

Raynen Embroidery Design Operation Manual

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Introduction

Welcome to Raynen Embroidery Design Software, the leading application software for embroidery industry design and manufacture.

Raynen Embroidery Software has many new and expanded features compared to our previous products which make digitizing easier and more efficient.

For more contents, please refer to the manual. For more details about our company, please visit <http://www.Raynen.cn/>.

1. Declaration

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First-time users

Raynen Embroidery Software involves in the functions of flexible digitizing ability,

creating and editing embroidery design with ease, adding and creating your own words with conciseness. For the first-time user, you must be satisfied with the functions of it. Before you begin working with the product, please read Digitizing with Embroidery Design in Chapter 1. This chapter presents an overview of the basic concepts of digitizing with Raynen Embroidery Software and provides important guidelines on how to use the software for best results. You should also familiarize yourself with Basic Procedures in Chapter 2. You will learn how to start the application, how to create or open the design, how to print the workflow and how to use all of the essential tools and features that Raynen Embroidery Software provides. Chapter 3 Viewing Designs contains essential information about the many ways of viewing designs in Raynen Embroidery Software.

Update users

The application of Raynen Embroidery Design Software is controlled by a security device installed in the computer or additional to the computer. You can easily upgrade your software through inputting authorization code or the changing security device for external application.

Bundled software includes the following components:

Manual

CD-ROM

Protection device: USB dongle. The authorized user's computers (software encrypting) don't need protection device.

Some agents will dispatch the protect device separately.

Minimum system requirements:

CPU main frequency is 1.8GHz or higher, with a CD-ROM drive.

Monitor resolution: 1024x768, 16bit or higher screen color setting.

512MB memory

Microsoft Windows NT operating system

At least 50MB free hard disk spacing

Mouse (three buttons are more available for design)

A parallel port or USB port prepared for connecting protection device

If you want to connect to additional hard disk, printer, embroidery machine, digital board and etc., you should at least prepare for another serial port and parallel port. You may need more ports based on the type and quantity of devices that you want to connect. Under the Windows NT working environment, several types of embroidery machines or embroidery disk formats can not be supported.

2. Installing Raynen Embroidery Design Software

To install Raynen Embroidery Design Software:

- (1) Insert Raynen Embroidery Design Software into CD-ROM drive.
- (2) Click RaynenEmb_Setup program.
- (3) Installing this software according to the notes on the screen.

3. Conventions used in the documentation

Commands

In this manual, commands on a sub-menu are referred to by both the sub-menu and command name. For example the command ‘According to color’ on the sub-menu ‘Select’ is referred to as click ‘Select’, then click ‘According to color’.

Dialog boxes

Dialog boxes are referred to as ‘dialogs’ and appear in manual only if they provide important information on using Raynen Embroidery Design Software. The screen illustrations in this publication are intended to be representations, not exact duplicates of the screen layouts generated by the software.

Mouse conventions

Instruction	Symbol	Description
Click		Click the left mouse button.
Right-click		Click the right mouse button.
Double-click		Click the mouse button twice without moving the mouse.
Shift-click	 + 	Hold down Shift and click left mouse button.
Click OK	 or 	Click OK with the mouse or press the Enter key on the keyboard to complete the action.

Keyboard conventions

Shortcut	Description
 + 	While holding down the Control key (Ctrl), press the lowercase letter S key.
 +  + 	While holding down the Control key (Ctrl), press Shift and the H key.

Part I BASIC PROCEDURES

1. Digitizing with Embroidery Designs

This software provides embroiderers with fast and flexible creation of embroidery designs, which can satisfy the requirements of professional users that have high productivity and efficiency. Besides, it can make the novice and infrequent operation users become high output embroidered users. You can modify embroidery design at any time, or embroider the different fabric with existing design or embroider in different machines with this software.

Digitizing with embroidery design includes the following parts:

- (1) Planning designs
- (2) Automatic digitizing
- (3) Manual digitizing
- (4) Improving embroidery quality of designs
- (5) Modifying designs
- (6) Detecting and outputting designs

1.1. Planning designs

The traditional digitizing is “linear” processing that the users have to plan the design then implement digitizing from start point to endpoint according to a sequence. The most effective way to create design is to plan your design completely, to experience different phases of design planning and to think of the effect of every phase upon on the the output of embroidery design at any time.

1.1.1. Features of good designs

High quality embroidery starts with a good design. Then you need a high quality embroidery machine to stitch it out. In addition, without the right fabric, embroidery line, substrate, tension and etc, we also can not get the high quality embroidery. When planning designs, please remember the following points, as display in the picture:



- (1) Design looks good: shapes, colors, balance
- (2) Stitches are angled to match shapes
- (3) Shapes are filled with correct fill and outline stitches
- (4) Details are clearly defined
- (5) Stitches are neat, smooth and even
- (6) Shapes are stitched correctly: no unwanted gaps
- (7) Lettering is clear and easy to read

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

- (1) The design stitches out efficiently on the machine.
- (2) The fabric has not puckered around the stitched areas.
- (3) The design is free of loose ends.

1.1.2. Selecting artworks for embroidery designs

The two artworks—vector and bitmap, both of which can be imported and pasted into this software for use as digitizing backdrops. To create good quality embroidery, you need to choose suitable artwork of either format. As for manual and automatic digitizing, “neat”, monochrome with limited quantity and well-defined outlined images are more suitable.



clipart: has well-defined outlined image



well-defined color block image



artwork scanned from a book

Unless you are an experienced digitizer, do not use complicated, detailed, small-shaped

artwork or artwork with different pattern effect. Possible sources of artwork created good embroidery design include:



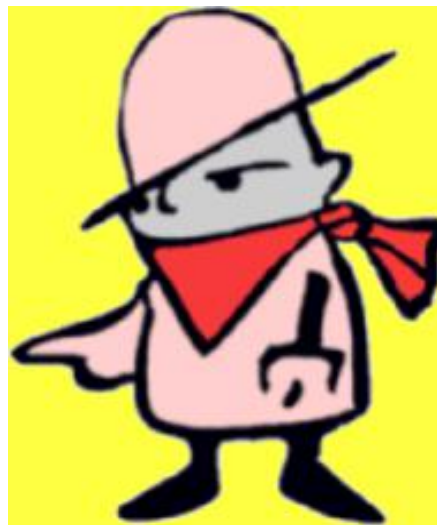
1. Books of embroidery patterns and children's storybooks
2. Printed table cloths or tea towels
3. Business cards, post cards and wrapping paper
4. Clipart libraries from your word processing or graphics programs
5. Internet or CD clipart libraries
6. Original artwork in folder of Raynen Embroidery Design Software

1.1.3. Editing artworks

Before inserting the complicated images into this software, you need to edit them through mapping software, for example, removing background images, and filled real colored areas largely, adding or improved outlines or closed-gap



Paragraph cut and background removed:
ready for manual digitizing



Areas recolored and outlines improved:
ready for automatic digitizing

1.1.4. Preparing for digitizing

Before digitizing, you need to analyze and plan design shapes and stitching sequence carefully.

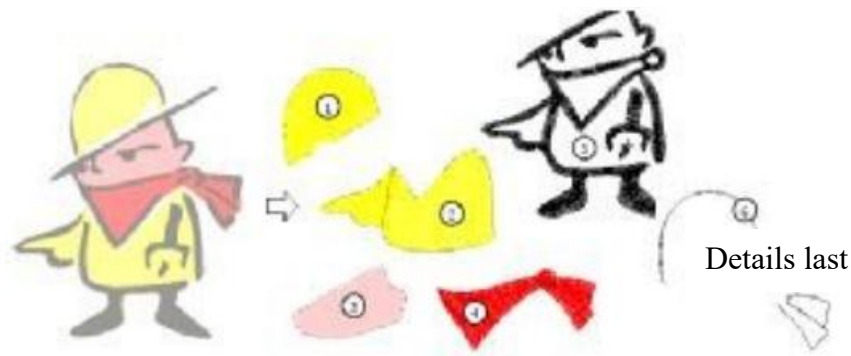
1.1.5. Design shapes

Design shapes need to be clearly defined to make them easy to embroider and to compensate for the clearance produced by fabric shrinkage/elongation, embroidery and the

effect caused by intensive stitch. The easiest shape for embroidering is having fixed width, smooth edges, but without sharp corners or small, prominent details.

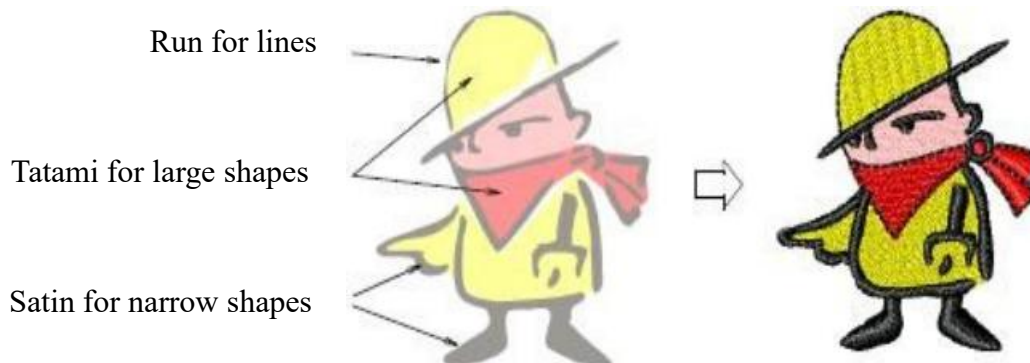
1.1.6. Design stitching sequence

The digitizing sequence defines the sequence of creating objects, or the stitching sequence. Of course you can change the sequence to improve the quality of embroidery—for example, to minimize color changes. Details should be stitched last.



1.1.7. Stitch types

You have to decide the stitch type of every design shape first. If you normally set stitch type, length, spacing and effects before digitizing each shape, this software can make you to change them at any time.



1.1.8. Design sizes

Decide the design size. If you want to digitize the background on-screen, you can import it into the design, and then scale it on-screen to meet the required size. However, it is best to scan the images in the right size before importing them into the software. Using electronic method to scale, rotate may cause them split into strange appearance.

1.2. Manual digitizing

Manual digitizing can make you to create designs from the basic shapes or embroidered objects. Different tools apply to create different shapes or design elements. Once you choose the proper tools, you can 'digitize' with the method of marking reference point along outlines.

1.2.1. Embroidery objects

Designs created by the soft are compose of embroidered 'objects', which all have their own unique set of properties, including shape, stitch setting and color. These properties are stored with each object together, and they can be modified at any time. The most important property of embroidery object is its stitch type. You can modify stitch in the object properties: for example, changing the stitch type. In addition, you also can edit stitch individually, but this only limited to accurate adjustment.

1.2.2. Generating stitches

With the software designs, stitches are automatically generated from design outlines and properties. You can either select to generate stitches as you digitize, or defined the outlines. If stitch setting or design changed, stitches are generated automatically again. This means that you can scale, transform and reshape designs, and without influence on stitch density or quality. No matter how much change has been done, the changed design has the same quality as the original one.

1.2.2.1. Properties

When start a new design, the software applies the default setting of the current properties. But you can create and use the object properties defined by yourself.

1.2.2.2. Input methods

You can use different "input methods" to input reference points depended on the shapes and stitching you need. The input method decides the embroidery stitches is outline, the part filled with parallel stitches, or the column filled with curved stitches along the shape. Basic tools include Manual Stitch, Automatic Run, Input A, Input B, Input C and Complex Fill. In addition, this software also provides some unique input tools.

1.2.2.3. Manual stitch

Use the "Manual Stitch" to create individual digitizing stitch. You can digitize individual "manual" stitch. With the digitizing of manual stitches, the individual embroidery object is formatted.

Note Manual stitch doesn't suit to scale or transform, because stitches can not to be counted automatically. It is time-saving to use manual stitch while you

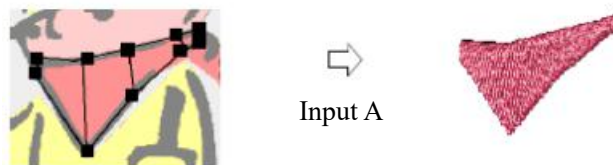
want to add some stitches to the finished design.

1.2.2.4. Automatic Run

Use "Automatic Run" to create run or triple-runs lines with digitizing. Run stitch places a row of Run stitches in a digitized line. Triple Run creates thicker lines by repeating each stitch for three times (or more).

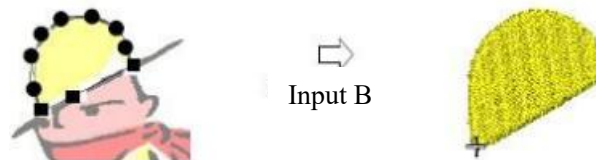
1.2.2.5. Input A

Use "Input C" to create digitizing columns with varying width and stitch angles. These digitizing reference points in pairs define the outline, and the line that connected the paired points defines the stitch angle.



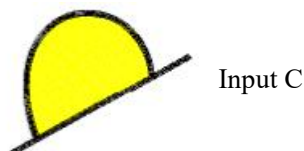
1.2.2.6. Input B

Use "Input B" to create different shapes digitized on both sides, especially one side must have more reference points than the other's. Stitches throughout the whole shape and rotate evenly.



1.2.2.7. Input C

Use "Input C" to create digitizing columns with fixed width; especially use it to digitize larger-shape columns and outlines. Digitize columns to create thick lines or outlines usually by combining Input C and Satin together.



1.2.2.8. Complex Fill

Use the "Complex Fill" to create digitizing columns with large and irregular shapes. Most of shapes can be digitized by this tool. Through digitizing the internal boundary of Complex Fill objects, you can create filled objects with holes. You can also use the existing boundaries in Complex Fill

objects to create a new one.



Complex Fill



1.2.3. Stitch types

The most important property of embroidery object is its stitch type. Different stitch types are applicable to different shapes. For the locked embroidery machine, there are three basic stitch types available: Run Stitch, Satin and Tatami. Other stitch types are their variations.



Run Stitched



Tatami Stitches



Satin Stitches

The stitch type you used for the object depends on the object's shape, size, and the effects you want to achieve. Use "Automatic Run" to digitize run stitch or triple-runs lines. Satin is well-suited to stitching narrow columns and shapes, where the length of each stitch forms the width of the column. Satin creates a glossy, high quality effect.



Triple Satin

Triple Satin stitches are often used in the folk embroidery designs which use thicker threads and imitate handmade method. Tatami stitch is suitable for irregular shapes with large fills so that they can get the appearance filled with stitches. With tatami fills, you can specify the offset of each row in order to create design formed by stitching points.

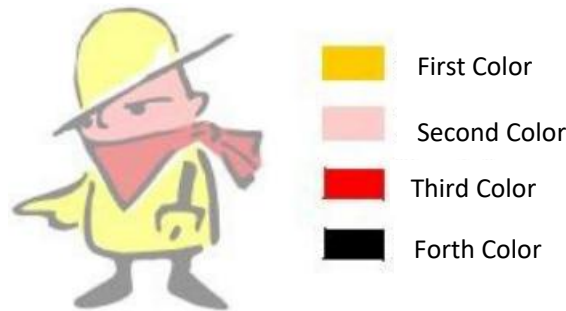
E stitch is used to produces long, narrow columns with a ‘comb ’ effect. Generally speaking, E stitches are usually more open than Satin or Zigzag stitches.



