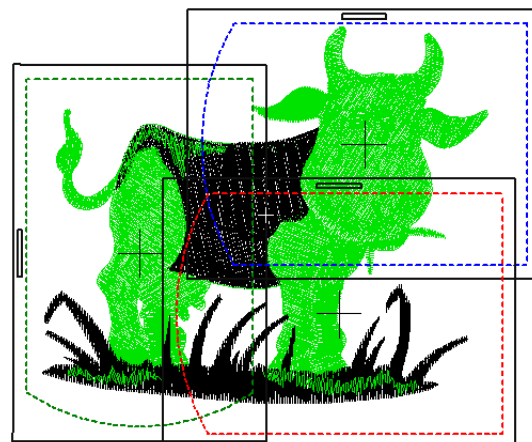
The **Splitting Guide** tool allows you to split objects that would not otherwise fit within a hooping. In effect, it allows you to digitize one or more split lines in a multi-hooped design prior to outputting to file, machine or memory card. Although split lines are only visible in **Hoop Canvas**, 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

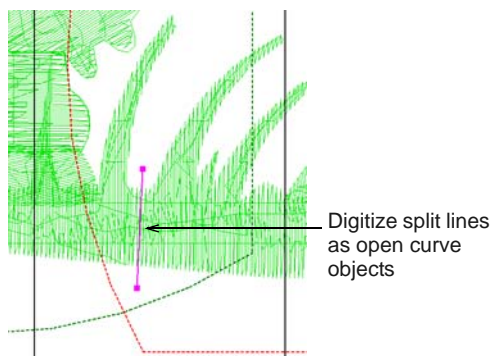
- 1 Select **Hoop Canvas**.

A design already exists in the design window with multiple hoopings and uncovered objects.

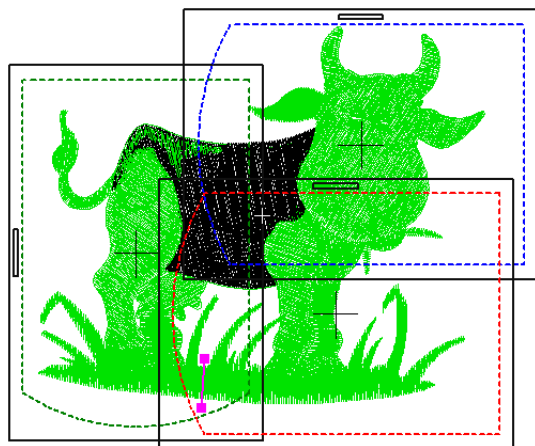


2 Select the **Splitting Guide** tool.

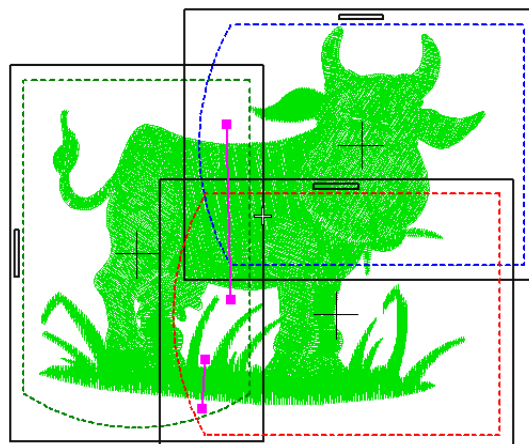
You are prompted to enter the starting point of the split line within sewing field overlaps.

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

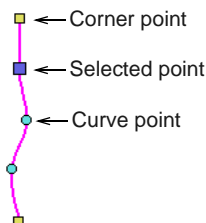
As long as splits occur within the sewing field of overlapping hoopings, the resultant 'split objects' become covered and are displayed in green.



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 using the **Reshape** tool. See also **Reshaping objects**.

**Outputting registration marks**

Use **General > Options** to access application options for system preferences, grid & guides, multi-hooping and other settings.

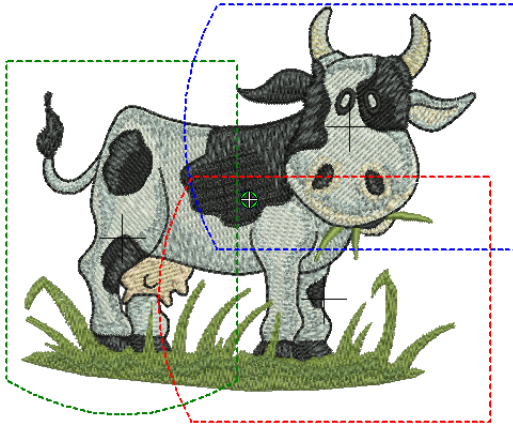
In order to help you correctly align multiple hoopings during stitchout, BERNINA Embroidery Software can stitch out registration marks for each hooping. These do not form part of the design and are not saved with the design file. However, they are added during output and are viewable in the production worksheet hooping sequence.



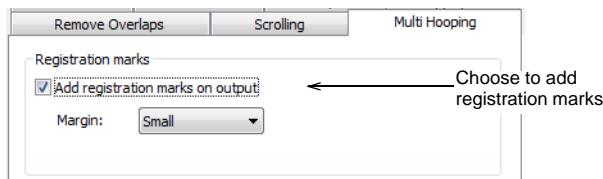
Tip Correct alignment of multi-hooped designs requires some practice. Third-party training programs are available on the internet which demonstrate correct technique. Most recommend using a sticky-back tear-away stabilizer, heavy enough so that the registration marks do not tear the stabilizer. Use pins through the registration marks of one hooping to align the corresponding marks of the next hooping.

To output registration marks

- 1 Open or create the large design or design layout you want to sew out. See also [Arranging & Transforming Objects](#).



- 2 Click the **Options** icon and select the **Multi-Hooping** tab.

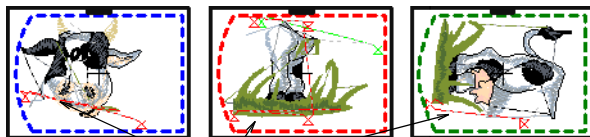


- 3 Select the **Multi-Hooping** tab and choose the **Add registration marks on output** option.
- 4 Adjust the margin settings as required.

The larger the margin, the greater the distance between the registration mark and the maximum embroidery area of the hoop. This makes it easier to align but there may be some trade-off in precision.



Tip To check that registration marks have been added, activate the hooping list in **Print Preview**. See [Outputting multi-hooped designs](#) for details.



Registration marks included

Creating sliding-hoop designs

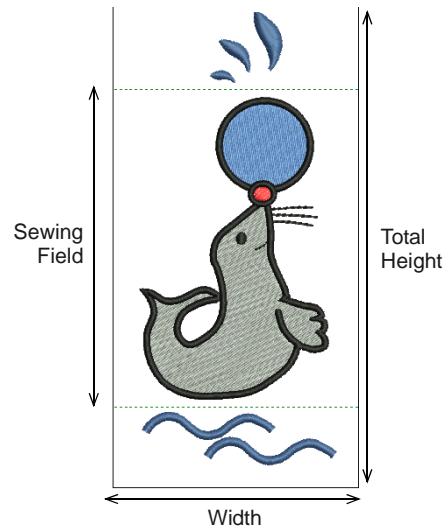


Use Multi-Hooping > Add Hoop to add a new hooping to a multi-hooping layout.



Use Multi-Hooping > Delete Hoop to remove selected hoop from hooping layout.

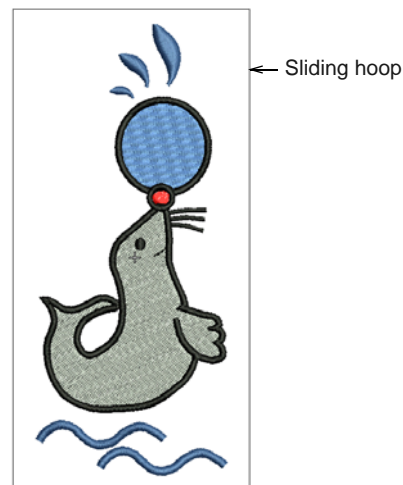
Sliding hoops are special hoops with adjustable frames to accommodate larger designs. You can adjust the position of the sewing field according to objects in the design. You can even define multiple sewing field positions as required. The entire design, however, must fit within the overall hoop.



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**, choose the sliding hoop you want to use. See [Changing hoops](#) for details. The overall outline is displayed in solid black.

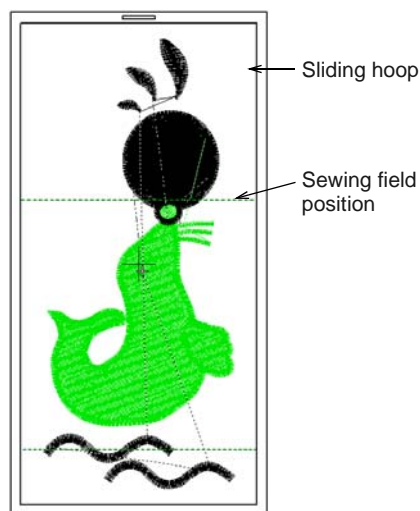


Note The design can only use a single sliding hoop, so you need to choose one that will

accommodate the entire design. The sewing field must also be able to accommodate the largest object in the design.

- 2 Switch to **Hoop Canvas**. See **Operating modes** for details.

When you enter **Hoop Canvas**, 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.



Note No embroidery object can be selected or manipulated in **Hoop Canvas**.

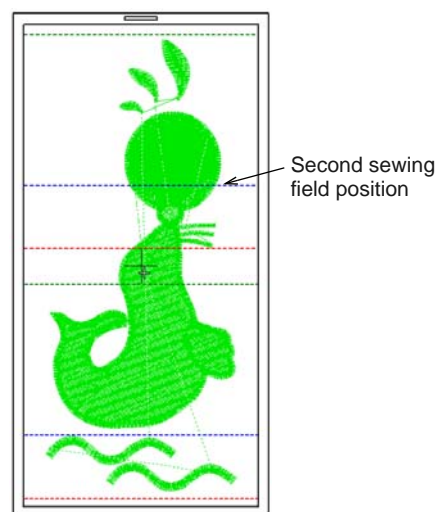
- 3 Click and drag the dotted outline till it covers the largest object in the design.
- 4 Click the **Add Hoop** icon.

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.



- 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 Multi-Hooping > Add Hoop to add a new hooping to a multi-hooping layout.



Use Multi-Hooping > Add Hoop Right to place a new hooping to right of selected hoop. Allows a 10mm overlap between sewing fields.



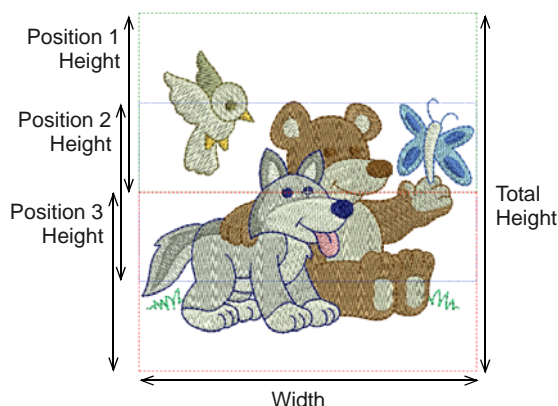
Use Multi-Hooping > Add Hoop Up to place a new hooping above selected hoop.



Use Multi-Hooping > Delete Hoop to remove selected hoop from hooping layout.

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.

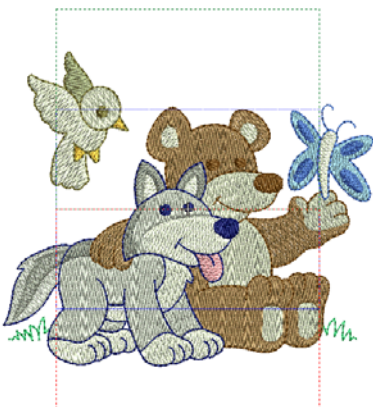


Note You can define your own 3-position hoop to suit the one you are working with. See [Defining 3-position hoops](#) for details.

To create a 3-position-hoop design

- 1 In **Embroidery Canvas**, 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.

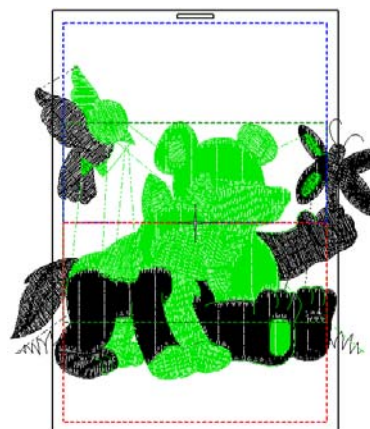


Note Very large designs can use multiple 3-position hoopings if required. The sewing field, however, must be able to accommodate the largest object in the design.

- 2 Switch to **Hoop Canvas**. See [Operating modes](#) for details.

When you enter **Hoop Canvas**, 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.



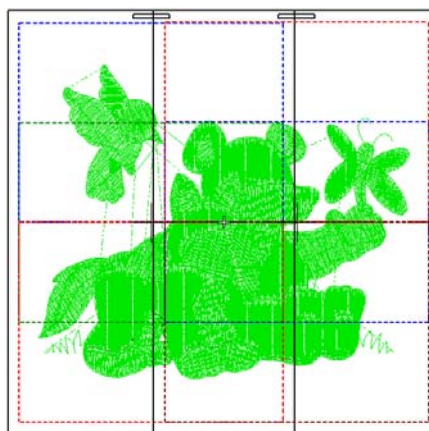
Note No embroidery object can be selected or manipulated in **Hoop Canvas**.

- 3 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

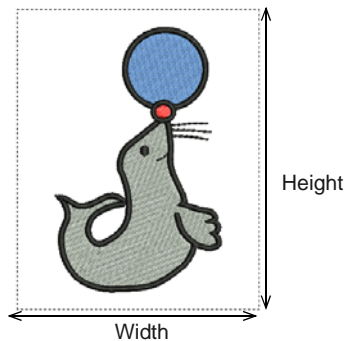
If you are using a hoop size that is not in the hoop list, you can define your own hoops and save them for later use. You can create or edit four types of hoop – rectangular, oval, sliding and 3-position.

Defining rectangle hoops



Click View > Show Hoop to show or hide hoop. Right-click to change hoop settings.

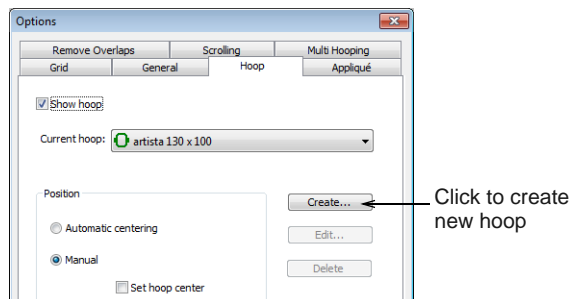
Rectangle hoops are displayed as dotted black lines. You can set the height and the width of the rectangle according to the dimensions of the hoop you are using.



To define a rectangle hoop

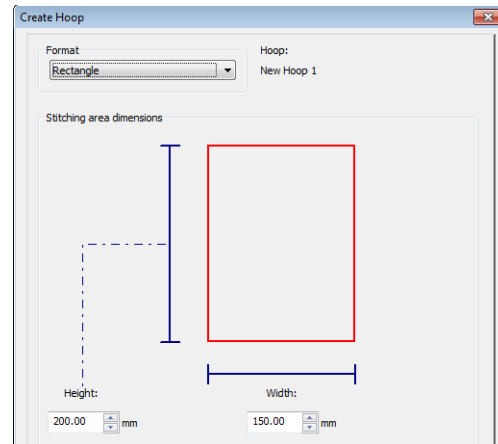
- 1 Right-click the **Show Hoop** icon or select **View > Hoop**.

The **Options > Hoop** dialog opens.

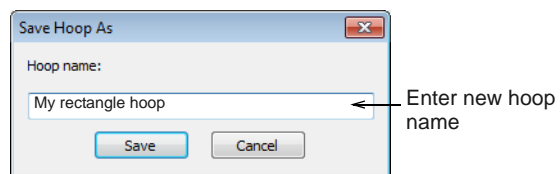


- 2 Click **Create**.

The **Create** 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** button.
The **Save Hoop As** dialog opens.
- 6 Enter a hoop name.



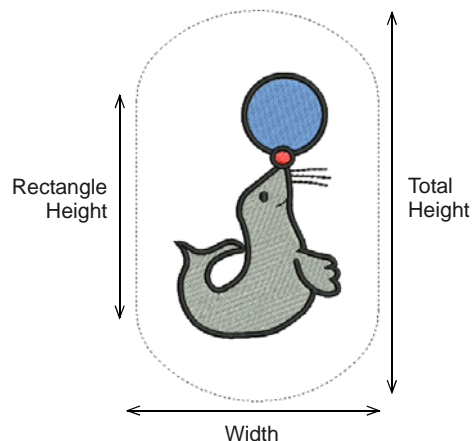
- 7 Click **Save** and **Save Hoop**.

Defining oval hoops



Click View > Show Hoop to show or hide hoop. Right-click to change hoop settings.

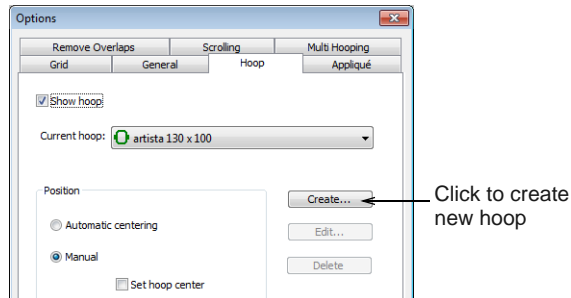
Oval hoops are displayed as black dotted outlines. You can set the height and the width of the oval according to the dimensions of the hoop you are using.



To define an oval hoop

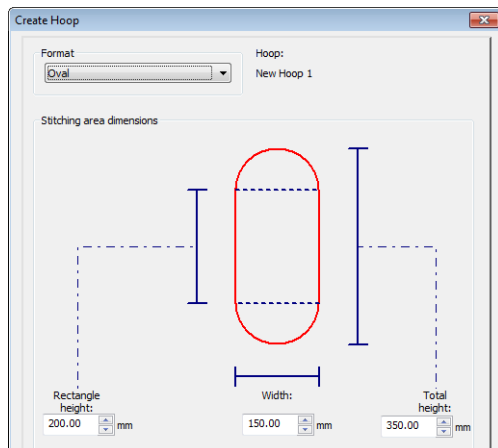
- 1 Right-click the **Show Hoop** icon or select **View > Hoop**.

The **Options > Hoop** dialog opens.

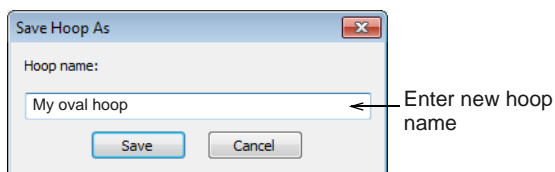


- 2 Click **Create**.

The **Create 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** button.
The **Save Hoop As** dialog opens.
- 6 Enter a hoop name.



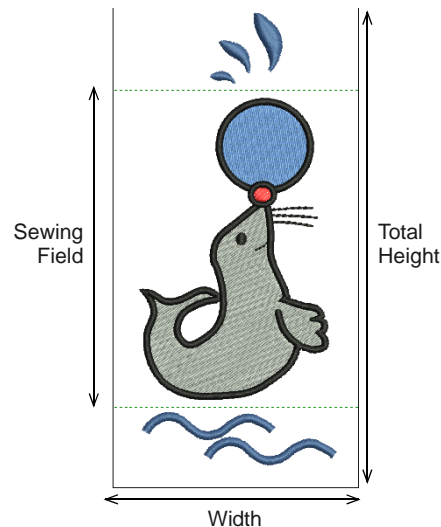
- 7 Click **Save** and **Save Hoop**.

Defining sliding hoops



Click **View > Show Hoop** to show or hide hoop.
Right-click to change hoop settings.

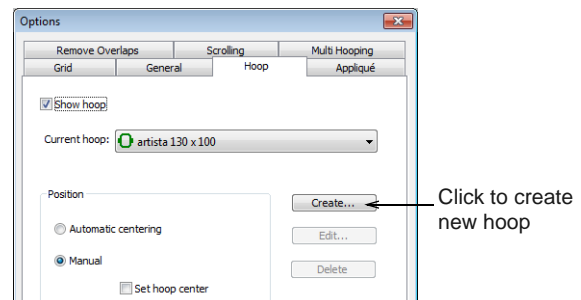
Sliding hoops are special hoops with adjustable frames to accommodate unusual size designs. You can set the height and the width of the hoop as well as the sewing field within according to the dimensions of the hoop you are using.



To define a sliding hoop

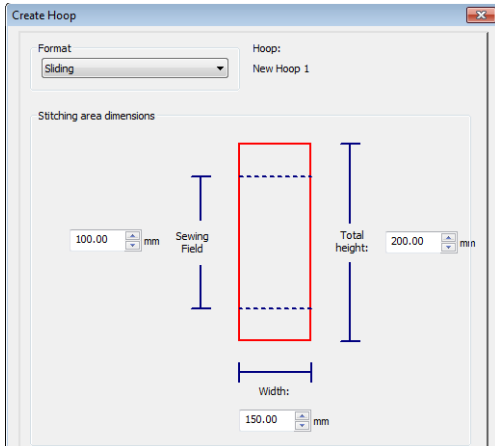
- 1 Right-click the **Show Hoop** icon or select **View > Hoop**.

The **Options > Hoop** dialog opens.



- 2 Click **Create**.

The **Create Hoop** dialog opens.

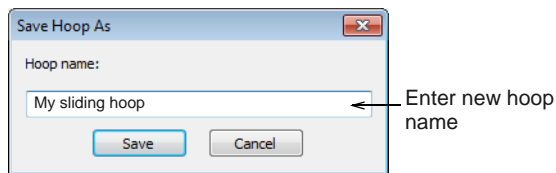


- 3 In the **Format** panel, select **Sliding**.
- 4 In the **Dimensions** panel, enter the **Sewing Field**, **Total Height** and **Width** of the hoop.



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** button.
The **Save Hoop As** dialog opens.
- 6 Enter a hoop name.



- 7 Click **Save** and **Save Hoop**.

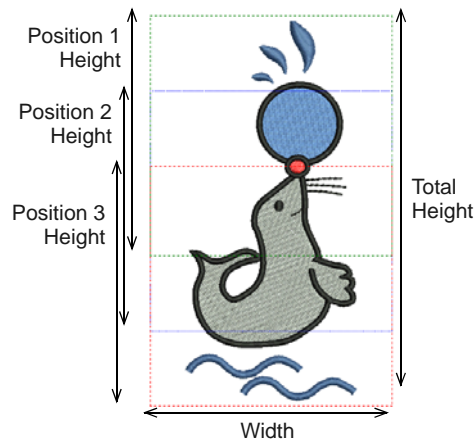
Defining 3-position hoops



Click **View > Show Hoop** to show or hide hoop.
Right-click to change hoop settings.

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

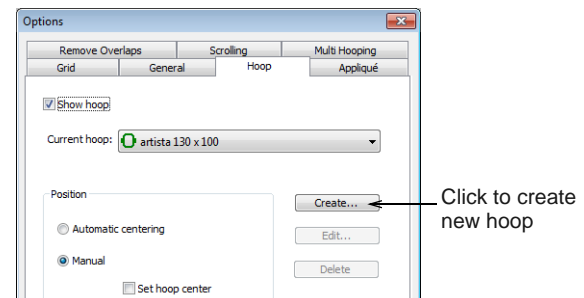
3-position hoop according to the dimensions of the hoop you are using.



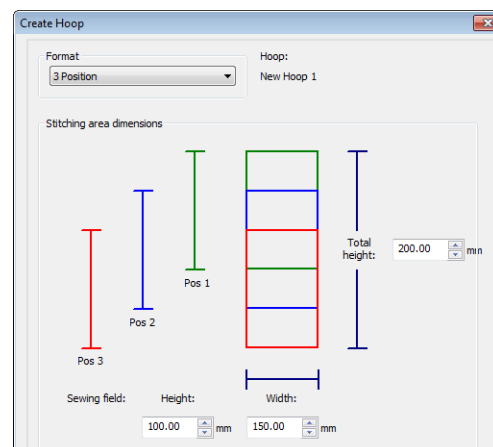
To define a 3-position hoop

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

The **Options > Hoop** dialog opens.



- 2 Click **Create**.
The **Create Hoop** dialog opens.

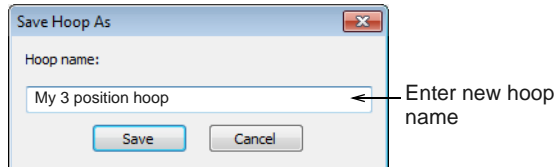


- 3 In the **Format** panel, select **3-Position**.
- 4 In the **Dimensions** panel, enter the **Total Height**, the heights for **Position 1**, **2** and **3**, followed by the hoop **Width**.



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** 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

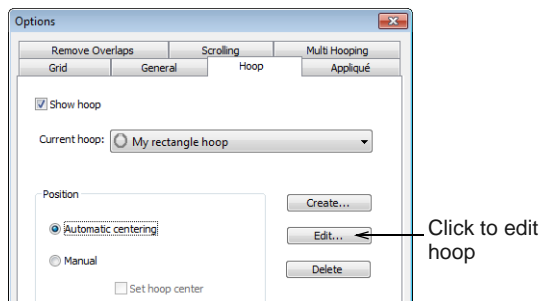


Click View > Show Hoop to show or hide hoop. Right-click to change hoop settings.

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

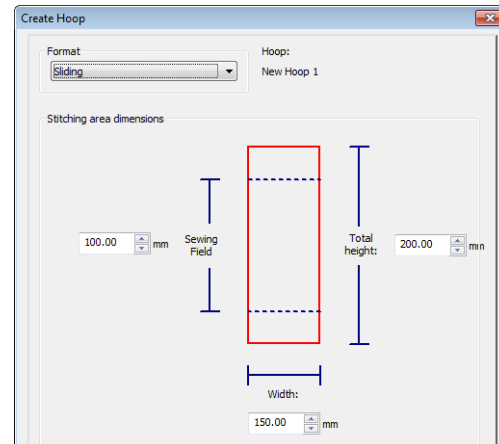
To edit a hoop

- 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**.

The **Create** dialog opens.



- 4 Enter the new dimensions.
- 5 Click the **Save Hoop** button.

Deleting hoops

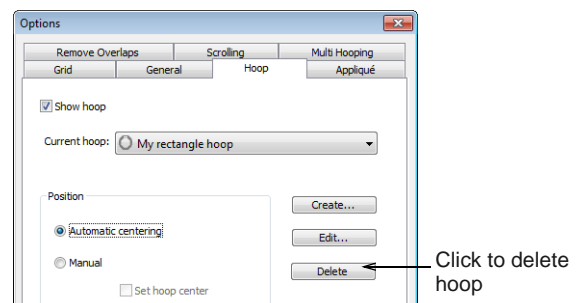


Click View > Show Hoop to show or hide hoop. Right-click to change hoop settings.

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.

CHAPTER 8

HARDWARE & SOFTWARE SETUP

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

BERNINA Embroidery Software supports TWAIN-compatible scanners.

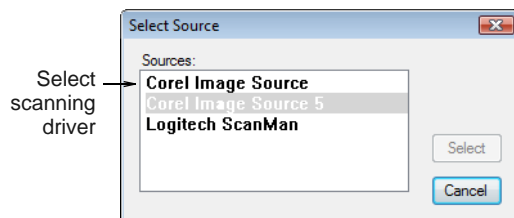


Note Some scanners will not work with BERNINA Embroidery Software because they require their own scanner software. If this is the case with your scanner, use your scanner software for scanning, save the image to your hard drive, then load the image into BERNINA Embroidery Software.

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.



- 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.

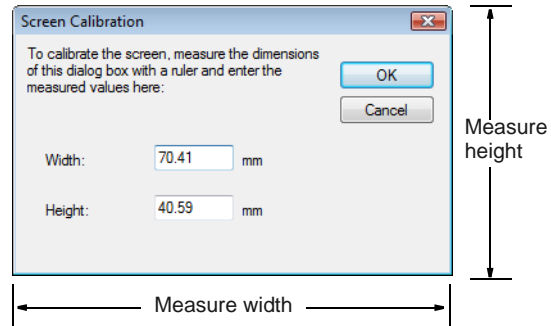
Calibrating the monitor

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 > Calibrate Screen**.

The **Calibrate Screen** dialog opens.



- 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

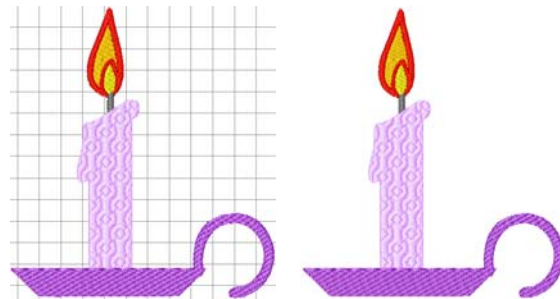


Right-click View > Show Grid to set grid reference point and spacing.



Use General > Options to access workspace options such as grid, hoop, and scroll settings.

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.



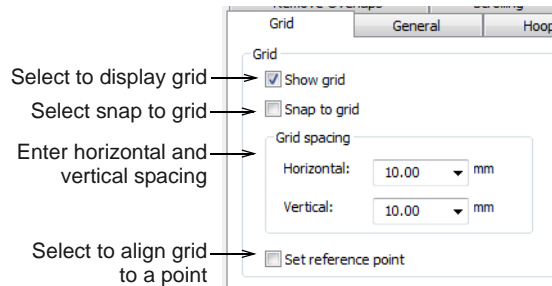
Align the grid with a specific point in the design by setting a reference point – for example, when you want grid lines to intersect the center point of the design, or a horizontal grid line to sit under a particular object.

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.



- 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

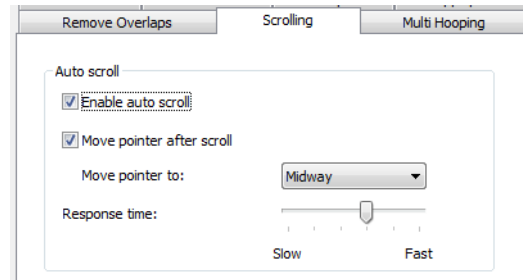


Use **General > Options** to access workspace options such as grid, hoop, and scroll settings.

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 Click **Options** icon and select the **Scrolling** tab.



- 2 Select the **Enable auto scrolling** checkbox to apply.
- 3 Select the **Move pointer after scroll** checkbox to move the position of the pointer after each scroll.
- 4 Adjust the **Response time** field as required.
Enter smaller values to increase scrolling speed.
- 5 Select the pointer position after scrolling from the **Move pointer 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



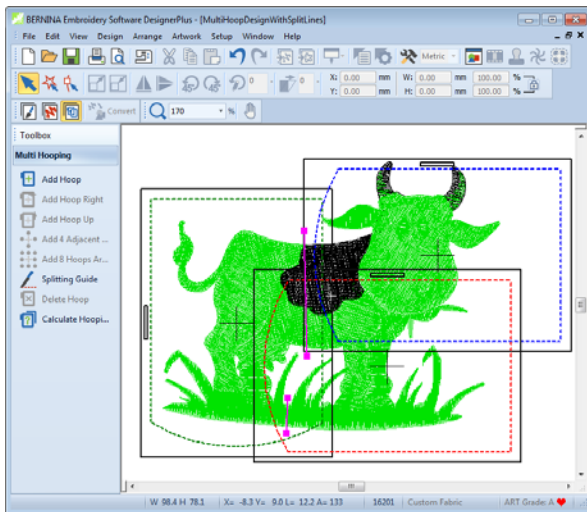
Right-click **View > Show Hoop** to change the hoop settings.



Use **General > Options** to access workspace options such as grid, hoop, and scroll settings.

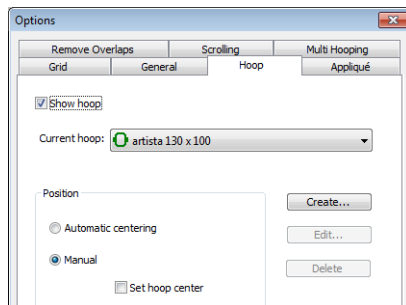
A range of sizes is available to suit the size of your design as well as a number of embroidery machines. Select the smallest hoop which fits the design from

the range of hoop sizes available. This will hold the fabric tight while stitching.



To set hoop options

- 1 Select **Settings > Options** and select the **Hoop** tab or right-click the **Show Hoop** icon. The **Options > Hoop** dialog opens.



Tip Hide the hoop by clearing the **Show 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 **Create** to create customized hoops. See [Defining custom hoops](#) for details.
- 5 Click **Edit** to edit existing hoops. See [Editing hoops](#) for details.
- 6 Click **Delete** to delete existing hoops. See [Deleting hoops](#) for details.
- 7 Click **OK**.

Setting appliqué options

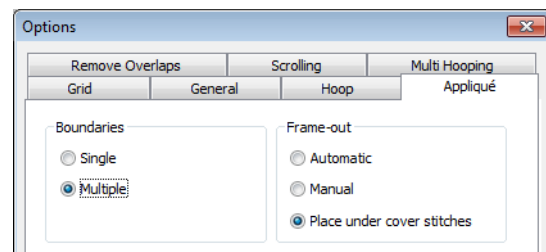


Use **General > Options** to access workspace options such as grid, hoop, and scroll settings.

Use **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 Appliqué options

- 1 Click **Options** icon 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 overlap removal options



Use **General > Options** to access workspace options such as grid, hoop, and scroll settings.

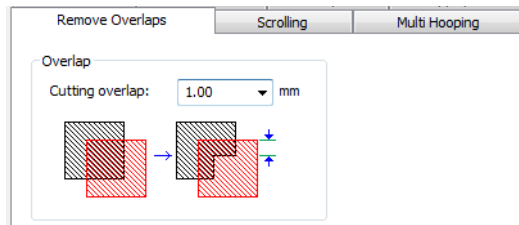
Use **Remove Overlaps** to remove underlying layers of stitching. This helps to reduce the stitch count and

prevent a build-up of stitches where they are not needed. See also [Removing underlying stitching](#).

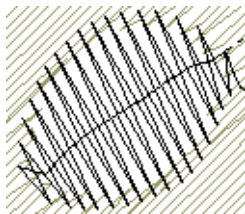
To set overlap removal options

- 1 Click **Options** icon and select the **Remove Overlaps** tab.

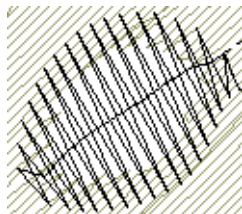
The **Options > Remove Overlaps** dialog opens.



- 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



Use General > Options to access workspace options such as grid, hoop, and scroll settings.

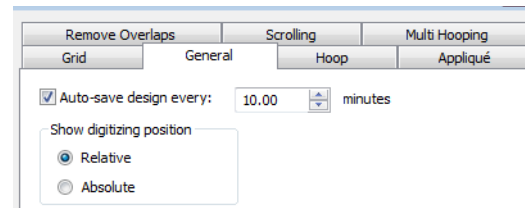
Save your work automatically at regular intervals using **Auto Save** to protect you from losing work in the event of hardware or software failure. A backup file is created every time you save a design. The design will be saved in the BACKUP folder of your BERNINA Embroidery Software installation. It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

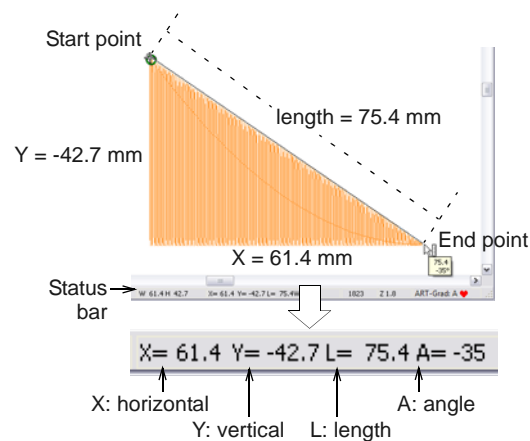
- 1 Click **Options** icon and select the **General** tab.



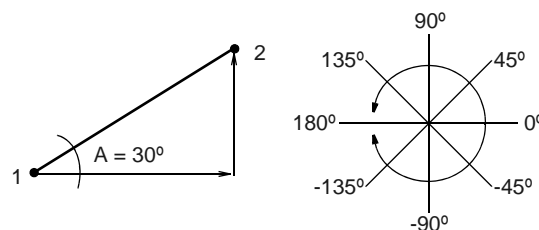
- 2 Tick the **Auto-save design** checkbox and enter the auto-save frequency.
- 3 Click **OK**.

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

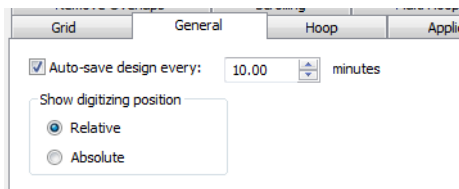


Use General > Options to access workspace options such as grid, hoop, and scroll settings.

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 Click **Options** icon and select the **General** tab.



- 2 Select a Relative or Absolute setting for the pointer:

Option	Purpose
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



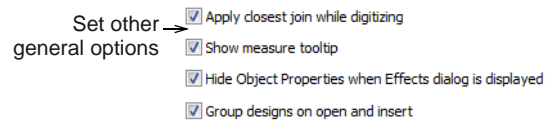
Use General > Options to access workspace options such as grid, hoop, and scroll settings.

The **Options > General** tab 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.

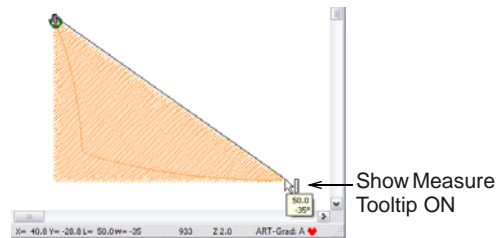
To set other general options

- 1 Click **Options** icon and select the **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 & 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 & 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 & 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 [Properties, Fabrics & 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.

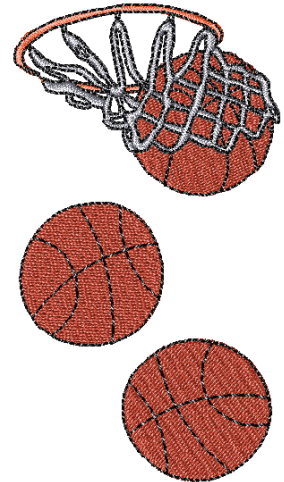
CHAPTER 9

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 [Properties, Fabrics & Templates](#).



Use **Stitch > Triple Outline** to create a thicker outline by repeating each stitch three times – use for heavier borders or details.

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 time.

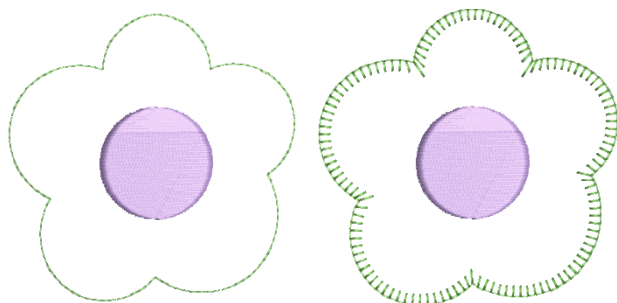
Selecting outline stitches



Use **Stitch > Single Outline** to create a single row of stitches along a digitized outline – used for borders or details.

To select an outline stitch

- 1 Select or digitize an open or closed object. See also [Digitizing Methods](#).



- 2 Select an **Outline** stitch type from the to **Stitch** toolbar. See also [Stitch toolbar](#).
The selected stitch type is applied.



Tip Select a stitch type with no object selected in order to make current for new objects.

Selecting fill stitches



Use **Stitch > Step Fill** to create stitch fills for larger, irregular shapes.

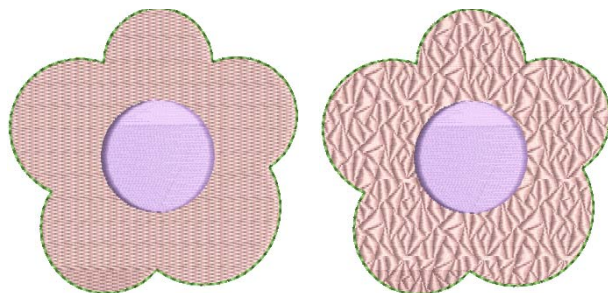


Use **Stitch > Satin Fill** to create stitch fills for narrow shapes.

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 Select or digitize a closed object. See also [Digitizing closed shapes](#).



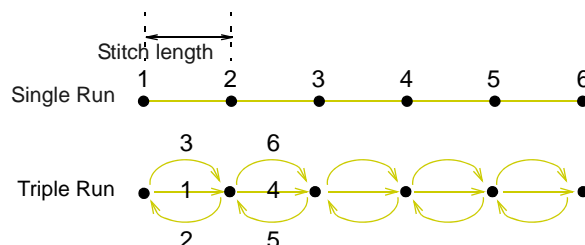
- 2 Select a **Fill** stitch type from the to **Stitch** toolbar. See also [Stitch toolbar](#).
The selected stitch type is applied.



Tip Select a stitch type with no object selected in order to make current for new objects.

Creating single and triple stitch outlines

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 through designs](#) for details.

Creating outlines with Single and Triple stitch



Use **Stitch > Single Outline** to create a single row of stitches along a digitized outline – used for borders or details.

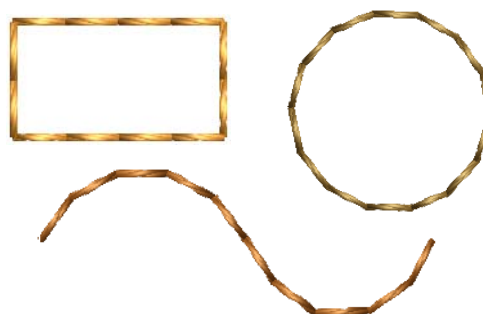


Use **Stitch > Triple Outline** to create a thicker outline by repeating each stitch three times – use for heavier borders or details.

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 Select **Single** or **Triple** from the to **Stitch** toolbar. See also [Stitch toolbar](#).
- 2 Select a digitizing tool and digitize a shape, open or closed. See [Digitizing Methods](#) for details.





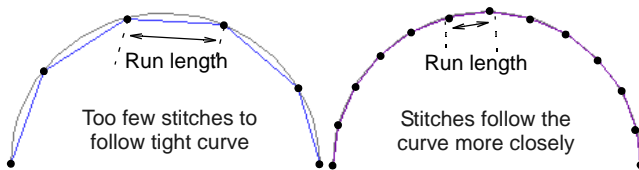
Note The outline is created with default Single or Triple stitch settings. Stitch length can be adjusted before or after digitizing. See [Adjusting Single or Triple stitch length](#) for details.

Adjusting Single or Triple stitch length



Click General > Object Properties to adjust stitch settings.

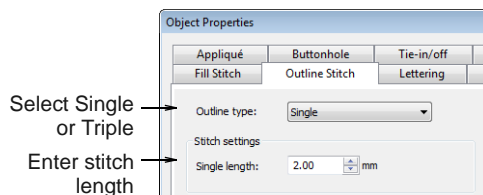
You can change stitch length in the **Object Properties** dialog either before or after **digitizing**. For both Single and Triple stitches, set a stitch length to suit the digitized shape. Where the object has tight curves, select a shorter stitch length. To reduce the stitch count for flatter curves,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



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.



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.

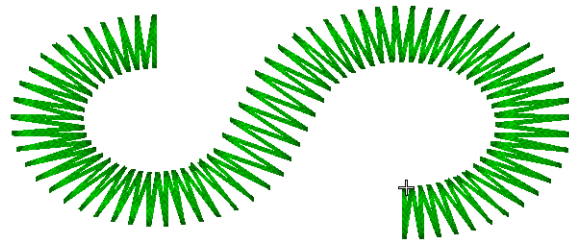


Tip You can mimic handmade embroidery with **Single** or **Triple** stitches by setting the length to 4.0 mm. See also [Craft Stitch Borders & Fills](#).

- 4 Click **Apply**.

Creating satin outlines

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 outlines with Satin stitch



Use **Stitch > Satin Outline** to create thicker borders or columns of even thickness.

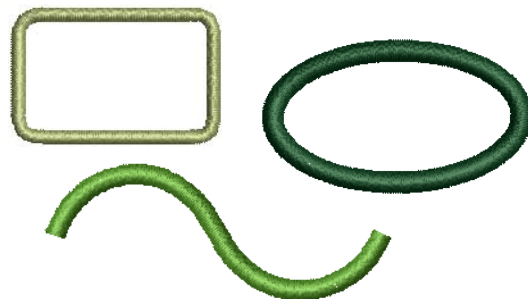


Use **Stitch > Raised Satin Outline** to create raised satin borders – can be used with trapunto for quilting effects.

Use Satin outline type to create thicker borders.

To create a Satin outline

- 1 Select **Satin Outline** from the to **Stitch** toolbar.
See also [Stitch toolbar](#).
- 2 Select a digitizing tool and digitize a shape, open or closed. See [Digitizing Methods](#) for details.
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.



Tip Combined with the **Raised Satin** stitch **Calligraphy** setting, **Open Freehand** can be used to create embroidered calligraphy. For best results, a wider satin width and more layers than

the default may be required. See [Creating freehand embroidery](#) for details.



Thick-thin calligraphy effect

Adjusting Satin outline stitch spacing and width



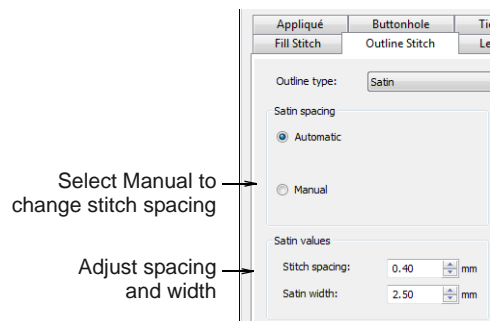
Click General > Object Properties to adjust stitch spacing and width.

Satin 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](#).



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.



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.

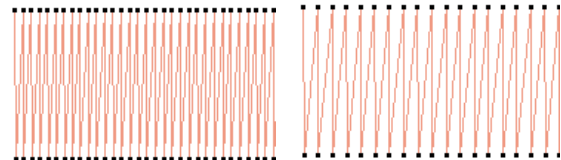
The **Stitch Spacing** field becomes activated.



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**.

Applying automatic spacing to satin outline



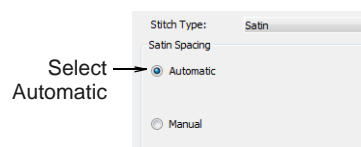
Click General > Object Properties to apply Automatic Spacing.

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](#).

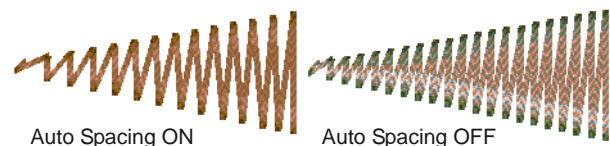
To apply automatic spacing to satin outline

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

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



- 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

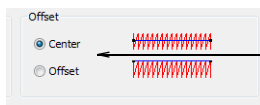


Click General > Object Properties to set stitch offsets.

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

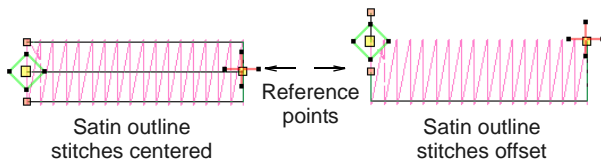
To adjust satin outline stitch offsets

- 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**.



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

- 3 Click **Apply**.

Creating blanket stitch outlines

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 outlines with blanket stitch

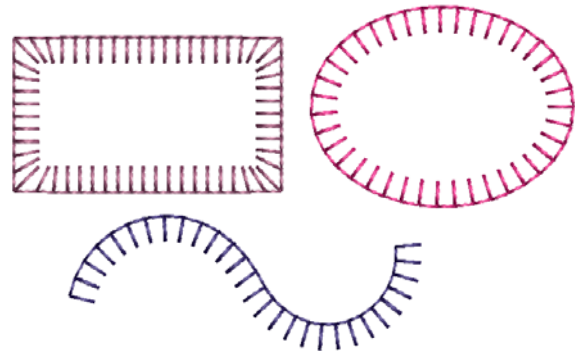


Use **Stitch > Blanket Outline** for long, narrow borders with a 'comb' effect.

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

To create a blanket stitch outline

- 1 Select **Blanket Outline** from the **to Stitch** toolbar. See also [Stitch toolbar](#).
- 2 Select a digitizing tool and digitize a shape, open or closed. See [Digitizing Methods](#) for details.
The outline uses default blanket stitch settings. Stitch spacing and width can be adjusted before or after digitizing. See [Adjusting blanket stitch spacing & width](#) for details.



Tip 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 & width



Click General > Object Properties to adjust stitch spacing and width.

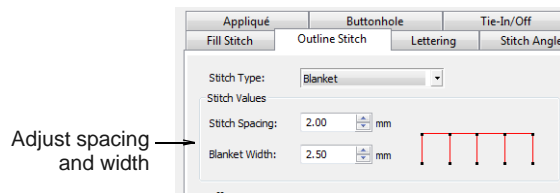
You can adjust the length of the stitches and the spacing between them.



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.



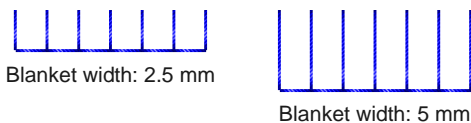
Tip You can preset stitch settings before digitizing. Click the **Object Properties** icon to access the dialog at any time.

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

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



- In the **Blanket Width** field, enter the width of each blanket stitch.



- Click **Apply**.

Adjusting blanket stitch offsets

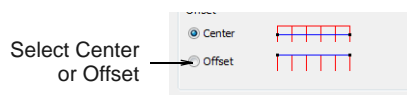


Click **General > Object Properties** to set Blanket stitch offsets.

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

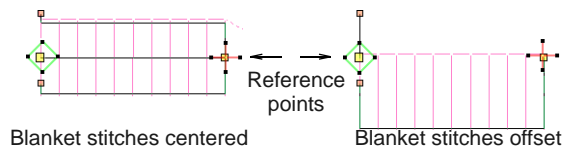
To adjust Blanket stitch offsets

- Double-click or right-click a blanket outline object. The **Object Properties > Outline Stitch** dialog opens.



- Select an offset option:
 - ▶ Center

▶ Offset



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

- Click **Apply**.

Creating satin fills

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 fills with Satin stitch



Use **Stitch > Satin Fill** to create stitch fills for narrow shapes.

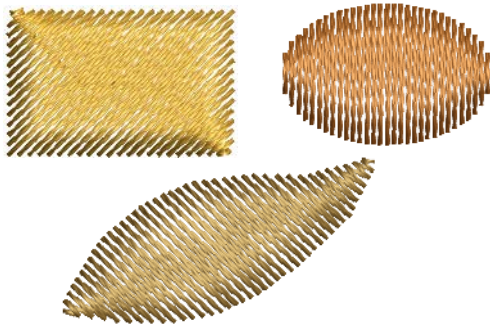


Use **Stitch > Raised Satin Fill** to create raised surfaces – can be applied to lettering or used with trapunto for quilting effects.

Use **Satin Fill** when creating narrow borders and shapes. Use **Raised Satin Fill** to create raised embroidery designs consisting of multiple layers of satin stitching. See also **Quilted embroidery**.

To create a satin fill

- Select **Satin Fill** from the **Stitch** toolbar. See also **Stitch toolbar**.
- Select a digitizing tool and digitize a closed shape. See **Digitizing Methods** for details.



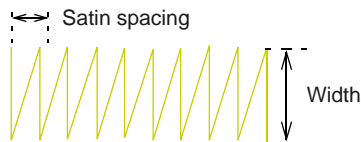
Note The filled object is created with default settings. Stitch spacing can be adjusted before or after digitizing. See [Adjusting Satin fill spacing](#) for details.

Adjusting Satin fill spacing



Click General > Object Properties to adjust Satin fill spacing.

Satin 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](#).

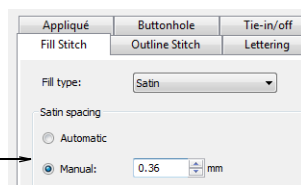


Change the stitch density in Satin fills at any stage. The larger the spacing, the lower the density. The smaller the spacing, the higher the density.

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

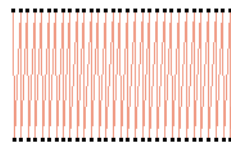


Tip You can preset stitch settings before digitizing. Click the **Object Properties** icon to access the dialog at any time.

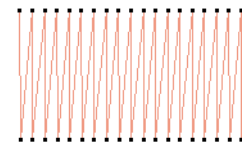
- 2 Select the **Manual** checkbox.

- 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



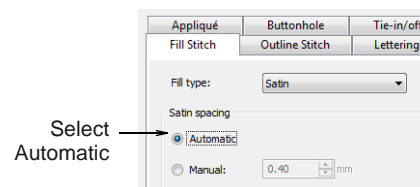
Click General > Object Properties to set automatic spacing to Satin fill.

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

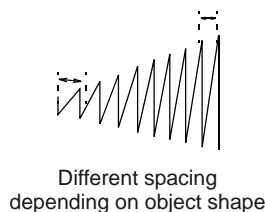
- 1 Double-click or right-click a satin fill object.

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

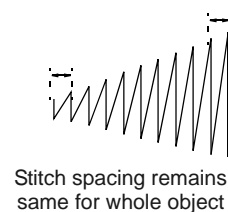


- 2 Select the **Automatic** checkbox.

Automatic stitch spacing



Manual stitch spacing

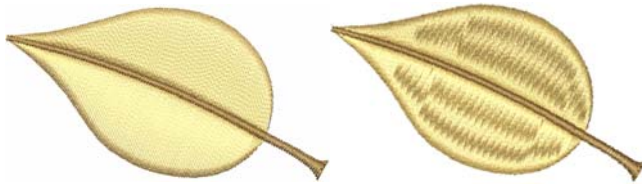


- 3 Click **Apply**.

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

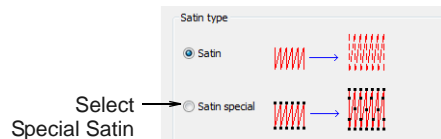
penetrations in a random pattern so that they do not form a line in the middle of the shape.



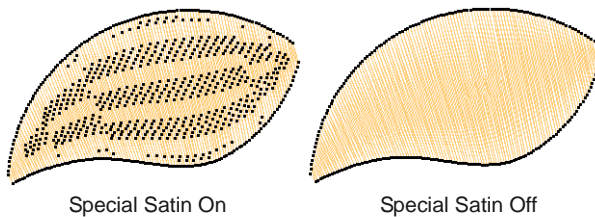
While **Special Satin** is used primarily to prevent long stitches in wide shapes, it can also be used as an alternative to Step fill. **Special Satin** looks more Satin-like and works well with turning stitches, creating soft lines and a little more depth. By contrast, Step fill is flat and can show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



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



- 3 Click **Apply**.

Creating step stitch fills

Different stitch types suit different shapes. BERNINA Embroidery Software provides normal Satin and Step fills, as well as Fancy and Craft Stitch fills.



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 fills with Step stitch

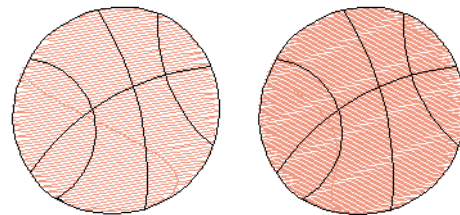


Use **Stitch > Step Fill** to create stitch fills for larger, irregular shapes.

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

To create Step fill

- 1 Select **Step Fill** from the **to Stitch** toolbar. See also [Stitch toolbar](#).
- 2 Select a digitizing tool and digitize a closed shape. See [Digitizing Methods](#) for details.



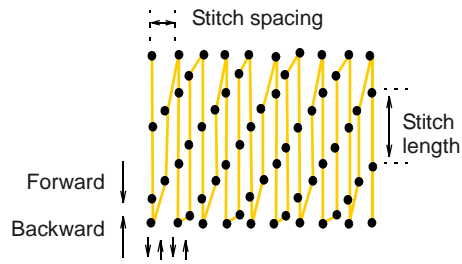
Note The filled object is created with default Step fill settings. Stitch spacing and length can be adjusted before or after digitizing. See [Adjusting Step fill spacing and length](#) for details.

Adjusting Step fill spacing and length



Click **General > Object Properties** to set step fill stitch spacing.

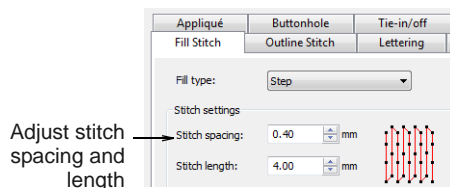
For Step, stitch density is determined by the distance between each row of stitches. The spacing setting is the distance between two forward rows.



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

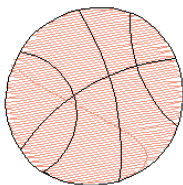
To adjust Step fill spacing and length

- 1 Double-click or right-click a step fill object.
The **Object Properties > Fill Stitch > Step** dialog opens.

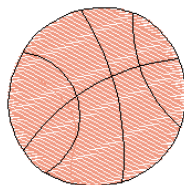


Tip You can preset stitch settings before digitizing. Click the **Object Properties** icon to access the dialog at any time.

- 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.

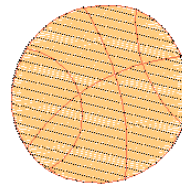


Stitch spacing: 1.2 mm

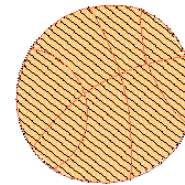


Stitch spacing: 0.7 mm

- 3 In the **Stitch Length** field, enter the stitch length you require.



Stitch length: 5.0 mm



Stitch length: 2.0 mm

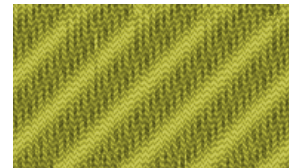
- 4 Click **Apply**.

Applying Step patterns



Click **General > Object Properties** to set step patterns.

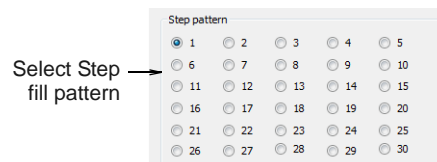
With Step fills you can select patterns formed by needle penetrations. The default Step pattern (No. 1) is designed to create a uniformly flat and smooth texture similar to a woven mat. See also **Creating fancy fills**.



There are other preset patterns to choose from. Experiment to find the best pattern for your purpose. See **Step Fill Samples** for details.

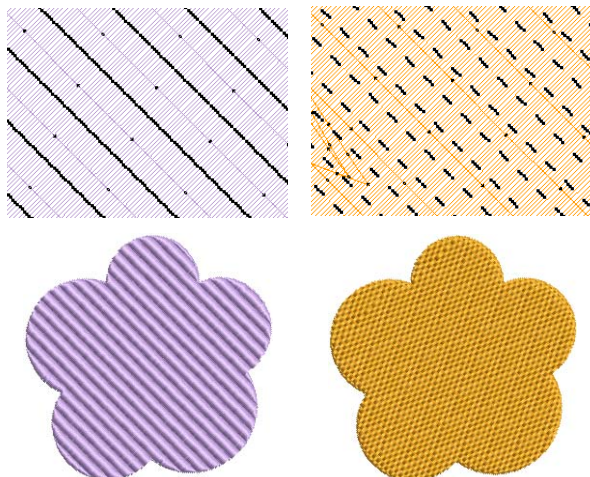
To apply a Step pattern

- 1 Double-click or right-click a step fill object.
The **Object Properties > Fill Stitch > Step** dialog opens.



- 2 Select a pattern.

A preview of the pattern appears.



3 Click **Apply**.

CHAPTER 10

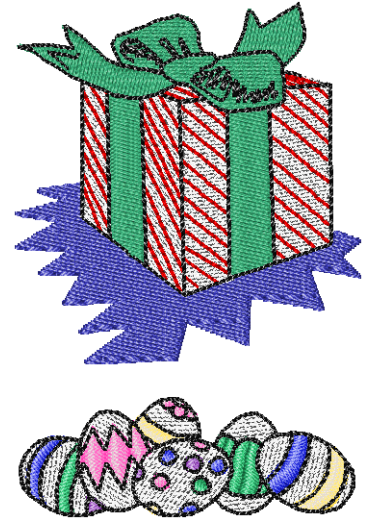
DIGITIZING METHODS

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 **Properties, Fabrics & 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 **Auto-digitizing with Magic Wand** for details.

Selecting digitizing tools

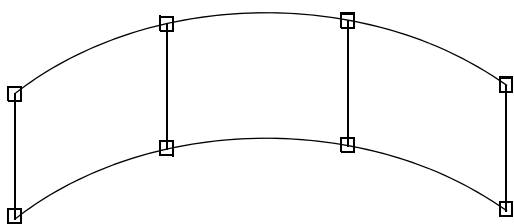
-  Use Digitize > Open Object to digitize embroidery objects.
-  Use Digitize > Closed Object to digitize closed embroidery objects.
-  Use Digitize > Ellipse to digitize ellipse or circle embroidery objects.
-  Use Digitize > Rectangle to digitize rectangle or square embroidery objects. Press <Ctrl> to constrain.
-  Use Digitize > Block to digitize columns with turning stitches.

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**, **Ellipse**, 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**, **Ellipse**, 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:

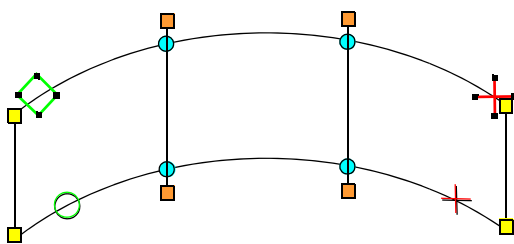
- ▶ Click to enter corner points.
- ▶ Right-click to enter curve points.



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.

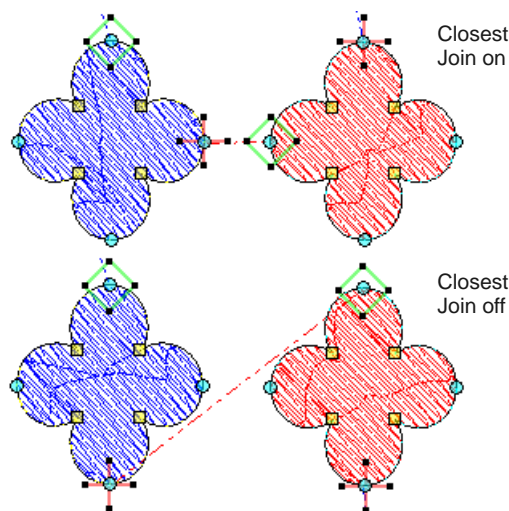


Note Most reshape nodes can be added, deleted, moved or changed to either corner or curve points. Some reshape nodes have a specific function and

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.



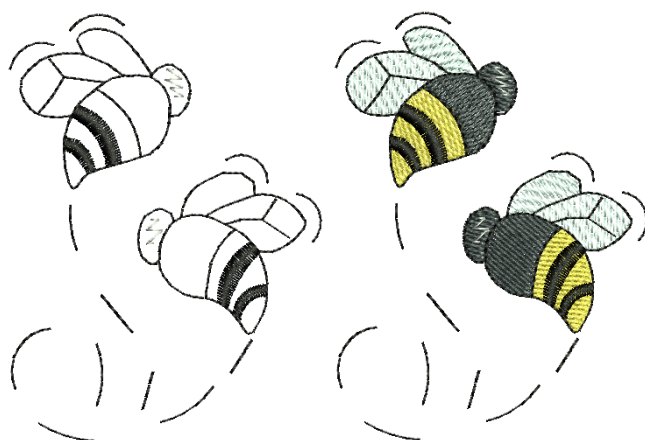
Digitizing open shapes



Use Digitize > Open Object to digitize open shapes.

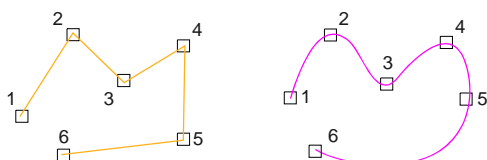
Use the **Open Object** tool to digitize open shapes of single/triple run, satin, blanket, patterned or craft stitching. **Open Object** places a row of stitches along

a digitized line. This tool is typically used to add borders to designs.



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.

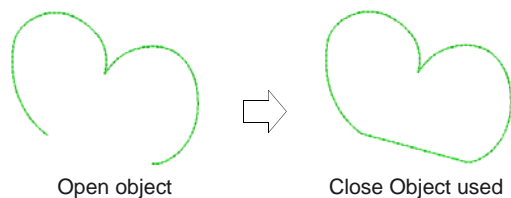


Tip Follow the prompts in the **Status Bar** to help you digitize. If you make a mistake, press **Backspace** to delete the last reference point, then continue adding reference points or press **Esc** to delete all the points so you can start again.

- 4 Press **Enter** to complete the shape.



Note If you decide to close the object, use the **Edit > Close Curve ...** commands with the option of using straight or curved points.



Open object

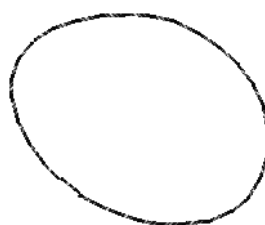
Close Object used

Digitizing closed shapes



Use **Digitize > Closed Object** to digitize 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



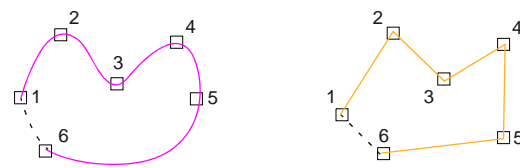
Filled closed object

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.
- 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**.



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.



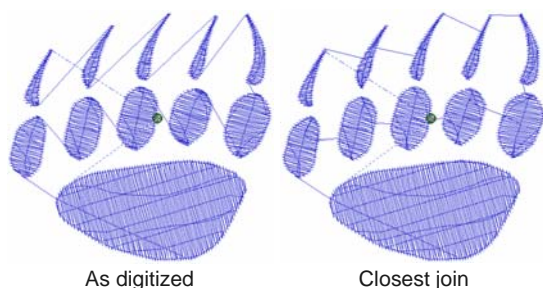
Objects are closed automatically

- 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 & exit points](#).



- 5 Press **Esc** to deselect the tool.

Digitizing columns of varying width



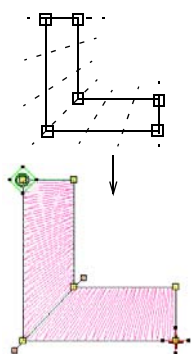
Use Digitize > Block to digitize columns with turning stitches.

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.

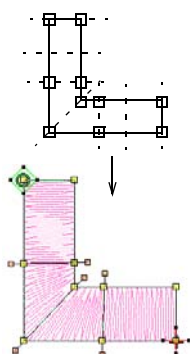
To digitize a column of varying width

- 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.



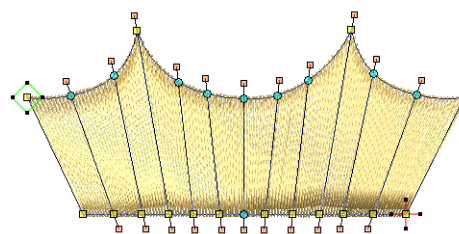
Stitches change their angle gradually



Stitches remain parallel 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.



Mixed curve and corner control points within the same pair



Tip If you make a mistake, press **Backspace** to delete the last reference point, then continue digitizing.

- 4 Press **Enter** to complete.

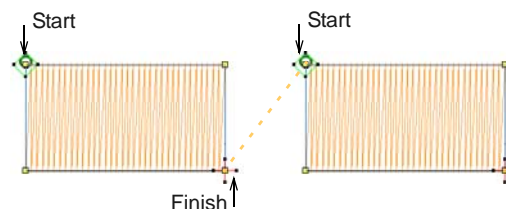
- 5 Repeat as many times as necessary to create more objects.

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 & exit points](#).

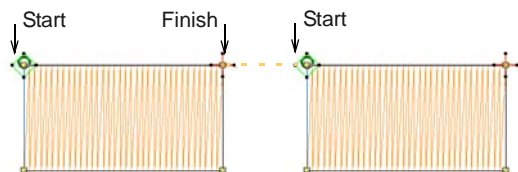


Tip If you are using the **As Digitized** method, you can choose whether to omit or include the last stitch. For example, if joining two objects, keep or omit the last stitch so that the exit point is close to where you begin the next object.

- ▶ Press **Enter** to **keep** the last stitch and place the exit point at the last reference point you marked.



- ▶ Press **Spacebar** to **omit** the last stitch and place the exit point on the opposite the last reference point you marked.



- 6 Press **Esc** to deselect the tool.

Digitizing regular shapes

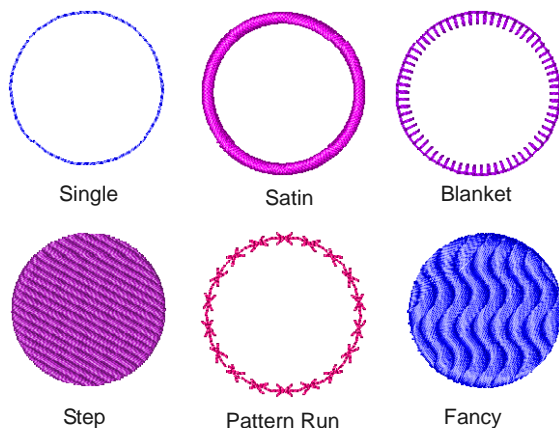
BERNINA Embroidery Software provides digitizing tools for quickly creating regular shapes such as circles and squares, ovals and rectangles.

Digitizing circles & ovals



Use Digitize > Ellipse to digitize ellipse or circle embroidery objects.

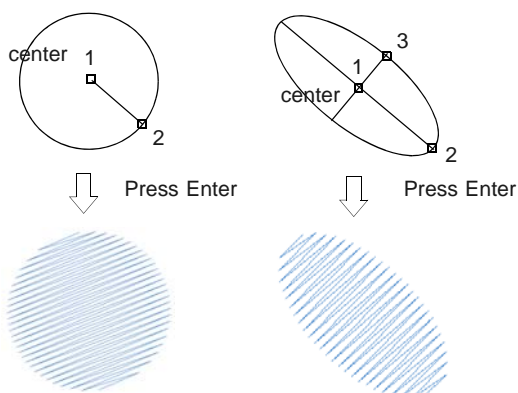
Digitize circles and ovals with a few clicks. You can use any fill or outline stitch type.



To digitize a circle or oval

- 1 Select an **Outline** or **Fill** stitch type. See [Selecting or changing stitches](#) for details.
- 2 Click the **Ellipse** 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**.

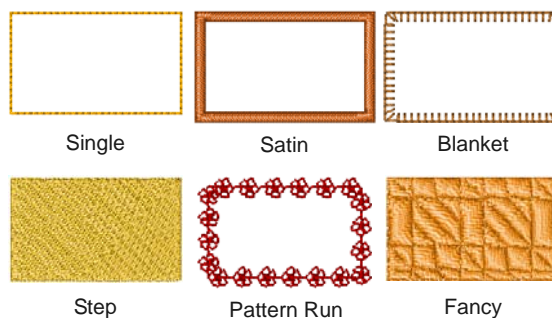


Digitizing squares & rectangles



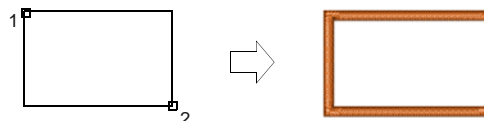
Use Digitize > Rectangle to digitize rectangle or square embroidery objects. Press <Ctrl> to constrain.

Digitize squares and rectangles with a few clicks. You can use any fill or outline stitch type.



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.



- ▶ To create a square, hold the **Ctrl** key down whilst dragging the pointer.

CHAPTER 11

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

BERNINA Embroidery Software provides various techniques to selecting and changing colors individually or across entire designs.



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 selected object colors



Use Color Palette > Color Picker to pick up a color from an existing object and make it current.



Use Color Palette > Apply Current Color to apply the currently selected palette color to embroidery objects.

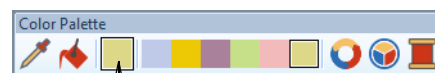


Use Color Palette to set current color.

time. When you digitize a new object, it automatically takes the 'current' color.

To change selected object colors

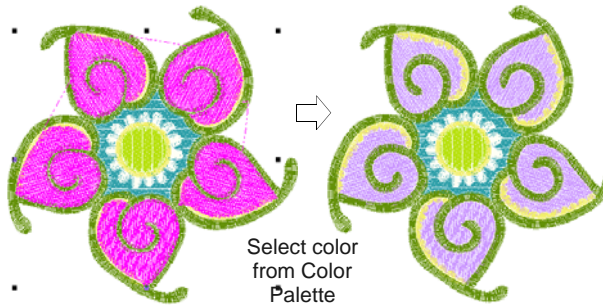
- ▶ Deselect all objects. The currently selected (default) color is shown on the toolbar.



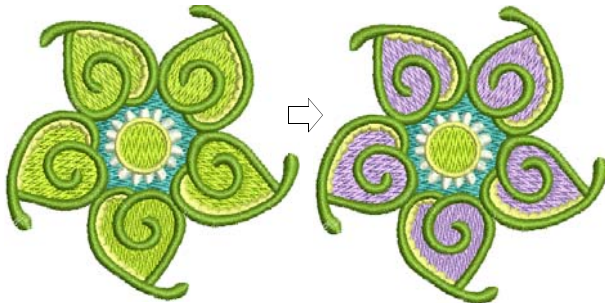
- ▶ Select a color from the **Color Palette**. This color becomes current for newly digitized objects.

New objects are digitized using the selected color on the **Color Palette**. You can change colors at any

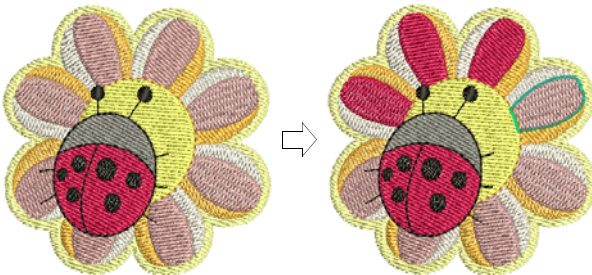
- ▶ Select object/s you want to recolor.



- ▶ Select a color from the **Color Palette**.
The selected objects change color accordingly.



- ▶ Pick colors from existing objects with the **Color Picker** tool and transfer to other objects with the **Apply Current Color** tool.



Changing color schemes



Use Color Palette > Cycle Used Colors to cycle through combinations of used colors. Right- or left-click.



Use Color Palette > Color Wheel to access Color Wheel to test combinations of related colors.

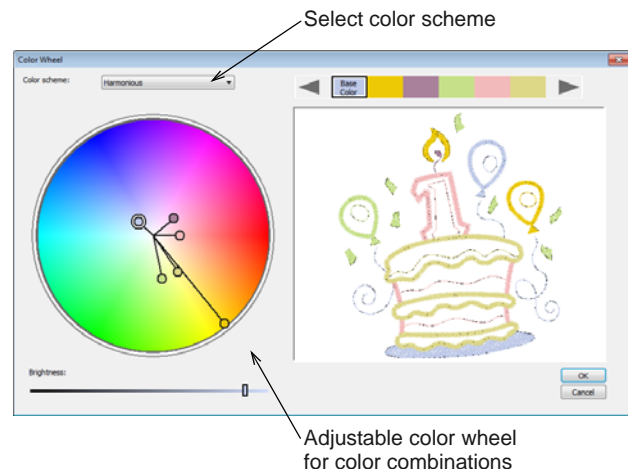
The **Color Wheel** allows you to try out and change entire color schemes. The main purpose of the tool is to create a new '**colorway**' quickly and easily in order to 'spice up' old designs or place them on a different fabric.

To change color schemes

- ▶ Use the **Cycle Used Colors** tool to try out different combinations using available threads.



- ▶ Alternatively, select **Color Wheel** from the palette.
This allows you to cycle through many color combinations using preset color schemes including **Analogous**, **Complementary**, **Harmonious**, etc.



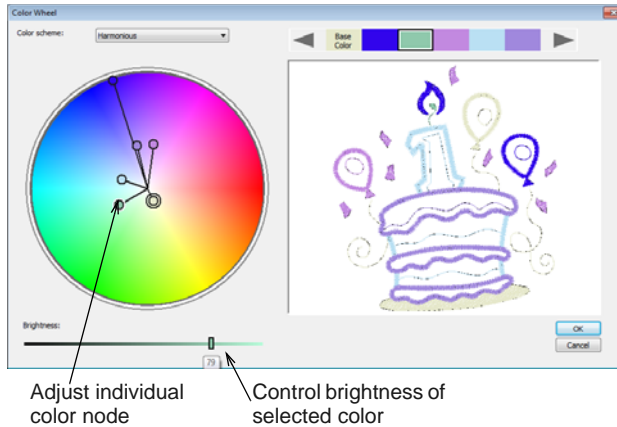
- ▶ Click and drag the 'base color' node to try out different combinations within the same **colorway**.





Note The base color nominally relates to the target fabric.

- ▶ Click and drag individual color nodes to adjust.
- ▶ Use the **Brightness** control further adjust selected colors.



- ▶ To adjust the brightness of the entire design, select the base color node and adjust the **Brightness** control.
 - ▶ Click **OK** to apply changes.
- The design updates to reflect the new color scheme.



Note If you have sufficient colors already defined in the color chart, they will be automatically matched.

- ▶ If you need to match and assign thread colors, you can do so manually or use the **Match & Assign All** function. See [Matching & assigning threads](#) for details.

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 & assigning threads



Use **Color Palette > Thread Colors** to search for and match threads from different charts.

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.

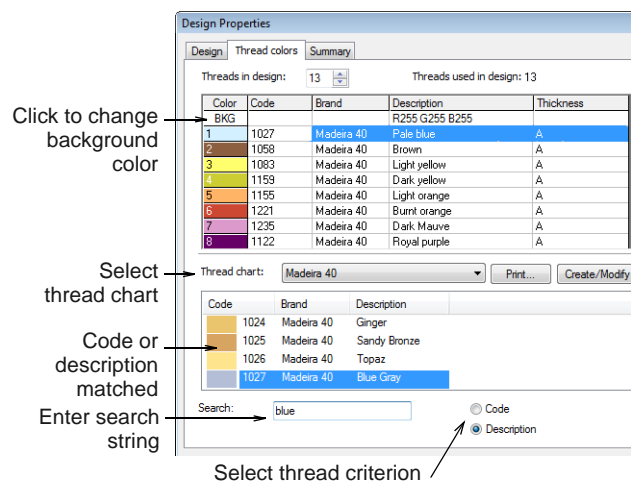


Note You can also create your own thread charts, even charts which include threads from different makers. See also [Creating custom thread charts](#).

To search and assign a thread

- 1 Click the **Thread Colors** icon.

The **Design Properties > Thread Colors** dialog opens.





Tip Change backgrounds via the **BKG** button at the top of the **Threads in design** panel. See [Setting 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 & assigning threads



Use Color Palette > Thread Colors to search for and match threads from different charts, and assign for use.

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.

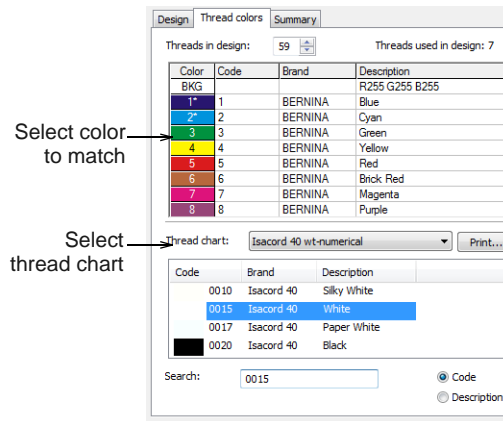


Tip You can also use this method to change all objects of one color to another color. For example, change all light green objects to dark green.

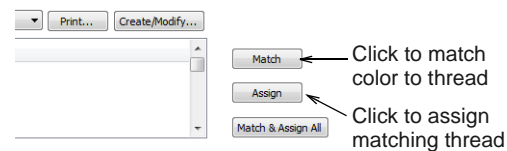
To match and assign threads

- 1 Click the **Thread Colors** icon.

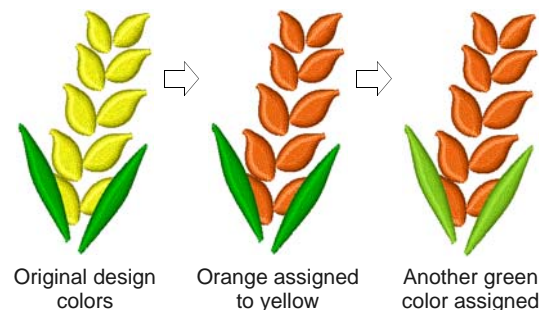
The **Design Properties > Thread Colors** dialog opens. All colors in the current design are displayed in the **Threads in design** panel.



- 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.



- 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.



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.

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.

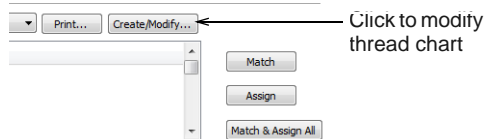
Modifying thread details

Change the code, brand or description for an existing thread.

To modify thread details

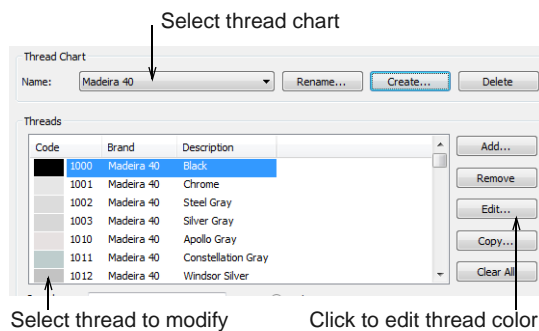
- 1 Select **Design > Thread Colors** or click the link in the **Color Palette** dialog.

The **Design Properties > Thread Colors** dialog opens.



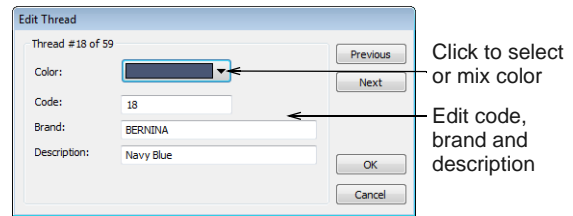
- 2 Click **Create/Modify**.

The **Modify Thread Chart** dialog opens.



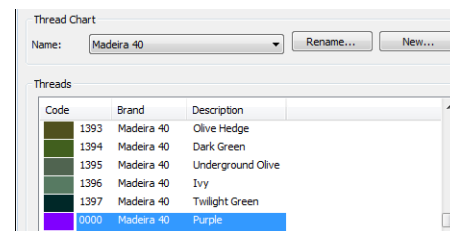
- 3 From the **Name** list, select the chart to modify.
- 4 In the **Threads** list, select the thread to modify.
- 5 Click **Edit**.

The **Edit Thread** dialog opens.



- 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 the **Color** droplist 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.



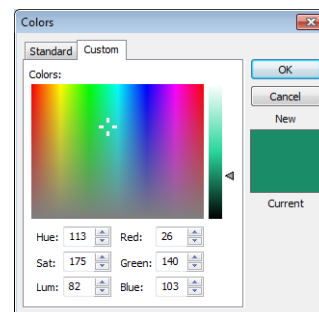
Mixing your own thread colors

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 **More Colors** in the **Color** droplist.
 - ▶ See [Modifying thread details](#) for details.
 - ▶ See [Adding your own colors to thread charts](#) for details.

The **Colors** dialog opens – this may vary slightly with the operating system you are using.



- 2 Select from the standard (pre-defined) colors or mix your own.

- 3 To further refine your color choice, drag the crosshairs on the color spectrum.
- 4 To adjust color brightness, drag the arrow on the slider bar.
- 5 Alternatively, set the exact HLS or RGB values you require.
- 6 Click **OK**.

The new color appears in the **Color** preview box.

Removing threads from charts

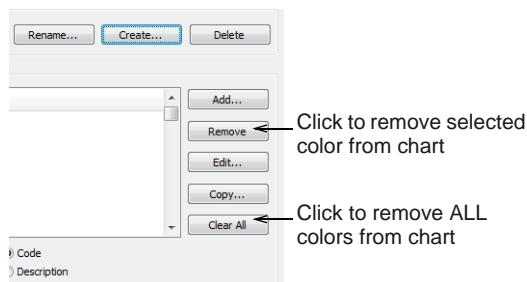


Use Color Palette > Thread Colors to search for and match threads from different charts, and assign for use.

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.



- 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**.



Tip To delete all the threads from a thread chart, click **Clear All**.

Renaming thread charts



Use Color Palette > Thread Colors to rename thread charts.

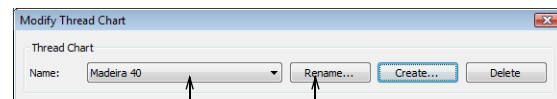
Rename thread charts from the **Modify Thread Chart** dialog.



Tip Select names that will help you remember the charts you need, or that sort frequently used charts to the top of the list.

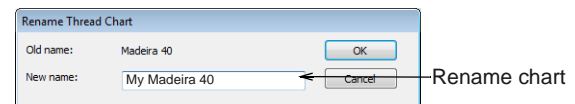
To rename thread charts

- 1 Open the **Modify Thread Chart** dialog. See [Modifying thread details](#) for details.



- 2 From the **Name** list, select the chart to modify.
- 3 Click **Rename**.

The **Rename Thread Chart** dialog opens.



- 4 Enter the new name for the thread chart, then click **OK**.

Deleting thread charts



Use Color Palette > Thread Colors to delete thread charts.

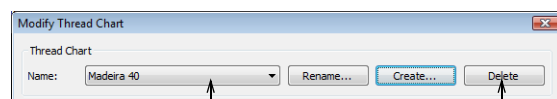
Delete obsolete thread charts from the **Modify Thread Chart** dialog.



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.



- 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



Use Color Palette > Thread Colors 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.

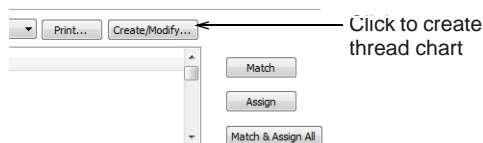
Creating new thread charts

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

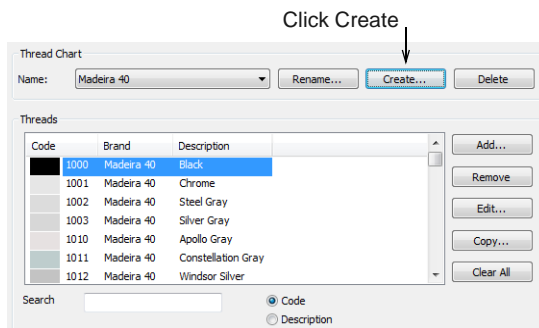
- 1 Select **Design > Thread Colors** or click the link in the **Color Palette** dialog.

The **Design Properties > Thread Colors** dialog opens.



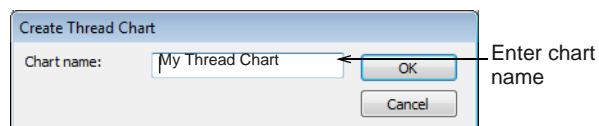
- 2 Click **Create/Modify**.

The **Modify Thread Chart** dialog opens.



- 3 Click **Create**.

The **Create Thread Chart** dialog opens.

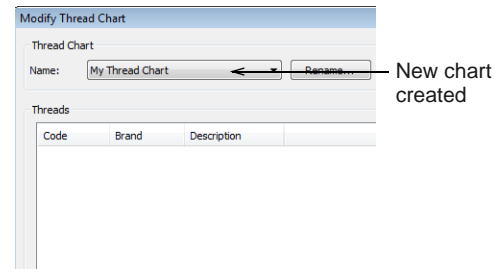


- 4 Enter a name for the chart and click **OK**.



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.



- 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**.

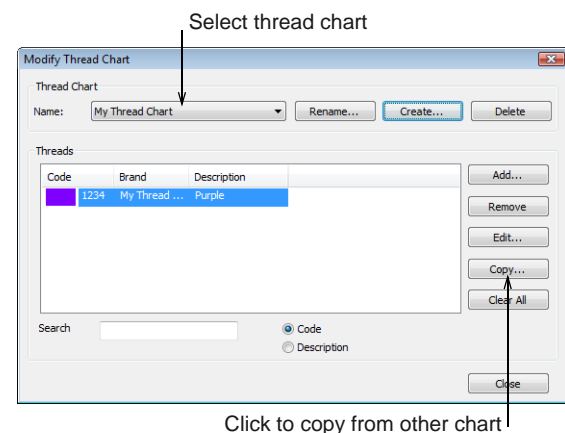
The new chart is created and ready for use.

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

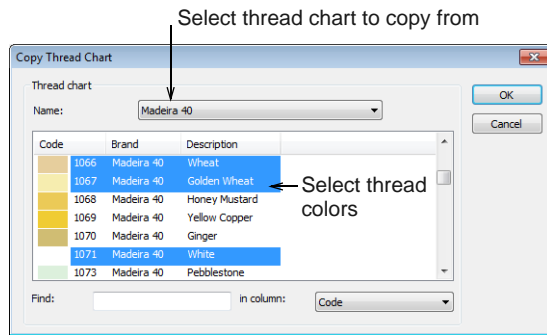
- 1 Open the **Modify Thread Chart** dialog. See [Creating new thread charts](#) for details.



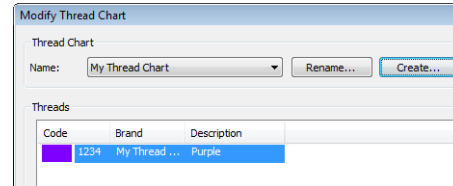
- 2 Select a chart from the **Thread Chart > Name** list.

- 3 Click **Copy**.

The **Copy Thread Chart** dialog opens.



The new color appears in the **Threads** list.



- From the **Name** list, select the thread chart containing the color you want to copy.
- 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.
- Click **OK**.

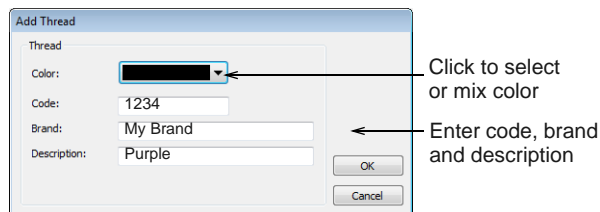
The colors are copied to the thread chart, and appear at the bottom of the list.