E stitch

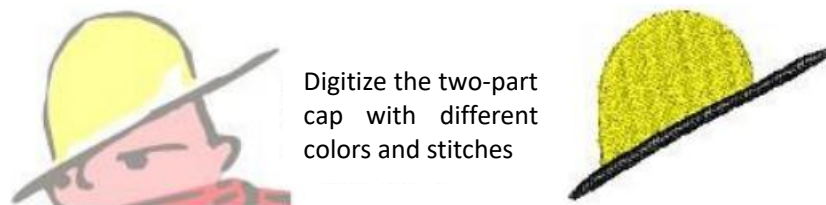
1.2.4. Thread color

You need to decide how many kinds of color are used in thread and the thread color sequence. When digitizing, you can select thread colors from color palette. The color scheme or colorway represents the actual thread colors in which a design will be stitched. While changing the color each time, please make the machine speed slow down, and then stop to trim thread. This will influence the production time and cost. If it is possible, simplify the design to reduce the times of color change. Put the same color object together in the embroidery sequence as possible as you can.

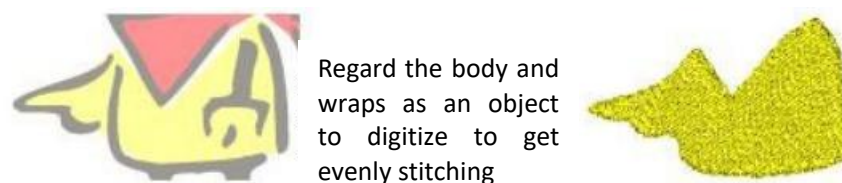


1.2.5. Digitizing irregular shapes

Digitize large and irregular shape by deviding them into several smaller and regular shapes. It is easy to use stitches with different color or stitch angle to fill these shapes.



If the stitch angles remain unchanged, you can digitize the objects separated drew on the artwork. This will save time, and ensure embroidery uniform and prevent the unwanted clearance.



1.2.5.1. Setting stitching sequence

When digitalize the shape of the design, you not only need to describe the shape but also provide machine with instruction for embroidery. The machine will stitch according to your stitching sequence. The stitching sequence will also influence the production speed and the number and length of connectors so that you need to plan the stitching sequence and stitch according to

the sequence. Design can have a few layers, but all of the designs should be started from the back one and move forward from layer to layer.



Digitizing object in the right way is more effective. You can resequence in any stage by cutting and pasting object according to different colors and objects. You can also combine objects and designs other through the way of copying, pasting, and inserting.

1.2.5.2. Connectors

Connectors connect the design objects. They may be Run stitch or Jump stitch. You can use automatic setting to generate connectors, trims and stop points, or use manual method to add them. For each time, while objects moving, scaling or transforming in any way, connectors would automatically adjust themselves.

In the same color layer, digitize the shape according to the sequence that has the shortest connecting stitches. Change entry and exit points to make the shortest connector. You can nest the object into the center of another to avoid generating long connecting line. “Nesting” can make you correctly create or insert objects in embroidery sequence.

If you often use automatic function, you can maximize the productivity and flexible of the software during design scaling and editing. For example, if you zoom in the design, the connecting line may be long enough to trigger to trim, tie-ins and tie-offs automatically.

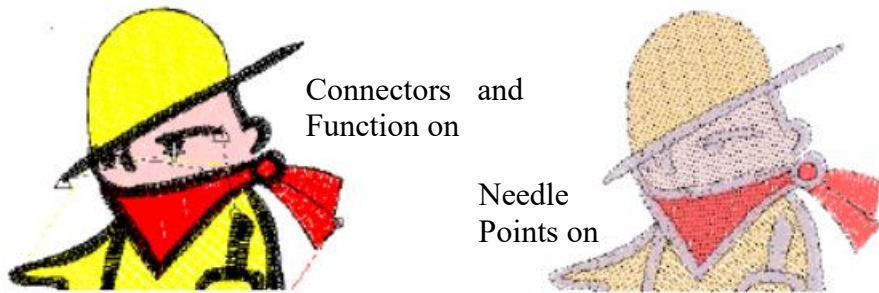


The dashed line is the Connectors

1.2.5.3. Viewing designs

You can zoom in on an area to see more detail, view the design at actual size. When implement the detailed work, you can pan the design to move it across the design window instead of scrolling, and quickly change between one view and the last. Display or hide various design elements with the available display settings. You can display or hide machine function Code,

needle penetration points, connectors, stitches and outlines.



1.3. Improving embroidering quality of designs

When you have digitized the design, you can choose any filled object and add one or more artistic stitch effect to create filled stitches of texture and pattern.

Before digitizing, you need to consider the design fabric and shape. You need pull compensation to make correct embroidery shape, or stabilize the fabric with the underlay stitch. Use automatic underlay, pull compensation, short stitch, and smart corner to position stitches smoothly, evenly and eliminate the clearance in your designs.

1.3.1. Stabilizing fabric or preventing embroidered line from sinking into fabrics

Use underlay to embroider before using filled stitch, to stabilize the fabric or prevent embroidered line from sinking into fabrics. The best type of underlay is determined by the size of fabrics and shapes, and the filled stitch you use. Larger areas and stretchy fabrics such as knits and pique generally need more underlays than smaller areas like drill and firm fabrics such as leather.



With underlay



Without underlay

1.3.2. Compensating for fabric stretch

Embroidery stitches tend to pull fabric inwards where the needle penetrates. This can cause fabric to pucker, and gaps to appear in the embroidery. Automatic pull compensation, counters the pull effect by ‘over stitching’ outlines of filled shapes on the sides where the needle penetrates. So automatic pull compensation can offset this negative effect caused by pucker and clearance.

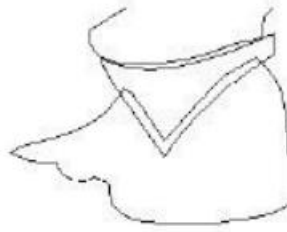


Compensate off



Compensate on

Experienced digitizers can manually compensate for pull by overlapping objects as they digitize.



Digitize the scarf overlapped the face and coat

1.3.3. Reducing stitch bunching in curves or corners

Stitch shortening reduces the punching of stitches. The outside edge in sharp may cause bunching along the inside edge. This may cause thread breakage when stitching out. The longer the stitches mean the worse the problem.



Short Stitch On

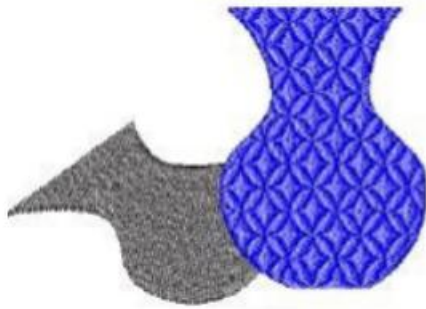


Short Stitch Off

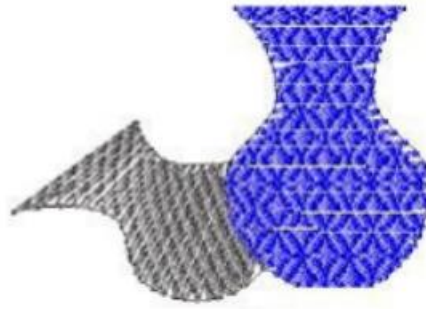
Use the stitch shortening in curved object to reduce the stitch density along the inside edge of object.

1.3.4. Adjusting stitch density

For each filledstitch, you can adjust stitch density by setting stitch spacing. Alternatively, you can reduce the overall stitch counts in designs by setting stitch spacing while you use different fabrics and threads, or want to make production cheaper.



100%: 5195 Stitches



20%: 987 Stitches

1.3.5. Preserving long stitches

Use Auto Jumps to split long stitches into a series of Jumps, you can keep long stitches in objects. If the stitch is beyond the maximum frame movement and you deselect the Auto Jump, then the stitch will break into smaller stitch. This will affect the appearance of the embroidery products, especially the products with Satin fills.

Auto Jump
OffAuto Jump
On

1.4. Specialized digitizing techniques

Possessing with special input tools, such as digital circle, start, annulus, and ad hoc approach for deepening the outline, this software provides specialized digitizing techniques, so as to save time and produce special effect and machine function. If your machine supports sequin embroidery, you can also digitize these effects via this software.

1.4.1. Circle, Star, and Annulus

ES design software provides you time-saving and digitizing circle, start, annulus, and special input methods. To get smaller proportion in circle effect, you can use annulus and circle tools or star tool to digitize the circle. You can use different filling methods to digitize the annulus. Contour stitch is mostly suitable for annulus, for it embroiders by encircling the annulus in spiral way. Please refer to the relevant details in **Digitizing Circle, Star and Annulus**.



1.4.2. Deepen the Outline

This function can be realized by using return and repeat. Return is to embroider along the opposite direction, and to widen the outline of running stitches, so that users do not need to create the needless connecting stitching mark. Repeat is to repeat embroidering the original stitching direction, and its typical use is to seal the shape. Please refer to the relevant details in **Deepen the Outline**.

1.4.3. Sequin Embroidery

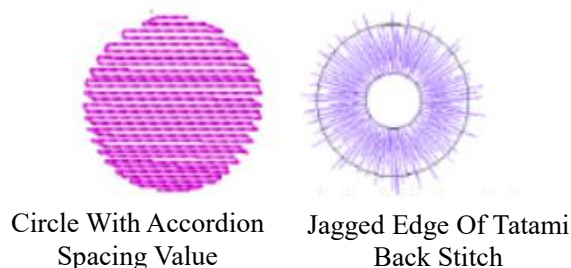
Some embroidery machines are equipped with sequin distributor which will help placing sequins on the clothing in embroidery process. Please refer to the relevant details in **Digitizing sequin embroidery**.

1.5. Artistic stitch effects and textured fills

This software provides a special tool to create texture effects with needle penetration points.

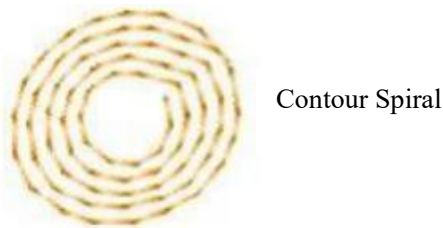
1.5.1. Jagged edges and accordion spacing values

You can create jagged edge effects or accordion spacing values to get open stitches or shading effects. Using jagged edge, you can create rough edge, shading effect on the object or imitate fur or other fluffy, etc in designs.



1.5.2. Contoured stitch

‘Contour’ is a curved fill stitch type—stitches follow the contours of a shape, creating a curved, light and shade effect. There are two types—Standard and Spiral.



1.5.3. Tatami offset

The Tatami offset default settings are designed to create a needle penetration pattern or texture in the stitched embroidery that is uniformly flat and smooth. The texture is like a woven Tatami mat without obvious split lines. By manipulating offset fractions, you can create textured fills where the stitch penetrations are more clearly visible.



Tatami Offset



Partition Lines



Random Factor

1.5.4. Flexi split and user defined split stitches

Flexi Split is a decorative stitch where one or more lines of a program split pattern are used in the object fill. The pattern follows the stitch angle and may be scaled to fit the width of the object. User-Defined Split lets you add detail to filled objects by digitizing lines of needle penetrations called 'split lines'.



Flexi Split



User Defined Split

1.5.5. Motif runs and fills

You can use motifs such as hearts, leaves or border patterns to create ornamental runs and textured fills. Create your own motifs or use the ones provided with the software. Motifs can be scaled, rotated and mirrored in the same way as other objects.



1.6. Modifying designs

When have digitized designs, you can modify it as a whole, edit an individual object within a design, even edit an individual stitch or stitch blocks and machine functions.

1.6.1. Editing designs

Through copying and duplicating the existing object, the software allows you to add the object to design quickly. It also combines your design together with the method of inserting a file to the other.

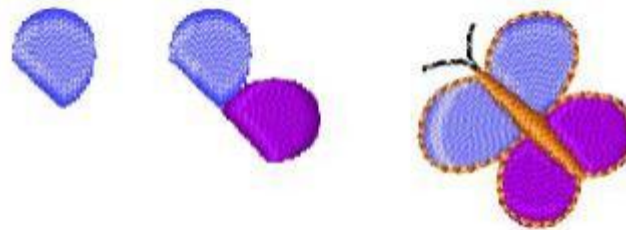


Stitching sequences usually according to the sequence of design digitizing. But you can use different method to change the sequence. Using colorway can preview designs on different fabrics or with different colors, or define multiple color schemes or switch schemes in each other. For each colorway you defined, you can use commercial thread to defined color, or define your own color.



1.6.2. Editing objects

You can change the position, size and orientation of objects in a design by moving, scaling and transforming them. You can align selected objects in a design to the left, right, top, bottom or center of a specific object and set spacing to make the selected object has even spacing. Group objects together and apply universal changes, or lock them to avoid unintentional modification.



This software can make you to reshape objects, transform object types, adjust stitch angles (including setting multiple stitch angles) and change the entry or exit points with control points.



1.6.3. Editing stitches

You can use editing tool to select individual or series of stitches and move individual or multiple stitches. You can insert stitches to filled gaps and delete individual stitch. If an object's stitches are regenerated for any reason, all inserted stitches will be lost. Where possible, edit the object properties rather than individual stitches. A very short stitch will damage the fabric, break stitching needles or threads. The software can automatically delete all short stitches before embroidering the design. You can use the Stitch List to position and select stitches for editing. When you select a stitch in the list, it is simultaneously selected in your design so that it can be edited. Using the list, you also can edit individual stitch coordinate (namely the location of stitch).

1.7. Embroidery lettering

You can quickly and easily add special characters and symbols, and then modify them on-screen directly. You can apply formatting just like a word processor, including italics, bolding, and right/left justification.



Apply horizontal, vertical, and curved baselines to your word object. You can reshape lettering by using lettering envelopes.



Use the Input Names feature to create designs with multiple names. For example, use the same logo with different names for sports teams or corporate uniforms without having to create multiple copies of the same design.



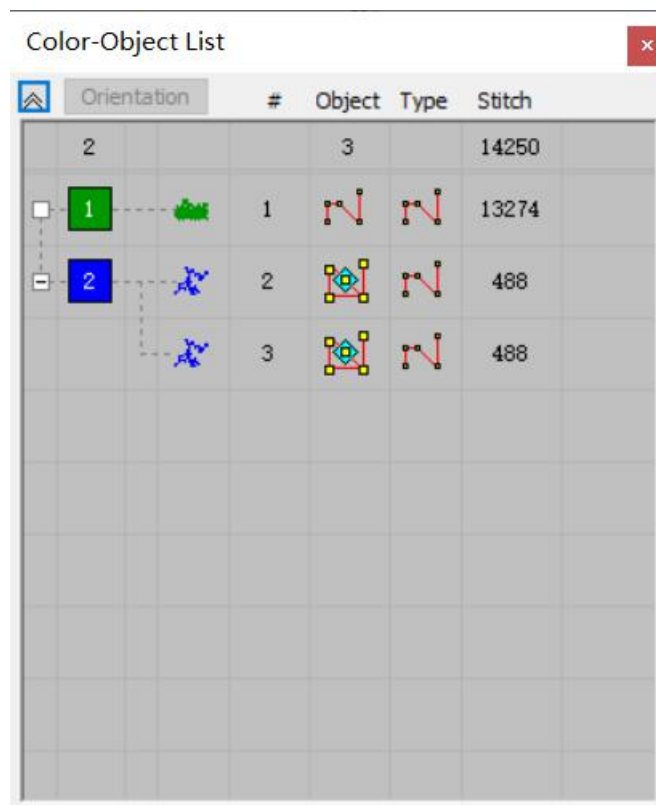
You can create user-defined group names composed by words, numbers and symbols; or create new group names through transforming the TrueType words.