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

- Open the **Modify Thread Chart** dialog. See [Creating custom thread charts](#) for details.
- Click **Add** to add your own colors.
The **Add Thread** dialog opens.



- Click the **Color** droplist to select the thread **display** color. See [Mixing your own thread colors](#) for details.
- Enter code, brand, and description details for the new thread color.
Code is the identification number of a thread color in a brand.
- Click **OK**.

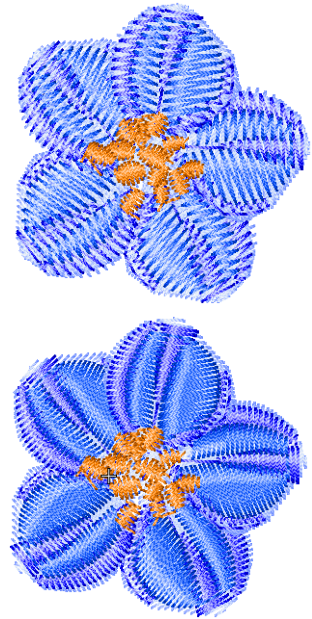
CHAPTER 12

PROPERTIES, FABRICS & 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.



Working with 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



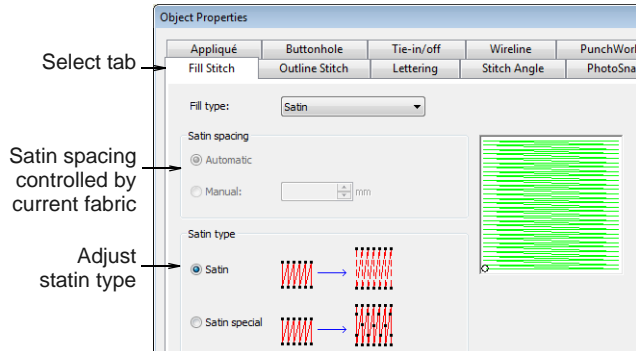
Use General > Object Properties to set current properties.

When you change **current object properties**, the new settings automatically apply to any objects subsequently 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. Tabs provide access to all possible object properties.



- 2 Click a tab to view current settings, and update as required.



Note Not all settings are available for update. Any defined by the current **fabric** cannot be overridden, except for selected objects.

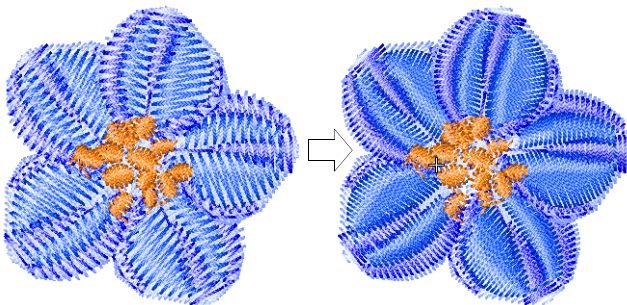
- 3 Click **Apply**.

Changing properties of selected objects



Use General > Object Properties to set current properties.

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

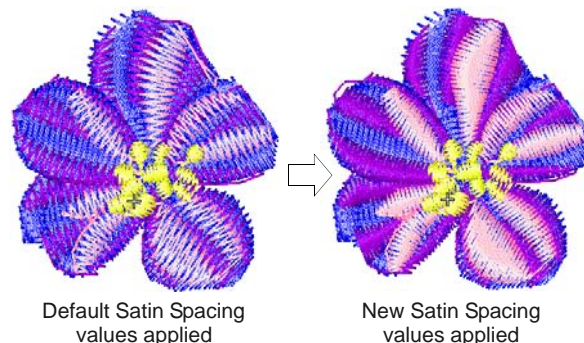
- 1 Select the object/s whose properties you want to change.
- 2 Double-click or right-click the object/s.
The **Object Properties** dialog opens.
- 3 Select the tab you want and change the settings as required.
- 4 Click **Apply**.

Changing default object properties



Use General > Object Properties to set current 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.

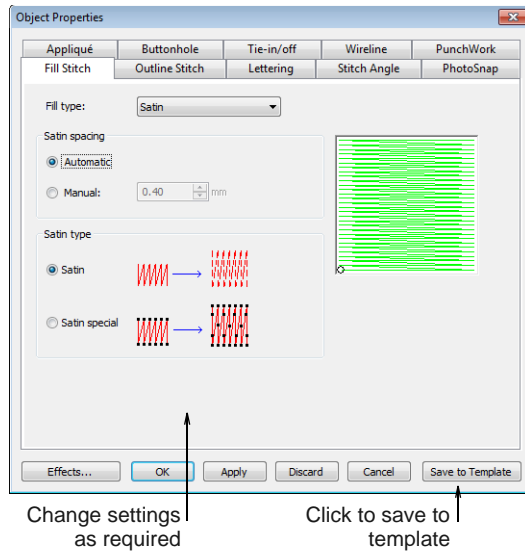


Note The change affects all new designs created using this template. If you only want the changes to apply to the design you are working in, change the **current** – not the **default** – properties. See **Setting current object properties** for details.

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.

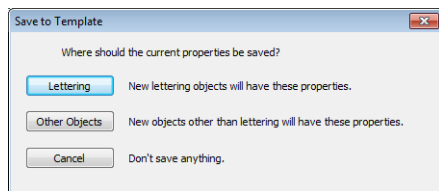
The **Object Properties** dialog opens.



- 3 Select the tab you want and change the settings as required.

- 4 Click **Save To Template**.

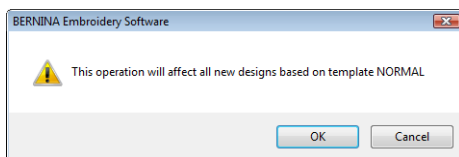
The **Save To Template** dialog opens.



- 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.

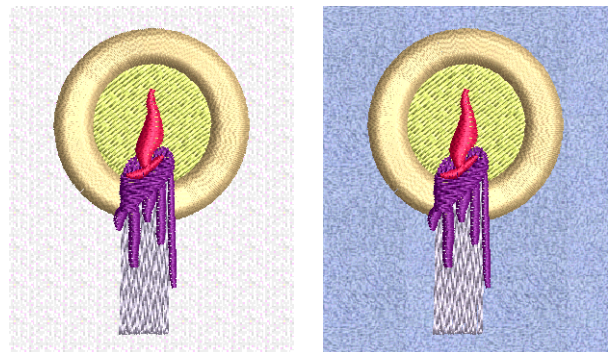
The object properties are saved to the current template and will apply to any new objects of the specified type based on this template.



Note You can also create a new template using modified object properties as defaults. See [Working with design templates](#) for details.

Working with fabrics

Embroidery stitches pull fabric inward where the needle penetrates. This can cause fabric to pucker, and gaps to appear in the embroidery. For an object to sew out correctly, it must have correct **stitch spacing**, sufficient **pull compensation** together with a suitable underlay for the combination of cover stitch type, object type and fabric. BERNINA Embroidery Software provides a set of customized fabric settings so that the software will take into account the type of fabric you are stitching on.



Fabrics are a critical element of designs and are controlled separately from **template** values. Fabric settings are fewer in number than those contained in templates. Templates set global values for designs but each design requires its own fabric settings which are saved with the design.

Changing fabrics

Normally you choose a **fabric** when you first set up a design although you can change it at any stage. Fabric settings affect all object types other than lettering, pattern fills, appliqué, and outlines.

Stitch settings for different fabric types are summarized in the table below.

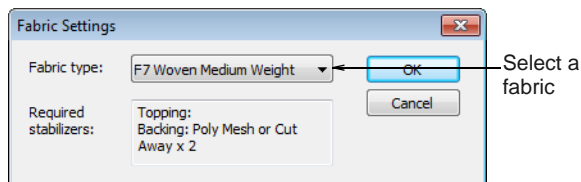
Weight	Fabrics	Pull Comp (mm)	Spacings (mm)				
			Satin (Manual)	Satin (Auto)	Step	Zigzag Underlay	Step Underlay
Factory defaults	N/A	0.200	0.4	0.01	0.45	3.0	3.0
Knit Light	T-shirts	0.250	0.37	0.02	0.40	3.0	2.5

Weight	Fabrics	Pull Comp (mm)	Spacings (mm)				
			Satin (Manual)	Satin (Auto)	Step	Zigzag Underlay	Step Underlay
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

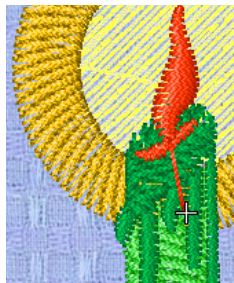
To change fabrics

- 1 Select **Design > Fabric Settings**.

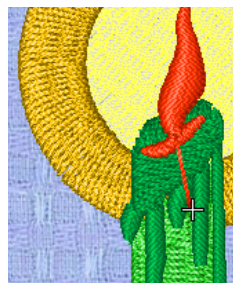
The **Fabric Settings** dialog opens.



- 2 From the **Fabric type** droplist, choose a fabric type matching or nearest to the fabric you intend to work with.



Woven Medium Weight



Woven Heavy Weight

- 3 Click **OK**.

The selected fabric settings are applied to all objects in the design. The current fabric is shown in the **Status Bar** at the bottom of the **Embroidery Canvas**.



Note Changing the current **Auto Fabric** will affect all **colorways** in the design. However, the converse is not the case. While colorways allow you to select different fabric swatches, these have no bearing on **Auto Fabric** settings.

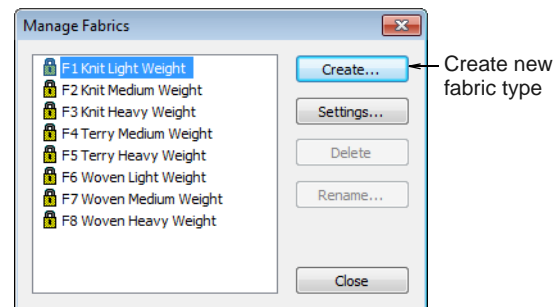
Managing fabrics

In addition to pre-defined **fabrics**, you can create custom fabrics to suit particular needs. You may find through experience that certain settings work better for certain fabrics. If you find yourself changing the same settings for each design, you may decide to set up a custom fabric which you can apply universally.

To define a new fabric

- ▶ Select **Settings > Manage Fabrics**.

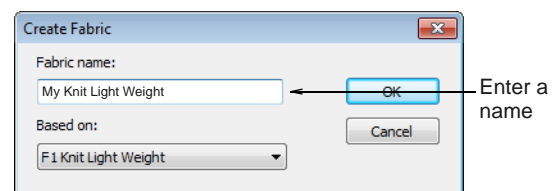
The **Manage Auto Fabrics** dialog opens.



Note If you already have custom fabrics defined, you have the option of editing, renaming, or deleting.

- ▶ Choose a fabric to modify or as a basis for a custom fabric.
- ▶ To modify an existing custom fabric, click **Settings**.
- ▶ To create a new fabric type, click **Create**.

The **Create Fabric** dialog opens.



- ▶ Enter a descriptive name for the fabric. Change the **Based on** setting as required.

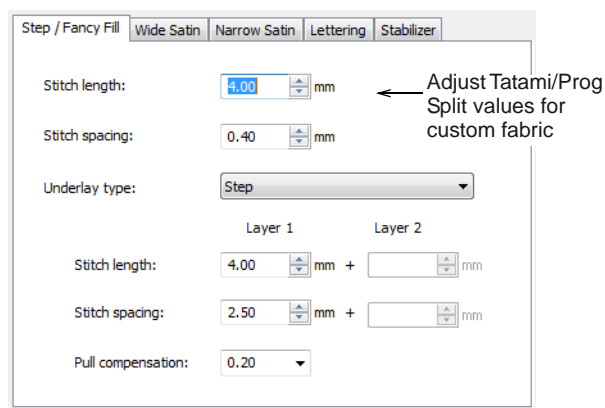


Tip You can view settings for both locked fabrics and custom fabrics, but you can't modify locked fabrics. If you want to do so, base a custom fabric based on the locked fabric, and edit as you wish.

To set step / fancy fill object values

- ▶ Click **OK**.

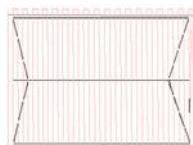
The **Fabric Settings** dialog opens. This dialog allows you to set the fabric values for four object groups – Step/Fancy Fill, Wide Satin, Narrow Satin, and Lettering – as well as enter details of any recommended stabilizers.



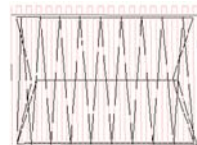
- ▶ Adjust the **Stitch Length** and **Stitch Spacing** settings as desired:
 - ▶ Step stitch consists of rows of run stitches and is suitable for filling large, irregular shapes. See also [Creating step stitch fills](#).
 - ▶ Fancy Fill is a decorative stitch type. Use it to fill wide and large areas with unique artistic effects while keeping the appearance of a solid field of stitching. See also [Creating fancy fills](#).
- ▶ Set a suitable underlay type for Step / Fancy Fill objects. See also [Stabilizing with underlays](#).
- ▶ Set a pull compensation allowance for these objects. See also [Compensating for fabric stretch](#).



Fabric: Denim
Pull Comp: Low



Fabric: Silk
Pull Comp: Medium

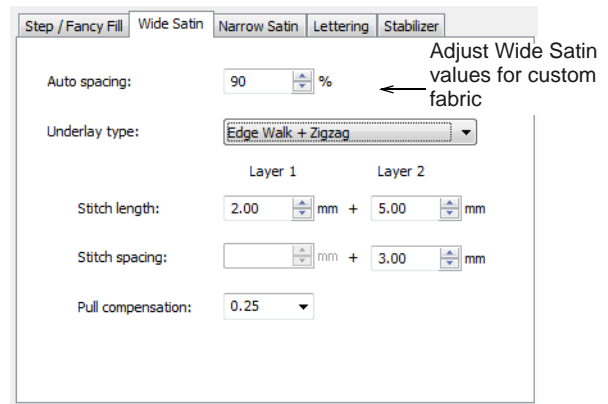


Fabric: Terry Toweling
Pull Comp: High

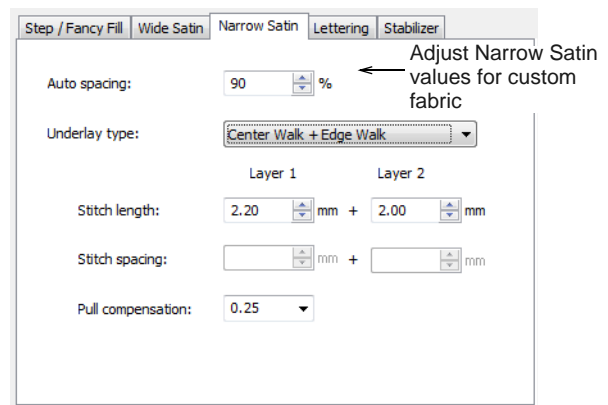
To set satin object values

- ▶ Click the tab to access the **Wide Satin** settings.

These settings will become the defaults for larger Satin objects.

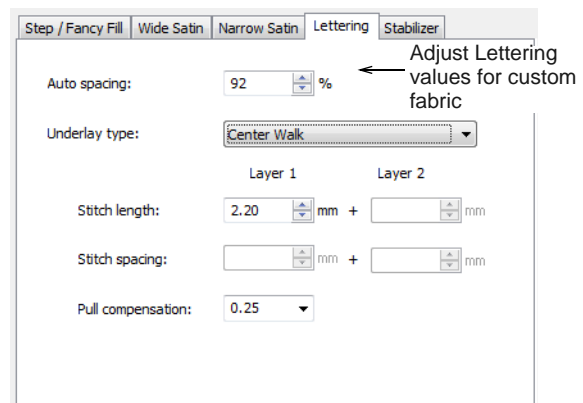


- ▶ Adjust the **Wide Satin** settings as you did for Step / Fancy Fill objects. See also [Creating satin fills](#).
- ▶ Click the tab to access the **Narrow Satin** settings and adjust as you did for Wide Satin objects. See also [Creating satin fills](#).



To set lettering object values

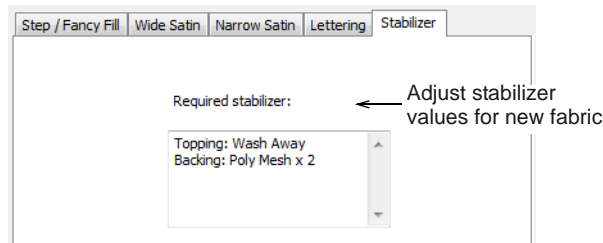
- ▶ Click the tab to access the **Lettering** settings.



- ▶ Adjust settings as you did for Satin objects. See also [Applying different stitch types & effects to lettering](#).

To set stabilizer settings

- Click the tab to access the **Stabilizer** settings.



- Key in one or more recommended stabilizer(s) in the **Required Stabilizer** field, together with a description or any other relevant information on the stabilizer for the custom fabric. This information will be displayed under **Fabric Settings**. See also [Starting designs](#).

Working with 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.

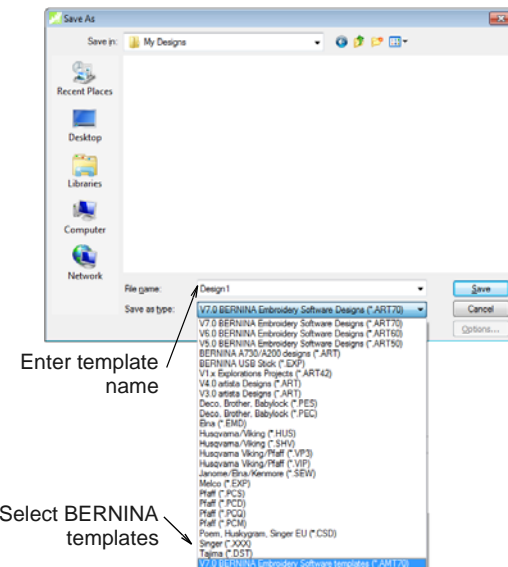
To create a design template

- Start a new design or open an existing one.
- Adjust the object properties as required.
- Add any objects and lettering to be included in the template.

For instance, you may want to include sample lettering using different baselines. Simply overwrite the sample text when using the template. See [Applying lettering baselines](#) for details.

- Select **File > Save As**.

The **Save As** dialog opens.



- Select **BERNINA Embroidery Software Templates** from **Save as Type** dropdown list.

BERNINA Embroidery Software automatically opens the **..\Program Files\BERNINA\Embroidery Software 7\template** folder. Design templates must be saved here or they will not appear in the template list when you start a new design.

- Enter a name for the template in the **File Name** field.
- 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 7\template** folder.

To modify design templates

- 1 Select **File > Open**.
The **Open** dialog opens.
- 2 Navigate to the **..\Program Files\BERNINA\Embroidery Software 7\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.



- 6 Select **File > Save As**.
The **Save As** dialog opens.
- 7 Select the **..\Program Files\BERNINA\Embroidery Software 7\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.



Saving current properties to a template

You can easily save current **object properties** to the current template. See also **Working with 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.
- 4 Click **OK** to update the template.
- 5 Click **Close** to return to the design window.



Note Only the **current** object properties – not the objects or other settings in the design – are saved to the template.

The new settings are saved in the template from which the design was created and are available for use.

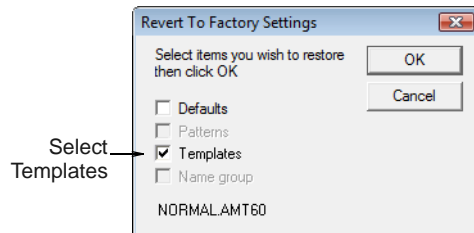
Reverting to the NORMAL template

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 go to the BERNINA Embroidery Software programs folder.
- 3 Select the **Tools** folder and click the **Revert** icon.

The **Revert to Factory Template** dialog opens.



Note It may take up to 1 or 2 minutes for the dialog to open.

- 4 Select the **Templates** checkbox and click **OK**.
The original settings for the NORMAL template are restored.

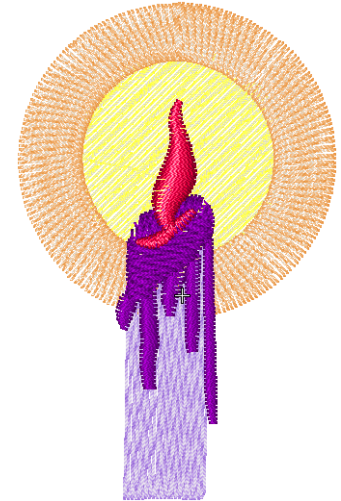
CHAPTER 13

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 automatic underlay to help stabilize fabric and reduce distortion due to the pull effect. Adjust the amount of over stitching 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.

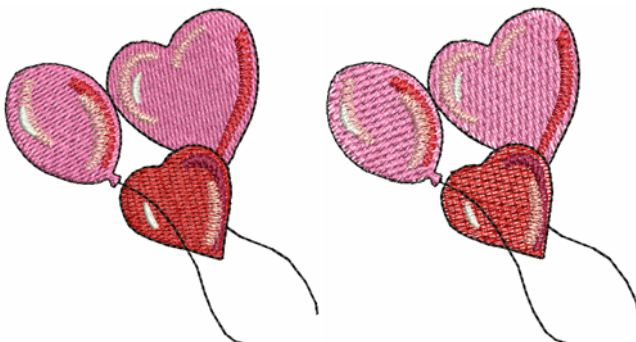
By applying **Auto Jump**, you can preserve long stitches in objects by turning them into a series of jumps. By default, tie-in stitches are automatically inserted at the start of objects to prevent stitches from unraveling. You can control tie-in/off settings for whole designs or particular objects. Use **Auto Start & 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 stitch densities

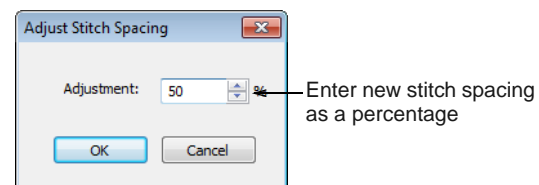
You may need to change stitch density in order to stitch on a different fabric or with a different thread. Or you may want to do a test design and reduce the overall stitch count. The software lets you change the density of most stitch types across the whole or selected parts of a design.



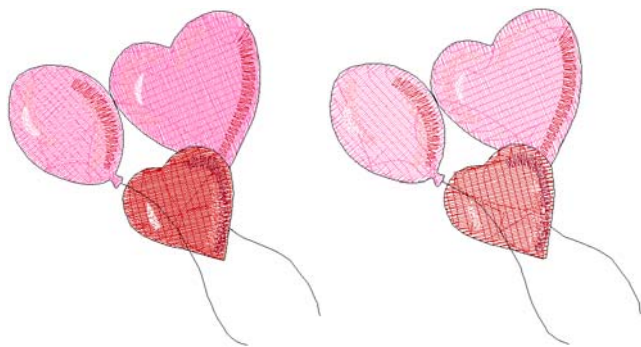
To adjust stitch densities

- 1 Select the design or objects you want to adjust.
- 2 Select **Edit > Adjust Stitch Spacing**.

The **Adjust Stitch Spacing** dialog opens.



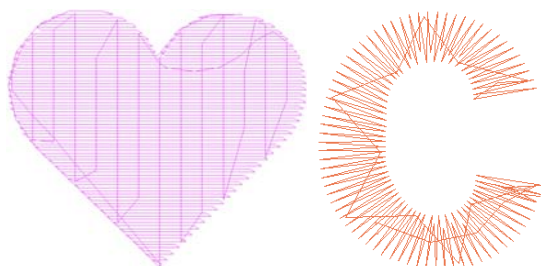
3 Click **OK**.



Tip Check any changes via the **Object Properties** dialog.

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 underlays



Use **Stitch > Auto Underlay** to strengthen and stabilize objects with underlay stitching.



Use **General > Effects** to apply stitch effects to selected embroidery objects or preset with nothing selected.

The **Auto Underlay** tool generates **underlay** stitching for objects based on current settings. You can preset custom underlay settings for all newly created objects in your design, or apply them to selected objects.

To apply underlays

- Click the **Auto Underlay** icon to activate the feature.



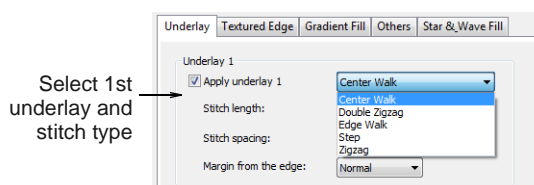
Tip To preset underlay settings, click the **Effects** icon to access the **Effects > Underlay** dialog.

- Create a closed-object – circle or square. See **Digitizing Methods** for details.

The object is digitized using current settings.

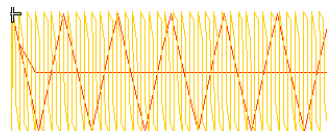
- To change **underlay** settings, select the object and right-click the **Auto Underlay** icon.

The **Effects > Underlay** dialog opens. This tab gives you the option of a single underlay or combined first and second underlays.

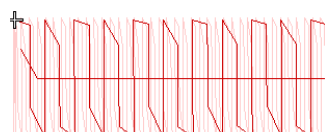


- Select **Apply Underlay 1** and select an underlay type from the dropdown list.

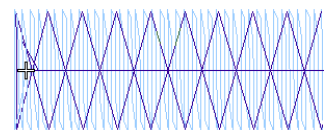
The type of underlay you choose is determined by the purpose it is to serve.



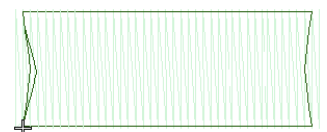
Zigzag underlay



Step underlay



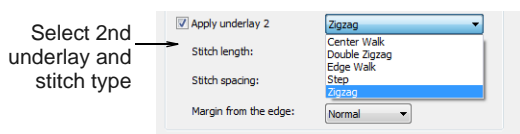
Double Zigzag underlay



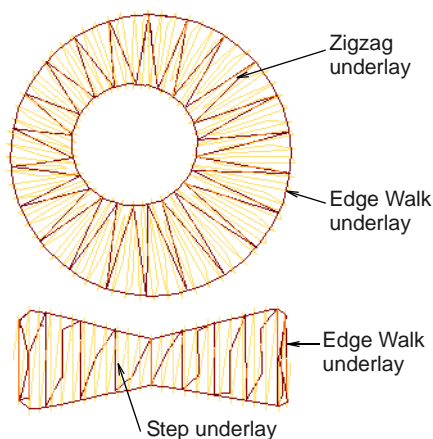
Edge Walk underlay

- Adjust stitch length and margin settings as required. See below for details.

All underlay types available for Underlay 1 are also available for Underlay 2.



- For extra stability, select a second underlay. Any combination of underlay types can be used.



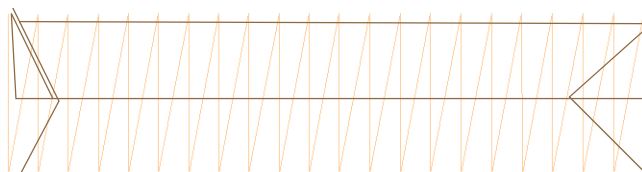
- To keep a permanent record of your custom settings, click **Save to Template**. See [Saving current properties to a template](#) for details.

Setting center & edge walk underlays



Right-click **Stitch Effects > Auto Underlay** to strengthen and stabilize objects with underlay stitching.

Center Walk underlay places a row of stitches along the center of a column. It is used to stabilize narrow columns – e.g. 2-3 mm wide. **Edge Walk** places stitches around the edge of an object. Use edge walk together with zigzag or step underlays when digitizing large shapes.



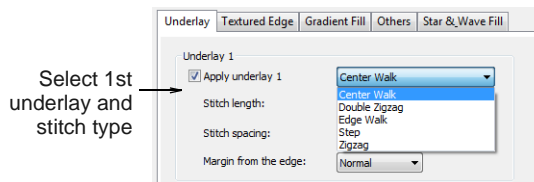
Center Walk and Edge Walk underlays used together



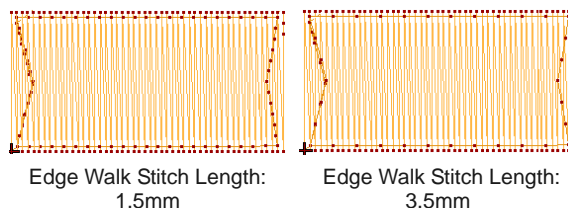
Note Stitch settings for edge walk underlays are stored separately from, and do not affect, cover stitch settings.

To set center and edge walk underlays

- 1 Select an object or objects to adjust their particular settings.
- 2 Right-click the **Auto Underlay** icon. The **Effects > Underlay** dialog opens.



- 3 Select first and second **Underlay** checkbox (as required) and select **Center Walk** and/or **Edge Walk** as the underlay types.
- 4 Adjust stitch length to ensure that underlay stitches follow the shape of curves and are not visible in the final embroidery.



- 5 Adjust underlay margins as required to prevent underlay stitches from extending outside the cover stitches. See [Setting underlay margins](#) for details.
- 6 Click **Apply**.
New or selected objects use the adjusted settings.

Adjusting zigzag underlay spacing



Use **Stitch > Auto Underlay** 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**.

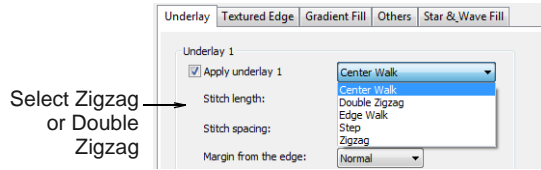


Note Zigzag underlay stitch settings are stored separately from, and do not affect, zigzag cover stitch settings.

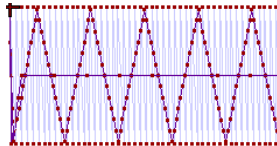
To adjust zigzag underlay spacing

- 1 Select an object or objects to adjust their particular settings.
- 2 Right-click the **Auto Underlay** icon.

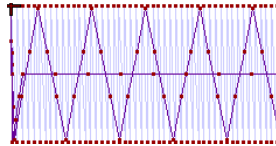
The **Effects > Underlay** dialog opens.



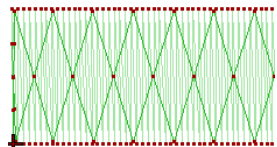
- 3 Select the **Apply Underlay 1** checkbox and select **Zigzag** or **Double Zigzag** as the **underlay** type.
- 4 Enter the required stitch length.



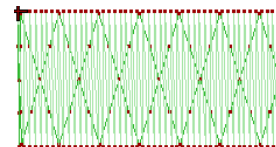
Zigzag Stitch Length: 2.5 mm



Zigzag Stitch Length: 5 mm



Double Zigzag Stitch Length: 7 mm



Double Zigzag Stitch Length: 3.5 mm

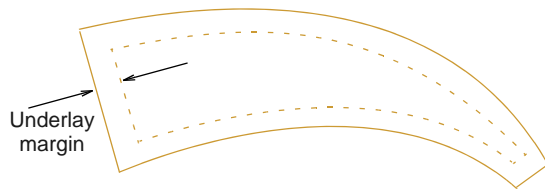
- 5 Click **Apply**.
Selected objects are updated with the adjusted settings.

Setting underlay margins



Use **Stitch > Auto Underlay** to change automatic underlay settings.

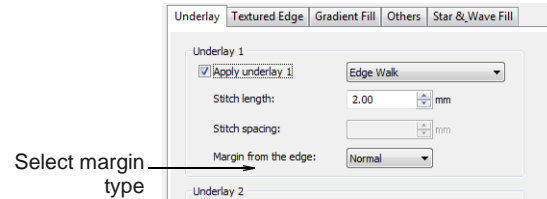
The **underlay** margin is the distance between an object outline and the edge of the underlay. Increase this margin to prevent underlay stitches from extending outside the cover stitches.



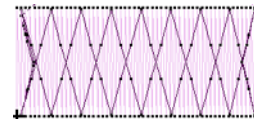
To set underlay margins

- 1 Select an object or objects to adjust their particular settings.
- 2 Right-click the **Auto Underlay** icon.

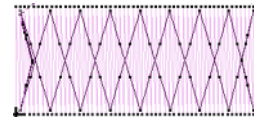
The **Effects > Underlay** dialog opens.



- 3 Select a **Margin** type from the dropdown list.



Normal



Medium



Wide

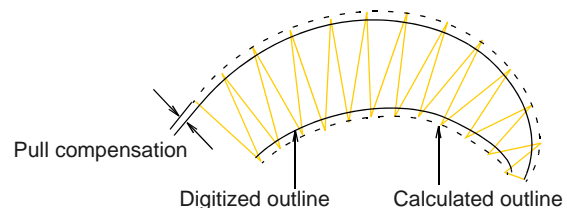
- 4 Click **Apply**.
New or selected objects use the adjusted settings.

Compensating for fabric stretch



Use **General > Object Properties** 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**.



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. You can also adjust pull compensation to suit the fabric you are embroidering.

on by selecting **Settings > Fabric Settings**. See also [Changing fabrics](#).



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 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.



- 5 Click **Apply**.
New or selected objects use the new settings.



Pull Compensation ON

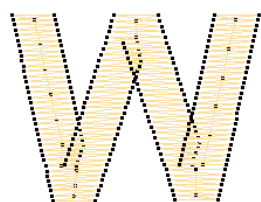


Pull Compensation OFF



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 overstretch 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.



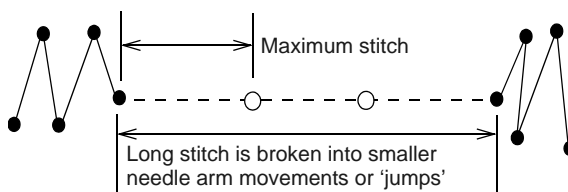
Tip Click **Save to Template** before closing this dialog to save settings permanently. Saved settings will be applied to all new designs based on the current template. See [Properties, Fabrics & Templates](#) for details.

Preserving long stitches



Use General > Object Properties 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](#).



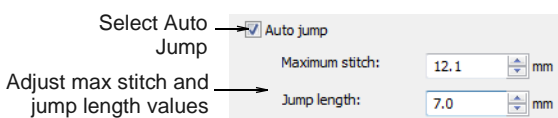
To create a narrow column with more 'loft' than normal Satin, apply Auto Jump, in conjunction with a suitable [underlay](#), with the maximum stitch length set to a small value, e.g. 6 mm. If the cover stitches are short, splitting them with a jump makes them looser and thus more effectively raised off 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.

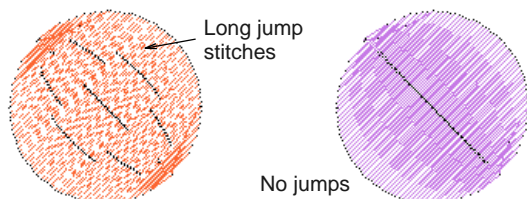
To apply Auto Jump

- 1 Select an object or objects to adjust their particular settings.
- 2 Click the **Object Properties** icon.
The **Object Properties** dialog opens.

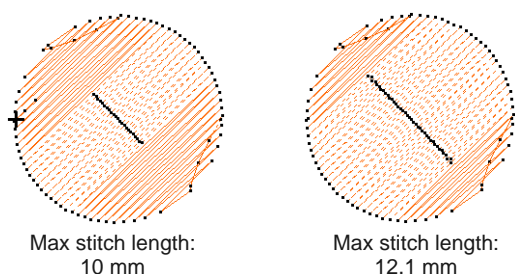
- 3 Click the **Effects** button and select the **Others** tab.



- 4 Select **Auto Jump** if not already selected and click **Apply**.

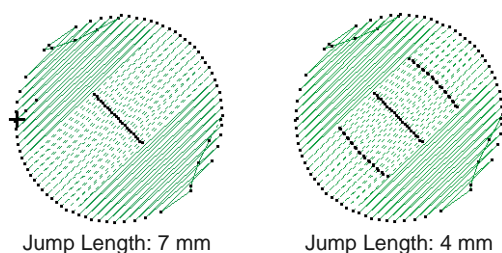


- 5 In the **Maximum Stitch** field, adjust the maximum stitch length as required. Stitches exceeding this value will have **Auto Jump** applied.



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.



Tip Smaller jumps increase the time required to stitch out but move the frame more smoothly across the design.

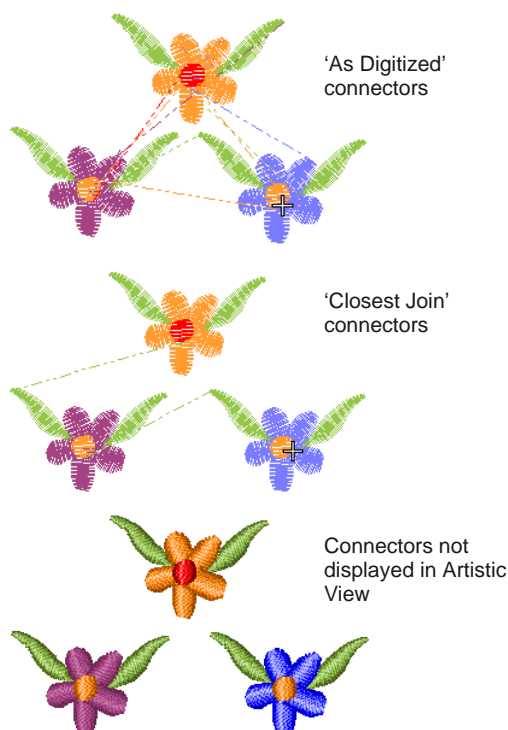
- 7 Click **Apply**.
New or selected objects use the adjusted settings.



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 [Properties, Fabrics & 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.

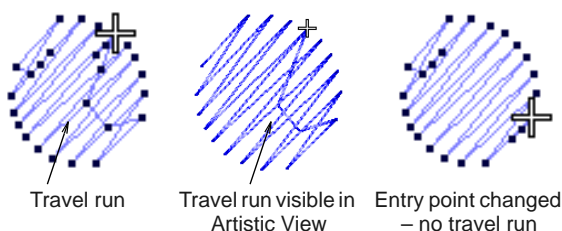


Connecting stitches are generated automatically but you can resequence objects in order to minimize trims. You can even change entry and exit points, but the **Closest Join** setting (the default) automatically calculates the closest join between objects while [digitizing](#). See [Setting other general options](#) for details.

Travel runs

Travel runs are automatically added when the needle has to travel between segments within an object.

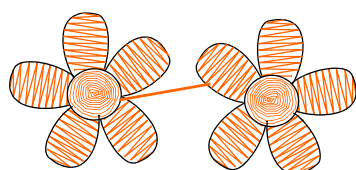
They are always covered by the overlying stitches but may sometimes show through.



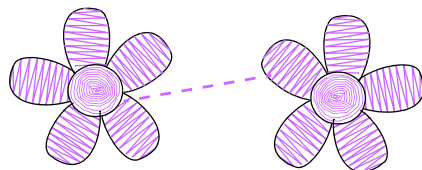
Travel runs are kept to a minimum by adjusting entry and exit points of consecutive objects. You can manually adjust entry and exit points using the **As Digitized** method, but the **Closest Join** setting (the default) automatically calculates the closest join between objects while **digitizing**. See **Setting other general options** for details.

Jumps

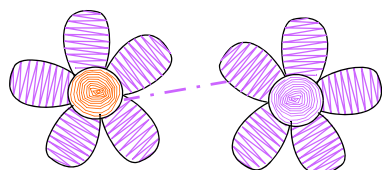
Jump connectors move the frame from one part of the design to another without needle penetrations. You generally need to trim the connecting thread. Jump connectors are displayed in **Stitch View** either as a dotted or solid line – solid lines for short connectors, dotted lines for long connectors (more 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)

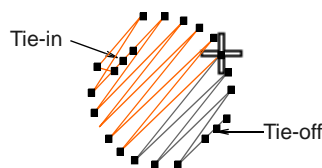
Long jump connectors have needle jumps of up to 7 mm along their length. This usually causes the machine to slow down while moving the hoop to the next needle penetration point.



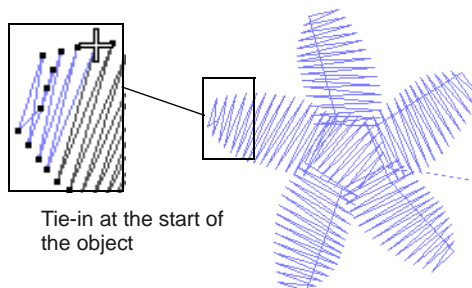
Note The default connector jump length is the same as that set for **Auto Jump**.

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 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.



Tip Travel through the design by one stitch to check for tie-ins and tie-offs. See **Traveling through designs** for details.

Adjusting tie-in/off settings



Use General > Object Properties to adjust tie-in/off settings.

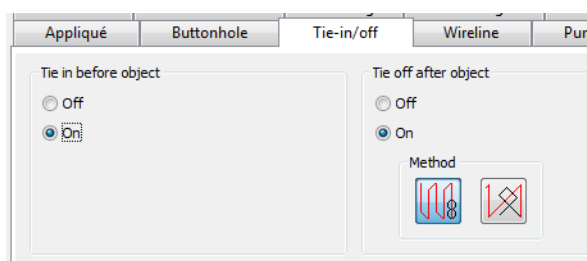
By default, tie-in stitches are inserted at the start of objects to prevent stitches from unraveling. There are instances, however, where whole designs may not include tie-ins, or where selected objects, such as lettering, may not include them. BERNINA Embroidery Software gives you control over tie-in/off 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 & 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.



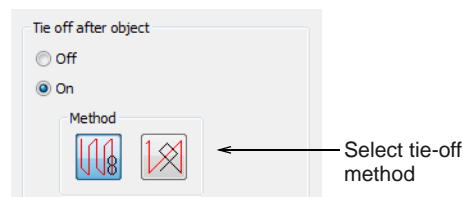
Note Existing designs created in previous versions of BERNINA Embroidery Software or other applications may have a **connector** length setting that differs from the 2 mm default setting.

- 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.



- 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.



- 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**.

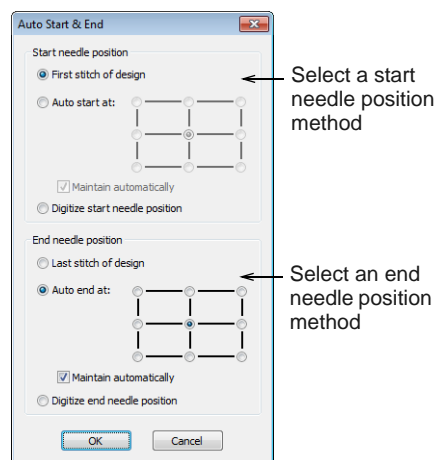
Settings are applied to selected objects or, if no objects are selected, current properties.

Setting automatic start & end points

Before stitching, some embroidery machines require you to position the starting needle exactly above the first needle penetration point. Use **Auto Start & End** to set the positions of first and last stitches in a design.

To set automatic start & end points

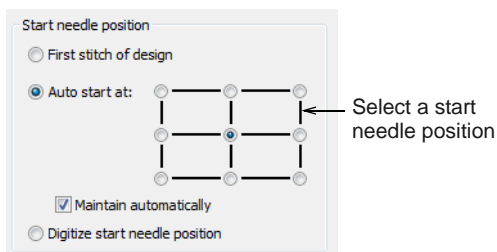
- 1 Select **Design > Auto Start & End**.
The **Auto Start & End** dialog opens.



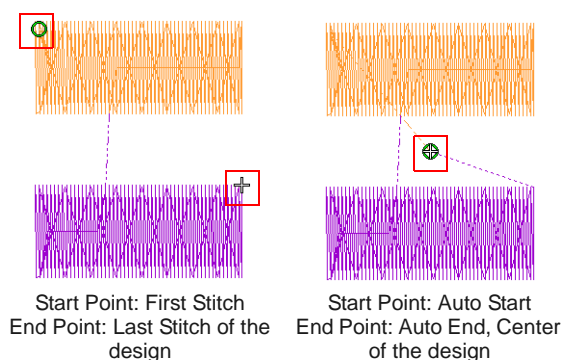
- 2 Select a **Start Needle Position** method:

- ▶ **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:



- ▶ **Digitize Start Needle Position:** You are prompted to manually mark the start and end points.



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 14

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 X6, 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 **Auto-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 **Auto-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.

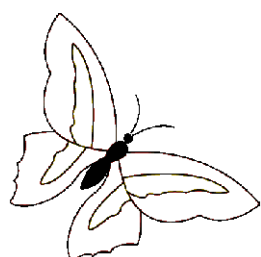
To create good quality embroidery, you need to choose suitable artwork. Once in BERNINA® Embroidery Software, you can set general properties such as size and position. You can also arrange and transform artwork in the same way as embroidery designs.



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:

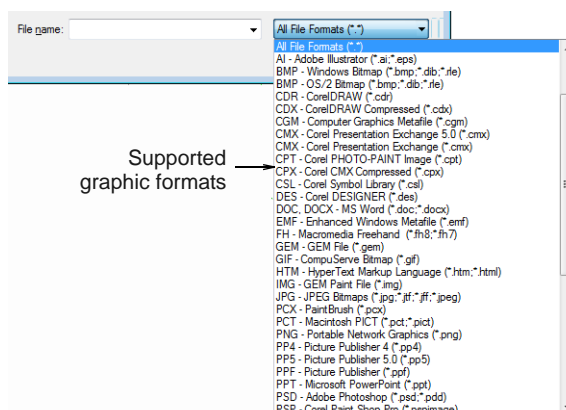
- ▶ well defined, where each shape is made up of pixels of the same color
- ▶ clearly 'blocked', where each shape is a stitchable size, at least 1 sq mm
- ▶ saved at a color depth of at least 256 colors (8 bit), or preferably millions of colors (16 bit). (Images are automatically reduced to 256 colors 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 X6 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 **Auto-digitizing with Magic Wand** and **Auto-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



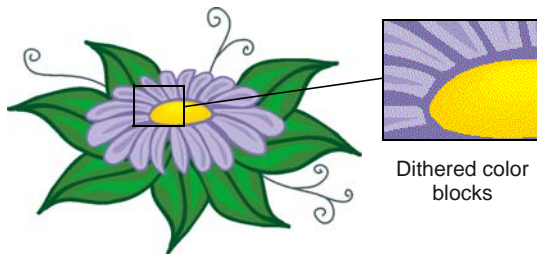
Image containing a lot of scanner 'noise'

consisting of solid color 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.



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 'sharpened' before use with automatic digitizing. See [Image Processing](#) for details.



Scanning artwork

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

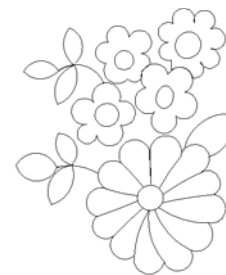
Preparing artwork for scanning

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 72dpi (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

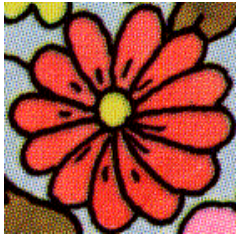
* Different scanning software uses different terms for the same mode.

Scanning tips

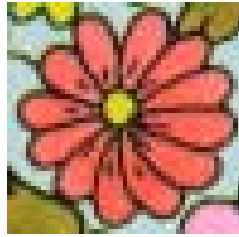
- ▶ Do not scan line art images in grayscale mode; grayscale scanning produces fuzzy edges.
- ▶ Scan color images in RGB mode (millions of colors) rather than 256 color mode. You may not notice any difference on screen. In fact the 256 color image may look better than the RGB image. However, BERNINA 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 artwork

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 Canvas > Artwork Canvas to import, edit or create vector artwork as a backdrop for embroidery digitizing, manual or automatic.



Use Artwork > Scan Bitmap 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 **Setting 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 Switch to **Artwork Canvas**.
- 4 Click the **Scan Bitmap** icon.
- 5 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.

- 6 Preview the image in the scanning program.
- 7 Select the area to be scanned and scan the image.
- 8 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.

Inserting bitmap artwork



Use Canvas > Embroidery Canvas to digitize and edit embroidery designs. Display embroidery as well as artwork. View designs realistically in 3D simulation.



Use General > Insert Artwork to Import artwork into current design as a backdrop for manual or automatic digitizing.

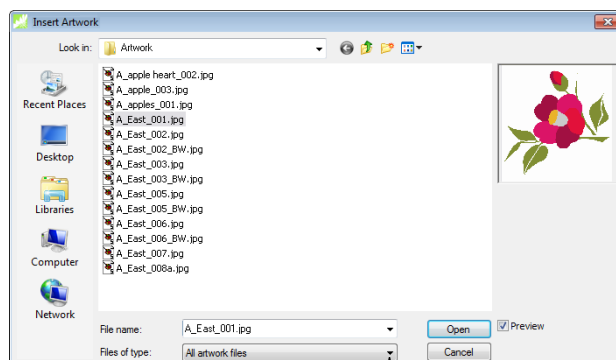


Use View > Show Bitmap Artwork to show and hide bitmap images.

You can load **bitmap** images of various formats for use as digitizing **backdrops** for manual or automatic digitizing.

To insert bitmap artwork

- 1 Switch to **Embroidery Canvas** and click the **Insert Artwork** icon.



- 2 Select a folder and select a file type from the **Files of Type** list – e.g. BMP.
- 3 Select a file and click **Open**.

- 4 Choose a digitizing technique:

- Use the artwork as a digitizing backdrop: See [Digitizing Methods](#) for details.
- Convert bitmap to embroidery: See [Automatic Digitizing](#) for details.



Note If you cannot see the image you loaded, make sure **Show Bitmap Artwork** icon is toggled on. See also [Displaying backdrops](#).

Loading vector artwork



Use Canvas > Artwork Canvas to import, edit or create vector artwork as a backdrop for embroidery digitizing, manual or automatic.



Use Artwork > Load Artwork to edit images in a graphics application.

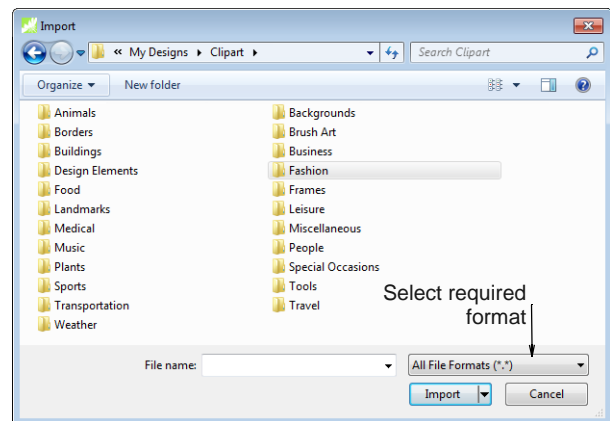


Use View > Show Vector Artwork to show or hide any vector artwork included in the design such as CorelDRAW® clipart.

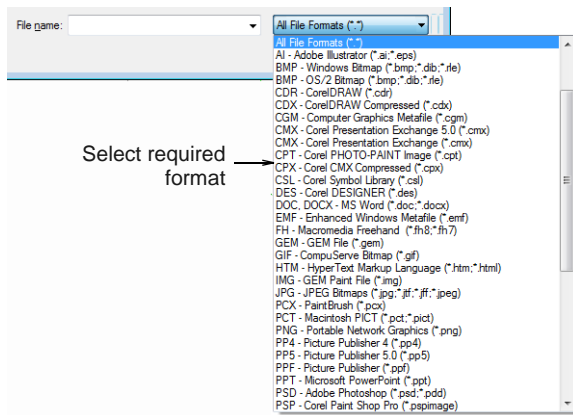
You can load **vector** artwork of various formats for use as digitizing **backdrops** for manual or automatic digitizing.

To load vector artwork

- 1 Switch to **Artwork Canvas** and click the **Load Artwork** icon.



- 2 Select a folder and select a file type from the **Files of Type** list – e.g. CDR.



Select required
format

- 3 Select a file and click **Import**.
- 4 Position the cursor in the design window and press **Enter**.
- 5 Choose a digitizing technique:
 - ▶ Convert **vectors** to embroidery: See **Digitizing with vector artwork** for details.
 - ▶ Switch to **Embroidery Canvas** and use the artwork as a digitizing backdrop: See **Digitizing Methods** for details.



Note If you cannot see the image you loaded, make sure **Show Vector Artwork** icon is toggled on. See also **Displaying backdrops**.



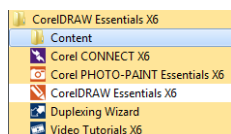
Tip Locking **backdrop** images holds them in place as you digitize, transform or reshape the embroidery objects near them. Locked objects can be unlocked for modification at any time. See also **Locking & unlocking objects**.

Browsing clipart

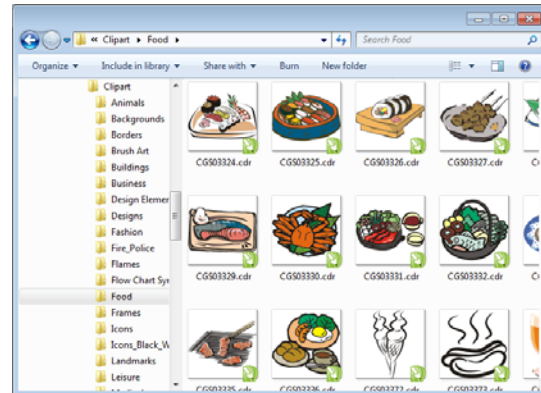
CorelDRAW® Essentials X6 itself is packaged with a selection of clipart which can be used as digitizing **backdrops** or converted directly into embroidery. See also **Converting vectors to embroidery**.

To browse clipart

- 1 Access the CorelDRAW® Essentials X6 folder via the Windows **Start > Programs** group.



- 2 Select the **Content** folder and choose **Clipart**.



- 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 **Artwork Canvas**. See also **Loading vector artwork**.



Tip It may be more convenient to take a copy of the entire CorelDRAW® **Clipart** folder and copy it to **My Designs - Embroidery Software 7** folder for easy reference.

Editing imported artwork

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**.

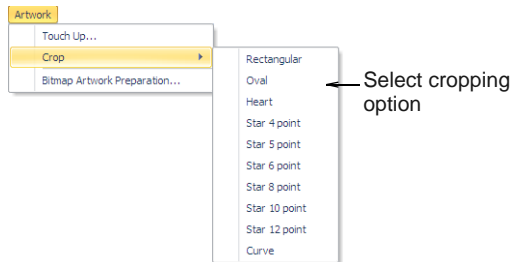
Cropping bitmaps for digitizing

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 a bitmap for digitizing

- 1 Scan or load the image you want to use. See **Importing artwork** for details.

- 2 Select the bitmap and a cropping option from the **Artwork > Crop** menu.



- Digitize points to create a cropping shape around the part of the image you require and press **Enter**.



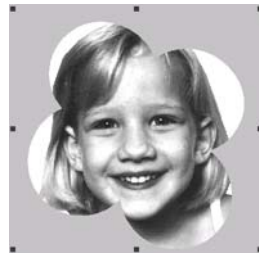
Rectangle



Heart



Star 10 points



Curve

Reshaping cropped bitmaps



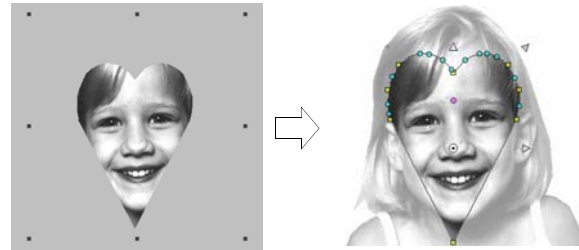
Click **Transform > Reshape Object** to crop a free form image.

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

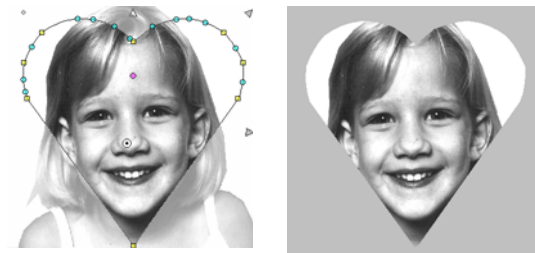
- 1 Crop an image and select. See [Cropping bitmaps for digitizing](#) for details.

- 2 Click the **Reshape Object** icon.



- 3 Adjust reshape nodes to change the shape and press **Enter**.

The image displays the cropping outline with reshape nodes.



- 4 Press **Esc** to finish.

Editing artwork in graphics applications



Use **Canvas > Artwork Canvas** to import, edit or create vector artwork as a backdrop for embroidery digitizing, manual or automatic.



Use **Artwork > Touch Up Bitmap** to edit images in a graphics application.

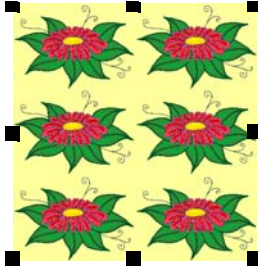
From within BERNINA Embroidery Software you can open images into third-party graphics applications which can help you improve your scanned images. Eliminate backgrounds, flood-fill solid areas with color, or add outlines, close gaps, or reinforce outlines. Images updated in this way are automatically 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 X6.

To edit images in a graphics application

- 1 Scan or load the image you want to use. See [Importing artwork](#) for details.

- 2 Still in **Artwork Canvas** mode, select the image.



Use a graphics application, for example, to cut out the part to be embroidered

- 3 Click the **Touch Up Bitmap** icon.
The image opens into the Corel PHOTO-PAINT® Essentials X6 application.
- 4 Edit the image as required.



Image cropped



Background removed



Outlines added

- 5 Select **File > Update Design**.
The image displays in BERNINA Embroidery Software overlaid with stripes. This means that it is still open in the graphics application.

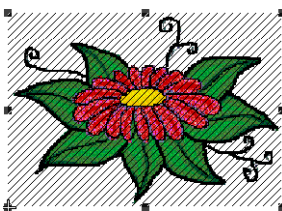


Image still open in graphics application

- 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



Use Canvas > Artwork Canvas to import, edit or create vector artwork as a backdrop for embroidery digitizing, manual or automatic.

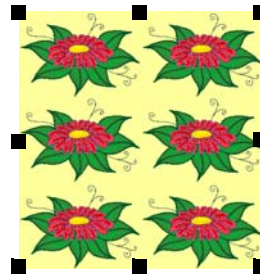


Use Artwork > Save Artwork to save a backdrop as a separate file.

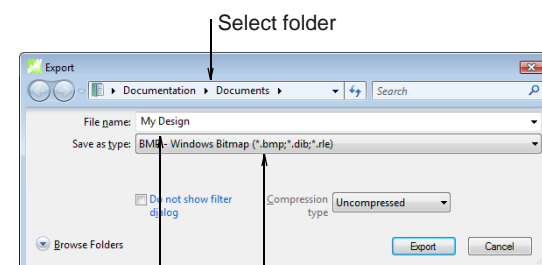
All images placed in the design window, whether by scanning, pasting or inserting from hard disk, are saved together with the embroidery design in the ART file. After editing in BERNINA Embroidery Software or third-party graphics application, you may want to save the image out as a separate file.

To save a backdrop as a separate file

- 1 Scan or load the image you want to use. See [Importing artwork](#) for details.
- 2 Still in **Artwork Canvas** mode, select the image.



- 3 Click the **Save Artwork** icon.
The **Export** dialog opens.



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.



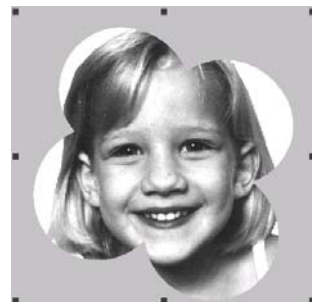
Note This file is not referenced by the ART file. Any further changes to it are not reflected in the embedded image.

CHAPTER 15

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 **Bitmap Artwork Preparation** function.

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.

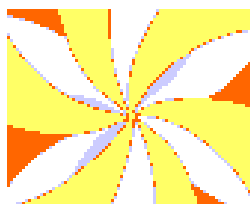


Image before color reduction



Image after color reduction

If you are scanning images, make sure you scan them correctly for best results. See [Scanning artwork](#) for details.

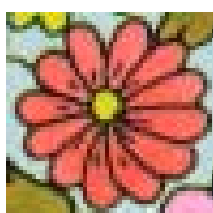


Image scanned in RGB color mode

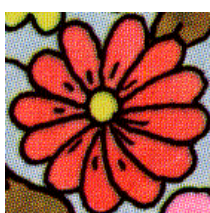


Image scanned in 256 color mode

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.

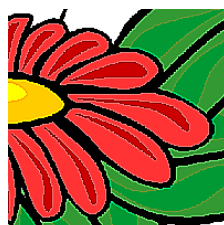


Image before outline sharpening



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 artwork preparation tools or a graphics package. See [Editing artwork 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

Artwork 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	<ul style="list-style-type: none"> Scans in RGB mode Uses sharpening 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> • Crops • Adds or edits outlines • Edits colors • Removes noise 	<ul style="list-style-type: none"> • Crops • Edits image shapes • Edits colors • Removes noise 	<ul style="list-style-type: none"> • Crops • Converts to grayscale • Removes background • Lightens or darkens • Adjusts contrast
Use Artwork Preparation tool in BERNINA Embroidery Software	Adjusts lightness or darkness of outlines. Automatically: <ul style="list-style-type: none"> • blends each outlined block into a single color • removes anti-aliasing, noise and dithering • sharpens outlines. 	Reduces colors to a specified number. Automatically: <ul style="list-style-type: none"> • reduces each block to a single color • removes anti-aliasing, noise and dithering • removes colors less than specified area. 	-
Digitize	<ul style="list-style-type: none"> • Manual • Magic Wand • Auto Digitizer 	<ul style="list-style-type: none"> • Manual • Magic Wand • Auto Digitizer 	PhotoSnap

Preparing non-outlined bitmaps



Use Canvas > Embroidery Canvas to digitize and edit embroidery designs. Display embroidery as well as artwork. View designs realistically in 3D simulation.



Use General > Insert Artwork to Import artwork into current design as a backdrop for manual or automatic digitizing.

The **Embroidery Canvas** provides a **Bitmap Artwork Preparation** option to prepare non-outlined images for automatic **digitizing**. This function 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.

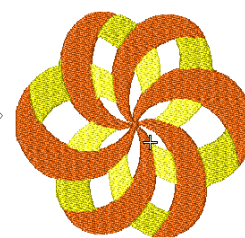


Tip Depending on the quality of the scanned image, you may need to touch it up manually before processing in BERNINA Embroidery Software. You would normally do this in order to eliminate

backgrounds, flood-fill solid areas with color, or add outlines, close gaps, or reinforce outlines. See **Editing artwork in graphics applications** for details.



Prepared image



Digitized image

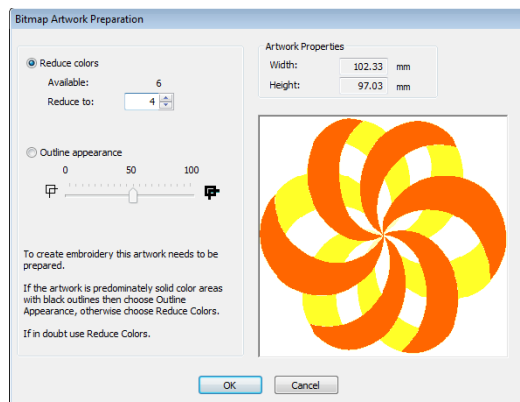
To prepare a non-outlined bitmap

- 1 Scan or load the image you want to use. See **Importing artwork** for details.
- 2 In **Artwork Canvas**, select the image and crop or edit it as required. See **Editing imported artwork** for details.
- 3 Switch to **Embroidery Canvas** and select the image.



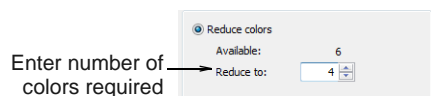
- 4 Select **Artwork > Bitmap Artwork Preparation**.

The **Bitmap Artwork Preparation** dialog opens.



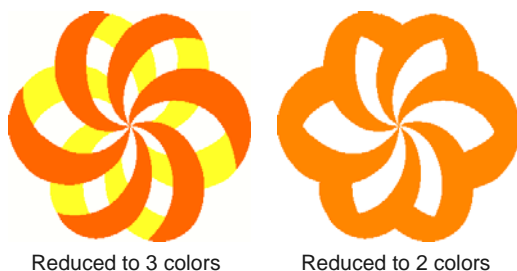
5 Check **Available** colors.

If there appear to be too many, the image probably contains 'noise'. See [Preparing images for automatic digitizing](#) for details.



6 Enter the number of colors you require:

You can accept the number suggested by BERNINA Embroidery Software or change it.



7 Click **OK** to apply the changes.

The image is ready for automatic digitizing. See [Automatic Digitizing](#) for details.

Preparing outlined images



Use Canvas > Embroidery Canvas to digitize and edit embroidery designs. Display embroidery as well as artwork. View designs realistically in 3D simulation.



Use General > Insert Artwork to Import artwork into current design as a backdrop for manual or automatic digitizing.

The **Embroidery Canvas** provides a **Bitmap Artwork Preparation** option to prepare outlined images for automatic [digitizing](#). This function

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.

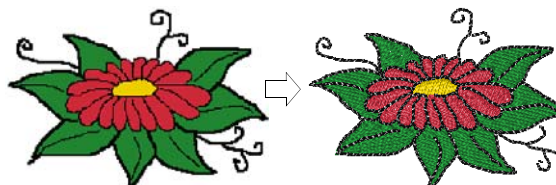


Image with single, solid colors

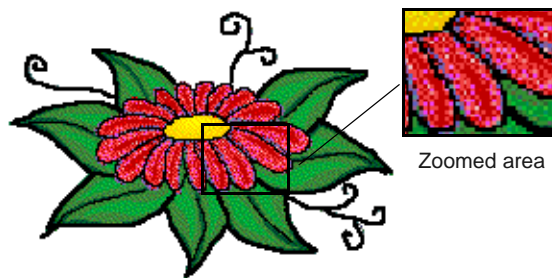
Digitized image



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 imported artwork](#) for details.

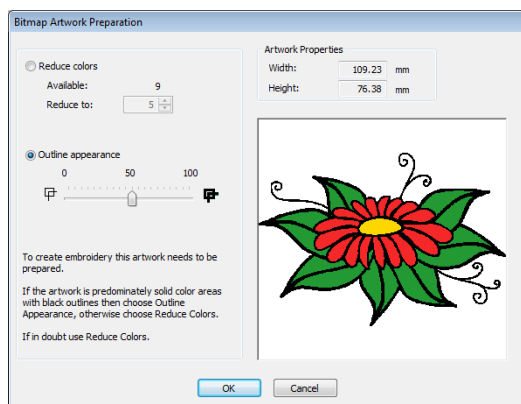
To prepare an outlined image

- 1 Scan or load the image you want to use. See [Importing artwork](#) for details.
- 2 In **Artwork Canvas**, select the image and crop or edit it as required. See [Editing imported artwork](#) for details.
- 3 Switch to **Embroidery Canvas** and select the image.

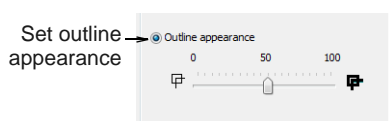


- 4 Select **Artwork > Bitmap Artwork Preparation**.

The **Bitmap Artwork Preparation** dialog opens.

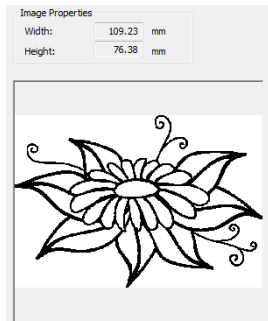


The image appears in the preview panel. The **Available** colors field shows the number of image colors.



- 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 **OK** to apply the changes.

The image is ready for automatic digitizing. See [Automatic Digitizing](#) for details.

CHAPTER 16

AUTOMATIC DIGITIZING

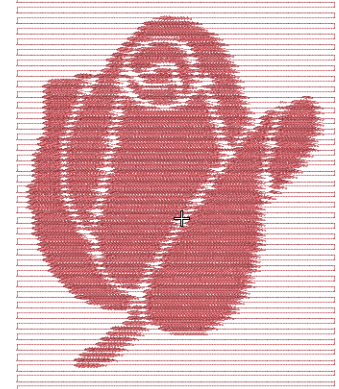
Through its integration with CorelDRAW®, BERNINA Embroidery Software allows inter-conversion of **vector** and **embroidery objects**. The **Convert Vectors to Embroidery** tool can be applied to text as well as vector artwork.

BERNINA Embroidery Software also provides a **Magic Wand** tool for quickly generating simple embroidery directly from electronic artwork. This in turn frees you to spend more time on the artistic or more complicated areas of your designs.

The **Auto Digitizer** tool automatically converts artwork to entire designs with little or no intervention. With this tool, novice embroiderers can create simple designs quickly and easily.

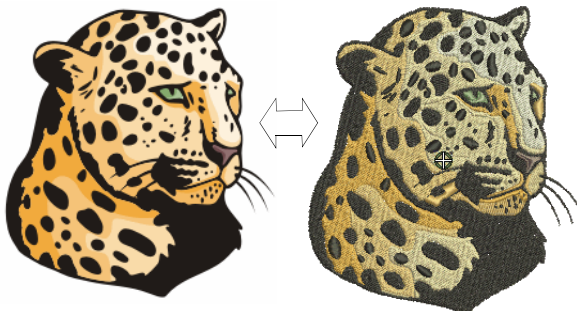
With **PhotoSnap** you can create embroidery from photographs and other images.

This section describes how to automatically convert vector artwork as well as bitmap images to embroidery designs with the available techniques. It also covers how to create embroidery from photographs.



Digitizing with vector artwork

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 limitations

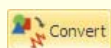
There are some limitations when converting some CorelDRAW® vectors to embroidery. Vector special effects, such as drop shadow, contour, and transparency, do not convert well as there is no equivalent embroidery effect. Enveloped text and

Fountain or **Mesh** fills do not always give the expected result either.



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.

Converting vectors to embroidery



Use Canvas > Convert Artwork to Embroidery to convert selected vector or bitmap artwork to fill or outline stitches.

The **Convert Artwork to Embroidery** tool converts fill or outline properties of selected **vector artwork** to fill or outline stitch types respectively. It can be applied to text as well as vector artwork. See also **Converting text to embroidery**.



Note Bitmaps cannot be converted to embroidery via the **Convert Artwork 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 **Artwork Canvas**.
- 2 Scan, load, or create the artwork and/or text you want to use. See also **Importing artwork**.



- 3 Click **Convert Artwork to Embroidery**.

BERNINA Embroidery Software automatically switches to **Embroidery Canvas**.



Converting embroidery to vectors

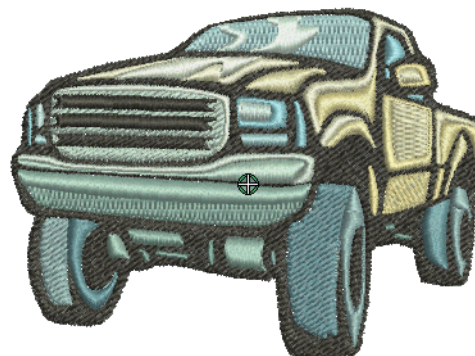


Use Canvas > Convert Embroidery to Artwork to convert selected embroidery objects to vector artwork.

The **Convert Embroidery to Artwork** tool converts selected **embroidery objects** to **vectors**.

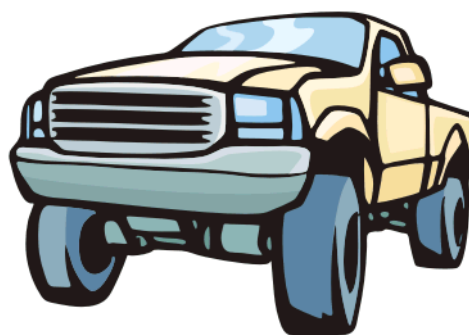
To convert embroidery to vectors

- 1 Switch to **Embroidery Canvas**.



- 2 Select embroidery and/or lettering objects and click **Convert Embroidery to Artwork**.

BERNINA Embroidery Software automatically switches to **Artwork Canvas** mode.



Auto-digitizing with Magic Wand



Use Canvas > Artwork Canvas to import, edit or create vector artwork as a backdrop for embroidery digitizing, manual or automatic.



Use Canvas > Embroidery Canvas to digitize and edit embroidery designs. Display embroidery as well as artwork. View designs realistically in 3D simulation.



Use Auto-Digitize > Magic Wand to automatically digitize filled areas in vector or bitmap artwork.



Use View > Show Bitmap Artwork to show and hide bitmap images.

The **Magic Wand** tool provides everything necessary to digitize shapes in **bitmap** images automatically.

To digitize shapes automatically

- 1 Scan or load the image you want to use. See [Importing artwork](#) for details.
If you cannot see the image you loaded make sure **Show Bitmap Artwork** icon is toggled on. See also [Displaying backdrops](#).

- 2 Switch to **Embroidery Canvas** and select **Magic Wand**.

The tool is only enabled if at least one **bitmap** exists in the design window.

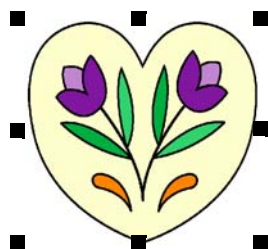
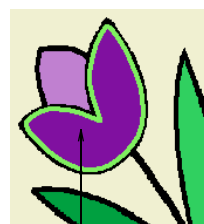


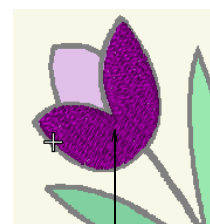
Image processed

- 3 Click an area of the image as prompted.
The software checks whether it has been processed and displays the **Bitmap Artwork Preparation** dialog as necessary. See [Preparing images for automatic digitizing](#) for details.
- 4 Set thread color and stitch type as desired. See [Assigning thread colors](#) for details.

- 5 Hover the mouse pointer over an area of the image, and click.



Click in area



Area filled with stitches

- 6 Digitize the other filled shapes in the same way, changing thread color and stitch type as required. See also [Selecting or changing stitches](#).
- 7 Check the results in **Artistic View**.



All areas digitized



Tip If you want to both fill and outline a shape, you can left-click for a fill and right-click for an outline object. Alternatively, use **Outline Design** to generate automatic outlines. See [Creating outlines & borders](#) for details.

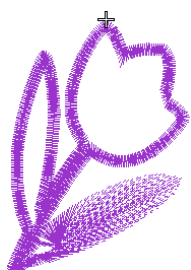


Completed design

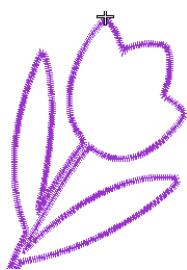


Only outlines digitized

Stitches are generated according to current stitch settings. Jumps may appear if stitch length exceeds the default.



Satin Stitch width:
2.5mm some jumps



Satin Stitch width:
1.0mm NO jumps

Auto-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 **Stabilizing with 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



Use Canvas > Artwork Canvas to import, edit or create vector artwork as a backdrop for embroidery digitizing, manual or automatic.



Use Canvas > Embroidery Canvas to digitize and edit embroidery designs. Display embroidery as well as artwork. View designs realistically in 3D simulation.



Use Auto-Digitize > Auto Digitizer to automatically digitize prepared bitmap artwork.



Use View > Show Bitmap Artwork to show and hide bitmap images.

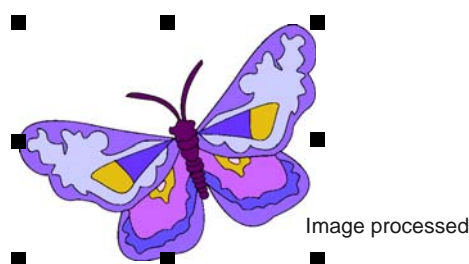
In essence, creating an embroidery design with **Auto Digitizer** is simply a matter of selecting the image you want to convert, and clicking the **Auto Digitizer** tool. There are, however, some settings you can adjust to optimize the conversion process for a particular image. Only one image may be 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 artwork** for details.



Tip If you cannot see the image you loaded make sure **Show Bitmap Artwork** icon is toggled on. See **Displaying backdrops** for details.

- 2 Switch to **Embroidery Canvas** and select **Auto Digitizer**.

The tool is only enabled if at least one **bitmap** exists in the design window.

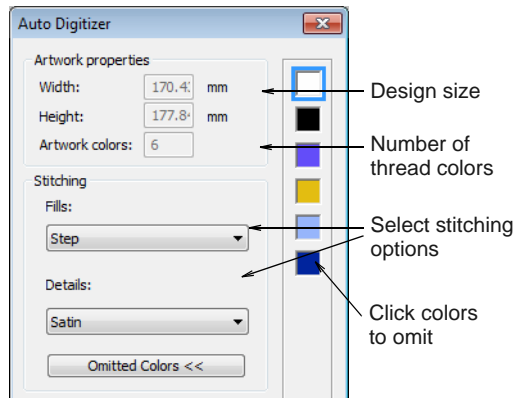
- 3 Click the image as prompted.

The software checks whether the bitmap has been processed and displays the **Bitmap Artwork 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.

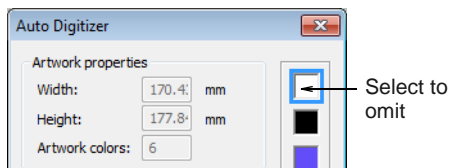


- 5 Select the stitch types for fills and outlines. See [Adjusting automatic stitch settings](#) and [Digitizing whole images automatically](#).

- 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 & borders](#) for details.
- 8 Click **OK**.

Auto Digitizer converts the artwork to embroidery objects and generates stitches.



White background omitted

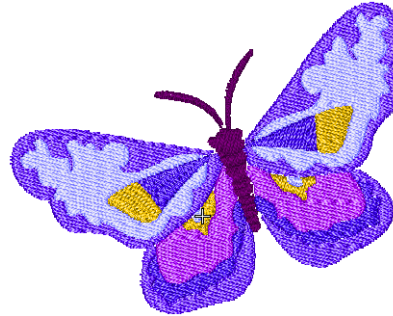
Some colors omitted

- 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

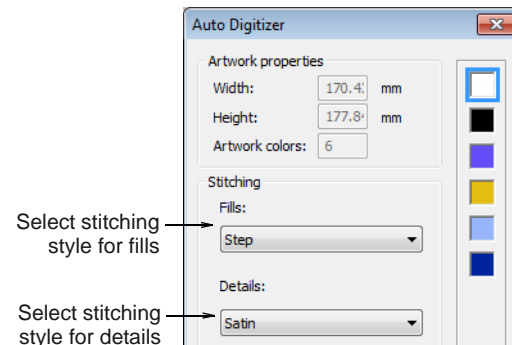
Auto Digitizer lets you adjust fill and detail stitch settings.



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 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 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 artwork to embroidery objects and generates stitches.



Outline: Satin



Outline: Double Run

Creating automatic outlines & borders



Use Auto-Digitize > Auto Digitizer to automatically digitize prepared bitmap artwork.

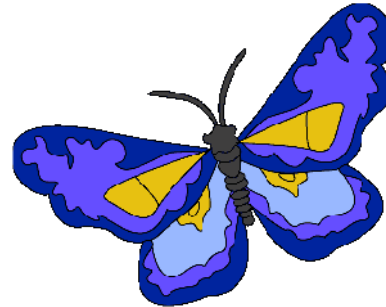


Use View > Show Bitmap Artwork to show and hide bitmap images.

The **Auto Digitizer** tool allows you to automatically generate outlines during image conversion. These may be in the form of details and/or borders. 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 create automatic outlines and borders

- 1 Scan or load the image you want to use. See [Importing artwork](#) for details.



Tip If you cannot see the image you loaded make sure **Show Bitmap Artwork** icon is toggled on. See [Displaying backdrops](#) for details.

- 2 Switch to **Embroidery Canvas** and select **Auto Digitizer**.

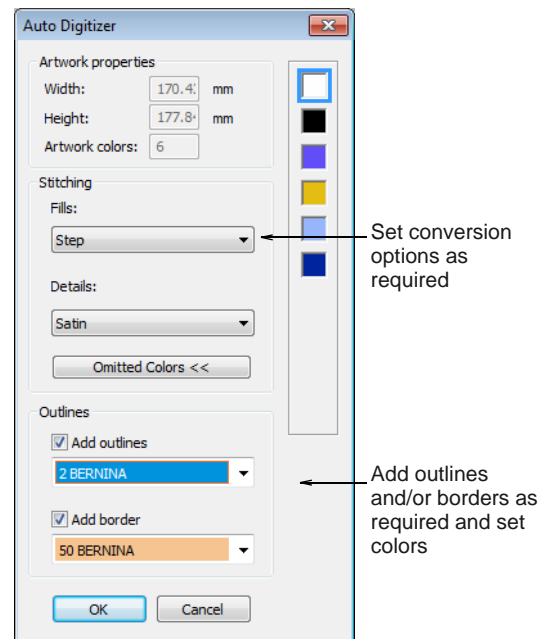
The tool is only enabled if at least one **bitmap** exists in the design window.

- 3 Click the image as prompted.

The software checks whether the bitmap has been processed and displays the **Bitmap Artwork Preparation** dialog as necessary. See [Preparing images for automatic digitizing](#) for details.

- 4 Click the image again as prompted.

The **Auto Digitizer** dialog opens.



- 5 Check the **Add Outlines** and/or **Add Border** options as required.

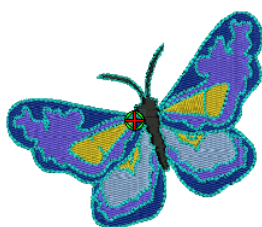
- ▶ Generated outline stitching uses run stitching to surround color blocks in the source image.
- ▶ Generated border outlines are created as Satin objects with the current design settings for width and other properties. The border is oriented clockwise for consistent stitching with objects such as appliqué.



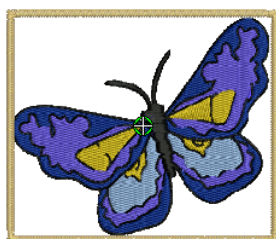
Note If the image already contains outlines, the use of **Add Outlines** is not recommended as you will get double outlines. See [Creating outlines & borders](#) for details.

- 6 Select thread colors for outlines from the dropdown lists and click **OK**.

Auto Digitizer converts artwork to embroidery objects and generates stitches.



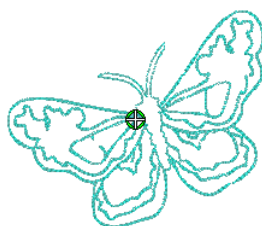
Outlines added



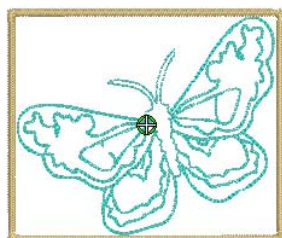
Border added



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

Auto-digitizing with PhotoSnap



Use Canvas > Artwork Canvas to import, edit or create vector artwork as a backdrop for embroidery digitizing, manual or automatic.



Use Canvas > Embroidery Canvas to digitize and edit embroidery designs. Display embroidery as well as artwork. View designs realistically in 3D simulation.



Use Auto-Digitize > PhotoSnap to turn grayscale or color photographs into embroidery.



Use View > Show Bitmap Artwork to show and hide bitmap images.

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.



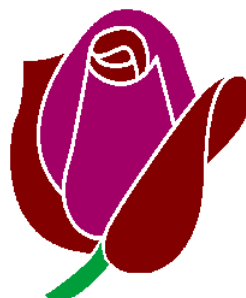
With border and lettering added



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 artwork](#) for details.



Tip If you cannot see the image you loaded make sure **Show Bitmap Artwork** icon is toggled on. See [Displaying backdrops](#) for details.

- 2 In **Embroidery Canvas** mode, click the **PhotoSnap** icon and click the image as prompted.

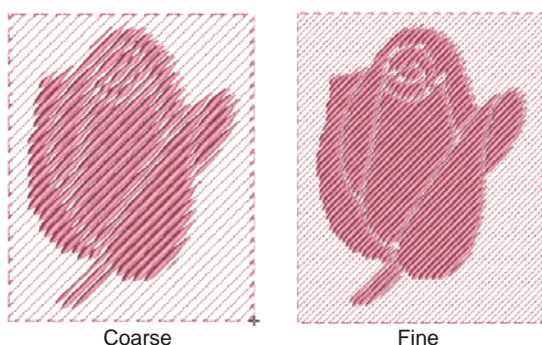
BERNINA Embroidery Software generates stitches. This process may take some time.

- 3 Right-click or double-click the resulting **PhotoSnap** design.

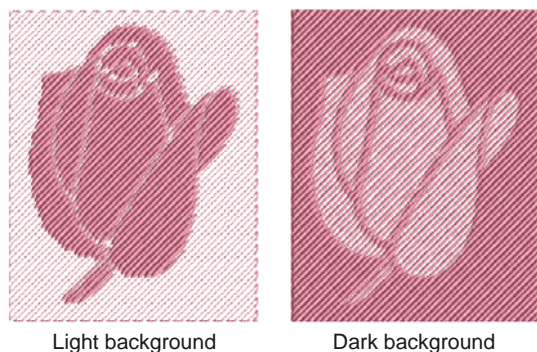
The **Object Properties > PhotoSnap** dialog opens.



- 4 In the **Resolution** panel, select a resolution – **Coarse**, **Medium**, or **Fine** – and click **Apply**.

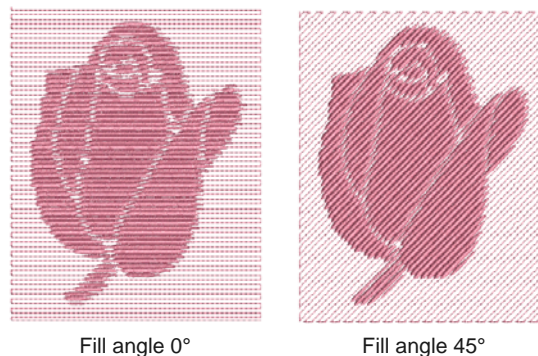


- 5 In the **Background Fabric** panel, select a background option – **Light** or **Dark** – and click **Apply**.

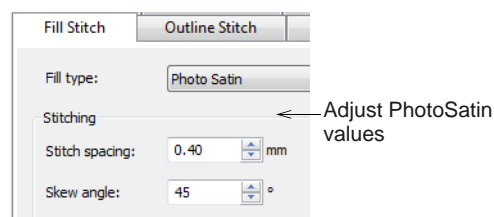


Tip Usually the option you select depends on whether the fabric is light or dark.

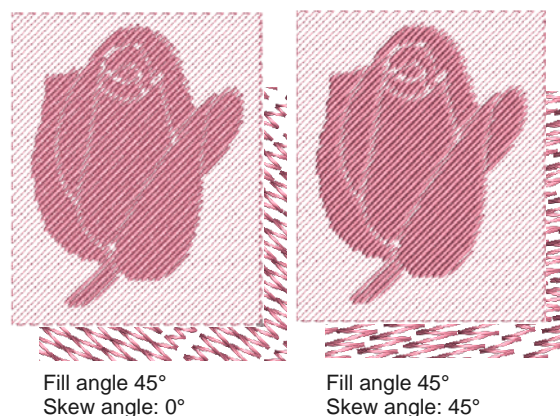
- 6 In the **Fill Angle** panel, adjust the stitching angle, if required, and click **Apply**.



- 7 Select **Fill Stitch** tab and adjust **PhotoSatin** stitch values as desired.



- **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).



- 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 & 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 & 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 & 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.

CHAPTER 17

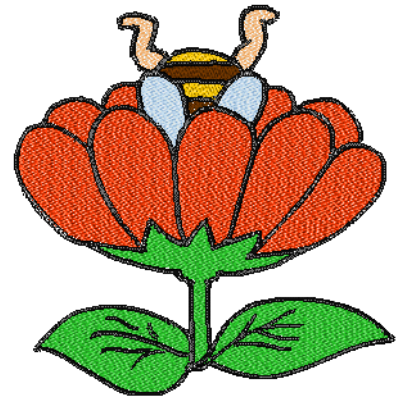
COMBINING & SEQUENCING OBJECTS

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.

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](#).

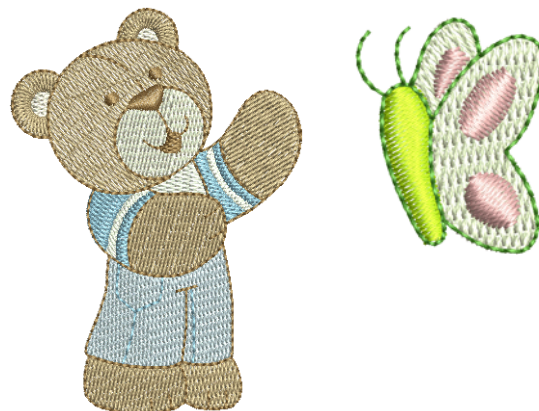
combined. Colors with the same RGB values are automatically identified as having the same thread color. If you want to preserve these as separate colors, you need to change one or other before merging.

Inserting designs



Use General > Insert Embroidery to import embroidery design files into the current design.

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





Caution It's best, when combining designs, to use Art Grade A or Grade B file formats. Art Grade C and D designs may produce poor results if resizing. See also [Embroidery design formats](#).

To insert designs

- 1 Open the base design.
When you first open a design in BERNINA Embroidery Software, it is grouped by default. See also [Grouping & ungrouping objects](#).
- 2 Click **Insert Embroidery**.
The **Insert Embroidery** dialog opens.
- 3 Find the design file you want to use and click **Open**.
The design is placed at the end of the stitching sequence. It too is grouped by default.
- 4 Resequence objects in the combined designs as necessary, ensuring that details stitch out last. See [Sequencing embroidery objects](#) for details.
- 5 Size the inserted design as required. See also [Scaling objects](#).



- 6 Move to the required position. See [Positioning objects](#) for details.
- 7 Remove any underlying stitching as necessary. See also [Removing underlying stitching](#).
- 8 Save the combined designs under the original or new name.

Copying & pasting objects



Click General > Copy to copy selected objects to the clipboard.



Click General > Paste to paste copied objects in the design.

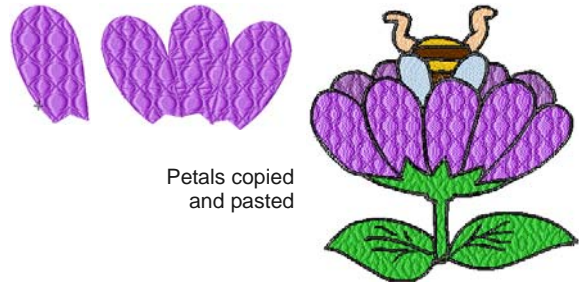
You can copy objects to create multiple, identical objects, or to insert objects from other designs. See also [Sequencing with the Color Film](#).



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 [Sequencing by cut-and-paste](#) for details.

To copy & 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 through designs](#) for details.
You can paste between other objects in the sequence.
- 4 Click the **Paste** icon.



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

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 with the Color Film](#).



To duplicate objects

- 1 Travel to the point in the stitching sequence where you want to place the object(s). See [Traveling through designs](#) 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 Transform > Select Object to select and clone objects.

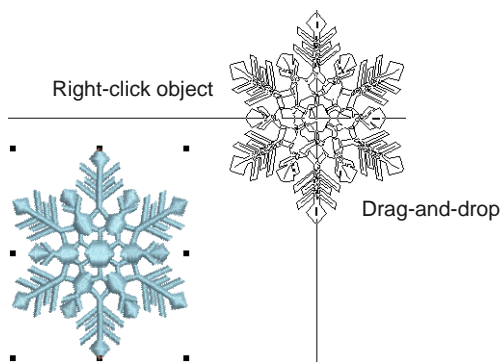
The **Quick Clone** feature lets you quickly duplicate selected objects by right-clicking, dragging and releasing at a new position.



Tip The software lets you create duplicate objects with an automatic offset. This means you can step-repeat offsets with duplicate objects.

To clone objects

- 1 Select the object(s).
- 2 Holding down the right mouse button, drag to a new position.



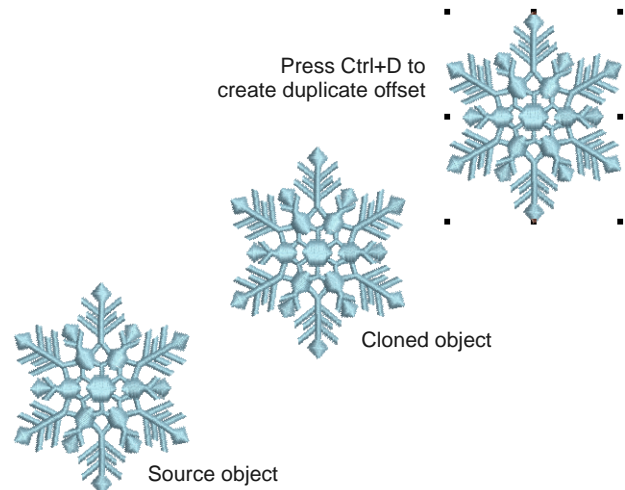
Tip For precise positioning, hold down the **Ctrl** key while dragging – movement is constrained to X or Y axes.

- 3 Release the mouse.

A duplicate object(s) is created at the release point.

- 4 Press **Ctrl+D** to repeat.

A new object is created at the same offset as the cloned object.



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 & 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 & ungrouping objects



Use Arrange > Group to combine multiple objects into one selectable object grouping.



Click Arrange > Ungroup to split object grouping into component objects.

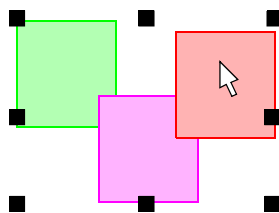
When you group objects, you can apply a change to all of them at once, saving time, and ensuring that changes are consistently applied. Group selected objects or the whole design to keep them together for moving, scaling or transforming operations. When you have finished making changes to a group, you can ungroup it and work with the objects individually.



Note When you first open a design in BERNINA Embroidery Software, it is grouped by default.

To group & ungroup objects

- ▶ Select objects to group and click the **Group** icon or press **Ctrl+G**.

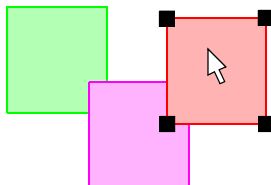


Select, move, resize or transform grouped objects as a single object

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](#).

- ▶ Select the grouped object and click the **Ungroup** icon or press **Ctrl+U**.

The object is ungrouped and component objects can be individually selected. See also [Selecting objects within groups](#).



Ungrouped objects can be individually selected

Locking & unlocking objects



Click Arrange > Lock to lock selected object/s into position for protection.



Click Arrange > Unlock All to unlock all locked object/s to remove protection.

Lock objects to prevent them from being moved or modified by accident. For example, locking **backdrop** images holds them in place as you digitize, transform or reshape the embroidery objects near them. Locked objects can be unlocked for modification at any time.

To lock or unlock objects

- ▶ Select the objects to lock and click the **Lock** icon or press **K**.

The **selection handles** disappear, indicating that the object can no longer be selected or modified.

- ▶ To unlock objects, click the **Unlock All** icon.

All locked objects in the design are unlocked.

Selecting objects within groups

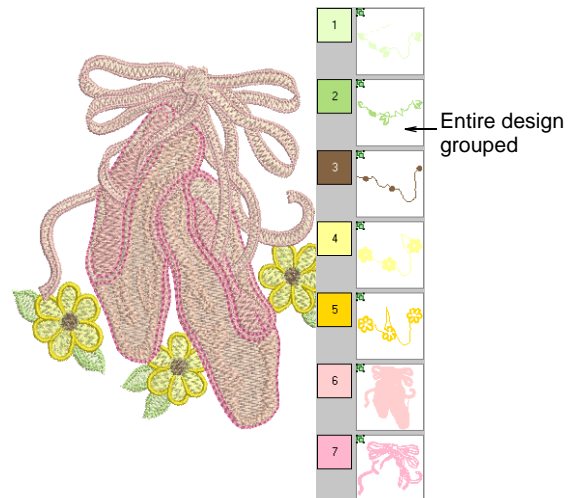


Click Transform > Select Object to select individual objects as well as groups or ranges of objects.

BERNINA® Embroidery Software provides a method for selecting individual objects within object groupings. The **Alt** key 'suspends' grouping temporarily. This is handy if you want to make changes 'on-the-fly' without first having to ungroup and then regroup objects.

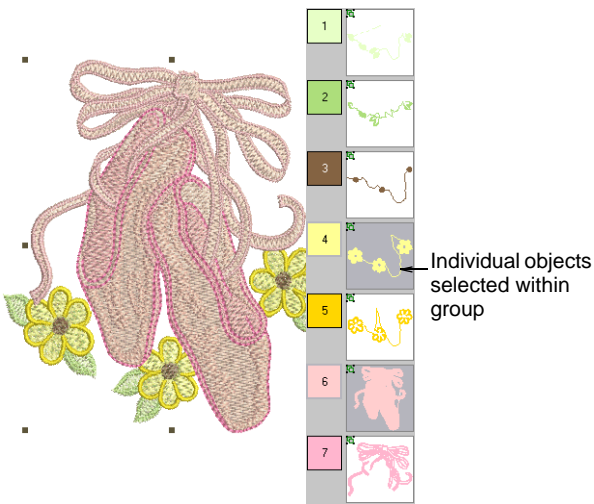
To select objects within groups

- ▶ Click the **Select Object** icon or press **O**.



- ▶ Use **Alt** + **Click** to select a single object within a group.
- ▶ In combination with the **Alt** key, use standard techniques to select multiple objects or a range of objects within a grouped design, both in the design window and the **Color Film**. These include:
 - ▶ Select a single object/color within a group: **Alt** + **Click**.
 - ▶ Add/remove a single object/color within a group: **Alt** + **Ctrl** + **Click**.

- ▶ Select a range of objects/colors within a group:
Alt + Shift + Click.



Tip You can also use a **selection marquee** or **Polygon Select** in combination with the **Alt** key. See also **Selecting Objects**.

- ▶ Once an object (or more) is selected, edit its properties, stitching and otherwise, as desired.

Splitting into component objects



Use **Edit > Break Apart** to split monograms, appliqué, lettering, and blackwork runs into component objects for editing.

The **Break Apart** tool allows you to split appliqué objects into their components. The command can also be used with monograms, lettering and blackwork runs. The effect on these objects is similar to the ungrouping operation.

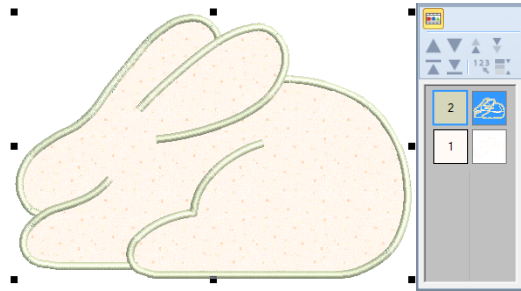


Note When saved into earlier versions of the software, monograms, appliqués, lettering, and blackwork runs may be subjected to the **Break Apart** procedure by default.

To split into component objects

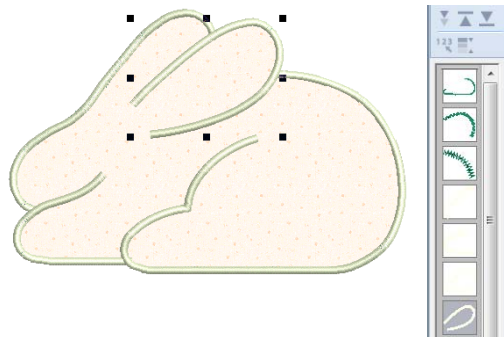
- 1 Select the object you want to split – open-object appliqué, auto-appliqué, monogram, or lettering.

The **Break Apart** command is activated.

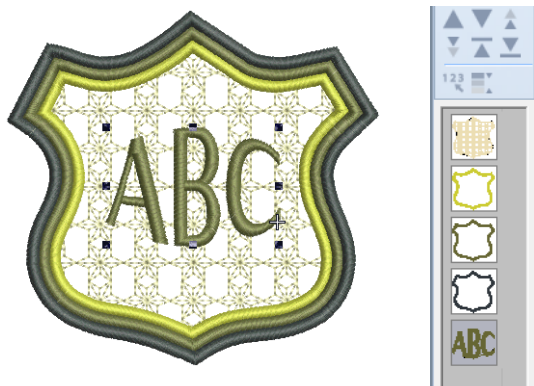


- 2 Click the **Break Apart**.

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**.



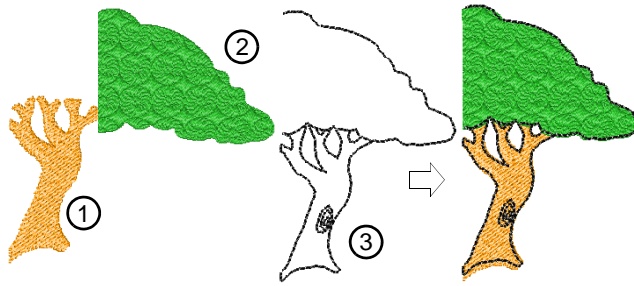
The operation ungroups monogram objects into their component groups – one lettering object, ornaments (each ornament set remaining as a group) and borders (also grouped). See also **Monogramming**.



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 embroidery objects

The **embroidery objects** comprising a design form a 'stitching sequence'. Before digitizing, it is good practice to analyze and plan design shapes and stitching sequence in advance. Shapes need to be clearly defined to make them easy to embroider. The best shapes have relatively constant width, with smooth edges, no sharp turns and no small, protruding details. Details should always be stitched last. See also **Sequencing with the 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 stitch sequence** for details.

Sequencing by cut-and-paste



Click General > Cut to cut a selected object or objects and place them on the clipboard.



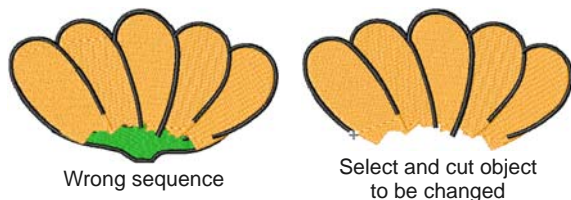
Click General > Paste to paste copied objects in the design.

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 sequence objects by 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.

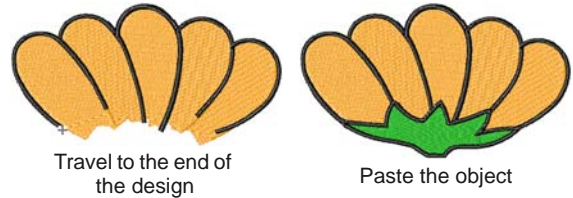


- 3 Travel to the position in the stitching sequence where you want to paste the object. See **Traveling through designs** for details.

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.



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.

Sequencing with the Color Film



Click General > Color Film to open the Color Film. Resequence by dragging and dropping objects in the list.



Click General > Show Individual Objects to view individual objects in order of stitching sequence. Drag and drop object icons to resequence.

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 & selecting color blocks**.

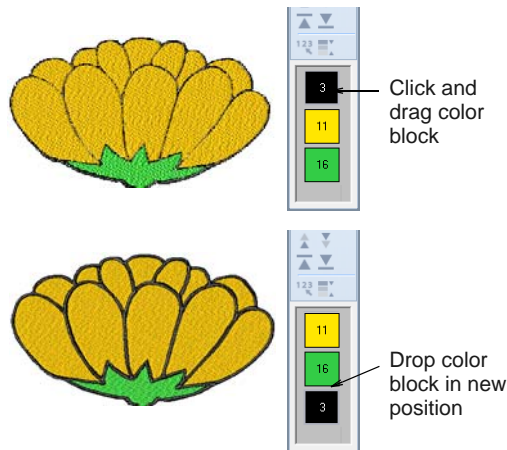


Note There are instances where colors have to be split, particularly when one object is an outline, since outlines are necessarily stitched above fills.

To sequence with the 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.

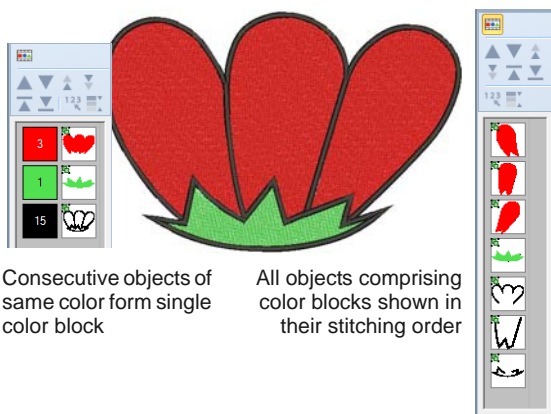
- ▶ Drag and drop color blocks to change their position in the stitching sequence.



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.

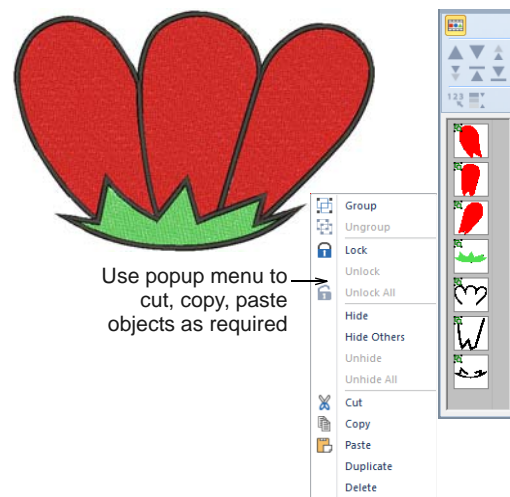
- ▶ Click the **Show Objects** toggle to view individual objects.

All objects within each color block are displayed 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. See **Sequencing by cut-and-paste** for details.



- ▶ Use the **Sequence** command buttons to reposition selected color blocks or individual objects in the stitching sequence. See **Sequencing objects & color blocks** for details.

Sequencing by color



Click General > Color Film to open the Color Film. Resequence by dragging and dropping objects in the list.



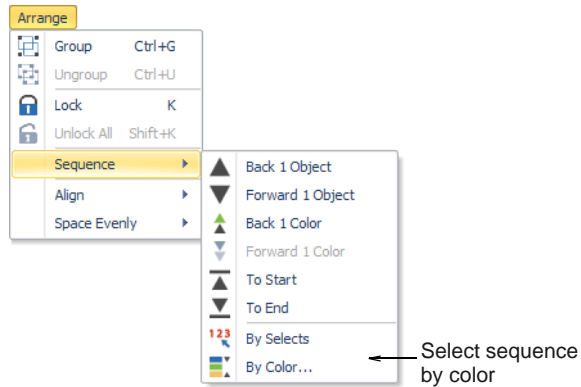
Select Color Film > Sequence by Color to resequence objects by color.

You can resequence objects by color. This reduces the number of color changes in a design. See also **Sequencing with the Color Film**.

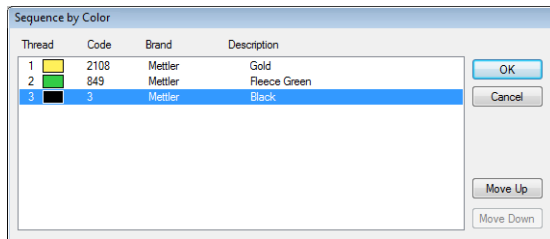
To sequence objects by color

- 1 Select the objects to resequence.
- 2 Select **Sequence by Color** from the **Color Film** toolbar.

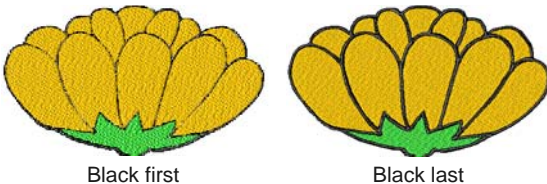
Alternatively, select **Arrange > Sequence by Color**.



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**.



Sequencing objects by selection order

- Click General > Color Film to open the Color Film. Resequence by dragging and dropping objects in the list.
- Use Color Film > Sequence by Selects to resequence objects in the order selected.

You can resequence objects by selecting them in the required stitching order.

To sequence objects by selection order

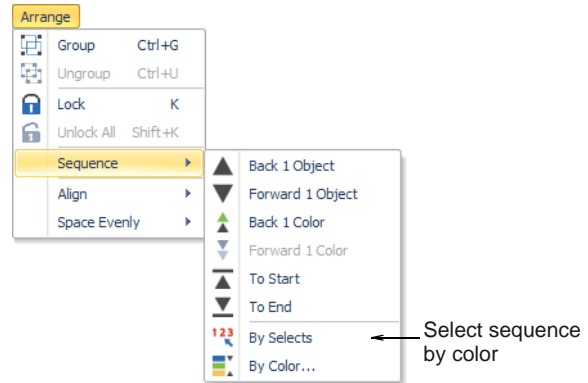
- 1 Select the first object in the range you want to resequence.
- 2 Holding down **Ctrl**, select the subsequent objects to resequence.



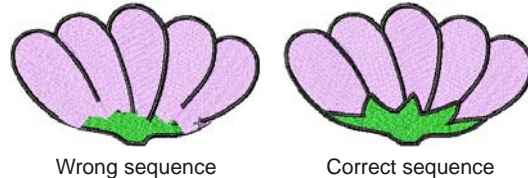
Note Select each object in the order you want it to stitch out in.

- 3 With the objects still selected, select **Sequence by Selects** from the **Color Film** toolbar.

Alternatively, select **Arrange > Sequence by Selects**.



The objects are resequenced in the order they were selected right after the first selected object. See also [Sequencing with the Color Film](#).

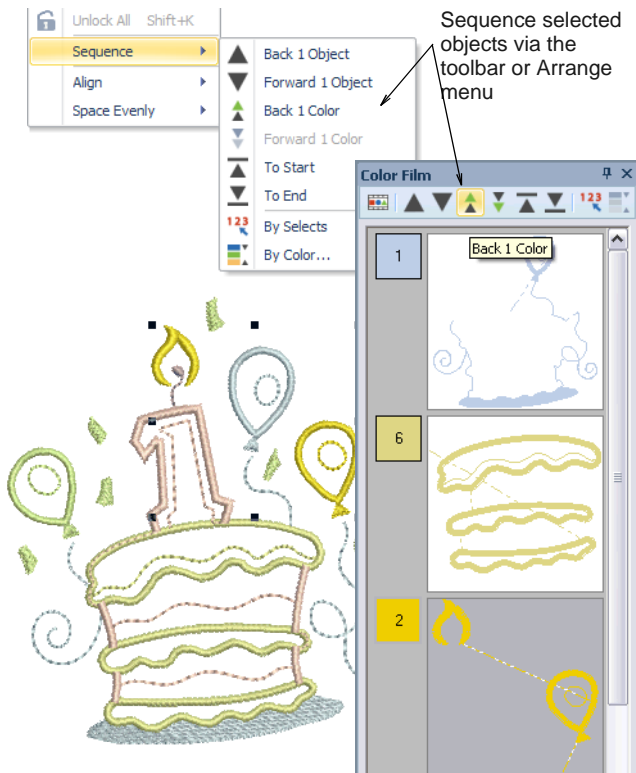


Sequencing objects & color blocks

- Click General > Color Film to open the Color Film. Resequence by dragging and dropping objects in the list.
- Use Color Film > Back 1 Object to move a selection back one object in the stitching sequence.
- Use Color Film > Forward 1 Object to move a selection forward one object in the stitching sequence.
- Use Color Film > Back 1 Color to move a selection back one color in the stitching sequence.
- Use Color Film > Forward 1 Color to move a selection forward one color in the stitching sequence.
- Use Color Film > Move to Start to move a selection to start of stitching sequence.
- Use Color Film > Move to End to move a selection to end of stitching sequence.

The **Color Film** toolbar provides a convenient means for sequencing selected objects and color blocks. The

same options can be accessed from the **Arrange > Sequence** menu.



Auto-sequencing entire designs

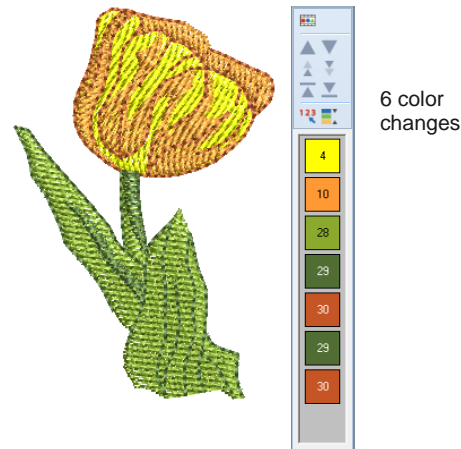
The **Stitch Sequence** feature improves the quality and efficiency of the stitchout by minimizing the number of hoopings, color changes, and trims. All existing overlaps are preserved by the operation. The system analyzes the design and calculates:

- ▶ 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**.

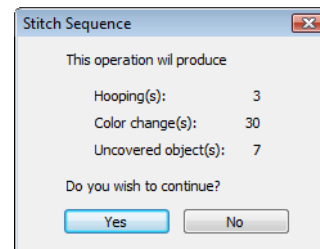
To auto-sequence an entire design

- 1 Open or create a design.



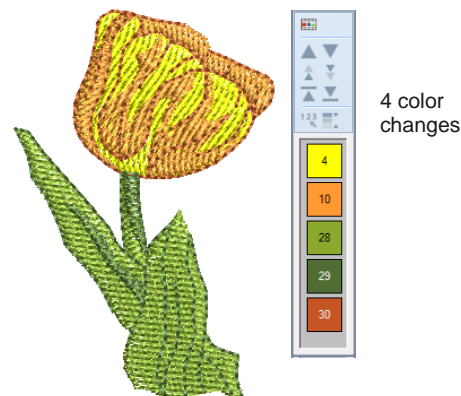
- 2 Select **Design > Stitch Sequence**.

The system analyzes all selected objects and calculates optimal hoopings, color changes and trims.



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 **Hoopings large designs**.

- 3 Confirm whether you want to proceed.





Note The **Undo** command will reverse the effect of any sequencing changes.

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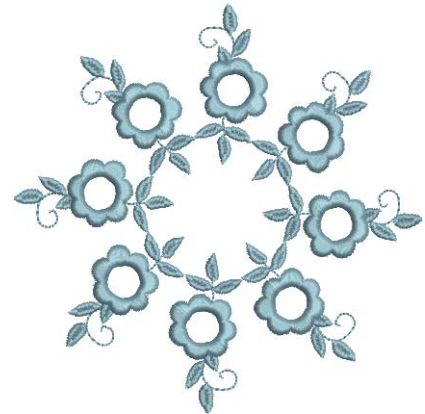
ARRANGING & TRANSFORMING OBJECTS

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.

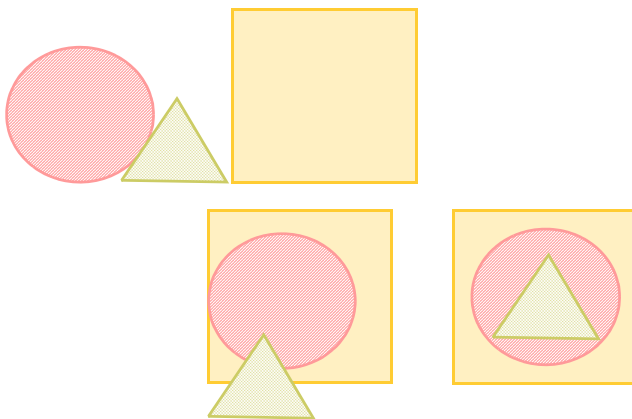
Special tools allow you to duplicate and transform selected embroidery objects, as well as create mirrored and rotated objects around a central axis.

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.



Arranging objects

Position objects in your design using the mouse to drag them to a new position, nudging them with the arrow keys or by specifying the X:Y coordinates in the **Property** bar. Alternatively, BERNINA Embroidery Software provides tools to help you align objects relative to each other, or distribute them evenly in your design.



Positioning objects

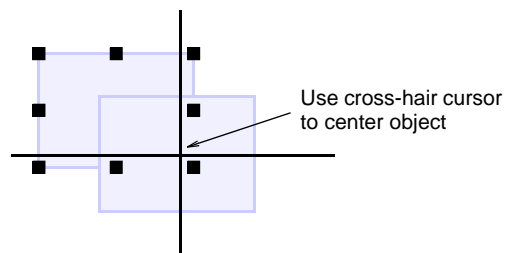
The simplest way to move an object in your design is to click-and-drag it to a new position. Use the arrow keys to 'nudge' objects into position.



Tip If no objects are selected, using the arrow keys moves the current needle position.

To position objects

- ▶ Select the objects to move and click-and-drag to a new position. See [Selecting Objects](#) for details.



- ▶ For more accurate positioning, use the arrow keys to 'nudge' an object into position.

- For even more accurate positioning, enter X:Y coordinates in the **Transform** toolbar. The object is centered around the coordinates you set.

X:	-112.58	mm	W:	3in	mm	162.17	%	
Y:	-53.33	mm	H:	25.38	mm	162.17	%	

Check position of selection

Hello!



Tip Zoom in 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.

Aligning objects



Use Transform > Select Object to select an object.



Click Arrange > Align Left to left-align selected objects.



Click Arrange > Align Vertical Center to vertically align centers of selected objects.



Click Arrange > Align Right to right-align selected objects.



Click Arrange > Align Top to align selected objects along their top sides.



Click Arrange > Align Horizontal Center to horizontally align centers of selected objects.



Click Arrange > Align Bottom to align bottoms of selected objects.



Click Arrange > Align Centers to align centers of selected objects.

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'.

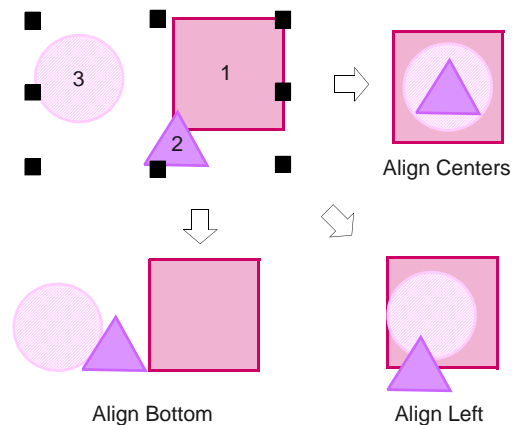
To align objects

- 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 **selection marquee** all the objects are aligned with the last object in the sequence.

- 3 Click one of the alignment icons on the **Arrange** toolset.



Distributing objects



Click Arrange > Space Evenly Across to evenly distribute three or more selected objects horizontally.

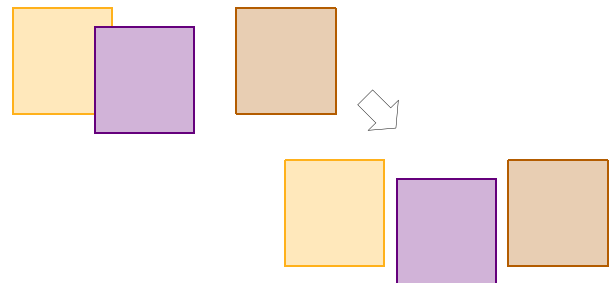


Click Arrange > Space Evenly Down to evenly distribute three or more selected objects vertically.

You can automatically distribute selected objects with even spacing between them, both vertically or horizontally.

To distribute objects

- 1 Select the objects you want to space. See [Selecting Objects](#) for details.
- 2 Click a spacing tool or select **Arrange > Space Evenly > ...**



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.

Checking dimensions

When doing any sizing work, you need to be aware of current dimensions. Typically, you will be scaling an entire design for different applications. For example, if you are stitching a left chest design, maximum size will be approximately 4.25" or 108 mm square.



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 check dimensions

- 1 Turn on the grid and/or ruler as required. See **Displaying rulers & guides** for details.
- 2 Select the design or object/s to scale. See **Selecting objects by point & click** for details.
- 3 Check design dimensions in the **Status Bar**. See **Status bar** for details.
- 4 Check dimensions of the selection in the **Transform** toolbar. See also **Measuring distances onscreen**.

X:	-112.58	mm	W:	3in	mm	162.17	%	
Y:	-53.33	mm	H:	25.38	mm	162.17	%	

Check dimensions of selection

Hello!

- 5 Set the required measuring units. See **Setting measurement units** for details.

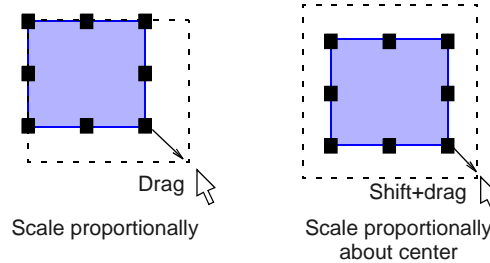
Scaling by click & drag

Change height and width of an object or entire design. Scale objects individually, or select multiple objects and scale them together. Scale proportionally using the selection handles.

To scale by click & drag

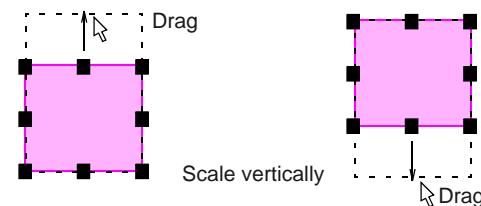
- ▶ Select the design or object/s to scale. See also **Checking dimensions**.
- ▶ Click and drag selection handles to resize.

- ▶ To scale height and width proportionally, use a corner handle.

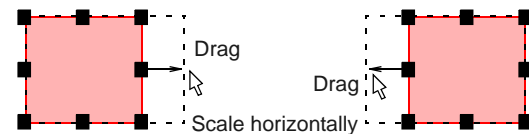


Tip Use the tooltip as a guide to object scale.

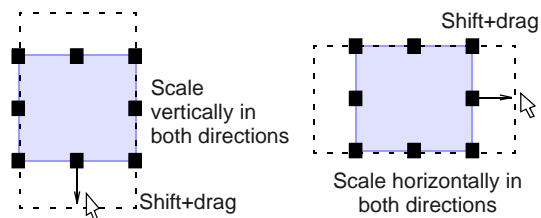
- ▶ To scale freely in vertical and horizontal planes, hold down **Ctrl** as you drag.
 - ▶ To change the height, use the handles at the center-top or center-bottom.



- ▶ To change the width, use the handles at the center-sides.



- ▶ To resize around a center anchor, hold down **Shift** while you resize.



Scaling by properties



Click Transform > Scale Up to increase size of selected object/s in 20% increments.



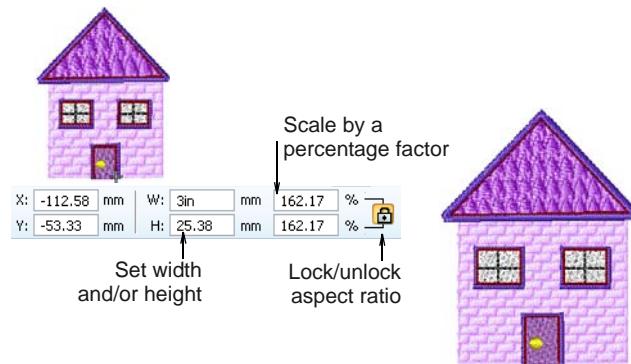
Click Transform > Scale Down to reduce size of selected object/s in 20% increments.

You can scale the height and width of selected objects or a whole design using **object properties**.



To scale by properties

- ▶ Select the design or object/s to scale. See also **Checking dimensions**.
- ▶ For quick scaling, use the **Scale Up/Down** icons.
- ▶ For more precise scaling, adjust dimensions of selection in the **Transform** toolbar and press **Enter**. See also **Measuring distances onscreen**.



- ▶ Optionally, you can specify measurement units on-the-fly. See also **Specifying measurement units on-the-fly**.
- ▶ Use the **Aspect Ratio** toggle to decouple width and height settings.
- ▶ Press **Apply**.

Rotating objects

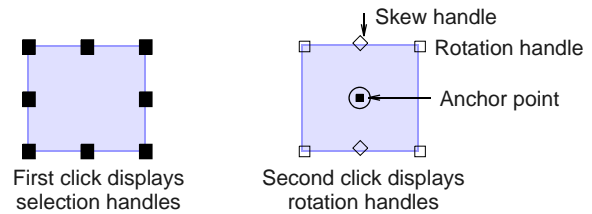
You can rotate objects directly on-screen or by setting an exact rotation angle.

Rotating by click & 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 by click & drag

- 1 Select the design or object/s to rotate.

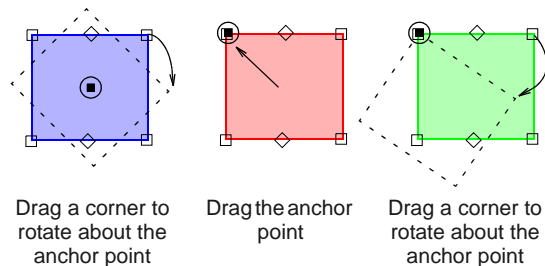


- 2 Click the object/s a second time.

Rotation handles appear at the corners and an anchor point at the center of the object.

- 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.



Rotating by properties



Click Transform > Rotate Right to Rotate selected objects in 45° increments to right.



Click Transform > Rotate Left to rotate selected objects in 45° increments to left.



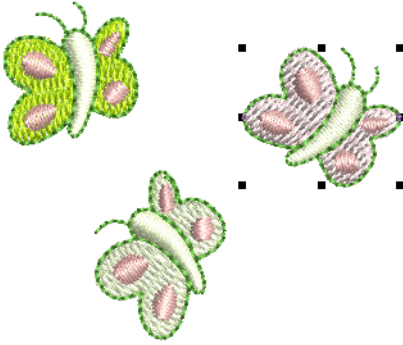
Rotate selected objects by specified amount – positive or negative – in degrees.

Use the rotation tools to rotate objects by specified degrees in either direction.

To rotate by properties

- ▶ Select the design or object/s to rotate.

- ▶ Click **Rotate Right / Left** on the toolbar.



- ▶ Alternatively, use the **Rotate By** field on the **Transform** toolbar to enter an exact rotation angle – plus or minus – and press **Enter**.

Skewing objects

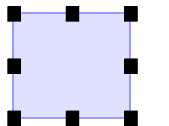


Skew selected objects by specified amount – positive or negative – in degrees.

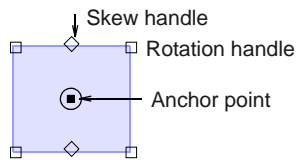
You can skew objects directly on-screen or by setting an exact skew angle.

To skew objects

- ▶ Select the design or object/s to skew.

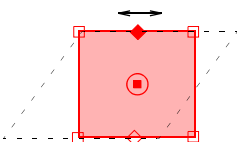


First click displays selection handles



Second click displays rotation handles

- ▶ Click a second time.
Rotation handles appear at the corners and skew handles at center-top and bottom of the object.
- ▶ Drag skew handles left or right.



Drag skew handle left or right

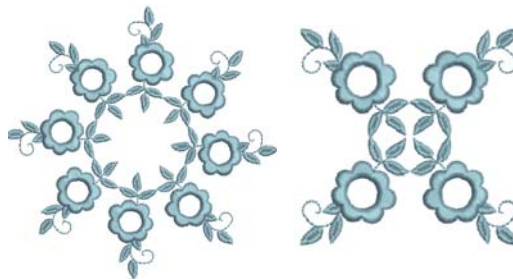
- ▶ Alternatively, use the **Skew** field on the **Transform** toolbar to enter an exact skew angle – plus or minus – and press **Enter**.

Skew

Skew

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 horizontally or vertically



Click Transform > Mirror Horizontal to flip selected object/s in horizontal planes.

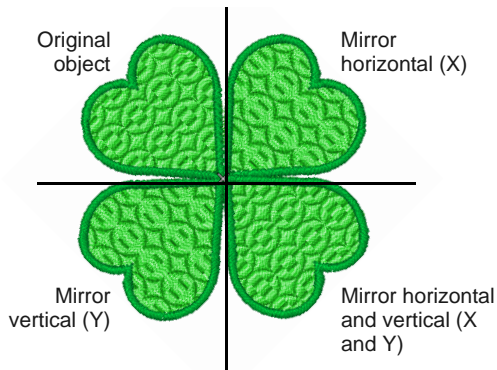


Click Transform > Mirror Vertical to flip selected object/s in vertical planes.

You can mirror selected objects horizontally or vertically using **Mirror Horizontal** or **Mirror Vertical**.

To mirror horizontally or vertically

- 1 Select the object/s to mirror.



- 2 Click the **Mirror Horizontal** icon to flip horizontally or **Mirror Vertical** to flip vertically.

Mirror-merging objects



Use Mirror-Merge > Mirror-Merge Horizontal to duplicate & mirror horizontally and merge overlapping objects (optional).



Use Mirror-Merge > Mirror-Merge Vertical to duplicate & mirror vertically and merge overlapping objects (optional).

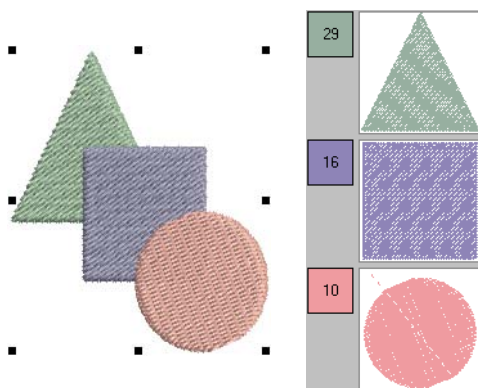


Use Mirror-Merge > Mirror-Merge Horizontal/Vertical to duplicate & mirror objects around a center point.

The **Mirror-Merge** tools allow you to duplicate and transform selected **embroidery objects** in vertical and horizontal planes. Colors are automatically resequenced during the mirror-merge operation. Optionally, overlapping objects can be merged in to a single object.

To mirror-merge objects

- 1 Select the object/s.



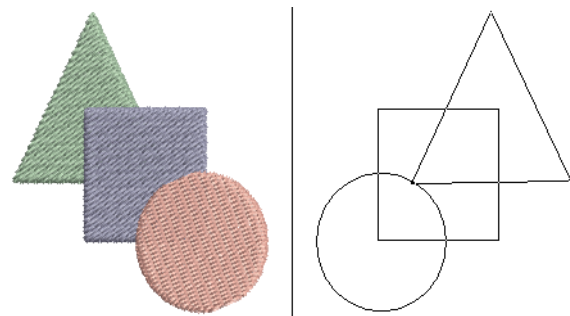
Note Make sure the source object/s are ungrouped otherwise colors will not be automatically resequenced.

- 2 Select a **Mirror-Merge** tool:

- ▶ Mirror-Merge Horizontal
- ▶ Mirror-Merge Vertical
- ▶ Mirror-Merge Horizontal/Vertical

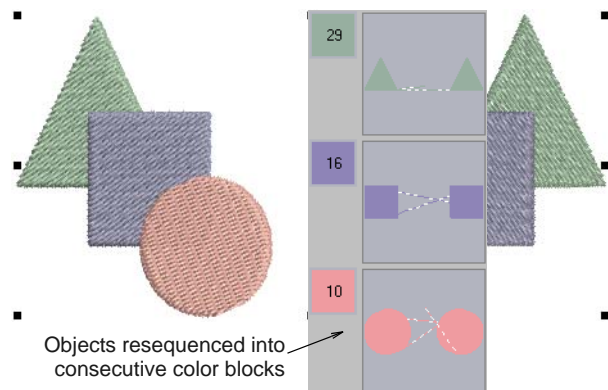
The technique for each is essentially the same.

- 3 Move the reference line to the position you want to add the mirrored objects.

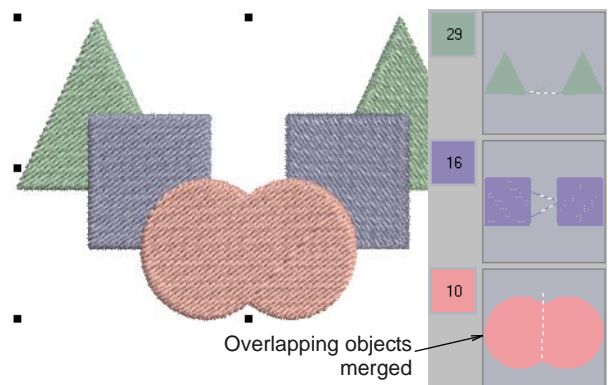


- 4 Click to place the mirror image.

Note that mirrored objects are resequenced into consecutive color blocks.



Note If the mirrored copy overlaps the original object, you are prompted to merge objects.



Creating wreaths



Use Mirror-Merge > Mirror-Merge Wreath to duplicate objects around a central axis. Specify duplicates in Mirror-Merge Settings toolbar.



Use Mirror-Merge > Kaleidoscope to duplicate & mirror objects around a central axis. Specify duplicates in Mirror-Merge Settings toolbar.

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 Kaleidoscope OFF



Six-point wreath with Kaleidoscope ON



Tip Use the **Wreath** tool with alphabets and numbers to create fun designs.

To create a wreath

- 1 Select the object/s.

Make sure the source object/s are ungrouped otherwise colors will not be automatically resequenced.

- 2 Click the **Wreath** icon.



Additional wreath settings toolbar opens

- 3 Enter a number of **Wreath** points.

Enter an even number to activate the **Kaleidoscope** icon.



Odd number of wreath points

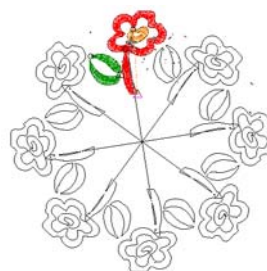


Even number of wreath points

Kaleidoscope icon becomes available

- 4 Click the **Kaleidoscope** icon as desired.

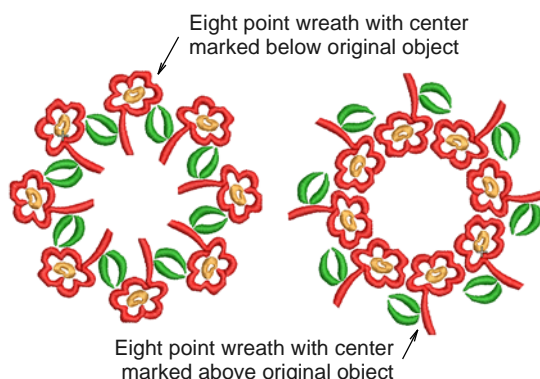
- 5 Move the reference line to the center of the wreath and click to mark the anchor point.



Move pointer to set the center point



Tip Hold down **Ctrl** to constrain the line to 45° angles.



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.

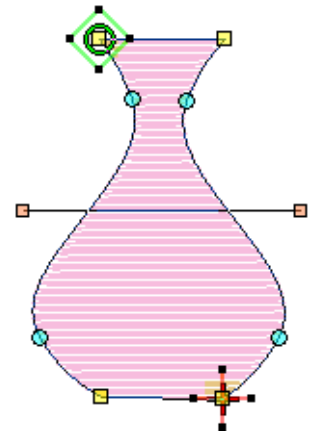
CHAPTER 19

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](#).



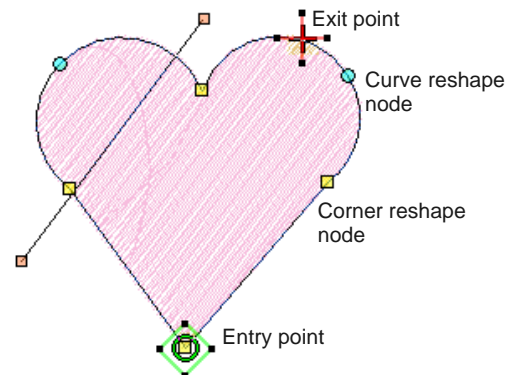
Reshaping objects

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.

Reshape nodes appear around the object.



Viewing & selecting reshape nodes



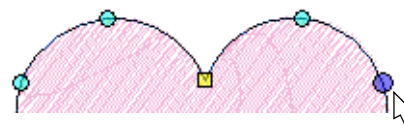
Click Transform > Reshape Object to view the reshape nodes of a selected object.

Reshape nodes can be selected individually or together, for repositioning or modification.

To view & select reshape nodes

- ▶ Select an object and click the **Reshape Object** icon.

- ▶ Click to select a single reshape node.



- ▶ Holding down **Ctrl**, click to select multiple reshape nodes.

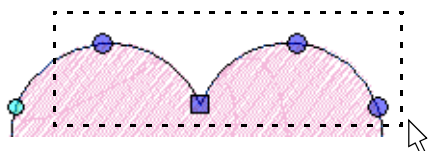


- ▶ Holding down **Shift** key, click to select a range of reshape nodes.



Tip Left-clicking or right-clicking in closed shapes reverses the direction of the selection.

- ▶ Click and drag a **selection marquee** around a group of reshape nodes to select.



Reshaping objects using reshape nodes

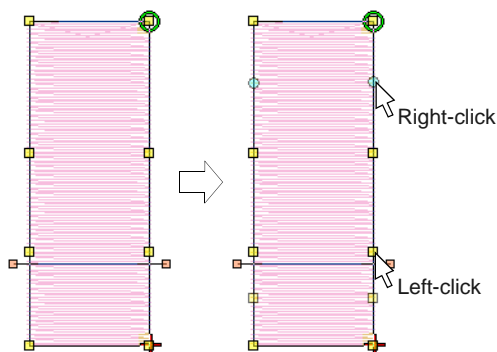


Click Transform > Reshape Object to reshape selected objects.

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.

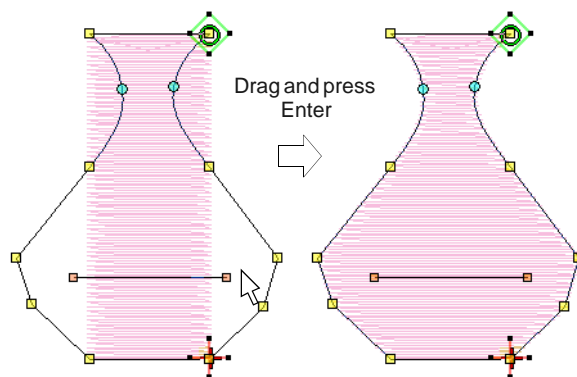
To reshape objects using reshape nodes

- 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.



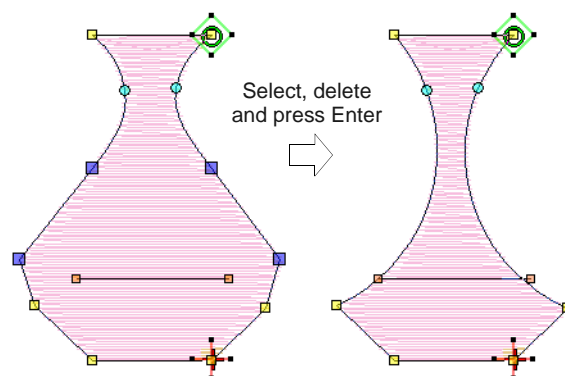
- 4 Select reshape nodes as required. See [Viewing & selecting reshape nodes](#) for details.

- 5 Adjust the position of selected reshape nodes by dragging them along the outline as required and press **Enter**.



Tip Use the arrow keys to 'nudge' selected reshape nodes.

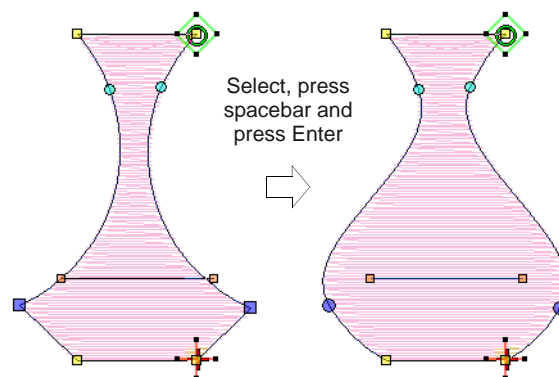
- 6 Press **Delete** to delete unwanted reshape nodes and press **Enter**.



- 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.





Note You can also adjust **stitch angles** as required, as well as change entry and **exit points**. See **Modifying stitch angles** and **Adjusting entry & exit points** for details.

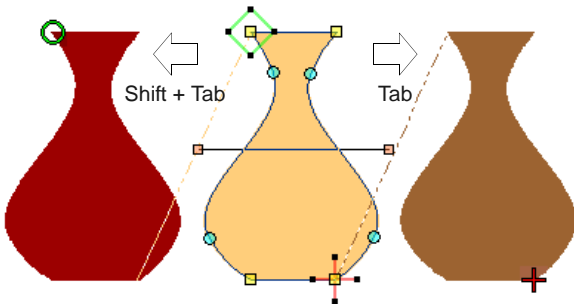
- 8 Press **Esc** to finish.

Reshaping next or previous objects

When editing an object in **Reshape** mode, use the **Tab** key to quickly jump between objects. See also **Deselecting & deleting 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.



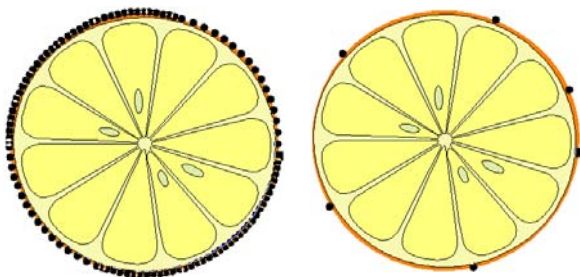
- ▶ Pressing **Shift + Tab** causes all changes to the object to be accepted and the **previous** object in the stitching sequence to be selected for reshaping.

Smoothing curves



Click **Transform > 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.



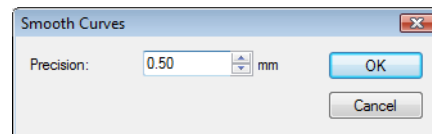
To smooth curves

- 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.



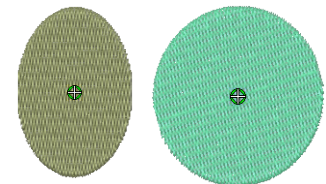
- 4 In the **Precision** field, enter the smoothing precision value.
This value controls how closely the smoothed outline follows the original. The larger the precision value, the fewer the reshape nodes.
- 5 Click **OK**.

Reshaping circle objects

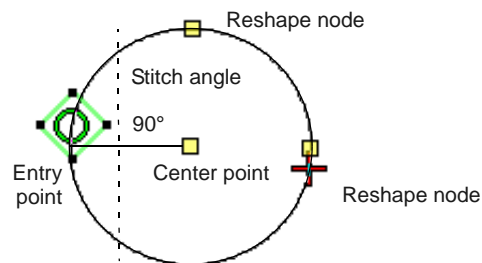


Click **Transform > Reshape Object** to reshape circle objects.

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.

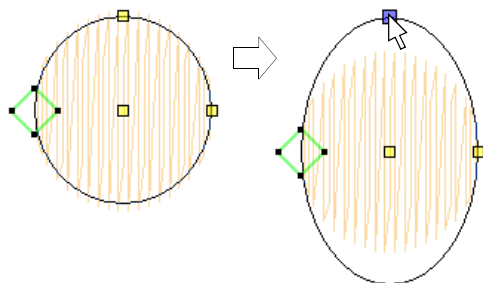


You can change Circle objects from circles to ovals using the **Reshape Object** tool. Circle objects have two reshape nodes (used to change the radius and orientation of the object), a center point (used to reposition it), and a stitch entry point.

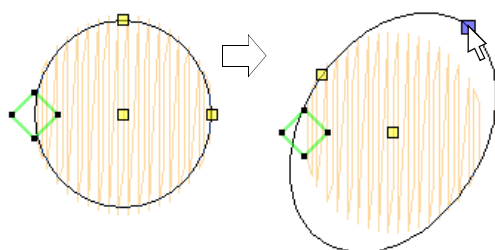


To reshape circle objects

- 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.



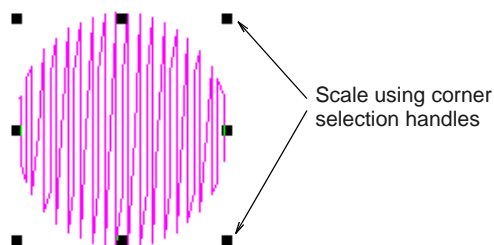
- ▶ To reshape and spin the object around its center point, use the reshape node at the side.



- 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.



Reshaping pattern runs



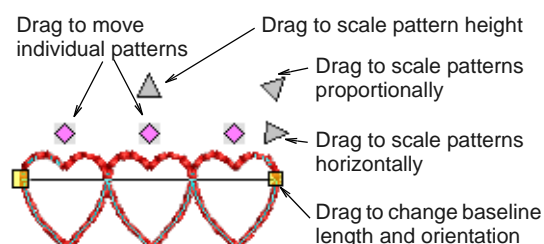
Click Transform > Reshape Object to view the reshape nodes of a selected object.

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.

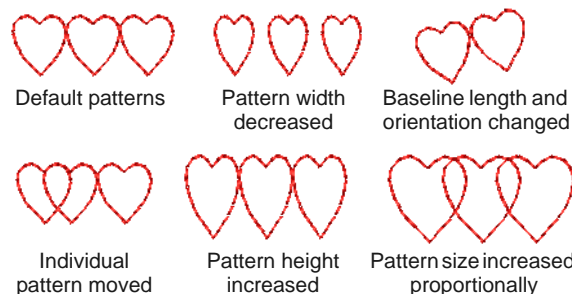


To reshape pattern runs

- 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.



- 3 Press **Esc** to finish.



Modifying 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

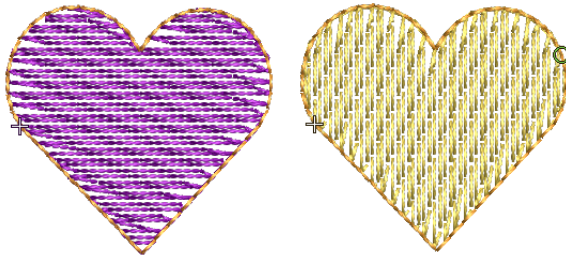


Use Edit > Add Stitch Angles to add stitch angles to closed objects with or without holes. Right-click for settings.



Use Edit > Remove Stitch Angles to remove stitch angles from closed objects with turning stitches.

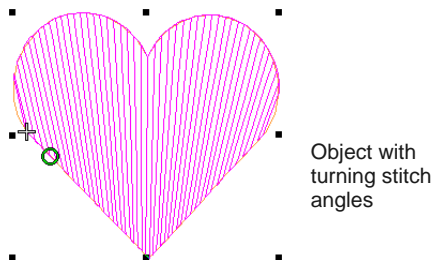
You can change the nominal stitch angles of filled objects using **object properties**.



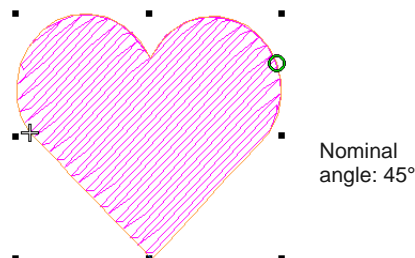
Note Whenever **Remove Stitch Angles** is applied to selected objects with turning stitch angles, the resultant object takes a single, nominal stitch angle.

To set the nominal stitch angle

- 1 Select an closed object with or without **turning stitches**.

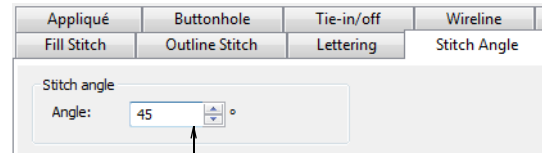


- 2 If necessary, click the **Remove Stitch Angles** tool to return it to the current nominal stitch angle.



- 3 Right-click the **Add Stitch Angles** icon. Alternatively, double-click or right-click the object itself.

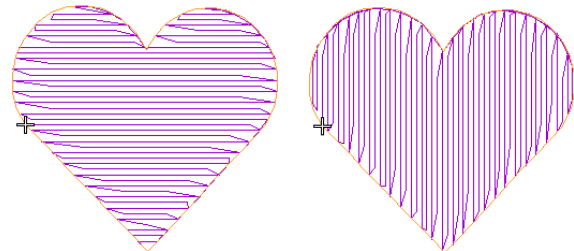
The **Object Properties** dialog opens.



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 and removing stitch angles

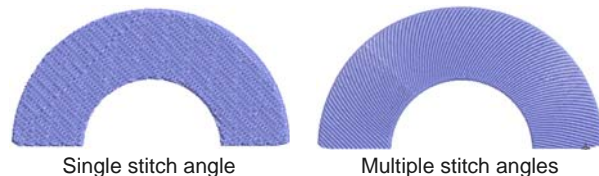


Use Edit > Add Stitch Angles to add stitch angles to closed objects with or without holes. Right-click for settings.



Use Edit > 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:

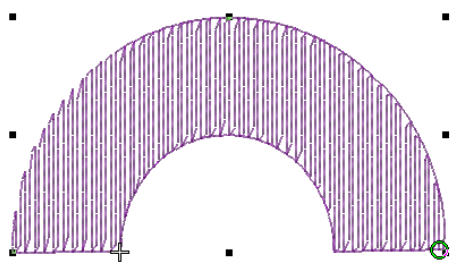
- ▶ turning stitch angles
- ▶ a single stitch angle, with or without hole(s).



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.

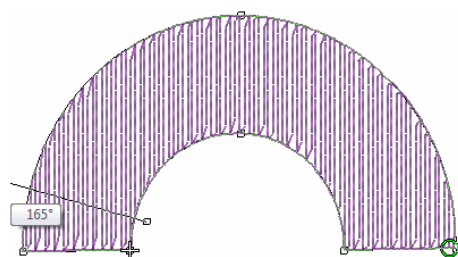
To add or remove stitch angles

- 1 Select an closed object with or without **turning stitches**.



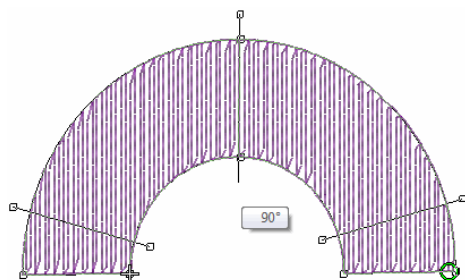
Note If a **Stitch Angles** tool is applied to an object with a **Star Fill** or **Wave Fill** effect, the effect is removed.

- 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.

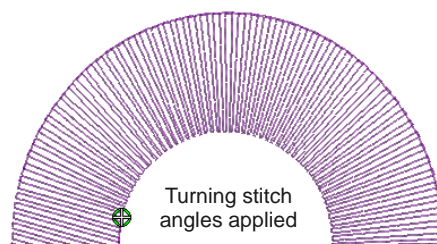
- 4 Digitize stitch angles – Points 1 and 2 – so that they intersect two sides of the object. Make sure that they do not intersect each other.



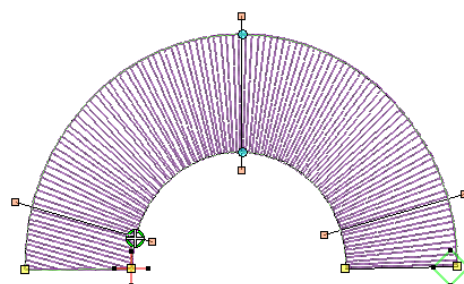
Caution New stitch lines should not intersect existing stitch lines or an error message displays. Press **Backspace** to delete.

- 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.



Tip Use the **Reshape Object** tool to adjust reshape nodes as required. See **Adjusting stitch angles** for details.

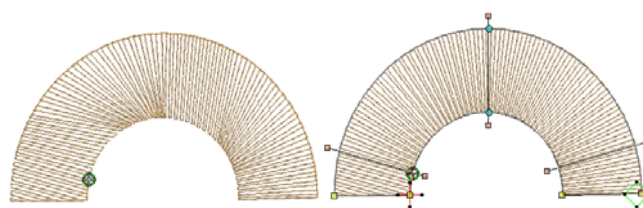


Adjusting stitch angles



Click **Transform > Reshape Object** to adjust the multiple stitch angles of a selected object.

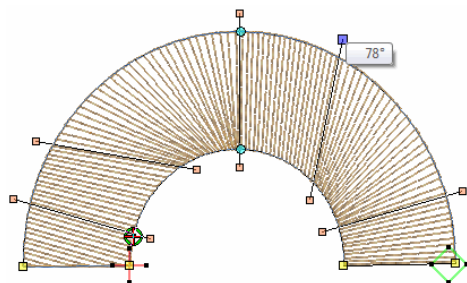
You can change stitch angles of filled objects using the **Reshape Object** tool.



To adjust stitch angles

- 1 Select the filled object.
- 2 Click the **Reshape Object** icon.

Reshape nodes appear including stitch angle lines.

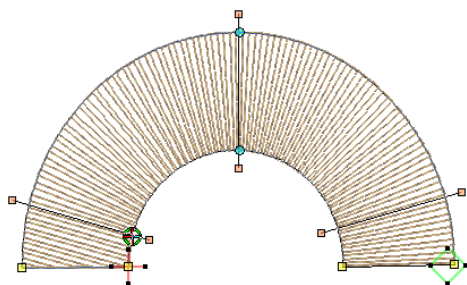


- 3 Select stitch angle nodes and press **Delete** to remove stitch angles.



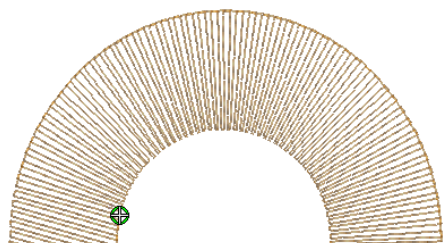
Tip When you move the mouse pointer over the stitch angle point, a tooltip displays the stitch angle of the selected object.

- 4 Click and drag lines as required.



- 5 Press **Enter** to apply the changes, then **Esc** to finish.

The object is re-stitched with the new angles.



Tip To set a precise stitch angle, use object properties. See [Setting nominal stitch angles](#) for details.

Adjusting entry & exit points



Click Transform > Reshape Object to adjust the entry and exit points of a selected object.

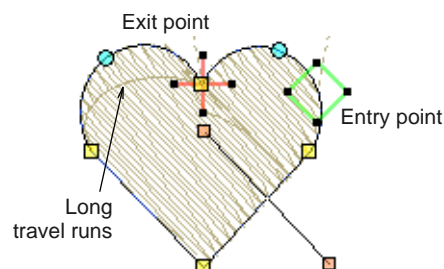
The default **Closest Join** method automatically calculates the closest join between objects while

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 & exit points

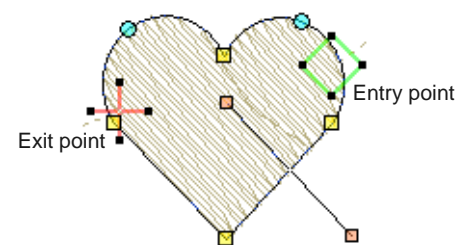
- 1 Select the object.
- 2 Click the **Reshape Object** icon.

Reshape nodes appear, including entry and exit points.

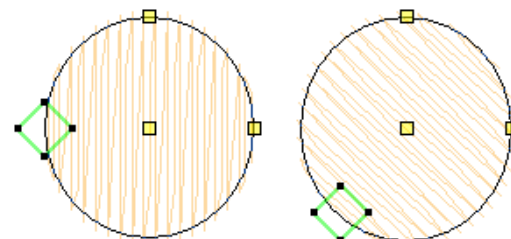


Note In Circle objects, only the entry point appears.

- 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.



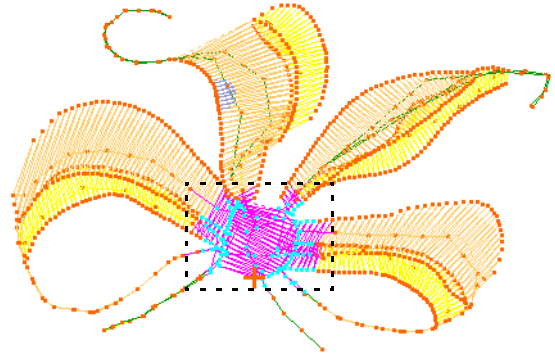
Note In Circle objects, the stitch angle is perpendicular to the line connecting the entry point to the circle center. Thus, changing the stitch entry point in a Circle object changes its stitch angle.



CHAPTER 20

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 **selection marquee** around them. Selected stitches are highlighted in a different color.

Selecting stitches by needle point



Click Edit > Stitch Edit to place stitch cursor at a selected insertion point.

You can select individual stitches in **Stitch Edit** mode by selecting their needle points.

To select stitches by needle point

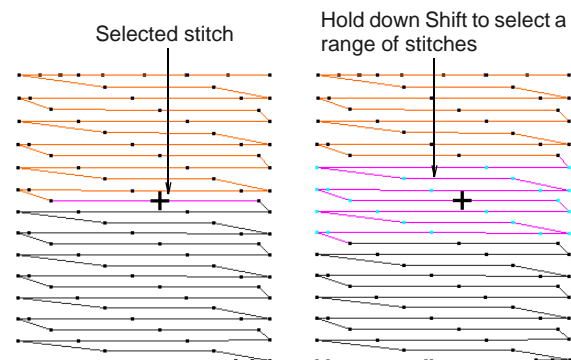
- 1 Select **Edit > Stitch Edit**. Alternatively press **E**.



Tip Zoom in and display the needle points for easier selection. See [Zooming in & out](#) and [Viewing embroidery elements](#).

- 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.



- ▶ To select a range, hold down **Shift** as you click.
- ▶ To select multiple items, hold down **Ctrl** as you click.

Selecting stitches with a selection marquee



Click Edit > Stitch Edit to place stitch cursor at a selected insertion point.

You can quickly select all stitches in a group by dragging a **selection marquee** around them.

To select stitches with a selection marquee

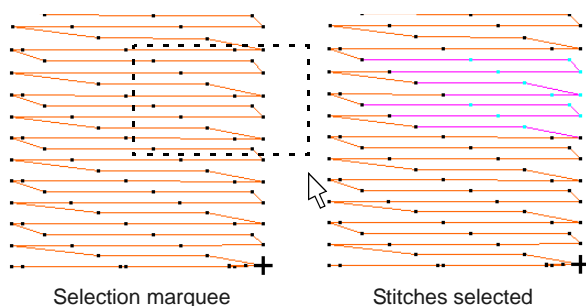
- 1 Select **Edit > Stitch Edit**. Alternatively press **E**.



Tip Zoom in and display the needle points for easier selection. See **Zooming in & out** and **Viewing embroidery elements**.

- 2 Drag a **selection marquee** around the stitches you want to select.

Stitches are selected when you release the mouse button.



Inserting stitches



Click **Edit > Stitch Edit** to place stitch cursor at a selected insertion point.

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.

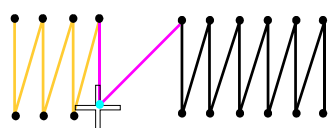
To insert stitches

- 1 Select **Edit > Stitch Edit**. Alternatively press **E**.



Tip Zoom in and display the needle points for easier selection. See **Zooming in & out** and **Viewing embroidery elements**.

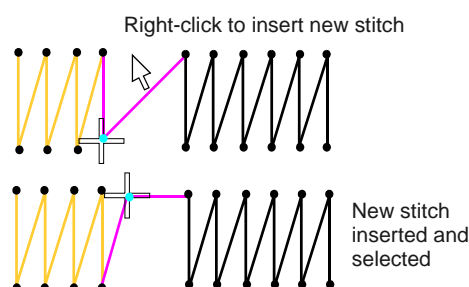
- 2 Select a needlepoint.



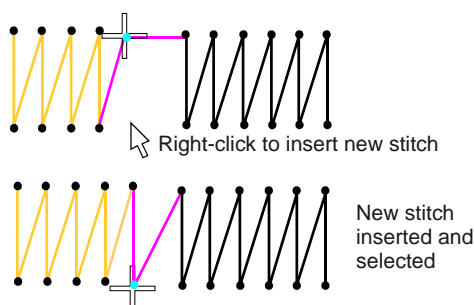
The needle point and stitch colors change and the needle position marker moves to the selected

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.



- 4 Move the mouse to where you want to insert the next stitch, and right-click.



- 5 Continue right-clicking as required.

Moving stitches



Click **Edit > Stitch Edit** to place stitch cursor at a selected insertion point.

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

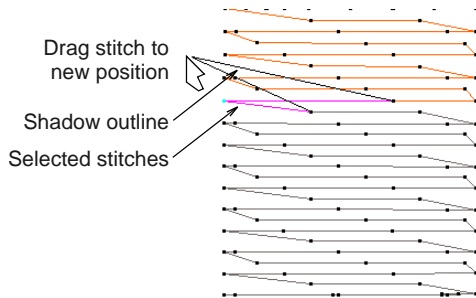
- 1 Select **Edit > Stitch Edit**. Alternatively press **E**.



Tip Zoom in and display the needle points for easier selection. See **Zooming in & out** and **Viewing embroidery elements**.

- 2 Select stitches and drag them to a new position.

The stitch shadow outline shows the new position.



3 Press **Enter**.

Deleting stitches



Click **Edit > Stitch Edit** to place stitch cursor at a selected insertion point.

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

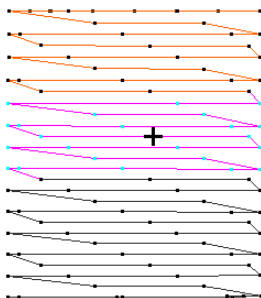
1 Select **Edit > Stitch Edit**. Alternatively press **E**.



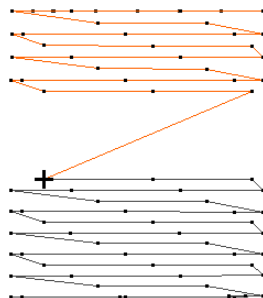
Tip Zoom in and display the needle points for easier selection. See **Zooming in & out** and **Viewing embroidery elements**.

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 & 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 & 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 & Fills](#) for details.

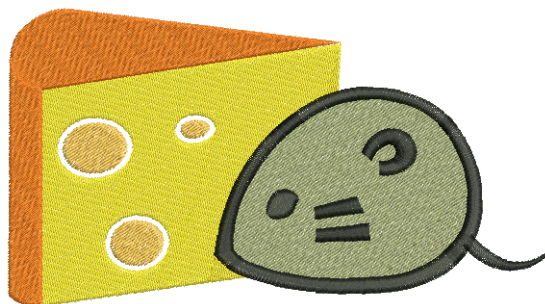
Digitizing for appliqué

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 21

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

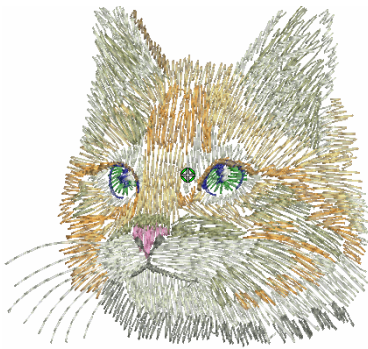
The **Freehand Embroidery** feature provides functionality similar to CorelDRAW® **Freehand** and **Polyline** tools. This is a technique that lets you create designs with a hand-drawn appearance, something which is difficult to achieve through conventional digitizing methods. The aim is to mimic designs formed on an embroidery machine by freehand motion. The difference is that the fabric secured in an

embroidery hoop, allowing the needle to 'draw' on the fabric surface, exactly as you have drawn on-screen.



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 shapes



Use Digitize > Open Freehand to draw embroidery outlines onscreen in the current stitch type.



Use Digitize > Closed Freehand to draw closed embroidery objects onscreen in the current stitch type – outline or fill.

The **Freehand Embroidery** 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.



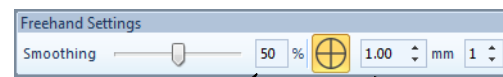
Tip The **Freehand Embroidery** tools can be operated with a mouse or WACOM pen.

To create freehand shapes

- ▶ To create freehand objects, select a **Freehand** tool.
- ▶ Select a color from the **Color Palette** and any of the available stitch types.

The full range of outline stitches is available for use and, with the **Closed Freehand** tool. Most fill stitch types as well.

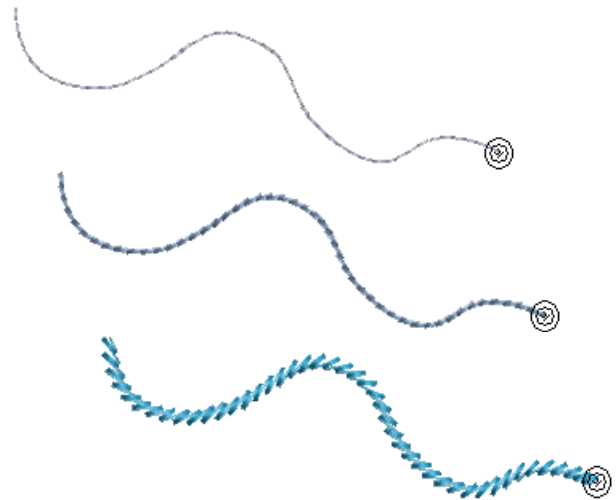
- ▶ Choose the preferred cursor style, and pre-set a smoothing factor to determine how closely to follow the digitized line. See [Adjusting freehand line smoothness](#) for details.



Set smoothing preference

Choose cursor style

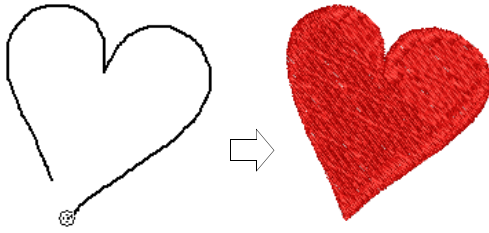
- ▶ Click and drag to draw. Release to finish. BERNINA Embroidery Software displays the stitches as you drag.



- ▶ To create closed objects, select the **Closed Freehand** tool.
- ▶ If **Outline** is selected in the **Color Palette**, 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.
BERNINA Embroidery Software closes and smooths the object outline.



Tip Combined with the **Raised Satin** stitch **Calligraphy** setting, **Open Freehand** can be used to create embroidered calligraphy. For best results, a wider satin width and more layers than the default may be required. See also **Creating satin outlines**.

Adjusting freehand line smoothness



Use Digitize > Open Freehand to draw embroidery outlines onscreen in the current stitch type.

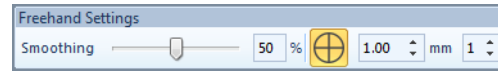


Use Digitize > Closed Freehand to draw closed embroidery objects onscreen in the current stitch type – outline or fill.

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 Settings** toolbar. This toolbar can be docked or floating.

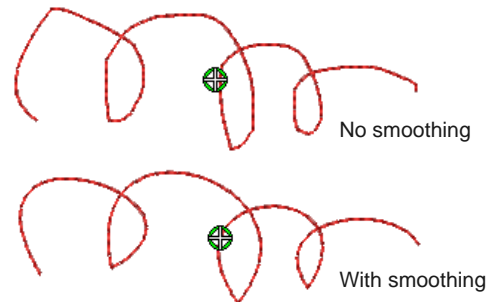
To adjust freehand line smoothness

- ▶ Create a freehand design using outline and/or filled objects. See **Creating freehand shapes** for details.






- ▶ Adjust the 'smoothness' of your freehand lines by means of the **Smoothing** controls.

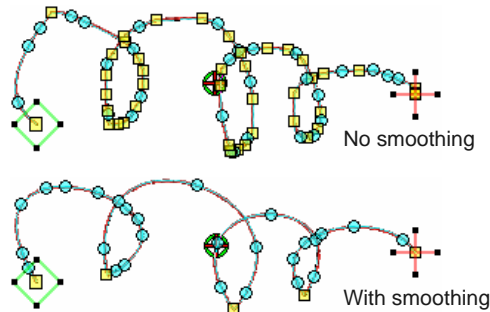
The toolbar contains a **Smoothing** control which lets you specify, as a percentage, how closely the smoothed outline follows the original. By adjusting the percentage, you increase or decrease the number of **control points** BERNINA Embroidery Software uses to define an embroidery shape.



- ▶ Toggle display of the freehand cursor guide as required:

Tool	Note
	Use Show Guide to toggle freehand digitizing guide cursor – provides more control over 'freehand' drawing than the default pointer.
	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 set the number of circles in the freehand cursor – 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.



- ▶ 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.



- ▶ 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 **Transform** toolbar.

Reinforcing outlines

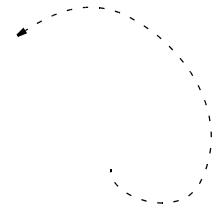
Use the **Double Run** feature to reinforce outlines. Use **Blackwork Run** to join selected outlines to form a single grouped, reinforced outline, correctly sequenced for efficient stitchout.

Reinforcing outlines with Double Run



Use **Edit > Double Run** to reinforce outlines, stitching it in the opposite direction.

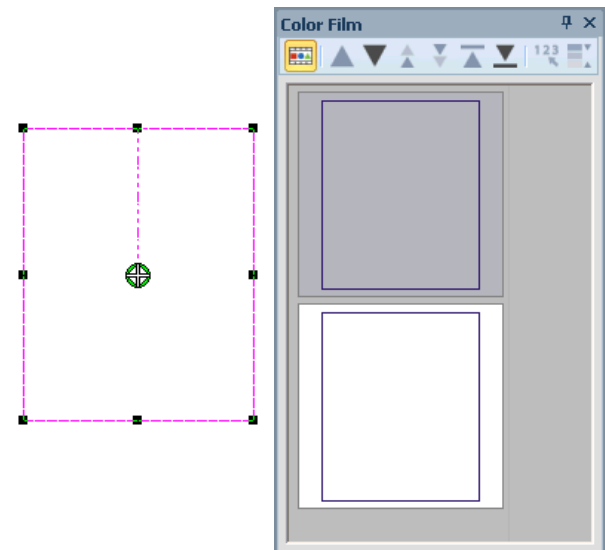
Use the **Double Run** feature to reinforce outlines. Double Run stitches in reverse direction to the original. It is typically used to make run stitch outlines thicker without creating unwanted connecting stitches. It can also be applied to filled objects.



To reinforce outlines with Double Run

- 1 Select the object/s to reinforce.
- 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 any of the following methods:
 - ▶ Check the stitch count in the **Status Bar**.
 - ▶ View the objects in the **Color Film**. See also [Viewing & selecting color blocks](#).
 - ▶ Travel through the stitches. See [Viewing stitch sequence](#) for details.
 - ▶ Use **Slow Redraw**. See [Simulating design stitchouts](#) for details.

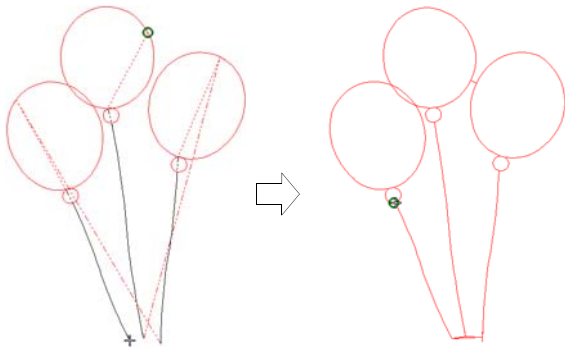
Reinforcing outlines with Blackwork Run



Use **Edit > Blackwork Run** to automatically sequence selected outlines for efficient stitchout.

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](#).



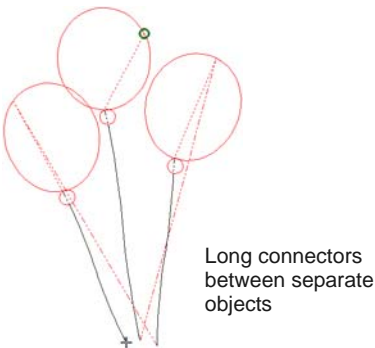
Blackwork Run works with embroidery outlines consisting of one or a combination of Open Object, Closed Object, Ellipse, or Rectangle object types. All outline stitches can be used except for **Pattern Run**, **Blackwork Border** or **Candlewicking Border**. See [Outline & Fill Stitches](#) for details.



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

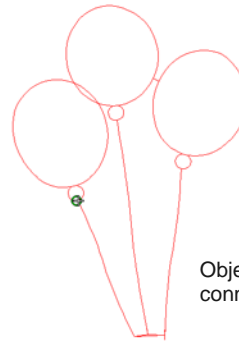
- 1 Select outline objects.



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 stitch 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 through designs](#) for details.

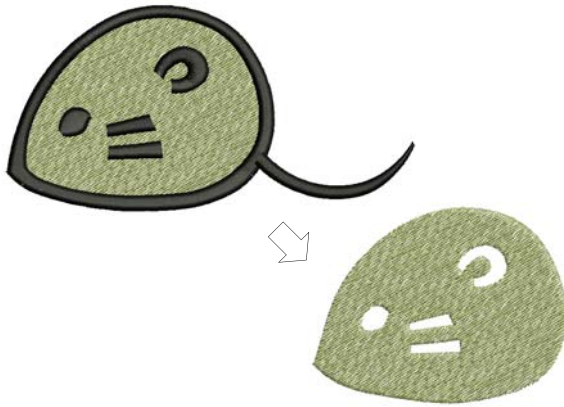
Removing underlying stitching



Use Edit > Remove Overlaps to remove unwanted stitching underlying objects or lettering.

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:

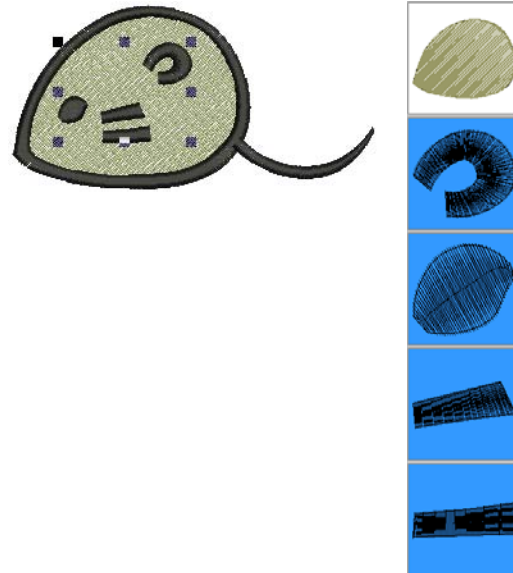
- ▶ Filled objects
- ▶ Auto Appliqué objects
- ▶ Outline objects.

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.

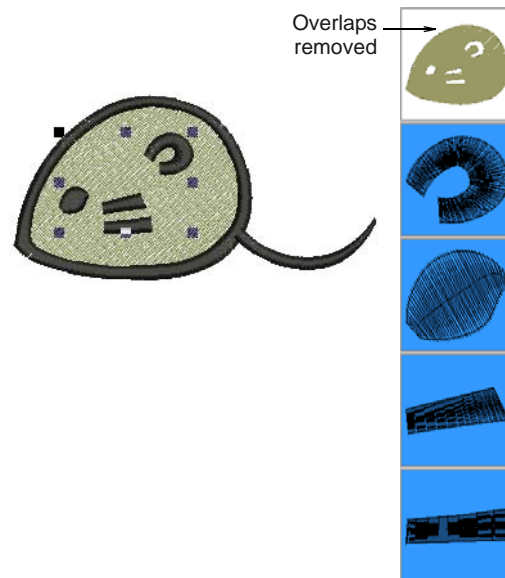
To remove underlying stitching

- 1 Select one or more 'cutters'.



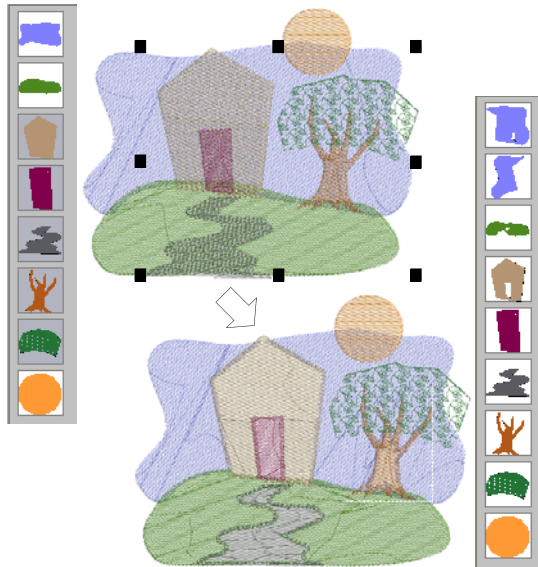
- 2 Click the **Remove Overlaps** icon or select **Arrange > Remove Overlaps**.

Stitching overlaps are removed according to the current setting. To change the setting, see **Setting overlap removal options**.





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.

Adding & removing holes



Use Edit > Add Holes to cut holes in filled objects.

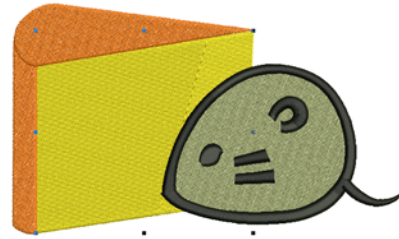


Use Edit > Remove Holes to remove holes from selected objects.

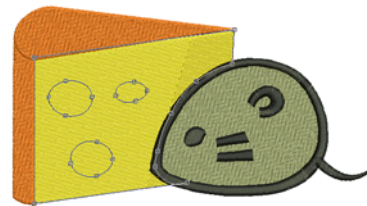
With BERNINA Embroidery Software you can cut holes in selected closed objects with a single stitch angle using the **Add Holes** tool. It can only be used with objects created with the **Closed Object** tool. The complementary **Remove Holes** tool allows you to remove unwanted holes in closed objects.

To add or remove holes

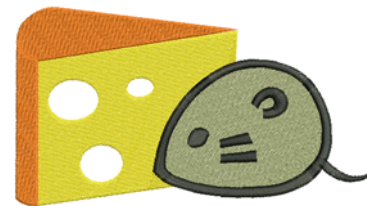
- 1 Select the object to modify.



- 2 Click the **Add Holes** icon.
Reference points display around the object outline.
- 3 Digitize additional boundaries for the object. Press **Enter** after each boundary.



- 4 Press **Enter**.



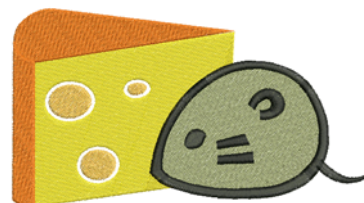
Note To remove boundaries from a closed object, select it and click **Remove Holes**.

Filling holes



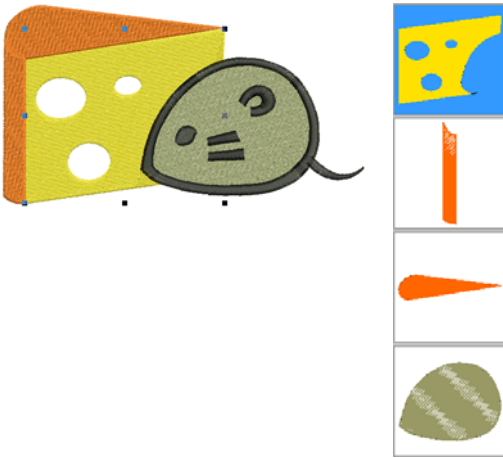
Use Edit > Fill Holes to fill holes in selected objects with current stitch type.

The **Fill Holes** tool fills holes in single closed objects containing holes. These can be removed altogether or new objects created.

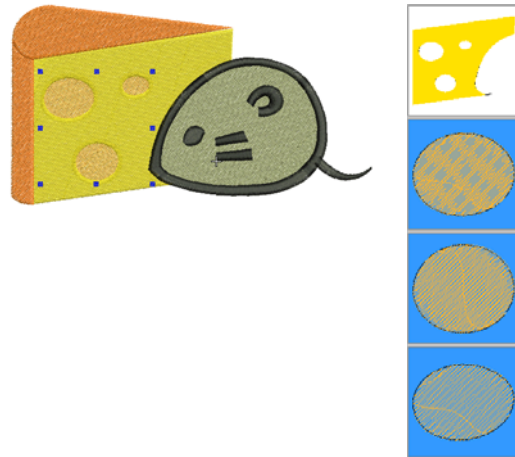


To fill holes in objects

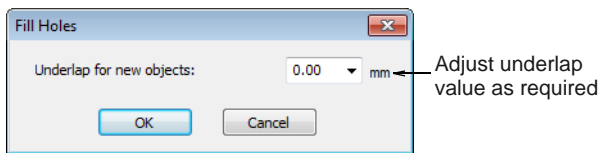
- 1 Select a source object.



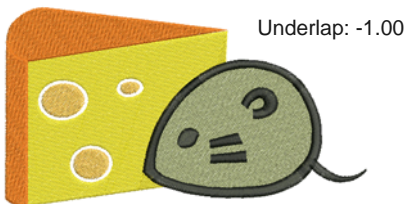
placed immediately after the source object in the stitch sequence.



- 2 Click the **Fill Holes** icon.
The **Fill Holes** dialog opens.



- 3 Adjust the **Underlap** value as desired.



- ▶ 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**.

- 4 Click **OK**.