1.8. Measuring designs

You can measure the stitching sequence of design in the software according to stitch, color or object running. You can also through slowly redisplay on-screen to measure stitching sequence. As you measuring stitching sequence and simulating embroidery process, when "embroidering", stitch color changes from black to the configuration color.

Object List is a continuous list, which provides an easy way to select objects and access their properties in the design. You can use the list to combine or cancel the combination, lock or unlock, display and hidden objects. It still can be used to cut, copy and paste, as well as resequence the selected color blocks.

The Object List provides the object list sequenced in the color combination. The continuous objects in the same color constitute an individual color block. You can use Color List the same as Object List.



1.9. Outputting designs

After creating designs, you can output embroidery designs in a variety of ways—saving to embroidery disk and punching paper tape, or sending designs to a cutter, or importing directly to machine for stitching.

Outputting to machine

Different embroidery machines speak different languages. They have their own control commands for the various machine functions. Before you can stitch a design, it must be in a format which can be understood by the embroidery machine. Once finishing the design, you can output it to the supporting machine without changing the original format. When you select a machine format, the software translates the commands used in digitized period into machine functions that can be understood by that machine. If the selected machine format doesn't support the machine function specified in the design (automatic or manual insert/in functions), this function will be ignored. You can change design formats at any time, so that they can be used in other machine, or be outputted to punching paper tapes or embroidery disks.

Storing designs on embroidery disks

Designs are generally stored in default format—RNP format. This format contains all the necessary information about stitching designs and modifying designs later. Save design records, their file names, locations and formats; and update the design with your changes. RNP format file automatically compresses, so as to reduce memory spacing to store a large file. When you open the file, the document automatically decompresses.

Design formats

Embroidery designs are saved in one of two formats—'outline' format or 'stitch' format. 'Outline' or 'compression' file is a senior format which contains object outlines, object properties and stitch data. When you open the outline files, the software apply the corresponding stitch type, input method and effects automatically. Outline files can scale, transform and reshape which influence stitch density or quality. 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 for stitching or outputting to embroidery disk or paper tape. The RNP format in this software combines the advantages of outline files and stitch file. It contains all the design information s including object outlines and properties, actual stitches, machine functions, thread colors, pattern icons and user comments.

2. Basic Procedures

To start using Raynen Embroidery Design Software, you need to understand a few basic procedures such as starting, opening, creating and saving designs. Other basic procedures include displaying/hiding grid, displaying and using toolbar, switching to TrueView (TM), and accessing popup menu. You can scale and move design, display/hide object or additional tools such as stitch points, outlines and stitches.



Security Code enables access to special features within the software. You also need to be able to identify your system's access Code, and enter new Code for upgrades. This chapter describes how to start Raynen Embroidery Design Software, how to open designs, start new ones and use the basic commands. It also explains how to turn on and off the grid and measure distances on-screen. You will also find out how to select machine formats for different output as well as how to save designs. The chapter also explains the procedure for entering security code.

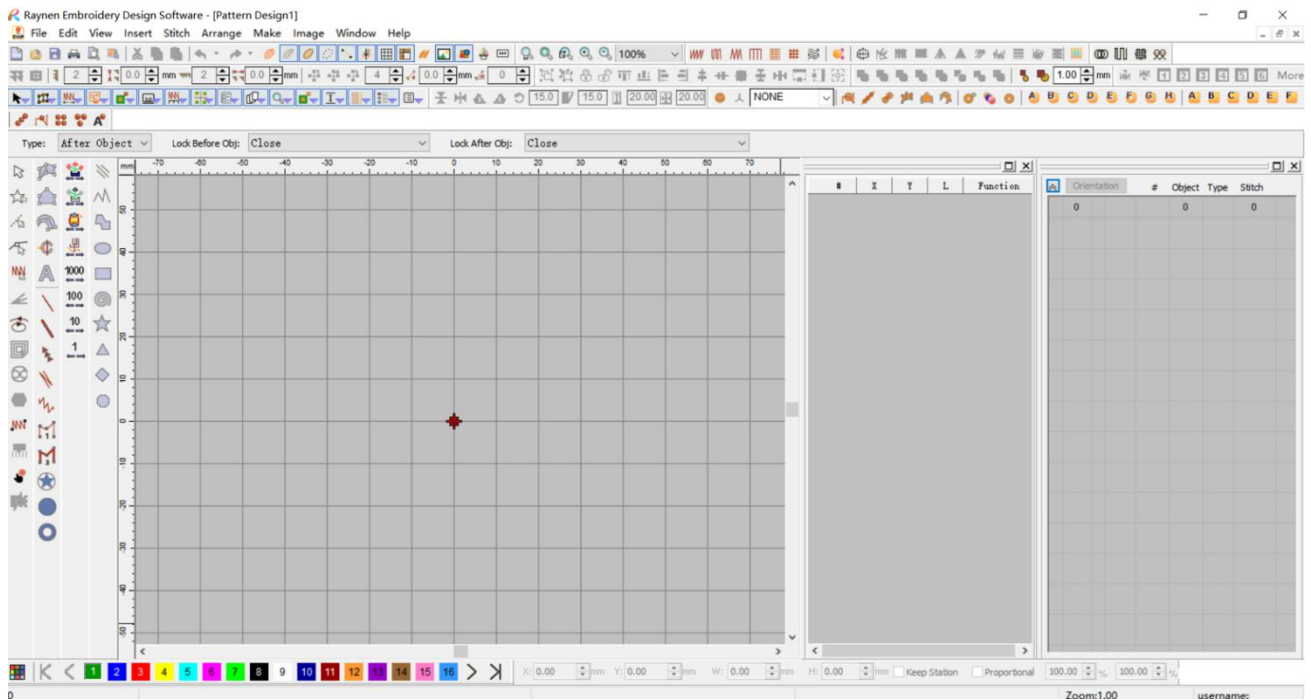
2.1. How to start Raynen Embroidery Design Software



(1) Double-click the software shortcut icon on the Windows desktop.

(2) Alternatively, select Start Menu > Program > Raynen Embroidery Design Software. The software opens a new, blank design (Design1).

(3) Customize the design window by displaying or hiding grid, changing grid dimensions, and displaying/ hiding toolbars. See Displaying the Grid and Displaying or Hiding Toolbars for details.



2.2. Using commands

Once you start the software, you can use commands or tools, and dialogs to finish your tasks. You can select commands in Raynen Embroidery Design Software in the same way as other Windows applications — from menus, toolbars, or popup menus. Keyboard shortcuts are also available for the most frequently used commands. See Quick Reference of Keyboard Shortcuts for details.

2.2.1. Using popup menus

Right-clicking a selected object can open the popup menu which contains the frequently used commands.

To use popup menus:

- (1) Right-click a selected object. The popup menu opens.
- (2) Select a command from the menu.

Object Property	A
Swap Head And Tail	
Select All	Ctrl + A
Deselect All	X
Make Properties Current	
Apply Current Properties	
Choose Property Style	
Apply Preference Property Style	>
Make Property Style	
Cut	Ctrl + X
Paste	>
Duplicate	Ctrl + D
Delete	Delete
Separate	
Transform	>
Reshape	>
Shaping	>
Format Convert	>
Copying Column Edges	>
Object to sequin conversion...	
Batch object to chip conversion...	
Swap column	

2.2.2. Undoing and redoing commands



: Use Undo icon (Standard toolbar) to undo an action and Undo Arrow to undo a range of action.



: Use Redo icon (Standard toolbar) to Redo an action and Redo Arrow to redo a range of action.

You can undo the effects of most commands. If you change your mind, you can redo them again. Raynen Embroidery Design Software can remember the last several commands.

To undo and redo commands:

- (1) To undo a previous command, simply click the *Undo* icon.

When the software cannot remember more commands, Undo is dimmed.

- (2) Click *Redo* to re-apply an “undone” command.

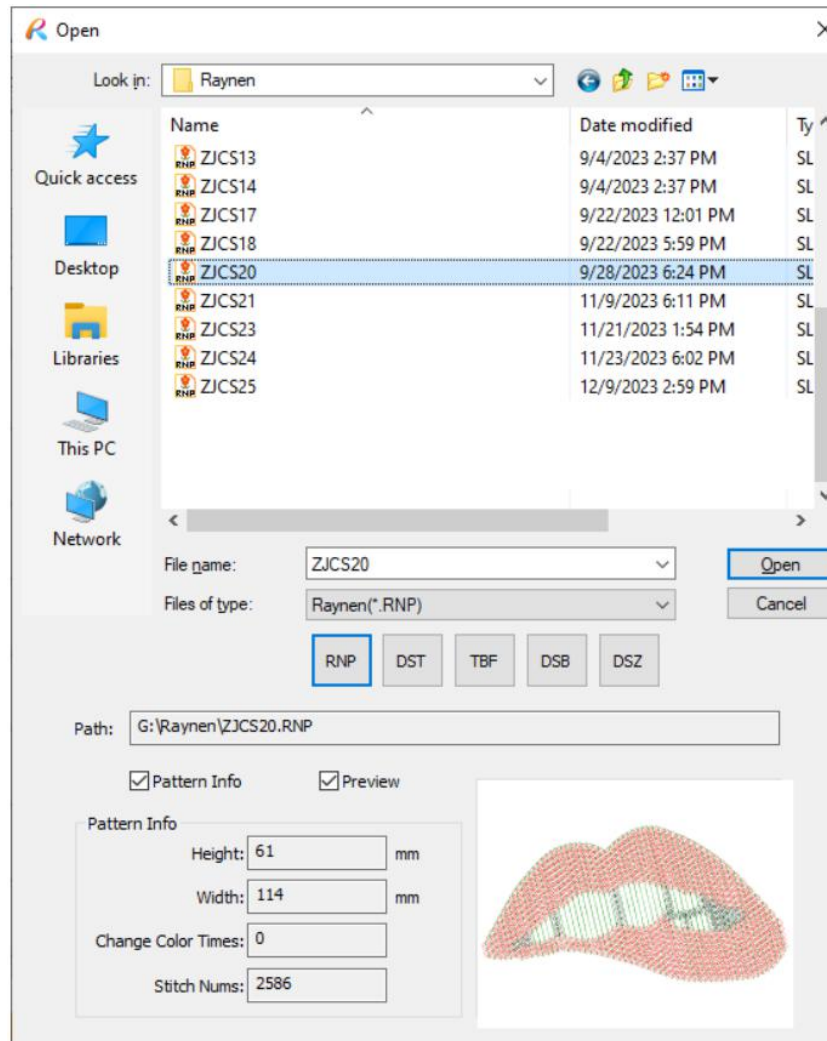
2.2.3. Opening designs

Raynen Embroidery Design Software opens a comprehensive range of both ‘outline ’ and ‘stitch ’ files. You can also open designs from proprietary embroidery disks, or view details of design formats, embroidery disk and paper tape.

Warning: You cannot open RNP files created with a later version of the software than the one you are currently running.

To open a design:

- (1) Select *File > Open*. The Open dialog opens.
- (2) Select a folder from the Look In list.
- (3) If the design is not in RNP format, select a file type from the Files of Type list.
- (4) Select a design or designs.
 - A. To select a range of items, hold down **Shift** then select.
 - B. To select multiple items, hold down **Ctrl** as you select.
- (5) Select the Preview checkbox to preview the design (for supported file formats) together with the design data. This includes stitch and color numbers, design height and width.
- (6) Click to open.



2.3. Creating new designs

When you start Raynen Embroidery Design Software, a new file (Design 1) is automatically created, ready for you to start digitizing. By default, Design 1 is based on the NORMAL template. Templates contain pre-set styles, default settings or objects, to make digitizing quicker and easier. When you create a file based on a template, the template's values are copied to the new design. You can create additional designs based on the NORMAL template, or select a different template. New designs are given a name, and numbered sequentially—e.g. Design 1, Design 2, and so on.

2.3.1. Creating new designs with the NORMAL template

You can use NORMAL template to create new designs.

To create a new design with the NORMAL template:

- (1) Select *File > New*.
- (2) A blank design opens in the design window.

Creating new designs with selected templates

You can select a custom template to base your new design on.

To create a new design with a selected template

Select *File > New*. A blank design opens in the design window.

2.3.2. Generating stitches

As for Raynen Embroidery Design Software, stitches are automatically generated from design outlines and properties. This means that you can scale, transform and reshape smart embroidery designs without influence on stitch density or quality. You can either generate stitches as you digitize, or wait until you have defined the outlines. With Generate Stitches on, stitches are calculated for new objects whenever you press Enter. They are also updated whenever you scale, transform or move the object. You can digitize objects, select objects and remove all generated stitches with Generate Stitches off. Concerned about these objects, only object outlines appear.

To generate stitches

(1) To generate stitches for new or selected objects, click the Generate Stitches icon. If any objects are selected, stitches are generated for them automatically.

(2) To remove stitches, or digitize without generating stitches, deselect Generate Stitches icon.

2.3.3. Displaying grids

Use grid lines to help accurately size or align embroidery objects. You can display or hide the grid at any time.

To display the grid

Tip You can change grid spacing, select a reference point and turn Grid on or off in the Options dialog.

(1) Select *View > Options > Grid > Display Grid*. When choosing displaying the grid, the grid will appear.

(2) Select *View > Options > Grid > Display Grid* and then select the Display Grid option again.

2.4. Measuring distances on-screen

Using the Measure command can measure the distance between two points on screen. Measurements are displayed in millimeters or inches, depending on the option selected in the Windows Control Panel. See your Windows documentations for more information.

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 on-screen

- (1) Select *View > Measure*.
- (2) Click the start point.
- (3) Move the pointer to the endpoint and hold the mouse still.

The following information displays in the Status bar:

- A. Position coordinates of the endpoint (X=, Y=)
 - B. Length of the measured line (L=)
 - C. Angle of the line relative to the horizontal (A=)
- (4) Press Esc to finish.

2.5. Saving designs

This software lets you save designs in the previous RNP and 'outline' formats.

Save a design record, 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.

To save a design

- (1) Select *File > Save*.

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

Tip To save changes to an existing file but preserve the original, use Save As.

- (2) Select the folder where you want to save the design from the Save list.
- (3) Enter a name for the design in the File name field.
- (4) Select a file format from the Save as type list.

Warning If a design feature is not available in the file type you select, it will be converted—e.g. Flexi Split stitching may be changed to Satin Tatami.

- (5) Click Save.

2.6. Connecting to Raynen website

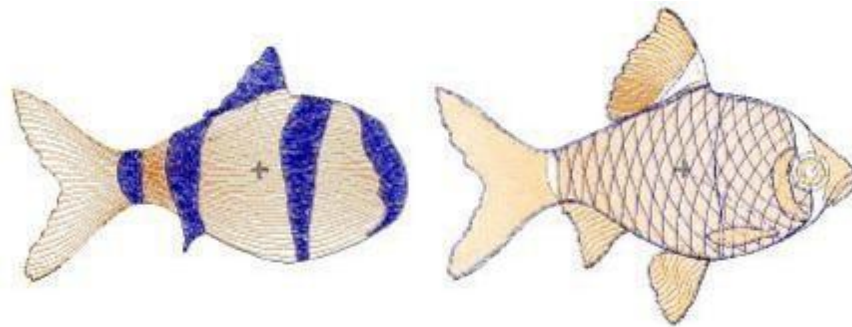
Select *Help > Raynen Homepage*.