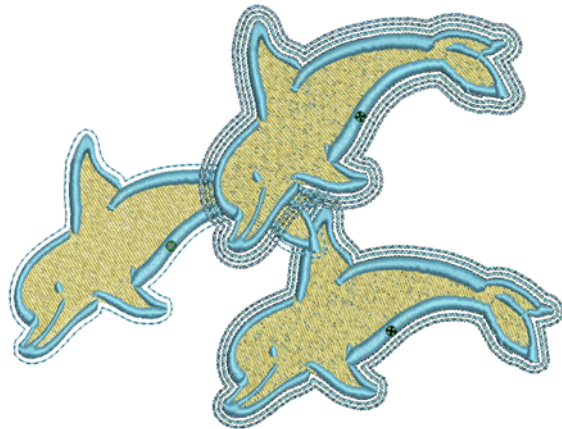
All newly created objects are filled with the current fill stitch settings, stitch angle and thread color. Each new object is an independent object and is

Creating outlines & borders



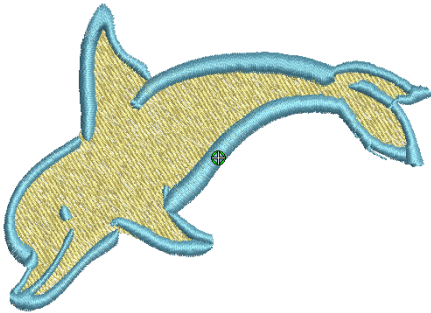
Use Edit > Outline Design to automatically outline selected objects with Single, Triple or Satin Line.

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 & borders](#).

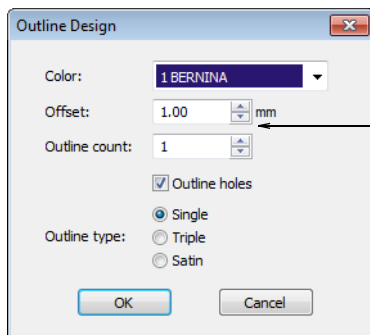


To create outlines and borders

- 1 Select the embroidery object/s or design to outline.



- 2 Click the **Outline Design** icon.
The **Outline Design** dialog is displayed.



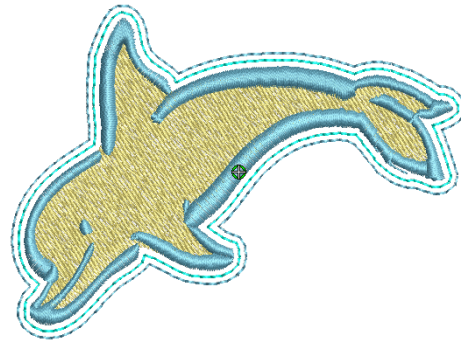
Set number of outlines

- 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.

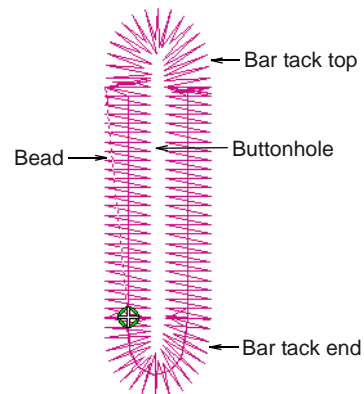
- 4 Click **OK** to apply settings.
The design outline is stitched in the current palette color using current properties. The outline is put last if the whole design is selected, or after a design part, in cases where the selected part of the

design is separated by 'whitespace' from the rest of the design.



Creating buttonholes

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.



Adding buttonholes



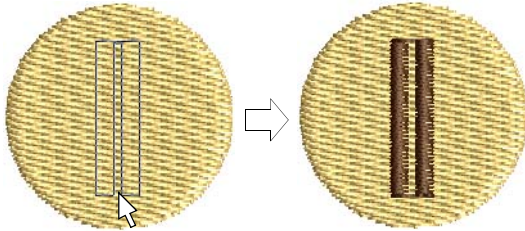
Use Digitize > Buttonhole to digitize a single buttonhole with all necessary stitching.

Add buttonholes to a design.

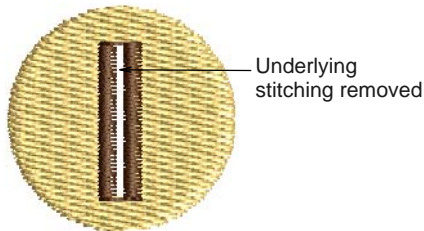


To add buttonholes

- 1 Open or create a design requiring buttonholes.
- 2 Select the **Buttonhole** tool.
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.



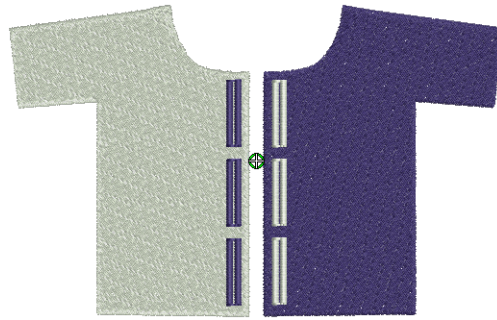
Tip If a buttonhole has been placed over other objects, some of the underlying stitches could unravel after the slit has been cut. To prevent this, objects under the buttonhole can be reshaped so that their boundaries line up along buttonhole slit. See [Reshaping & Editing Objects](#) for details.

Creating a line of buttonholes



Use **Digitize > Buttonholes** to digitize a line of buttonholes with all necessary stitching.

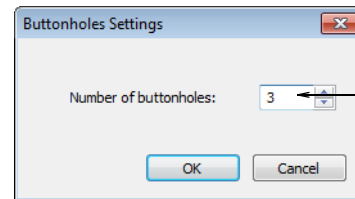
Add a line of evenly spaced buttonholes to a design with the **Add Buttonholes** command.



To create a line of buttonholes

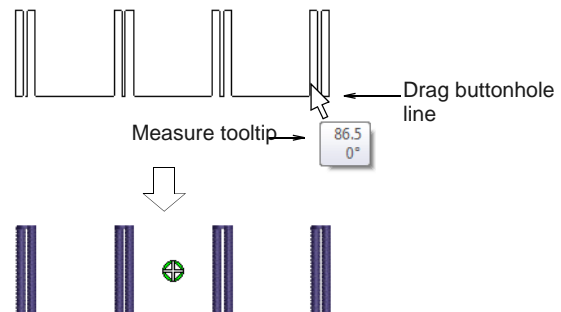
- 1 Open or create a design requiring buttonholes.
- 2 Select the **Buttonholes** tool.

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.



- 6 Use the measure tooltip as a guide and click to complete.

Changing buttonhole types

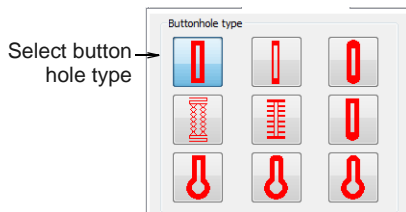


Use **General > Object Properties** to change buttonhole types.

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.



- 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 & density



Use General > Object Properties 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.

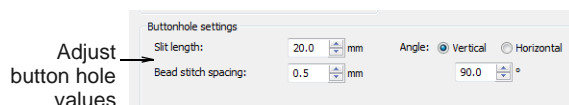
Increase or decrease the bead stitch density by decreasing or increasing the **Bead stitch spacing**.

To adjust buttonhole length and density

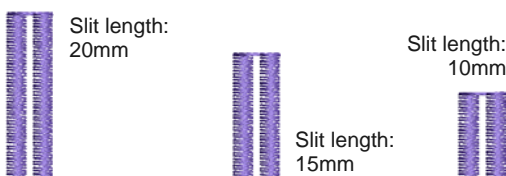
- 1 Click the **Object Properties** icon and select the **Buttonhole** tab.



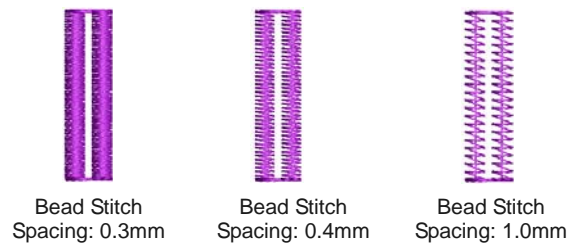
Tip Double-click or right-click the buttonhole object to change the stitch values for that object only.



- 2 In the **Slit length** field, enter a new value.



- 3 In the **Bead stitch spacing** field, enter a new value.

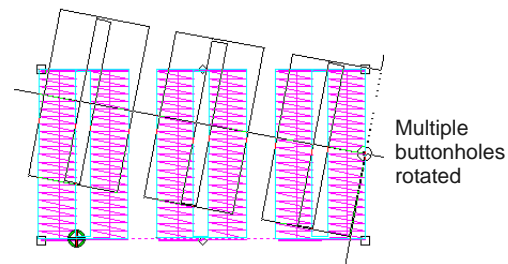


- 4 Click **Apply**.

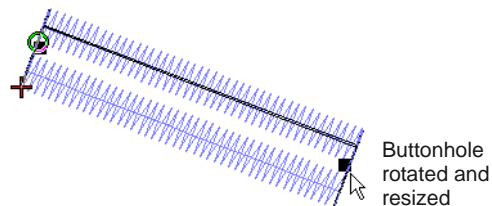
Adjusting buttonhole orientation

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.



- ▶ **Reshape Object** tool to rotate single buttonholes. See **Reshaping objects** for details.



- ▶ **Rotate 45° CCW/CW** tool to rotate one or more buttonholes. See **Rotating by properties** 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 by properties** for details.

CHAPTER 22

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 Fill 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.



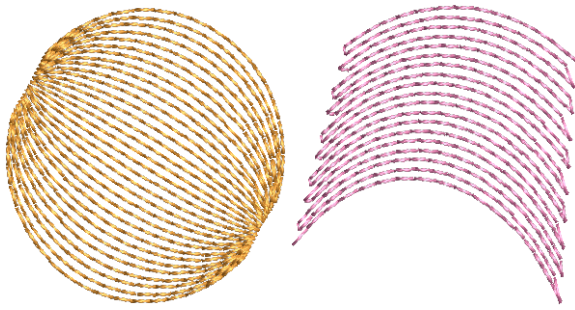
Creating contour fills



Use Stitch > Contour Fill to create stitching which follows object contours, creating a curved, light-and-shade effect.

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**

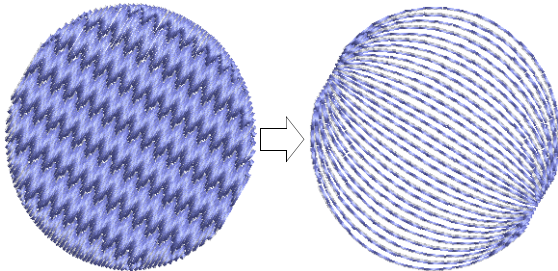
Angles tool cannot be used with **Contour** stitch. See also **Creating ripple fills**.



Contour stitch is accessed from the stitch list in the **Color Palette** and the **Fill Stitch** object properties tab.

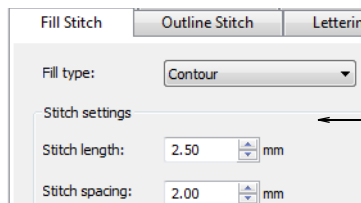
To create a contour fill

- 1 Click the **Contour Fill** icon.
The stitch type will be applied to new or selected objects based on current settings.
- 2 Create a block digitizing object and select. See **Digitizing Methods** for details.
The current **Contour** settings are applied to the selected object.



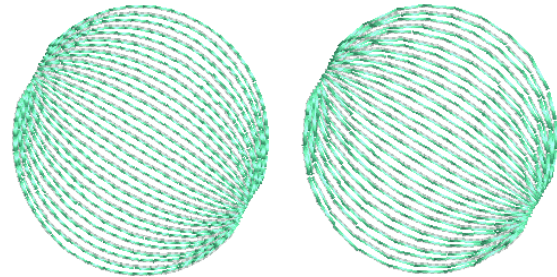
Note Stitch angle has no effect on the pattern layout.

- 3 To change settings, double-click or right-click the object.
The **Object Properties > Fill Stitch** dialog opens.



- 4 Adjust contour **Stitch Values** as desired:

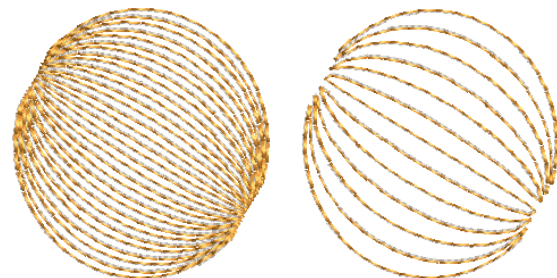
- Adjust **Stitch length** for smoother or sharper curves.



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 **Stitch > Fancy Fill** to create artistic fills while keeping the appearance of solid stitching.

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

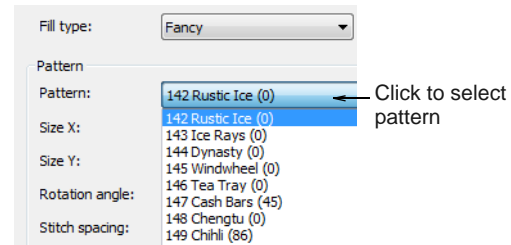
- 1 Click the **Fancy Fill** icon.
The stitch type will be applied to new or selected objects based on current settings.
- 2 Create closed-object/s – circle or square – and select. See [Digitizing Methods](#) for details.
The current **Fancy Fill** settings are applied to the selected object.



Note Stitch angle has no effect on the pattern layout.

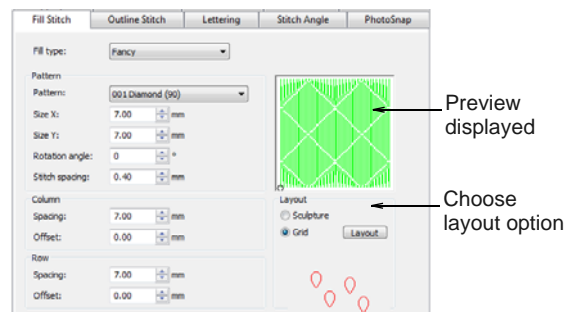
- 3 To change settings, double-click or right-click the object/s.

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



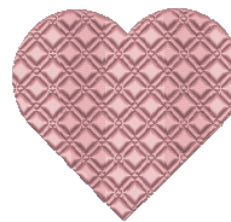
- 4 Select a pattern from the dropdown list. See also [Fancy Fill Samples](#).

The selected pattern is displayed in the preview panel.

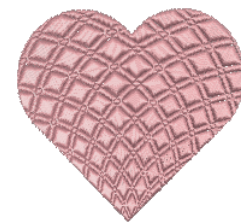


- 5 Change pattern layout by adjusting settings in the dialog or on-screen via the **Layout** button.

- 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

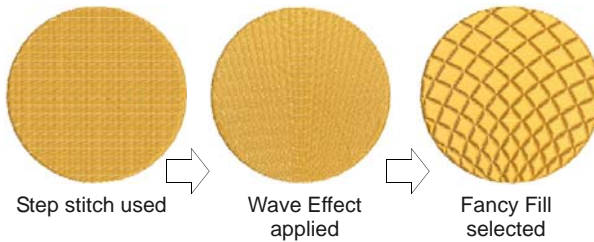
- 6 Click **Apply** to preview the effect or **OK** to finish and close.

The stitch is regenerated with the adjusted settings.

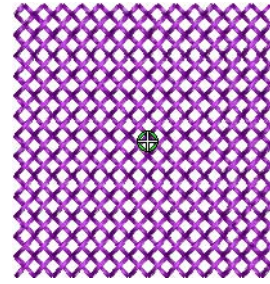


Tip **Wave Fill** lets you contour fill stitches along a digitized guideline. Wave Fill can be applied to Fancy Fill objects. However, you need to first apply

the effect to a Step fill before converting to a Fancy Fill. See also [Creating wave effects](#).



The current **Cross Stitch** settings are applied to the selected object.



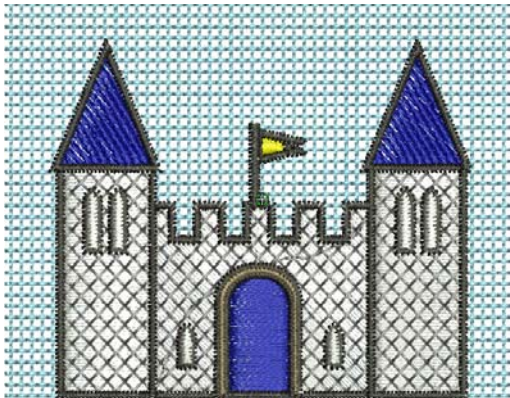
Note Stitch angle has no effect on the pattern layout.

Creating cross stitch fills



Use **Stitch > Cross Stitch Fill** to create open patterned fills with crosses generated to suit standard grid for entire design.

Cross stitching is a popular technique for filling large areas with low stitch counts. Cross stitch is also sometimes combined with appliqué. It is something like **Pattern Fill** but it is generated differently and uses travel runs under and along the cross stitching. Crosses are generated to suit a global or standard grid for the whole design. See also [Creating pattern fills](#).



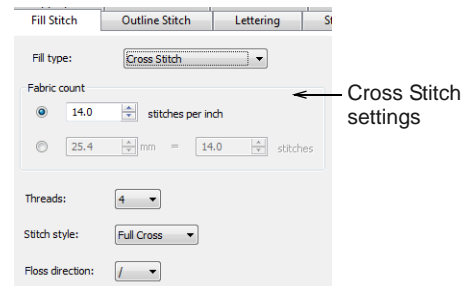
Tip **Cross Stitch** fill is a stitch type in its own right but does not replace the BERNINA Cross Stitch application available from the **General** toolbar. See also [Introduction to cross stitch](#).

To create a cross stitch fill

- 1 Click the **Cross Stitch Fill** icon.
The stitch type will be applied to new or selected objects based on current settings.
- 2 Create closed-object/s – circle or square – and select. See [Digitizing Methods](#) for details.

- 3 To change settings, double-click or right-click the object/s.

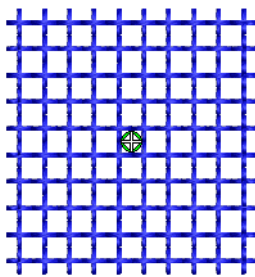
The **Object Properties > Fill Stitch** dialog opens.



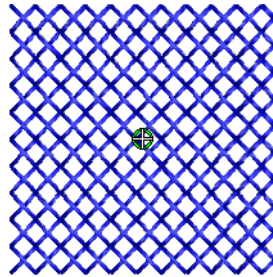
- 4 Adjust cross stitch settings as desired:

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 **Stitch > Textured Edge** to create rough edges and shading effects, or imitate fluffy textures.

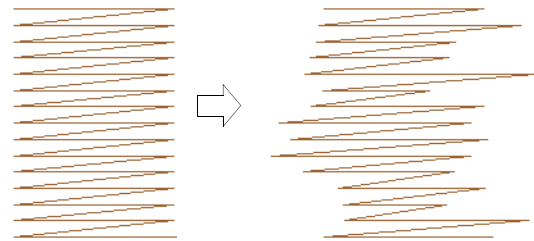
Use **Textured Edge** to add rough edges to objects, create shading effects, or imitate fur or other fluffy textures in your design. Textured Edge is applied based on current settings in the **Effects** dialog. Adjust settings to change the degree of roughness, the side of the object to which the effect is applied and the textured edge margin. You can change these settings before or after digitizing.



To create a textured edge

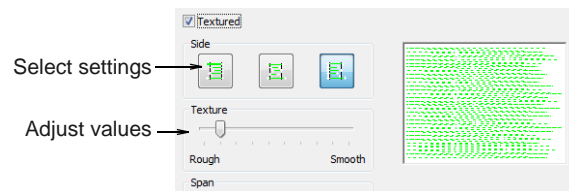
- 1 Click the **Textured Edge** icon.
The effect will be applied to new or selected objects based on current settings.
- 2 Create closed-object/s – circle or square – and select. See **Digitizing Methods** for details.

The current settings are applied to the selected object.

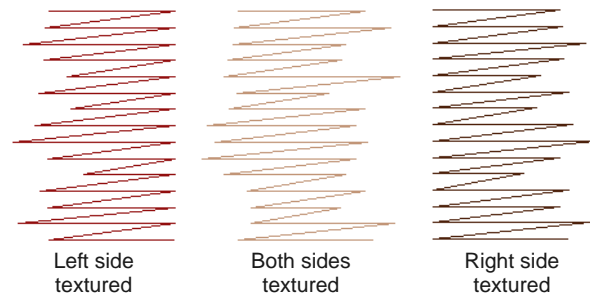


- 3 To change settings, right-click the **Textured Edge** icon with the object selected.

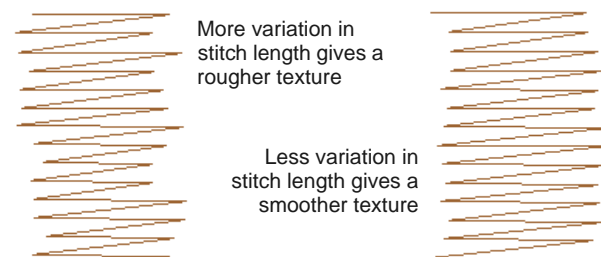
The **Effects > Textured Edge** dialog opens.



- 4 Use the buttons to choose the side of the object you want to apply the effect to.

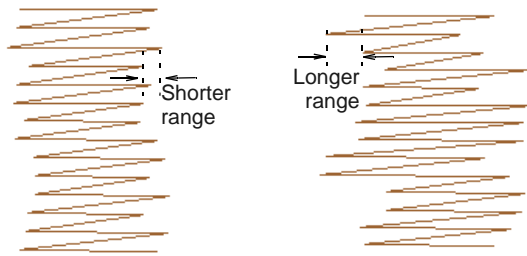


- 5 Use the **Texture** slider to select the degree of texture – left for a rougher texture and right for a smoother texture.

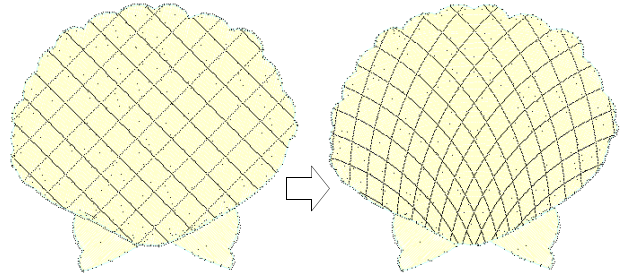


- 6 Use the **Span** slider to select a stitch range in which you want the stitches to fall.

Move the slider to the left for a short range and to the right for a longer range.




The effect is applied to the selected object.



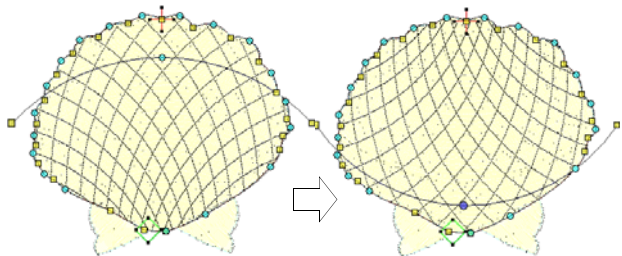
- 7 Click **Apply** to preview the effect or **OK** to finish and close.

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**.

- 2 To modify the effect, select the object and click the **Reshape Object** icon.



Creating wave effects

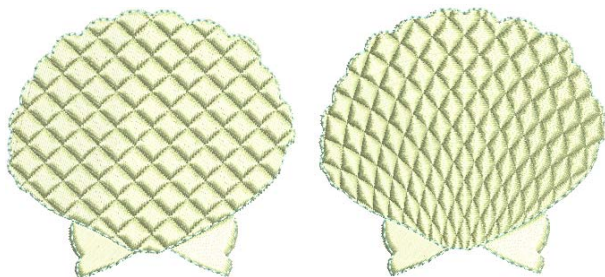


Use **Stitch > Wave Fill** to contour stitches along a digitized guideline – stitching maintains uniform density.



Click **Transform > Reshape Object** to view the reshape nodes of a selected object.

Wave Fill lets you contour fill stitches along a digitized guideline. Stitches follow the line but maintain uniform density and needle penetration patterns.



Tip Use smaller stitch lengths – e.g. 4.00 mm or less – for best results.

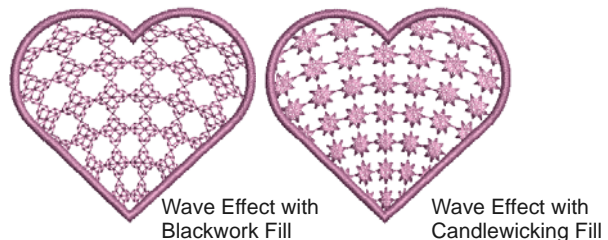
To create Wave Fill

- 1 Select a closed-object and click the **Wave Fill** icon.

- 3 Click and drag the curve into the required shape and press **Enter**. See [Reshaping objects](#) for details.
- 4 Press **Esc** to finish.



Tip **Wave Fill** 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](#).



Caution Don't alter stitch angles after applying **Wave Fill** as it can displace **Fancy Fill** patterns.

Creating star fill effects



Use **Stitch > Star Fill** to create radial turning stitching with available stitch types. Stitches are generated from outside to geometric center. Center can be shifted.



Click **Transform > Reshape Object** to view the reshape nodes of a selected object.

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.

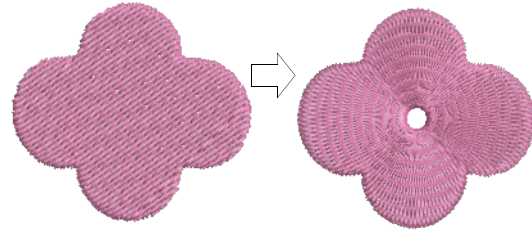


Tip For best effect, use **Star Fill** with ring shapes. The size of ring should be about 20% of the outer diameter.

To create star fill effects

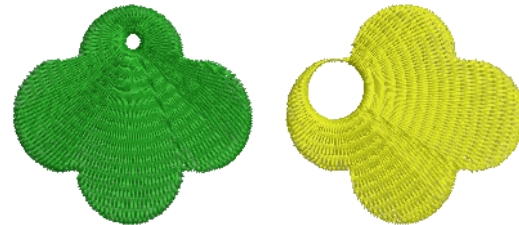
- 1 Select a closed-object and click the **Star Fill** icon.

The effect is applied to the selected object.



- 2 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 losing the original shape.

- 3 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

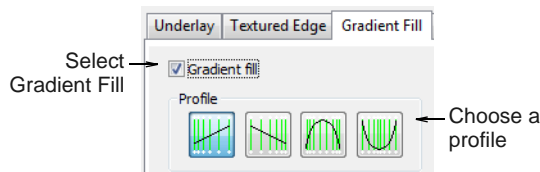
Gradient Fill varies stitch spacing between dense and open fill, producing perspective and shading effects which are difficult to achieve manually. A number of different **Gradient Fill** effects are available. When you use **Gradient Fill**, the current stitch spacing settings are ignored. However, other stitch effects will still apply.



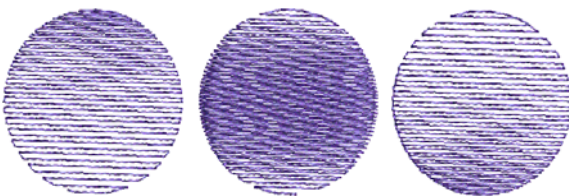
Tip You can use **Gradient Fill** with **Step** fill to create interesting shading effects.

To create a gradient fill

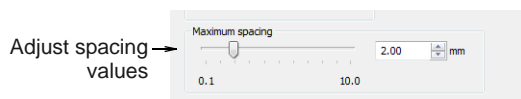
- 1 Double-click or right-click a filled object.
The **Object Properties > Fill Stitch** dialog opens.
- 2 Click the **Effects** button and select the **Gradient Fill** tab.



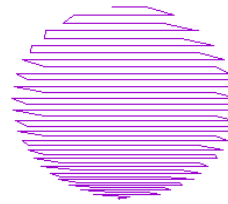
- 3 Select the **Gradient Fill** checkbox and choose a profile.
- 4 Click **Apply** to preview the effect.



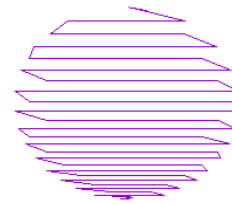
- 5 Move the slider to adjust the values or enter new spacing values as required.



- 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 **Effects > Underlay** checkbox. See also [Stabilizing with underlays](#). See also [Creating open fills](#).

Creating open fills

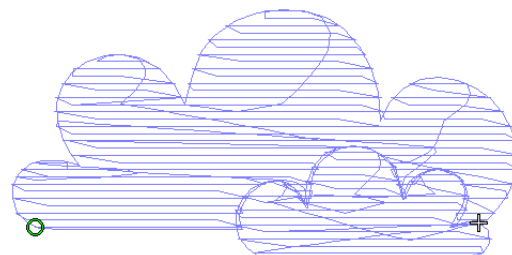
Apply **Travel on Edges** effect to force underlying travel runs to the edges of an object so that they can't be seen through open stitching. This is often used for backgrounds.



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](#).

To create an open fill

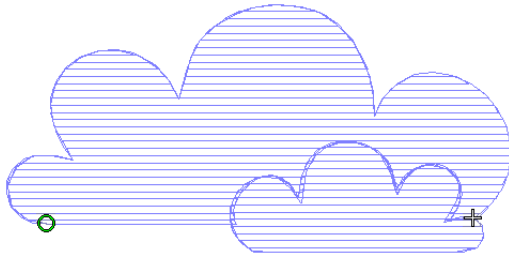
- 1 Double-click or right-click a filled object.
The **Object Properties > Fill Stitch** dialog opens.



- Click the **Effects** button and select the **Others** tab.



- Select the **Travel on Edges** checkbox.
Travel runs and overlapping rows are removed, and consistent row spacing is applied.



- 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 [Properties, Fabrics & Templates](#) for details.

Creating color blending

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.

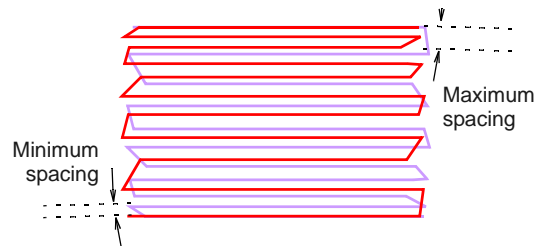
Color Blending can be applied to objects filled with Satin, Step, or Fancy Fill stitch, or objects outlined with Satin or Blanket stitch.

Applying color blending



Use Edit > Color Blending to create blended stitching in selected objects.

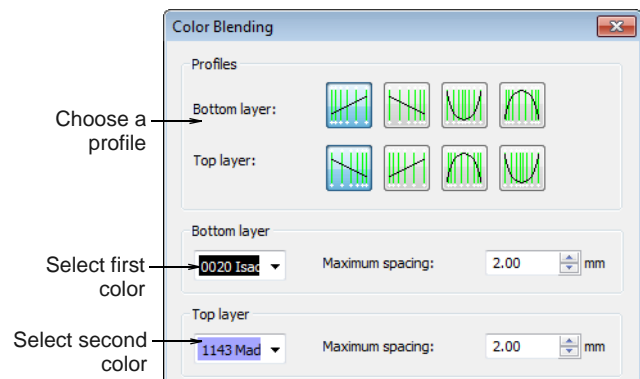
Use the **Color Blending** effect to create color blends, perspective effects and shading.



To apply color blending

- Select a filled object and click the **Color Blending** icon.

The **Color Blending** dialog opens.



- In the **Profiles** panel, select a spacing profile for top and bottom layers.



Bottom Layer: Profile1
Top Layer: Profile1



Bottom Layer: Profile3
Top Layer: Profile3

- In the **Bottom Layer** panel:

- ▶ Select the color of the first layer.
- ▶ Adjust the maximum spacing value for the first layer as required.

- 4 In the **Top Layer** panel:
 - ▶ Select the color of the second layer.
 - ▶ Adjust the maximum spacing value for the second layer as required.
- 5 Click **OK**.



Bottom Layer: Red
Top Layer: Yellow



Bottom Layer: Yellow
Top Layer: Red



Tip To prevent underlay stitching from showing through, deselect the **Effects > Underlay** checkbox. See also [Stabilizing with underlays](#).

Editing blended objects



Click **Arrange > Ungroup** to ungroup selected objects.



Click **General > Color Film** 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 blended objects

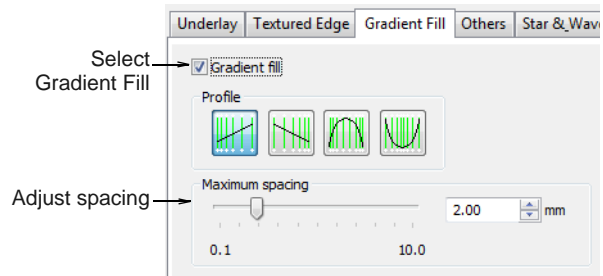
- 1 Select the blended object and ungroup it. See [Grouping & splitting objects](#) for details.



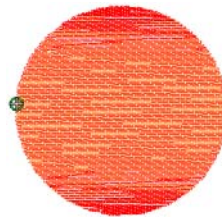
Tip Use the Color Film to view all color blocks and objects in the design. See [Viewing & selecting color blocks](#) for details.

- 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.



- 4 Select a profile and adjust spacing as required. See [Creating gradient fills](#) for details.
- 5 Click **Apply** to preview the effect or **OK** to finish and close.
- 6 Repeat the process for the second object and re-group the objects.

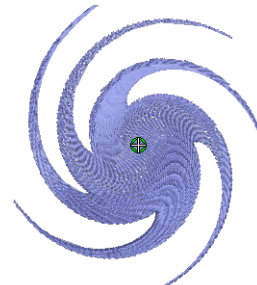
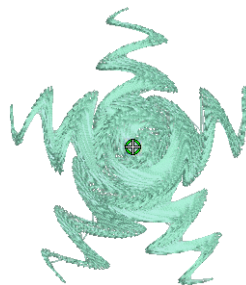


Creating morphing effects



Use **General > Morphing** to create transformed object outlines and stitches.

The **Morphing** feature allows you to transform object outlines and stitches in novel and interesting ways. They are additive in the sense that more than one effect can be applied to a given selection.



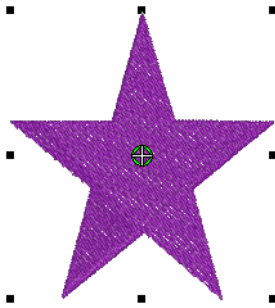
Morphing is a powerful feature but don't overdo it. Keep in mind the following points when morphing objects/designs:

- ▶ To avoid poor quality embroidery, don't use too much of the effect. Less is more when it comes to morphing.

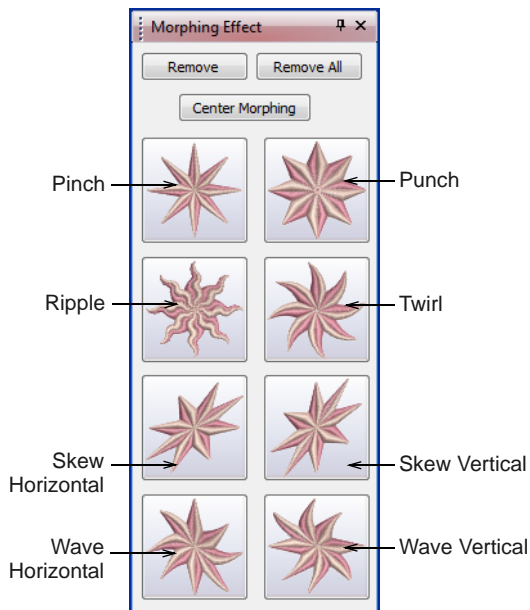
- ▶ Use larger stitch spacing – increase it by about 20%.
- ▶ Avoid morphing Satin stitches – in some objects they become too long.
- ▶ Increase the underlay margin to avoid it projecting outside the cover stitch.

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.

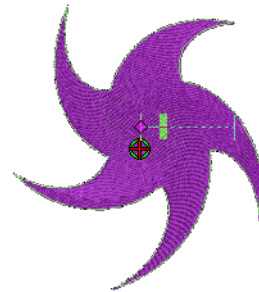


Use Wave Horizontal to move the object outlines and stitches to follow a horizontal wave pattern.



Use Wave Vertical to move the object outlines and stitches to follow a vertical wave pattern.

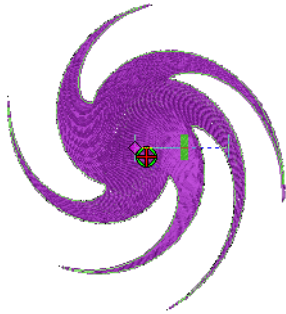
The selected morphing effect is applied to the current selection with the morphing center (if any) defaulting to the center of the current selection.



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.

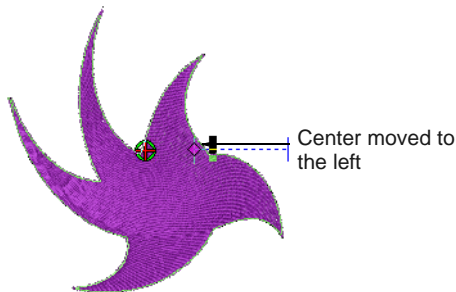
If you drag one of sliders, the resultant object outlines display dynamically in black until the mouse button is released.



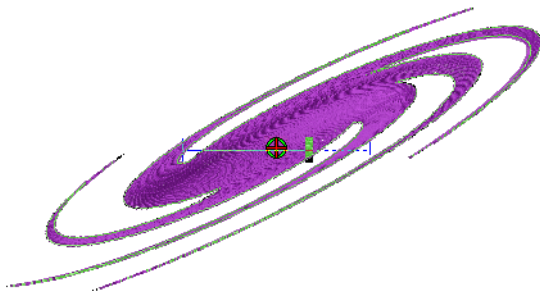
- ▶ Clicking the enabled **Remove All** button causes all morphing effects to be removed from the current selection and the **Reshape** process to be stopped.

- 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.



- 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.

CHAPTER 23

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



Use Digitize > Pattern Stamp to place individual patterns in the design. Choose from pattern library.

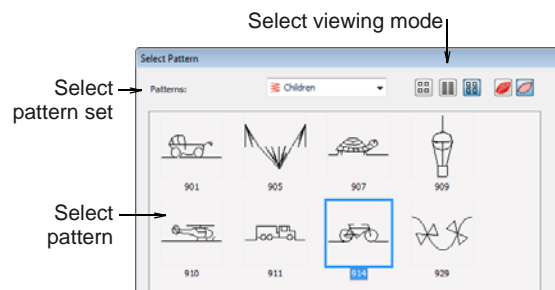
The **Pattern Stamp** feature allows you to place single patterns anywhere in the design window. You can access any pattern in any 'pattern set'. These include purpose-made Pattern Fill patterns as well as craft stitch patterns and monogramming ornaments.



To add a pattern stamp

- 1 Select **Digitize > Pattern Stamp**.

The **Select Pattern** dialog opens.



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](#).

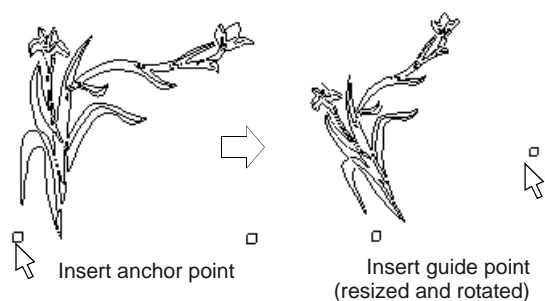
- 3 Click **OK**.

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.



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.

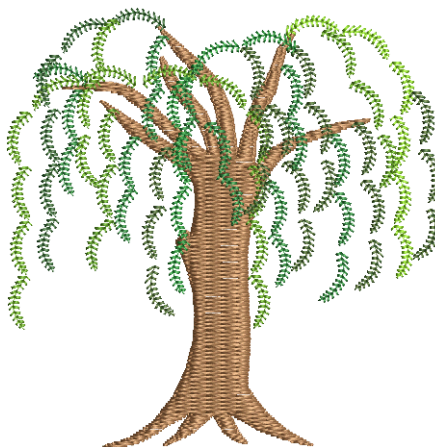
- 8 Press **Esc** to finish.



Note Each pattern is treated as a single grouped object. To edit only a section of a pattern, ungroup it first. See [Grouping & splitting objects](#) for details.

Creating patterned outlines

Pattern Run Outline 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.

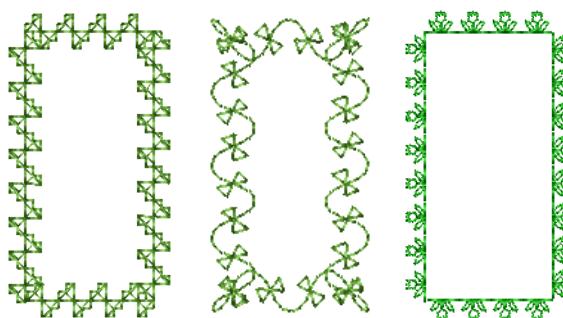


Applying pattern runs



Use **Stitch > Pattern Run Outline** to create ornamental craftstitch borders. Choose from pattern library.

Select the pattern to use in the pattern run before or after digitizing.

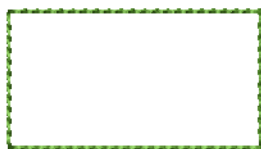


To apply a pattern run

- 1 Click the **Pattern Run Outline** icon.

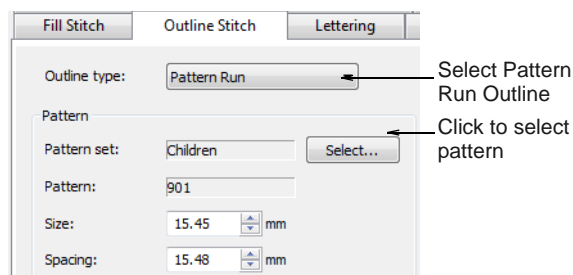
The stitch type will be applied to new or selected objects based on current settings.

- 2 Digitize an outline for the run to follow. See [Digitizing Methods](#) for details.



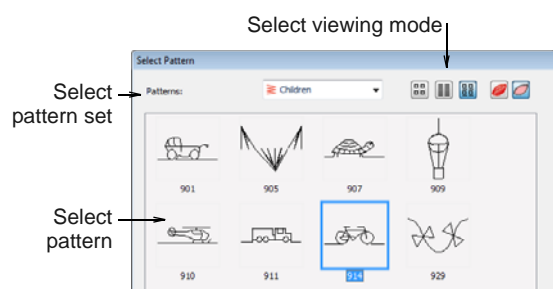
- 3 To change settings, double-click or right-click the object.

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



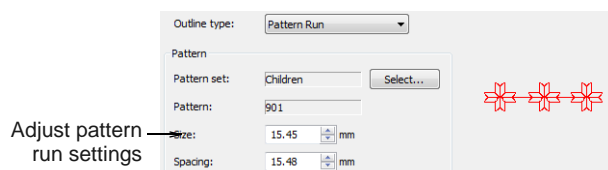
- 4 If not already selected, select **Pattern Run Outline** from the **Stitch Type** list and click **Select**.

The **Select Pattern** dialog opens showing all available patterns in the current set.



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**.



- 7 Adjust pattern run settings. See [Adjusting pattern run settings](#) for details.
- 8 Click **Apply**.

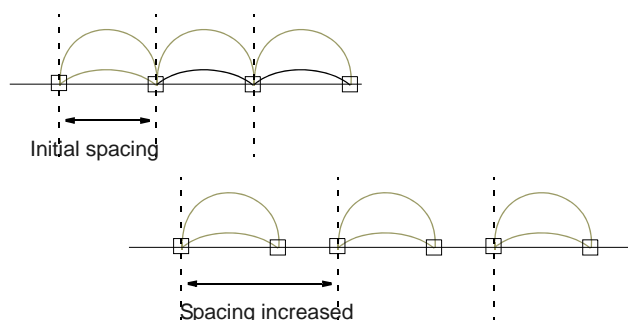
The digitized object is outlined with the selected pattern run. See also [Reshaping pattern runs](#).



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.



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.

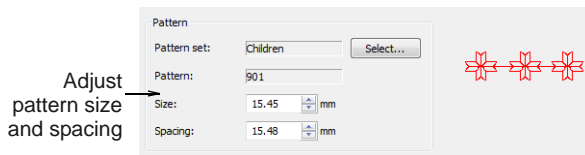


Tip You can reshape the baseline to achieve the exact spacing you require. See [Reshaping pattern runs](#) for details.

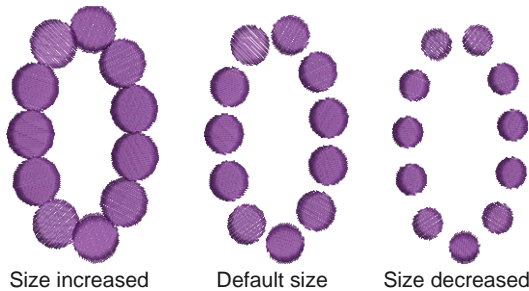
To adjust pattern run settings

- 1 Select the pattern run object.
- 2 Double-click or right-click the object.

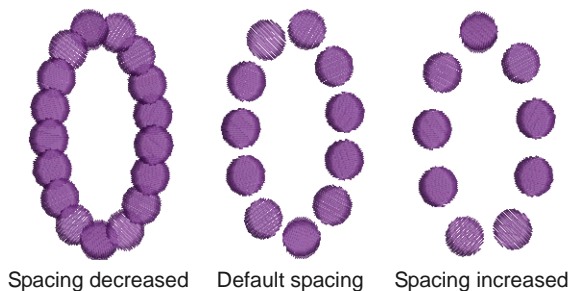
The **Object Properties > Outline Stitch** dialog displays.



- 3 Enter the pattern size in the **Size** field.



- 4 Adjust the **Spacing**.



- 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



Use **Stitch > Pattern Fill** to create decorative fill stitching. Choose from pattern library.

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 **Pattern Fill** icon.

The stitch type will be applied to new or selected objects based on current settings.

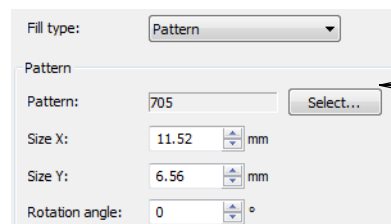
- 2 Create a closed shape and select. See [Digitizing Methods](#) for details.



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.

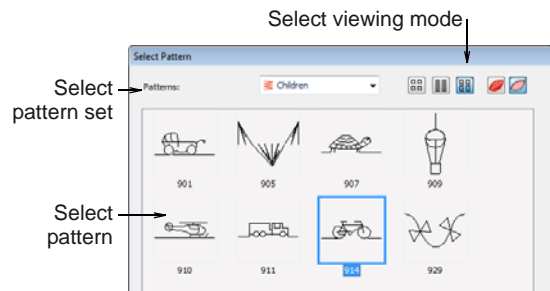
- 3 To change settings, double-click or right-click the object/s.

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



- 4 If not already applied, select **Pattern** from the **Stitch Type** list and click **Select**.

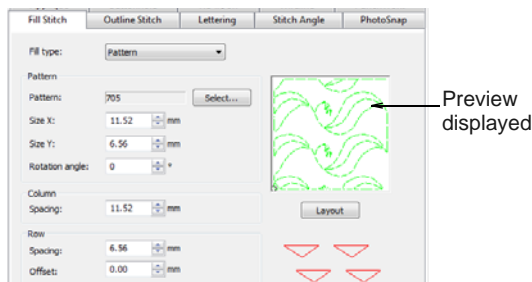
The **Select Pattern** dialog opens showing all available patterns in the current set.



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.



- 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.

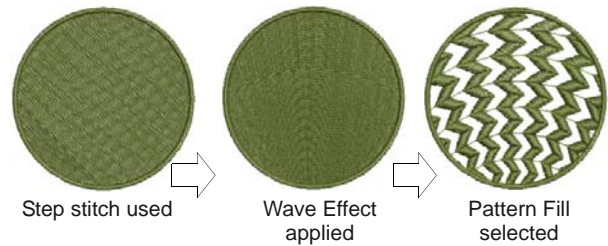
- 8 Click **Apply**.

The digitized object is filled with the selected Pattern Fill.



Tip Wave Fill lets you contour fill stitches along a digitized guideline. Wave Fill 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](#).



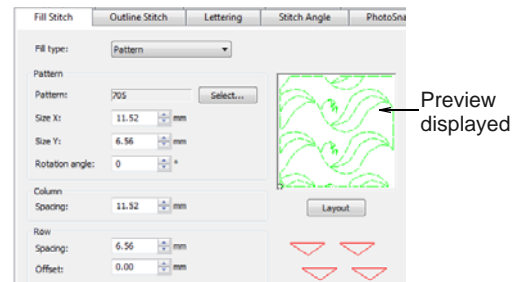
Adjusting pattern fill settings

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.

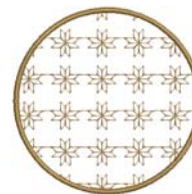
The **Object Properties > Fill Stitch** dialog opens with the current pattern in the preview panel.



- 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.

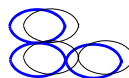
Laying out pattern fills on-screen

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

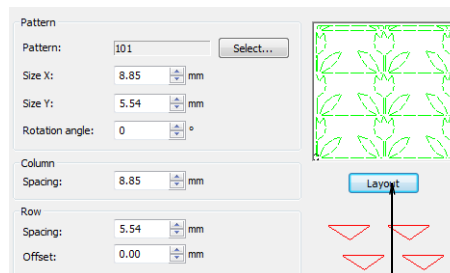
Use middle guide-pattern to move, rotate, skew, and scale all patterns



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

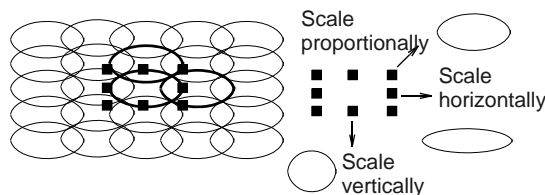
- 2 Click **Layout**.

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.



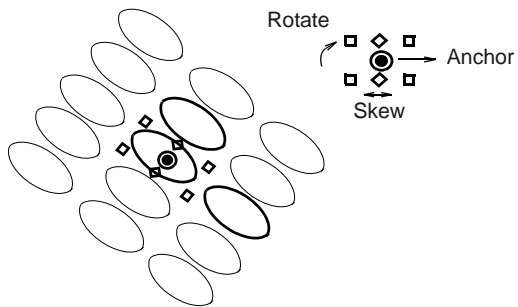
Tip Zoom in to select the correct guide-pattern.

- 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.

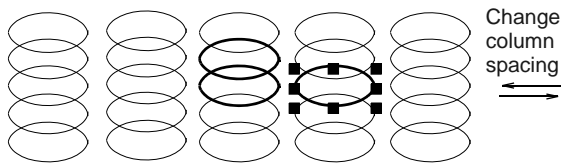


- **Rotate** patterns by clicking the middle guide twice to display the rotation handles. Click a corner handle and drag to rotate.

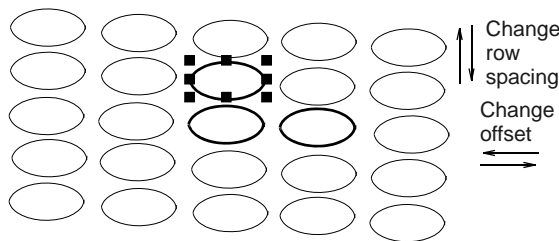
- ▶ **Skew** patterns by clicking the middle guide twice, then dragging the skew handles.



- ▶ **Change column spacing** by selecting the side guide and dragging it left or right.



- ▶ **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.



- 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

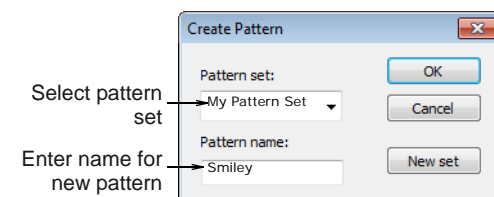
- 1 Select the **embroidery object/s** you want to save.



Tip To create objects with holes, see [Adding & removing holes](#) for details.

- 2 Select **Settings > Create Pattern**.

The **Create Pattern** dialog opens.

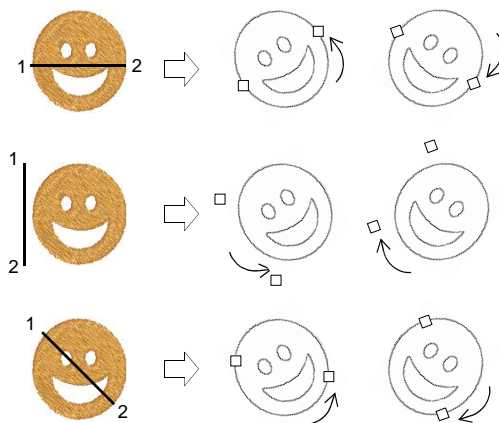


- 3 Select a pattern set from the dropdown list.

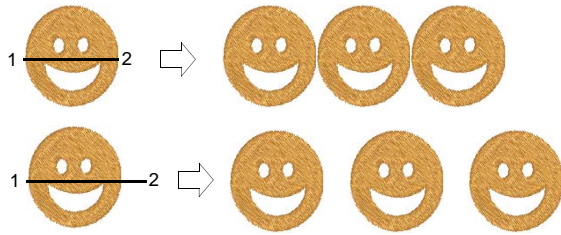


Note Choose the pattern set carefully so you remember where you have stored your patterns. See also [Creating your own pattern sets](#).

- 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**.



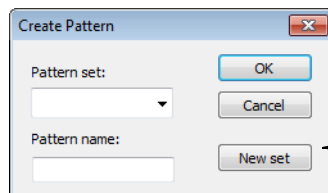
Tip Test your new pattern. See [Adding pattern stamps](#), [Creating patterned outlines](#), and [Creating pattern fills](#).

Creating your own pattern sets

The **Create Pattern** function lets you create your own pattern sets to organize and classify your patterns.

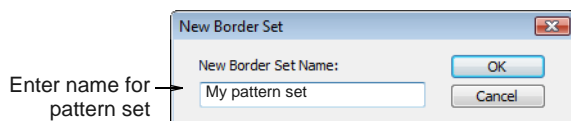
To create your own pattern set

- 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 **Create 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 7\Userletw** folder.

Deleting patterns

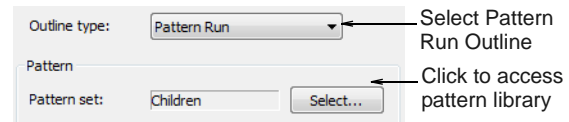


Click Object Properties (General toolbar) to delete patterns.

Delete any patterns you no longer want from a pattern set. You can only delete your own patterns.

To delete a pattern

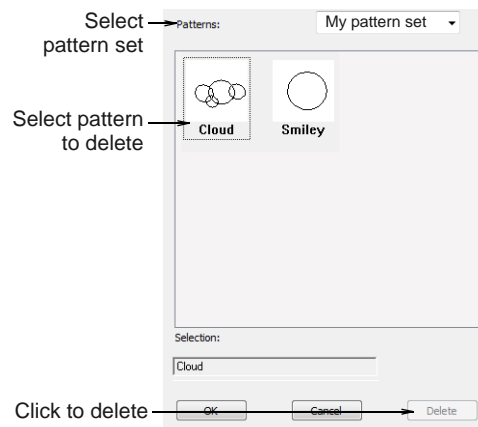
- 1 Click **Object Properties** icon.
- 2 Select **Pattern Run Outline** from **Outline Stitch** tab or **Pattern Fill** from the **Fill Stitch** tab.



Select Pattern Run Outline
Click to access pattern library

- 3 Click **Select**.

The **Select Pattern** dialog opens showing all available patterns in the current set.



Click to delete



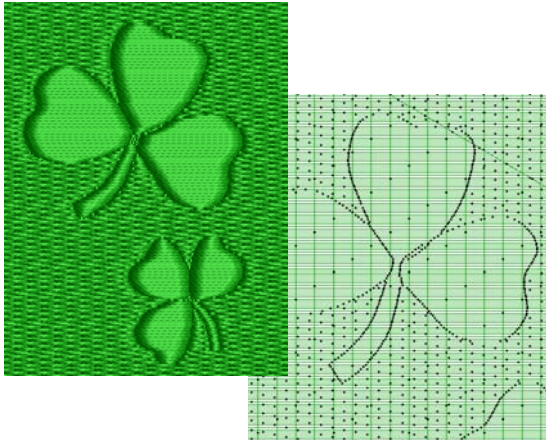
Tip Select a viewing mode – you can list patterns by picture, name, or both.

- 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 apply preset or custom patterns to create a pattern of needle penetrations.

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 **or** to any applicable objects if nothing is selected.

To apply pre-defined patterns

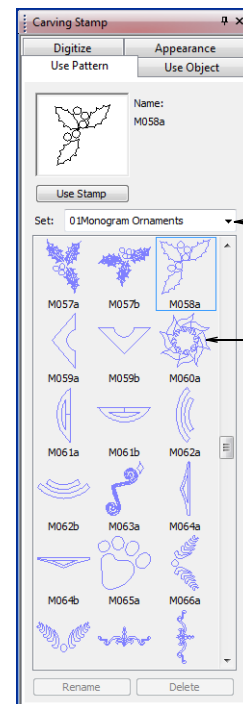
- 1 Select an **embroidery object** or not as required.



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.



Select a pattern set

Select a stamp to use

- 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.

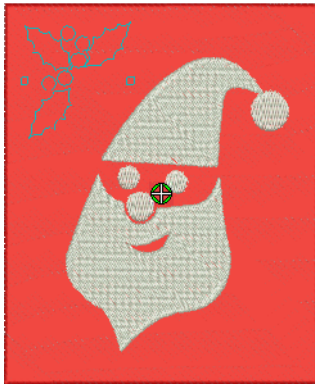
- 4 Select a pre-defined stamp pattern.

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.

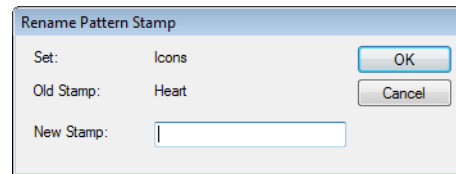


Note If there are multiple overlapping objects in the area in which the stamp is applied, the stamp is applied to every overlapping applicable object.

- 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 Pattern Stamp** 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

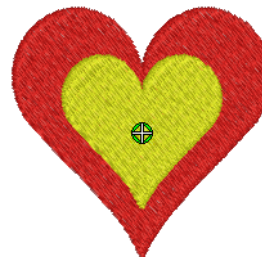


Use General > Carving Stamp to apply preset or custom patterns to create a pattern of needle penetrations.

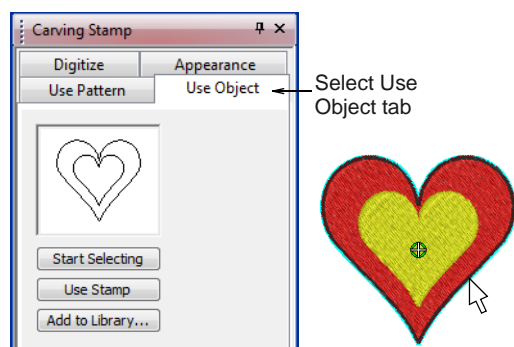
The **Carving Stamp** docker contains four tabs: Use Pattern, Use Object, Digitize, and Appearance. The **Use Object** tab allows you to select object outlines from the design window and apply them directly as stamps or save them to a library for future reference.

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.



- Click the **Carving Stamp** icon and select the **Use Object** tab.



- Click the **Start Selecting** button.
Any pre-selected objects remain selected.
- 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 **Artwork Canvas**. This is the only time vectors can be selected in the **Embroidery Canvas**.

- Click the **Use Stamp** button to apply the selection as a carving stamp. See [Applying pre-defined patterns](#) for details.



- 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.



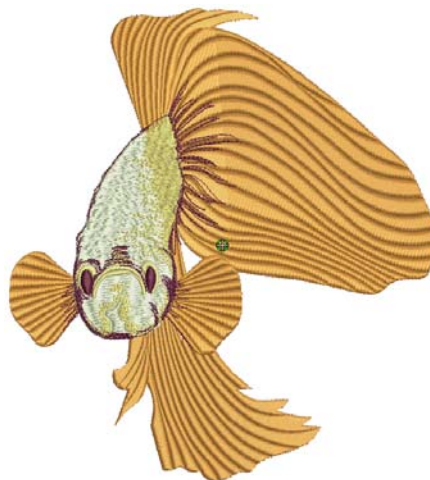
Tip Use the **Softened Stamp** and **Raised Stamp** options on the **Appearance** tab to soften or accentuate the effect. See [Changing carving stamp appearance](#) for details.

Digitizing carving stamps



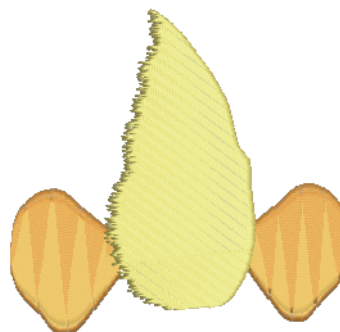
Use General > Carving Stamp to apply preset or custom patterns to create a pattern of needle penetrations.

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.

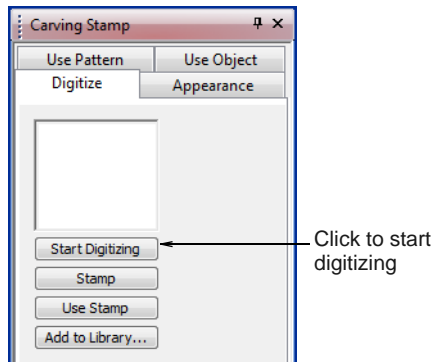


To digitize carving stamps

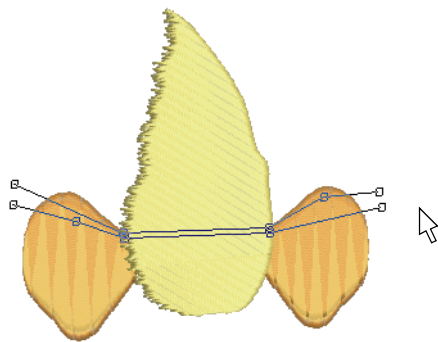
- Select an **embroidery object** or not as required.
If embroidery objects are pre-selected, digitized stamps will apply only to these objects.



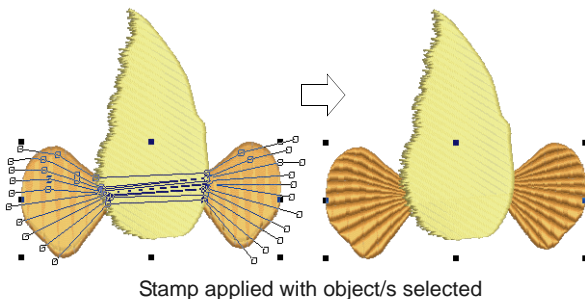
- 2 Click the **Carving Stamp** icon and select the **Digitize** tab of the dialog.



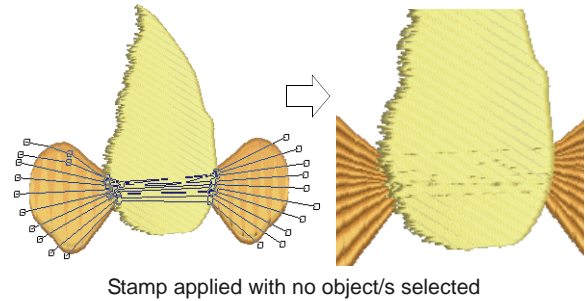
- 3 Click the **Start Digitizing** button.
You are prompted to enter a starting point for the stamp outline.



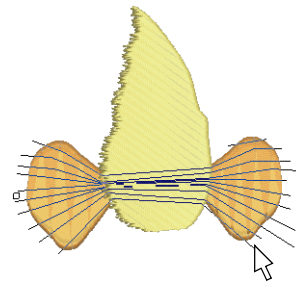
- 4 Digitize stamp outlines:
 ▶ Press **Enter** once to complete a boundary.
 ▶ Press **Enter** again to finish stamp digitizing.
- 5 Click the enabled **Stamp** button.
 ▶ Click the **Stamp** button to apply the stamp to selected applicable objects only.



- ▶ Alternatively, use **Stamp** to apply the stamp to applicable objects 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



Use General > Carving Stamp to apply preset or custom patterns to create a pattern of needle penetrations.

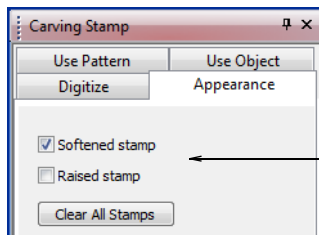
The **Carving Stamp** docker contains four tabs: Use Pattern, Use Object, Digitize, and Appearance. The **Softened Stamp** and **Raised Stamp** checkboxes and **Clear All Stamps** button in the **Appearance** tab are enabled when one or more objects with stamps are selected.

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.

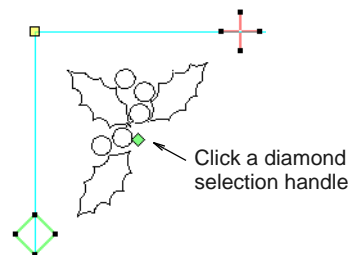
Reshaping carving stamps

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.

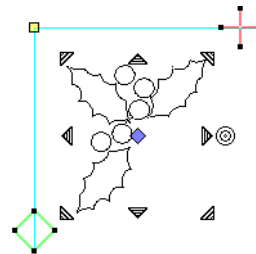
To reshape a carving stamp

- ▶ In **Reshape** mode, select an **embroidery object** with carving stamps applied.

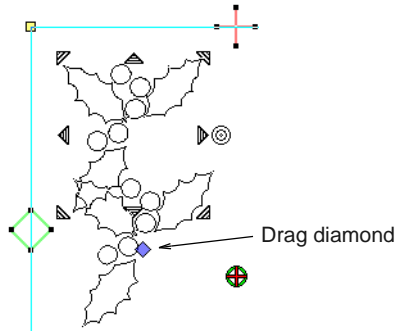
A diamond selection handle is displayed at the center of each stamp.



- ▶ Select the diamond selection handle. Another set of sizing, stretching and rotation handles appears around the stamp as shown.

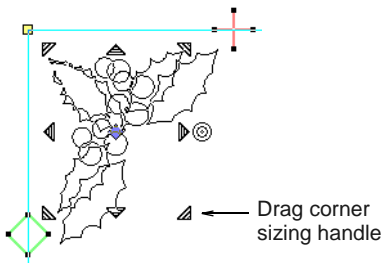


- ▶ Drag the diamond to move the stamp.

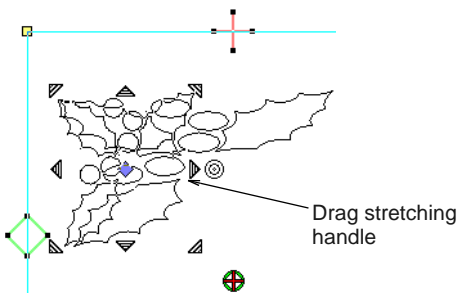


Tip Holding down the **Ctrl** key will constrain the movement to the horizontal or vertical axis.

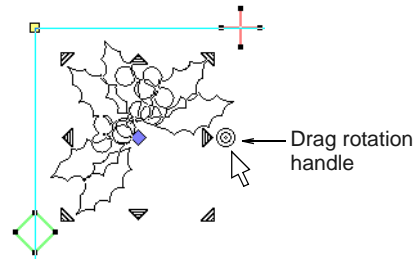
- ▶ Drag one of the corner sizing handles to scale the stamp.



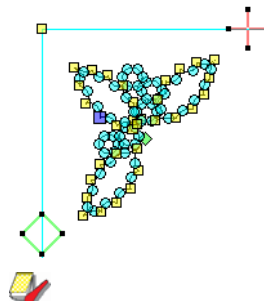
- ▶ Hold **Shift** key to scale from the center.
- ▶ Hold **Ctrl** key to scale proportionally.
- ▶ Hold **Ctrl** and **Shift** keys while dragging a sizing handle to scale proportionally about the center.
- ▶ Drag one of the stretching handles to stretch the stamp.
 - ▶ Top and bottom stretching handles 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.



- ▶ Drag the rotation handle to rotate 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.



Note When an embroidery object with carving stamps is itself transformed, carving stamps are transformed accordingly.

Adding stamps to a library



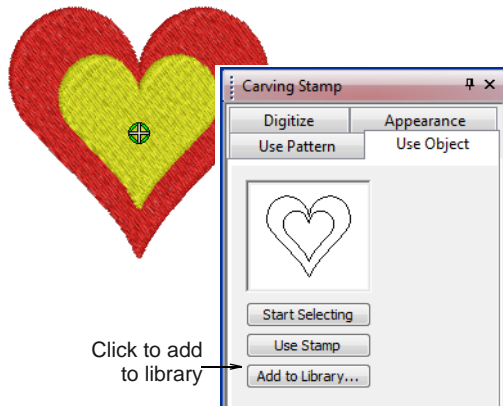
Use General > Carving Stamp to apply preset or custom patterns to create a pattern of needle penetrations.

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

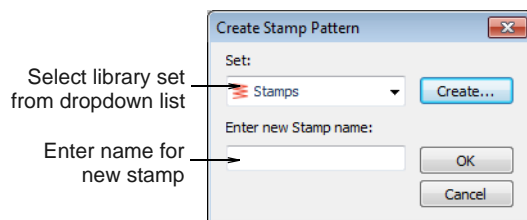
- 1 Select an object which you want to add to the library as a user-defined carving stamp.
 - ▶ Define your own carving stamps using the **Carving Stamp > Use Object** tab. See **Using objects as carving stamps** for details.

- ▶ Digitize carving stamps on the spot using the **Carving Stamp > Digitize** tab. See **Digitizing carving stamps** for details.

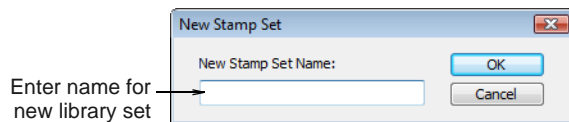


- 2 On either of these tabs, click the enabled **Add to Library** button.

The **Create Stamp Pattern** dialog opens.

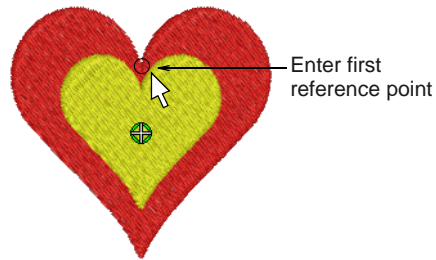


- 3 Select a set from the dropdown list or click the **New Set** button to create a new library. If you chose to create a new library set, use the **New Stamp Set** dialog to create a new stamp set. The newly created stamp set is displayed in the **Set** list when the **Use Pattern** tab is selected.



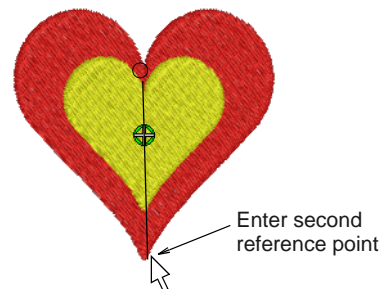
- 4 Enter a new stamp name and click **OK**. You are prompted to digitize the first reference point in the design window.
- 5 Enter the first reference point:
 - ▶ Press **Enter** to have the reference point created automatically.

- ▶ Move the mouse pointer to the position you want to use as the **anchor point** during manual stamp placement, and left-click.



- 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.



BERNINA Embroidery Software:

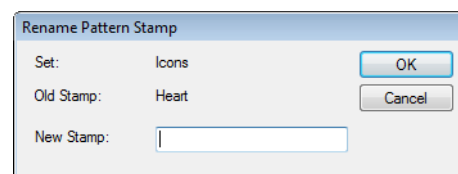
- ▶ creates the stamp
- ▶ registers the reference points either automatically or manually entered
- ▶ replaces any same name stamp with the newly created stamp
- ▶ displays a confirmation message.

- 7 Click **OK**.

The newly created stamp is displayed in the stamp list when the **Use Pattern** tab is selected.



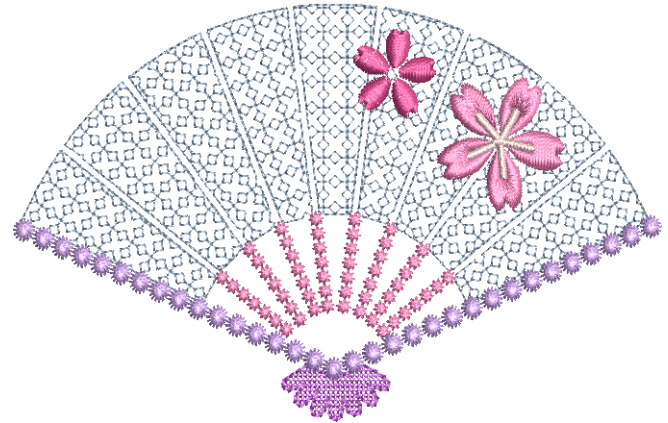
Note The **Rename** and **Delete** buttons are enabled in the **Use Patterns** tab whenever a user-defined stamp pattern is selected. When the **Rename** button is clicked, the **Rename Pattern Stamp** dialog opens. Use it to rename user-defined stamp patterns. See also **Applying pre-defined patterns**.



CHAPTER 24

CRAFT STITCH BORDERS & 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.

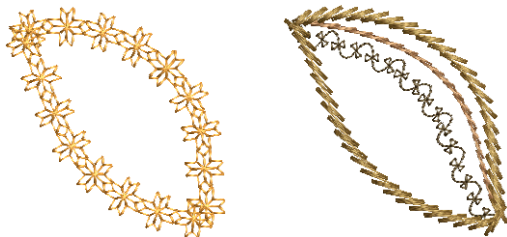
Backstitch forms a continuous thin line, similar to machine stitching, while stemstitch produces rope-like lines which can vary in thickness depending on stitch angle. Both can be used to make a smooth continuous row of stitching suitable for outlines and for blackwork.

Lacework and stipple are two decorative fill stitches. Lacework can be used to give a lacy 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 patterned outlines](#) for details.

Creating craft stitch borders



Use **Stitch > Blackwork Outline** to create craftstitch borders. Name derives from black silk thread traditionally used in this form of embroidery.



Use **Stitch > Candlewicking Outline** to create ornamental craftstitch borders. Specify exact pattern size and spacing.



Use **Stitch > Backstitch Outline** to create backstitch borders – old, adaptable stitch type used for delicate outlines.



Use **Stitch > Stemstitch Outline** to create stemstitch borders or for details such as stems and vines.

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 **Stitch** toolbar.
- 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 Outline:** See [Creating blackwork outlines](#) for details.
 - ▶ **Backstitch Outline:** See [Creating backstitch outlines](#) for details.
 - ▶ **Stemstitch Outline:** See [Creating stemstitch outlines](#) for details.
 - ▶ **Candlewicking Outline:** 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](#).

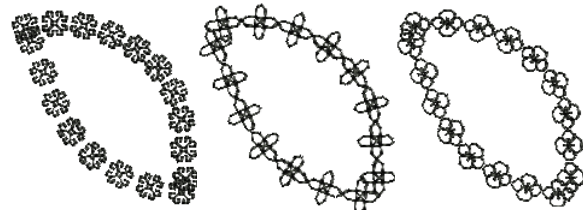
Creating blackwork outlines



Use **Stitch > Blackwork Outline** to create craftstitch borders. Name derives from black silk thread traditionally used in this form of embroidery.

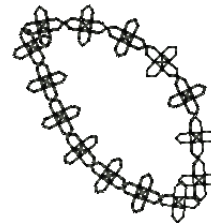
Blackwork gets its name from the black silk thread traditionally used in this form of embroidery. Early designs tend to be angular, whereas later designs use more diagonal stitches. Blackwork employs just a few

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](#).



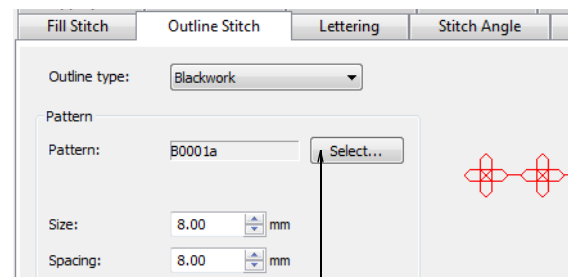
To create a blackwork outline

- 1 Select **Blackwork Outline**. 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.

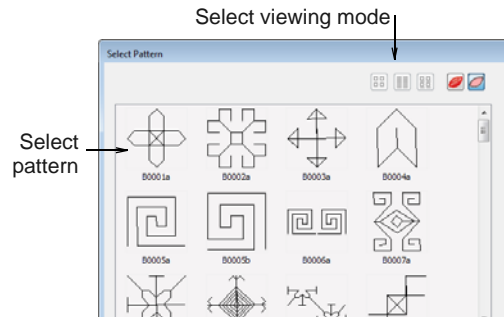
The **Object Properties > Outline Stitch** dialog opens.



Click to change pattern

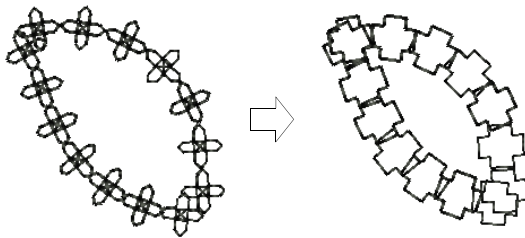
- 4 If not already applied, select **Blackwork** from the **Stitch type** list.
- 5 Click the **Select** button.

The **Select Pattern** dialog opens.

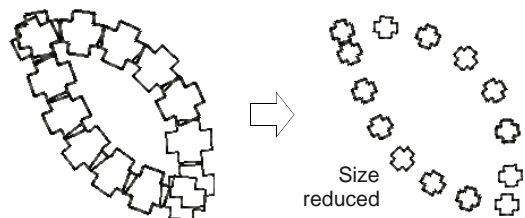


Tip Select a viewing mode – you can list patterns by picture, name, or both.

- 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.

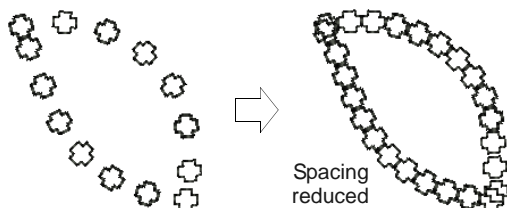


- 8 Adjust the pattern **Size** as required and click **Apply**.



- 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.



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 **Stitch > Backstitch Outline** to create backstitch borders – old, adaptable stitch type used for delicate outlines.

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.



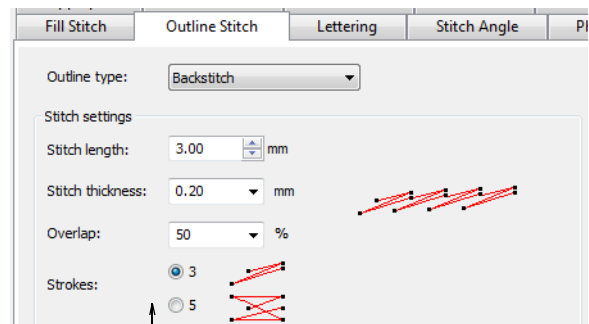
To create a backstitch outline

- 1 Select **Backstitch Outline**. See [Creating craft stitch borders](#) for details.
- 2 Digitize a line for the outline to follow. See [Digitizing Methods](#) for details.



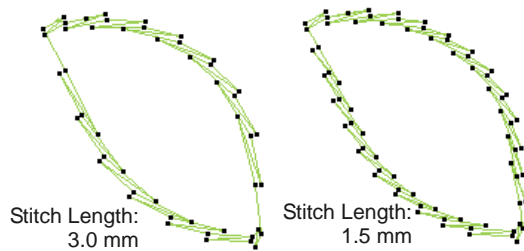
- 3 To change settings, double-click or right-click the object.

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

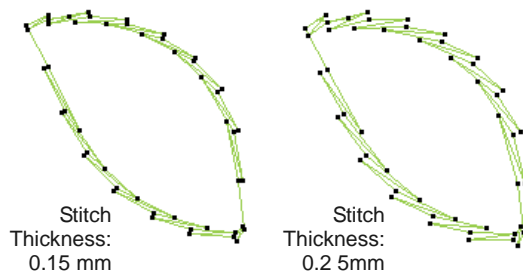


Adjust settings

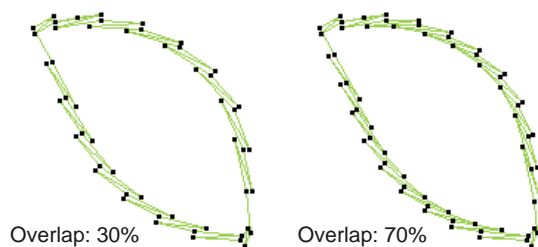
- 4 If not already applied, select **Backstitch** from the **Stitch type** list.
- 5 Adjust the **Stitch length** as required and click **Apply**.



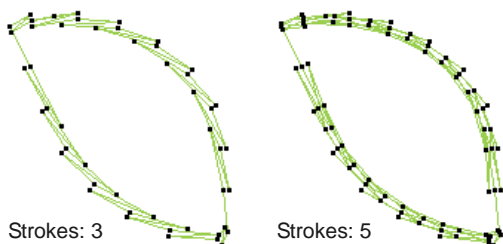
- 6 Adjust the **Stitch thickness** as required and click **Apply**.



- 7 Adjust the **Overlap** as required and click **Apply**.



- 8 Adjust the number of strokes as required.



Creating stemstitch outlines



Use **Stitch > Stemstitch Outline** to create stemstitch borders or for details such as stems and vines.

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

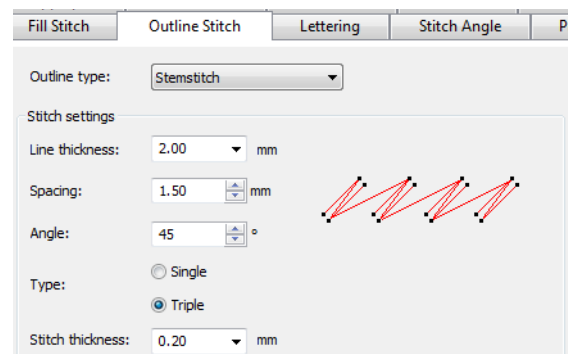


- 1 Select **Stemstitch Outline**. See [Creating craft stitch borders](#) for details.
- 2 Digitize a line for the outline to follow. See [Digitizing Methods](#) for details.

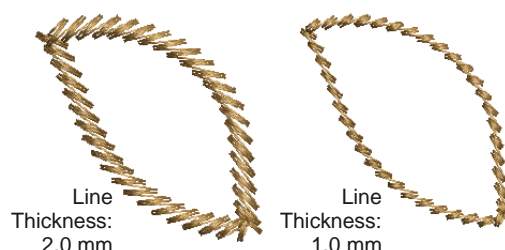


- 3 To change settings, double-click or right-click the object.

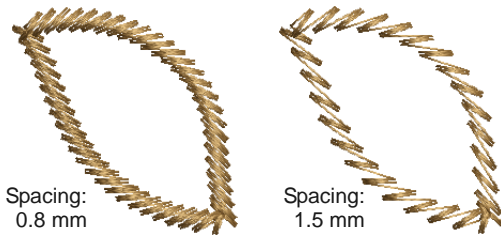
The **Object Properties > Outline Stitch** dialog opens.



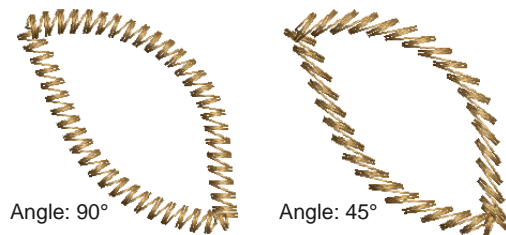
- 4 If not already applied, select **Stemstitch** from the **Stitch Type** list.
- 5 Adjust the **Line thickness** as required and click **Apply**.



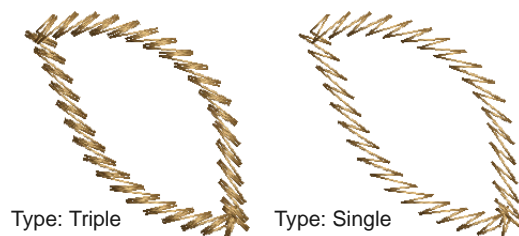
- 6 Adjust the **Spacing** as required and click **Apply**.



- 7 Adjust the **Angle** as required and click **Apply**.



- 8 Select either **Single** or **Triple** and click **Apply**.



- 9 For **Triple** only, enter a **Stitch Thickness**.



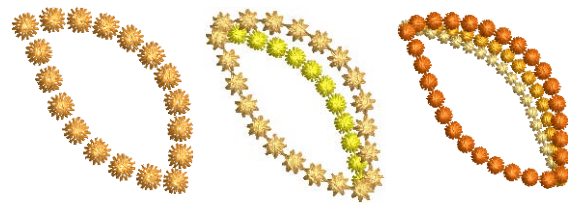
Creating candlewicking outlines



Use **Stitch > Candlewicking Outline** to create ornamental craftstitch borders. Specify exact pattern size and spacing.

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 Outline 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

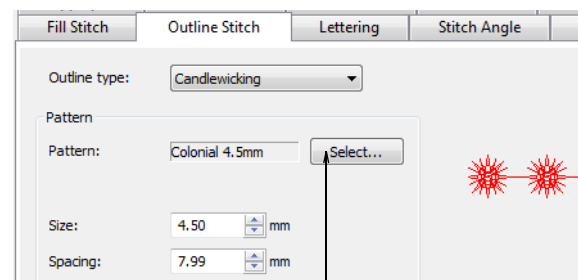


- 1 Select **Candlewicking Outline**. See [Creating craft stitch borders](#) for details.
- 2 Digitize a line for the outline to follow. See [Digitizing Methods](#) for details.



- 3 To change settings, double-click or right-click the object.

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

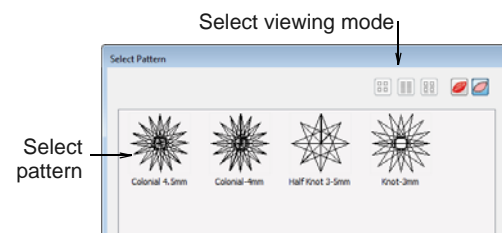


Click to change pattern

- 4 If not already applied, select **Candlewicking** from the **Stitch type** list.

- 5 Click the **Select** button.

The **Select Pattern** dialog opens.

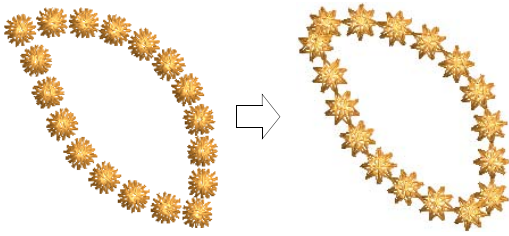


Tip Select a viewing mode – you can list patterns by picture, name, or both.

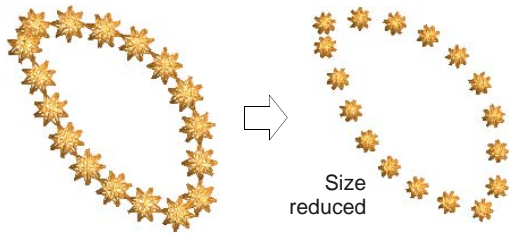
- 6 Select a pattern from the display panel.

This becomes the current pattern. See also [Craft Stitch Pattern Samples](#).

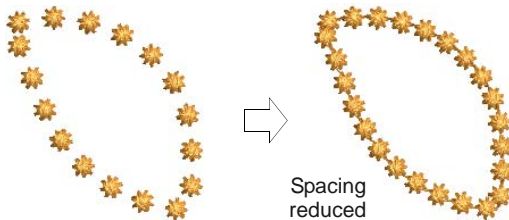
- 7 Click **Apply** to preview the effect.
The selected pattern is applied to the object.



- 8 Adjust the **Size** as required and click **Apply**.



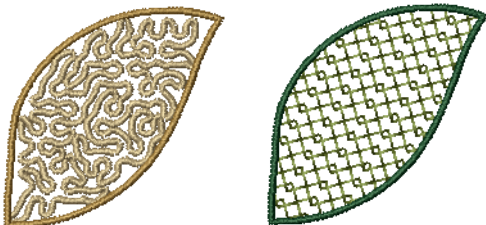
- 9 Adjust the **Spacing** as required and click **Apply**.



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



Use **Stitch > Blackwork Fill** to create fill for blackwork designs. Name derives from black silk thread traditionally used in this form of embroidery.



Use **Stitch > Candlewicking Fill** to create candlewicking fills – traditional white-on-white embroidery usually done with heavy cotton thread on white linen.



Use **Stitch > Lacework Fill** to create a lacey look with open trellis-like patterns.



Use **Stitch > Sculptured Fancy Fill** to create 3D pattern effects with turning fills.



Use **Stitch > Ripple Fill** to create spiral stitching from the center of any filled object.



Use **Stitch > Stipple Run Fill** to create fills made up of run stitches which meander within a border.

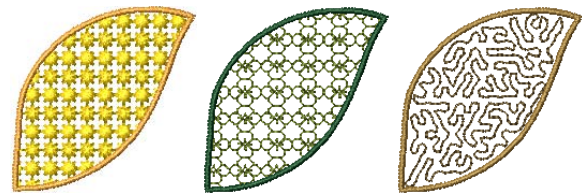
BERNINA Embroidery Software provides four craft stitch fills – **Blackwork Fill**, **Candlewicking Fill**, **Lacework** and **Stipple**. Different stitch types are suited to different objects. See [Craft Stitch Pattern Samples](#) for details.



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 **Stitch** toolbar.
- 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.



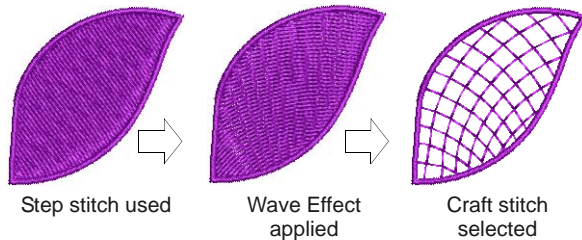
Tip You can change between craft stitch fills and outlines quickly using the buttons on the **Craft Stitch** toolbar or the **Fill** dropdown menu. See also [Creating craft stitch borders](#).

4 Adjust settings as required:

- ▶ **Blackwork Fill:** See [Creating blackwork fills](#) for details.
- ▶ **Candlewicking Fill:** See [Creating candlewicking fills](#) for details.
- ▶ **Lacework Fill:** See [Creating lacework fills](#) for details.
- ▶ **Sculptured Fancy Fill:** See [Creating sculptured fancy fills](#) for details.
- ▶ **Ripple Fill:** See [Creating ripple fills](#) for details.
- ▶ **Stipple Run Fill:** See [Creating stippling fills](#) for details.