You can directly connect to Raynen homepage through the address :<http://www.raynen.cn>.

3. Viewing Designs

Raynen Embroidery Design Software provides many viewing modes to make it easier to work with your designs. You can zoom in on an area to see more detail, view the design at actual size. When doing the detail work, you can pan the design to move it across the design window instead of scrolling, and quickly change between one view and the last.

Display or hide various design elements with the available display settings. You can display or hide outlines, needle penetration points, connectors, machine function symbols and the stitches themselves.



In Raynen Embroidery Design Software, you can preview a design in different colors on different fabrics in the same way by selecting from among any number of pre-defined colorways.

Raynen Embroidery Design Software can provide the information of design in different ways and formats. Even before opening the software or a design, you can check the software version number and other design information for RNPfiles directly from Windows Explorer. The production worksheet also provides design preview and essential production information, including the size of the design, color sequence and any special instructions.

This chapter explains the design viewing modes available in Raynen Embroidery Design Software as well as the various design viewing settings. It also describes how to view designs by colorway. Obtain design information are explained, as well as how to define design information.

3.1. Design viewing modes

Raynen Embroidery Design Software provides many viewing modes to make it easier to work with your design. Zoom in on an area to see more detail, view the design at actual size. You can pan across the design instead of scrolling, and quickly change between one view and the last.

3.1.1. Zooming in and out

Select Zoom In 2X (See menu) to display a design at twice its current size. Select Zoom Out 2X (See menu) to display a design at half its current size. Click Zoom 1:1 (See menu) to display a design at actual size. Select a Zoom Factor (See menu) to display the design at a particular scale. Click Zoom Box (See menu) to zoom in on a section of a design. Magnify your view of the design by zooming in on individual stitches or details, or zoom out individual stitch or details in the

window to display more of the design.

To zoom in and out

- (1) To display a design at twice its current size, click *View > Zoom In 2X*.
- (2) To display a design at half its current size, click *View > Zoom Out 2X*.
- (3) To zoom in on a section of a design, click *View > Zoom Box* and drag a bounding box around the zoom area.

3.1.2. Recovering the previous picture and redisplaying the design

You can switch quickly between the current selected picture and the previous picture. After an operation, for example—editing thread, you may need to refresh the screen to get a clear picture.

To recover the previous picture and redisplay the design

- (1) Back to the previous picture, select *View > Previous View*
- (2) In order to redisplay screen, select *View > Redisplay*.

3.2. Design viewing setting

You can display or hide design elements with a variety of display settings. You also can display or hide object outlines, needle penetration points, connectors, machine function symbols and the stitches themselves as well as display or hide selected colors.

3.2.1. Viewing needle points, connectors and machine functions



: Click Show Needle Points (Standard toolbar) to show or hide the needle points in a design.



: Click Show Connectors (Standard toolbar) to show or hide the connectors.

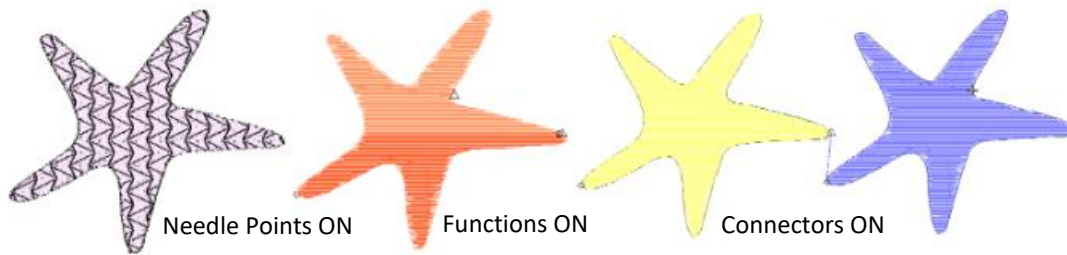


: Click Show Functions (Standard toolbar) to show or hide the function.

You can display or hide the design elements such as stitches, connectors and machine function symbols. For example, using viewing needle penetration points to edit stitches, selecting machine functions to check color changes or trims, selecting connectors to position entry and exit points.

To view needle points, connectors and machine functions:

- (1) Click *Display Needle Points* icon to display or hide the needle points.



(2) Click *Display Connectors* icon to display or hide connectors.

(3) Click *Display Functions* icon to display or hide machine functions.

3.2.2. Viewing design objects by color

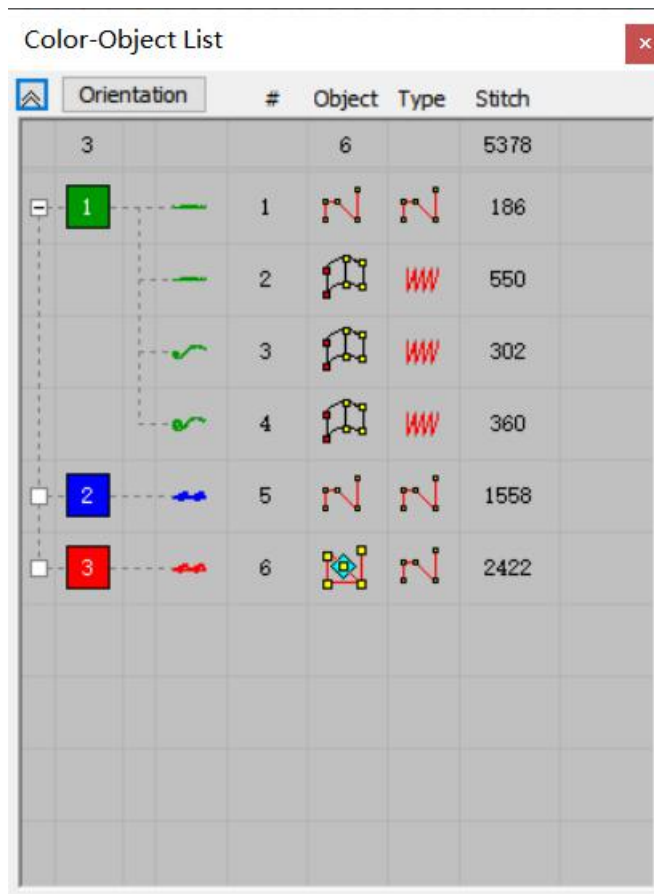
To help you isolate individual design elements for checking or manipulation, the View by Color function lets you view objects by color. This is particularly useful when you are resequencing objects by color.

Tip The Object List provides another way to view design objects.

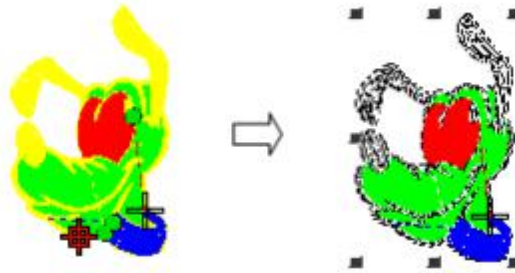
To view design objects by color:

- (1) Create or open a design.
- (2) Select View > Object List.

The Select by Color dialog opens.



- (3) Select the colors you want to view.
 - A. To select a range of items, left-click.
 - B. To select multiple items, left-click and hold down Ctrl at the same time as you select.



Note The View by Color command will not work with grouped objects.

3.2.3. Bill of Materials

Bill of Materials can calculate the usage of sequins, beads, rhinestone, embroidery thread, bottom thread, and other materials. Convenient material management and sample quotation.

To bill of materials

- (1) Select *File > Bill of Materials*. View the usage of various materials in the window.

Bill of Materials

Signal Scheme: Three Bead and Two Sequin Setting Materials Scheme: Three Bead and Two sequin Setting

	Signal	Materi...	Material ...	Quantity/...	Unit	Shape/...	Material specifications
1	SequinA	S5634	Sequin	185			Red 3mm
2	SequinB	S3285	Sequin	40			Green 3mm
3	BeadA	B8724	Bead	140			Yellow 2mm
4	BeadC	B6425	Bead	2			White Round Bead 4mm
5	Yarn1	Y1575	Yarn	2614.60	mm		
6	Botto...		Bottomline	2614.60	mm		

Bottom Line Factor: 1.00 Recalculate Export excel

- (2) Signal scheme: Click “Signal scheme”, display settings interface.

Set whether stacking sequins is a single or multiple Sequin

Tip In DST Sequin A usually uses ABC signal, Sequin B usually uses ABD signal.

Signal Scheme Setting

Signal Scheme: Three Bead and Two Sequin

Buttons: Make, Delete, Import, Export Cur, Export All

Sequin	Overlap Sequin
SequinAB	☒
SequinAC	☒
SequinAD	☒
SequinABC	☐
SequinABD	☐
SequinACD	☒
SequinABCD	☒
SequinBC	☒
SequinBD	☒
SequinBCD	☐
SequinCD	☒

Buttons: Save and apply, Cancel

- A. Select the saved scheme from the drop down menu.
 - B. Make: Save the current settings as a new scheme.
 - C. Delete: Delete the currently selected scheme.
 - D. Import: Import Scheme File *. sig.
 - E. Export Cur: Export current signal scheme (*. sig).
 - F. Export All: Export all signal scheme (*. sig).
 - G. Save and apply: Save the modifications to the selected scheme and apply them to the BOM statistics.
 - H. Cancel: Cancel modification and scheme selection operations
- (3) Material Scheme: Click “Material Scheme”, display settings interface.
- Set information such as number, name, color, size, etc. for each material.

Material Scheme

Material: Three Bead and Two sequin Make Scheme Delete Scheme Import Scheme Export Current Export All

	Signal	Material...	Material name	Unit	Specification
1	SequinA	S5634	Sequin		Red 3mm
2	SequinB	S3285	Sequin		Green 3mm
3	BeadA	B8724	Bead		Yellow 2mm
4	BeadC	B6425	Bead		White Round Bead 4mm
5	Yarn1	Y1575	Yarn	mm	
6	Bottom...		Bottomline	mm	
7	SequinC				
8	SequinD				
9	SequinE				
10	SequinF				
11	SequinG				
12	SequinH				
13	Signal AB				
14	Signal AC				

Save and apply Cancel

- A. Select the saved scheme from the drop down menu.
- B. Make scheme: Save the current settings as a new scheme.
- C. Delete scheme: Delete the currently selected scheme.
- D. Import scheme: Import Scheme File *. mfcg.
- E. Export Cur: Export current signal scheme *.mfcg.
- F. Export All: Export all signal scheme *.mfcg.
- I. Save and apply: Save the modifications to the selected scheme and apply them to the BOM statistics.
- G. Cancel: Cancel modification and scheme selection operations

(4) Bottom Line Factor: Ratio coefficient between bottom line and embroidery thread, Used to calculate the amount of bottom line usage.

(5) Export Excel: Export the current bill of materials information to an Excel file format, which can be modified.

3.2.4. Previewing production worksheets

The production worksheet is the link between the designer and the embroidery machine operator. It contains a design preview and essential production information, including the size of the design, color sequence and any special instructions.

To preview a production worksheet

- (1) Select *File > Print Preview*. The production worksheet displays in a preview window.
- (2) Adjust the view as required:
 - A. To print the design, click **Print**.
 - B. To close the production worksheet preview, click **Close**.

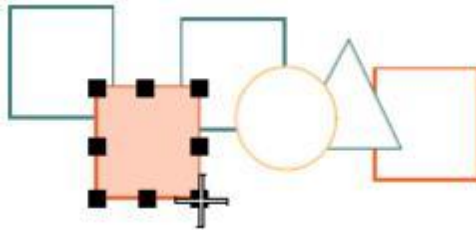
Tip Zoom in to read the production information or view the design preview more closely.
Large designs maybe placed over a number of pages.

- (3) Click icon , the Bill of Materials will be opened.

Embroider SoftWare technics list		Date: 2024-3-1												
Design Name: 01-06K	Designer: Raynen	Design Department: Raynen Devel												
		Machine: Raynen												
		Change Color Num: 2												
		Stop Num: 0												
		Emb line(m): 43.89												
		Under line(m): 43.89												
		Stitch Num: 15087												
		Color Num: 3												
		OrgPos: (0.00, 0.00)												
		End Pos: (145.70, 37.50)												
		Size: 2045.75 * 4167.70												
Sequin Num: 779														
A3:779														
Bead Num: 0														
Color Change Order: <table border="1"> <thead> <tr> <th>#</th> <th>Color</th> <th>No.</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td> Green</td> <td>1</td> </tr> <tr> <td>2.</td> <td> Blue</td> <td>2</td> </tr> <tr> <td>3.</td> <td> Red</td> <td>3</td> </tr> </tbody> </table>			#	Color	No.	1.	 Green	1	2.	 Blue	2	3.	 Red	3
#	Color	No.												
1.	 Green	1												
2.	 Blue	2												
3.	 Red	3												
Sequin Num: 779 A3:779 Bead Num: 0														
Company: FUJIAN RAYNEN TECHNOLOGY CO. LTD Address: Building 26, Area C of Fuzhou Software Park, No.89 Tongpan Road, Fuzhou, Fu Telephone: 400-0898-188 Website: www.raynen.cn PAGE-1														

4. Checking Designs and Selecting Objects

When working with embroidery designs, you need to understand the stitching sequence. You can check a design's stitching sequence in Raynen Embroidery Design Software by 'traveling' through it stitch by stitch. You can also check the sequence by slowly redrawing the design on-screen. Raynen Embroidery Design Software provides different methods to choose objects to constitute the design. You can choose all the objects as a whole to modify the design or select individual or more objects to make accurate modify.



This chapter describes how to check the design by travelling the design and also describes how to use the selection tool and keyboard to select objects. How to select objects while operating in the design and use the object list to select objects both be explained in this chapter. You can also know how to choose the object of the specified color from this chapter.

4.1. Checking stitching sequences

When you deal with designs, you must know the embroidery sequence. Traveling by the stitch, section, function or objects in designs, you can check embroidery sequence. You can also slowly redraw the sequence on screen to check the embroidery sequence. Raynen Embroidery Design Software can simulate the embroidery process. While "embroidering", stitches gradually become the matched color from black.

4.1.1. Traveling by stitches



: Click Travel 1 Stitch (Travel toolbar) to travel backwards 1 stitch at a time. Right-click Travel 1 Stitch to travel forwards 1 stitch at a time.



: Click Travel 10 Stitches (Travel toolbar) to travel backwards 10 stitches at a time. Right-click Travel 10 Stitches to travel forwards 10 stitch at a time.



: Click Travel 100 Stitches (Travel toolbar) to travel backwards 100 stitches at a time. Right-click Travel 10 Stitches to travel forwards 100 stitch at a time.

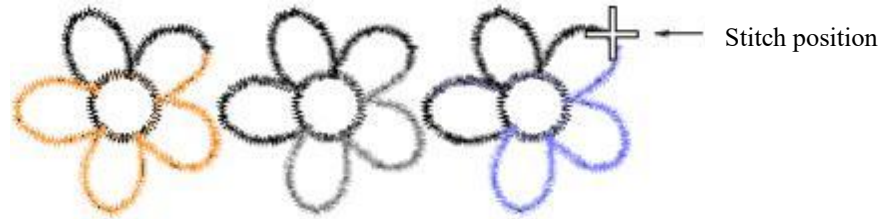


: Click Travel 1000 Stitches (Travel toolbar) to travel backwards 1000 stitches at a time. Right-click Travel 10 Stitches to travel forwards 10 stitch at a time.

You can use stitch operation tools or shortcut key to make design travel one or more stitches at

one time.

Note The current embroidery needle position use a big white cross or "needle mark" to display whose original location is in the end of the design. When the stitch travelling, stitch position tab also move correspondingly. The current stitch appears in the status bar.



To travel by stitches

- (1) Click the travel tool you require to travel backwards through the stitching sequence by 1, 10, 100, or 1000 stitches.
- (2) Right-click the required tool to travel forwards through the stitching sequence.



Tip Slow Redraw lets you view the stitching and color sequence of a design in slow motion.

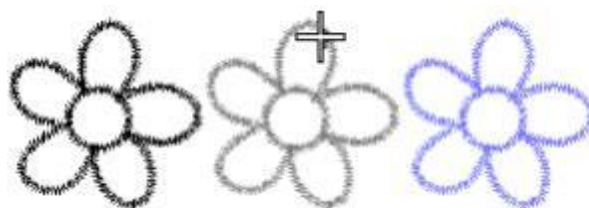
To travel by object

- (1) To travel to the previous object, click the Travel by One Object icon.
- (2) To travel to the next object, right-click the Travel by One Object icon.

To travel by color

Use the travel tool or keyboard shortcut to travel through the design by color. This is useful if you need to locate a specific color change in order to insert an object or delete it from the stitching sequence.

Note When you travel by color, the system looks for the next or previous color change function. Both automatically and manually inserted color change functions are recognized.



4.1.2. Redrawing the stitching sequence slowly

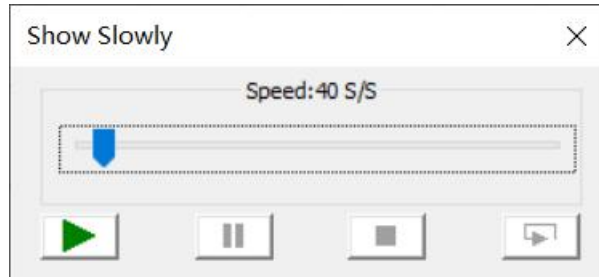
You can use Slow Redraw to view the stitching and color sequence of a design in slow motion.

Note You can change the stitches color before embroidered.

To redraw the stitching sequence slowly

- (1) Select *View > Slow Show*.

The Slow Show dialog opens.



- (2) Click **Start** . Redraw the design on screen according to the stitching sequence.

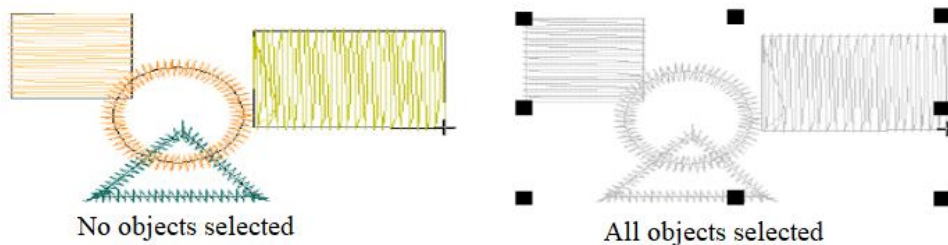
- (3) Click **Cancel**  to stop this operation.

4.1.3. Selecting all objects in a design

Select all objects to apply changes to a whole design.

To select all objects in a design

- (1) Select *Edit > Select All* or press **Ctrl+A**. Selection handles appear around the entire design.



- (2) To deselect, select *Edit > Deselect All*, press **Esc**.

4.2. Selecting objects with Select Object

Select Object tool provides various means for selecting objects including point and click, and polygon selection.

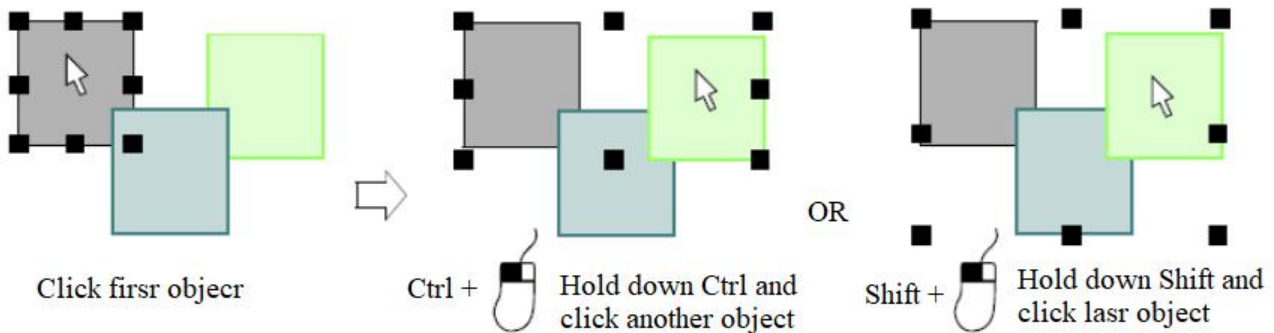
4.3. Selecting objects by point & click

The simplest way to select objects is by pointing and clicking with the mouse with the Select Object tool activated. With Shift and Ctrl keys, you can select multiple objects.

To select objects by point & click

(1) Click Select Object icon.

(2) Click the object you want to select. Selection handles appear around it. You can move the cursor anywhere within these extents to click-and-drag the object.



(3) To select a range of items, hold down Shift as you click.

Tip In order to select the objects behind others, amplify and click the outline.

4.4. Selecting objects with Polygon Select/Line Select

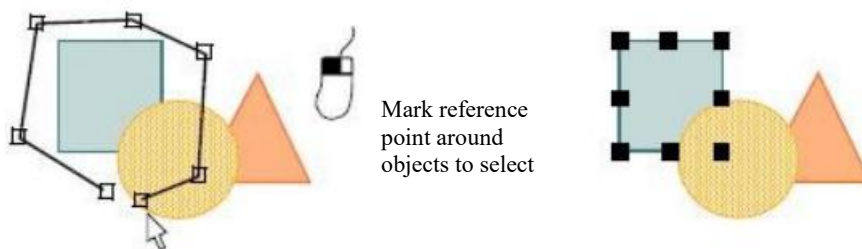
Sometimes the Select Object tool does not provide fine enough control. The Polygon Select /Line Select tool lets you select individual objects by drawing an outline around them or a line through them.

Selecting objects with Polygon Select

Click Polygon Select to select objects with a bounding box.

To select objects with Polygon Select

- (1) Click the Polygon Select icon.
- (2) Tab reference points around the object/s you want to select.



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

- (3) Press **Enter** to select.

4.5. Selecting relevant objects

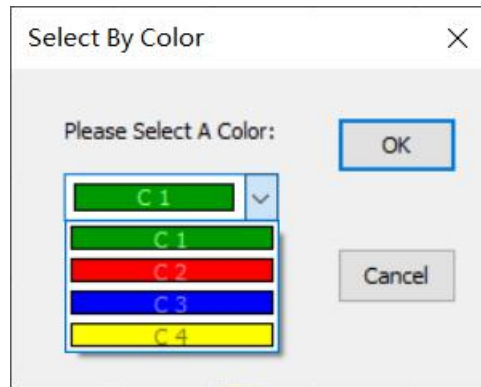
You can select all objects of the same color or stitch type with a single command. Use this feature to apply a change across all objects of the same type.

4.5.1. Selecting objects by color

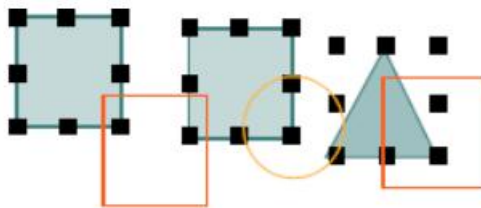
You can select all objects of the same color with a single command. Use this feature to apply a change across all objects of the same color.

To view design objects by color

- (1) Select *Edit > Select By Color*. Select By Color dialog opens.



- (2) Select the thread color you wanted from the list.



- (3) Click **OK**.

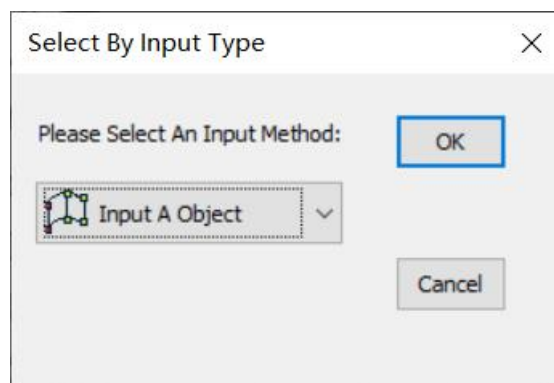
Note Based on the original color, any objects had manual color changing function are selected.

4.5.2. Selecting objects by stitch type

To select objects by stitch type

- (1) Select *Edit > Select By Stitch Type*.

The Select By Stitch Type dialog opens.



- (2) Select a stitch type from the list.

- (3) Click **OK**.

4.6. Deselecting objects

You can deselect all the selected objects in design or delete some individual objects in a group of selected objects.

To deselect objects

Deselect an object by any of the following means:

- (1) Press **Esc**.
- (2) Click the icon to deselect.
- (3) Select a different object.
- (4) Click an empty area of the background.
- (5) Select **Edit > Deselect All**.
- (6) Hold down **Ctrl** and click the object wanted to be removed to deselect.

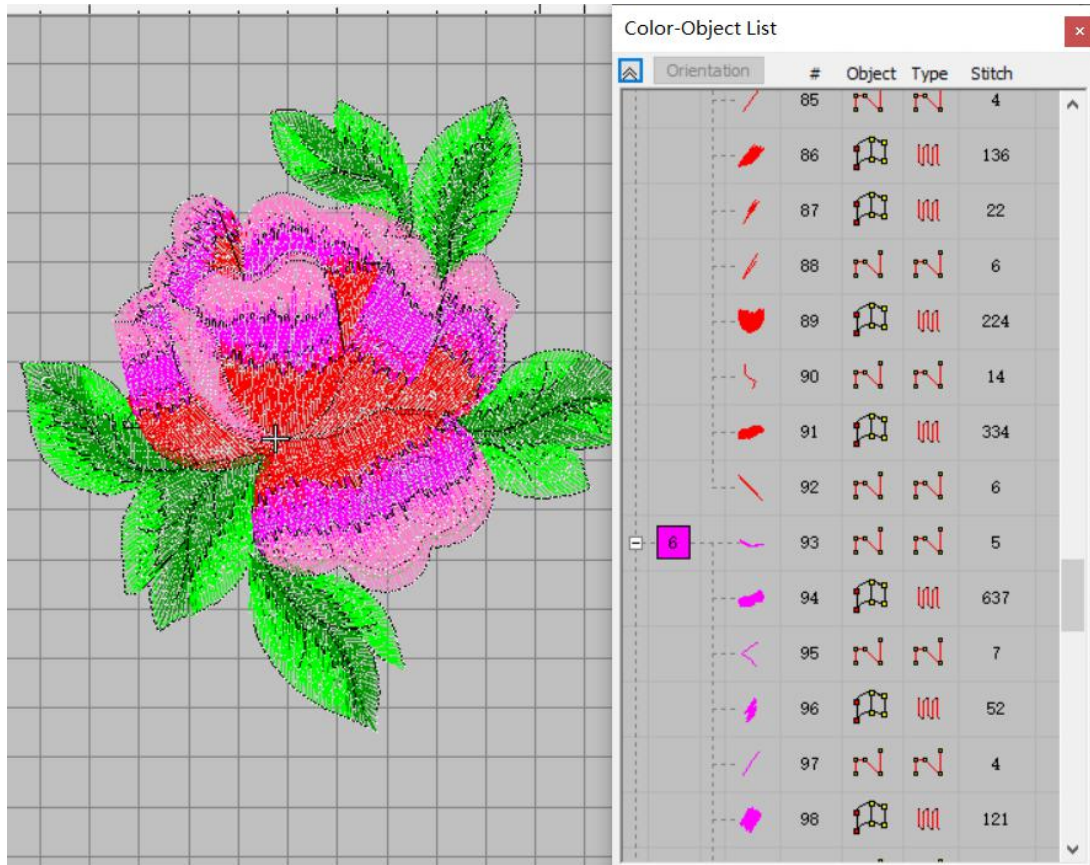
4.7. Selecting and processing objects with the Object List

The Object List provides a sequential list of objects. It offers an easy way to select objects in the design and visit their properties. You can use the Object List to group or ungroup, lock or unlock, display or hide objects. Use it also can cut, copy, paste and resequence for the selected color blocks.

Tip Object List and Design Window are synchronization. Whenever you choose, modify, delete or create a new object, the Color List will be updated.

To select and process objects with the Object List

- (1) Select *View > Object List*. The Object List opens.



The Object List displays a separate icon for each object in the design, in order of stitching sequence. Each object's stitch count is also displayed, together with the input method and stitch type used in its creation.

(2) Click icon to select objects.

A. To select a range of items, hold down **Shift** as you click.

B. To select multiple items, hold down **Ctrl** as you click. A blue border appears around the selected objects.

(3) Process color block as required.

Right-click their icons, you can quickly visit the popup menu command to view the property and process them.

A. Group or ungroup block objects via the popup menu commands. Use the same method to lock or unlock objects.

B. Use the same method to display or hide objects.

C. You can use Object List to resequence the objects.

Part II DIGITIZING FOUNDATION

1. Manual Digitizing

In this software, you can build designs from basic shapes or ‘embroidery objects’. These are like ordinary vector 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. The property of you created object was defined while digitizing, but you can modify them in any phase. You can modify the setting of some input tools to set some objects’ properties before creating. You can also define the ‘current ’ properties to apply to all the objects you create.



Note The most important property for an embroidery object is its stitch type. Different stitch types are suited to different shapes. Please see Chapter 7 Stitch Types for details. This chapter describes how to digitize shapes with main inputting methods. It also explains how to adjust input settings to obtain the best results.

1.1. Using input methods

The process of creating embroidery objects on-screen is called ‘digitizing’. Like the creation of designs in graphics applications, this involves the use of different pictures or ‘input ’ tools. These are similar to drawing tools except that the end result is an embroidery rather than vector object.

Tip Using the ‘drawing’ tool in the software, vectors objects themselves can be transformed into embroidery objects.

(1)  Use “*Manual Stitch*” tool to input stitch length setted manually.

(2)  Use “*Triple Manual*” (Input toolbar) to enter triple manual stitches.

(3)  Use “*Automatic Run*” tool to input satin stitches along a digitized line.

(4)  Use “*Triple Run*” (Input toolbar) to place a triple row of run stitches along a digitized line.

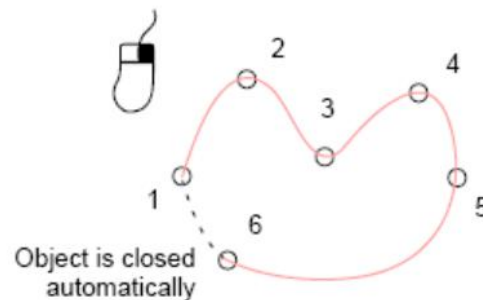
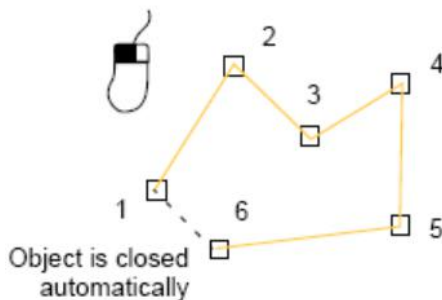
(5)  Use “*Input A*” tool to create columns of varying width and stitch angle.