Tip Wave Fill lets you contour fill stitches along a digitized guideline. **Wave Fill** 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](#).

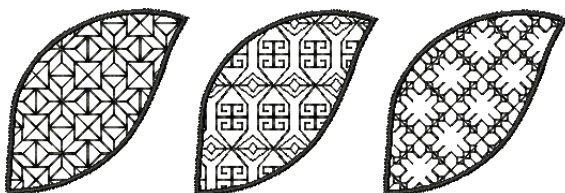


Creating blackwork fills



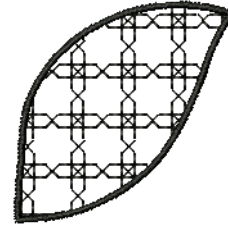
Use **Stitch > Blackwork Fill** to create fill for blackwork designs. Name derives from black silk thread traditionally used in this form of embroidery.

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

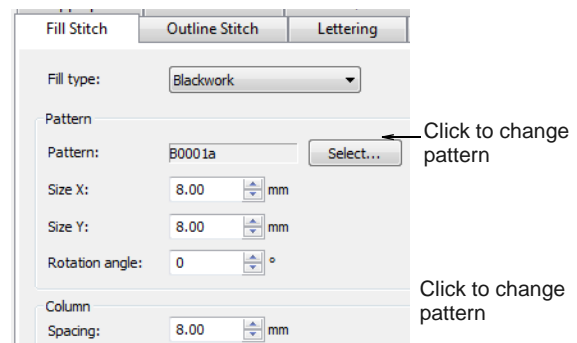
- 1 Select **Blackwork Fill**. See [Creating craft stitch fills](#) for details.
- 2 Create or select a closed shape. See [Digitizing Methods](#) for details.



Note Stitch angle has no effect on the pattern layout.

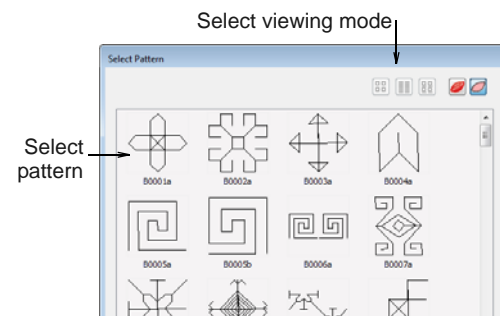
- 3 To change settings, double-click or right-click the object.

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



- 4 If not already applied, select **Blackwork** from the **Stitch type** list and click **Select**.

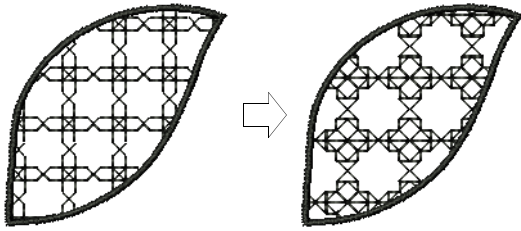
The **Select Pattern** dialog opens showing all available fill types.



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.

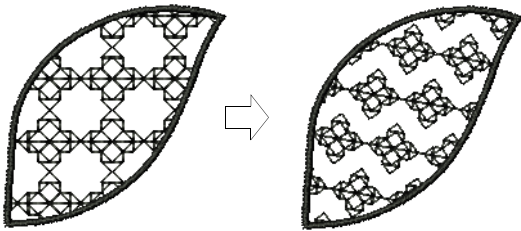
The selected pattern is applied to the object.



- 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.



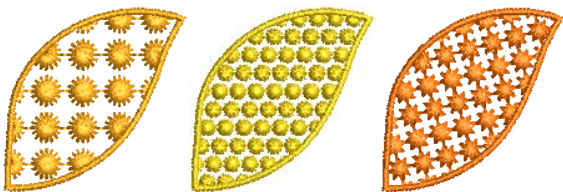
Note If more than half a pattern is outside the boundary, it will be clipped along the boundary.

Creating candlewicking fills



Use **Stitch > Candlewicking Fill** to create candlewicking fills – traditional white-on-white embroidery usually done with heavy cotton thread on white linen.

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.

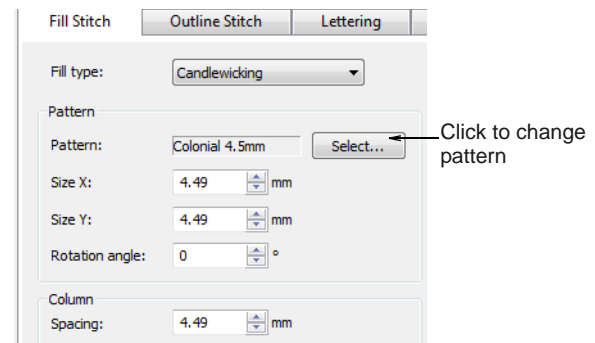
- 2 Create or select a closed shape. See [Digitizing Methods](#) for details.



Note Stitch angle has no effect on the pattern layout.

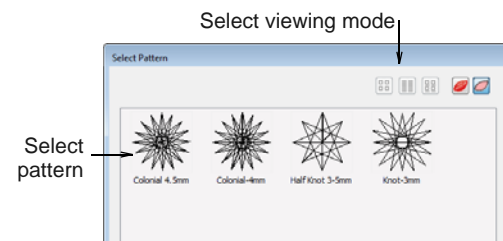
- 3 To change settings, double-click or right-click the object.

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



- 4 If not already applied, select **Candlewicking** from the **Stitch type** list and click **Select**.

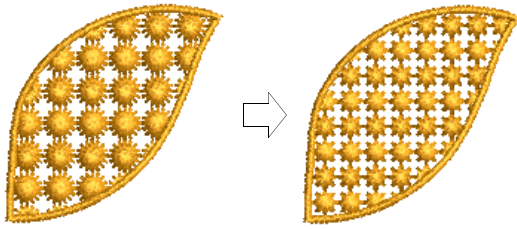
The **Select Pattern** dialog opens showing all available fill types.



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.

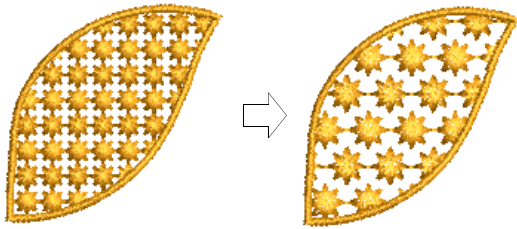
The selected pattern is applied to the object.



- 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.



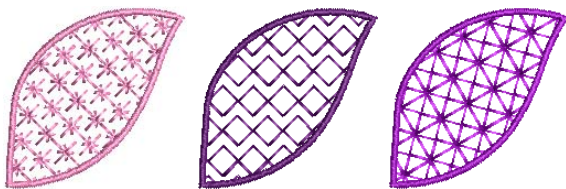
Note If more than half a pattern is outside the boundary, it will be clipped along the boundary.

Creating lacework fills



Use **Stitch > Lacework Fill** to create a lacy look with open trellis-like patterns.

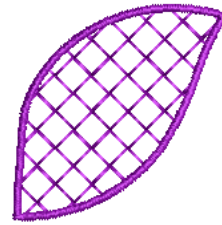
Lacework stitch consists of an open square trellis-like pattern which gives objects a lacy look. With Lacework fills you can adjust the layout of the preset patterns.



To create a lacework fill

- 1 Select **Lacework Fill**. See [Creating craft stitch fills](#) for details.

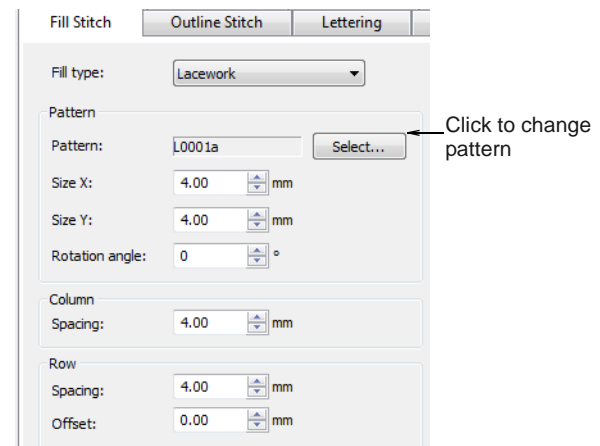
- 2 Create or select a closed shape. See [Digitizing Methods](#) for details.



Note Stitch angle has no effect on the pattern layout.

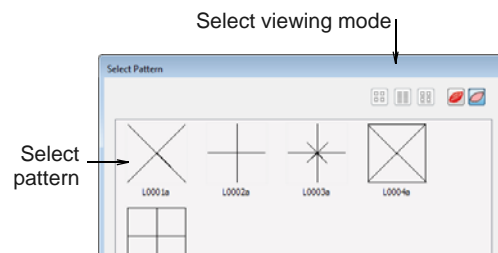
- 3 To change settings, double-click or right-click the object.

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



- 4 If not already applied, select **Lacework** from the **Stitch type** list and click **Select**.

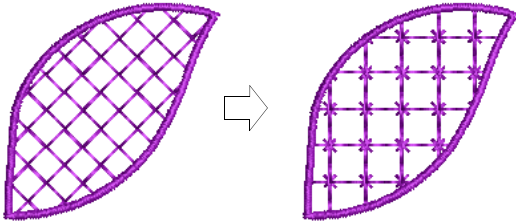
The **Select Pattern** dialog opens showing all available fill types.



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.

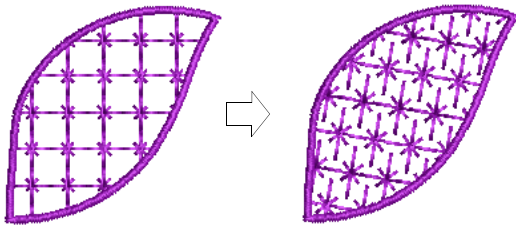
The selected pattern is applied to the object.



- 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 **Stitch > Sculptured Fancy Fill** to create 3D pattern effects with turning fills.

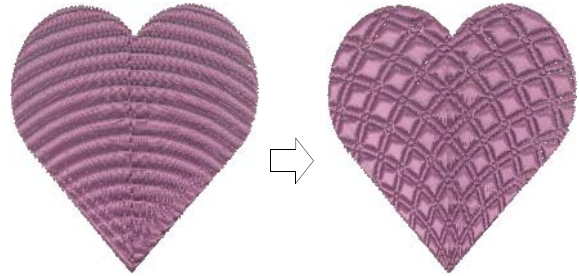
Sculptured Fancy Fill stitch is related to **Fancy Fill** stitch using needle penetrations to form a tiled pattern. The difference is that **Sculptured Fancy Fill** stitch can be applied to objects with **turning stitches** creating three dimensional, turning pattern effects which can't be achieved by **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 [Modifying 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 Select **Sculptured Fancy Fill** icon. See [Creating craft stitch fills](#) for details.

The effect is applied using the current **Fancy Fill** pattern. See also [Creating fancy fills](#).

Creating ripple fills



Use **Stitch > Ripple Fill** to create spiral stitching from the center of any filled object.

Ripple Fill 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. It can be applied to any filled object. The center of the **Ripple** stitch can be moved with the **Reshape Object** tool.



Ripple Fill 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](#).

To create a ripple fill

- 1 Select **Ripple Fill**. See [Creating craft stitch fills](#) for details.

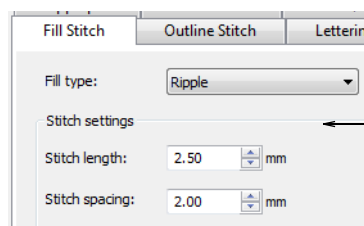
- 2 Create or select a closed shape. See **Digitizing Methods** for details.



Note Stitch angle has no effect on the pattern layout.

- 3 To change settings, double-click or right-click the object.

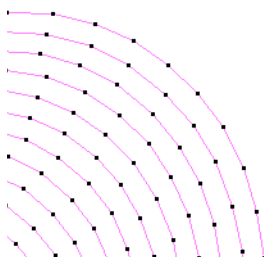
The **Object Properties > Fill Stitch** dialog opens.



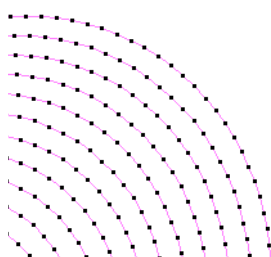
Adjust stitch settings as desired

- 4 Adjust ripple **Stitch settings** as desired:

- ▶ Adjust **Stitch length** for smoother or sharper curves.

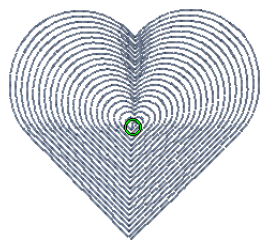


Stitch length: 3.0 mm

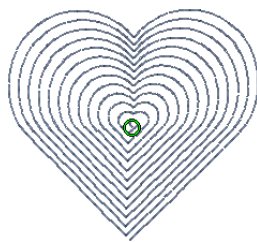


Stitch Length: 1.0 mm

- ▶ Adjust **Stitch spacing** for denser or more open stitching.



Stitch spacing: 3mm



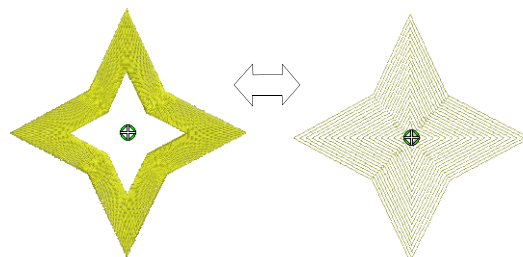
Stitch spacing: 5mm

- 5 Click **Apply** to preview the effect or **OK** to finish and close.

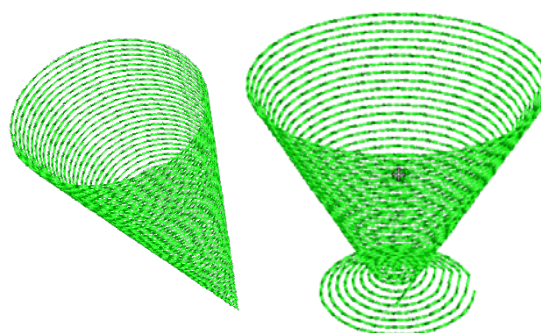
The selected settings are applied to the object.



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 Fill** stitch outside the object outline.



Creating stippling fills



Use **Stitch > Stipple Run Fill** to create fills made up of run stitches which meander within a border.

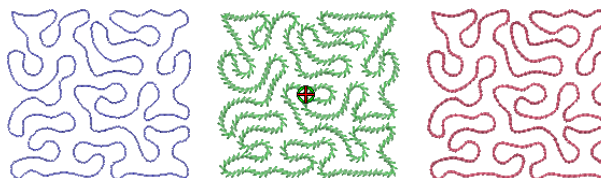


Use **Stitch > Stipple Stemstitch Fill** to create heavier stipple run fills with stemstitch outlines.



Use **Stitch > Stipple Backstitch Fill** to create heavier stipple run fills with backstitch outlines.

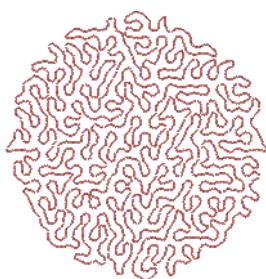
Stippling creates a fill made up of run stitches which meander within a border. There are three types: **Stipple Run**, **Stipple Backstitch**, and **Stipple Stemstitch**. Stippling can be applied to the same objects as **Pattern Fill** – i.e. closed objects with or without stitch angles. It can't be 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

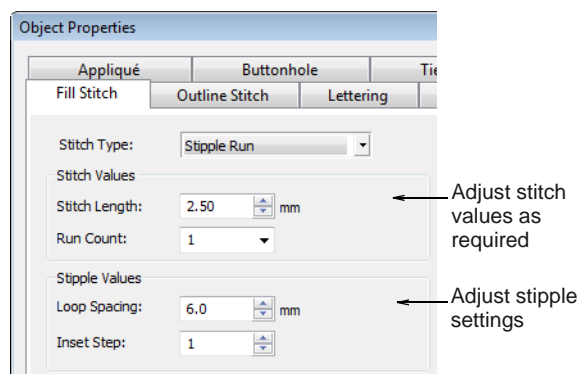
- 1 Choose a **Stipple Fill**. See [Creating craft stitch fills](#) for details.
- 2 Create or select a closed shape. See [Digitizing Methods](#) for details.



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.



- 4 Adjust run **Stitch settings** 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 settings** as desired:

- ▶ Adjust **Loop spacing** for tighter or more open stitching.



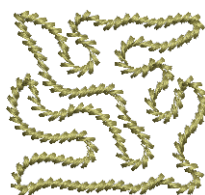
Loop Spacing: 1.5 mm



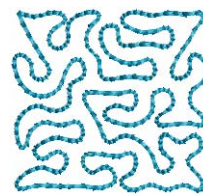
Loop Spacing: 2.5 mm

- ▶ 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.

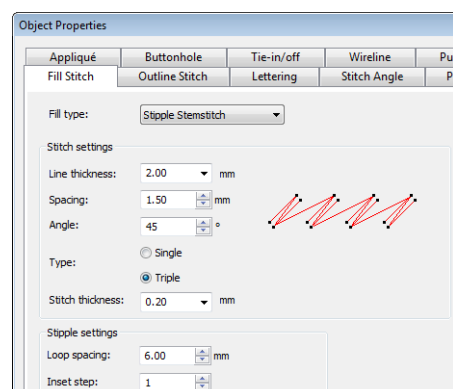


Stipple Stemstitch

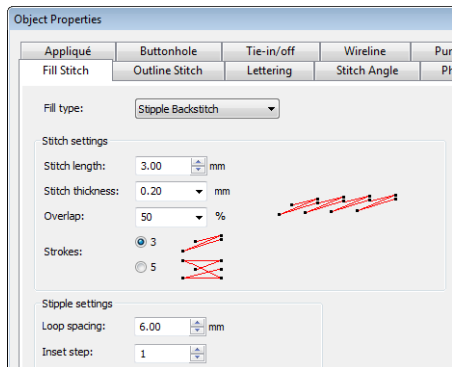


Stipple Backstitch

- ▶ **Stipple Stemstitch** settings are also controlled via **Object Properties**. See also [Creating stemstitch outlines](#).

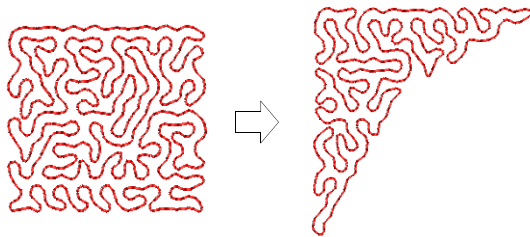


- **Stipple Backstitch** settings are also controlled via **Object Properties**. See also [Creating backstitch outlines](#).

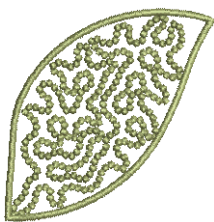


- 7 Click **Apply** to preview the effect or **OK** to finish and close.

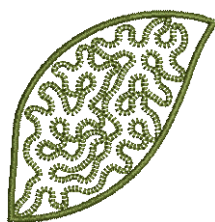
Once a stipple fill is generated, you can adjust [object properties](#) of the generated stipple run at any time. You can also reshape and scale stipple fill object outlines while preserving settings. See [Reshaping objects using reshape nodes](#) for details.



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



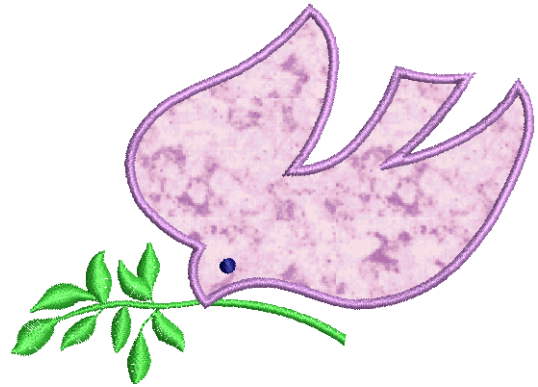
Stipple with Blanket

CHAPTER 25

DIGITIZING FOR APPLIQUÉ

Appliqué is an important craft in home sewing, and the Appliqué feature provides an easy way to create quality work. Use 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 Remove Appliqué Overlaps 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 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 **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 Appliqué



Use Digitize > Appliqué to digitize closed-object appliqué with all necessary stitching.

Use **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 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 Appliqué

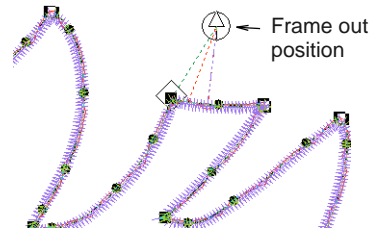
- 1 Load a picture. See [Loading vector artwork](#) for details.
- 2 Click the **Appliqué** icon in **Design** or **Artistic View**.
- 3 Digitize the appliqué outline by marking reference points around the shape.
 - ▶ Click to create a corner point.
 - ▶ Right-click to create a curve point.



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 appliqué options](#) for details.

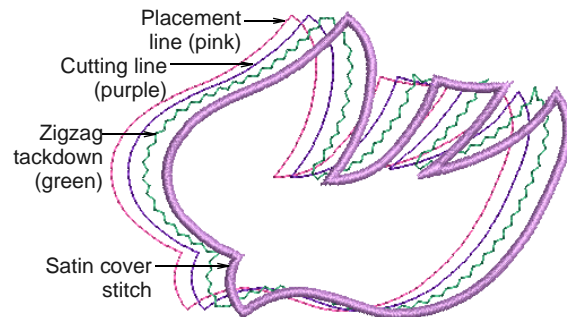
- ▶ **Automatic:** If activated, the frame-out position is determined automatically.
- ▶ **Manual:** If activated, click the point where the frame-out position is to be.



- ▶ **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 Appliqué settings](#) for details.



Note The **Ungroup** command is not available when an Appliqué object is selected. If you wish to access component objects, use the **Break Apart** tool. See [Splitting into component objects](#) for details.

Adjusting Appliqué settings



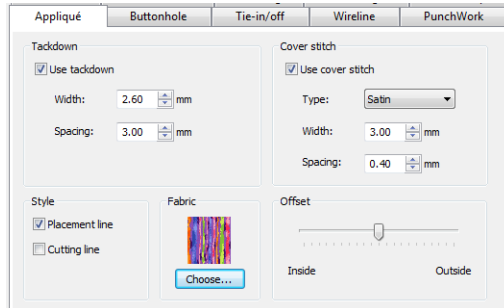
Use General > Object Properties to set current properties.

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 Appliqué settings

- 1 Double-click or right-click an Appliqué object.

The **Object Properties > Appliqué** dialog opens.



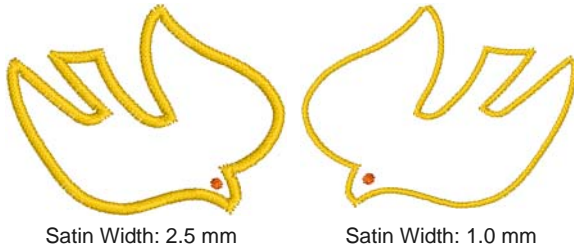
Tip To adjust settings prior to digitizing, with no objects selected, access the **Object Properties > Appliqué** dialog.

- In the **Cover stitch** panel, select the required cover stitch type – Satin or Blanket.

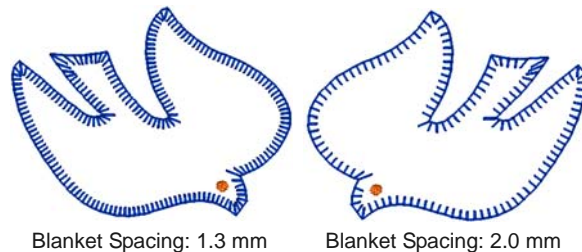


Note By default cover stitching is activated. This control allows compatibility between appliques created in Explorations which has a 'No Border' option, and those created in BERNINA Embroidery Software.

- Adjust cover stitch width and spacing as required:
 - **Width:** Enter the width of the Satin or Blanket column.

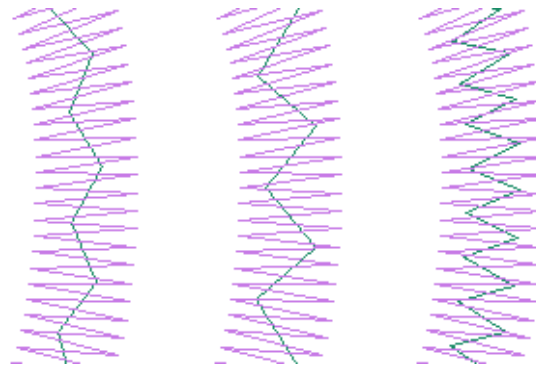


- **Spacing:** Enter the stitch spacing of the Satin or Blanket column.



- 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

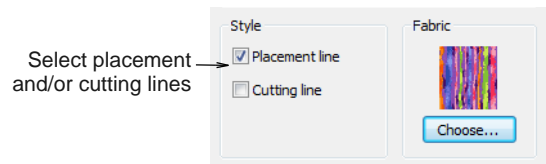
Tackdown stitch width: increased spacing: decreased



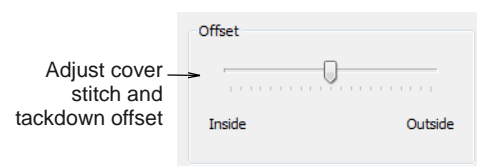
Note Tackdown stitching is not available for Blanket cover stitch.

- Select required appliqué styles.

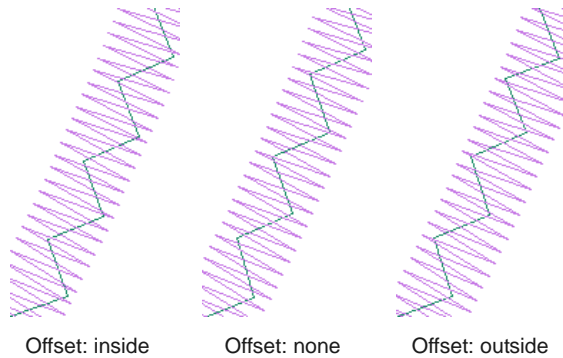
Two options are available – **Placement Line** and **Cutting Line**. Use placement lines as a guide to place pre-cut fabric patches. Use cutting lines to hold down uncut patches so that they can be cut in place.



- Use the slider to offset the cover stitch relative to – inside or outside – the placement line.



Satin defaults to none while Blanket defaults to 100% inside.



- 7 Click **Apply**.
Current settings are applied to selected objects.

Placing fabrics in Appliqué designs



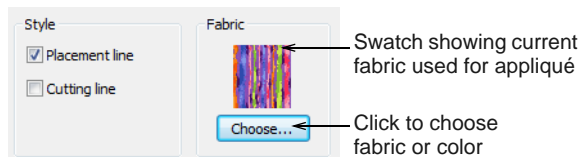
Use View > Show Appliqué Fabric to show or hide background fabric / color of any appliqué objects in the design.

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.



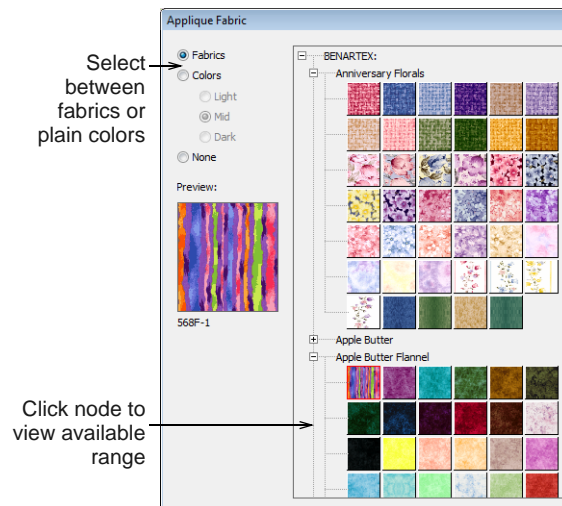
To place fabric in an Appliqué design

- 1 Double-click or right-click an appliqué object.
The **Object Properties > Appliqué** dialog opens.

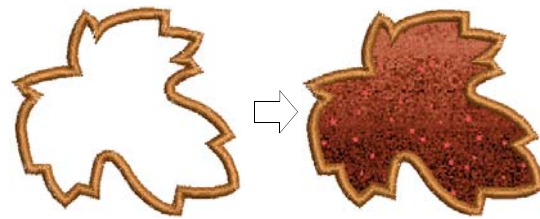


- 2 Click **Choose** to choose a fabric or plain color in the Fabric panel to assign to your appliqué patch.
The **Appliqué Fabric** dialog opens. The **Fabric/Color/None** options allow you to select

between fabrics or plain colors. By default the **Fabrics** option is selected.



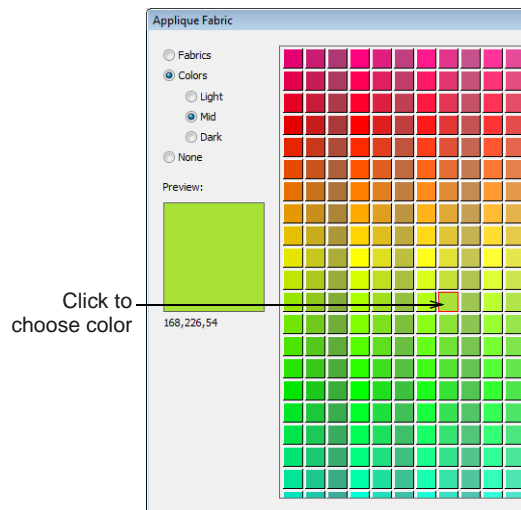
- 3 Scroll down the display panel to find a suitable category and click a node on the fabrics tree to view the available range – e.g. 'Anniversary Florals'.
- 4 Click **OK** to apply it to the selected appliqué object.



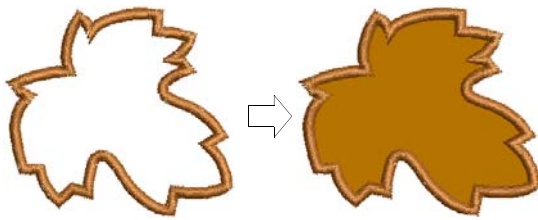
Note The Benartex range is displayed as in **Patch Properties** dialog. See [Creating open-object appliqué](#) for details.

- 5 If you prefer to assign a color to your appliqué patch, select the **Color** option.

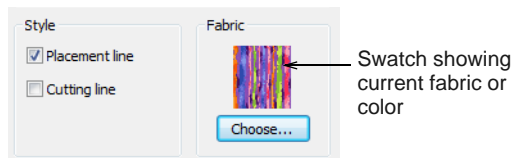
The **Appliqué Fabric** dialog updates to display a range of colors.



- 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.



- 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

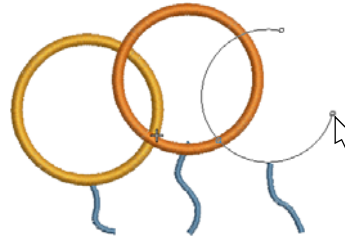


Click **Edit > Remove Appliqué Overlaps** to remove unwanted stitching from underlying appliqué objects.

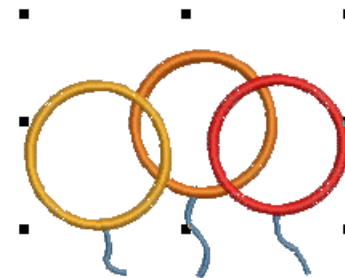
Using the **Remove Appliqué Overlaps** tool, you can create overlapping appliqué objects with partial cover stitching without doubling-up borders. The lower layers will have partial appliqué applied to them.

To create partial cover appliqué

- 1 Create appliqué shapes with **Appliqué**. See **Creating appliqué with Appliqué** for details.

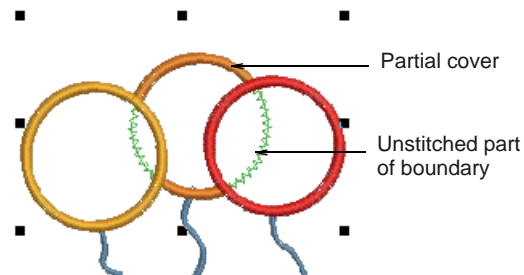


- 2 Select the appliqué objects.



- 3 Click the **Remove Appliqué Overlaps** icon.

Cover stitches are removed where objects overlap, leaving only the secondary objects – tackdown, placement and cutting lines.



Creating open-object appliqué

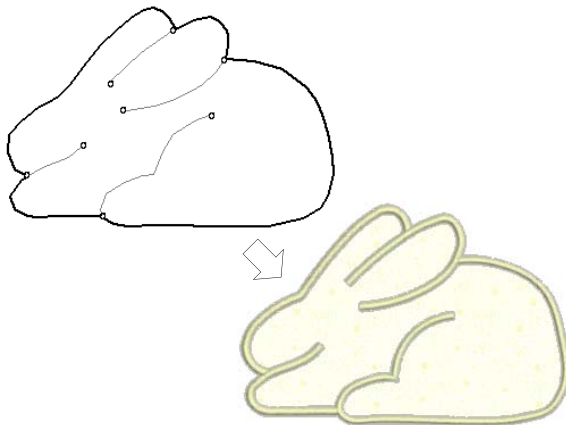
Appliqué is an important craft in home sewing, and the **Appliqué** feature provides an easy way to create high quality work. However, sometimes you require added flexibility to extend the range of designs that

can be sewn. For instance, designs containing open objects cannot be handled by **Appliqué**.



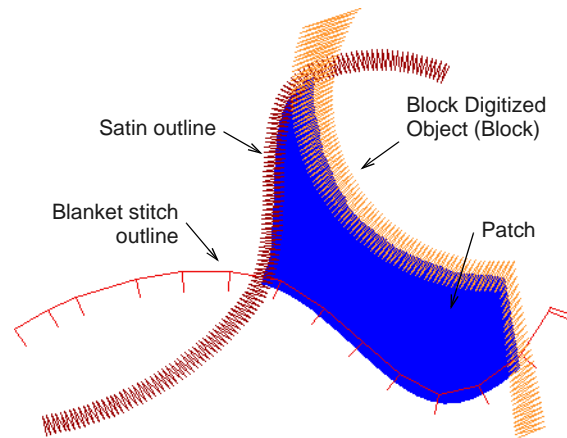
In this design, the stem in the center of the leaf must be sewn **after** the placement and cutting lines around the leaf outline but **before** the cover stitches. There may be one or two fabric areas. If there is only one patch, the stem will not require placement or tacking stitches. If there are 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:



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 & 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 Digitize > Advanced Appliqué to generate open-object appliqué from one or more source objects.

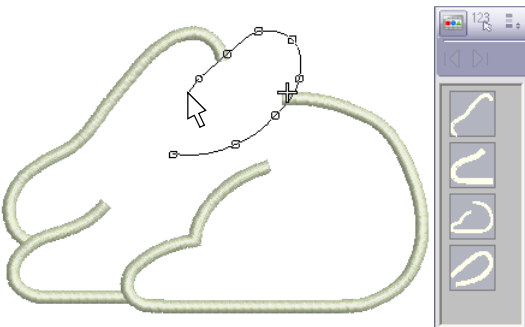
Several types of 'primary object' can be used in the creation of open-object appliqué, including any outline stitch type – Single Run, Satin Outline, etc – any filled object, or any block-digitized object. Additionally, some other objects can be used as input, including lettering objects, auto-appliqués 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.

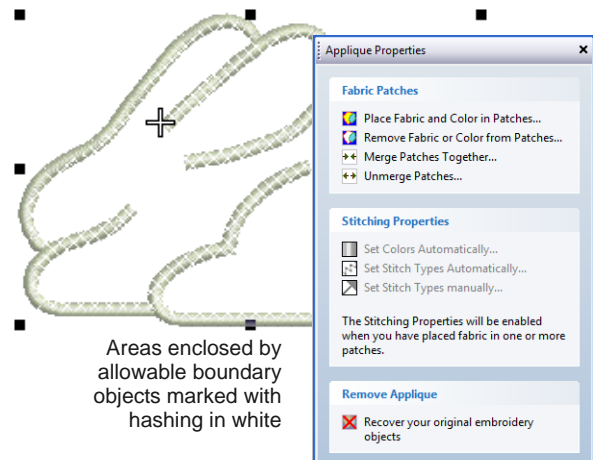
To create an open-object appliqué design

- 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.



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



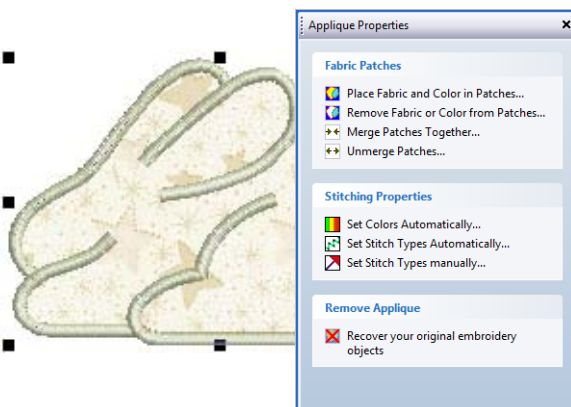
Use View > Show Appliqué Fabric to show or hide background fabric / color of any appliqué objects in the design.

You can add fabric swatches to open-object appliqué when it is first created or at any later stage.

To place fabric in patches

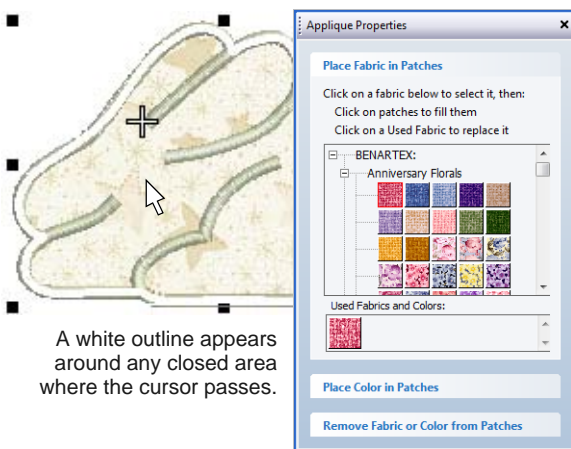
- 1 If editing an existing open-object appliqué object, double-click or right-click the object.

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.



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



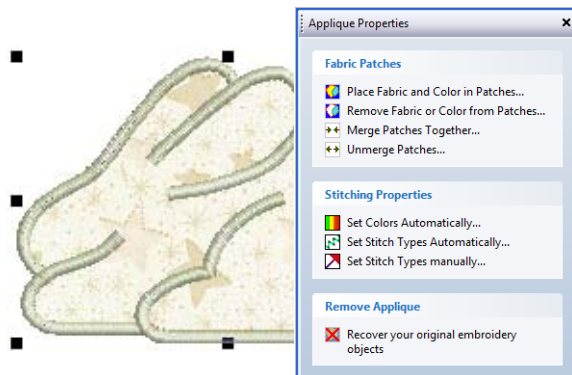
Use View > Show Appliqué Fabric to show or hide background fabric / color of any appliqué objects in the design.

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

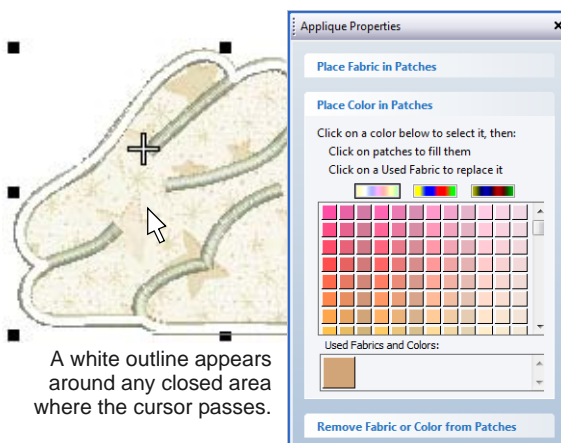
- 1 If editing an existing open-object appliqué object, double-click or right-click the object.

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.

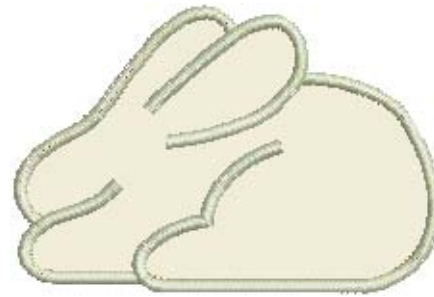
The dialog changes to display the **Place Fabric in Patches** panel. There may already be pre-selected entries in the **Used Fabrics and Colors** palette.



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 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 Use the **Show Appliqué Fabric** toggle to turn appliqué fabrics/colors display on/off.

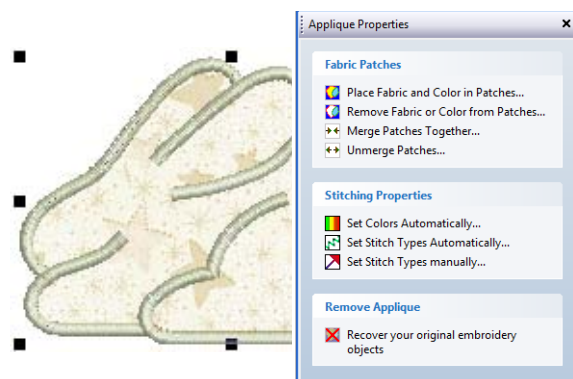
Removing fabric or color from patches

You can remove colors or fabrics from open-object appliqué at any stage.

To remove fabric or color from patches

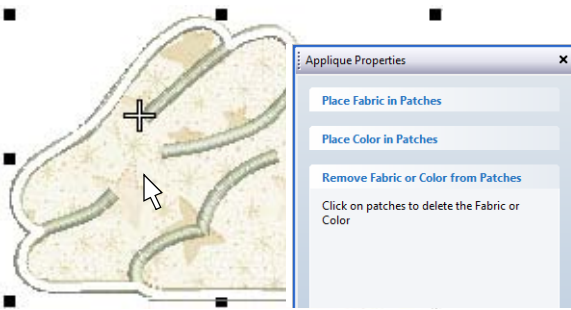
- 1 Double-click or right-click the open-object appliqué object.

The **Appliqué Properties** dialog opens.

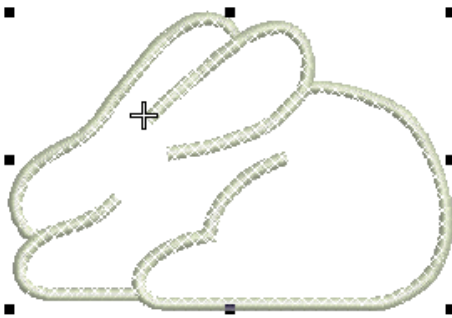


- 2 Click the **Remove Fabric from Patches** option.

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 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 & unmerging patches

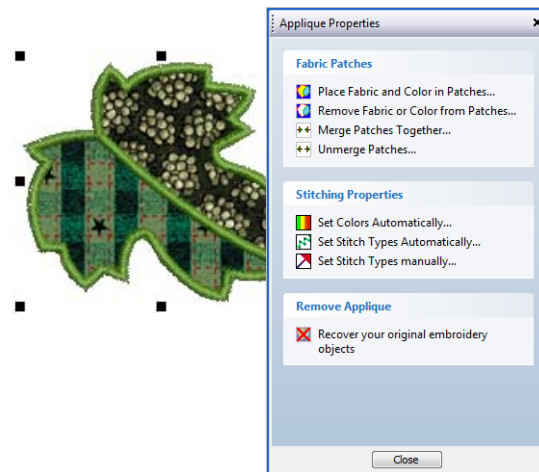
In the sample below, there may be one or two fabric areas. If there are two patches, the stem, as well as the outline, must have placement and tacking stitches. If there is only one patch, the stem will not

require placement or tacking stitches. In this case, the two fabric areas need to be merged into one.

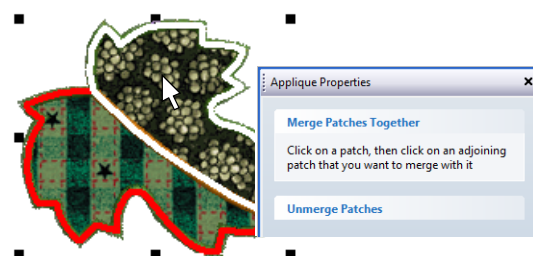


To merge and unmerge patches

- 1 Double-click or right-click the Advanced Appliqué object.
The **Applique Properties** dialog opens.



- 2 Select the **Merge Patches Together** option.
The **Merge Patches Together** panel is displayed.

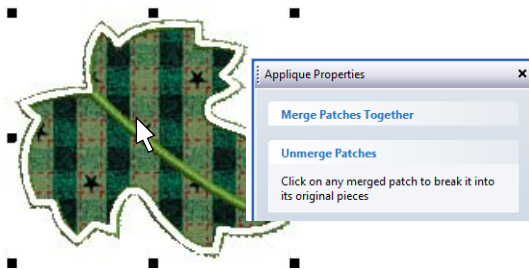


- 3 Select the patch to merge.
A red line appears around its border.
- 4 Hover the cursor over the second patch.
This patch may or may not be filled with fabric or color. A white line appears around its border.
- 5 Click the patch.
The two patches are merged into a single patch taking the fabric or color of the first one. All

secondary stitching is removed from the boundary segments previously shared by the patches.



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 patches, each with their current (not original) fabric or color. New secondary objects are created for shared boundaries.

- 6 Click **Back** to complete.
- 7 Click **Close** to close the dialog.



Tip Use the **Show Appliqué Fabric** toggle to turn appliqué fabrics/colors display on/off.

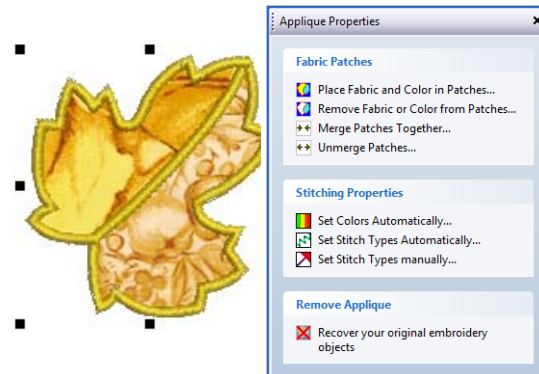
Setting stitch colors

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**.

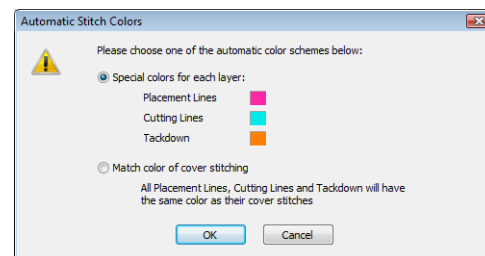
To set stitch colors

- 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 **Applique 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.

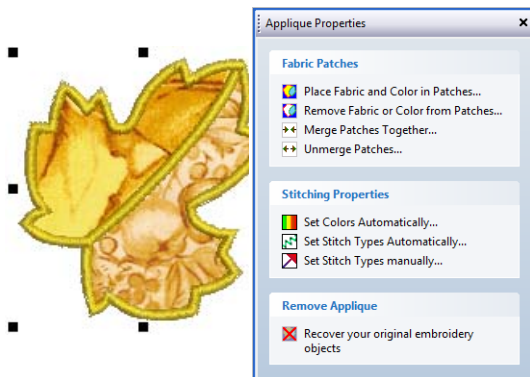
- ▶ If the cover stitches are anything else, the tackdown is set to Run stitch.

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.

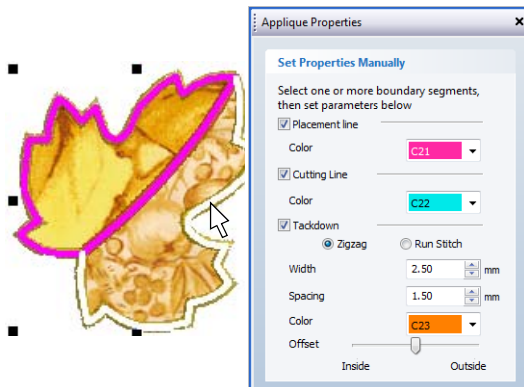
To set stitch types

- 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:

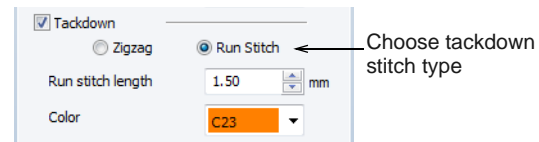
- ▶ **Placement lines:** These are, optionally, the first appliqué layer to be stitched. Placement lines are used to position pre-cut appliqué patches on the background material.
- ▶ **Cutting lines:** Again optionally, cutting lines form a guide when trimming the fabric of an appliqué patch 'in situ'.
- ▶ **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.



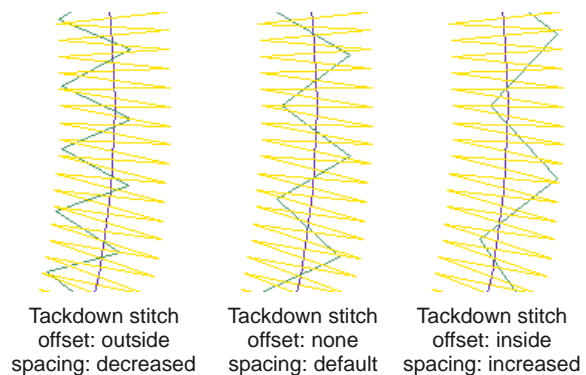
Note When you set colors manually, any change you make overrides automatically chosen colors. See [Setting stitch colors](#) for details.

- 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:



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.

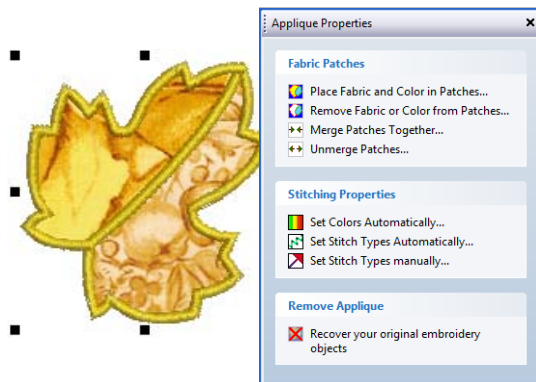
Recovering the original embroidery objects

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.

CHAPTER 26

RAISED EMBROIDERY

BERNINA Embroidery Software provides tools and techniques for expanding flat embroidery surfaces into raised or 'sculpted' surfaces.

Stumpwork is a raised form of embroidery. It is created on one backing fabric and transferred to another, 'ground fabric'. BERNINA Embroidery Software allows you to visualize all components of a stumpwork design in a single design window. At the same time, it lets you edit each stumpwork piece individually and output to machine.



Quilting creates dimension by stuffing or filling areas to produce a raised surface. In BERNINA Embroidery Software, the quilting feature consists of two components: **Raised Satin** to create 'puffy embroidery', and **Trapunto Outlines** to turn puffy embroidery designs into trapunto designs.

Needle felting, also called 'dry felting', is a popular fiber-arts craft that creates felt without the use of water. In BERNINA Embroidery Software, a dedicated **PunchWork** tool allows you to create felting objects and designs for use with the BERNINA **Rotary Hook Punch**.

This section covers tools and techniques for expanding flat embroidery surfaces into raised or 'sculpted' surfaces, specifically by means of stumpwork, quilted embroidery, and needle felting.

Stumpwork embroidery

Stumpwork is a raised form of embroidery. It is created on one backing fabric and transferred to another, 'ground fabric'. Through the use of padding, beads, wire and/or needle lace stitches it becomes three-dimensional in contrast to flat embroidery.



The difficulty for anyone trying to create this type of embroidery is in visualizing the complete design. BERNINA Embroidery Software allows you to visualize all components of a stumpwork design in a single design window. At the same time, it lets you edit each piece individually and output to machine as needed.

Stumpwork workflow

Stumpwork consists of four main elements:

Element	Requirement	Note
Cutting	Mandatory, with or without additional stabilizing lines	Either manually or using the BERNINA CutWork tool
Fill	Mandatory	May be embroidered or plain fabric
Wire	Optional	Consisting of placement, tackdown and cover stitching
Base design	Optional	But usually used in conjunction with stumpwork

Stumpwork scenarios

Stumpwork usually conforms to one of the following scenarios:

- ▶ Generating stumpwork piece from existing embroidery
- ▶ Digitizing stumpwork pieces from scratch with fabric and wire

- ▶ Digitizing additional wirelines to lend support and shape.

Machine recommendations

Here are some recommendations for producing stumpwork on the machine:

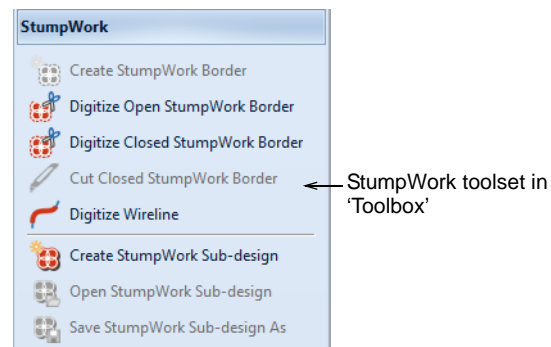
- ▶ Use the 44C foot. It is transparent and is large enough to help hold the wire in place as it is tacked down.
- ▶ Use a foot control when tacking down the wire – it's easier to stop and start that way.
- ▶ Reduce to slow speed with the sliding speed control.
- ▶ After the wire is tacked down, it is ok to stitch at fast speed.
- ▶ When working with a stumpwork piece that has a wireline border with wirelines within it – such as a leaf with central veins – make sure the wire tackdown ends slightly before the tackdown around the object. That way, the latter won't catch the wirelines inside.
- ▶ An alternative, cut the wire slightly shorter than the length of the wireline. This allows you to have stitching right up to the border, thereby avoiding unwanted gaps.

StumpWork user interface

The **StumpWork** user interface has three main components:

StumpWork toolbox

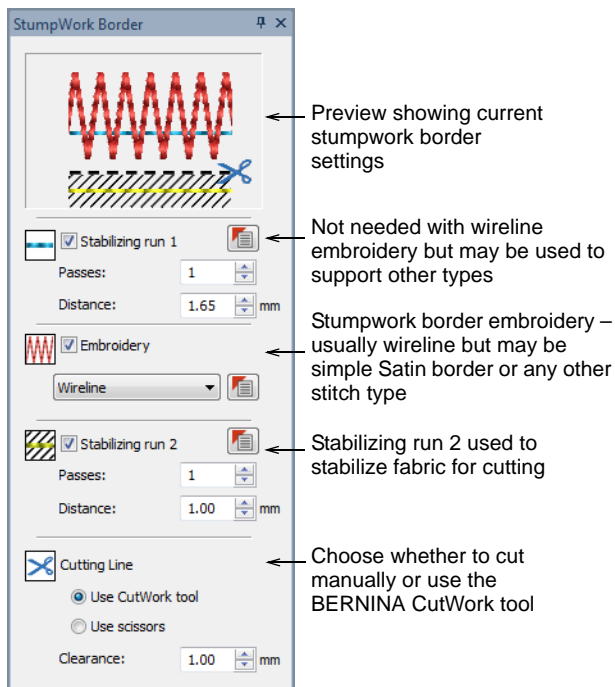
Stumpwork in BERNINA Embroidery Software is created by means of a **StumpWork** toolset. This contains all tools needed to digitize stumpwork from scratch or create from existing embroidery. See **StumpWork toolset** for details.



StumpWork Border docker

The **StumpWork Border** docker allows you to preset characteristics of the type of stumpwork you are

creating. Settings can also be applied to existing stumpwork borders. See also [Editing stumpwork](#).



Note Click associated **Object Properties** icon to access object properties for each included stumpwork piece.

Stumpwork components

Stumpwork consists of some or all of the following components. Each is separated in the stitching sequence by a machine stop.

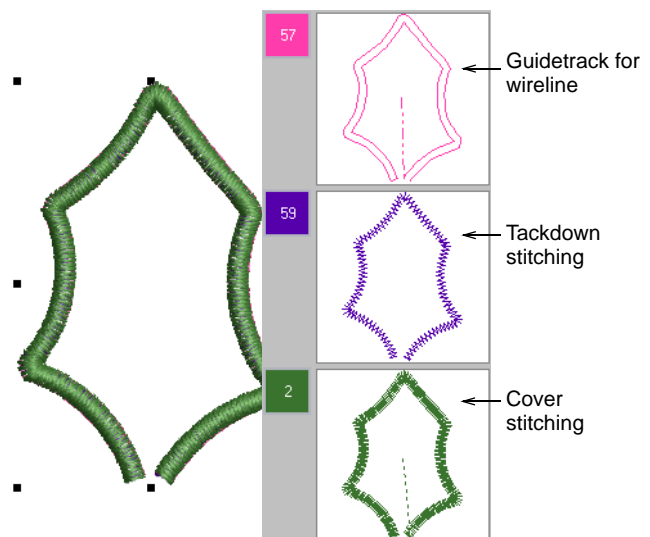
Component	Notes
Stabilizing run 1	This is internal to the stumpwork. It is not needed with wireline embroidery but may be required with other types. Stabilizing runs are used to reduce any deformation in the material prior to cutting.
Embroidery border	Typical stumpwork makes use of a wireline but other borders may be used. Stop: If you use wireline, all necessary stitching and stops are included to allow you to place and sew the wireline. See below
Stabilizing run 2	This is external to the stumpwork. This is generally used to stabilize the fabric for cutting. Stop: Change to a cutting tool or cut stumpwork out by hand.
† Mandatory	

Component	Notes
Cutting line	You have the option of generating a cutting line for the CutWork tool, or cutting by hand. The Clearance setting allows you to set a margin between the stumpwork and the cutting line.

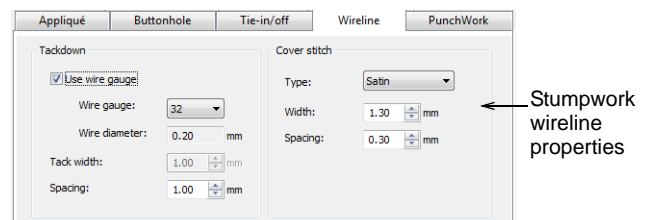
† Mandatory

Wireline object properties

Most stumpwork involves the use of wirelines to provide body and shape. The process involves first sewing a guidetrack within which to place the wireline. Next a tackdown is used to sew the wireline into position within the guidetrack. Finally cover stitching is added, usually satin.



Object properties can be adjusted via a dedicated **Wireline** tab.



If you have chosen **Wireline** as your embroidery type, the following properties can be set:

Setting	Notes
Tackdown stitching	The gauge of wireline you are using determines the width of guidetrack and tackdown stitching. You can choose to factor it into your cutwork properties or use the default value.

Setting	Notes
Cover stitching	Satin is the default. Alternatively, Blanket can be used. Width and spacing can be adjusted for both.

Digitizing open stumpwork borders



Use General > StumpWork Border to show or hide the StumpWork Border docker. Use in conjunction with the StumpWork toolbox.



Use View > Show StumpWork to show or hide any stumpwork sub-designs included in a design.



Use StumpWork > Digitize Open StumpWork Border to digitize an open stumpwork border using digitized outline and current settings.



Use StumpWork > Create Stumpwork Sub-design to create stumpwork sub-design from selected objects which include embroidery within a stumpwork border.



Use StumpWork > Digitize Wireline to create a wireline object using a digitized outline and current settings.



Use StumpWork > Open StumpWork Sub-design to view or edit the stumpwork sub-design.

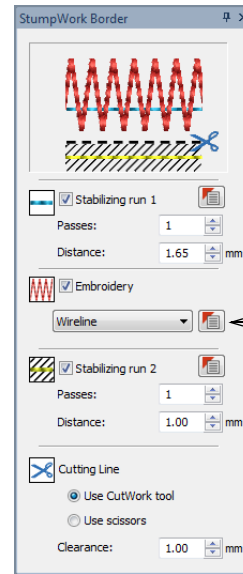


Use StumpWork > Save Stumpwork Sub-design As to save stumpwork Sub-design as a separate design file.

Digitizing with wire and fabric is probably the commonest scenario for creating stumpwork. It involves digitizing a simple stumpwork border. This is then sewn onto a separate piece of fabric, usually patterned, with the inclusion of a wire, and then cut out and attached to the base design. Required tools are listed above.

To digitize an open stumpwork border

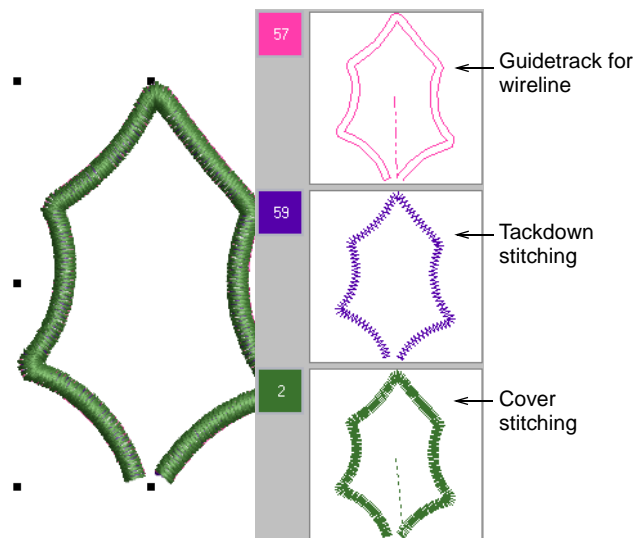
- 1 Open the **Stumpwork Border** docker and preset your preferences. Generally, with open borders, you will use a wireline.



Select wireline option in conjunction with open border

- 2 Select the **Digitize Open StumpWork Border** tool and digitize your border as you would any other open object. Make sure the ends are fairly close together.
- 3 Press **Enter** to complete.

A stumpwork object is generated based on the **StumpWork Border** presets. See **StumpWork Border docker** for details.



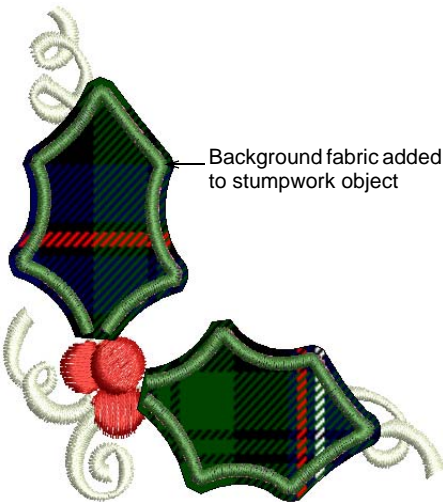
- 4 Select the resulting object and click **Create Stumpwork Sub-design**.

Selected objects are bundled into a composite object which resides on a separate 'layer' to the

base design. The stumpwork layer does not appear in the **Color Film** because it is separate to the main design.

- 5 Optionally, use the **Digitize Wireline** tool to insert additional wirelines for extra support. See [Digitizing additional wirelines](#) for details.
- 6 Optionally, edit your stumpwork object by double-clicking or clicking **Open StumpWork Sub-design**.

The stumpwork object opens in a separate window where you can edit properties such as wire gauge, satin cover width and offsets, etc. Optionally, add a background indicative of the fabric you will be using. See [Editing stumpwork](#) for details.



Background fabric added to stumpwork object



Tip Study the StumpWork_Sample1 design included in the designs folder. Try stitching it out to practice the techniques involved. Check your BERNINA machine documentation.

Digitizing closed stumpwork borders



Use General > StumpWork Border to show or hide the StumpWork Border docker. Use in conjunction with the StumpWork toolbox.



Use View > Show StumpWork to show or hide any stumpwork sub-designs included in a design.



Use StumpWork > Digitize Closed StumpWork Border to digitize an open stumpwork border using digitized outline and current settings.



Use StumpWork > Create Stumpwork Sub-design to create stumpwork sub-design from selected objects which include embroidery within a stumpwork border.

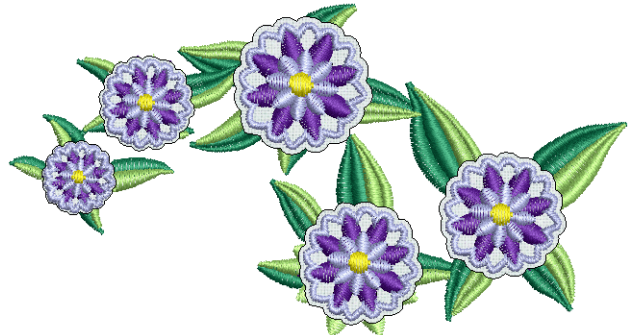


Use StumpWork > Open StumpWork Sub-design to view or edit the stumpwork sub-design.



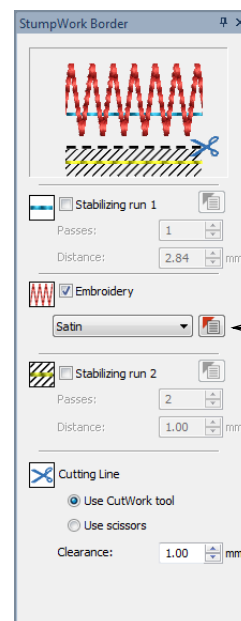
Use StumpWork > Save Stumpwork Sub-design As to save stumpwork Sub-design as a separate design file.

Another simple scenario for the use of stumpwork involves creating design elements within a closed border. Like open-border stumpwork, these elements, or 'sub-designs', are sewn onto a separate piece of fabric, usually patterned, but without the inclusion of a wire. They are then cut out and attached to the base design. Required tools are listed above.



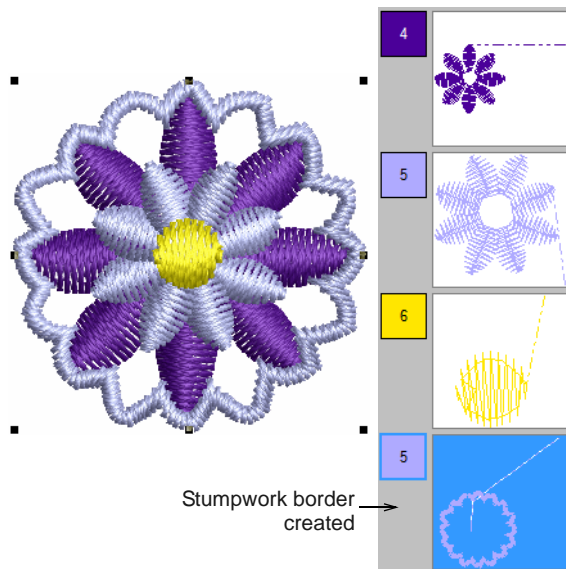
To digitize a closed stumpwork border

- 1 Use your normal embroidery tools to create a design, or take an existing design you want to modify. See also [Digitizing Methods](#).
- 2 Open the **Stumpwork Border** docker and preset your preferences – for example, a satin border.

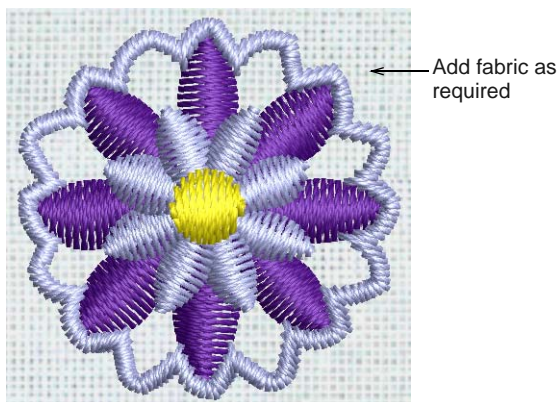


Choose a border style – closed borders can't use wireline

- 3 Select the **Digitize Closed StumpWork Border** tool and digitize the border as you would any other closed object.



- 4 Press **Enter** to complete.
A stumpwork object is generated based on the **StumpWork Border** presets. See **StumpWork Border docker** for details.
- 5 Select the resulting border and everything else you want included in the stumpwork sub-design, and click **Create Stumpwork Sub-design**.
Selected objects are bundled into a composite object which resides on a separate 'layer' to the base design. The stumpwork layer does not appear in the **Color Film**.
- 6 Optionally, edit your stumpwork object by double-clicking or clicking **Open StumpWork Sub-design**.
The stumpwork object opens in a separate window where you can edit its properties. Optionally, add a background indicative of the fabric you will be using. See **Editing stumpwork** for details.



- 7 Close the sub-design to return to the base design.

You will be prompted to save.



Tip If you decide to add a wireline to a closed border, you need to first cut an entry point. Use the **Cut Closed StumpWork Border** tool for this purpose. See **Editing stumpwork** for details.

Creating stumpwork from existing embroidery



Use General > StumpWork Border to show or hide the StumpWork Border docker. Use in conjunction with the StumpWork toolbox.



Use StumpWork > Create StumpWork Border to generate stumpwork border from selected objects.



Use StumpWork > Create Stumpwork Sub-design to create stumpwork sub-design from selected objects which include embroidery within a stumpwork border.



Use StumpWork > Open StumpWork Sub-design to view or edit the stumpwork sub-design.

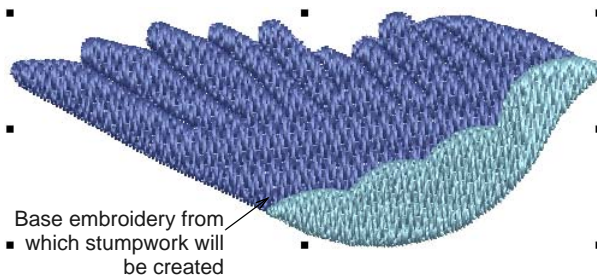
This scenario involves selecting embroidery shapes from which to generate the mandatory cutting element. This usually includes a wireline but doesn't have to. The resulting stumpwork embroidery is sewn separately with wire and border. It is then cut out and

sewn or attached to the base design. Required tools are shown above.



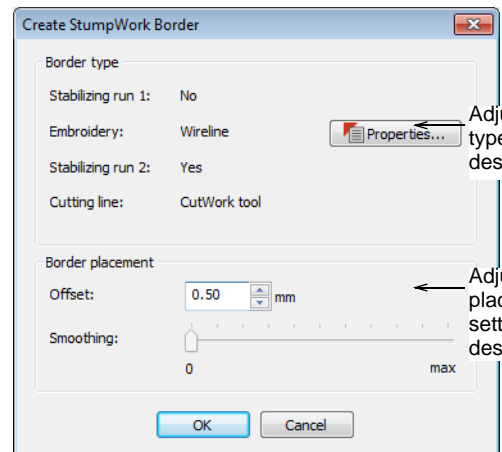
To generate stumpwork from existing embroidery

- 1 Open an existing design or digitize embroidery objects as required. Add any stitch effects you want.

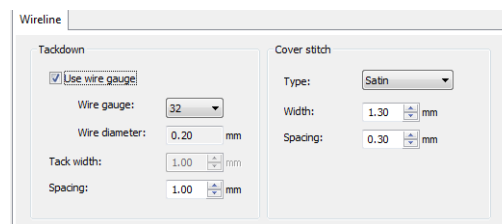


- 2 Click the **StumpWork Border** icon to open the docker. Adjust presets as required. See [StumpWork Border docker](#) for details.
- 3 Select all objects and click **Create StumpWork Border** to create the cutting element.

The **Create StumpWork Border** dialog opens. This dialog also provides access to **Object Properties**.

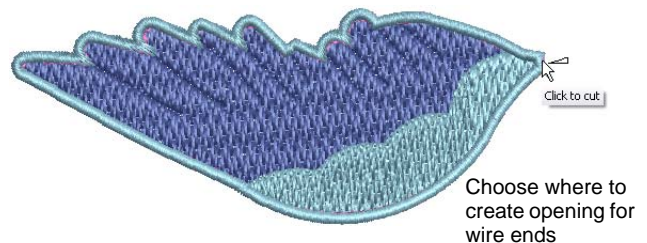


- 4 Adjust border type and placement settings as desired. See also [Wireline object properties](#).



- 5 Click **OK** to proceed.

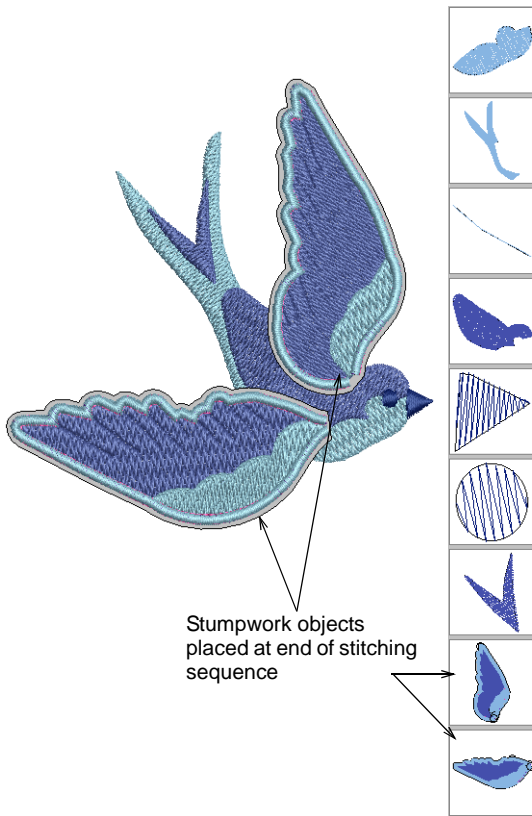
You are prompted to mark a cutting point where you want wire ends to protrude. All selected objects are automatically grouped.



- 6 Select the resulting object group and click **Create Stumpwork Sub-design**.

Selected objects are bundled into a composite stumpwork object which effectively resides on a separate 'layer' to the base design. It can be edited independently by double-clicking or clicking

Open StumpWork Sub-design. See **Editing stumpwork** for details.



Tip Study the StumpWork_Sample2 design included in the designs folder. Try stitching it out to practice the techniques involved. Check your BERNINA machine documentation.

Digitizing additional wirelines



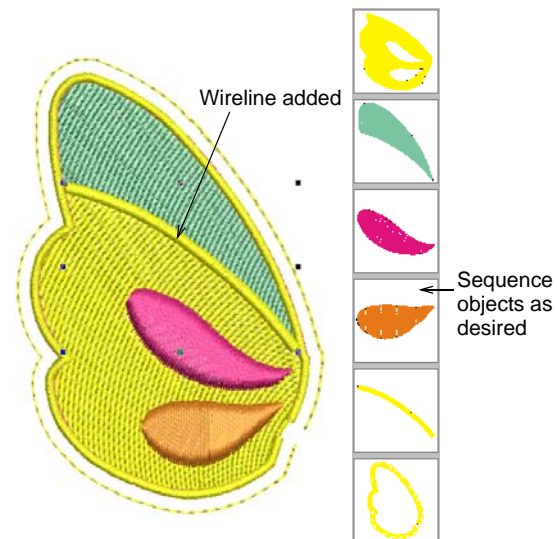
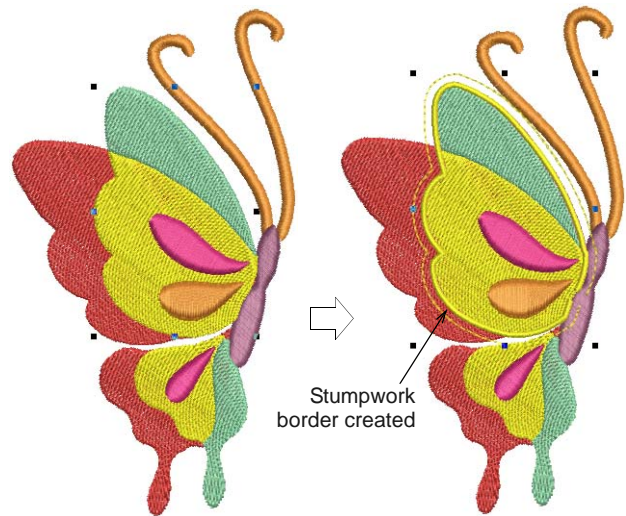
Use StumpWork > Digitize Wireline to create a wireline object using a digitized outline and current settings.

This scenario involves digitizing additional wirelines over top of an object or objects. Additional wirelines provide more shape to a piece than a simple border wire.

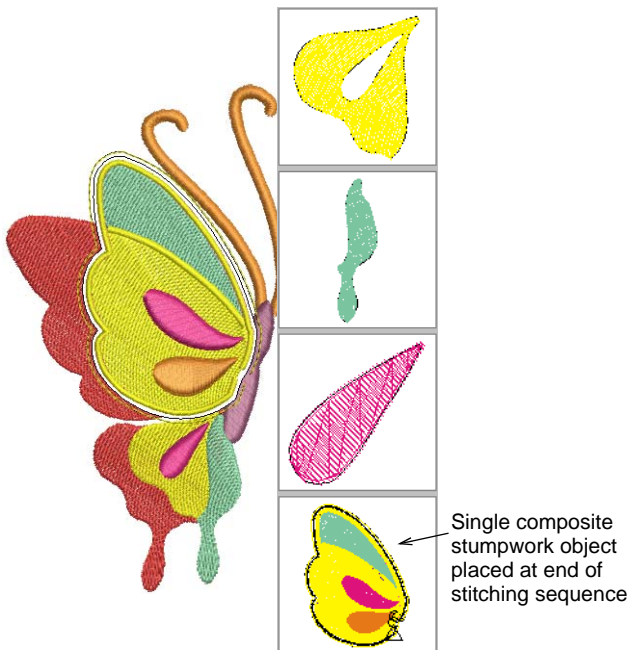
To digitize additional wirelines

- 1 Create stumpwork borders from existing embroidery or digitize manually as preferred. See
- 2 Before selecting stumpwork objects and clicking **Create Stumpwork Sub-design**, select the **Digitize Wireline** tool.
- 3 Digitize additional wirelines as you would any open object.
The software automatically creates the wire placement tracks, wire tackdown and cover stitching.
- 4 Sequence objects you want to include in the **Color Film** docker.
- 5 Select all objects and click **Create Stumpwork Sub-design**.

Creating stumpwork from existing embroidery for details.








Selected objects are bundled into a composite stumpwork object which effectively resides on a separate 'layer' to the base design.



Tip Additional wirelines can be added in edit mode after stumpwork has been created, together with other operations such as object sequencing, color and stitch edits, etc. See also [Editing stumpwork](#).

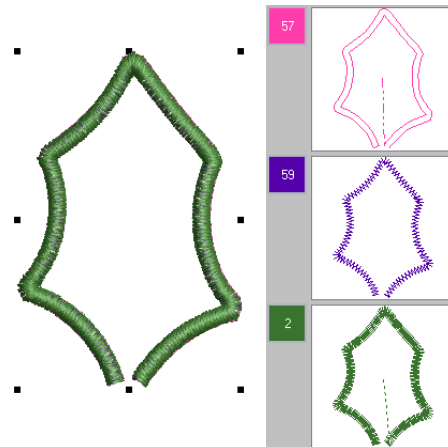
Editing stumpwork

-  Use View > Show StumpWork to show or hide any stumpwork sub-designs included in a design.
-  Use StumpWork > Open StumpWork Sub-design to view or edit the stumpwork sub-design.
-  Use StumpWork > Digitize Wireline to create a wireline object using a digitized outline and current settings.
-  Use StumpWork > Cut Closed StumpWork Border to cut a closed stumpwork border to leave an opening for wire ends.
-  Use StumpWork > Save Stumpwork Sub-design As to save stumpwork sub-design as a separate design file.

Once the **Create Stumpwork Sub-design** function has been applied, the resulting stumpwork resides on a separate 'layer' to the base design. Stumpwork objects can be edited as standalone designs. Required tools are listed above.

To edit stumpwork

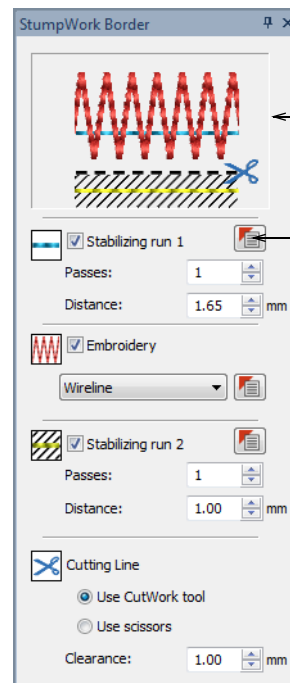
- ▶ Select the stumpwork object you want to edit.



- ▶ Double-click selection or click **Open StumpWork Sub-design**.

The stumpwork design opens in a separate editing window.

- ▶ Edit stumpwork borders via the **StumpWork Border** docker – e.g. add or remove stabilizing runs or cutting lines. See also [StumpWork Border docker](#).

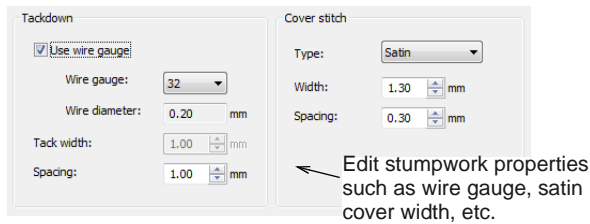


Preview showing current stumpwork border settings

Click arrow button to access object properties for each included stumpwork component

- ▶ Click associated **Object Properties** icon to access object properties for each included stumpwork

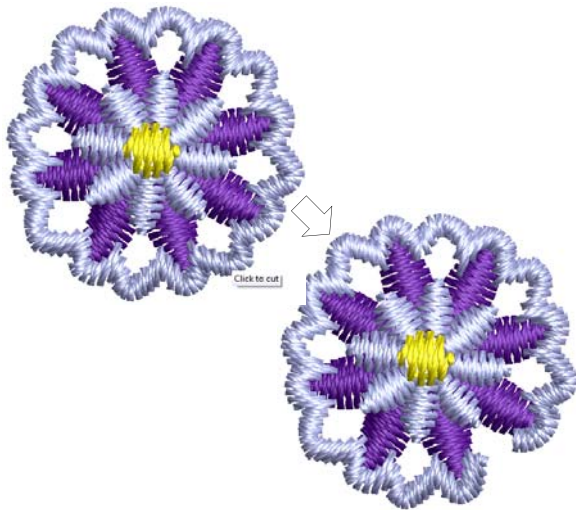
component. Edit properties such as wire gauge, satin cover width and offsets.



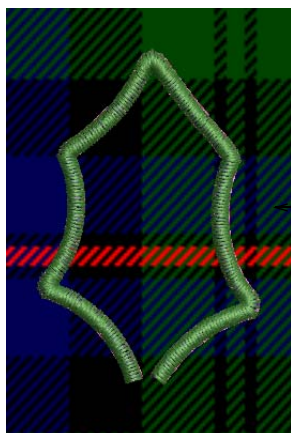
- ▶ Digitize other objects as desired.

Use the **Digitize Wireline** tool to insert wirelines for extra support and shape. See also **Digitizing additional wirelines**.

- ▶ Use the **Cut Closed StumpWork Border** to cut a selected closed-stumpwork border to leave an opening for wire ends.

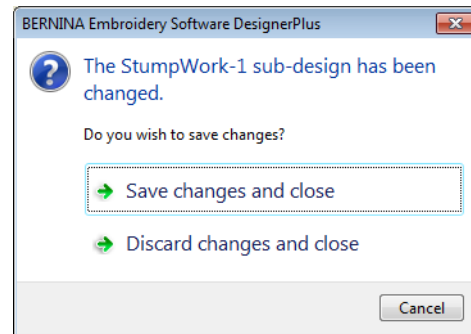


- ▶ Sequence objects in the **Color Film** docker as desired.
- ▶ Use the **Design > Background** command to specify a fabric type if you are creating stumpwork with fabric and wire.

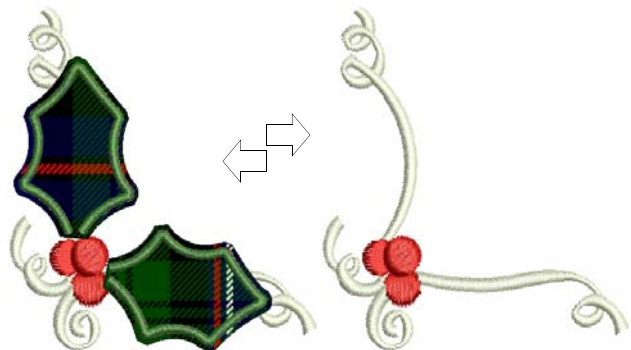


— Add a background fabric as required

- ▶ Click **Save** to save changes. Alternatively, click **Save Stumpwork Sub-design As** if you want to save the stumpwork piece as a separate design file.
- ▶ Select **File > Close** to return to the main design. If you haven't already saved changes, you will be prompted as shown.



- ▶ Use the **Show StumpWork** toggle to show or hide stumpwork objects.



Visualizing stumpwork



Use View > Show StumpWork to show or hide any stumpwork sub-designs included in a design.

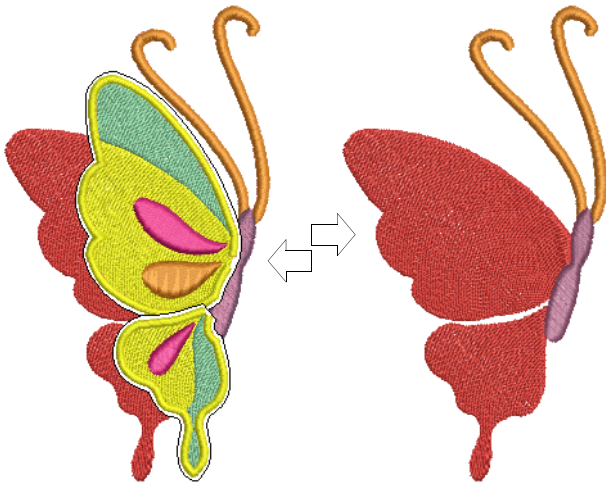


Use StumpWork > Open StumpWork Sub-design to view or edit the stumpwork sub-designs.

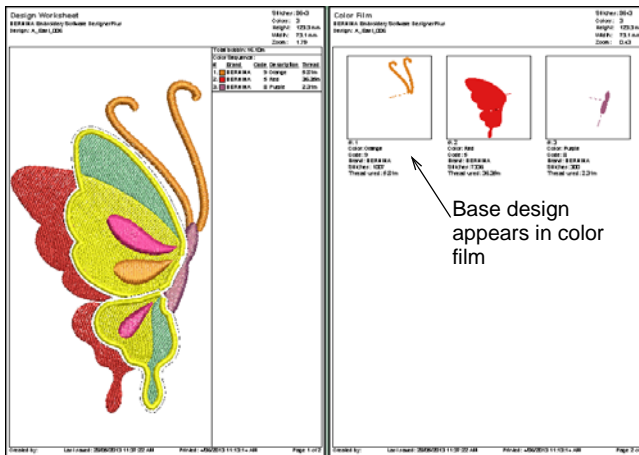


Click General > Print Preview to preview the print preview onscreen.

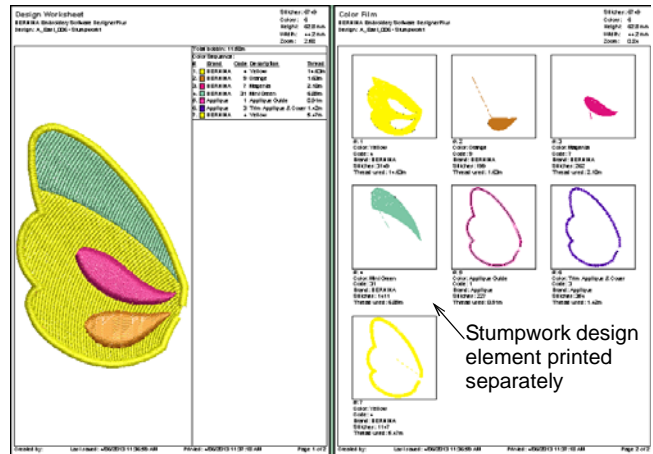
Use the **Show StumpWork** toggle on the **View** toolbar to show or hide stumpwork objects within a design.



The worksheet preview shows the entire stumpwork design in preview but only the base design in the color film.



To print out a worksheet for the stumpwork portions of a design, open the stumpwork object in its own window and preview it there.



Tip Study the StumpWork_Sample3 design included in the designs folder. Try stitching it out to practice the techniques involved. Check your BERNINA machine documentation.

Quilted embroidery

Quilted embroidery creates dimension by stuffing or filling areas to produce a raised surface. It employs a technique known as 'trapunto', also referred to as 'stuffed embroidery'.



Quilting techniques

There are a number of techniques for creating trapunto designs.



Note To make sure your design is being displayed correctly 3D, particularly with **Raised Satin** in **Artistic View**, calibrate your monitor. See [Calibrating the monitor](#) for details.

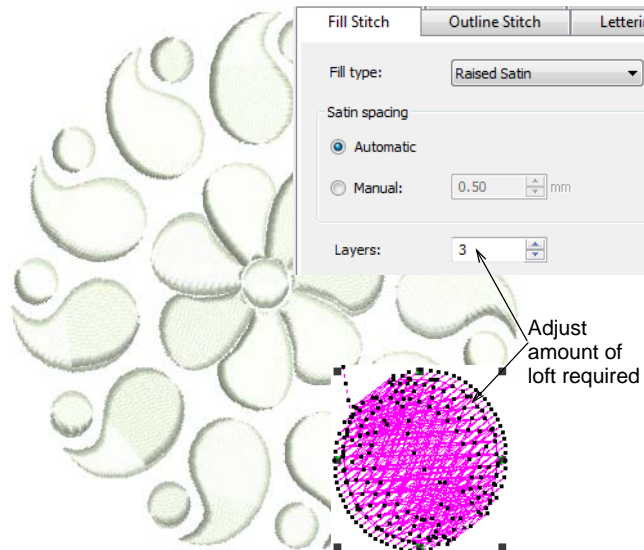
Trapunto techniques

Traditional hand trapunto involves sewing two layers of fabric together with a motif outline. The underside is then slit and stuffed with yarn or cotton.

A modern technique used to create trapunto – sometimes called machine trapunto or cut-away trapunto – is to mark the design pattern on top of the quilt fabric with a water soluble marker. A layer of batting is then pinned to the underside of the fabric and two layers are stitched together. The batting is trimmed close to the stitching to create the embossed design. The quilt is then constructed by sewing the quilt top to the quilt back with another layer of batting in between.

Raised satin

Another technique is to use layers of thread instead of stuffing or batting to create dimension. The embroidery design consisting of multiple layers of satin stitching is first stitched onto **Aqua Mesh** water-soluble stabilizer. Then a top and bottom layer of fabric are added before the final outline is stitched around the design. See also [Creating satin fills](#).



Note Recommended settings for best loft are 0.30mm manual for satin spacing with 4 layers.

Quilting in BERNINA Embroidery Software



Use Edit > Create Trapunto Outlines in conjunction with Raised Satin to create quilt stitching for a raised 'quilted' look.



Use Stitch > Raised Satin Fill to create raised embroidery designs consisting of multiple layers of satin stitching.



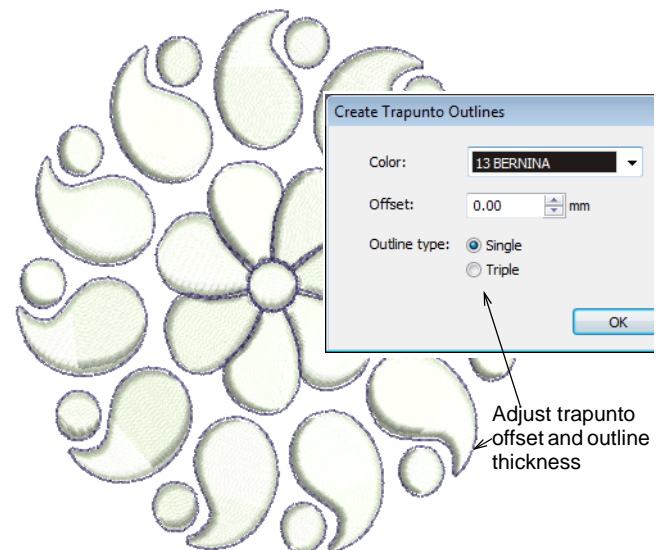
Use Stitch > Raised Satin Outline to create raised satin borders – can be used with trapunto for quilting effects.

In BERNINA Embroidery Software, the quilting design work relies on two main tools:

- ▶ **Raised Satin:** This allows you to create 'puffy embroidery'. Outlines can be used for lettering and special calligraphy effects. See also [Creating freehand embroidery](#).
- ▶ **Trapunto Outlines:** This allows you to turn puffy embroidery designs into trapunto quilting designs.

The puffy embroidery component allows you to create raised embroidery consisting of multiple layers of satin stitches. This is as an alternative to stuffing with yarn or batting. The trapunto component allows you to stitch layers of fabric over the raised satin.

The **Trapunto Outlines** feature is used exclusively with **Raised Satin** to create a 'quilted' look. When activated, this feature always defaults to the next unused color so as to force the machine to stop before trapunto outlines are stitched. This allows you to place the covering fabric.



Tip Study the quilting design included in the designs folder. Try stitching it out to practice the techniques involved. Check your BERNINA machine documentation.

Needle felting

Needle felting, also called 'dry felting', is a popular fiber-arts craft that creates felt without the use of water. It can be created by industrial felting machines, needle felting attachments like BERNINA needle-punch tool, or even hand-held tools.



The needles used in dry felting have small barbs with soft shoulders. As they penetrate the base fabric, they pull fiber or 'roving' through. Since the barbs face downwards, fibers are left behind as the needles exit. Using a single needle or small group of needles, fine details can be achieved using this technique. It is popular for 2D and 3D felted work.

BERNINA Rotary Hook Punch tool

The BERNINA 'needle-punch' tool is a cluster of three needles that are used to punch fibers through fabric. This process is normally performed as free motion sewing but can also be done in the embroidery hoop.

Example of use



Needle-punch tool for rotary hook machines



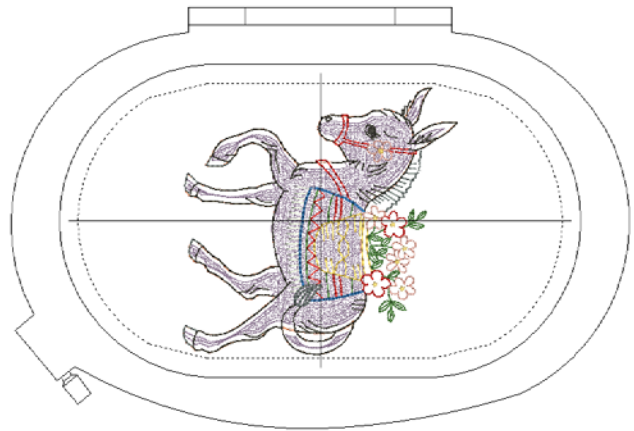
The tool most suitable for hoop work is the **Rotary Hook Punch** tool, since the presser foot also allows yarn, ribbon and so on to be fed through the foot under the needles, and includes a guide as part of the accessories.

Felting with BERNINA Embroidery Software



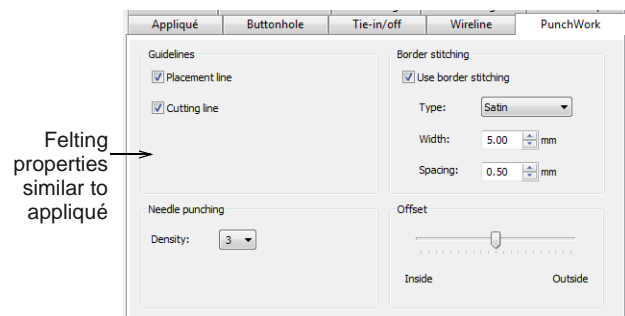
Use Digitize > PunchWork to create felting objects and designs for use with the BERNINA Rotary Hook Punch tool.

In BERNINA Embroidery Software, a dedicated **PunchWork** tool allows you to create felting objects and designs for use with the BERNINA **Rotary Hook Punch**.



PunchWork properties

The object properties for punchwork are similar to appliqué. The digitizing technique is essentially the same. See also [Creating closed-object appliqué](#).



Punchwork consists of the following components, all of which, apart from the punching itself, are optional. Each component is separated in the stitching sequence by a machine stop.

Component	Notes
Placement line	Include a guideline to assist placement of roving. Stop: Place roving evenly within placement line.
Cutting line	Include a cutting line to hold down edge of the roving, and mark out the shape.
† Mandatory	

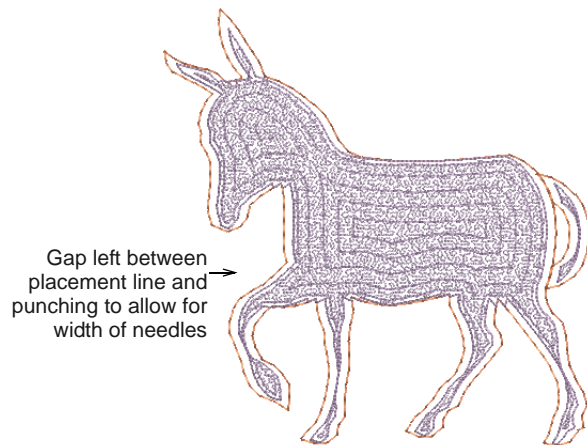
Component	Notes
	Stop: Cut excess roving from around the edges. Change to punch plate and needle.
Needle punching	† Punch the felting – consists of loose tackdown and stipple stitching. Adjust density as required.
	Stop: Remove cutting line as required. Change back to embroidery plate and needle.
Border stitching	Include a border as desired – default is satin. Blanket stitching is also available. Set border width and stitch spacing.
Offset	Use the slider to offset borders in relation to the placement line. By default, Satin is centered, while Blanket sits inside the placement line. Adjust as required.
† Mandatory	



Tip Check fabric settings before you stitch out. If you are stitching details over felting, you may need to select a heavier fabric to compensate. See also [Changing fabrics](#).

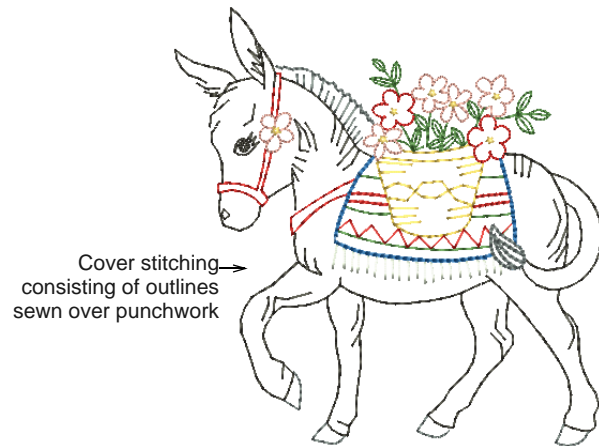
Design technique

Because you have complete control over the punchwork elements to include in your design, different approaches may be taken. The sample below includes only a placement line and felting.



Once the **roving** has been punched into position, the border stitching can be applied. In this case, border

stitching has been digitized separately as run stitch outlines.

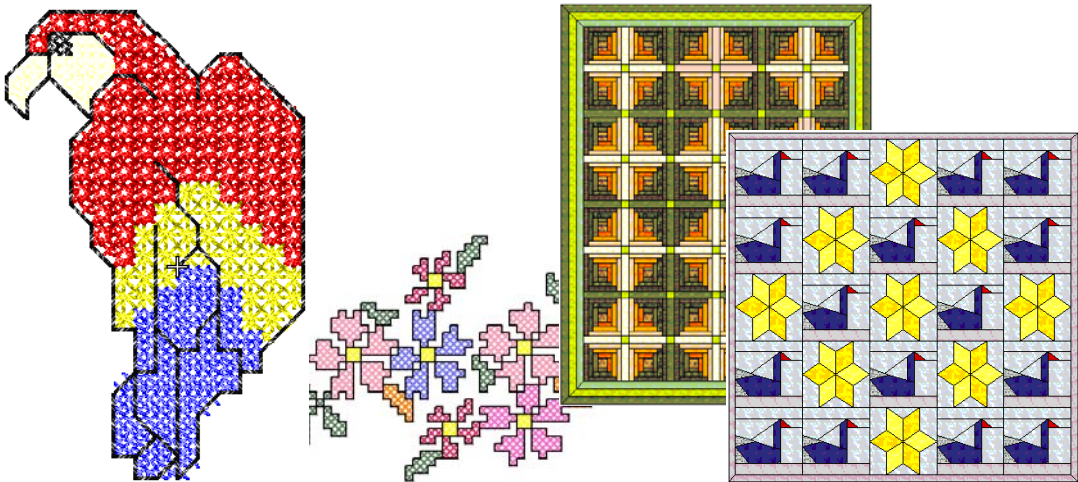


Tip Study the punchwork design included in the designs folder. Try stitching it out to practice the techniques involved. Check your BERNINA machine documentation.

CHAPTER 27

ANCILLARY APPLICATIONS

In addition to CoreIDRAW®, BERNINA Embroidery Software includes ancillary, standalone applications which can be launched from within **Embroidery Canvas**. The BERNINA Cross Stitch application lets you create dedicated cross stitch designs or add cross stitching to embroidery. Use BERNINA Quilter to experiment with patches and colors enabling you create beautiful, personalized quilts.



This section provides an overview of the ancillary BERNINA Cross Stitch and BERNINA Quilter applications provided with BERNINA Embroidery Software.

Introduction to cross stitch












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.

Unlike machine embroidery where designs are enhanced with different stitch types, angles, and effects, in cross stitch you can only add dimension to the design with shades of colors. For this reason, most cross stitch designs use many more colors than machine embroidery.

Types of cross stitch

Cross stitches are created on a matrix of squares or 'pixels'. Any part of the square can be stitched, from

the edges to the diagonals. The full range of cross stitches is listed below.

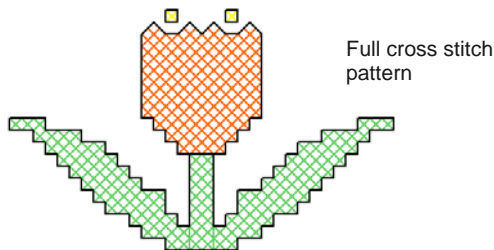
	Full Cross		Upright Cross
	Three-Quarter Cross		Double Cross
	Half Cross		Elongated Vertical Cross
	Quarter Cross		Elongated Horizontal Cross
	Mini Cross		Single Line
	French knot		

Cross stitch fills

When using cross stitch as a fill you can select from any of the cross stitch fill types.

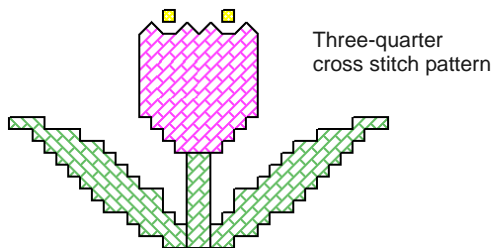
Full cross stitch

Full cross stitches are made up of two equal-length stitches that cross at the center to form an X. The overall effect of the fill depends on which stitch in the X lies underneath or on top. You can also mix and match for special effects.



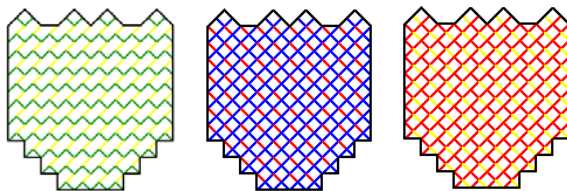
Three-quarter cross stitch

A three-quarter stitch is most often created by stitching a quarter stitch followed by a half stitch. A different effect is achieved by stitching the half stitch first and anchoring it with the quarter stitch.



Note The long arm of the three-quarter stitch can go either / or \ directions.

Frequently a quarter stitch and a three-quarter stitch of different colors share a single square. Mix and match their positions to give different effects.

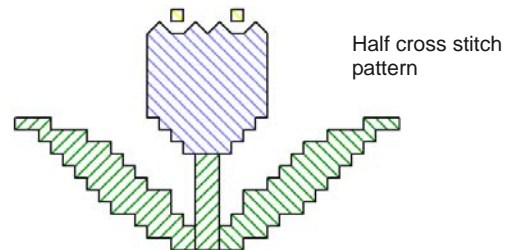


Mixtures of quarter and a three-quarter stitches

Half cross stitch

A half stitch is simply a diagonal stitch that looks like / or like \. Half stitches are usually used for shadows and background shading. The stitch can start from

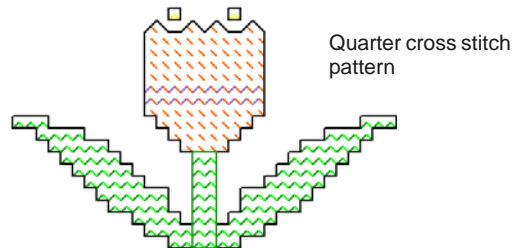
any corner. Sometimes two half stitches of different colors are used to make one full cross stitch.



Half cross can go in either direction depending on the effect you want to achieve. For example, half cross used to represent feathers would slant in the direction of the feathers themselves.

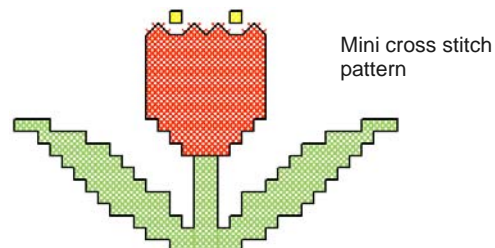
Quarter cross stitch

Quarter stitches are used to stitch more intricate patterns.



Mini cross stitch

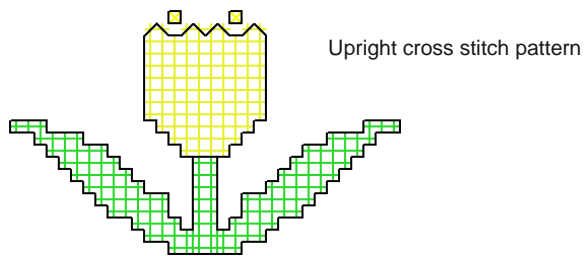
Mini cross stitches are two equal-length stitches that cross at the center to form an X but they only fill quarter of the square. Use mini cross stitch for details such as eyes or for a denser look in parts of your design.



Upright cross stitch

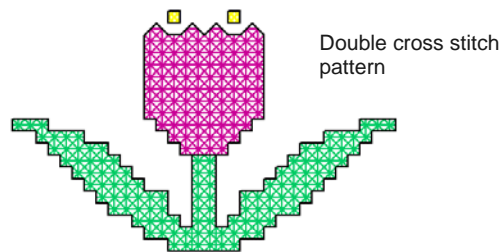
Upright cross stitches are comprised of a vertical and horizontal stitch.

The stitches can be worked diagonally across the canvas, or in a horizontal or vertical line.



Double cross stitch

Double cross stitch is two full cross stitches stitched at 90° on top of each other. A double cross stitch resembles a star. It is generally used in a scattered fashion or worked into a row to form a decorative border.



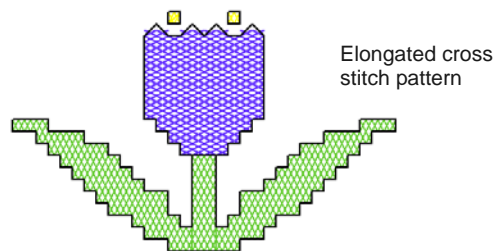
Typically the top thread of the bottom cross is the stitch which lies at 135° to the horizontal; and the top thread of the overlapping cross is the horizontal stitch.

Elongated cross stitch

Elongated cross stitch consists of two equal-length stitches that cross to form an X. There are two types:

- ▶ elongated horizontal cross stitch
- ▶ elongated vertical cross stitch.

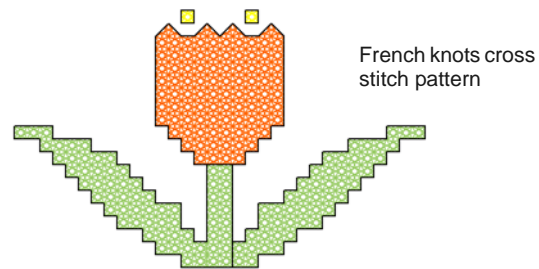
Elongated horizontal cross stitches are only half the height of normal cross stitch and elongated vertical cross stitches are only half the width of normal cross stitch.



French knots

French knots were originally a hand-stitch used to create a raised look for embellishment. They were

traditionally used in 'whitework' with very exclusive cotton and fine silk threads.



French knots can be used in combination with other cross-stitch types. Use them for eyes, door knobs, dots for flower pistils, or in place of beads used in hand-work designs – e.g. ornaments on a Christmas tree or to dot letters such as 'i'. Use them as an outline border. Try them with colorful metallic or variegated threads. French knots are better sewn in larger grids.

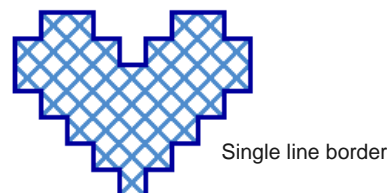
Cross stitch borders

Cross stitch can be used as an embroidery outline or border. You can also combine cross stitching with other stitch types to achieve special effects.

You can make outlines with **Single Line** or **Full Cross** stitches or a combination of both for a denser border. A **Single Line** outline is treated by the software as a border while a **Full Cross** outline is treated as a fill. This is important if you need to delete a border because a single line can be deleted as a single object while a full cross stitch border cannot.

Single line border

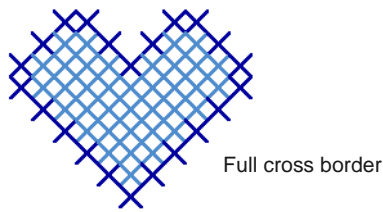
Single Line stitches are only used to create borders or add details. The single line can be placed on any side of the square. Click on the side you want to place the line. You can place a single line border on one side or all four sides of the square. The single line border can be placed in a square which already has a cross stitch in it.



Full cross border

Full crosses can also be used as a decorative outline stitch. If you use full cross as a border it will be the same cross stitch type as selected in the Fill stitch

type list. You can change this by changing the Fill stitch type.

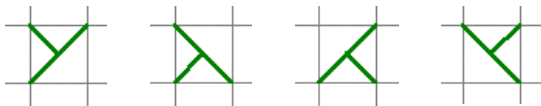


Cross stitch variations

The orientation of fractional cross stitches can be varied to create different patterning effects. You do this directly pixel-by-pixel, or by setting a fill stitch orientation. You can also combine fractional cross stitches in a variety of ways. See also [Types of cross stitch](#).

Three-quarter cross stitches

Quarter and three-quarter cross stitches can be used to create rounded edges. See also [Cross stitch fills](#).



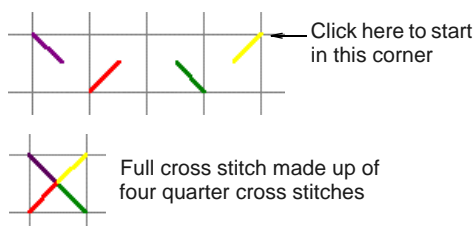
Half cross stitches

Half cross stitches can be used to give objects an 'airy' look. You can also use half cross stitches to make a full cross stitch with two colors. See also [Combination stitches](#).



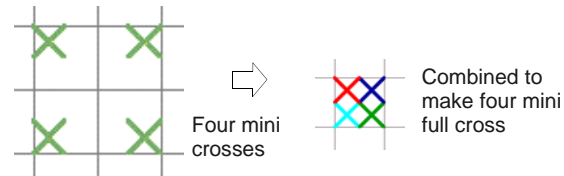
Quarter cross stitches

Quarter and three-quarter cross stitch can be used to smooth rounded edges. You can also use quarter cross stitch to make a full cross stitch with up to four colors. See also [Combination stitches](#).



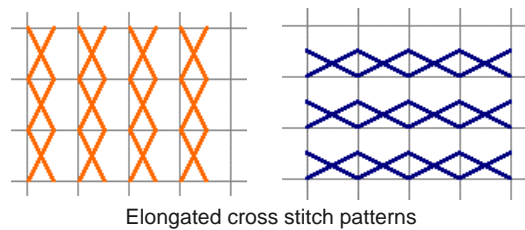
Mini cross stitches

Use mini cross stitch for details such as eyes or for a denser look in parts of your design.



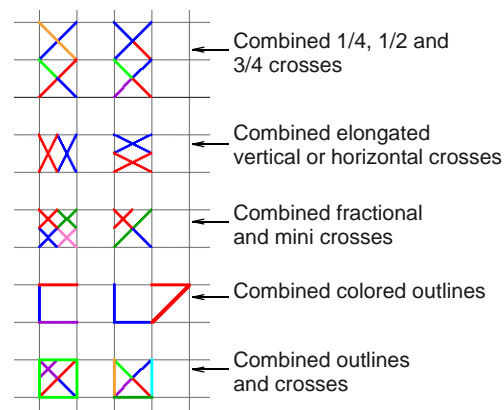
Elongated cross stitches

Vertical and horizontal elongated cross stitches are made up of two equal-length stitches that cross to form an X. They fill either the left, right, top or bottom of the square.



Combination stitches

Quarter, half and three-quarter cross stitches can be combined to make crosses comprised of multiple colors. You can also combine mini crosses, elongated vertical or horizontal crosses and outline stitches.



Launching BERNINA Cross Stitch



Use General > Application Launcher to access ancillary applications – Portfolio, Cross Stitch, and Quilter.

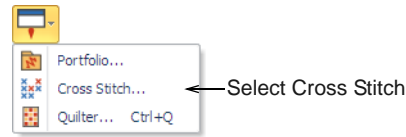
Cross stitch design involves a different digitizing technique to ordinary embroidery design. For this reason, BERNINA Cross Stitch has its own design

window which you open from within BERNINA Embroidery Software.

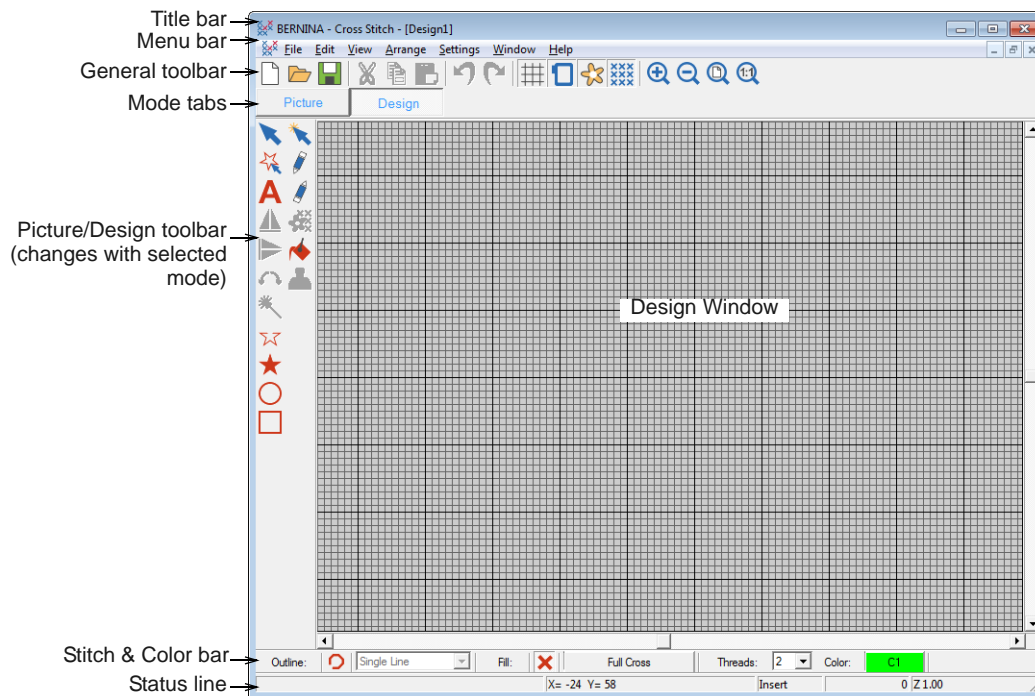
To launch BERNINA Cross Stitch

- ▶ Run BERNINA Embroidery Software.

- ▶ In **Embroidery Canvas** click the **Application Launcher** and select **Cross Stitch** from the droplist.



BERNINA Cross Stitch opens in its own design window.



- ▶ For further information, refer to BERNINA Cross Stitch **Help**.

Introduction to patchwork & quilting

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.

Blocks on a quilt can be filled with patches of either patterned or plain fabric. BERNINA Quilter includes a large selection of patchwork blocks and fabrics, but you can also scan your own and store them in a quilting library.

When a quilt design is complete you can print it out, showing the blocks, how they are constructed, as well as yardage, sewing and cutting details.

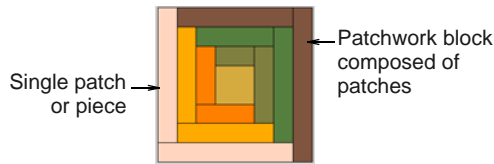
Patchwork quilt designs

Patchwork and quilting are related and complementary techniques. BERNINA Quilter is essentially a design tool to help you put together quilts combining patchwork, embroidery, and appliqué. Use BERNINA Quilter to plan and lay out your patchwork blocks on screen, select your fabrics, and add embellishments such as appliqué and embroidery.

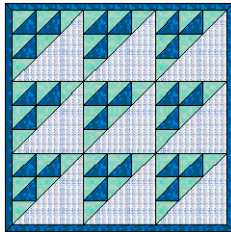
Patchwork

A 'patchwork block' is a collection of patches sewn together, usually forming a regular shape such as a rectangle. A 'patch' is a single piece of fabric sewn with others into a set arrangement to form a

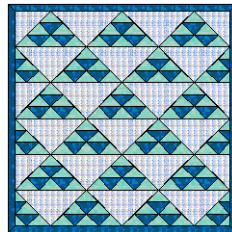
patchwork block. Sewing patches together into blocks is known as 'piecing'.



Blocks are then sewn together, either in a straight square format or as diamonds on-point.

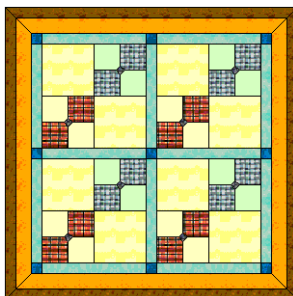


Square



On-point

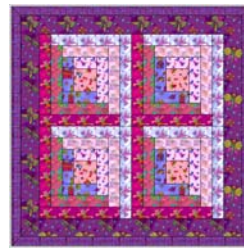
Although some quilts have patchwork extending out to the edge, the majority have one or more borders. Some also have narrow strips of fabric, called 'sashing', to separate the blocks. Borders and sashes can alter the size and appearance of your quilt. They can be used to frame and soften a busy design. Borders can also be used to enlarge a quilt so that it fits a standard bed. More than one border may be used on each quilt.



With borders and sash

Many quilts use a combination of fabrics similar in color and value for the background. Patchwork patterns are created by the contrast between light, medium and dark fabrics. Contrast in color depth is critical to some designs. It is good practice to select

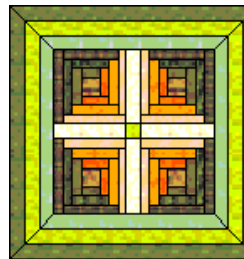
your background color before deciding on your other design colors.



Contrast between light, medium and dark fabrics



When fabrics are placed carefully, a three dimensional illusion can be created. Solid or plain colors are placed to create bold contrasts between the patchwork blocks. When working with a single color, select a wide range of fabrics.

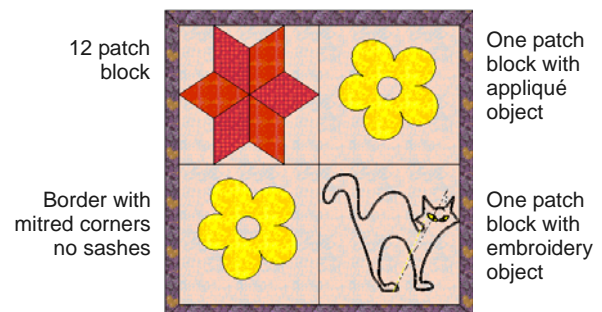


Creating 3D effects



Using a dominant color

With BERNINA Quilter you can also add appliqué and embroidered objects to the quilt.



12 patch block

One patch block with appliqué object

Border with mitered corners no sashes

One patch block with embroidery object

Square quilt with four blocks

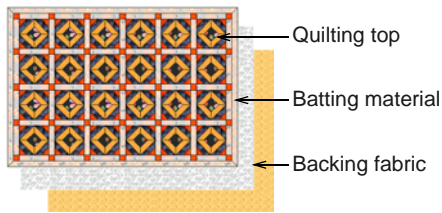
Plan your quilt by working out the overall measurements, then calculate how many blocks, borders and sashes are to be used. Decide which patchwork blocks are to be used and how you will use color. Try out various arrangements and colors until you find one that you like.

Quilting

A quilt is like a sandwich formed of three layers:

- **Quilt top:** a collection of patches sewn together, usually forming a regular shape such as a rectangle and may include borders and sashes.

- ▶ **Batting:** a layer of padded material between the front and back fabric to add thickness and substance.
- ▶ **Backing:** a layer of fabric added to the back of a quilt to encase the batting.



Quilting involves sewing decorative designs on quilts. These designs use run stitches to divide the fabric into sections giving a pattern of raised areas. Quilting can be done either by hand, or by free motion using a sewing machine.



Tip A quilt can be a combination of patchwork and quilting using patchwork blocks pieced together with quilting stitches.

Quilt sizing

BERNINA Quilter uses inches (in) for measuring designs. Use the table to convert between imperial and metric measurements. You will find it easier to use the decimal equivalent for imperial measurements when working out quantities with a calculator.

Metric (mm)	Imperial (inch)	Decimal (inch)
3	1/8	0.125
6	1/4	0.25
9	3/8	0.375
12	1/2	0.5
16	5/8	0.625
19	3/4	0.75
22	7/8	0.875
25	1	1.0
50	2	2.0
75	3	3.0
100	4	4.0
130	5	5.0
150	6	6.0
225	9	9.0
250	10	10.0
300	12	12.0
450	18	18.0
500	20	20.0

Metric (mm)	Imperial (inch)	Decimal (inch)
900	36 (1 yard)	36.0
1000 (1 meter)	40	40.0

Use the table below as a rough guide to the most common quilt sizes. It will vary according to the blocks you use.

Quilt	Imperial (inches)	Metric (cm)
Baby	36-45 x 45-54	90-115 x 115-137
Cot	42-48 x 54-60	107-122 x 137-152
Single	56-64 x 84-100	142-162 x 213-254
Double	70-80 x 84-100	178-203 x 213-254
Queen	76-84 x 90-104	193-213 x 228-264
King	92-100 x 90-104	234-254 x 228-264
Jumbo	120-124 x 120-124	304-315 x 304-315

Launching BERNINA Quilter

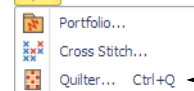


Use General > Application Launcher to access ancillary applications – Portfolio, Cross Stitch, and Quilter.

Launch BERNINA Quilter from within BERNINA Embroidery Software.

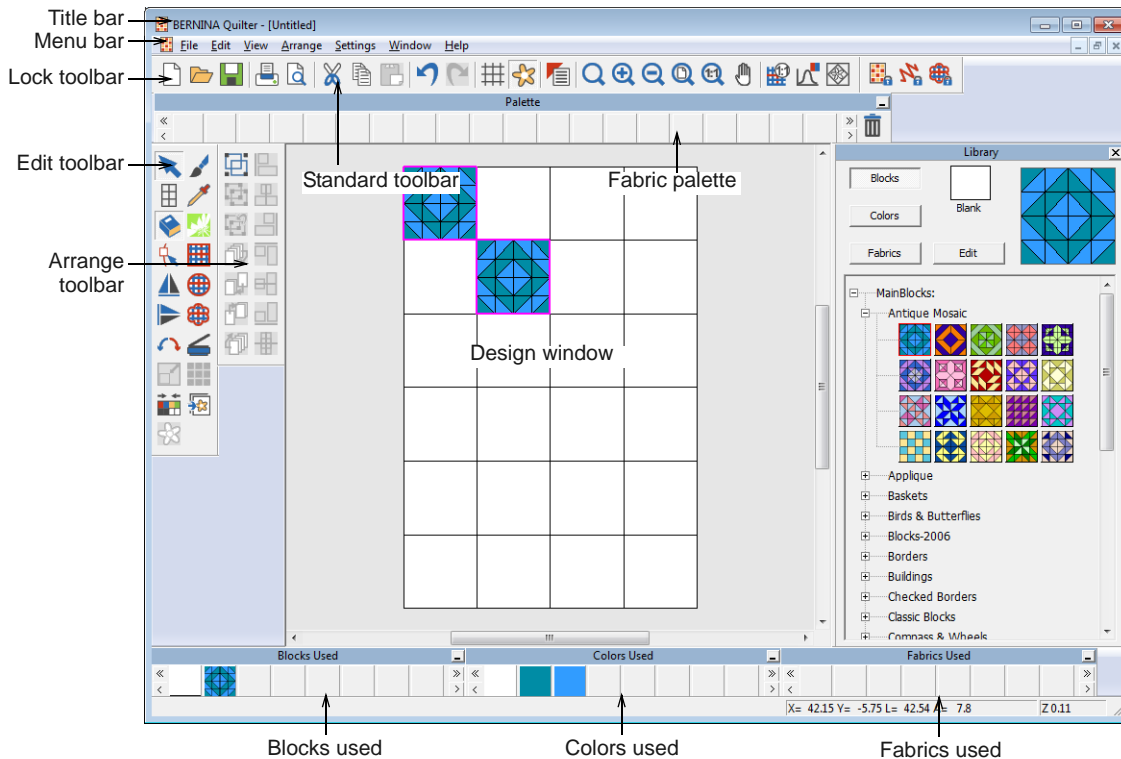
To launch BERNINA Quilter

- ▶ Run BERNINA Embroidery Software.
- ▶ In **Embroidery Canvas** click the **Application Launcher** and select **Quilter** from the droplist.



- ▶ Alternatively, you can also launch BERNINA Quilter by pressing **Ctrl+Q**.

BERNINA Quilter opens in its own design window.



- For further information, refer to BERNINA Quilter **Help**.



Note If BERNINA Quilter does not open from BERNINA Embroidery Software, check that Internet Explorer V6 has been installed on your PC. This is a minimum requirement.

Design management with BERNINA Portfolio Basics

BERNINA Portfolio provides an efficient way for viewing and managing embroidery designs. This design management tool displays thumbnails and limited design information whenever a design folder is accessed. Use it to access design files stored on your computer hard disk, CD-ROM, or floppy disk. It recognizes all design file formats used by BERNINA Embroidery Software. You can filter the contents of the display panel to show only certain file types. BERNINA Portfolio even lets you view design files in folders which have been archived by means of the popular WinZip utility. You can also rename folders, add sub-folders and delete folders without leaving BERNINA Portfolio.

Launching BERNINA Portfolio

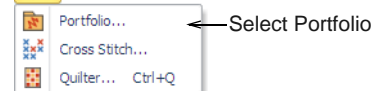


Use General > Application Launcher to access ancillary applications – Portfolio, Cross Stitch, and Quilter.

BERNINA Portfolio does not require a separate installation. Launch BERNINA Portfolio from within BERNINA Embroidery Software.

To launch BERNINA Portfolio

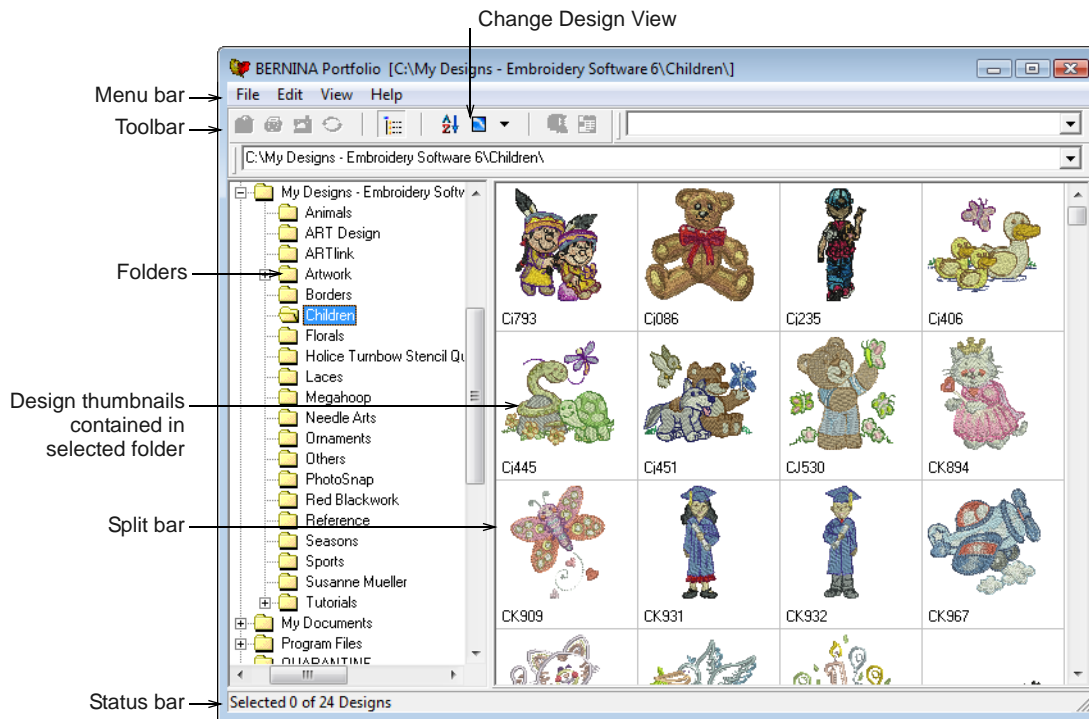
- Run BERNINA Embroidery Software.
- In **Embroidery Canvas** click the **Application Launcher** and select **Portfolio** from the droplist.



BERNINA Portfolio opens in its own design window.

- Use the folder tree to direct BERNINA Portfolio to the **My Designs - Embroidery Software 7** folder.

All your ART designs are displayed as thumbnail images.



- For further information, refer to BERNINA Portfolio **Help**.



Tip If BERNINA Embroidery Software is hiding BERNINA Portfolio from view, switch between them using the MS Windows® **Alt + Tab** function.

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 28

LETTERING ESSENTIALS

Add embroidery lettering to designs quickly and easily, either on-screen using 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 or OpenType fonts.

Creating lettering on-screen

A Use Digitize > Lettering to create embroidery 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 thread colors](#) for details.

- 3 Click where you want to start typing.
An I-beam appears where you clicked.



- 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 via dialog

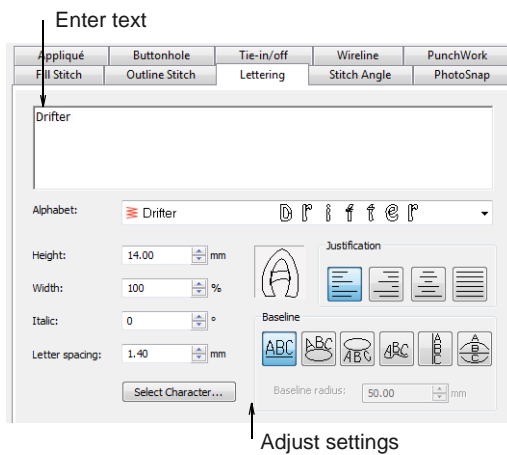
A Right-click Digitize > Lettering to enter text in the dialog and adjust settings for embroidery lettering.

You can specify letter formatting before adding it to the design. Select from the supplied alphabets or convert TrueType or OpenType fonts. 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**.

To create lettering via dialog

- 1 Right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens.



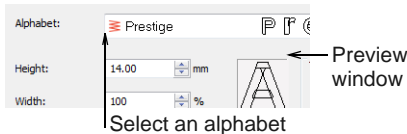
- 2 Enter the text you want to embroider in the text entry panel.

To start a new line, press **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 an alphabet from the **Alphabet** list. See also [Converting fonts to alphabets](#).



Tip Check min/max recommendations for each alphabet and stay within them for best results. See also [Alphabet Samples](#).

- 4 Adjust formatting and baseline settings as required. See [Formatting lettering](#) for details.
- 5 Click **Apply**.

- 6 Click where you want to place the lettering, or mark reference points for the baseline you selected. See [Applying lettering baselines](#) for details.

Drifter



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 & effects to lettering](#) for details.

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.

Bamboo
Bamboo
Bamboo

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 Digitize > Lettering to enter text in the dialog and adjust settings for embroidery lettering.

-  Use Free Line (Lettering tab) to create straight horizontal baselines of no fixed or pre-determined length.
-  Use Circle CW (Lettering tab) to create clockwise baselines.
-  Use Circle CCW (Lettering tab) to create counter-clockwise baselines.
-  Use Any Shape (Lettering tab) to shape lettering around elements in a design.
-  Use Free Line Vertical (Lettering tab) to create straight vertical baselines of no fixed or pre-determined length.
-  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. 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 Digitize > Lettering to enter text in the dialog and adjust settings for embroidery lettering.



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 via dialog](#) for details.
- 2 Enter your text in the text entry panel. See [Creating lettering via 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 Digitize > Lettering to enter text in the dialog and adjust settings for embroidery lettering.



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. They 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 left to right. 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 via dialog](#) for details.

- 2 Enter your text in the text entry panel. See [Creating lettering via 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

A Right-click Digitize > Lettering to enter text in the dialog and adjust settings for embroidery lettering.

 Use Circle CW (Lettering tab) to create clockwise baselines.

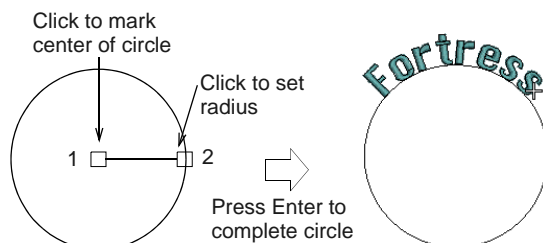
 Use Circle CCW (Lettering tab) to create counter-clockwise baselines.

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.



To create circular baselines

- 1 Right-click the **Lettering** icon.
The **Object Properties > Lettering** dialog opens. See [Creating lettering via dialog](#) for details.
- 2 Enter your text in the text entry panel. See [Creating lettering via 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.

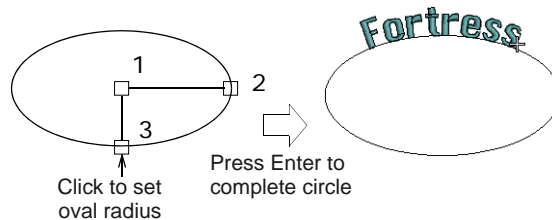


- 5 Mark a point to define the radius.

- 6 Press **Enter** to complete the circle.



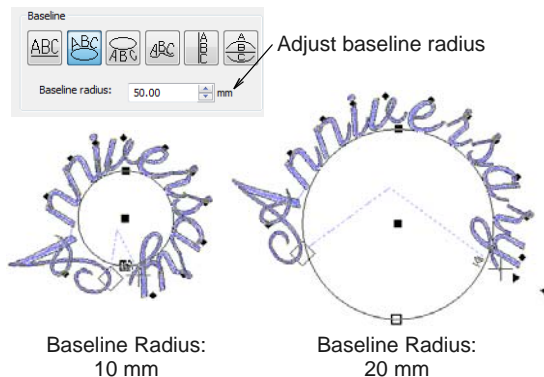
- 7 Alternatively, if you want to create an oval baseline, mark a third reference point.



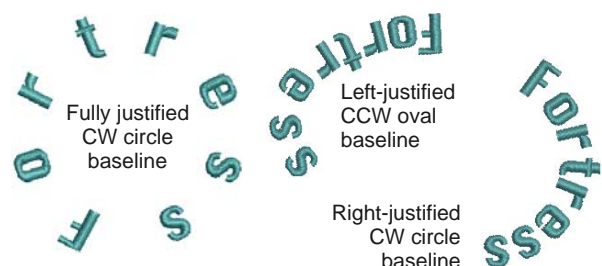
- 8 Press **Enter** to complete the oval.



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](#).



Tip Different effects can be achieved by changing the justification setting – left, right, center, full. See [Setting letter justification](#) for details.



Creating predefined baselines



Right-click Digitize > Lettering to enter text in the dialog and adjust settings for embroidery lettering.



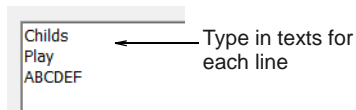
Use Predefined (Lettering dialog) to create multiple arching baselines.

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 via dialog](#) for details.
- 2 Type the text for the line around the top of the circle in the text entry panel.
- 3 Press **Enter**.



- 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 Digitize > Lettering to enter text in the dialog and adjust settings for embroidery lettering.



Use Any Shape (Lettering tab) to shape lettering around elements in a design.

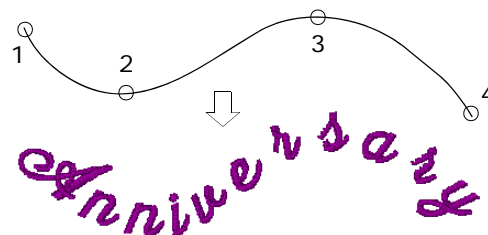
Use **Any Shape** baselines to shape lettering around elements in your design. Digitize Any Shape baselines by marking reference points to form the required line. The number of reference points and length of baseline are practically unlimited.



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 via dialog](#) for details.
- 2 Enter your text in the text entry panel. See [Creating lettering via 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.

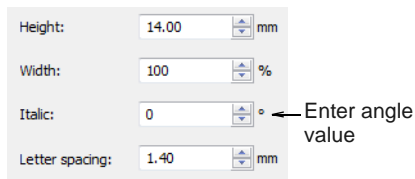
Making italic lettering

A Right-click Digitize > Lettering to enter text in the dialog and adjust settings for embroidery lettering.

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.
The **Object Properties > Lettering** dialog opens.



- 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.

Blackboard
Italic angle: 0°

Blackboard
Italic angle: -45°

Blackboard
Italic angle: 45°

Making bold lettering

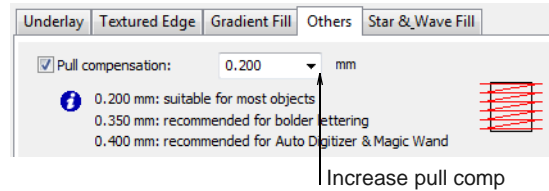
A Right-click Digitize > Lettering to enter text in the dialog and adjust settings for embroidery lettering.

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.
The **Object Properties > Lettering** dialog opens.
- 2 Click the **Effects** button.

The **Effects** dialog opens.



- 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 than 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.

Craft Craft
Pull comp: 0.2 mm Pull comp: 0.6 mm

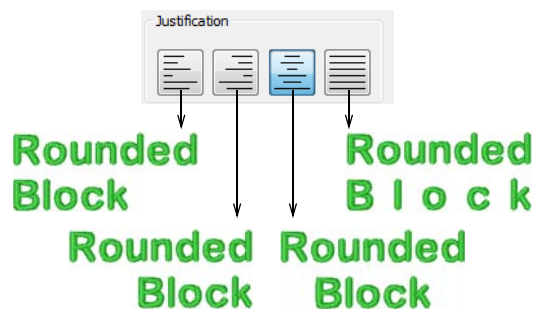
Setting letter justification

A Right-click Digitize > Lettering to enter text in the dialog and adjust settings for embroidery lettering.

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.
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 Transform > Reshape Object 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.



- 3 Release the mouse button to complete and press **Esc**.

Fortress



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 Transform > Reshape Object 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.



- 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**.

Christopher

Adjusting line spacing on-screen



Click Transform > Reshape Object to adjust line spacing.

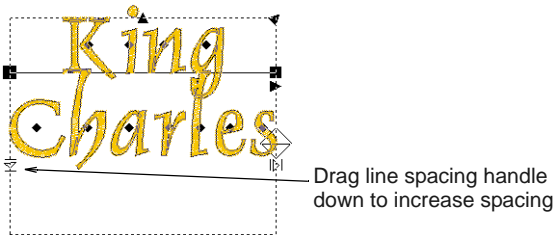
Change the space between lines in a multiple-line lettering object using the **Reshape** tool.

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.



- 3 Release the mouse button to complete and press **Esc**.

King
Charles

CHAPTER 29

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.



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**.

An I-beam appears.

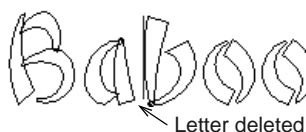


Editing lettering text on-screen

A Use Digitize > Lettering to edit lettering on-screen.

The easiest way to edit lettering is to change it directly on-screen.

2 Edit the text as required.



Tip Press **Shift+Enter** to start a new line.

To edit lettering text on-screen

- 1** Click the **Lettering** icon and then click inside the lettering object.
- 3** Press **Enter** to complete.

Bamboo

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.



- 2 Edit the text in the text entry panel as required.
- 3 Adjust settings as required. See **Formatting lettering** for details.
- 4 Click **Apply**.

Childs Play



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 & effects to lettering** for details.

Scaling lettering

When you first create lettering, it may be too big or too small. Size can be adjusted interactively or via object properties.

Scaling lettering with Select Object

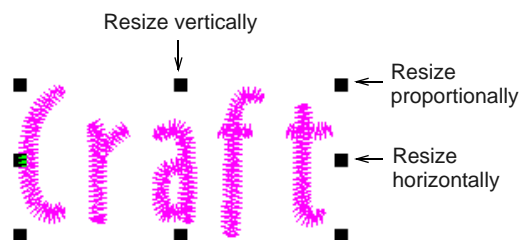


Use Transform > Select Object to scale lettering objects on-screen.

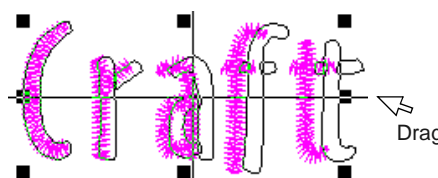
You can scale your lettering objects vertically, horizontally and proportionally with the **Select Object** tool. See also **Transforming lettering with Select Object**.

To scale lettering with Select Object

- 1 Click **Select Object** and select the lettering object.



- 2 Click and drag a handle to resize the object horizontally, vertically or proportionally.



- 3 Release the mouse to complete.

Scaling lettering with Reshape Object



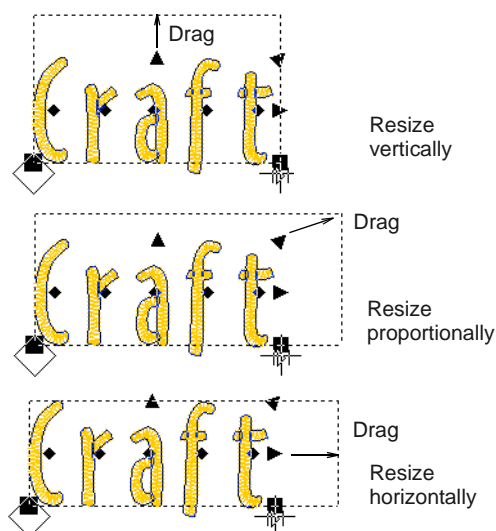
Use Transform > Reshape Object to scale lettering objects on-screen.

You can scale your lettering objects vertically, horizontally and proportionally with the **Reshape Object** tool. See also **Rotating lettering with Reshape Object**.

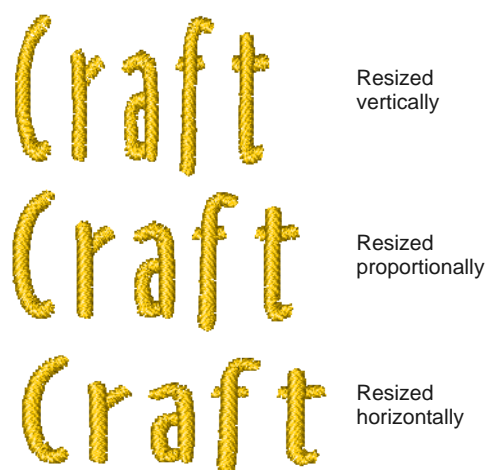
To scale lettering with Reshape Object

- 1 Select the lettering object and click the **Reshape Object** icon.

- Click and drag a dark triangular handle to scale the object horizontally, vertically or proportionally.



- Release the mouse button to complete and press **Esc**.



Adjusting letter dimensions

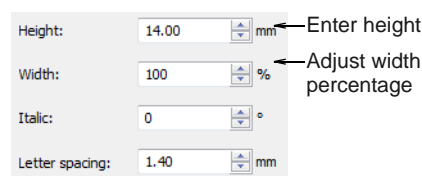
A Right-click Digitize > Lettering to adjust letter dimensions.

You can scale your lettering objects vertically, horizontally and proportionally via object properties.

To adjust letter dimensions

- Double-click or right-click a lettering object.

The **Object Properties > Lettering** dialog opens.



- Enter the height in the **Height** field.



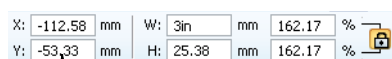
Note Letter height can be between 1 mm and 200 mm. See [Alphabet Samples](#) for details.

- Enter the width as a percentage of height in the **Width** field.
- Click **Apply**.

The setting is applied to any selected lettering objects or to newly created lettering objects.



Tip Optionally, use the width and height controls on the **Transform** toolbar to resize selected lettering objects. See also [Scaling by properties](#).



Check position of selection



Removing underlay from small lettering

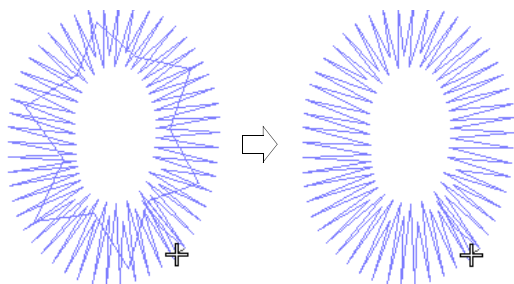


Use **Stitch > Effects > Auto Underlay** to strengthen and stabilize objects with underlay stitching.

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



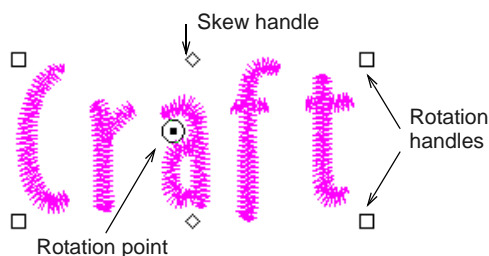
Use Transform > Select Object to scale lettering objects on-screen.

You can transform lettering objects by manipulating **control points** on-screen with the **Select Object** tool. See also [Scaling lettering with Select Object](#).

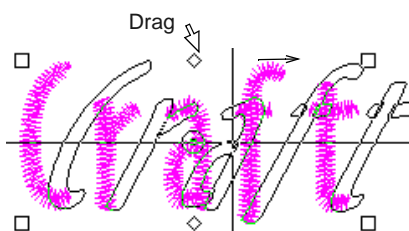
To transform lettering with Select Object

- 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.

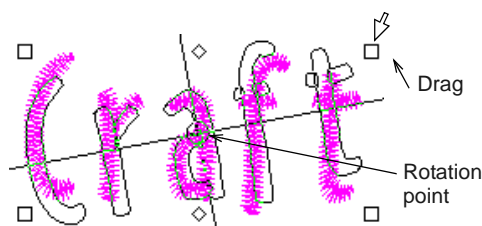
Another set of selection handles appears – these let you rotate and skew the object.



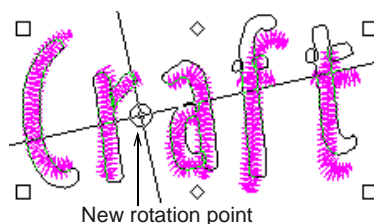
- 3 Click and drag one of the diamond-shaped handles to skew the lettering object horizontally.



- 4 Click and drag one of the hollow square handles to rotate the object.



Tip Drag the rotation point itself to a new location as required.



- 5 Release the mouse to complete.

Rotating lettering with Reshape Object



Use Transform > Reshape Object 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.



- 2 Click and drag a solid square handle to rotate the lettering object.



- 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

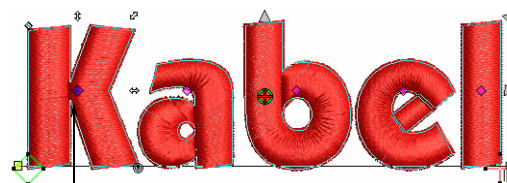


Use Transform > Reshape Object to reposition individual letters on screen.

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.



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 Transform > Reshape Object to transform individual letters on screen.

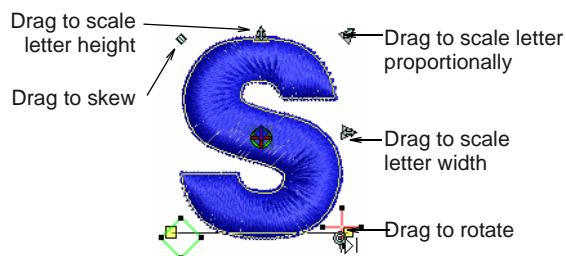
You can transform individual letters by manipulating **control points** on screen with the **Reshape Object** tool.

To transform letters on screen

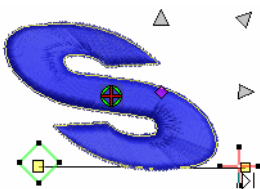
- 1 Select the lettering object and click **Reshape Object**.



- 2 Click the diamond control point of a letter. Another set of reshape nodes appear around the letter.



- 3 Click-and-drag a reshape node around the letter to transform it.



- 4 Press **Esc** to finish.



Reshaping letters on screen



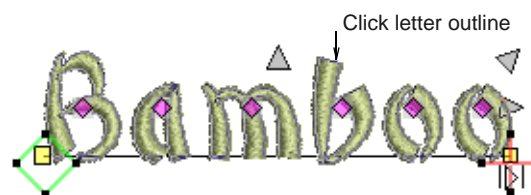
Use Transform > Reshape Object to reshape individual letters.

Create special lettering effects by reshaping letter outlines with the **Reshape Object** tool.

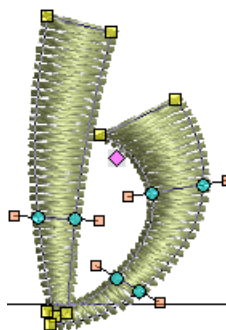
To reshape letters on screen

- 1 Select the lettering object and click the **Reshape Object** icon.

Selection handles appear around the lettering object.

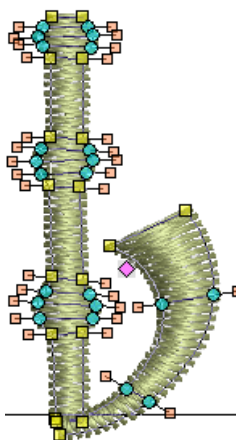


- 2 Click the letter outline. Reshape nodes appear around it.



Tip Zoom in the letter for precise reshaping. See [Zooming in & 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.

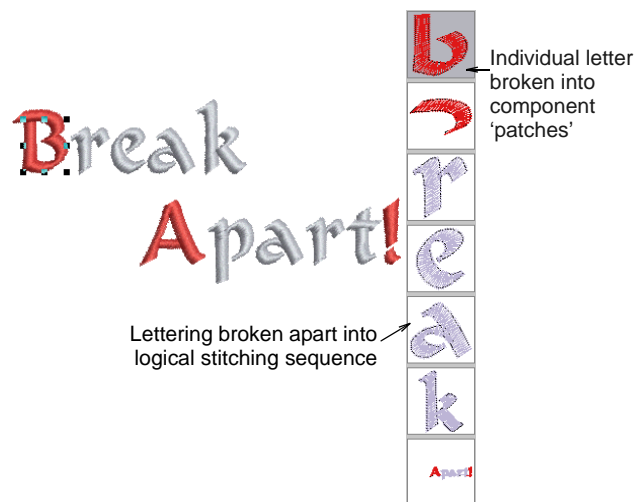


Breaking apart lettering for editing



Use **Edit > Break Apart** to split monograms, appliqués, lettering, and blackwork runs into component objects.

Applying the **Break Apart** function to a lettering object breaks it into a logical stitching sequence while maintaining lettering object characteristics. Object properties can be edited separately for single lines, single words, or even single characters. Stitching sequence is maintained. See also **Splitting into component objects**.



Sequence logic is as follows:

- ▶ Multi-line lettering can be broken into separate objects per line
- ▶ Individual lines can be broken into separate objects per word
- ▶ Words can be broken into separate objects per letter.
- ▶ Letters can be broken into their individual embroidery patches. Lettering properties are lost but properties of each patch can be individually modified.



Tip An exception for single-line (multi-word) objects is the case of the center-out stitching sequence. Such objects are broken apart directly into single-letter objects. The stitching sequence is thereby preserved.

Adding stitch angles to letters

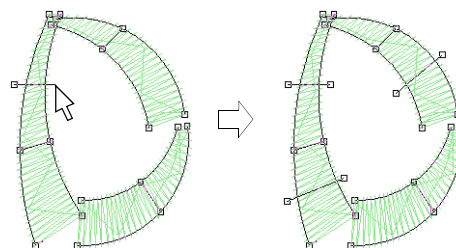


Use **Edit > Add Stitch Angles** to set different stitch angles for selected letters.

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

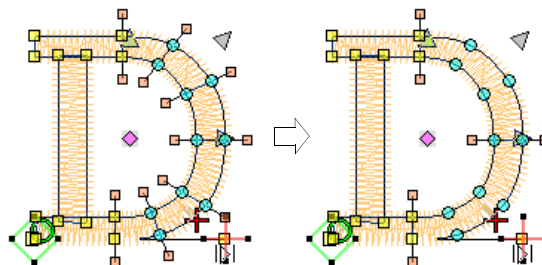


Use **Transform > Reshape Object** to delete individual stitch angles in lettering objects.

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 Digitize > Lettering 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 via dialog](#) for details.

To recolor letters

- 1 Click the **Lettering** icon and then click inside the lettering object.

An I-beam appears.




- 2 Select a letter(s) by dragging the cursor over the letter(s).



- 3 Click a color on the color palette.
- 4 Press **Enter** to confirm changes.



Reshaping baselines

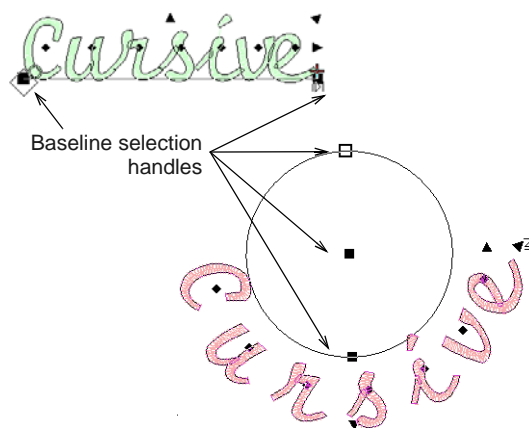
 Use Transform > Reshape Object to reshape lettering baselines.

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.

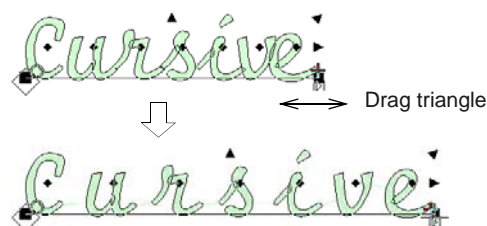


Tip The large diamond and cross represent start and end points. You may need to move them to access baseline selection handles. They will reposition themselves automatically based on changes you make.

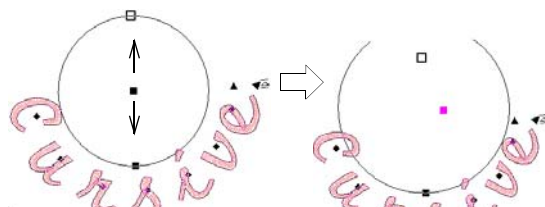
- ▶ To change the angle of a straight or vertical baseline, click and drag one of the large solid squares.



- ▶ To adjust the baseline length, click and drag the open triangle handle. Letter spacing adjusts accordingly.

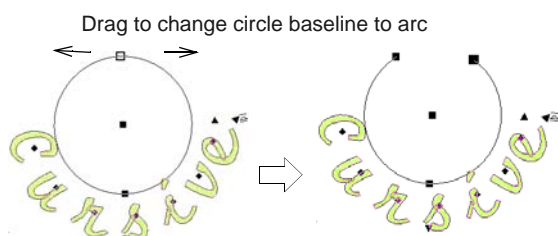


- ▶ To reshape lettering with a circular baseline, drag the handle at the circle center to adjust the radius.



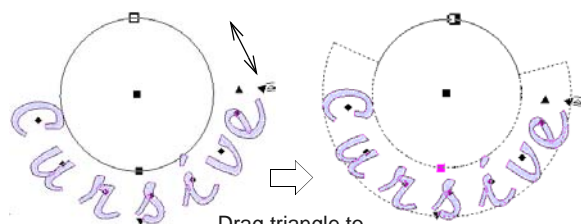
Drag up or down to change radius of circle

- ▶ 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.

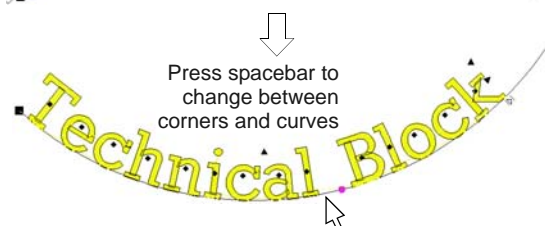
- ▶ To adjust Any Shape baselines, add, delete, change or move reshape nodes on the base line

like any embroidery object. See [Reshaping objects using reshape nodes](#) for details.

Technical Block



Click baseline to bend, then drag up or down



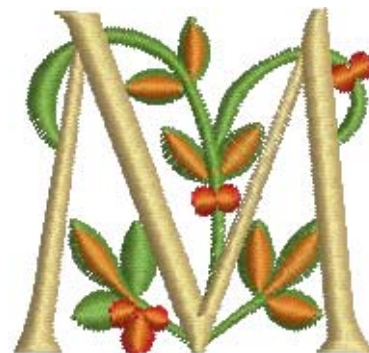
Press spacebar to change between corners and curves

- ▶ Press **Esc** to finish.

CHAPTER 30

SPECIAL LETTERING FEATURES

All TrueType or OpenType 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 Canvas > Convert Artwork to Embroidery to convert text to satin embroidery lettering with turning stitching.

The **Convert** 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.

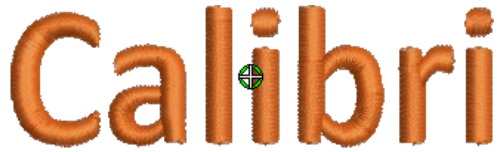
To convert text to embroidery

- 1 Select **Artwork Canvas** mode.

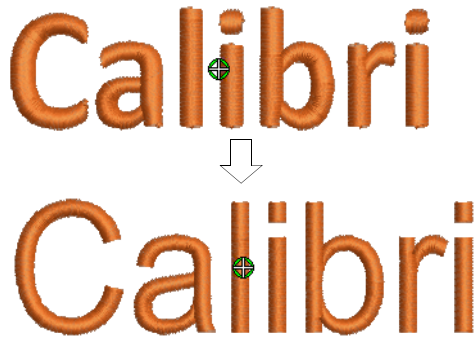
Calibri

- 2 Select one or more text objects and click the **Convert** tool.

BERNINA Embroidery Software automatically switches to **Embroidery Canvas**. 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** tool with ordinary **vector objects**. See also **Digitizing with vector artwork**.

Converting fonts to embroidery



Right-click Digitize > Lettering to convert TrueType fonts to embroidery fonts via the dialog.

MS Windows® comes with a collection of TrueType and OpenType fonts installed and there are others available from various sources, including CorelDRAW® Essentials X6. All these fonts are available to you when placing lettering in your designs.

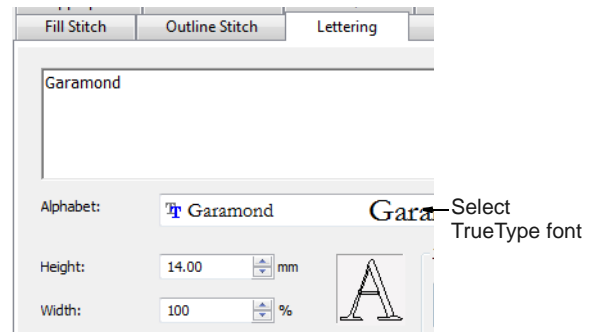


Tip Install new fonts using **My Computer > Control Panel**. Double-click the **Fonts** folder then select **File > Install New Font**. Before you can use the new fonts, you need to restart your computer and then BERNINA Embroidery Software will display the new fonts in the **Alphabet** list.

To convert a font to embroidery

- 1 Right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens.



- 2 Select a font from the **Alphabet** list.
Any TrueType or OpenType 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



Right-click Digitize > Lettering to select special characters via the dialog.

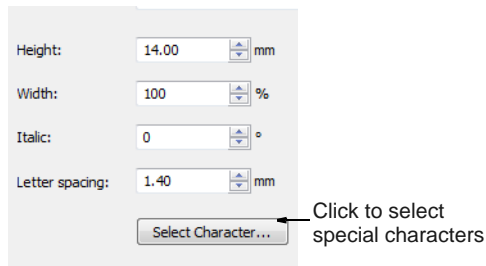
You can quickly add special characters and symbols to your lettering designs. If you know the keyboard shortcut for a symbol, add it to your lettering by entering the combination on-screen or in the **Object Properties > Lettering** dialog.



To select special characters

- 1 Right-click the **Lettering** icon.

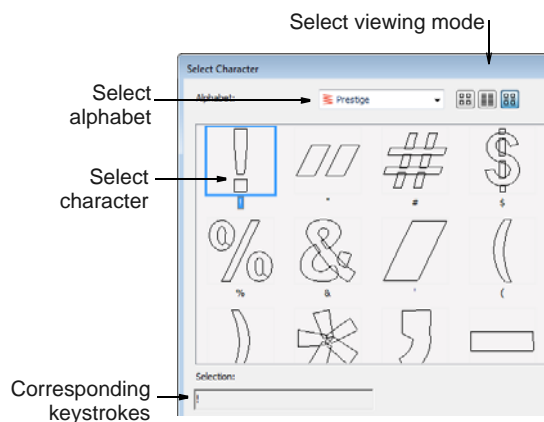
The **Object Properties > Lettering** dialog opens.



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.



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.

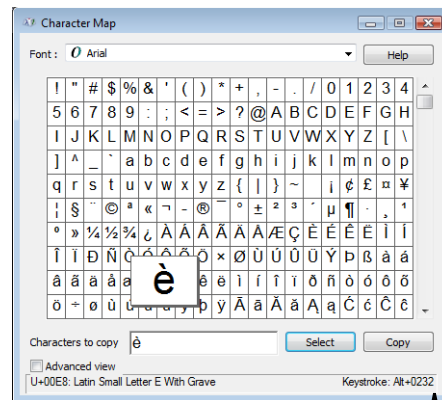


Tip You can create special characters in each **alphabet** by holding down the **Alt** key on your keyboard and typing **0** (zero), its code, using the numbers on the keypad. For example, to type **è** with the code **232**, type **Alt+0232**. The character will appear when you release the **Alt** key. 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**.



- 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



Right-click Digitize > Lettering to add fancy lettering via the dialog.



Use Edit > Break Apart to split monograms, appliqués, lettering, and blackwork runs into component objects.

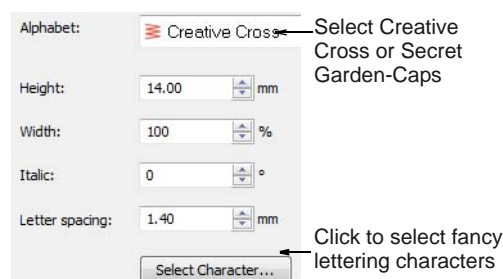
BERNINA Embroidery Software includes a number of fancy alphabets such as **Creative Cross** and **Secret Garden-Caps**. These alphabets include multiple colors and miniature designs. In effect, each letter is a self-contained design. This presents a few challenges when it comes to coloring and sequencing.



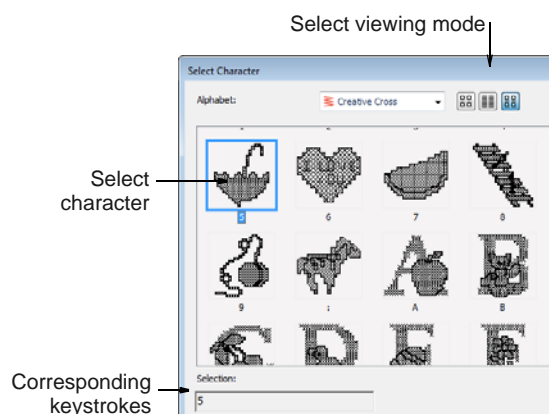
To add fancy lettering

- 1 Right-click the **Lettering** icon.

The **Object Properties > Lettering** dialog opens.

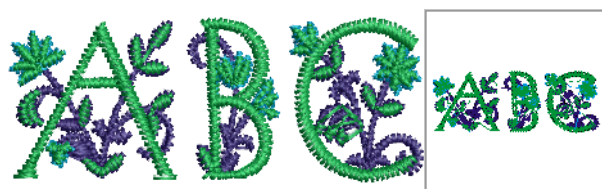


- 2 Select one of the included fancy alphabets from the **Alphabet** list – e.g. 'Creative Cross' or 'Secret Garden-Caps'.
- 3 Optionally, use the **Select Character** button to preview and select special characters.



Tip When you select a character, a corresponding keystroke appears in the **Selection** field. You can use this to type the character directly on-screen once the alphabet is selected.

- 4 Click **Apply** and click a starting point on-screen. Colors will default to the initial colors in the **Color Palette**. The letters will appear as a single lettering object in the **Color Film**.



- 5 Place and size the lettering object as desired. See **Arranging & Transforming Objects** for details. Don't worry about colors for the moment.
- 6 Optionally, in order to change colors, assign them via the **Design Properties > Thread Colors** dialog. See **Matching & assigning threads** for details.

Notice in the **Color Film** object list, each letter is sewn out separately. This involves many color changes.



- 7 Optionally, use the **Break Apart** tool to split the lettering object into its components. See [Breaking apart lettering for editing](#) for details.

These can then be recolored and resequenced as desired. However, note that lettering properties are lost.



Adding flair script lettering

A Right-click Digitize > Lettering to add flair script lettering via the dialog.

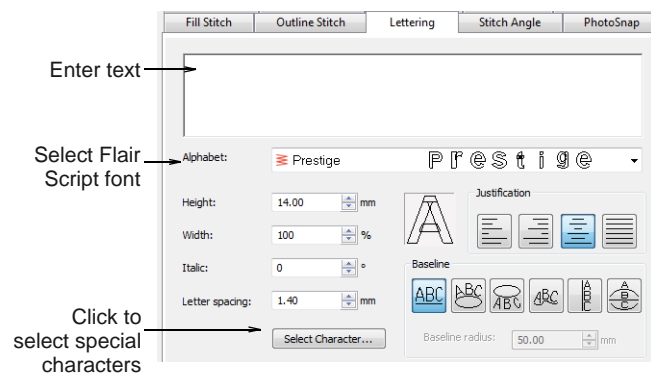
Flair script is a special font which allows you to add decorative flairs to the end of text objects, mimicking flamboyant handwriting flourishes.



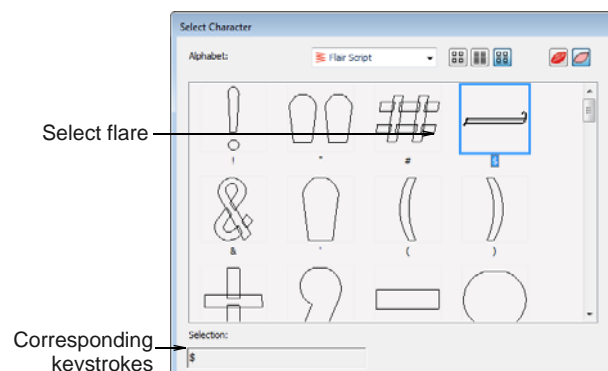
To add flair script lettering

- 1 Right-click the **Lettering** icon.

The **Object Details > Lettering** dialog opens.



- 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.



- 5 Select the flare character(s) you want to use.
Scroll down for more options. See also [Selecting special characters](#).
- 6 Click **OK** 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.

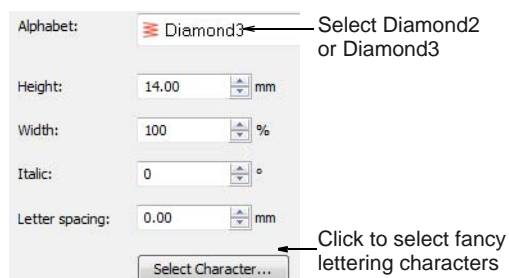
Adding monogram lettering

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.



- 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.

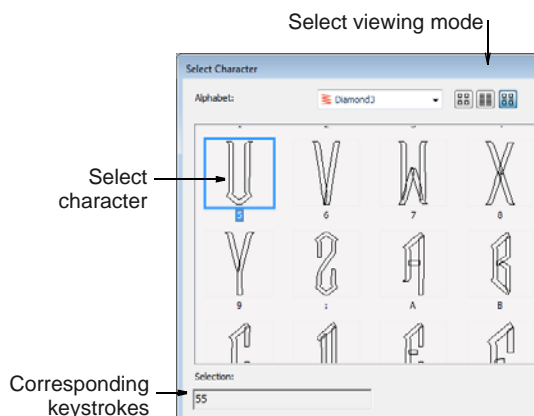
- ▶ Use **Diamond3** for a three-letter monogram: Diamond3 is a special alphabet which includes three versions of each letter for left, center and right positions, plus a border and flourish for 3-letter designs. See [Diamond3](#) for details.

- 3 Click **Select Character**.

The **Select Character** dialog opens.



Tip Select a viewing mode – you can list alphabets by picture, character, or both.



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.

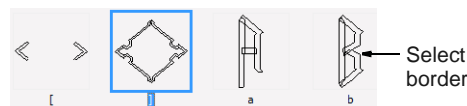


Note When selecting letters, make sure the letter orientation is correct. For example, Diamond3 has three sets of each letter, one for the left side, one for the middle and one for the right side.

- 5 Select the middle letter, if using Diamond3.
- 6 Select the right letter.

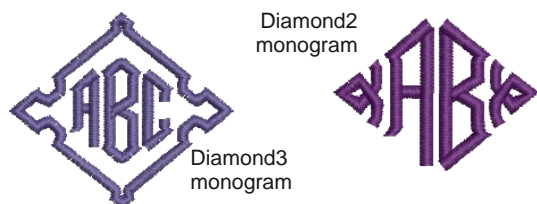


- 7 Select a border if required.



- 8 Click **OK**.

The selected characters are displayed in the text entry panel.

9 Click **Apply**.

Tip If you want the letters in your monogram to be different styles, create each letter separately.

Applying different stitch types & effects to lettering

By default, lettering objects are filled with satin stitching. You can apply other fill stitch types, such as **Step** or **Fancy**, as with any other **embroidery object**. See **Selecting outline stitches** for details.



Adjusting Satin stitch settings for lettering

By default, lettering objects are filled with satin stitch. 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 **Creating satin fills** for details.



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. See also **Adjusting Satin fill spacing**.

Nightowl
Automatic Spacing

Nightowl
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**.

Applying Raised Satin to lettering

Raised Satin can be applied to lettering with or without trapunto outlines to create raised lettering. See also **Quilted embroidery**.



Applying Step stitch settings to lettering

You can fill lettering shapes with Step stitch. It is particularly suitable for filling large, irregular lettering

shapes. Adjust stitch density and pattern as desired. See [Creating step stitch fills](#) for details.

with curved elastic lettering. Elastic Lettering can be used with any baseline.

Drifter Drifter

Applying Fancy stitch settings to lettering

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](#).

Drifter Drifter

Creating 'elastic lettering' effects

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



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

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:

ABC ABC

Straight

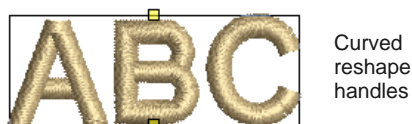
Curved

ABC ABC

Perspective

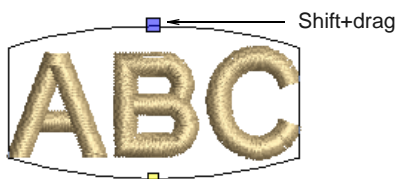
Diamond

Different handles display around the object outline depending on the **Elastic Lettering** type.

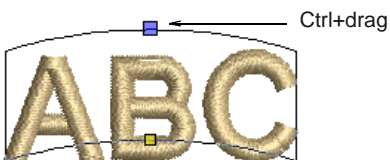


4 Drag a handle to reshape the object:

- ▶ To move two handles in opposite directions, hold the **Shift** key down while dragging a handle.



- ▶ To move the handles in the same direction, hold down the **Ctrl** key while dragging a handle.



5 Press **Enter** to complete.

Editing lettering in Elastic Lettering

A Click Digitize > Lettering to edit letters in envelopes on-screen.

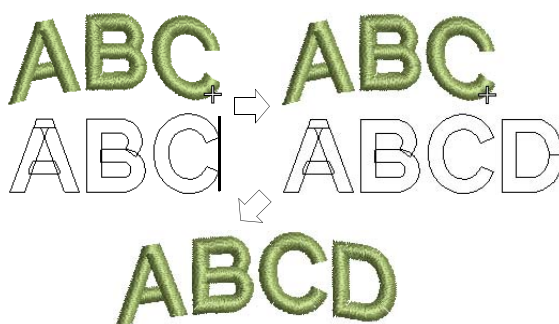
You can edit lettering in Elastic Lettering on-screen in the same way as normal lettering. When you click inside the lettering, a duplicate displays below the envelope.

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.

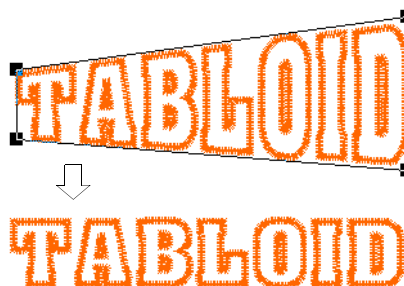
Removing Elastic Lettering

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 31

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

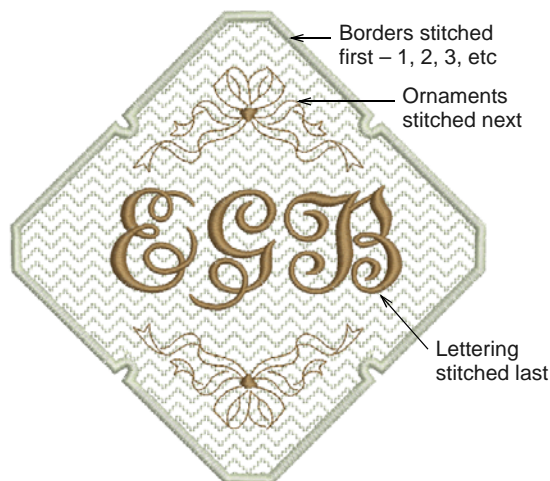


Use Digitize > Monogramming to create personalized monograms using a selection of pre-defined monogramming styles, border shapes and ornaments.

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.

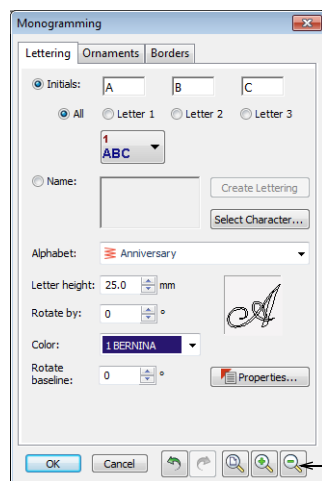


Assuming that all elements are present, the monogram is stitched in the following order: borders (1, 2, 3, and 4), ornament sets, and lettering object(s).

To create a monogramming design

- 1 Click the **Monogramming** icon.

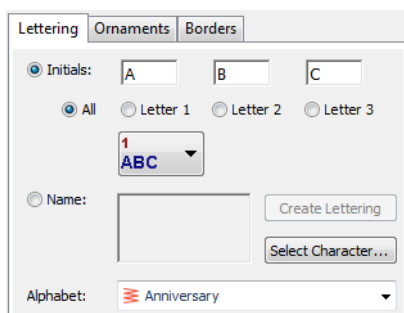
The **Monogramming** dialog opens with the **Lettering** tab selected. This tab allows you to specify the characters in the lettering component of a monogram. Two options are available: **Initials** and **Name**.



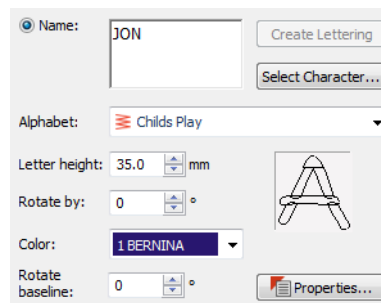
Zoom and Undo/Redo buttons

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.

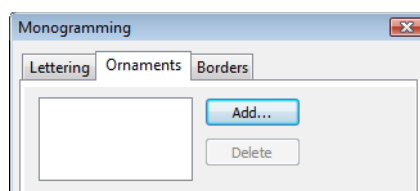
- 2 Select the type of lettering object you want to make:
 - **Initials**: Up to three initials can be entered, including special characters and symbols. See [Creating monogram lettering with initials](#) for details.



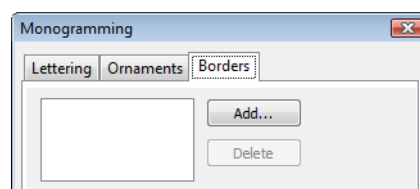
- **Name**: This option allows unlimited lines of characters to be entered. See [Creating monogram lettering with names](#) for details.



- 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

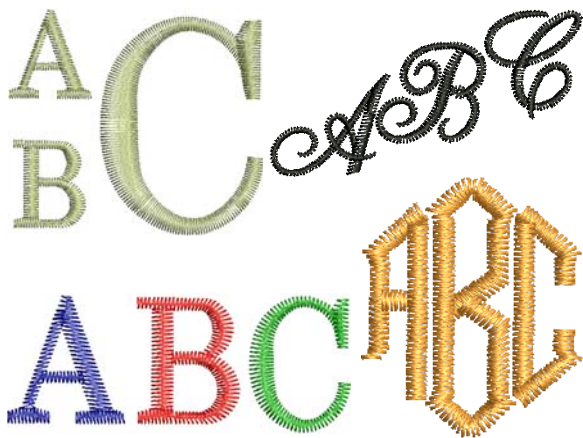
The **Monogramming** tool allows you to create personalized monograms with up to three initials, including special characters and symbols, or unlimited lines of characters.

Creating monogram lettering with initials



Use Digitize > Monogramming to create personalized monograms using a selection of pre-defined monogramming styles, border shapes and ornaments.

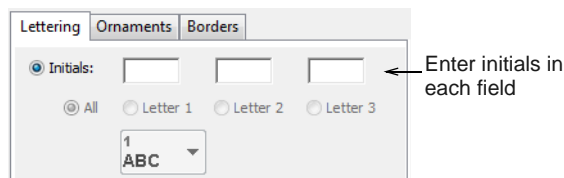
Up to three initials can be entered into your monogramming design, including special characters and symbols. Change settings for each one or all together, or apply pre-defined layout styles.



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.



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.

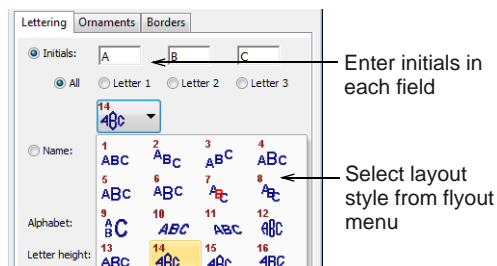
The letter simultaneously appears in the design window.



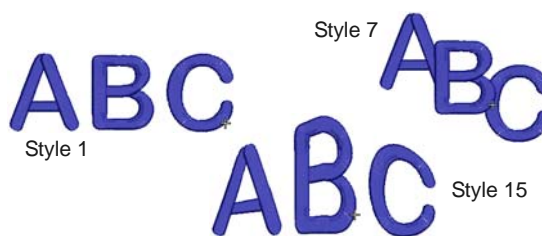
Note When using a single letter, it should be placed in the **Letter #1** field.

- 3 Tab to the next fields and enter second and third initials as required.

These letters appear in the design window.

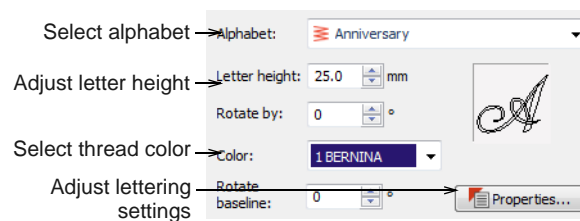


- 4 Optionally, click the **Style** button and select the style you want from the flyout menu – scroll to the desired item and release the mouse button. The current height of Letter #1 is used as the 'base setting' for the style.



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.



- 6 Use the **Alphabet** dropdown list to change alphabets.