- (6)  Use “*Input B*” tool to create asymmetrical columns of turning stitches.
- (7)  Use “*Input C*” tool to input columns of fixed width.
- (8)  Use “*Complex Fill*” tool to input filled shapes with fixed angles.

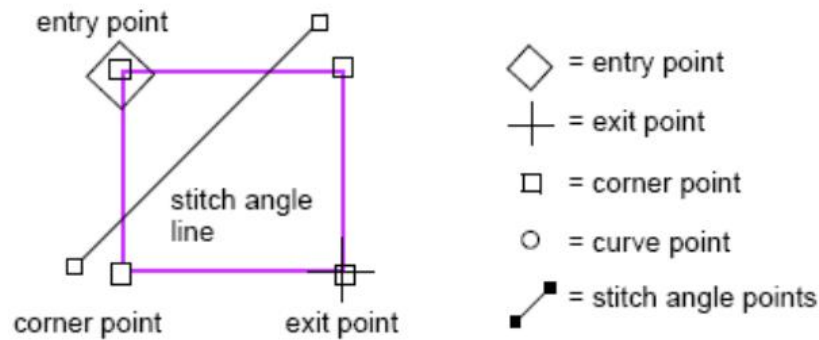
Different digitizing methods or ‘tools’ are suited to creating different shapes or design elements. Digitizing methods divide broadly into two categories—outline and fill. “Manual Stitch” and “Automatic Run” methods both are used to digitize outlines or individual stitch. Inputs A, B & C are used to create filled columnar shapes with differing characteristics. Complex Fill is the most commonly used digitizing tools, can be used to create almost any filled shape. You can adjust the settings of most of the digitizing methods by right-clicking the tools or selecting “Stitches > Object Property” of menu in the dialog.

In this software, once you have selected a digitizing method, you digitize shapes in the following same way by marking points along an outline. Commonly you will tab points in the following place:

- (1) The place that curve outline changes curvature.
- (2) The place that outline has corner.
- (3) The place that outline becomes curve from straight line.



You always use the left mouse button to tab a corner point, and the right mouse button to tab a curve point. The two points marked by left mouse button are connected with a straight line while the two points marked by right mouse button are connected with a curve line. The points you tab when digitizing a shape become the ‘control points’ of selected objects. ‘Control Points’ appear in the objects’ outline which are used to edit or ‘transform’ the objects. Such actions may include reshaping, scaling (Zooming in and Zooming out), and changing entry and exit points. Most of the control points can be added, deleted, moved or changed for corner points or curve points. Some control points have specified function which can not be deleted, such as entry point.



To switch in different digitizing methods

- (1) Press Enter to switch between Input method and Manual Stitches method.
- (2) Press Spacebar to switch between Input method and Auto Run method.

Note Manual Stitches method and Auto Run method can not switch.

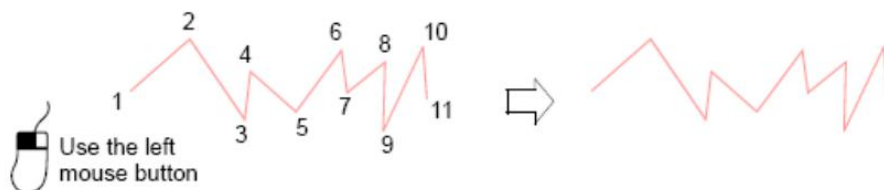
1.2. Digitizing individual stitches

Digitize individual stitches with  Manual Stitches' digitizing method. You can enter manual stitches to generate an embroidery object. Manual stitches are not well suited to scaling and transforming actions as the stitches can not be automatically recounted. Using manual stitches is time saving, for example to add a few stitches to a finished design.

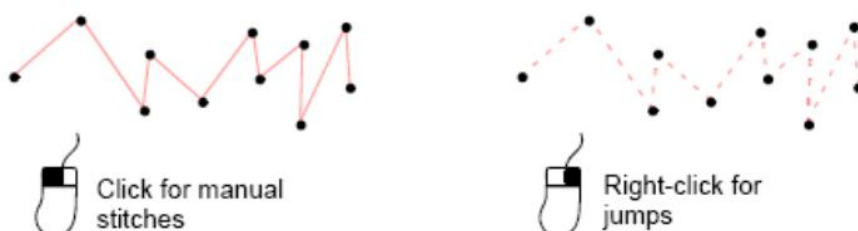
Note As each stitch is individually defined, the only object properties required by manual objects are general and connector properties.

To digitize individual stitches

- (1) Click the Manual Stitches icon.
- (2) Click to tab the start of the stitch and again to tab its end. The end-point becomes the beginning of the next stitch.
- (3) Continue marking stitch points until the manual stitch object is complete.
- (4) Press Enter to finish inputting stitch objects.



Tip You can create runs manually by left-clicking and create jumps manually by right-clicking as you digitize.



2. Digitizing lines



Use  Auto Run tool to create digitizing lines of satin stitching. You can fill satin stitch or motif run in the stitching line of satin. In the "stitch" property page, you can change filled object properties before digitizing.

Tip You can switch Auto Run to Input C.

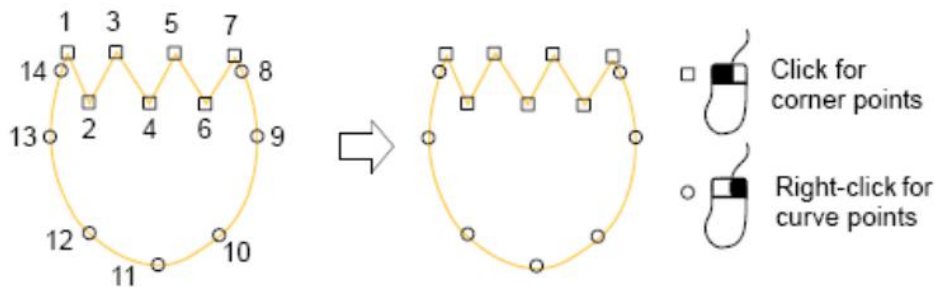
2.1. Creating stitch runs

Use the Run and Tripe Satinto digitize lines of individual run or Tripe Satinstitching. You can create objects after left and right mouse clicks create reference points and border outlines. Left mouse clicks input corner points while right mouse clicks input curve points.

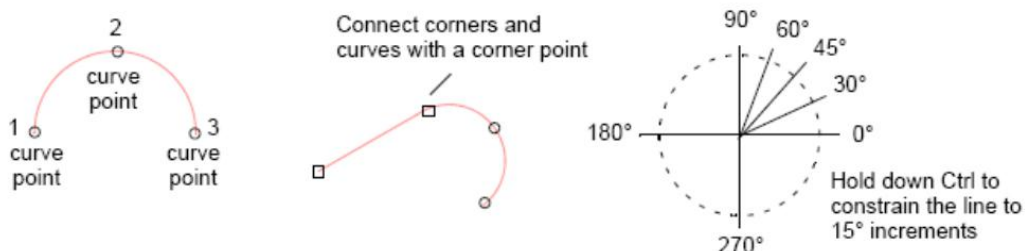


To create stitch lines

- (1) Click "Auto Run" icon.
- (2) Digitize the shape of line by marking reference points.
 - A. Click to enter corner points.
 - B. Right-click to enter curve points.



- C. To constrain the line to 15 increments, hold down **Ctrl** as you digitize.
- D. For a perfect circular arc, tab three points with a right-click.
- E. Where curves connect—either to a straight line or another curve—click to tab the connection point.



Tip If you make a mistake, press Backspace to delete the last reference point, and then go on digitizing.

(3) After digitizing the line, you can:

A. Press **Enter** to end digitizing objects in non-closed way.

B. when the distance between the start and last points is less than 0.4mm, Press **Enter** to digitizing objects in closed way.

2.2. Digitizing columns of varying width



Use  Input A to create digitizing columns of varying width and stitch angle. Pairs of digitizing reference points define the outline, while lines connecting the pairs define the stitch angles.



Tip The Continuous Input feature provides you with a simple and efficient way of digitizing an individual Input A object comprised of separately stitched sections.

Note The software lets you convert between Input A, Input B, Complex Fill objects.

To digitize columns of varying width

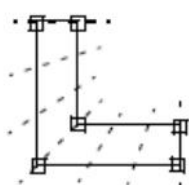
(1) Click the Input A tool.

(2) Digitize the column by marking points on alternate sides of the column.

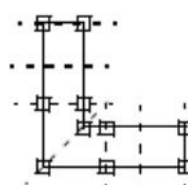
A. Click to enter corner points.

B. Right-click to enter curve points.

Tab a pair of points wherever the outline changes and wherever you want the stitch angle to change.



Stitches change their angle gradually through the entire shape



Stitches remain parallel between parallel stitch angles

Note The control points in a pair do not have to be the same type. For example, one can be a corner point; the other can be a curve point.

Tip If you make a mistake, press Backspace to delete the last reference point and then go on

digitizing

(3) When you have finished digitizing the line, you can press **Enter** to end digitizing objects in closed way.

Tip If you are joining two columns, the exit point is close to the entry point of the next column.

2.3. Digitizing asymmetrical columns of turning stitches



Use  Input B tool to digitize shapes where one side is different to the other, especially where one side requires more points than the other. Stitches turn evenly throughout the entire shape.



Tip You can convert between Input B, Input A and Complex Fill objects.

To digitize asymmetrical columns of turning stitches

- (1) Click the Input B tool.
- (2) Digitize the first side of the shape (i.e. top or left) by marking points.
 - A. Click to enter corner points.
 - B. Right-click to enter curve points.

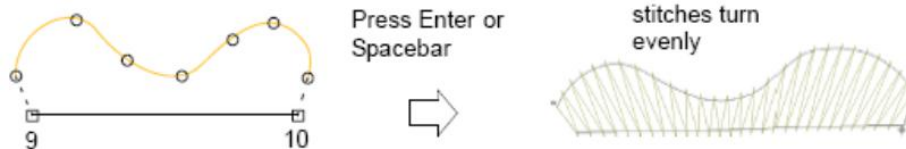


- (3) Press **Enter**.

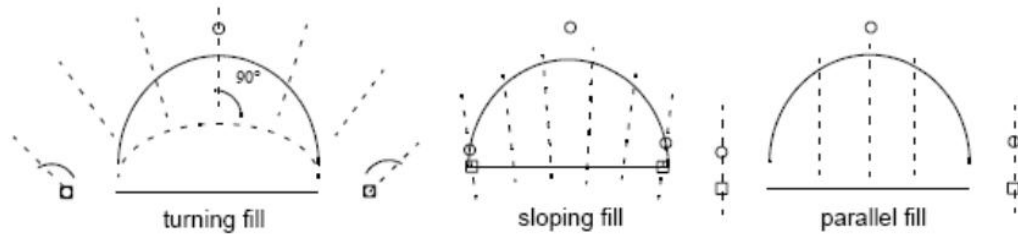
An elastic line attaches to the pointer, ready for you to digitize the second side of the shape.

Tip If you make a mistake, press Backspace to delete the last point and then go on digitizing.

- (4) Digitize the second—i.e. bottom or right—side of the object.



Tip Stitch angles can be controlled by splitting the sharp points of shapes and making the first and last reference point have long distance.



(5) When you have finished digitizing the line, you can press **Enter** to end digitizing objects in closed way

2.4. Digitizing columns of fixed width



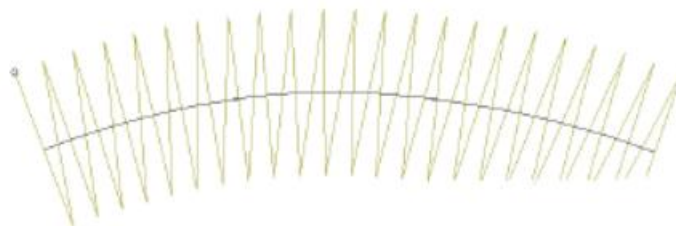
Use Input C to create digitizing columns of fixed width. It is typically used for digitizing borders and outlines of larger shapes. You can digitize columns to create thick lines or borders. Input C is typically used with Satin stitch.



Tip You can switch objects from Input C to Auto Run.

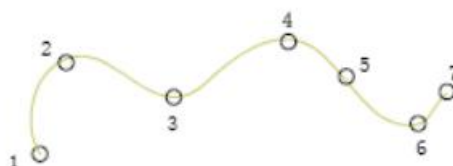
2.5. Creating columns and borders

Digitize columns and borders of fixed width with the Input C tool. Create objects using left and right mouse clicks to tab points to form an outline. Use left-clicks to enter corner points and right-clicks to enter curve points. Then specify the column width. You can leave the shape open, or create a border by joining the first and last points.



To create columns and borders

- (1) Click the Input C icon.
- (2) Digitize the shape of the column by marking points.
 - A. Click to enter corner points.
 - B. Right-click to enter curve points.



Tip If you make a mistake, press Backspace to delete the last point and then go on digitizing.

(3) When you have finished digitizing the line, either:

A. Press **Enter** to end digitizing objects in non-closed way.

B. when the distance between the start and last points is less than 0.4mm, Press **Enter** to digitizing objects in closed way.

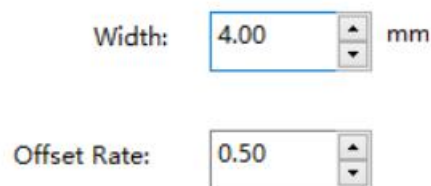
Tip To make a border, ‘close’ the shape by entering the last point exactly on top of the first. If the points are not exactly on top of each other, the stitches will not turn smoothly around the corner.

2.5.1. Setting offset values

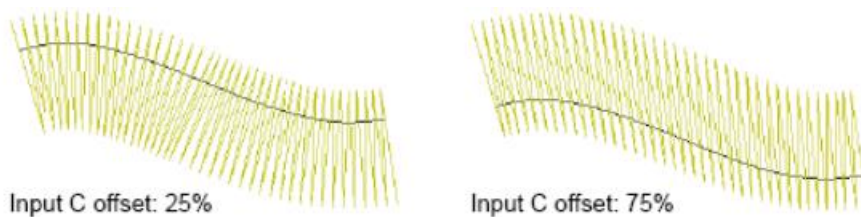
By default, stitches are positioned around the center of a digitized line. In the object properties dialog, you can set the accurate offset values. The offset values you setted will become the new object default offset values of "Input C" migration.

To set offset values

(1) Right-click the Input C icon. The Object Properties > Input C dialog opens.



(2) Input offset value in the Column Offset field.



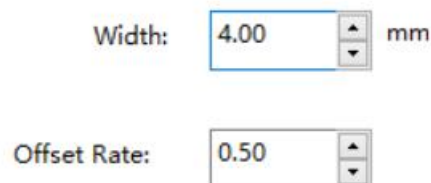
(3) Click OK

2.5.2. Setting column width

You can set the exact width of Input C columns in the Object Properties dialog. The value you set becomes the current width for new Input C objects.

To set the column width

(1) Right-click the Input C icon. The Object Properties > Input C dialog opens.



(2) Enter a width in the Column Width field.

(3) Click OK.

2.6. Digitizing complex shapes with fixed stitch angles



Use “Complex Fill” to digitize complex shapes with fixed stitch angles. Many shapes can be digitized with these tools. By digitizing further boundaries within shapes, you can create

filled objects with holes.



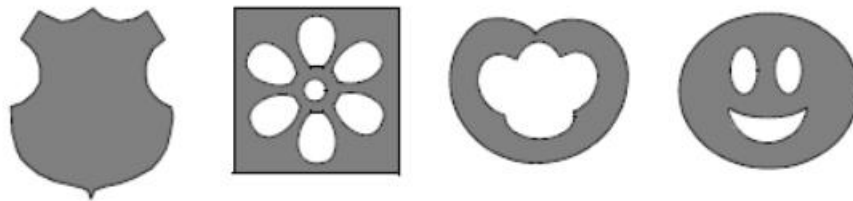
Outlines in complex objects should not overlap or intersect each other. A boundary should not overlap itself and should not have a second boundary inside (hole within a hole). These shapes below, for example, cannot be successfully digitized with Complex Fill.



Where they occur, overlapping boundaries in Complex Fill shapes are ignored and stitches are generated in the largest area defined by the boundaries.

2.6.1. Creating complex filled-objects

Digitize complex shapes with the Complex Fill tool. Create objects using left and right clicks to tab points to form the boundary outlines.



To create complex filled-objects

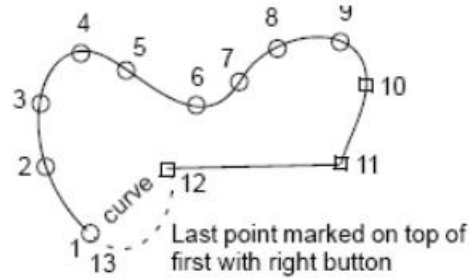
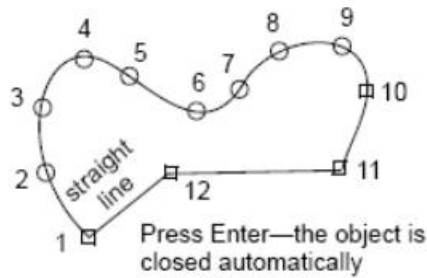
- (1) Click the Complex Fill icon.
- (2) Digitize the boundary of the shape, by marking points around the outline of the shape.
 - A. Click to enter corner points.
 - B. Right-click to enter curve points.

Tip Use the prompts in the prompt line to help you digitize. If you make a mistake, press **Backspace** to delete the last point and then go on digitizing.

- (3) Close the shape.

A. To close the shape with the same type of point as the last one entered—i.e. corner or curve—simply press **Enter**.

B. To close the shape using a different type of point, tab the last on top of the first and press **Enter**.



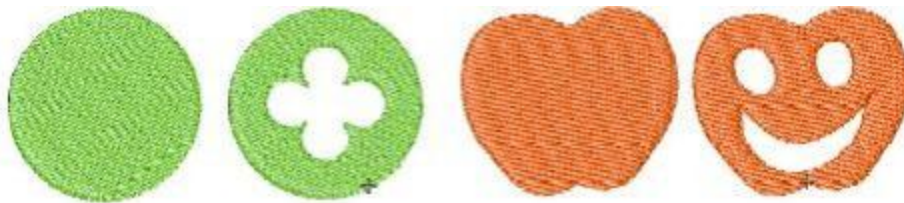
(4) Digitize any additional boundaries in the same way. Boundaries can not overlap.

(5) Press **Enter**

Note All segments and boundaries in the “Complex Fill” objects are part of the same object..

2.6.2. Adding boundaries

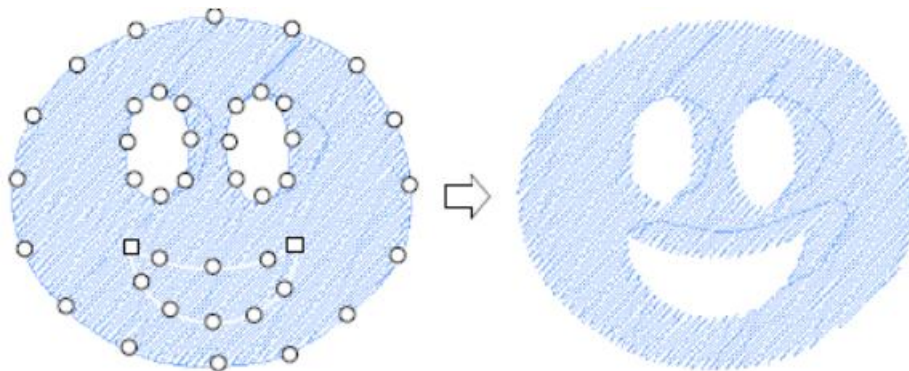
This software lets you add boundaries to Complex Fill objects.



Tip You can also create new objects from existing boundaries in “Complex Fill” objects using the Filled Holes feature.

To add boundaries

- (1) Select the Complex Fill object to modify.
- (2) Digitize additional boundaries making sure they do not overlap. After digitizing each boundary, press **Enter**.
- (3) When you have digitized all boundaries, press **Enter**.



Note To remove unwanted boundaries in “Complex Fill” object, click the Reshape Object icon to display the control of the object. Select the control point on the unwanted boundary, and press **Delete**.

3. Fill stitches

All embroidery objects in this software contain a defining set of 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.

The most important property of all embroidery objects is the stitch type. The software uses object outlines and associated stitch type to generate stitches. Whenever you reshape, transform or scale an object, stitches are regenerated according to its stitch properties.



All embroidery objects in the software contain defining properties in the digitizing period, but you can change them anytime. While creating embroidery objects, you can adopt the default setting setted for an input method or use new setting value. Store the default setting in design template. You can also apply the current properties for all objects in your current design. This chapter explains how to select stitch types for objects and how to modify stitch value to get the best result.

3.1. Selecting fill stitches

Different stitch types are suited to different objects. When you digitize an object, it uses the current stitch type for the selected input method. However, you can change an object’s stitch type at any stage. You can also preset the stitch type by selecting it as ‘current’ before digitizing.

Tip You can change between fill stitch types quickly using the buttons on the General toolbar, or using the keyboard to switch between fill and outline stitching.

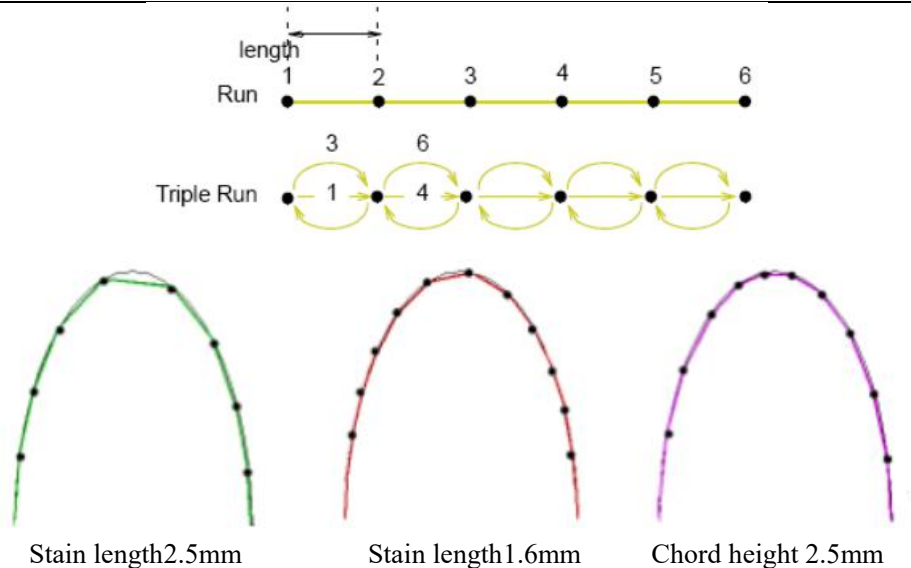
To select fill stitches

- (1) Select the object (or objects) whose stitch type you want to change.
- (2) Select a stitch type icon. The new stitch type is applied to the object.

Note If you cannot select some stitch types from the Stitch Types toolbar that is to say the current selected objects don’t have these stitch types for filling.

3.2. Creating fills with Satin stitch

Satin stitch is a kind of fill stitch which is along with digitizing line. You can create triple Satin stitch by setting repeated parameters. Triple Satin stitch is to repeat each stitch for three times (or more) to create a thicker line. The typical function of this application is to add border and individual run edge in design. You can also create swinging Satin stitch by setting oscillation parameter. Swinging Satin stitch is a line which swings along the digitizing line.

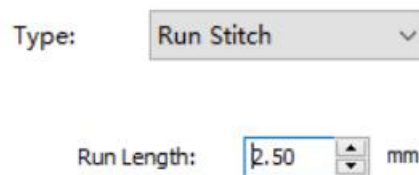


3.2.1. Setting Satin stitch lengths

For Satin stitch, you should set stitch length to suit the digitized shape. In the bend of the object, choose the shorter stitch length. To reduce the stitch count for flatter curves, you should increase the stitch length

To set Satin stitch lengths

- (1) Click Object Properties icon. Object Properties > Stitches dialog opens.



- (2) Select Satin stitch from the list.
- (3) Enter a stitch length in the Satin Stitch Length field.



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

Tip Mimic hand-made embroidery by setting the Tripe Satinlength to 4.0 mm

- (4) Click *Apply*.

3.2.2. Setting varying run stitch lengths

This software can make you to use “chord height” options to calculate the best length automatically for each stitch.

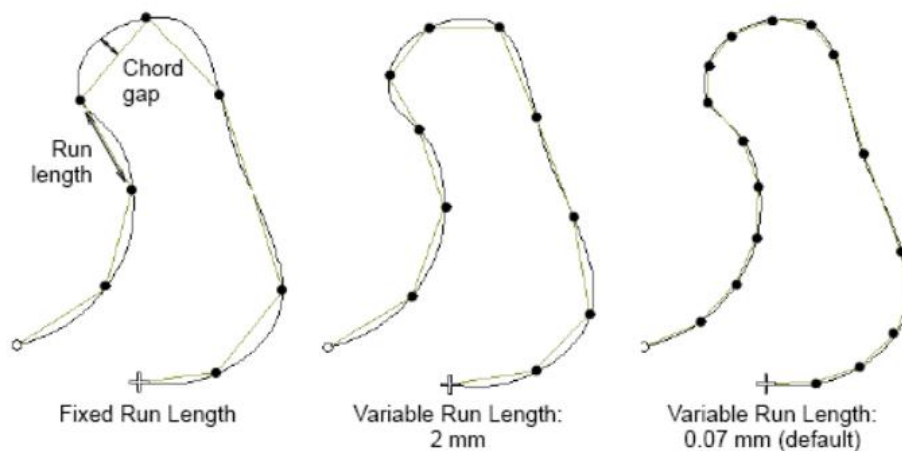
To set varying stitch lengths

- (1) Click the *Object Properties* icon. The *Object Properties > Run Stitch* dialog opens.
- (2) Select the *Chord Height* checkbox.



- (3) In the Min Len field, enter the minimum stitch length to allow.

(4) 在 In the Chord Height field, enter the maximum distance to allow between the digitized outline and the stitches. When this value is exceeded the stitch, length is reduced to follow the outline more closely.



Note Stitches will not be reduced to less than the specified minimum length, even if the chord height value is exceeded.

- (5) Click *Apply*

3.2.3. Setting Tripe Run

By default, Tripe Run repeats each stitch three times. You can change the number of repetitions used for Tripe Run by changing the value in the Object Properties dialog.

To set Tripe Run

- (1) Click the *Object Properties* icon. The *Object Properties > Run Stitch* dialog opens.
- (2) Select *Repeat* from the repeat list.
- (3) Enter the number of repetitions in the *Run Count* field.
- (4) Click *Apply*.

Type: Triple Run

Run Length: 2.50 mm

☒ Chord Height

Min Step: 0.80 mm

Chord Height Restrict: 0.07 mm

Run Stitch Num: 3 mm

3.2.4. Setting oscillating run stitch

- (1) Click the Object Properties icon. The Object Properties > Run Stitch dialog opens.

Type: Backstitch

Run Length: 2.50 mm

Minimum Length: 0.80 mm

Chord Height: 0.07 mm

Round Trip: 3

Stitch Thickness: 0.20 mm

Overlap: 50 %

- (2) Select *Oscillating* from the repeat list.
- (3) Enter the number of oscillations in the *Repeat* field.
- (4) Enter the vibration amplitude of repetitions in the *Oscillating* field.
- (5) Enter the vibration interval in the *Oscillating* field.
- (6) Click *Apply*.

Note While oscillating the run stitch, the numbers of interval repetitions are in null.

3.3. Creating fills with Satin stitch

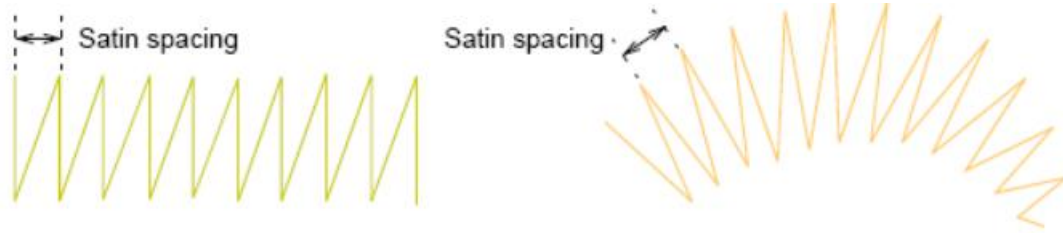
Satin stitch is well-suited to stitching narrow columns and shapes, where the length of each stitch forms the width of the column. Satin stitches are almost parallel, with every second stitch slightly slanted. Because there are generally no needle penetrations breaking up the fill, Satin stitch creates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



If a column is too wide, stitches may be loose and not cover the fabric properly. Conversely, in very narrow columns, the stitch density can be too high, and the needle penetrations can damage the fabric. Adjust stitch density by setting a fixed spacing value. The Auto Jump features help you to control long Satin stitches.

3.3.1. Adjusting Satin stitch spacing

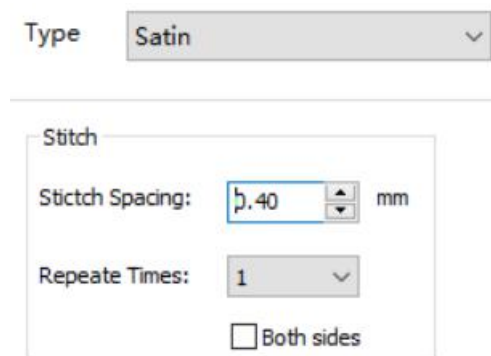
Stitch spacing is the distance in millimeters between two needle penetrations on the same side of a column. Where a column is narrow, stitches are tight, thus requiring fewer stitches to cover the fabric. Where a column is very narrow, stitches need to be less dense because too many needle penetrations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



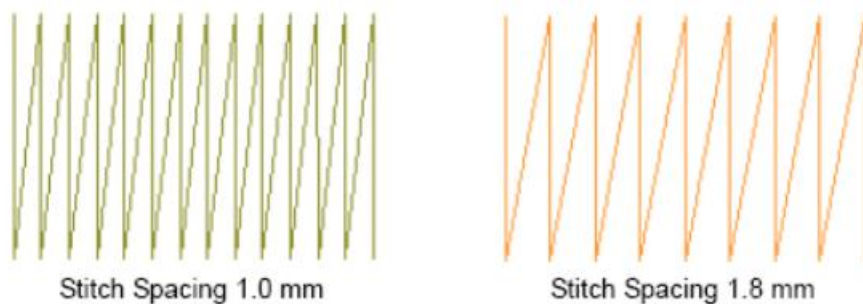
Change the stitch density in Satin fills by adjusting the stitch spacing setting in the Object Properties dialog. The larger the spacing between stitches means the lower density. The smaller spacing means the higher density.