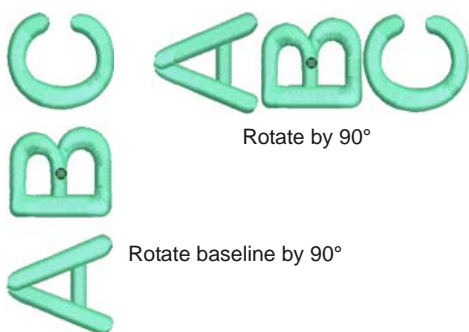
Note The default values for monogram lettering **Alphabet** and **Height** are distinct from those for conventional lettering. All settings can, however, be controlled via the **Object Properties > Lettering** tab.

- 7 Adjust available lettering settings as desired:

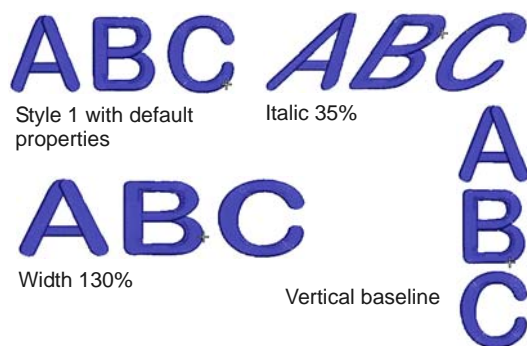
- ▶ Adjust **Letter Height** and **Color** as desired. This height setting overrides the one in the **Object Properties > Lettering** tab.



- ▶ Adjust letter rotation via the **Rotate By** and **Rotate Baseline** controls. These allow you to rotate individual letters or the entire baseline.



- 8 Click **View Properties** to make any further adjustments to your lettering stitch properties. See [Applying different stitch types & effects to lettering](#) for details.



- 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 Digitize > Monogramming 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.



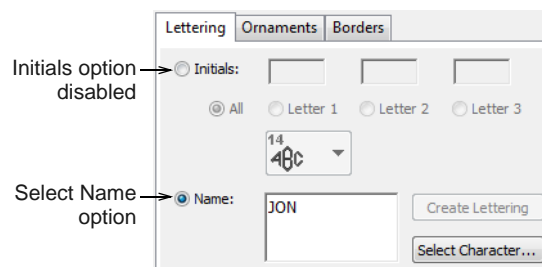
To create monogram lettering with a name

- 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.

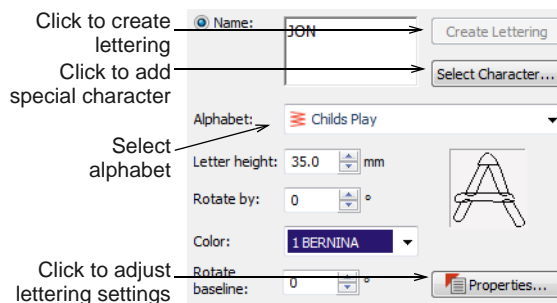
The **Initials** option is disabled.



- 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.





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 & effects to lettering](#) for details.



- 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

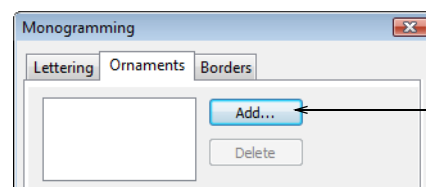
You can add up to ten ornament sets to a monogram design and change them at any time. There is a dedicated monogram ornaments pattern set although any available pattern set can be used. A set of ornamental designs is also available. These are stored in their own **Ornaments** folder.



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.



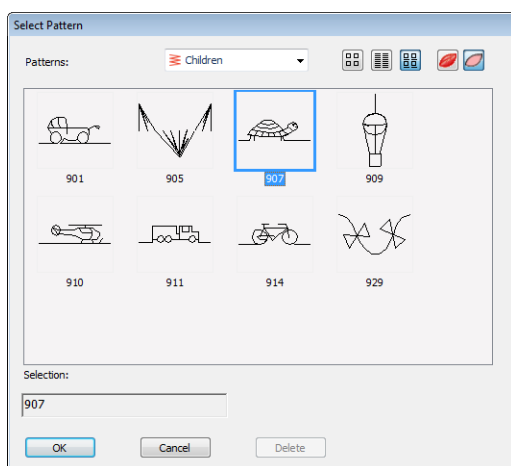
- 3 Click the **Add** button.



Note Up to ten ornaments can be added to the selection list. Any combination of positions can be used.

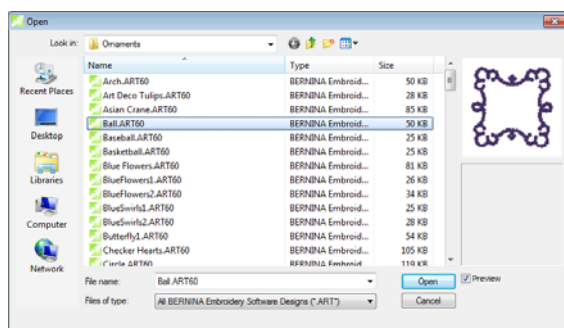
- 4 Choose an ornament source:

- ▶ 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.

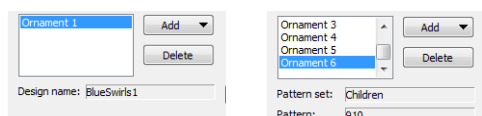
- ▶ If you choose the **From Design** option, an **Open** dialog opens onto the **Ornaments** folder. Designs here are specifically intended for use as ornaments.



- 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.

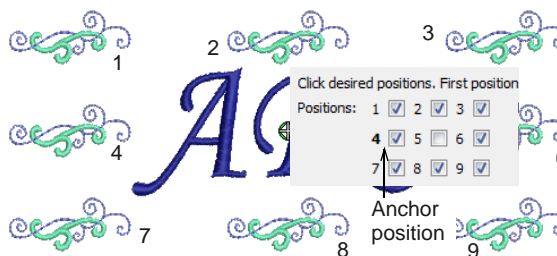
- 6 Select an ornament set from the list box.



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.

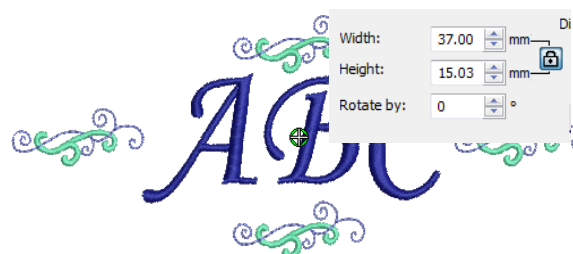
- 7 Use the **Positions** checkboxes to add up to eight instances of a selected ornament.

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](#).

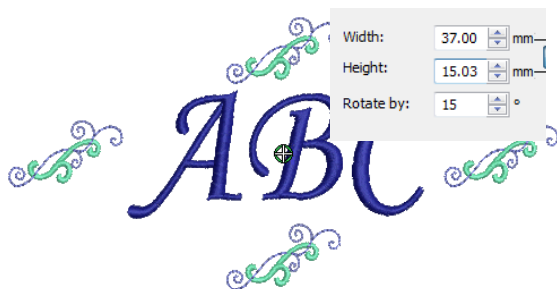
- 8 Use the **Width** and **Height** fields to change ornament dimensions.



Tip The **Lock Aspect Ratio** toggle forces width and height settings to resize in proportion to each other.

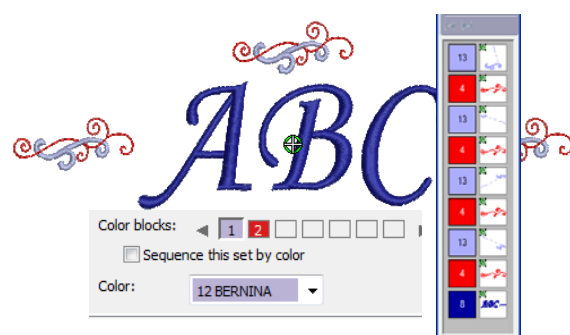
- 9 Use the **Rotate by** field to specify a rotation angle for the anchor object.

All other ornaments are sized, rotated and mirrored in relation to this object. See also [Creating multi-ornament layouts](#).

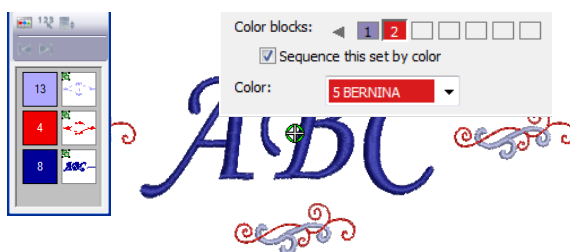


- 10 Use the **Color Blocks** palette to change ornament colors.

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](#).

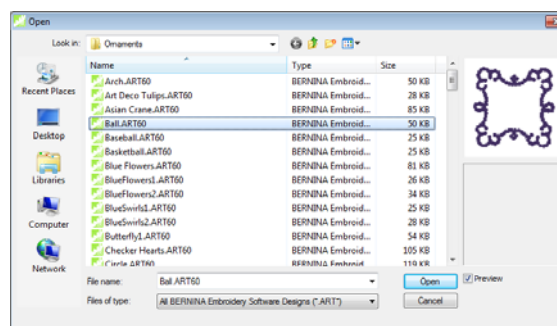


To create a single ornament layout

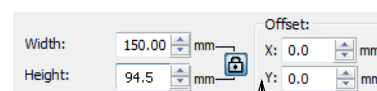
- 1 Create the lettering object you want to use in your monogram. See [Creating monogram lettering with initials](#) and [Creating monogram lettering with names](#) for details.
- 2 Add the ornament you want to use.



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.

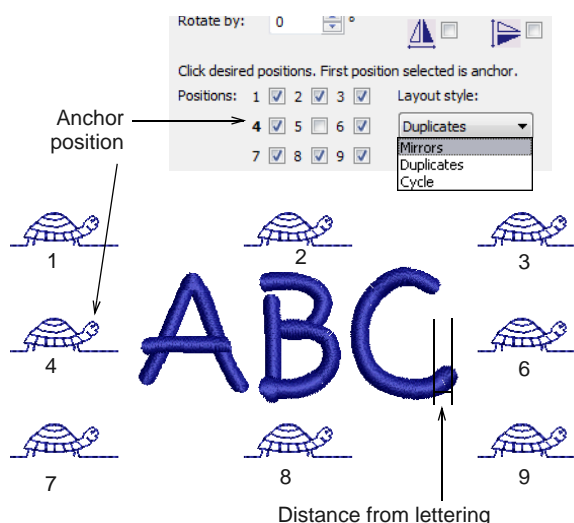


Choose from a range of pre-defined layout styles, including **Mirrors**, **Duplicates**, and **Cycle**. You also have the option of flipping the anchor ornament horizontally or vertically.

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.



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.

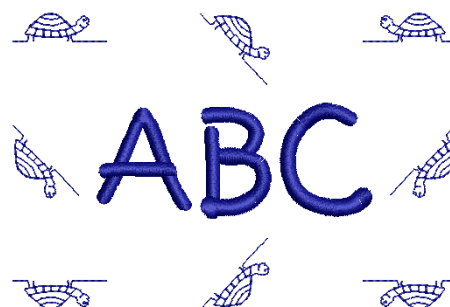
- 4 Size and rotate the anchor ornament as required. See [Adding ornaments to monograms](#) for details.
- 5 Use the **Distance From Lettering** field to specify the distance ornaments are offset from the lettering object.



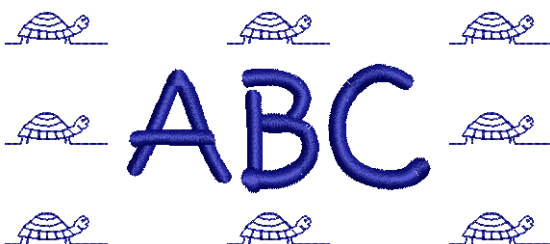
Tip The software allows you to enter a negative offset.

- 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:



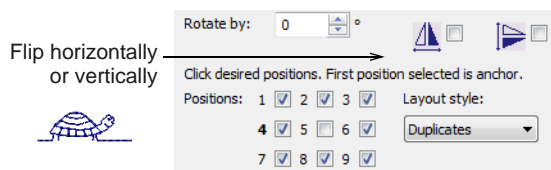
► **Duplicates:**



► **Cycle:**



- 7 Flip the entire configuration horizontally and/or vertically as required.



► **Horizontal:**



► **Vertical:**



► **Horizontal and Vertical:**



- 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 **Add 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.

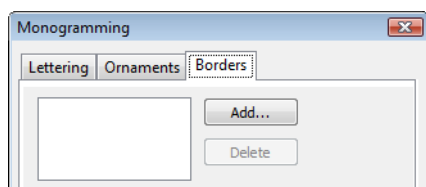


To create multiple borders

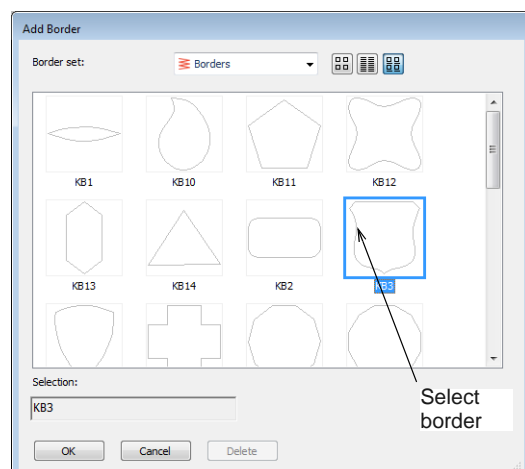
- 1 Create the lettering object you want to use in your monogram:

- ▶ **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.



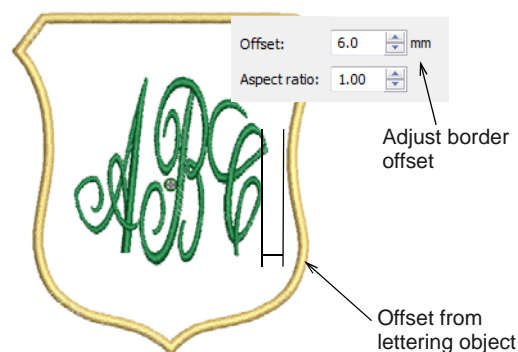
- 4 Click the **Add** button.
The **Add Border** dialog opens offering a library of pre-defined border shapes.



Tip You can create your 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.

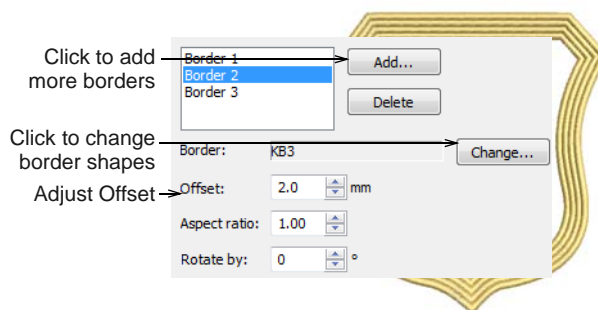
- 6 Use the **Offset** field to adjust space between lettering and border.



Tip The software allows you to enter a negative offset. This allows you to create multiple overlapping borders.

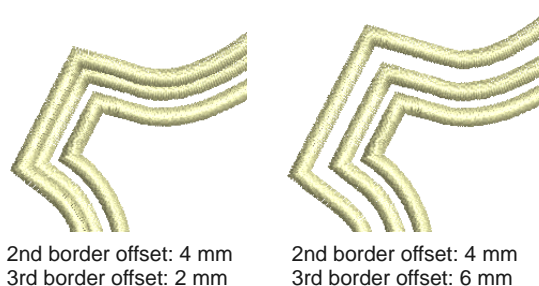
- 7 Click the **Add** button again to add up to four more borders.

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.

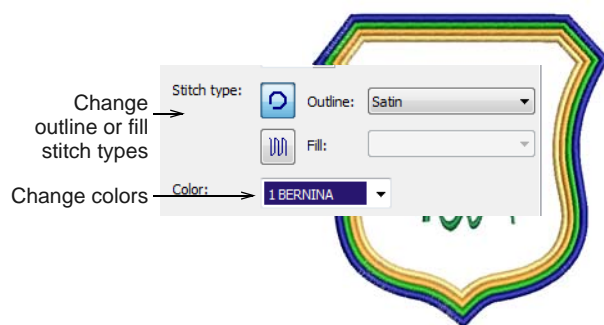


Tip If you want to change the border shape, click the **Change** button and select a different border from the **Select Border** dialog. Any change affects all borders in the design.

- 8 Use the **Offset** field to adjust spacing between borders.



- 9 Use the **Color** palette to adjust the colors of selected borders.



- 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.



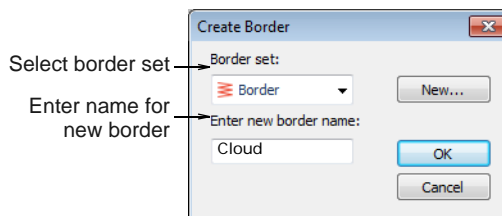
Tip Like borders, you can create your own ornament patterns for use in monograms using the **Create Pattern** tool. See [Creating your own pattern sets](#) for details.

To create your own border

- 1 Select the closed embroidery object you want to save as a border.

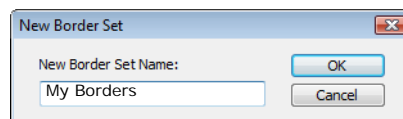


- 2 Select **Settings > Create Border**.
The **Create Border** dialog opens.



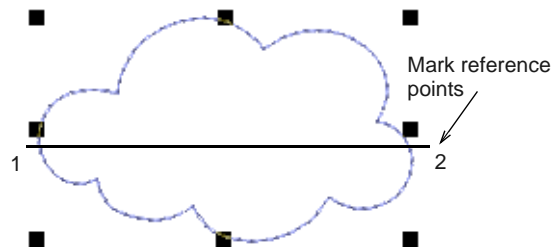
- 3 Select a border set from the list.

Optionally, click **New Border 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.



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 & 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. See [Reading & Writing Design Files](#) for details.

CHAPTER 32

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.

Your design displays as it will be printed. Large designs may be displayed over a number of pages if printed at actual size.



Previewing & printing worksheets



Use General > Print Preview to preview a design before printing.



Use General > Print to print active design using current settings.

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.

- 2 Use the **Preview** buttons as required:

Field	Description
Next Page	View the next page.
Prev Page	View the previous page.
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. You are also able to select font type and size as well as zoom factors for included articles.

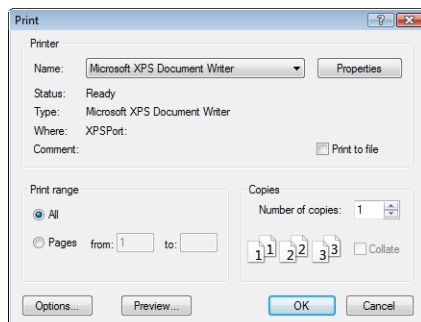


Note You have the option of printing the whole design or selected objects only. If the latter, you need to select the objects before accessing the **Print Options** dialog.

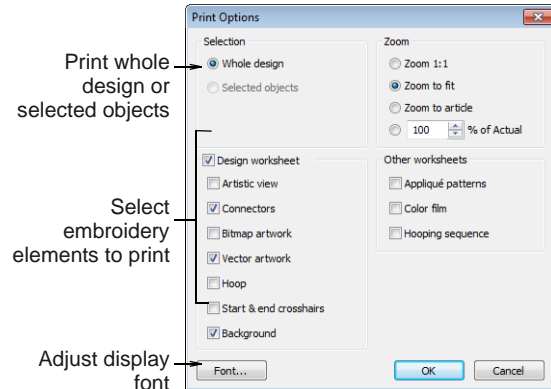
To set print options for embroidery

- 1 Select **File > Print**.

The **Print** dialog opens.



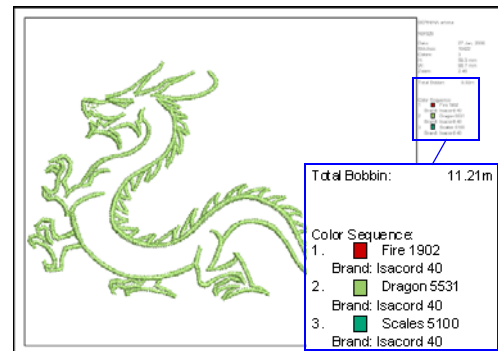
- 2 Select a printer from the **Name** list.
 3 Type the number of copies you want to print and other printing information.
 4 Click **Options** to change the size of the picture, the type of view or the items to be included. The **Print Options** dialog opens.



- 5 Choose whether to print the whole design or selected objects only.

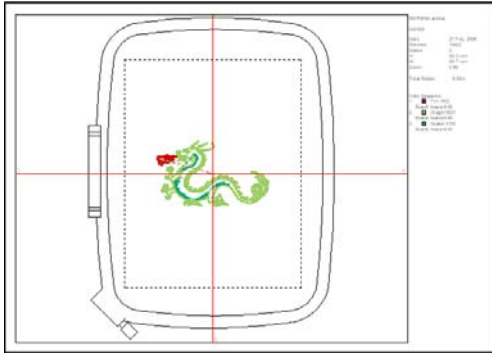
The **Selected Objects** option is only available if you have already selected the objects you want to print.

- 6 Select checkbox if you want to print the design as a **Design Worksheet**.

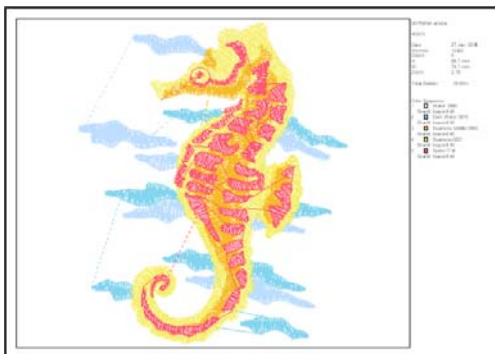


- 7 Select the embroidery elements to stitch. All embroidery stitches are shown by default in normal (Stitch View) display mode.
 8 Include other options as required:

- ▶ **Hoop:** The hoop is included in the printout.



- ▶ **Bitmap artwork:** The design is printed with the bitmap artwork behind it.
- ▶ **Vector artwork:** The design is printed with the vector artwork 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**.

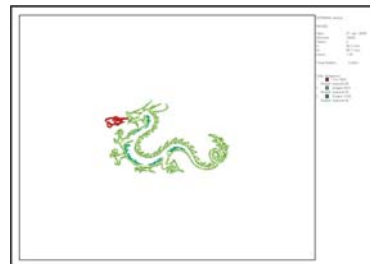
- ▶ **Start/End Crosshairs:** The start/end needle position is included in the printout.
- ▶ **Background:** The background page is filled with a color or a fabric image according to the

current **Fabric Display** setting. See **Setting backgrounds** for details.

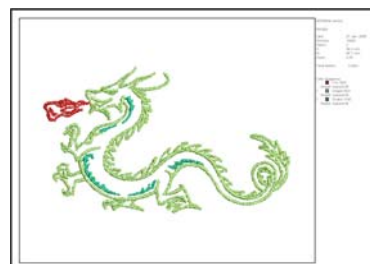


- 9 Select a size option from the **Zoom** panel:

- ▶ **Zoom 1:1:** the design is printed at the same size it will be stitched.
- ▶ **Zoom to fit:** large designs will be reduced to fit the printing paper, small designs will be enlarged.
- ▶ **Zoom to article:** The whole article or garment backdrop is scaled to fill available space on the printout.
- ▶ **% of Actual:** The design view is resized according to this setting.



70 % of actual size



150 % of actual size

- 10 Optionally, click the **Font** button to adjust worksheet display font.

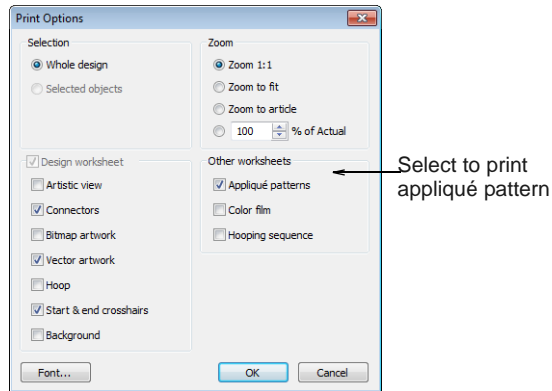
- 11 Click **OK**.

Printing appliqué patterns

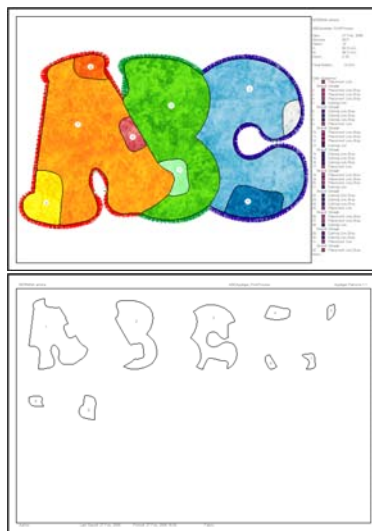
Print a copy of the appliqué pattern to use to cut out the fabric pieces. Each appliqué pattern piece is numbered according to the stitching sequence.

To print an appliqué pattern

- 1 Select **File > Print Preview**.
- 2 Click **Options** icon.
Print Options dialog opens.
- 3 Select the **Appliqué Pattern** checkbox.



- 4 Click **OK**.
Each appliqué pattern piece is numbered according to the stitching sequence.



Appliqué
Assembly
page

Appliqué
Patterns page



Note If the **Zoom 1:1** option is selected, both an assembled appliqué layout and individual patterns in the actual size are created on separate pages. If the **Zoom to fit** 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.

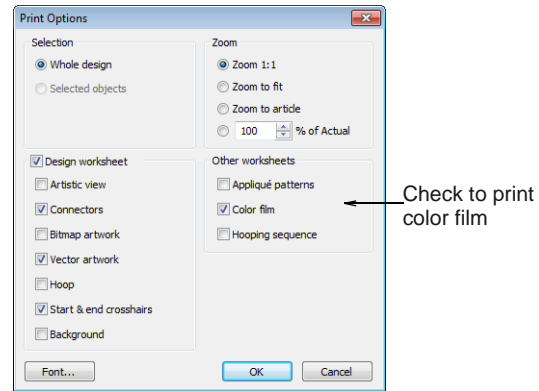
- 5 Click **Print**.

Printing Color Film

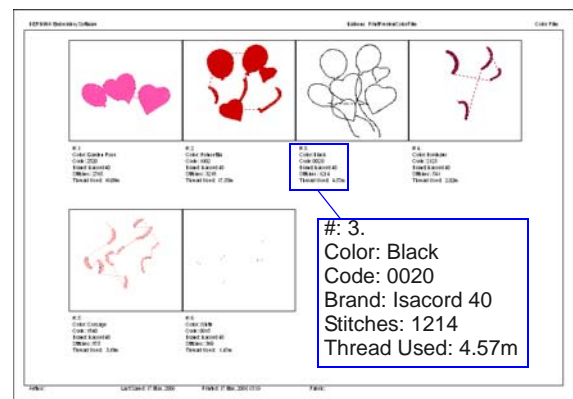
The **Color Film** option lets you include a list of color layers in the current design, together with color and stitch information for each layer.

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.



- 4 Click **OK**.

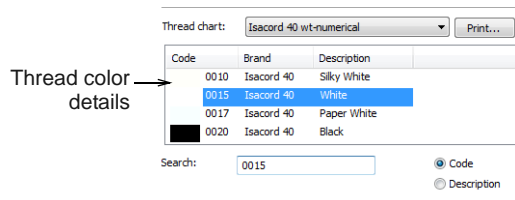


The following information is included:

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'.



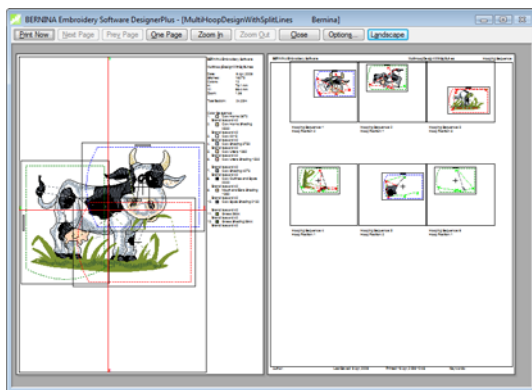
Note The information displayed here is the same as the information displayed in the **Thread Colors** dialog. See **Assigning thread colors** for details.



5 Click **Print**.

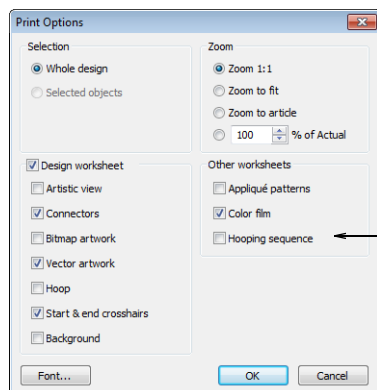
Printing multi-hooped designs

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**.



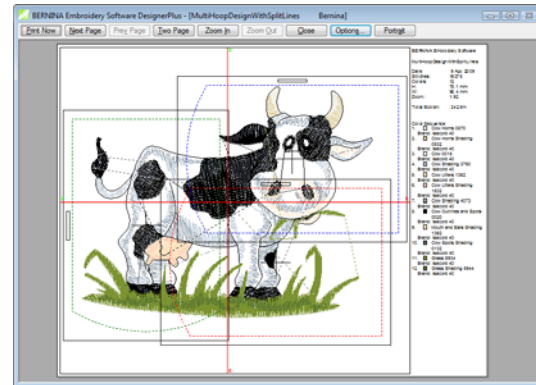
To print a multi-hooped design

- 1 Select **File > Print Preview**.
- 2 Click **Options** icon.
The **Print Options** dialog opens.
- 3 Select the **Hooping Sequence** checkbox.

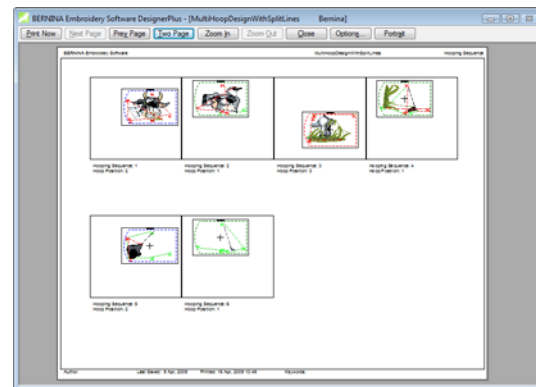


Check to print
hooping sequence

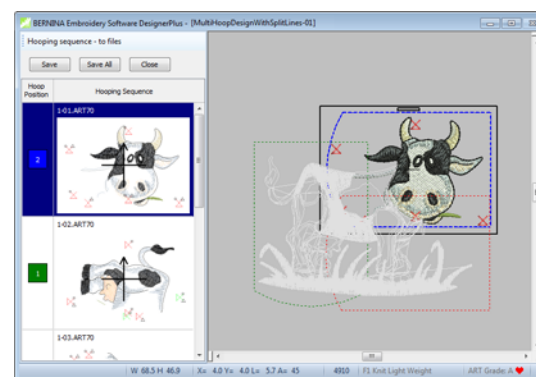
4 Click **OK**.



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**.

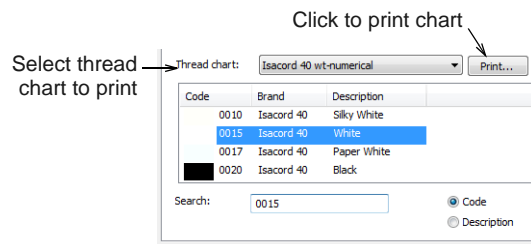
Printing thread charts

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 **Design > Thread Colors**.

The **Design Properties > Thread Colors** dialog opens.



- 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.

	Code	Brand	Description	Memo
<input type="checkbox"/>	0010	Isacord 40	Silky White	
<input type="checkbox"/>	0015	Isacord 40	White	
<input type="checkbox"/>	0017	Isacord 40	Paper White	
<input checked="" type="checkbox"/>	0020	Isacord 40	Black	
<input type="checkbox"/>	0101	Isacord 40	Eggshell	
<input type="checkbox"/>	0105	Isacord 40	NEW 2008	
<input type="checkbox"/>	0108	Isacord 40	Cobblestone	
<input type="checkbox"/>	0111	Isacord 40	White	
<input type="checkbox"/>	0112	Isacord 40	Leadville	
<input type="checkbox"/>	0124	Isacord 40	Fieldstone	
<input type="checkbox"/>	0131	Isacord 40	Smoke	
<input type="checkbox"/>	0132	Isacord 40	Dark Pewter	

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 bitmap

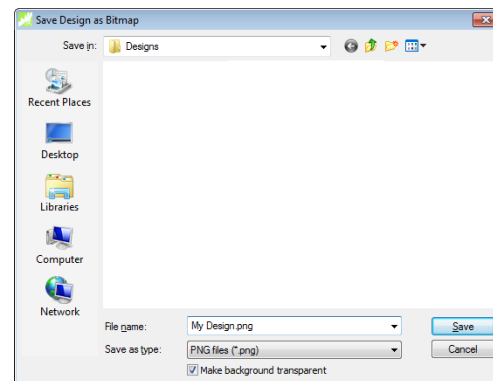
The **Save Design as Image** command allows you to save design images for use with your fabric and garment application. The resulting image is exactly as it appears on screen, including connectors, stitch cursor, grid, as well as any **backdrop**. The hoop, however, does not appear in the image file even if it intersects objects within the design.

To save a design as an image

- 1 Switch to **Embroidery Canvas**.

- 2 With the design still open in the design window, select **File > Save Design as Bitmap**.

The **Save Design as Bitmap** dialog opens. By default, PNG is the selected file type.

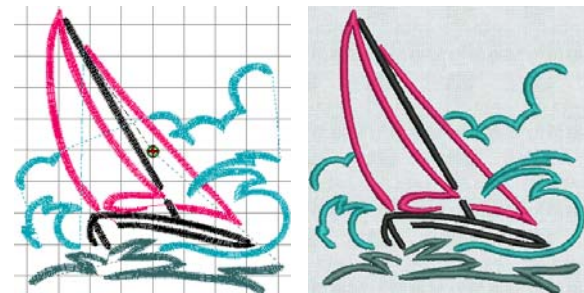


- 3 Deselect the **Make Background Transparent** option as required.

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 **General > Write to Card/Machine** to write (save) design to BERNINA design card or BERNINA embroidery machine.

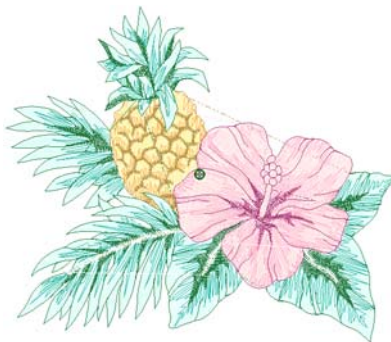
Use **Write to Card/Machine** to send a design directly to your BERNINA embroidery machine ready to stitch. See also [Writing designs to machine](#).



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 & printing worksheets](#) for details.

To stitch out a design

- 1 Switch to **Embroidery Canvas**.



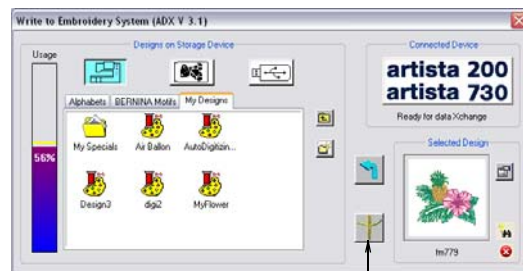
- 2 Check that the design fits the hoop. Use the smallest hoop possible. See [Changing hoops](#) for details.
- 3 Click the **Write to Card/Machine** icon.

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.



- 4 Select an embroidery machine type and COM port if prompted to do so. See also [Device selection](#).
- 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 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

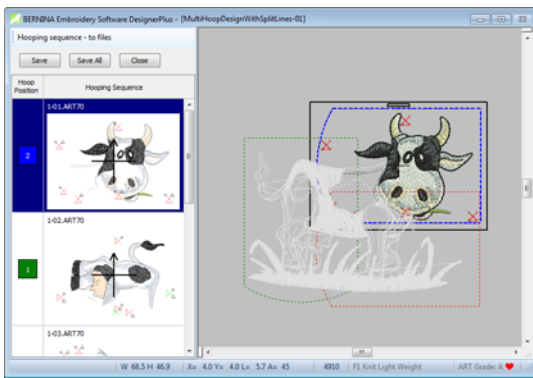
When working with designs that are larger than the available physical hoop, you can split them into parts

in **Hoop Canvas**, 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 Canvas**:

- ▶ Save As
- ▶ Write to Card/Machine
- ▶ Card/Machine Write

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



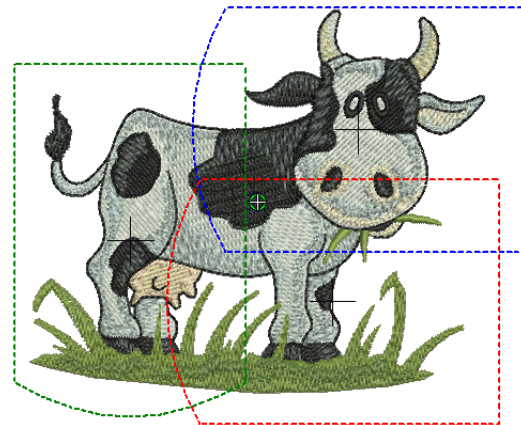
Use General > Write to Card/Machine to write (save) design to BERNINA design card or BERNINA embroidery machine.

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 Canvas** and create your multi-hooped design. See **Hooping large designs** for details.

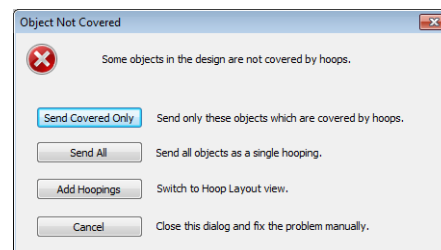
- 2 Ensure that the embroidery machine or reader box have been correctly attached.



- 3 Click the **Write to Card/Machine** icon.

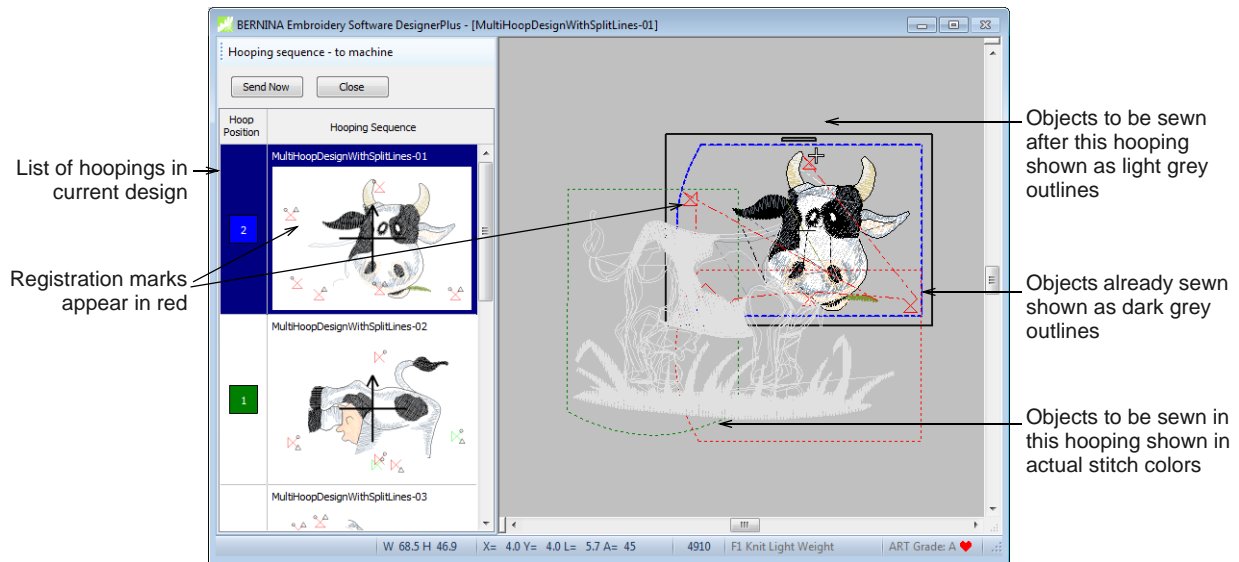
The system checks whether there is only one hoop in the design and if all objects are covered.

- ▶ 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. This

displays a list of all hoopings required to stitch the design.

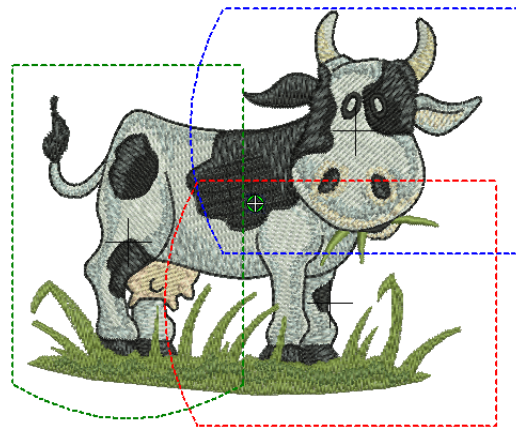


Note Fabric in covered appliqué is hidden, leaving stitchable items only. Registration marks are shown if activated. See also **Outputting registration marks**.

- 4 Select any hooping in the list.
Objects within the selected hooping are shown in their actual stitch colors.
- 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.

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**.

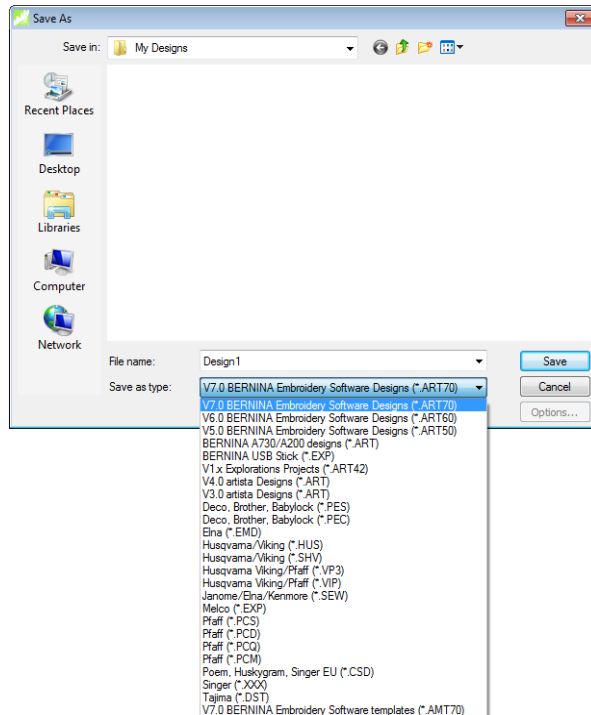


To save a multi-hooped design

- 1 Switch to **Hoop Canvas** and create your multi-hooped design. See **Hooping large designs** for details.
- 2 Select **File > Save As**.

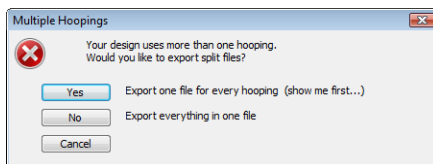
A standard MS Windows® **Save As** dialog appears allowing you to browse to any folder, choose any

name for the exported file, and choose a file format from a dropdown list.

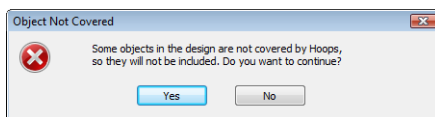


- 3 Change the file name as required, and choose a destination folder and/or file format, and click **Save**.

- ▶ 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.



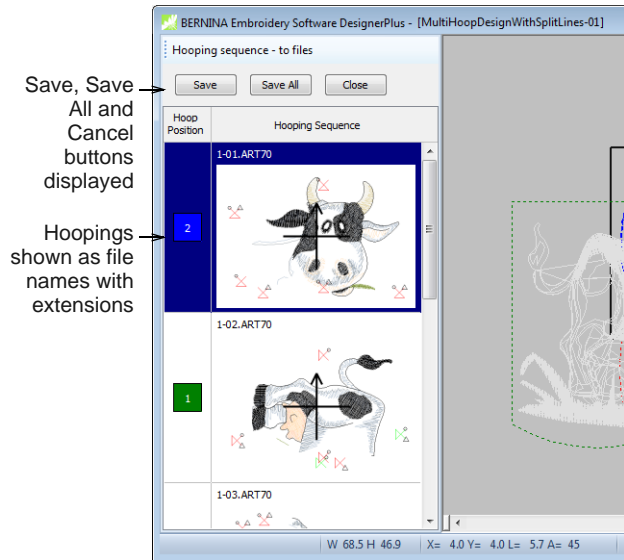
- ▶ If the system detects that not all objects in the design are covered by hoop positions, you are asked whether you want to continue.



- 4 If you decide to export a file for every hooping, click **Yes**.

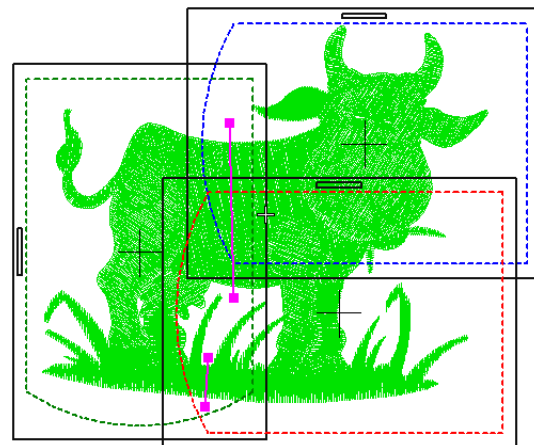
The system checks that all **embroidery objects** are covered. You will be warned if they are not. Otherwise, all hoopings needed to stitch the design are calculated and displayed in the

Hoopings 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.



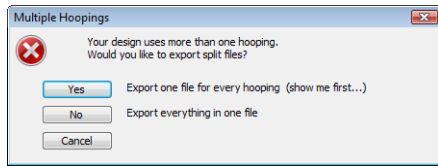
Outputting designs with split lines

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 Canvas**, 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

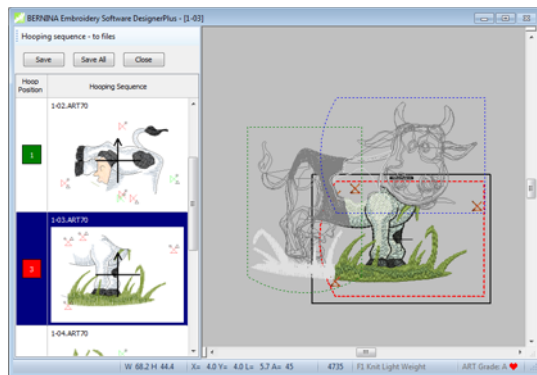
- 1 Select the **Save As, Write to Card/Machine**.

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**.

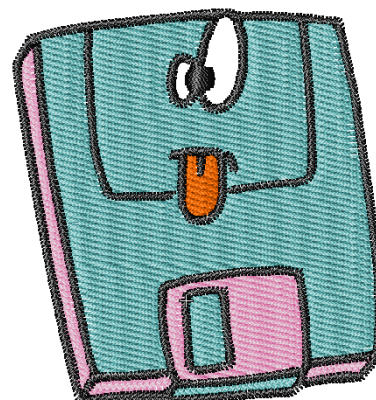
BERNINA Embroidery Software exits **Hooping Sequence** mode and displays the design in the design window in its original state - with split lines but with objects un-split.

CHAPTER 33

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.



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.



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.

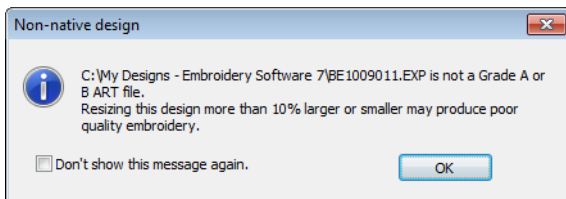


Tip For information about the source of a design file, refer to the **Open** dialog or the **Design Properties** dialog. See [Viewing design information](#) for details. See also [Opening designs](#).

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.

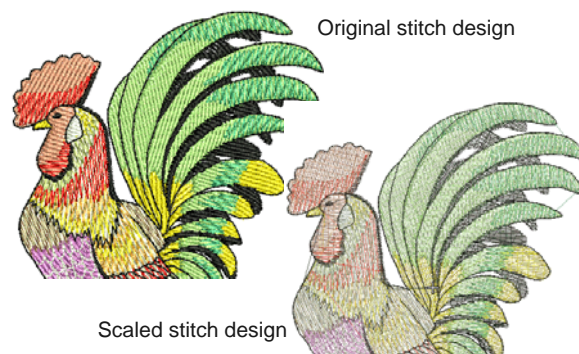
Included in file	Stitch files	ART files
Object properties	No	Yes
Stitch data	No	Yes
Stitch types	No	Yes
Includes stitch coordinates	Yes	Yes
Thread colors	Some	Yes
Comments	No	Yes
Pull compensation settings	No	Yes
Auto spacing settings	No	Yes

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 $\pm 5\%$ or some areas may be too thickly or too thinly covered.





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
Vx.0 BERNINA Embroidery Software	ARTx0	A	●	●
BERNINA A730/A200 designs	ART	A	●	●
artista designs	ART	^	●	●
V1.x Explorations Projects	ART42	A	●	●
V7.0 BERNINA ES templates	AMT70	A	●	●
Vx.0 BERNINA ES templates	AMTx0	¥	A	●
artista templates	AMT	A	●	
BERNINA USB stick	EXP			●
artista Cross Stitch	ARX	‡	D	●

¥ AMT50 and AMT60 no longer supported for write.
 ^ V1 and V2 ART no longer supported for write
 ‡ Cross Stitch application only † Quilter application only
 * Save back as SHV but not convert to SHV

Format	File	Grade	Read	Write
Deco, Brother, Babylock	PEC	C	●	●
Deco, Brother, Babylock	PES	C	●	●
Elna Xpressive	EMD	C	●	●
Great Notions	GNC	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	●	●
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 Quilter	ARQ	†	D	●

¥ AMT50 and AMT60 no longer supported for write.
 ^ V1 and V2 ART no longer supported for write
 ‡ Cross Stitch application only † Quilter application 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.

Device selection

Whether outputting designs or reading designs, you interact with devices via the **Device Selection** dialog.



If you plug a USB stick into your PC, you will see four enabled icons shown above. The other two buttons are enabled once you connect to machine. The dialog is the interface to the following functions.

Device	Description
	Use this to: <ul style="list-style-type: none"> Write designs in EXP format to USB stick Read designs EXP designs from USB stick.
	Use this to load the design to machine ready for stitching.
	Use this to: <ul style="list-style-type: none"> Write design to machine, or USB stick plugged into machine Read designs from machine, or USB stick plugged into machine.
	Use this to: <ul style="list-style-type: none"> Write EXP design to memory card for deco 330/bernette 340 deco, or USB stick for bernette 340 deco Read EXP design from memory card for deco 330/bernette 340 deco, or USB stick for bernette 340 deco.
	Use this to: <ul style="list-style-type: none"> Write EXP design to artista 165 to artista 185 or serial Reader/Writer Box Read EXP from artista 165 to artista 185 or serial Reader/Writer Box.
	Use this to: <ul style="list-style-type: none"> Write design in artista 200/730(ART V4) format to USB stick Read artista 200/730(ART V4) design from USB stick.

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 General > Open 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.

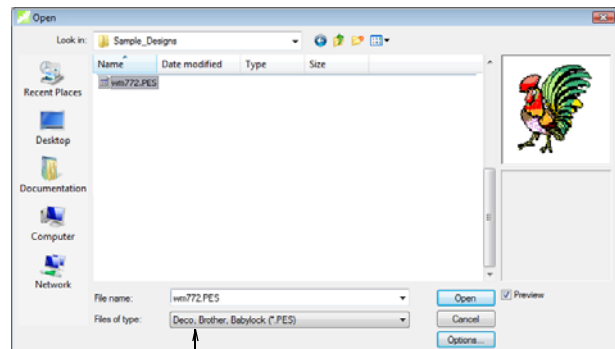


Tip To ensure object outlines, stitch types, stitch density and colors are correct, it is always a good idea to check and edit designs after conversion.

To open a file with conversion

- 1 Click the **Open** icon to open from your hard disk, or read from disk or design card.

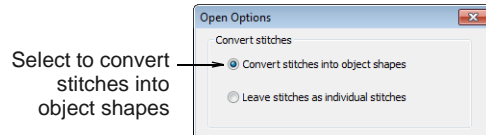
The **Open** dialog opens.



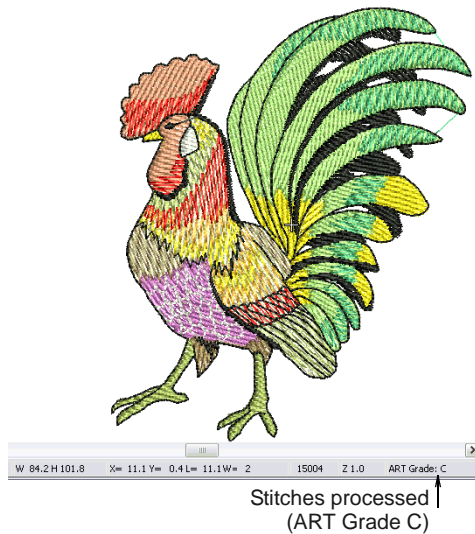
Select stitch format

- 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.



- 5 Select the **Convert stitches into object shapes** checkbox.
- 6 Click **OK** and then **Open**.



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 General > Open 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.

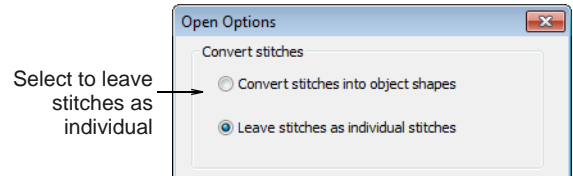
To open a file without conversion

- 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.



- 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.



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).



- **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**.

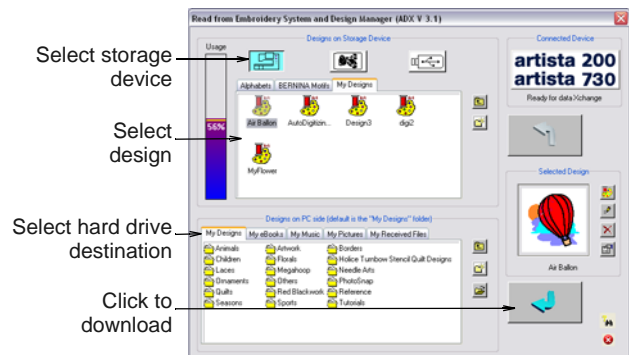
If this is the first time you have downloaded a design after turning on the machine or reader box, the **Device Selection** dialog opens.



- 4 Select an embroidery machine or reader box, as well as COM port if prompted to do so. See also [Device selection](#).
- 5 Click **OK**.

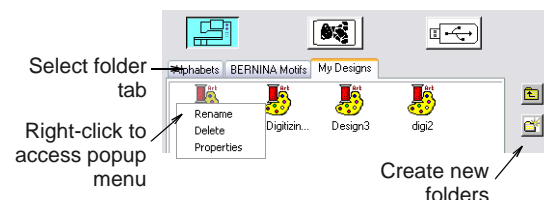
If the machine connection is working, the **Write to Embroidery System** dialog opens. The name and thumbnail image are displayed.

The **Read from Embroidery System and Design Manager** dialog opens.



- 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.





Tip Right-click the design icon to access a popup menu – use it to rename, delete, or view design properties.

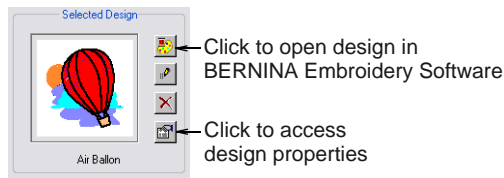
- 7 Click a folder tab (if more than one) and/or folder to locate the design.



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.

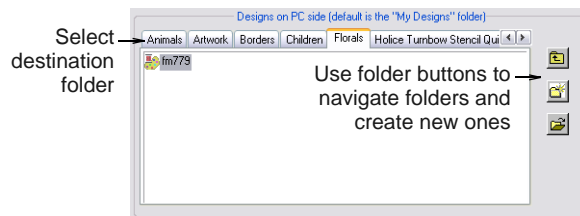


- 9 Use the display panel buttons as required to:

- ▶ Open the design directly into BERNINA Embroidery Software for editing.
- ▶ Rename the design.
- ▶ Delete the design.
- ▶ Access design properties.



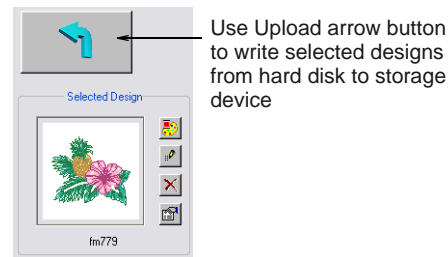
- 10 Select a destination folder on the hard disk where the design is to be stored.



- 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.



Writing designs to machine



Use General > Write to Card/Machine to write (save) design to BERNINA design card or BERNINA embroidery machine.

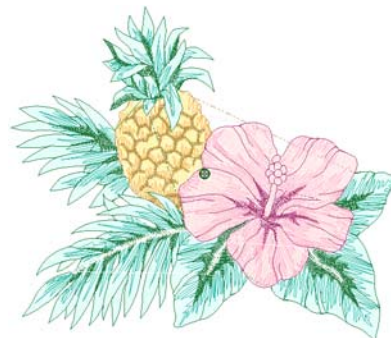


Click View > Show Stitches to toggle stitch view on/off.

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 Card/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.

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.

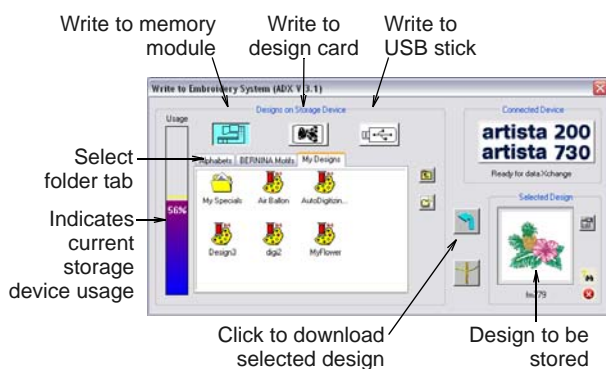
- 3 Click the **Write to Card/Machine** icon.

If this is the first time you have downloaded a design after turning on the machine or reader box, the **Device Selection** dialog opens.



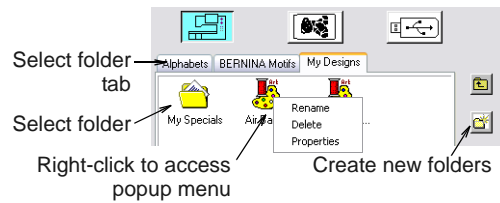
- 4 Select an embroidery machine or reader box, as well as COM port if prompted to do so. See also [Device selection](#).
- 5 Click **OK**.

If the machine connection is working, the **Write to Embroidery System** dialog opens. The name and thumbnail image are displayed.



- 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.



- 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 General > Write to Card/Machine to write (save) design to BERNINA design card or BERNINA embroidery machine.



Click View > Show Stitches 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.

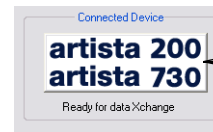


- 2 Insert a BERNINA or OESD USB memory stick directly into a USB port on your PC.
- 3 Click the **Write to Card/Machine** icon.
If this is the first time you have downloaded a design after turning on the machine or reader box, the **Device Selection** dialog opens. See also [Device selection](#).



Tip If you are already connected to an embroidery system, click the **Connected Device** button in the **Write to Embroidery System** dialog in order to

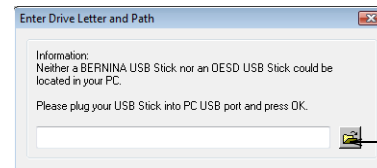
access the **Device Selection** dialog. See also [Writing designs to machine](#).



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.

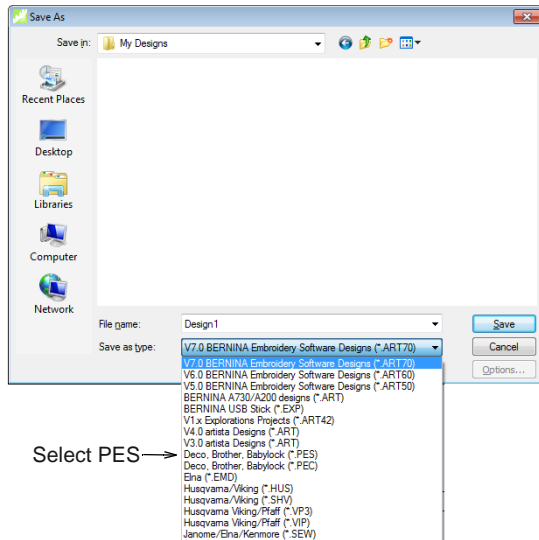
While saving the design, BERNINA Embroidery Software automatically converts it to the correct format for stitchout. See the relevant BERNINA Embroidery Software documentation for details of how to stitch out from a USB memory stick.

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.

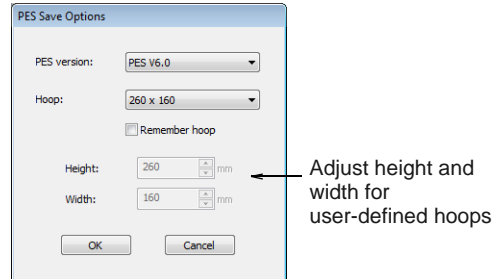
To save a design in PES format

- 1 Select **File > Save As**.



- 2 Choose PES as the file type and click **Save**.

The **PES Save Options** dialog opens.



- 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

QUICK REFERENCE



QUICK REFERENCE

BERNINA Embroidery Software integrates with CorelDRAW® Essentials X6 into a single application. This Quick Reference details commands and tools available in the **Embroidery Canvas** and **Hoop Canvas**. Not all options described here are relevant to all product levels. See also [Product Feature List](#).

Operating modes

BERNINA Embroidery Software has one workspace or 'design window' but you interact with it in different modes or 'canvases': **Artwork Canvas**, **Embroidery Canvas**, and **Hoop Canvas**. These are accessed via the **Canvas** toolbar.



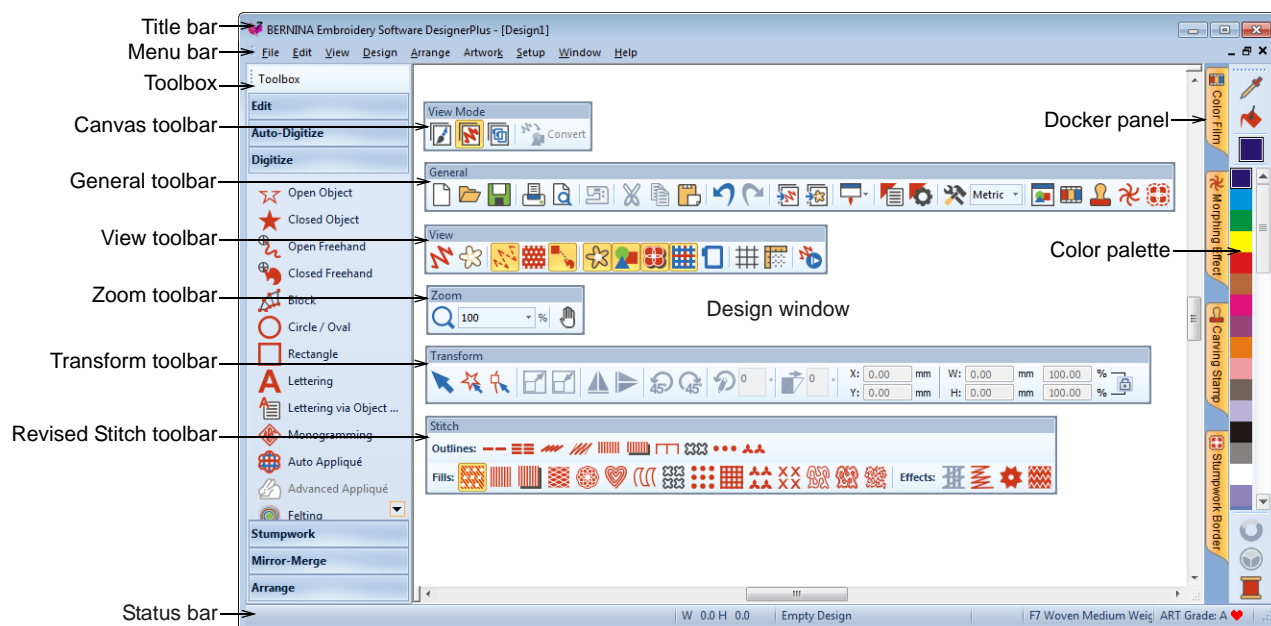
Embroidery Canvas



Use Canvas > Embroidery Canvas to digitize and edit embroidery designs. Display embroidery as well as artwork. View designs realistically in 3D simulation.

The **Embroidery Canvas** allows you to create, edit, and output embroidery designs using the embroidery digitizing toolset.

The screen image below displays an exploded view of **all** toolbars in the BERNINA DesignerPlus **Embroidery Canvas**.

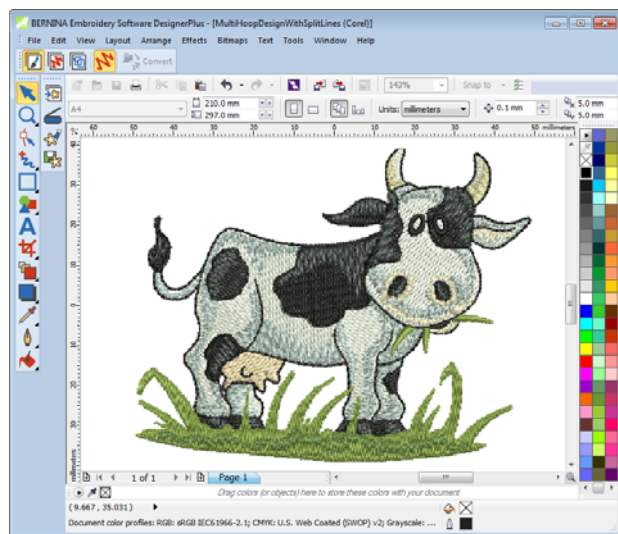


Artwork Canvas



Use Canvas > Artwork Canvas to import, edit or create vector artwork as a backdrop for embroidery digitizing, manual or automatic.

The **Artwork Canvas** allows you to create and edit bitmap and vector artwork using the CorelDRAW® Essentials X6 toolset. Below is a screen image of the **Artwork Canvas** workspace. This includes the entire suite of CorelDRAW® drawing tools which offer many techniques for drafting outlines and shapes onscreen.



In addition, **Artwork Canvas** provides capabilities to convert **vectors** and vector text directly to embroidery. You can use **Artwork 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 available in Artwork Canvas, 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.

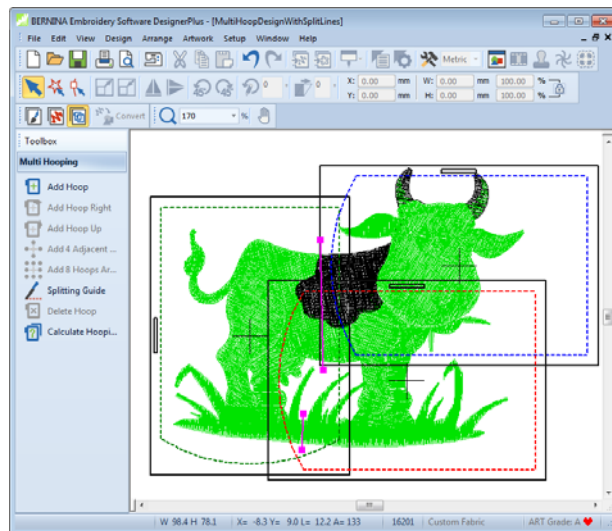
Hoop Canvas



Use Canvas > Hoop Canvas to view and edit multi-hoopings. If embroidery is too large or contains multiple designs spaced around an article, split into multiple hoopings.

The **Hoop Canvas** allows you to set up position and sequence of all hoopings used in the stitchout of a design.

Below is a screen image of the **Hoop Canvas** workspace. If your embroidery is too large or contains a number of designs spaced around an article, you can split it into multiple hoopings. **Hoop Canvas** 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 blank design.
New from Template	Create new design from template.
Open	Open an existing design.
Open Recent	Select file from most recently used.
Close	Close current design.
Save	Save current design.
Save As	Save current design with a different name, location or format.
Print	Print active design using current settings.
Print Preview	View design worksheet. Print worksheet from this window.

Read from Card / Machine	Read (open) design from BERNINA Embroidery Software Design Card or BERNINA embroidery machine.
Write to Card / Machine	Write (save) design to BERNINA design card or BERNINA embroidery machine.
Insert Embroidery	Import embroidery design files into the current design.
Insert Artwork	Import vector or bitmap artwork into current design as a backdrop for manual or automatic digitizing.
Scan Artwork	Scan images directly into BERNINA Embroidery Software.
Save Design As Bitmap	Save design images in Stitch View or Artistic View. The resulting image is exactly as it appears in the design window.
Exit	Close all open designs and exit BERNINA Embroidery Software.

Edit menu

Undo	Cancel last command or series of commands.
Redo	Re-apply cancelled commands.
Cut	Cut selection and place on Clipboard for pasting.
Copy	Copy selection and place on Clipboard for pasting.
Paste	Paste contents of Clipboard into the design window.
Duplicate	Duplicate selection without placing it on clipboard.
Delete	Delete selection without placing it on clipboard.
Select All	Select all objects in design.
Deselect All	Deselect all selected objects in design.
Close Curve with Straight Line	Close an open outline with a straight line.
Close Curve with Curve Line	Close an open outline with a curved line.
Smooth Curves	Apply curve 'smoothing' to selected objects.
Elastic Lettering	Apply special effects to lettering objects to make them bulge or arch, stretch or compress.

View menu

Artistic View	Show or hide artistic view.
Dim Artwork	Dim backdrops to show stitches more clearly when digitizing.
Show >	Access same design viewing commands as available on View toolbar.
Show Grid	Show or hide workspace grid.
Show Rulers & Guides	Show or hide workspace rulers and guides.
Zoom > Zoom	Zoom in/out of workspace and zoom in on bounded areas to full window size. Shortcut also available.
Zoom > Zoom 1:1	Show design at actual size. Shortcut <1> also available.
Zoom > Zoom Factor	Display design as percentage of actual size. Shortcuts <F> and <F3> also available.
Zoom > Zoom In 2X	Display design at 200% current view. Shortcut <Z> also available.
Zoom > Zoom Out 2X	Display design at 50% current view. Shortcuts <Shift+Z> and <F10> also available.
Zoom > Zoom to Fit	Display whole design in design window. Shortcut <0> also available.
Zoom > Zoom to Selected	Zoom into selected object. Shortcut <Shift+0> also available.
Zoom > Zoom to Article	View entire product in design window.
Zoom > Zoom to Hoop	Display entire hoop in design window.
Pan	Drag to pan across the design at high zoom factors. Shortcut <P> also available.
Previous View	Return to previous view. Shortcuts <V> and <F5> also available.
Center Current Stitch	Center currently selected stitch in design window. Shortcuts <C> and <F6> also available.
Measure	Measure distances on screen. Shortcut <M> also available.
Slow Redraw	Redraw design slowly to check stitching sequence. Shortcut <Shift> + <R> also available.
View by Color	Show only selected colors in design.
View all Colors	Show all colors after activating View by Color.
Refresh Screen	Refresh screen display. Shortcut <R> also available.

Design menu

Design Properties	Show design information such as size or number of stitches, and add comments to print on worksheet.
Thread Colors	Search for and match threads from different charts, and assign for use.
Auto Start & End	Set start and end points in design.
Fabric Settings	Adjust fabric types and settings.
Background	Select background fabrics and colors.
Stitch Sequence	Automatically arrange stitch sequence to minimize hoopings, color changes and trims.

Arrange menu

Group	Combine multiple objects into one selectable object grouping. Shortcut <G> also available.
Ungroup	Split object grouping into component objects. Shortcut <U> also available.
Lock / Unlock All	Lock and unlock objects to protect them during digitizing or editing. Shortcut keys <K> and <Shift+K> also available.
Sequence >	Access same object sequencing commands as available on Color Film toolbar. See Color Film toolbar for details.
Align >	Access same object alignment commands as available on Arrange toolset. See Arrange toolset for details.
Space Evenly	Same functions as the Arrange toolset.

Artwork menu

Touch Up	Open a third-party paint program to edit selected bitmap artwork.
Crop	Crop bitmap artwork for use with PhotoSnap.
Bitmap Artwork Preparation	Reduce number of colors, remove image 'noise', and sharpen outlines in scanned artwork.

Settings menu

Object Properties	Same functions as the General toolbar.
Effects	Same functions as the General toolbar.

Options	Adjust settings for display window.
Calibrate Screen	Calibrate screen for accurate display.
Scanner Setup	Set scanner options.
Security Setup	Enter codes when upgrading or adding optional features.
Create Pattern	Save your own patterns for future use in pattern fills or runs, or even as pattern stamps.
Create Border	Save your own borders for future use with monogram designs.

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.
Dockers	Show or hide dockers to optimize working area. See also General toolbar .
(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.
Reference Manual	Onscreen documentation in Adobe Acrobat PDF format. 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.







Activate Upgrade	Purchase software upgrades directly from the internet.
Install Upgrade	Downloads access codes to your dongle after email notification of successfully processed online upgrade purchase.

Embroidery Canvas toolbars

The **Embroidery Canvas** workspace contains the toolbars described below. Not all tools are relevant to all levels of product.

Canvas toolbar

There are three operating modes in BERNINA Embroidery Software accessible via the **Canvas** toolbar.


















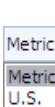

	Artwork Canvas	Import, edit or create vector artwork as a backdrop for embroidery digitizing, manual or automatic.
	Embroidery Canvas	Digitize and edit embroidery designs. Display embroidery as well as artwork. View designs realistically in 3D simulation.
	Hoop Canvas	View and edit multi-hoopings. If embroidery is too large or contains multiple designs spaced around an article, split into multiple hoopings.
	Show Embroidery	Show or hide any embroidery components.
	Convert	Convert Embroidery to Artwork: Convert selected embroidery objects to vector artwork.
	Convert	Convert Artwork to Embroidery: Convert selected vector or bitmap artwork to fill or outline stitches.







Note For a full description of the CorelDRAW® Essentials X6 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.

General toolbar














This toolbar includes tools for opening and outputting designs, accessing design properties, and opening and closing docker windows.

	New	Open new blank design.
	Open	Open an existing design.
	Save	Save current design.
	Print	Print active design using current settings.
	Print Preview	View design worksheet. Print worksheet from this window.
	Write to Card / Machine	Write (save) design to BERNINA design card or BERNINA embroidery machine.
	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.
	Insert Embroidery	Same as File > Insert Embroidery.
	Insert Artwork	Same as File > Insert Artwork.
	Application Launcher	Access ancillary applications – Portfolio, Cross Stitch, and Quilter.
	Object Properties	Access properties of selected embroidery objects or preset with nothing selected.
	Effects	Apply stitch effects to selected embroidery objects or preset with nothing selected.
	Options	Access workspace options such as grid, hoop, and scroll settings.
	Metric	Change measurement units within software without changing operating system settings.
	Overview Window	Show or hide Overview Window docker. Use to zoom and pan thumbnail of current design.

	Color Film	Show or hide Color Film docker. Use it to resequence objects and color blocks in the design.
	Carving Stamp	Show or hide Carving Stamp docker. Use preset or custom patterns to create a pattern of needle penetrations.
	Morphing Effect	Show or hide Morphing Effect docker. Create transformed object outlines and stitches.
	StumpWork Border	Show or hide the StumpWork Border docker. Use in conjunction with the StumpWork toolbox.







View toolbar

This toolbar brings together tools for design visualization. See also [Viewing Designs](#).

	Show Artistic View	Show or hide simulation of stitched embroidery.
	Dim Artwork	Dim backdrops to show stitches more clearly when digitizing.
	Show Stitches	Show or hide embroidery stitching.
	Show Needle Points	Show or hide the needle points in embroidery stitching.
	Show Connectors	Show or hide connecting stitches between embroidery objects.
	Show Bitmap Artwork	Show or hide any bitmap artwork included in the design.
	Show Vector Artwork	Show or hide any vector artwork included in the design such as CorelDRAW® clipart.
	Show StumpWork	Show or hide any stumpwork sub-designs included in the design.
	Show Appliqué Fabric	Show or hide background fabric / color of any appliqué objects in the design.
	Show Hoop	Show or hide hoop. Right-click for settings.
	Show Grid	Show or hide workspace grid. Right-click for settings.
	Show Rulers & Guides	Show or hide workspace rulers and guides. Right-click for settings.
	Slow Redraw	Simulate embroidery design stitchout onscreen in either stitch or artistic view.

Color palette








This toolbar displays a palette of thread colors together with tools for selecting, applying, and cycling through colors. See also [Thread Colors & Charts](#).


	Color Picker	Pick up a color from an existing object and make it current.
	Apply Current Color	Apply the currently selected palette color to embroidery objects.
	Current Color	Shows the currently selected palette color.
	Cycle Used Colors	Cycle through combinations of used colors. Right- or left-click.
	Color Wheel	Access Color Wheel to test combinations of related colors.
	Thread Colors	Search for and match threads from different charts, and assign for use.


Stitch toolbar


This toolbar provides a range of basic outline and fill stitch types as well as those of a more artistic or decorative kind. It also includes stitch effects which can be additionally applied. Left-click icons to select stitch type. Right-click to access properties. See also [Outline & Fill Stitches](#).

Outlines


	Single Outline	Create a single row of stitches along a digitized outline – used for borders or details.
	Triple Outline	Create a thicker outline by repeating each stitch three times – use for heavier borders or details.
	Backstitch Outline	Create traditional backstitch borders – old, adaptable stitch type used for delicate outlines.
	Stemstitch Outline	Create traditional stemstitch borders or details such as stems and vines.
	Satin Outline	Create thicker borders or columns of even thickness.
	Raised Satin Outline	Create raised satin borders – can be used with trapunto for quilting effects.
	Blanket Outline	Create long, narrow borders with a 'comb' effect.


 **Blackwork Outline** Create ornamental craftstitch borders. Name derives from black silk thread traditionally used in this form of embroidery.


 **Candlewicking Outline** Create ornamental craftstitch borders. Specify exact pattern size and spacing.


 **Pattern Run Outline** Create ornamental craftstitch borders. Choose from pattern library.


Fills


 **Step Fill** Create stitch fills for larger, irregular shapes.


 **Satin Fill** Create stitch fills for narrow shapes.


 **Raised Satin Fill** Create raised surfaces – can be applied to lettering or used with trapunto for quilting effects.


 **Fancy Fill** Create artistic fills while keeping the appearance of solid stitching.


 **Sculptured Fancy Fill** Create 3D pattern effects with turning fills.


 **Ripple Fill** Create spiral stitching from the center of any filled object.


 **Contour Fill** Create stitching which follows object contours, creating a curved, light-and-shade effect.


 **Blackwork Fill** Create fill for blackwork designs. Name derives from black silk thread traditionally used in this form of embroidery.


 **Candlewicking Fill** Create candlewicking fills – traditional white-on-white embroidery usually done with heavy cotton thread on white linen.


 **Lacework Fill** Create a lacey look with open trellis-like patterns.

 **Pattern Fill** Create decorative fill stitching. Choose from pattern library.


 **Cross Stitch Fill** Create open patterned fills with crosses generated to suit standard grid for entire design.


 **Stipple Run Fill** Create fills made up of run stitches which meander within a border.


 **Stipple Stemstitch Fill** Create heavier stipple run fills with stemstitch outlines.


 **Stipple Backstitch Fill** Create heavier stipple run fills with backstitch outlines.

Effects

 **Auto Underlay** Strengthen and stabilize objects with underlay stitching.


 **Textured Edge** Create rough edges and shading effects, or imitate fluffy textures.


 **Star Fill** Create radial turning stitching with available stitch types. Stitches are generated from outside to geometric center. Center can be shifted.


 **Wave Fill** Create contoured stitches along a digitized guideline – stitching maintains uniform density.


Transform toolbar

This toolbar contains all the tools you need to select, reshape, scale, and mirror embroidery designs in **Embroidery Canvas** mode. See also [Arranging & Transforming Objects](#).


 **Select Object** Click to select objects or drag a selection marquee to enclose.

 **Polygon Select** Select irregular areas or shapes – click reference points to demarcate.


 **Reshape Object** Reshape selected embroidery and lettering objects.


 **Scale Up** Increase/reduce size of selected object/s in 20% increments. Stitches are automatically recalculated.


 **Scale Down**


 **Mirror Horizontal** Flip selected object/s in horizontal or vertical planes.


 **Mirror Vertical**

 **Rotate Left** Rotate selected objects in 45° increments to right or left.

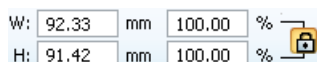
 **Rotate Right**

 Rotate selected objects by specified amount – positive or negative – in degrees.

 Skew selected objects by specified amount – positive or negative – in degrees.

 Enter specific settings for precise positioning of selected objects. Use in conjunction with Rulers & Guides.

X: -1.17 mm
Y: 0.01 mm



Scale objects or whole designs by a precise width or height, or a percentage factor. Use Aspect Ratio lock to maintain proportions.

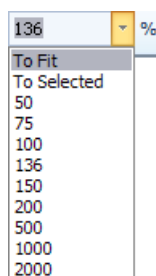
Zoom toolbar

This toolbar includes tools for zooming and panning designs. Other zoom presets are available via the **View** menu. See also [Zooming & panning](#).



Zoom

Left-click to zoom in, right-click to zoom out, or drag a 'zoom box'. Shortcut also available.



Zoom Factor: select a preset zoom scale from the droplist or key in your own zoom scale and press Enter.



Pan

Drag to pan across the design at high zoom factors. Shortcut <P> also available.

Embroidery Canvas toolbox

The **Embroidery Canvas** workspace contains a **Toolbox** permanently docked on the left of the workspace. The **Toolbox** contains a series of droplists containing 'toolsets' organized as follows.

Edit toolset

This toolset contains all tools you need to edit embroidery designs in **Embroidery Canvas** mode.



Add Holes Cut holes in filled objects.



Remove Holes Remove holes from selected objects.



Add Stitch Angles Add stitch angles to closed objects with or without holes. Right-click for settings.



Remove Stitch Angles Remove stitch angles from closed objects with turning stitches.



Double Run Reinforce outlines, stitching it in the opposite direction.



Blackwork Run Automatically sequence selected outlines for efficient stitchout.



Color Blending Create blended stitching in selected objects.



Fill Holes Fill holes in selected objects with current stitch type.



Outline Design Automatically outline selected objects with Single, Triple or Satin Line.



Create Trapunto Outlines Use in conjunction with raised satin to create stitching for a raised 'quilted' look.



Break Apart Split monograms, appliqué, lettering, and blackwork runs into component objects for editing.



Remove Overlaps Remove unwanted stitching underlying objects or lettering.



Remove Appliqué Overlaps Remove unwanted stitching from underlying appliqué objects.



Stitch Edit Place the stitch cursor at a selected insertion point.

Auto-Digitize toolset

This toolset contains all tools required for auto-digitizing artwork in **Embroidery Canvas** mode. See also [Automatic Digitizing](#).



Auto Digitizer Automatically digitize prepared bitmap artwork.



Magic Wand Automatically digitize filled areas in vector or bitmap artwork.



PhotoSnap Turn grayscale or color photographs into embroidery.

Digitize toolset

This toolset contains all tools required for manually digitizing embroidery designs in **Embroidery Canvas** mode. Right-click to access properties. See also [Digitizing Methods](#).



Open Object Digitize open embroidery objects.



Closed Object Digitize closed embroidery objects.



Open Freehand Draw embroidery outlines onscreen in the current stitch type.



Closed Freehand Draw closed embroidery objects onscreen in the current stitch type – outline or fill.

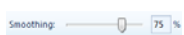





Block Digitize columns with turning stitches.

	Ellipse	Digitize ellipse or circle embroidery objects.
	Rectangle	Digitize rectangle or square embroidery objects. Press <Ctrl> to constrain.
	Lettering	Create embroidery lettering directly on screen.
	Monogramming	Create personalized monograms using a selection of pre-defined styles, border shapes and ornaments.
	Appliqué	Digitize closed-object appliqué with all necessary stitching.
	Advanced Appliqué	Generate open-object appliqué from one or more source objects.
	Buttonhole	Digitize a single buttonhole with all necessary stitching.
	Buttonholes	Digitize a line of buttonholes with all necessary stitching.
	PunchWork	Digitize PunchWork designs for use with the BERNINA Rotary Hook Punch tool.
	Pattern Stamp	Place individual patterns in the design. Choose from pattern library.

Freehand Setting toolbar









When **Freehand** tools are activated, the **Freehand Settings** toolbar appears.

	Use the Smoothing control to specify, as a percentage, how closely the smoothed outline follows the original.
	Use Show Guide to toggle freehand digitizing guide cursor – provides more control over 'freehand' drawing than the default pointer.
	Use the Guide Inner Circle Radius control to define size of center circle of freehand digitizing guide.
	Use the Number of Guide Circles control to set number of circles in the freehand cursor – if the inner circle radius is 2mm, each additional guide circle is offset by 2mm.

StumpWork toolset





The **StumpWork** toolset is available from the **Toolbox**. It contains all the tools necessary to digitize

stumpwork from scratch or create stumpwork from existing objects. See also **Stumpwork embroidery**.

	Create StumpWork Border	Generate stumpwork border from selected objects.
	Digitize Open StumpWork Border	Digitize an open stumpwork border using digitized outline and current settings.
	Digitize Closed StumpWork Border	Digitize a closed stumpwork border using digitized outline and current settings.
	Cut Closed StumpWork Border	Cut a closed stumpwork border to leave an opening for wire ends.
	Digitize Wireline	Create a wireline using a digitized outline and current settings.
	Create Stumpwork Sub-design	Create stumpwork sub-design from selected objects which include embroidery within a stumpwork border.
	Open StumpWork Sub-design	View and edit selected stumpwork sub-design.
	Save Stumpwork Sub-design As	Save stumpwork sub-design as a separate design file.

Mirror-Merge toolset

This toolset contains all tools required to duplicate and transform selected **embroidery objects** in vertical and horizontal planes. See also **Mirroring objects**.

	Mirror-Merge Horizontal	Duplicate & mirror horizontally and merge overlapping objects (optional).
	Mirror-Merge Vertical	Duplicate & mirror vertically and merge overlapping objects (optional).
	Mirror-Merge Horizontal / Vertical	Duplicate & mirror selected objects around a center point.
	Wreath	Duplicate selected objects around a central axis. Specify duplicates in Mirror-Merge Settings toolbar.



Kaleidoscope

Duplicate & mirror objects around a central axis. Specify duplicates in Mirror-Merge Settings toolbar. This tool only appears when the Wreath tool is activated.



Enter number of wreath points. Enter even number to activate Kaleidoscope.

Arrange toolset

This toolset contains all tools you need to precisely align, distribute and mirror objects in **Embroidery Canvas** mode. See also [Arranging & Transforming Objects](#).



Group

Combine multiple objects into one selectable object grouping.



Ungroup

Split object grouping into component objects.



Lock

Lock selected object/s into position for protection.



Unlock All

Unlock all locked object/s to remove protection.



Align Left

Left-align selected objects.



Align Vertical Centers

Vertically align centers of selected objects.



Align Right

Right-align selected objects.



Align Top

Align tops of selected objects.



Align Horizontal Centers

Horizontally align centers of selected objects.



Align Bottom

Align bottoms of selected objects.



Align Centers

Align centers of selected objects.



Space Evenly Across

Evenly distribute three or more selected objects horizontally.



Space Evenly Down

Evenly distribute three or more selected objects vertically.

Color Film toolbar

This toolbar is available in **Embroidery Canvas** mode.



Show Objects

View individual objects in order of stitching sequence. Drag and drop object icons to resequence.



Back / Forward 1 Object

Move selection back / forward one object in the stitching sequence.



Back / Forward 1 Color

Move selection back / forward one color in the stitching sequence.



Move to Start / End

Move selection to start / end of stitching sequence.



Sequence by Selects

Resequence objects in order of selection.



Sequence by Color

Resequence all blocks of like color. (To maintain separate color blocks, use Color Film.)

Multi-Hooping toolbar

This toolbar is available in **Hoop Canvas** mode. See [Hooping Designs](#) for details.



Add Hoop

Add a new hooping to a multi-hooping layout.



Add Hoop Right

Place a new hooping to right of selected hoop. Allows a 10mm overlap between sewing fields.



Add Hoop Up

Place a new hooping above selected hoop. Allows a 10mm overlap between sewing fields.



Add 4 Hoops Around

Generate 4/8 hoopings around a selected hoop's perimeter. Allow a 10mm overlap between sewing field.



Add 8 Hoops Around



Splitting Guide

Digitize one or more guides in a multi-hoop layout to split objects between hoopings.



Delete Hoop

Remove selected hoop from hooping layout.



Calculate Hoopings

Calculate hoopings resulting from current layout.

KEYBOARD SHORTCUTS

You select commands in BERNINA Embroidery Software as other MS Windows® applications – from menus or toolbars. Keyboard shortcuts are available for frequently used commands.

Key combinations

To use a keyboard shortcut, or key combination, you press a modifier key together with a character key. For example, pressing the **Ctrl** (Control) key with the 'c' key copies whatever is currently selected – text, graphics, etc – to the Clipboard. This is also known as the **Ctrl+C** key combination, or keyboard shortcut.

Windows to Mac conversion

Key combinations are slightly different from Mac to PC. If you know and use keyboard shortcuts regularly in Windows, you will need to retrain your fingers slightly. For the most part, a Control + Key in Windows translates to a Command + Key in Mac OS. Most favorites should work by just making this switch. Here is a basic breakdown of keyboard equivalence:

Windows	Mac
Control (Ctrl)	Command (most of the time); Control
Alt	Option
Windows / Start	Command / Apple
Backspace	Backspace
Delete	Delete
Shift	Shift
Enter	Enter
Return	Return



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.

General functions

To	Press
Cancel command	Esc
Exit the program	Alt + F4
Open existing design	Ctrl + O
Print design	Ctrl + P





To	Press
Save design	Ctrl + S
Start new design	Ctrl + N

View designs























To	Press	Or
Center current stitch	C	F6
Measure	M	
Refresh screen	R	F4
Show needle points	. (period or full stop)	
Show previous view	V	F5
Show selected objects only	Shift + S	
Zoom to fit	0 (zero)	F2
Show/hide connectors	Shift + C	
Show/hide picture	D	
Show/hide vectors	Shift + D	
Pan	P	
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	
Vertical scroll	Alt + 	
Horizontal scroll	Ctrl + 	

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






























To	Press
Select object underneath	 + 
Select previous object	 + 

Edit designs



To	Press
Delete the last input point	*  Bksp
Finish digitizing an object	*  or 
Turn underlay on/off	
Display the lettering dialog	
Redo command	 + 
Undo command	 + 
Cut selection	 + 
Copy selection	 + 
Paste selection	 + 
Duplicate selection	 + 
Clone selection	 + 
Reinforce outline (Double Run)	 + 
Delete selection	

* BERNINA DesignerPlus only

View stitching sequence








To travel	Press
	Keyb'rd Keypad*
1 segment backward	 + 
1 segment forward	 + 
1 stitch backward	†  
1 stitch forward	†  
10 stitches backward	†  
10 stitches forward	†  
100 stitches backward	
100 stitches forward	
Activate Slow Redraw	 + 
To next color	 
To next object	 + 
To next selected object	
To previous color	 
To previous object	 + 
To previous selected object	 + 
To the end of a design	 

* Num Lock OFF † Select Object tool OFF

To travel	Press
	Keyb'rd Keypad*
To the start of a design	 




























* Num Lock OFF † Select Object tool OFF

Digitizing & lettering

To	Press
Activate Double Run	 + 
Delete the last input point	*  Bksp
Finish digitizing an object	*  or 
Turn underlay on/off	
Display the lettering dialog	

* BERNINA DesignerPlus only

Manipulate objects and stitches

To	Press or click
Nudge selected designs	   
Move an object horizontally or vertically	 +  Drag the object
Maintain an object's proportions while resizing	†  +  Drag corner handle
Reshape selected object	
Change reshape node type	 +  Select reshape node and press spacebar
Group selected objects	 + 
Ungroup selected objects	 + 
Regroup ungrouped objects	*  + 
Lock selected objects	
Unlock selected objects	 + 
Bring object to front	*  + 
Bring object forward	* 
Send object to back	*  + 
Send object backward	* 
Activate Stitch edit	

† Use Alt+Drag with BERNINA Quilter * BERNINA Quilter only

System shortcuts

Here is a list of commonly-used Windows keyboard shortcuts and their Mac equivalents.

Action	Windows	Mac
Backwards delete	Backspace	Delete

Action	Windows	Mac
Capture entire screen to Clipboard	Print Screen	Command + Control + Shift + 3
Capture frontmost window	Alt + Print Screen	Command + Shift + 3
Close current window	Control + W	Command + W
Copy a file/folder	Control + drag icon	Option + drag icon
Copy to Clipboard	Control + C	Command + C
Create an alias or shortcut	Right mouse click and select Create Shortcut	Command + L
Cut to Clipboard	Control + X	Command + X
Exit a dialog box without changes	Escape	Escape
Find/Search	Control + F	Command + F
Force quit a frozen application	Control + Alt + Delete	Command + Option + Escape
Forward delete	Delete	Delete (For Mac notebooks, press the Function (fn) and Delete key)
Get item info or properties	Alt + Enter	Command + I
Logout current user	Windows + L	Command + Shift + Q
Maximize window	Control + F10	None
Minimize windows	Windows + M	Command + M
New folder	Control + N	Command + Shift + N
Open file	Control + O	Command + O
Paste Clipboard	Control + V	Command + V
Print	Control + P	Command + P
Quit / close a program	Alt + F4	Command + Q
Rename a file / folder	Select item + F2	Select item + Enter
Save file	Control + S	Command + S
Select all items	Control + A	Command + A
Select more than one item in a list (non contiguous)	Control + click on each item	Command + click on each item
Send items to trash / recycle bin	Delete	Command + Delete
Send / receive email	Control + K	Command + K
Shut down	Windows + U + U	Command + Option + Control + Eject

Action	Windows	Mac
Switch to next window	Control + F6	Command + ~ (tilde)
Switch to previous window	Control + Shift + F6	Command + Shift + ~ (tilde)
Toggle through open applications	Alt + Tab	Command + Tab
Type special characters	Alt + key	Option + key
Undo	Control-Z	Command-

Mac environment on virtual machines

If you are running BERNINA Embroidery Software in a Mac environment on a virtual machine (VM), you may find that shortcuts don't work as expected.

Lion uses more shortcuts than Snow Leopard, especially for **LaunchPad** and **Mission Control**. The latter has **Ctrl** arrow left and **Ctrl** arrow right assigned by default. With **Parallels** preferences / keyboard / Enable Mac OS X system shortcuts checked, the above combinations trigger Mission Control functions even from inside the VM. That's what the preference item is for. To avoid this, you can go two ways:

- ▶ Disable the checkbox in Parallels preferences. This is the easy way, but you lose all system keys at once within the VM); or
- ▶ Remove the assignment of those two shortcuts in Mac OS X system preferences / keyboard / keyboard shortcuts.

Just chose Mission Control on the left side, then you can see the two items on the right side. Uncheck them, and you are fine inside the Windows VM. There's no sacrifice unless you want to use the shortcuts for Mission Control.

Since Mission Control only makes real fun with gestures enabled, most people with gesture-capable machines won't need the shortcuts. You could even assign other shortcuts to Mission Control if you liked.

There may also be an issue with the **Shift** key in Parallels. Try the following: Click on 'Virtual Machine'. Configure and enable the option 'Optimize Modifier key for games'.

PART IX

PRODUCT FEATURE LIST



BERNINA Embroidery Software Product Feature List

Capability	Feature Name	EditorPlus	DesignerPlus	Relevant topic in Reference Manual
Basics				Basic Procedures
View designs in Artwork Canvas	Artwork Canvas	●	●	Artwork Canvas
View designs in Embroidery Canvas	Embroidery Canvas	●	●	Embroidery Canvas
View designs in Hoop Canvas	Hoop Canvas		●	Hoop Canvas
Open multiple designs		●	●	Opening designs
Create designs (templates)	New from Template	●	●	Starting designs
Save designs		●	●	Saving designs
Display hoop, grid, rulers, and guides		●	●	Hoops, grids & rulers
Measure distances onscreen		●	●	Measuring distances onscreen
Set measurement units		●	●	Setting measurement units
Undo/redo commands	Undo/Redo	●	●	Undoing & redoing commands
Move/dock toolbars		●	●	Toolbox & toolbars
Access object properties		●	●	Accessing object properties
Launch Portfolio, Cross Stitch, Quilter		●	●	Launching ancillary applications
View designs				Viewing Designs
View embroidery elements	Artistic View / Stitch View	●	●	Viewing embroidery elements
View objects by color		●	●	Viewing objects by color
View designs in overview	Overview Window	●	●	Viewing designs in overview
Zoom in/out		●	●	Zooming in & out
Travel by color block / object / stitches		●	●	Traveling through designs
View simulated design stitchout	Slow Redraw	●	●	Simulating design stitchouts
View/hide backdrops		●	●	Displaying backdrops
Change background colors/fabrics		●	●	Setting backgrounds
Visualize finished articles		●	●	Visualizing finished articles
View design information		●	●	Viewing design properties
Preview designs		●	●	Previewing designs
Select objects				Selecting Objects
Select objects by point and click	Select Object	●	●	Selecting objects by point & click
Select objects by selection marquee	Polygon Select	●	●	Selecting objects by selection marquee
Select objects by Tab key		●	●	Selecting objects by Tab
Select all objects in design		●	●	Selecting all objects in a design
Deselect / delete objects		●	●	Deselecting & deleting objects
View and select color blocks	Color Film	●	●	Viewing & selecting color blocks
● Included as standard ▲ New/improved feature/option				

Capability	Feature Name	EditorPlus	DesignerPlus	Relevant topic in Reference Manual
Working with hoops				Hooping Designs
Display hoops		●	●	Selecting hoops
Create multi-hooped designs	Hoop Canvas		●	Creating multi-hoop designs
Split objects between hoopings	Splitting Guide		●	Splitting objects between hoopings
Create custom hoops		●	●	Defining custom hoops
Modify custom hoops		●	●	Modifying custom hoops
System setup				Hardware & Software Setup
Calibrate monitor		●	●	Calibrating the monitor
Set grid options		●	●	Setting grid options
Set automatic scrolling		●	●	Setting auto scroll options
Set hoop options		●	●	Setting hoop options
Set closed-object appliqué options	Appliqué		●	Setting appliqué options
Set Remove Overlaps options	Remove Overlaps	●	●	Setting overlap removal options
Set automatic save		●	●	Setting automatic save
Set pointer position display options		●	●	Setting pointer position display options
Set other general options		●	●	Setting other general options
Digitizing methods				Digitizing Methods
Digitize open shapes	Open Object		●	Digitizing open shapes
Digitize closed shapes	Closed Object		●	Digitizing closed shapes
Digitize columns of varying width	Block		●	Digitizing columns of varying width
Digitize circles and ovals	Circle / Oval		●	Digitizing circles & ovals
Digitize squares and rectangles	Rectangle		●	Digitizing squares & rectangles
Outline & fill stitches				Outline & Fill Stitches
Select outline stitches		●	●	Selecting outline stitches
Select fill stitches		●	●	Selecting fill stitches
Create Single/Triple outlines	Single / Triple	●	●	Creating single and triple stitch outlines
Create Satin outlines	Satin / Raised Satin	●	●	Creating satin outlines
Create Blanket outlines	Blanket	●	●	Creating blanket stitch outlines
Create Satin fills	Satin / Raised Satin	●	●	Creating satin fills
Create Step fills	Step Fill	●	●	Creating step stitch fills
Change Step patterns	Step Pattern	●	●	Applying Step patterns
Thread colors & charts				Thread Colors & Charts
Change current colors		●	●	Changing selected object colors
Change color schemes		●	●	Changing color schemes
Search and assign threads		●	●	Searching & assigning threads
Match and assign threads		●	●	Matching & assigning threads
● Included as standard ▲ New/improved feature/option				

Capability	Feature Name	EditorPlus	DesignerPlus	Relevant topic in Reference Manual
Change colors in entire design		●	●	Changing color schemes
Modify thread charts		●	●	Modifying thread charts
Create custom thread charts		●	●	Creating custom thread charts
Object properties & templates				Properties, Fabrics & Templates
Set current object properties		●	●	Setting current object properties
Change object properties		●	●	Changing properties of selected objects
Change default object properties		●	●	Changing default object properties
Change fabrics		●	●	Changing fabrics
Manage fabrics		●	●	Managing fabrics
Create design templates		●	●	Creating design templates
Modify design templates		●	●	Modifying design templates
Save current properties to template		●	●	Saving current properties to a template
Revert to NORMAL template		●	●	Reverting to the NORMAL template
Improving stitch quality				Stitch Quality
Adjust stitch densities		●	●	Adjusting stitch densities
Apply automatic underlays		●	●	Stabilizing with underlays
Apply automatic pull compensation		●	●	Compensating for fabric stretch
Preserve long stitches	Auto Jump	●	●	Preserving long stitches
Adjust tie-in/off settings		●	●	Adjusting tie-in/off settings
Set automatic start and end points	Auto Start/End	●	●	Setting automatic start & end points
Digitizing with backdrops				Digitizing with Backdrops
Scan bitmap images		●	●	Scanning artwork
Load bitmap and vector pictures		●	●	Loading vector artwork
Crop images for digitizing		●	●	Cropping bitmaps for digitizing
Reshape cropped images	Reshape Object	●	●	Reshaping cropped bitmaps
Edit images in a graphics application	Touch Up Picture	●	●	Editing artwork in graphics applications
Save backdrops as separate files		●	●	Saving backdrops as separate files
Prepare non-outlined images	Image Preparation	●	●	Preparing non-outlined bitmaps
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 Embroidery to Artwork		●	Converting embroidery to vectors
Digitize shapes automatically	Magic Wand	●	●	Auto-digitizing with Magic Wand
Digitize whole images automatically	Auto Digitizer	●	●	Digitizing whole images automatically
Create automatic outlines and borders	Auto Digitizer	●	●	Creating automatic outlines & borders
● Included as standard ▲ New/improved feature/option				

Capability	Feature Name	EditorPlus	DesignerPlus	Relevant topic in Reference Manual
Create designs from photographs	PhotoSnap	●	●	Auto-digitizing with PhotoSnap
Combining & sequencing objects				Combining & Sequencing Objects
Insert designs		●	●	Inserting designs
Copy and paste objects		●	●	Copying & pasting objects
Duplicate objects		●	●	Duplicating objects
Clone objects	Quick Clone	●	●	Cloning objects
Group / ungroup objects	Group / Ungroup	●	●	Grouping & ungrouping objects
Lock / unlock objects	Lock / Unlock	●	●	Locking & unlocking objects
Select objects within groups		●	●	Selecting objects within groups
Break objects apart	Break Apart	●	●	Splitting into component objects
Resequence objects		●	●	Sequencing embroidery objects
Manipulate color blocks and objects	Color Film	●	●	Sequencing with the Color Film
Sequence entire designs automatically	Stitch Sequence	●	●	Auto-sequencing entire designs
Arranging & transforming objects				Arranging & Transforming Objects
Align objects		●	●	Arranging objects
Scale objects		●	●	Scaling objects
Rotate objects		●	●	Rotating objects
Skew objects		●	●	Skewing objects
Mirror objects		●	●	Mirroring objects
Mirror-merge objects		●	●	Mirror-merging objects
Create wreaths		●	●	Creating wreaths
Reshaping & editing objects				Reshaping & Editing Objects
Reshape objects	Reshape Object	●	●	Reshaping objects
Adjust stitch angles		●	●	Modifying stitch angles
Change entry and exit points		●	●	Adjusting entry & exit points
Stitch editing				Editing Stitches
Select stitches		●	●	Selecting stitches
Insert stitches		●	●	Inserting stitches
Move stitches		●	●	Moving stitches
Delete stitches		●	●	Deleting stitches
Specialized digitizing techniques				Specialized Digitizing Techniques
Create freehand embroidery	Freehand Draw Embroidery		●	Creating freehand embroidery
Reinforce outlines			●	Reinforcing outlines
Remove underlying stitching	Remove Overlaps	●	●	Removing underlying stitching
Cut holes in objects	Add Holes		●	Adding & removing holes
● Included as standard ▲ New/improved feature/option				

Capability	Feature Name	EditorPlus	DesignerPlus	Relevant topic in Reference Manual
Fill holes in objects	Fill Holes		●	Filling holes
Create outlines and borders	Outline Design		●	Creating outlines & borders
Create buttonholes	Add Buttonhole	●	●	Creating buttonholes
Artistic stitch effects				Artistic Stitch Effects
Create contour fills	Contour		●	Creating contour fills
Create fancy fills	Fancy Fill	●	●	Creating fancy fills
Create cross stitch fills	Cross Stitch		●	Creating cross stitch fills
Create textured edges	Textured Edge	●	●	Creating textured edges
Create wave effects	Wave Fill	●	●	Creating wave effects
Creating star fills	Star Fill		●	Creating star fill effects
Create gradient fills	Gradient Fill		●	Creating gradient fills
Create open fills	Travel on Edges	●	●	Creating open fills
Create color blending effects	Color Blending		●	Creating color blending
Create morphing effects	Morphing		●	Creating morphing effects
Pattern runs & fills				Patterned Stamps, Runs & Fills
Add pattern stamps	Pattern Stamp		●	Adding pattern stamps
Create pattern runs	Pattern Run	●	●	Creating patterned outlines
Create pattern fills	Pattern Fill	●	●	Creating pattern fills
Create your own pattern sets			●	Managing patterns
Create stitch patterns with carving stamps	Carving Stamp		●	Creating stitch patterns with carving stamps
Craft stitch borders & fills				Craft Stitch Borders & Fills
Create blackwork outlines	Blackwork Border		●	Creating blackwork outlines
Create backstitch outlines	Backstitch		●	Creating backstitch outlines
Create stemstitch outlines	Stemstitch		●	Creating stemstitch outlines
Create candlewicking outlines	Candlewicking Border		●	Creating candlewicking outlines
Create blackwork fills	Blackwork Fill		●	Creating blackwork fills
Create candlewicking fills	Candlewicking Fill		●	Creating candlewicking fills
Create lacework fills	Lacework		●	Creating lacework fills
Create ripple fills	Ripple		●	Creating ripple fills
Create stippling fills	Stipple		●	Creating stippling fills
Appliqué				Digitizing for Appliqué
Create appliqué	Appliqué		●	Creating closed-object appliqué
Create partial cover appliqué	Remove Appliqué Overlaps		●	Creating partial cover appliqué
Create open-object appliqué	Advanced Appliqué		●	Creating open-object appliqué
● Included as standard ▲ New/improved feature/option				

Capability	Feature Name	EditorPlus	DesignerPlus	Relevant topic in Reference Manual
Raised embroidery				Raised Embroidery
Stumpwork embroidery	StumpWork		●	Stumpwork embroidery
Quilted embroidery	Trapunto Outlines		●	Quilted embroidery
Needle felting	PunchWork		●	Needle felting
Ancillary applications				Ancillary Applications
Cross stitching	BERNINA Cross Stitch		●	Introduction to cross stitch
Patchwork and quilting	BERNINA Quilter		●	Introduction to patchwork & quilting
Embroidery lettering				Embroidery Lettering
Add lettering to embroidery designs		●	●	Adding lettering to embroidery designs
Create horizontal baselines		●	●	Creating horizontal baselines
Create vertical baselines		●	●	Creating vertical baselines
Create circle baselines		●	●	Creating circular baselines
Create multiple baselines		●	●	Creating predefined baselines
Create custom baselines		●	●	Creating custom baselines
Format lettering (italics, bolding, justification)		●	●	Formatting lettering
Adjust letter spacing (overall, individual, line)		●	●	Adjusting spacings
Edit lettering text		●	●	Editing lettering text
Scale lettering		●	●	Scaling lettering
Remove underlay from small lettering		●	●	Removing underlay from small lettering
Transform lettering objects (rotate, skew)		●	●	Transforming lettering objects
Adjusting individual letters (reposition, transform, reshape)		●	●	Adjusting individual letters
Add stitch angles to letters		●	●	Adding stitch angles to letters
Recolor letters		●	●	Recoloring letters
Embroidery lettering – special				Embroidery Lettering
Convert text to embroidery	Convert to Embroidery		●	Converting text to embroidery
Convert TrueType fonts to embroidery			●	Converting fonts to embroidery
Add special characters and symbols		●	●	Adding special characters
Special alphabets		●	●	Using special alphabets
Create special effects with Elastic Lettering	Elastic Lettering	●	●	Creating 'elastic lettering' effects
Monogramming				Monogramming
Create monogram lettering with initials	Monogramming	●	●	Creating monogram lettering with initials
Create monogram lettering with names		●	●	Creating monogram lettering with names
Add ornaments to monograms		●	●	Adding ornaments to monograms
Create ornament layouts		●	●	Creating multi-ornament layouts
Add borders to monograms		●	●	Adding borders to monograms
● Included as standard ▲ New/improved feature/option				

Capability	Feature Name	EditorPlus	DesignerPlus	Relevant topic in Reference Manual
Create your own borders			●	Creating custom borders
Design processing				Design Processing & Output
Print designs		●	●	Previewing & printing worksheets
Set print options for embroidery		●	●	Setting print options for embroidery
Print appliqué patterns		●	●	Printing appliqué patterns
Print Color Film		●	●	Printing Color Film
Print multi-hooped designs		●	●	Printing multi-hooped designs
Print thread charts		●	●	Printing thread charts
Save designs as images		●	●	Saving designs as bitmap
Stitch out designs		●	●	Stitching out designs
Output multi-hooped designs			●	Outputting multi-hooped designs
Open stitch files with object conversion		●	●	Opening files with conversion
Open stitch files without object conversion		●	●	Opening files without conversion
Read designs from machine		●	●	Reading designs from machine
Write designs to machine		●	●	Writing designs to machine
Write designs to USB stick		●	●	Writing designs directly to USB stick
Save designs in PES format		●	●	Saving designs in PES format
● Included as standard ▲ New/improved feature/option				

PART X

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 Reference Manual – select **Help > Reference 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.

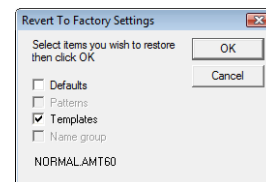
Reverting to factory settings

If you have made changes to the default settings in your software and you want to revert to 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 7 > BERNINA Embroidery Software 7 Tools > 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.

- 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
CPU	Intel® Pentium® 4, AMD Athlon™ 64 or AMD Opteron™

Item	Minimum
OS	‡ Windows® XP SP3 (32-bit)
Browser	I.E. 7.0 or later
Internet connection	Required for installation, product registration and access to software updates.
Memory	1 GB (32-bit) or 2 GB (64-bit)
Hard disk size	40 GB
Free disk space	† 20 GB
Graphics card	Support for Highest Color (32bit) and resolution 1280 x 1024
Monitor	¥ 17" at native resolution of 1280 x 1024
Scanner, printer and plotter	Windows-compatible (any connection method – e.g. parallel, USB)
USB ports	Dedicated USB port for a USB dongle
Mouse	USB mouse
Data drives	DVD-ROM drive for software installation
Sound card	Required for multimedia training

Supported operating systems ‡

- ▶ Although Windows XP (32bit) is supported, BERNINA highly recommends that you consider updating to Windows 7 or Windows 8.

Free hard disk space †

BERNINA Embroidery Software occupies up to 1Gb of hard disk space, depending on the options installed.

Screen resolution ¥

Some controls may be hidden on the user interface if you run your monitor at low resolutions. The physical size of your monitor will have a bearing on the optimum screen resolution. Larger fonts will exacerbate the problem. If you experience visibility issues, try adjusting both screen resolution and font size. For example, a resolution of 1280 x 720 with a font size of 100% or 125% should be acceptable.

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.

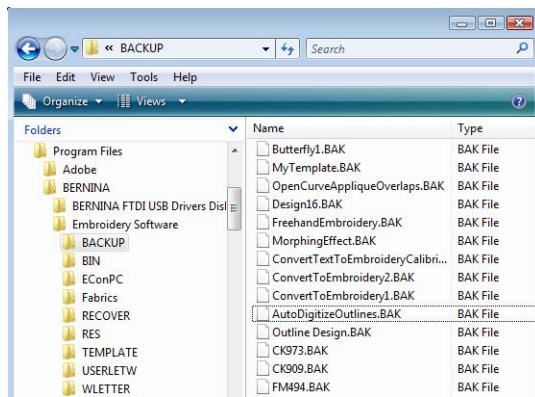


Note Do **not** save to the **Backup** folder or it will be deleted.

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 7 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 7\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

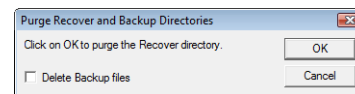
You can delete corrupt files using the **Delete Recovery** utility. **Delete Recovery** deletes files in the C:...\Program Files\BERNINA\Embroidery Software 7\Recover and C:...\Program Files\BERNINA\Embroidery Software 7\Backup folders. You should also periodically delete the backup files created by **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 7 > BERNINA Embroidery Software 7 Tools > Purge Recovery**.
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 7\Recover and C:...\Program Files\BERNINA\Embroidery Software 7\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	<ul style="list-style-type: none"> 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.

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.

General problems

The following section refers to general problems you may experience with your designs.

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 1024 x 768 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 7\RES\defaults.dfl file.
Suggestion	Delete any files in theProgram Files\BERNINA\Embroidery Software 7\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 for details. See also Resolving Exception Access Violation errors .

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 V7.0 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, Step.
- ▶ 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 V7.0, 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 V7.0 will automatically digitize TrueType fonts.
- ▶ The Remove Appliqué Overlaps 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 relocater' 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 **é** 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,./?!@#\$%&*()-'";:ıı
 ÀÁÂÃÄÅÆÇÈÉÊËÌÍÎ
 ÑÒÓÔÕÖØÙÚÛÜÝß
 àáâãäåæçèéêëìíî
 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

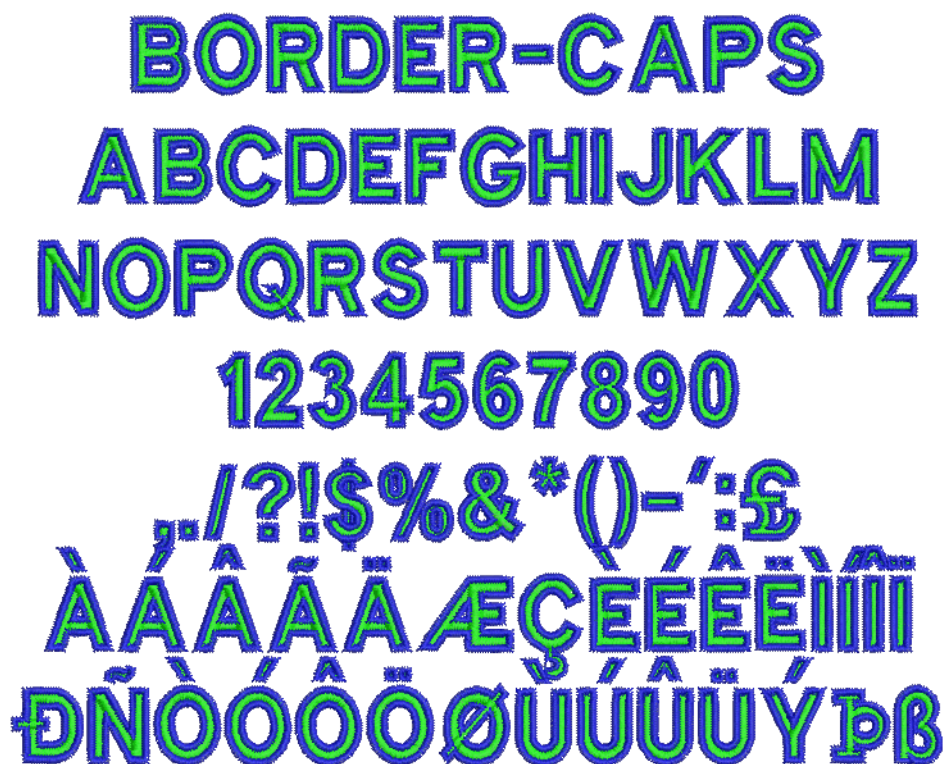
Bodoni is a classic, high-contrast alphabet best suited to larger sizes or with very stable fabric.

Bodoni
A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
1 2 3 4 5 6 7 8 9 0 , . / ? ! @ # \$ % & * ()
- = + ' " ; : ¡ ¢ £ ¥ € © ® ™ “ ”
À Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
Ð Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ ß
à á â ã ä å æ ç è é ê ë ì í î ï
đ ñ ò ó ô õ ö ø ù ú û ü ý þ ÿ œ

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

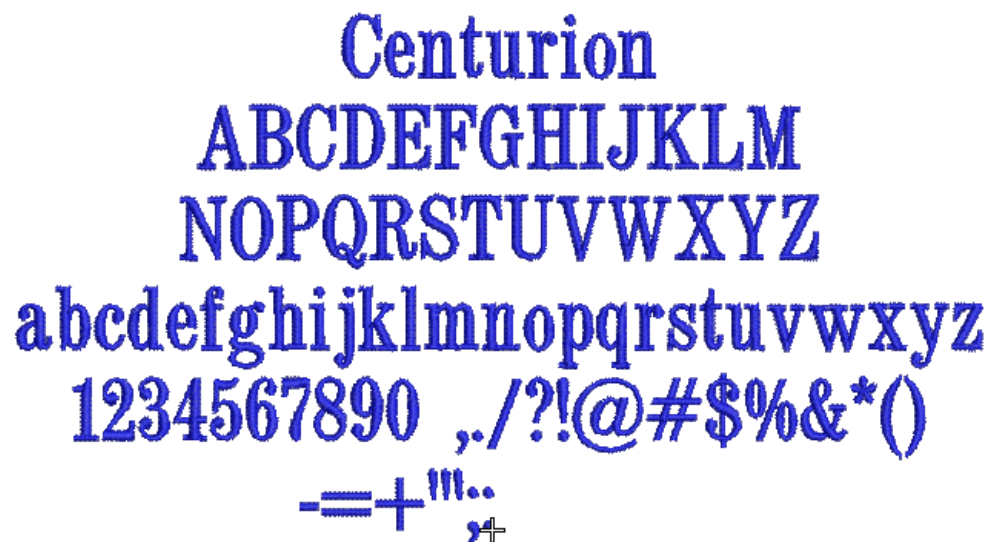
Castle is a classic romantic alphabet suitable for monograms or to convey a medieval or old world feel to restaurants or advertising material.



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.

Chicago
A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
1 2 3 4 5 6 7 8 9 0 , . / ? ! @ # \$ % & * ()
- = + " ' ; : ¡ ¢ £ ¥ € © ® ™ \ / \ /
À Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
Ð Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ ß à á â ã ä å æ ç è é ê ë ì í î ï
ð ñ ò ó ô õ ö ø ù ú û ü ý þ ÿ œ

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, styled 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.



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 ! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9		
Colors	Multi-color		
Stitching	Manual/cross stitches		
Recommended letter height	Minimum	1.2 in	30 mm
	Maximum	4.0 in	100 mm

Croissant

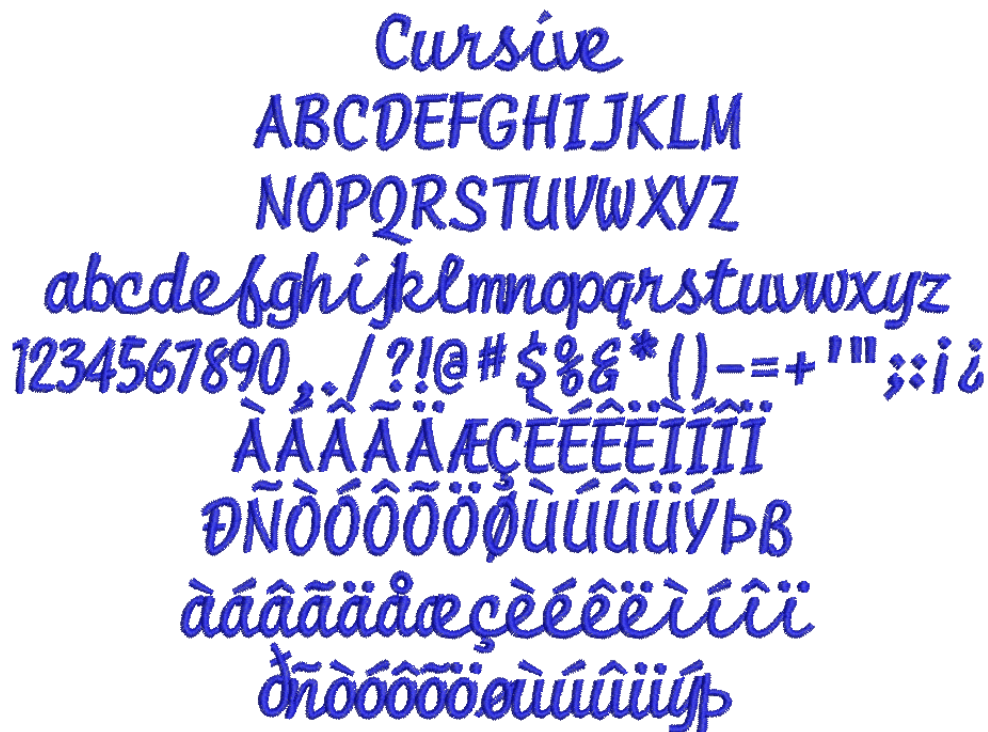
Croissant is a specialist fancy style, giving a completely different look from most other alphabets. It is suitable for restaurants, homewear and other people-oriented designs.

Croissant
A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
1 2 3 4 5 6 7 8 9 0 , . / ? ! @ # \$ % & * ()
. = + " ' ; : , & £ ¥ € © ® ™ " ' " "
À Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
Ð Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ ß à á â ã ä å æ ç è é ê ë ì í î ï
ð ñ ò ó ô õ ö ø ù ú û ü ý þ ÿ æ

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
 1234567890 ,./!@#\$%&*()
 -=+ "'''

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

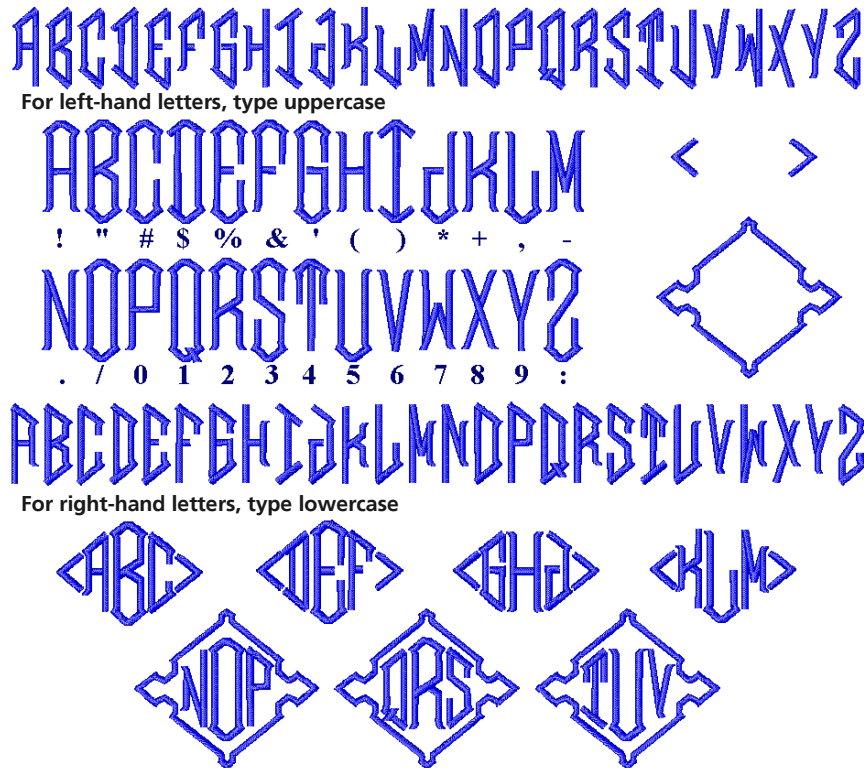
Alphabet contains

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.



Alphabet contains	Left, Center and Right letters for 3-letter monogram, plus 2 borders as shown. To create a monogram, use uppercase 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.

Drifter
A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
1 2 3 4 5 6 7 8 9 0
,./?!@#\$%&*()-'":;:ıı
À Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
Ð Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ
à á â ã ä å æ ç è é ê ë ì í î ï
đ ñ ò ó ô õ ö ø ù ú û ü ý

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

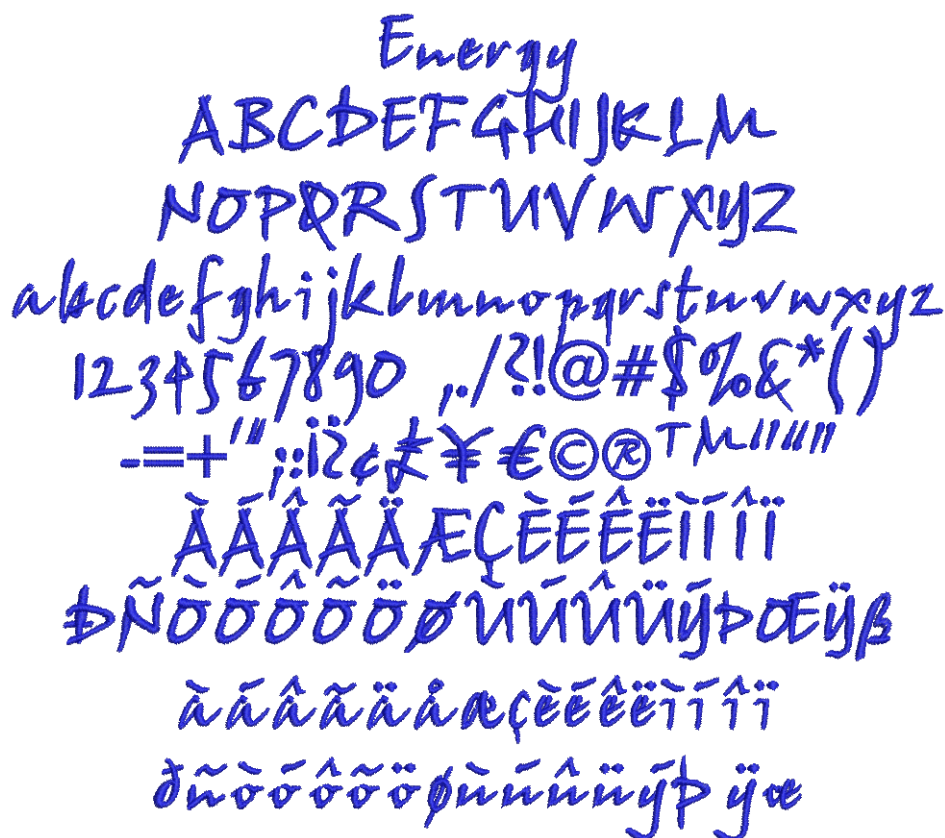
Empress is an elegant calligraphic script style with a rich, classical look and small lower-case letters. It is reminiscent of wedding and similar invitations, and is suitable for gifts and special occasions.



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.

Felt Tip
 A B C D E F G H I J K L M
 N O P Q R S T U V W X Y Z
 a b c d e f g h i j k l m
 n o p q r s t u v w x y z
 0 1 2 3 4 5 6 7 8 9 ! " # \$ % & ' ()
 * + , - . / : ; = ? @ [\] ^ _ ` { | } ~
 ¡ ¢ £ ¤ ¥ ¦ § ¨ © ª « ¬ ® ¯ ° ± ² ³ ´ µ ¶ · ¸ ¹ º » ¼ ½ ¾
 À Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ ß
 à á â ã ä å æ ç è é ê ë ì í î ï ð ñ
 ò ó ô õ ö ø ù ú û ü ß
 Œ œ Š š ˆ ˇ ˘ ˙ ˚ ˛ ˜ ˝

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

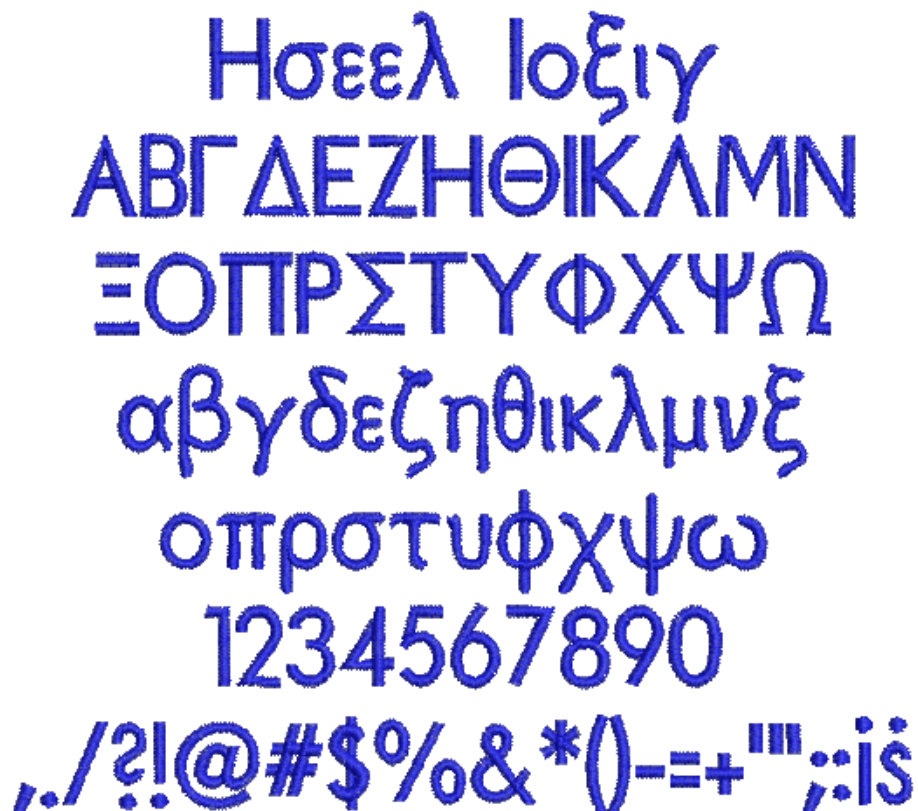
Greek is a classic serif-style. It is suited for educational institutions, restaurants, and events such as marriages and births in Greek communities.

Γρεεκ
 ΑΒΧΔΕΦΓΗΙΩΚΛΜ
 ΝΟΠΘΡΣΤΥηΩΞΨΖ
 αβχδεφγηιςκλμν
 οπθρστυαωξψζ
 1234567890
 ,./?!\$%&*()-'";

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

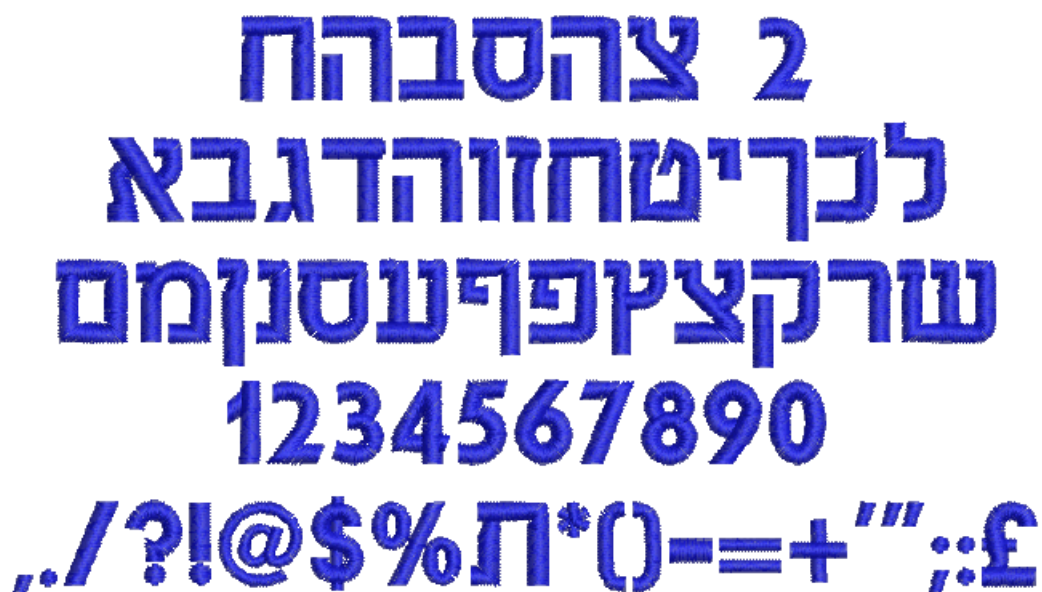
Guinevere is based on the old writing styles of Welsh and Irish texts. It is decorative and suited for a wide range of uses such as souvenirs, linen, restaurants, some ethnic designs, etc.



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

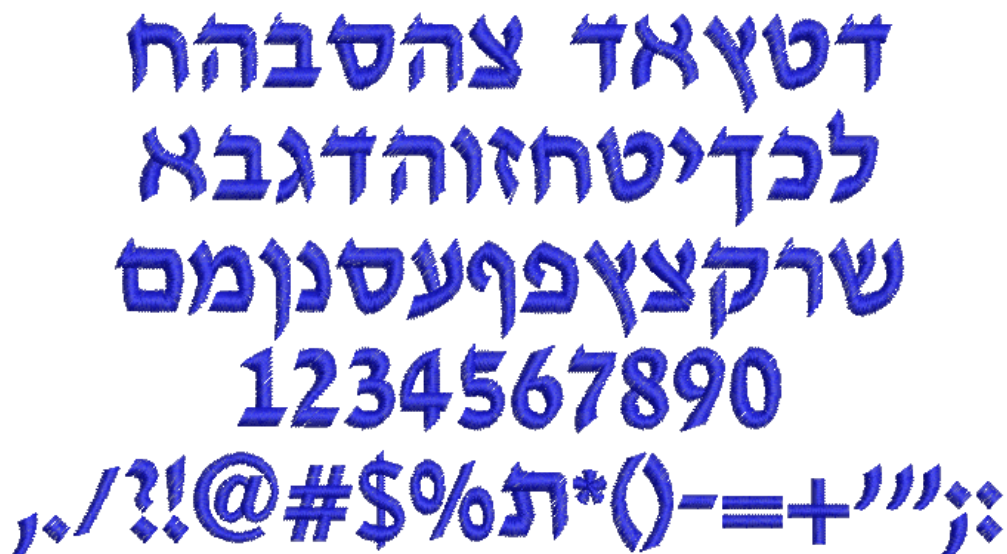
Hebrew 2 is a modern square Hebrew alphabet. It is a compact alphabet which can be applied to a wide range of uses in Hebrew communities.



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

Heisei Gyosho

Heisei Gyosho is a simple Japanese calligraphy or 'brush' (mouhitsu shotai) style alphabet for use in oriental and Japanese designs. It is a so-called 'semi-cursive' flowing style of writing where each character is often expressed by a single curving brushstroke.

平成楷書
 あいうえおかきくけこ
 アイウエオカキクケコ
 ABCDEFG abcdefg
 1234567890
 !?@#\$\$%

Alphabet contains

letters, 0 - 9, and some punctuation and symbols

Colors 1 color

Stitching Satin

Recommended letter height	Minimum	0.32 in	8 mm
	Maximum	2.7 in	70 mm

Heisei Kaisho

Heisei Kaisho is a simple Japanese calligraphy or 'brush' (mouhitsu shotai) style alphabet for use in oriental and Japanese designs. This is the type of handwriting taught to Japanese schoolchildren at elementary school.

平成楷書
 あいうえおかきくけこ
 アイウエオカキクケコ
 ABCDEFG abcdefg
 1234567890
 !?@#\$\$%

Alphabet contains

letters, 0 - 9, and some punctuation and symbols

Colors

1 color

Stitching

Satin

Recommended letter height

Minimum	0.32 in	8 mm
Maximum	2.7 in	70 mm

Helvetica Small

A variant of Helvetica, this alphabet is specifically created for use in small sizes.

Helvetica Small
 ABCDEFGHIJKLM
 NOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 1234567890 ,./? !@#\$%&*()
 - = + " ' , ; | ` ~ £ ¥ € © ® ™ “ ”
 À Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
 Ð Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ ß
 à á â ã ä å æ ç è é ê ë ì í î ï
 ñ ò ó ô õ ö ø ù ú û ü ý þ ÿ œ

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	0.3 in	7 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 だちづでど
 ばびぶべぼ ぱぴぷぺぽ
 あいうえお つやゆよ
 ` ° 「 」 — ! ?

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.



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

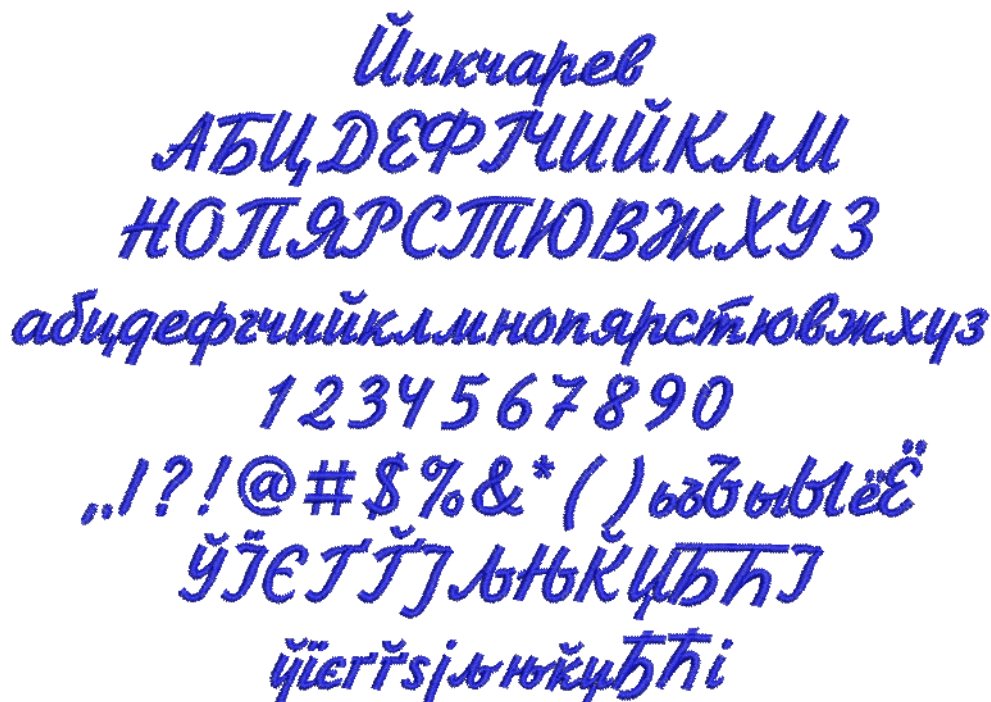
Island is a bold script-style alphabet, with connecting lower-case letters. The thickness of the strokes is even throughout. It is popular and versatile.



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 ワラン
 ガギグゲゴ ザジズゼゾ ダヂヅデド
 バビブベボ パビブベボ
 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

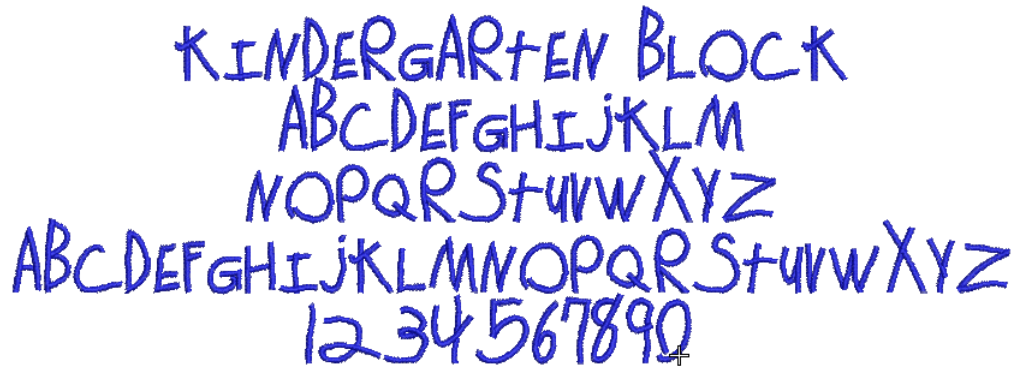
Ketchikan is an ornate all caps alphabet which is commonly used for restaurant, clothing and other business names where style and fashion are important.



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.



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

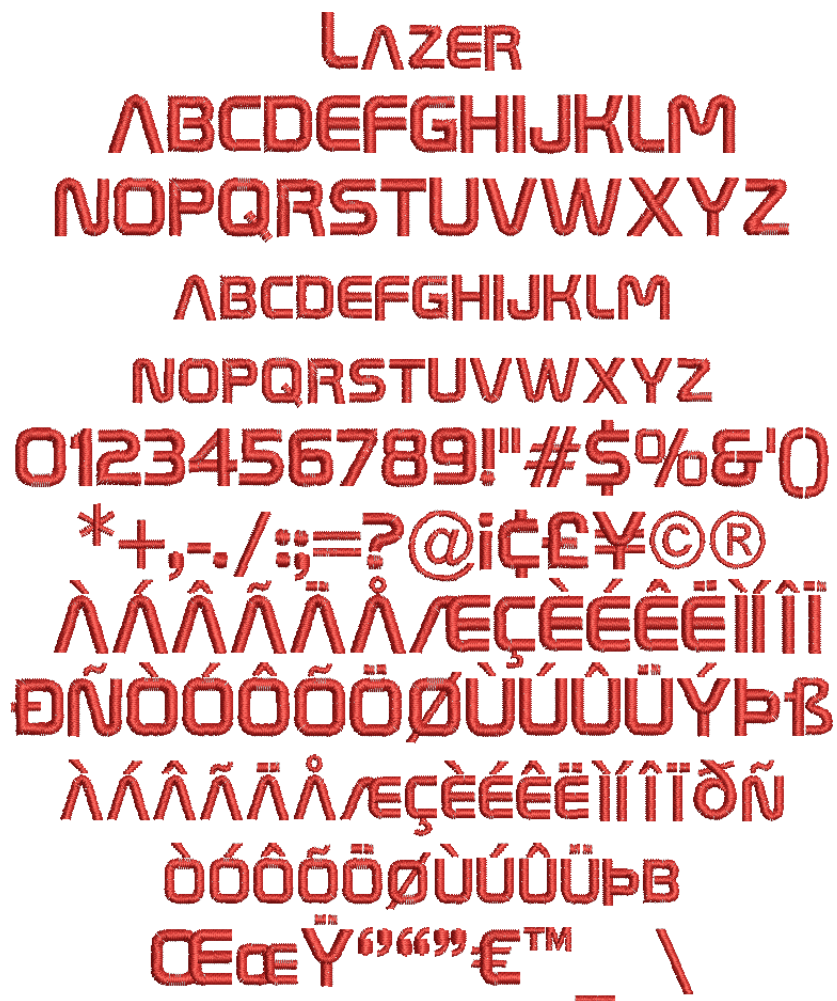
King Charles is a fancy alphabet style with proportionally large lower-case and long ascenders. It creates an old-style formal and elegant impression.



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 ,./?!@#\$%&*()
 -='"/:;¡¢£¥€©®™“”
 ÀÁÂÃÄÅÆÇÈÉÊËÌÍÎ
 ÑÒÓÔÕÖØÙÚÛÜÝÞÇÈË
 àáâãäåæçèéêëìíî
 ñòóôõöøùúûüýþÿœ

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.

Medley
 ABCDEFGHIJKLM
 NOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 1234567890
 .,:;!@#\$%&*()-'";:ıç
 Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
 Ð Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ
 à á â ã ä å æ ç è é ê ë ì í î ï
 ð ñ ò ó ô õ ö ø ù ú û ü ý

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

Micro Block

Micro Block has been designed for use specifically where small legible block letters is required.

MICRO BLOCK
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
1234567890 ,./?!@#\$\$%&*()
-+=+''":;icç£¥€©®™“”“”
À Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ ß

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	0.3 in	8 mm

Microgramma

Microgramma is a slightly boxy, wide, sans-serif alphabet.

Microgramma
 ABCDEFGHIJKLM
 NOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 1234567890

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
A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
1 2 3 4 5 6 7 8 9 0
., / ? ! @ # \$ % & * () - = + ' ' ' : ; i ð
À Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
Ð Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ ß

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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

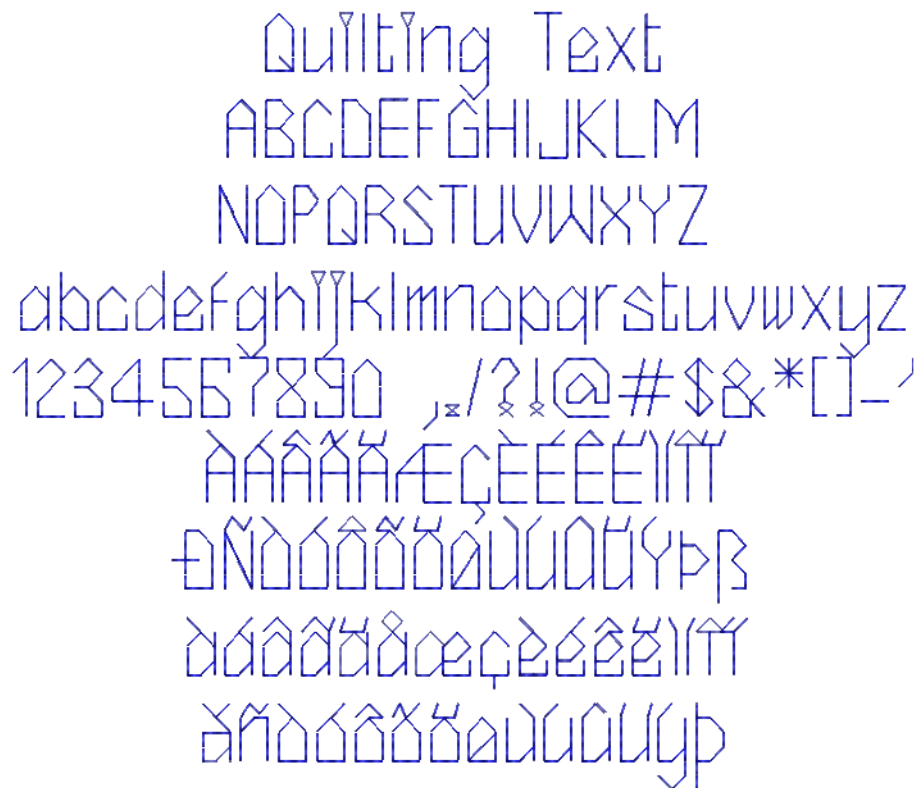
Prestige is a traditional block-style alphabet, popular for corporate logo work. It is quite bold and usually does not require additional pull compensation. It also works well with **Elastic Lettering** effects. See [Creating 'elastic lettering' effects](#) for details.



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.

Roman-Small
 ABCDEFGHIJKLM
 NOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 1234567890 ,./? !@#\$%&*()
 - = + ' " ; : ¡ ¢ £ ¥ € © ® ™ “ ”
 À Á Â Ã Ä Å Æ È É Ê Ë Ì Í Î
 Ï Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ ß
 à á â ã ä å æ ç è é ê ë ì í î
 ï ñ ò ó ô õ ö ø ù ú û ü ý þ ÿ

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

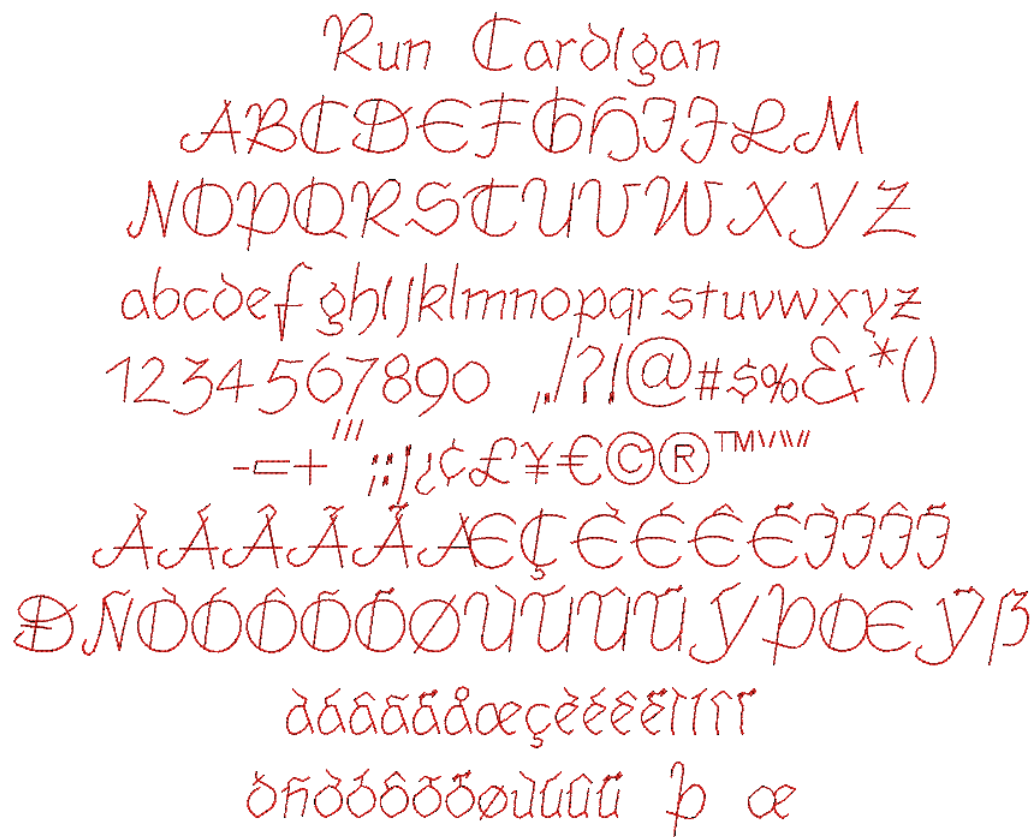
Arial Rounded is based on the widespread 20th century realist sans-serif.

Rounded Block
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
,./?!@#\$%&*()-=+'":;:¿£¥
ÀÁÂÃÄÅÆÇÈÉÊËÌÍ
ÐÑÒÓÔÕÖØÙÚÛÜÝÞß
àáâãäåæçèéêëìíî
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	1.8 in	45 mm

Run Cardigan

Run Cardigan is an outline or run alphabet based on Cardigan TrueType font. It gives a feel of hand stitching and is used to personalize blocks in quilts. It can also be used for quilting labels or other small text. See also [Quilting Text](#).



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	0.5 in	12 mm

Run Freehand

Run Freehand is an outline or run alphabet based on Freehand591 TrueType font. It gives a feel of hand stitching and is used to personalize blocks in quilts. It can also be used for quilting labels or other small text. See also [Quilting Text](#).

Run Freehand
 ABCDEFGHIJLM
 NOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 1234567890 ,./? !@#\$%&'*()
 - = + " ' ; : | ^ _ { } ~ ¢ £ ¥ € © ® ™ ¯ ¸ ¹ º » ¼ ½ ¾
 À Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
 Ð Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ ß à á â ã ä å æ ç è é ê ë ì í î ï
 ð ñ ò ó ô õ ö ø ù ú û ü þ æ

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	0.5 in	12 mm

Run Liberty

Run Liberty is an outline or run alphabet based on Liberty BT Regular TrueType font. It gives a feel of hand stitching and is used to personalize blocks in quilts. It can also be used for quilting labels or other small text. See also [Quilting Text](#).



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	0.5 in	12 mm

Run Murray Hill

Run Murray Hill is an outline or run alphabet based on Murray Hill Regular TrueType font. It gives a feel of hand stitching and is used to personalize blocks in quilts. It can also be used for quilting labels or other small text. See also [Quilting Text](#).

Run Murray Hill
 ABCDEFGHIJKLMNOP
 NOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 1234567890 .,/?!@#\$%^&*()
 -+=~!@#\$%^&*()™“”
 À Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
 Ð Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ ß
 à á â ã ä å æ ç è é ê ë ì í î ï
 ð ñ ò ó ô õ ö ø ù ú û ü þ æ

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	0.5 in	12 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 Тѣхтбуок
 АБЦДЕФГЧИЙКЛМ
 НОПЯРСТЮВЖХУЗ
 абцдефгчийклмнопярстювжхуз
 1234567890
 ,./?!@#\$%&*()ъь ЪыІёЁ
 ЎїЄГГЈльньКЦЪѢ
 ўїєггѕјльнькцѣѣ

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

Sm High Tower

Hightower was created by Tobias Frere-Jones for the Journal of the American Institute of Graphic Arts. Based on Nicolas Jenson's 1470 Venetian roman font, Frere-Jones prepared his own version of this calligraphic roman font with his own personal italic in 1996. Sm HighTower is a variant of the italic font, specifically designed for use in smaller sizes.

Sm HighTower
ABCDEFGHIJLM
NOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890 ,./?!@#\$%^&()*
~+=,":;~iç£¥€©®™“”
À Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
Ð Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ ß
à á â ã ä å æ ç è é ê ë ì í î ï
ð ñ ò ó ô õ ö ø ù ú û ü ý þ ÿ œ

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

Speedy

Speedy is a bold, fast-paced modern alphabet.

Speedy
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

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.

Swiss Block
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890 ,./?!@#\$%&*()
-+=~!";:ıç£¥€©®™“”„
ÀÁÂÃÄÅÆÇÈÉÊËÌÍÎ
ÐÑÒÓÔÕÖØÙÚÛÜÝÞÇÈË
àáâãäåæçèéêëìíî
ñòóôõöøùúûüýþÿœ

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
 ,./?!@#\$%&*()-=+";:¡£¥
 À Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
 Ð Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ ß
 à á â ã ä å æ ç è é ê ë ì í î ï
 ð ñ ò ó ô õ ö ø ù ú û ü ý þ ÿ

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

Times Small

Times Small is a variant of Times Roman, specifically designed for use in smaller sizes.

Times Small
 ABCDEFGHIJKLM
 NOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 1234567890 ,./?!@#\$%&*()
 -+=+'";:¡¿¢£¥€©®™“”
 ÀÁÂÃÄÅ Æ ÈÉÊËÌÍÎ
 ÐÑÒÓÔÕÖØ ÙÚÛÜÝ Þ Æ Æ Æ
 àáâãäå æ ç è é ê ë ì í î
 ñ ò ó ô õ ö ø ù ú û ü ý þ ÿ æ

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

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
 A B C D E F G H I J K L M
 N O P Q R S T U V W X Y Z
 1 2 3 4 5 6 7 8 9 0
 . / ? ! \$ % & * () - ' " : ; < > ,
 ~ Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
 Ð Ñ Ò Ó Ô Õ Ö Ø Ù Ú Û Ü Ý Þ

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.

Verdana
 ABCDEFGHIJKLM
 NOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 1234567890 ,./?!@#\$%&*()
 -=+''";:¡¢£¥€©®™ˆˇ˘˙˚˛˜˝
 ÀÁÂÃÄÅÆÇÈÉÊËÌÎĨ
 ÑÒÓÔÕÖØÙÚÛÜÝÞŒÿß
 àáâãäåæçèéêëìíï
 ñòóôõöøùúûüýþÿœ

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


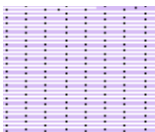
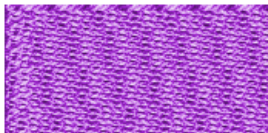


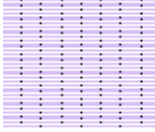
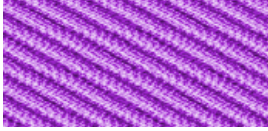
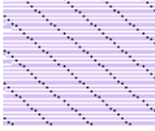
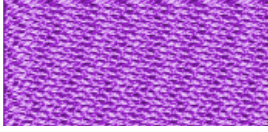




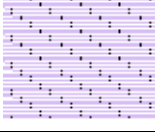
APPENDIX D

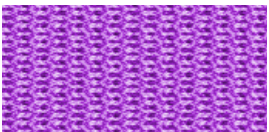
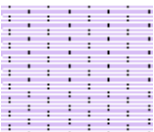
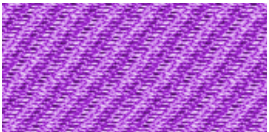
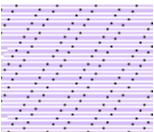
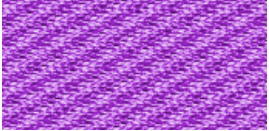

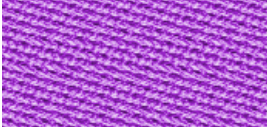
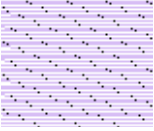

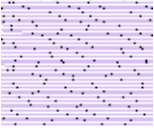

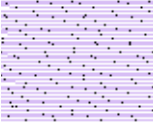
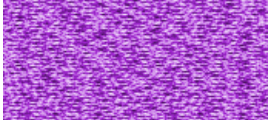

STEP FILL SAMPLES



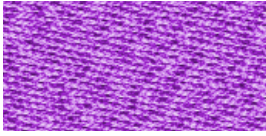
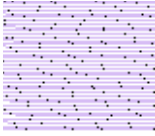
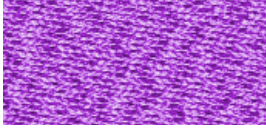
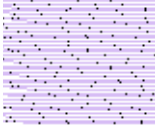
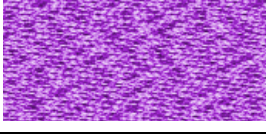
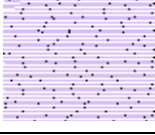
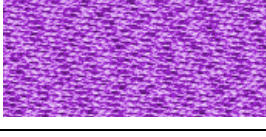
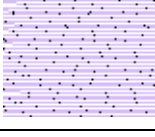
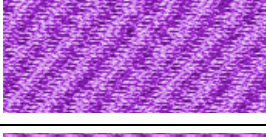
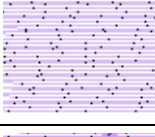

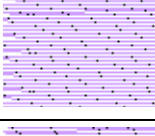

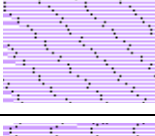
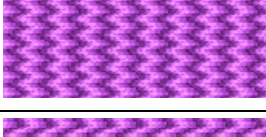
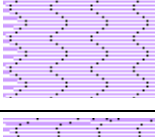
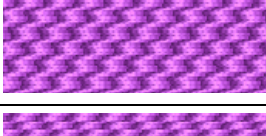
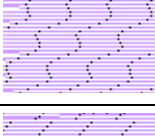

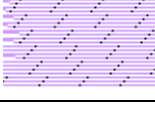
The Step fill patterns shown in this appendix are a sample of those included with your BERNINA® Embroidery Software program. For actual Step fills and instructions on how to use them, see [Creating step stitch fills](#).

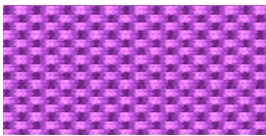
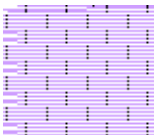
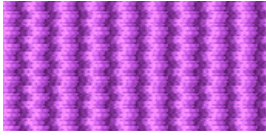
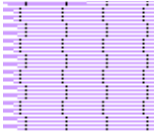

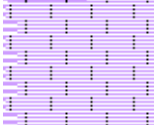
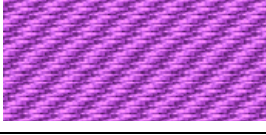
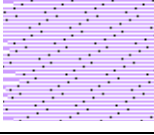
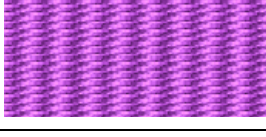
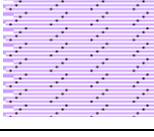


Note Make sure you apply the correct stitch angle to each Step fill. The following samples have been digitized with a stitch angle of 0°. Experiment with different stitch angles to get new effects.

No.	Stitch sample	Preview
1		
2		
3		
4		
5		
6		
7		

No.	Stitch sample	Preview
8		
9		
10		
11		
12		
13		
14		



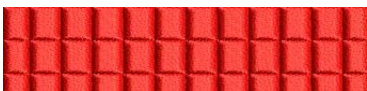
No.	Stitch sample	Preview
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		












No.	Stitch sample	Preview
26		
27		
28		
29		
30		
















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
023 Oval (90)	
024 Whirlpool (90)	
025 Dance (90)	
026 Heart (90)	
027 Heart2 (90)	
028 Valentine (90)	
029 Scallop (90)	
030 Shell (90)	
031 Smile (90)	
032 Flower (90)	
033 Ribbon (30)	
034 Sunny (90)	
035 Shine (90)	
036 Star (90)	
037 Stardust (90)	
















ID & Angle	Fancy Fill
038 Honey-comb (90)	
039 Beeswax (30)	
040 Wave (90)	
041 Dunes (0)	
042 Chevron (90)	
043 Chevron2 (90)	
044 Chevron3 (90)	
045 Wedge (90)	
046 Crazy (90)	
047 Arrow (20)	
048 Weave (48)	
049 Weave2 (90)	
050 Stream (90)	
051 Bowtie (0)	
052 Chain (90)	
















ID & Angle	Fancy Fill
053 Glitter (90)	
054 Cross (45)	
055 Double-cross (90)	
056 Galaxy (90)	
057 Ring (90)	
058 Ramble (90)	
059 Florastar (90)	
060 Stripes (90)	
061 Letter A (90)	
062 Letter B (45)	
063 Letter C (90)	
064 Letter D (45)	
065 Letter E (45)	
066 Letter F (45)	
067 Letter G (45)	
















ID & Angle	Fancy Fill
068 Letter H (45)	
069 Letter I (45)	
070 Letter J (45)	
071 Letter K (30)	
072 Letter L (45)	
073 Letter M (45)	
074 Letter N (45)	
075 Letter O (30)	
076 Letter P (45)	
077 Letter Q (30)	
078 Letter R (45)	
079 Letter S (45)	
080 Letter T (45)	
081 Letter U (45)	
082 Letter V (45)	
















ID & Angle	Fancy Fill
083 Letter W (45)	
084 Letter X (90)	
085 Letter Y (30)	
086 Letter Z (30)	
087 Paver (90)	
088 Picasso (135)	
089 Ziggy (0)	
090 Spirali (90)	
091 Manchu (45)	
092 Grilles (45)	
093 Wooden Lattice (82)	
094 Han Line (45)	
095 Dart (10)	
096 T-frame (45)	
097 Double-arm (87)	







ID & Angle	Fancy Fill
098 Knuckled frame (45)	
099 Tile (0)	
100 Alarm Tile (83)	
101 Turtle-back (79)	
102 Stepped Wave (45)	
103 Crayon (0)	
104 Diamond Inlay (0)	
105 Corduroy (0)	
106 Diamond Punch (0)	
107 Inlay Print (0)	
108 Snowflake (0)	
109 Inlay Maze (45)	
110 Quilt Diamond 1 (0)	
111 Quilt Diamond 2 (0)	
112 Quilt Diamond 3 (0)	

ID & Angle	Fancy Fill
113 Zig-Zag Inlay (0)	
114 Shell Inlay (0)	
115 Music 1 (0)	
116 Music 2 (0)	
117 Four Square (45)	
118 Symbol 1 (45)	
119 Symbol 2 (50)	
120 Symbol 3 (82)	
121 Wave 2 (0)	
122 Wave 3 (0)	
123 Honey-comb 2 (45)	
124 Rope (0)	
125 Tree (142)	
126 Wings (135)	
127 Leaf (0)	

ID & Angle	Fancy Fill
128 Star (18)	
129 Web (0)	
130 Tear Drop (0)	
131 2-way zig-zag (87)	
132 Quilt Square 1 (45)	
133 Quilt Square 2 (0)	
134 Quilt Square 3 (0)	
135 Quilt Square 4 (0)	
136 Quilt Square 5 (45)	
137 Quilt Square 6 (18)	
138 Cloud Band 1 (25)	
139 Cloud Bands 2 (0)	
140 Cloud Bands 3 (0)	
141 Arrow 2 (0)	
142 Rusty Ice (0)	

ID & Angle	Fancy Fill
143 Ice Rays (0)	
144 Dynasty (0)	
145 Windwheel (0)	
146 Tea Tray (0)	
147 Cash Bars (45)	
148 Chengtu (0)	
149 Chihli (86)	
150 Ming (135)	
151 Arrowhead (89)	
152 Basket2 (40)	
153 Bird (90)	
154 Blocks2 (0)	
155 Chain (90)	
157 Circle (0)	
158 Cube (48)	

ID & Angle	Fancy Fill
159 Ellipse (0)	
160 Flame (90)	
161 Jem (90)	
162 Leaf (0)	
163 Melody (0)	
164 Metal (0)	
165 Passage (0)	
166 Piccolo (0)	
167 Roma (0)	
168 Rope (10)	
169 Seville (0)	
170 Star5 (10)	
172 Tick (0)	
173 Tile1 (135)	
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](#).



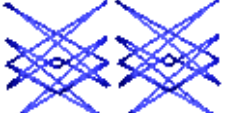
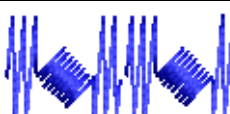

Pattern set: BerninaV5

Name	Pattern
NP005-01	
NP005-02	
NP005-03	
NP005-04	
NP005-05	
NP005-06	
NP005-07	
NP005-08	
NP005-09	
NP005-10	


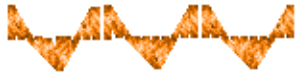





Name	Pattern
NP005-11	
NP005-12	
NP005-13	
NP005-14	
NP005-15	
NP005-16	
NP005-17	
NP005-18	
NP005-19	


Name	Pattern
NP005-20	
NP005-21	
NP005-22	
NP005-23	
NP005-24	
NP005-25	
NP005-26	
NP005-27	
NP005-28	
NP005-29	
NP005-30	
NP005-31	
NP005-32	
NP005-33	
NP005-34	

Name	Pattern
NP005-35	
NP005-36	
NP005-37	
NP005-38	
NP005-39	
NP005-40	
NP005-41	
NP005-42	
NP005-43	
NP005-44	
NP005-45	


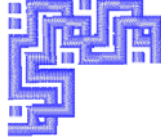
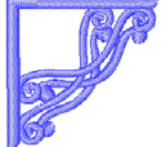

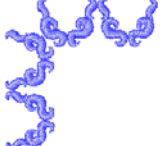


Name	Pattern
NP005-46	
NP005-47	
NP005-48	
NP005-49	
NP005-50	











Pattern set: Children




Name	Pattern
901	
905	
907	
909	
910	
911	
914	

Name	Pattern
929	










Pattern set: Corners


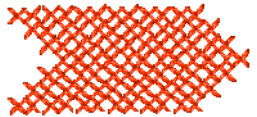






Name	Pattern
Cnr001	
Cnr002	
Cnr003	
Cnr004	
Cnr005	
Cnr006	
Cnr007	

Name	Pattern
Cnr008	
Cnr009	
Cnr010	
Cnr011	
Cnr012	
Cnr013	
Cnr014	
Cnr015	
Cnr016	
Cnr017	






Name	Pattern
Cnr018	
Cnr019	
Cnr020	









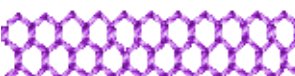
Pattern set: Cross

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	



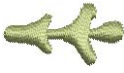




Pattern set: Misc








Name	Pattern
10	
11	
12	
13	
21	
29	
Star	
3wave	
Heart	
Wedge	
Blanket	
Feather	





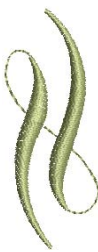

Name	Pattern
Pinstit	


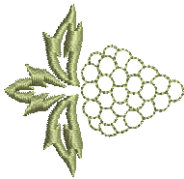





Pattern set: Monogram Ornaments







Name	Pattern
M001a	
M001b	M001a pattern oriented horizontally and mirrored
M002a	
M002b	M002a pattern oriented horizontally
M003a	
M004a	
M004b	M004a pattern oriented horizontally
M005a	
M005b	M005a pattern oriented horizontally and mirrored




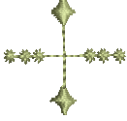



Name	Pattern
M006a	
M006b	M006a pattern oriented horizontally
M007a	
M008a	
M008b	M008a pattern oriented vertically
M009a	
M009b	M009a pattern oriented horizontally
M010a	
M010b	M010a pattern oriented horizontally
M011a	
M011b	M011a pattern oriented horizontally
M012a	
M012b	M012a pattern oriented horizontally





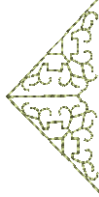


Name	Pattern
M013a	
M013b	M013a pattern oriented horizontally
M014a	
M014b	M014a pattern oriented vertically and mirrored
M015a	
M015b	M015a pattern oriented horizontally
M016a	
M016b	M016a pattern oriented horizontally
M017a	
M018a	
M018b	M018a pattern oriented vertically
M019a	
M019b	M019a pattern oriented horizontally







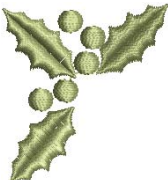




Name	Pattern
M020a	
M020b	M020a pattern oriented horizontally
M021a	
M021b	M021a pattern oriented horizontally
M022a	
M022b	M022a pattern oriented diagonally
M023a	
M023b	M023a pattern oriented horizontally
M024a	
M024b	M024a pattern oriented diagonally
M024c	M024a pattern oriented horizontally
M025a	
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



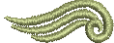







Name	Pattern
M039a	
M039b	M039a pattern oriented horizontally
M040a	
M040b	M040a pattern oriented horizontally
M041a	
M041b	M041a pattern oriented horizontally
M042a	
M042b	M042a pattern oriented vertically
M042c	M042a pattern oriented diagonally
M043a	
M043b	
M043c	M043a pattern oriented horizontally
M044a	
M044b	M044a pattern oriented vertically


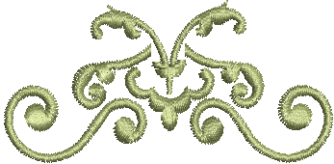






Name	Pattern
M045a	
M045b	M045a pattern oriented horizontally
M046a	
M046b	M046a pattern oriented horizontally
M047a	
M047b	M047a pattern oriented horizontally
M048a	
M048b	M048a pattern oriented horizontally
M049a	
M049b	M049a pattern oriented horizontally
M050a	
M050b	M050a pattern oriented horizontally
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









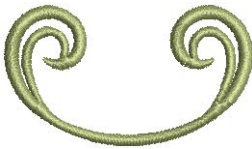

Name	Pattern
M063a	
M064a	
M064b	M064a pattern oriented horizontally
M065a	
M066a	
M066b	M066a pattern oriented horizontally
M067a	
M067b	M067a pattern oriented vertically
M068a	
M069a	
M069b	M069a pattern oriented vertically
M070a	
M071a	
M071b	M071a pattern oriented vertically


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





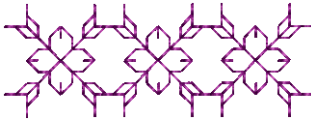







Name	Pattern
M083a	
M083b	M083a pattern oriented vertically
M084a	
M084b	M084a pattern oriented vertically
M085a	
M085b	M085a pattern smaller sized
M085c	M085b pattern oriented vertically
M086a	
M086b	M086a pattern oriented vertically
M087a	
M087b	M087a pattern smaller sized
M087c	M087b pattern oriented 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



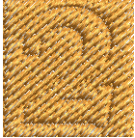







Name	Pattern
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328	
330	
332	
333	
334	
336	
337	
338	
339	
340	
342	


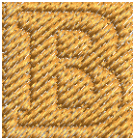


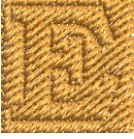


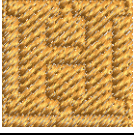
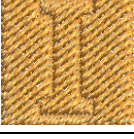

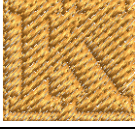
Name	Pattern
343	
a301	
a302	
a303	
a304	
a305	
a306	
a307	
a308	
a309	
a310	
a311	
a312	
a313	
a314	
a315	
a316	


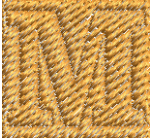




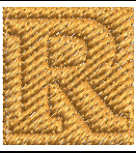
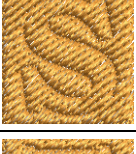
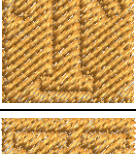
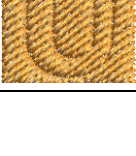
Pattern set: Satin-Quilt


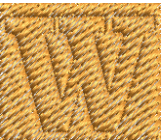
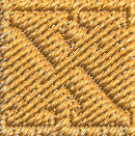
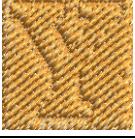
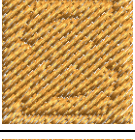
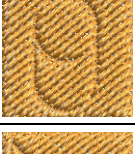
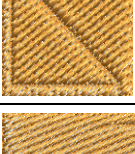
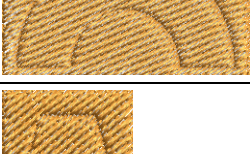
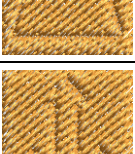
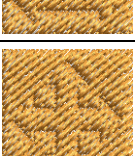
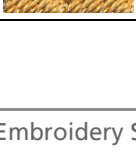
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506	
507	
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512	
513	
514	
515	

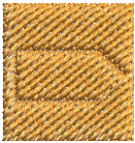

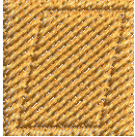
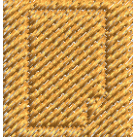
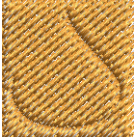
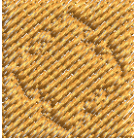
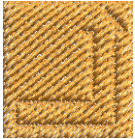

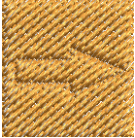
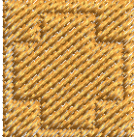

Pattern set: Carving Stamps

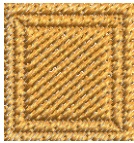



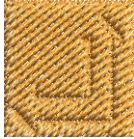
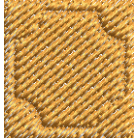
Name	Pattern
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

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
Arrow_Block	
Ring_Ellipse	
Parallelogram	
Page	
Tear	
Arrow_4_Way_Block	
Arrow_Right_Angle	
Arrow_Double_Block	
Arrow	
Cross	
Flash	

Name	Pattern
Flame	
Heart	
Banned	
Smiley	
Arrow_Double_Right_Angle	
Polygon	

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 & 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	

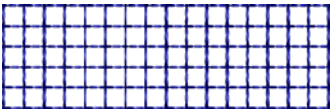
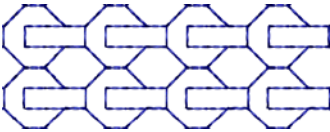
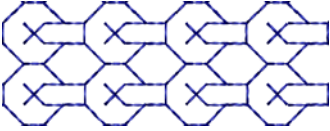
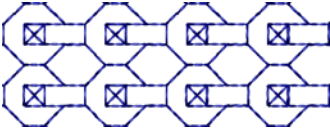
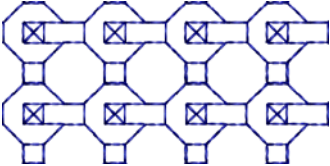
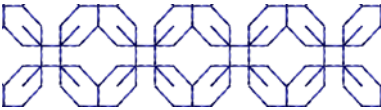
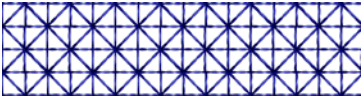
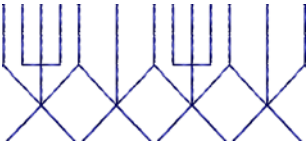
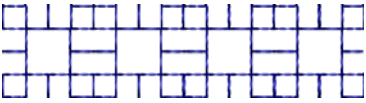
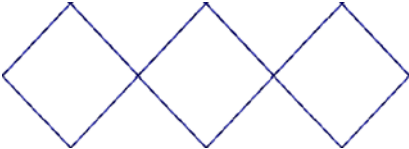
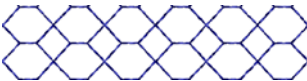
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B0006a	
B0007a	
B0008a	
B0009a	
B0010a	

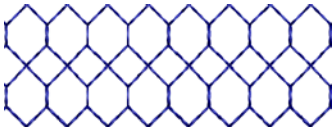
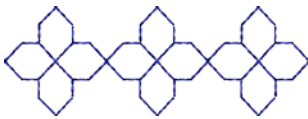

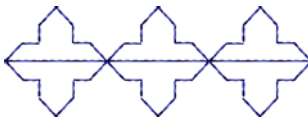

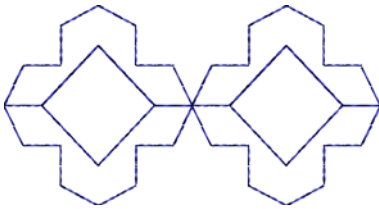

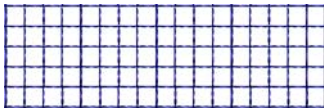
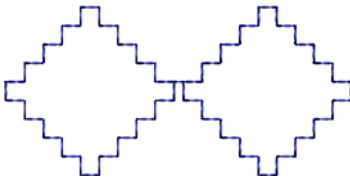

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B0013a	
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B0014a	
B0015a	
B0016a	
B0017a	
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B0019a	
B0020a	
B0021a	

ID	Sample
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B0024a	
B0025a	
B0026a	
B0027a	
B0028a	
B0029a	
B0030a	

ID	Sample
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B0036a	
B0037a	
B0038a	
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B0040a	

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B0047a	
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B0048b	
B0049a	
B0050a	

ID	Sample
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B0052a	
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B0057a	
B0058a	
B0059a	
B0060a	
B0061a	

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ID	Sample
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Candlewicking patterns

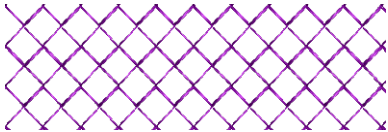
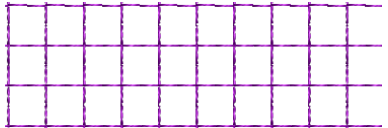
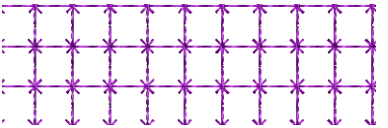
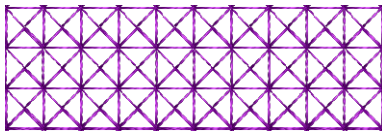
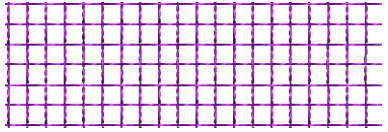
Candlewicking is a traditional white-on-white embroidery technique, usually done on white linen or cotton fabric with heavy cotton threads. Candlewicking patterns can be used either as borders, as fills, or even pattern stamps. See [Creating candlewicking outlines](#) and [Creating candlewicking fills](#).

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 Preparation: 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 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 Object: 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 Object 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. 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-loom 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 Schiffl 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.

Needle felting: Needle felting, also called 'dry felting', is a popular fiber-arts craft that creates felt without the use of water. The needles which are used in industrial felting machines, or needle felting attachments like BERNINA needle-punch tool, or even hand-held tools, have little barbs with soft shoulders. As these needles penetrate the layers of fabric and yarn, they pull fiber through. Since the barbs face downwards, they do not pull the fibres out as the needles exit. Using a single needle or a small group of needles, fine details can be achieved using this technique. It is popular for 2D and 3D felted work.

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 X6. 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 Object objects. You can also create special or three dimensional effects.

Pattern Run Outline: 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 – placement 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](#).

Roving: Fibers that have been carded and combed, but not spun. The term is most commonly heard in the phrase 'wool roving', but roving can be made out of any kind of fiber or a mix of fibers.

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. Satin Special 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 condensed 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 $\pm 5\%$ 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](#).

Selection marquee: The dotted rectangle that appears when you select a range of items. See also [Bounding box](#).

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.

Turning stitches: Embroidery objects can be filled with parallel or turning stitching. Turning stitches are columns of stitches which turn to follow the path defined by the object outline. By contrast, parallel stitching traverses the shape in one direction only – e.g. at 90° to the horizontal, 45°, or whatever is set. Objects can be created with turning stitching already applying, or multiple stitch angles can be added later. Turning stitches are best used with designs containing complicated, turning shapes such as trees, animals, or large filled areas. Turns generally occur at points where a shape changes significantly in direction or width.

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.

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