To adjust Satin stitch spacing

- (1) Select Satin from Edit Type (General Toolbar).
- (2) Right-click to set Satin stitch properties. The Object Properties > Fill Stitch dialog opens.



- (3) In the Stitch Spacing field, enter the spacing.
 - A. To increase stitch density, enter a smaller value.
 - B. To reduce the density for more open stitching, enter a larger value.



- (4) Click *Apply*.

3.3.2. Adjusting Satin stitch count

Triple Satin is often used for folk designs to mimic handmade embroidery that uses thicker thread. If you require thicker stitches, set the Satin stitch to repeat itself multiple times. You set the number of repetitions of each stitch in the Satin Count Field. Every odd (forward) stitch of a Triple Satin column can be stitched up to 15 times.



To adjust Satin stitch count

- (1) Select Input C from Edit Type List (General Toolbar).
- (2) Right-click to set Satin stitch properties.
The Object Properties > Fill Stitch dialog opens.
- (3) Enter the number of repetitions in the Satin Count field.

Note Using a value higher than 10 may cause thread breaks, depending on the design, fabric, or thread tension.

- (4) Click *Apply*.

3.4. Creating fills with Tatami stitch

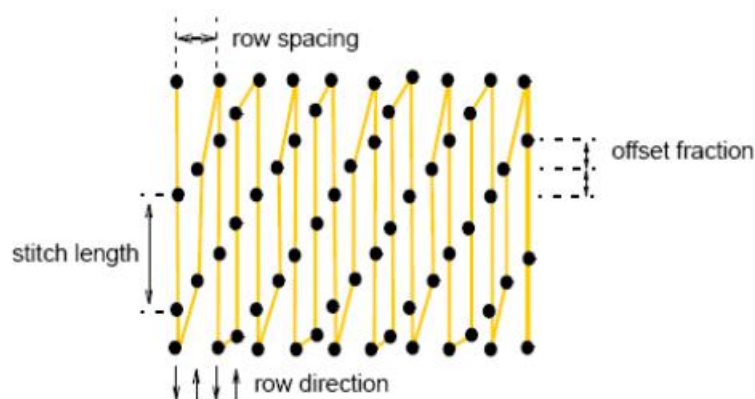
Tatami stitch consists of rows of run stitches and is suitable for filled large, irregular shapes. Stitches are laid in rows going back and forth across the shape. They may be parallel or turning slightly. Stitch offsets in each row are used to eliminate horizontal split lines.



You can control stitch density in Tatami objects by adjusting the backstitch type, stitch length, and row spacing. With Tatami fills you can specify how each row is offset in order to create the patterns formed by needle penetrations.

3.4.1. Adjusting Tatami stitch spacing

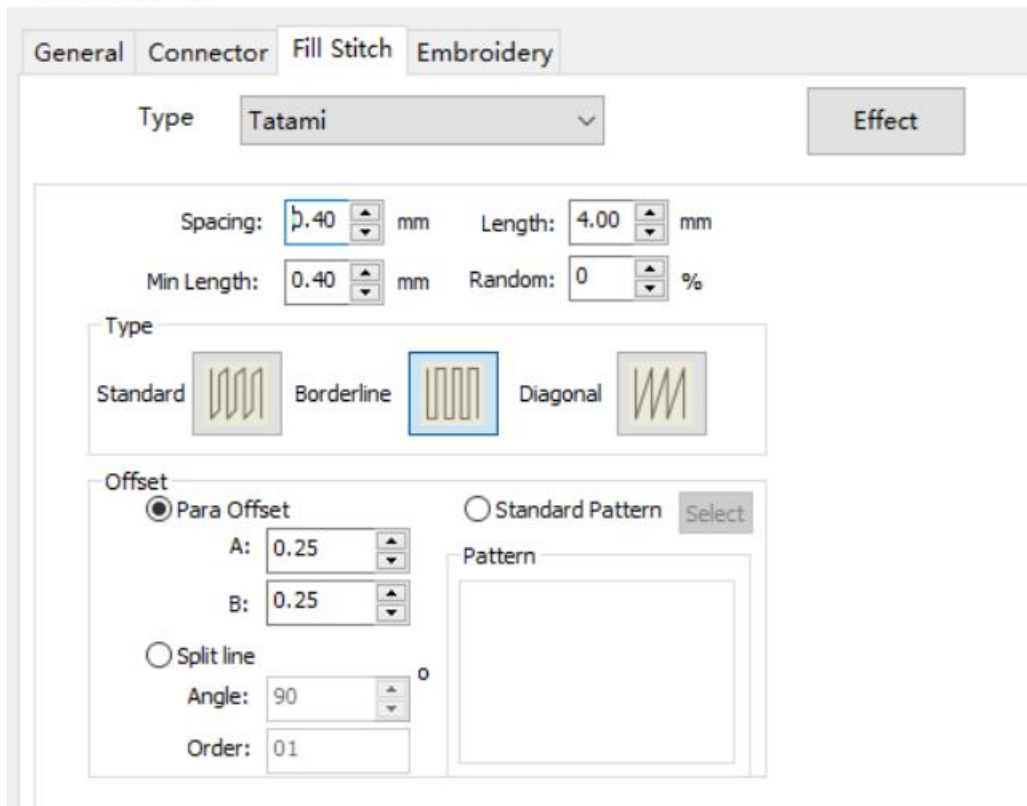
As for Tatami, its stitch density is determined by the distance between each row of stitches. The spacing setting is the distance between two forward rows.



To adjust Tatami stitch spacing

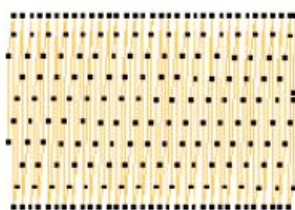
- (1) Select Tatami stitch from the list in general toolbar.
- (2) Click the *Object Properties* to set Tatami stitch property.
The Object Properties > Fill Stitch dialog opens.

Object Property

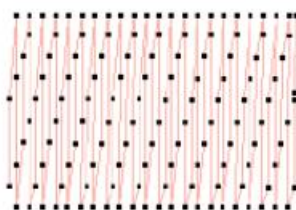


- (3) In the Stitch Spacing field, enter the required spacing value. This value is the distance between each row of stitching.

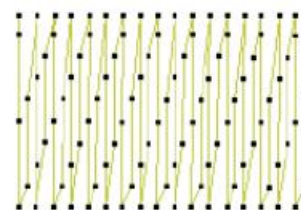
- A. To increase the density, enter a smaller value.
- B. To decrease the density, enter a larger value.



Spacing: 0.4 mm



Spacing: 0.6 mm



Spacing: 0.8 mm

- (4) Click *Apply*

3.4.2. Adjusting Tatami stitch length

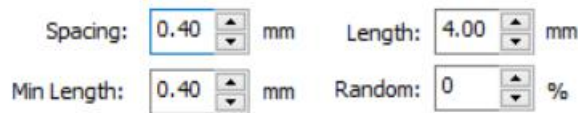
Specify the created stitch length and minimum stitch of objects with Tatami fills. In Tatami filling, change a little bit about the stitch length to ensure not to generate short stitch along the border of the shape.

To adjust Tatami stitch length

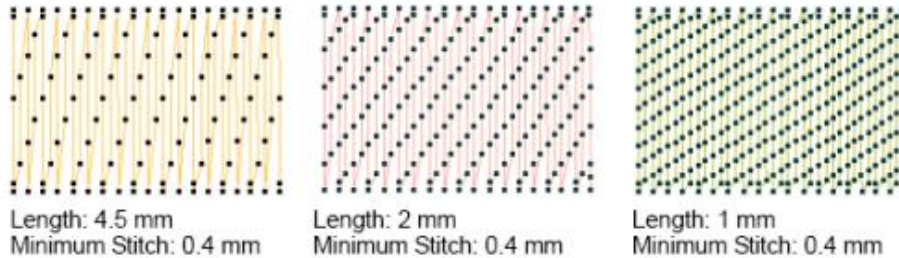
- (1) Select Tatami stitch from the list in general toolbar.

(2) Click the *Object Properties* to set Tatami stitch property.

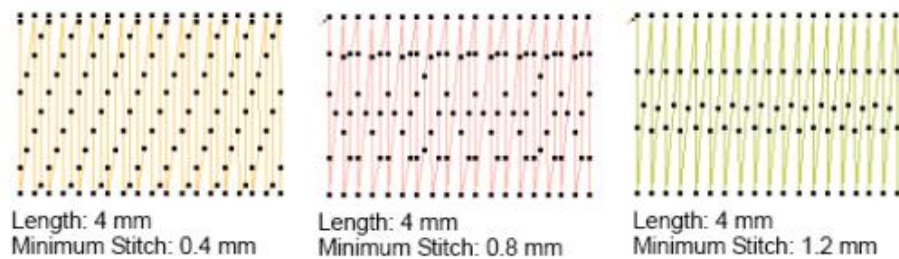
The Object Properties >Fill Stitch dialog opens.



(3) In the *Stitch Length* field, enter the needed length value.



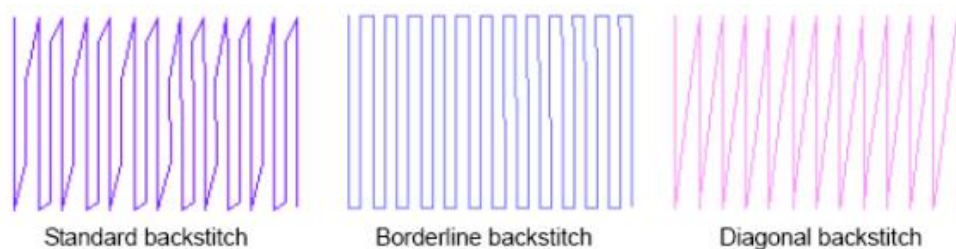
(4) In the *Min Stitch Length* field, enter the length of the shortest stitch to be generated.



(5) Click *Apply*.

3.4.3. Selecting a Tatami backstitch

Tatami backstitch is the term used for every second row of stitches in a Tatami fill. There are three types available—Standard, Borderline, and Diagonal.



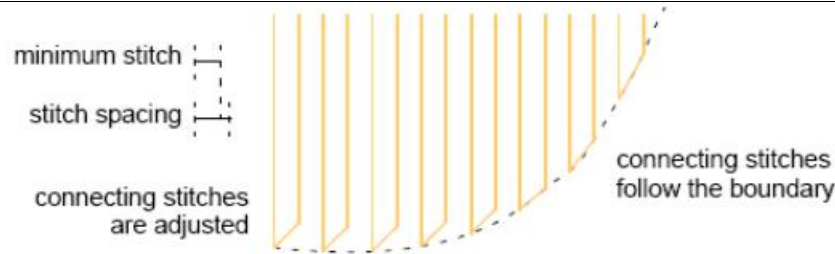
Standard backstitch

The rows are approximately parallel, with every backstitch row slightly shorter than the forward row. Because the rows are different lengths, there are fewer small stitches at the edge of the shape, reducing possible damage to the fabric. Standard backstitch is suitable for high density fills.

Borderline backstitch

The rows are approximately parallel. With lower density fills, borderline backstitch creates a smooth, well-defined edge.

Note Borderline back stitches may not follow the outline of the shape if the stitch spacing is less than the minimum stitch length. Where the stitch rows are perpendicular to the boundary, connecting stitches are adjusted to be longer than the minimum stitch.



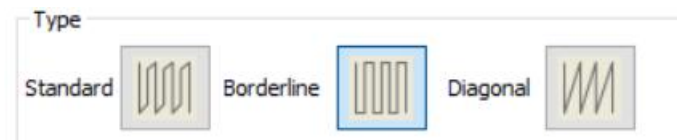
Diagonal backstitch

The backward rows are diagonal, directly connecting the forward rows. Diagonal backstitch is suitable for turning shapes, and gives good results with Jagged Edge.

To select a Tatami backstitch

- (1) Select Tatami stitch from the list in general toolbar.
- (2) Click the *Object Properties* to set Tatami stitch property.

The Object Properties > Fill Stitch dialog opens.



- (3) Select a diagonal backstitch type in the *Diagonal Backstitch* panel.
- (4) Click *Apply*.

3.5. Creating outlines with Zigzag stitch

Zigzag stitch is similar to Satin in that the needle penetrates each side of the column. But while Satin gives a straight line followed by a diagonal, Zigzag produces two diagonal lines, thereby producing a more open stitch. Zigzag is frequently used for tacking down appliques, while E Stitch is used as the cover stitch. It can also be used for decorative effect or where fewer stitches are required.



To create outlines with Zigzag stitch

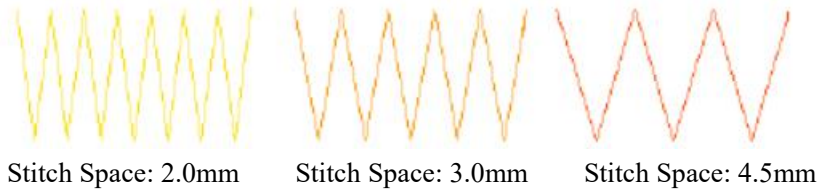
- (1) Right-click the Zigzag icon.
The Object Properties > Fills > Zigzag dialog opens.



- (2) Enter a spacing value in the Stitch Spacing field.

This value is the distance in millimeters between two needles

Penetrations on the same side of the column.



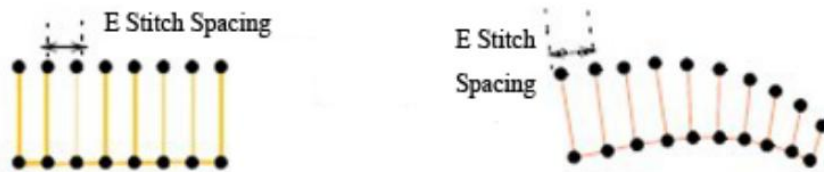
(3) Click *Apply*..

3.6. Creating fills with E Stitch

E Stitch produces long, narrow columns with a 'comb' effect. The needle penetrates both sides of the column, and then penetrates the second side again, laying the thread along the side. Generally speaking, E stitches are usually more open than Satin or Zigzag stitches.



By adding the extra stitches between the vertical E stitches, you can change the spacing between them. These stitches are evenly distributed in E stitches.

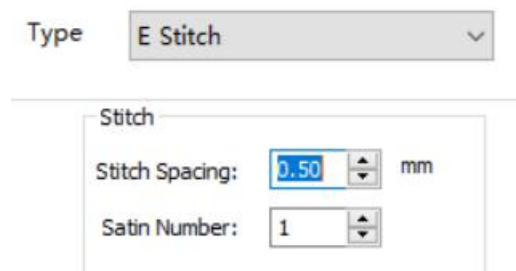


The Satin stitch numbers of each pair of E Stitch are the same, but the bending curve with shorter stitch length is an exception.

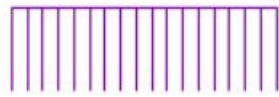
To adjust E Stitch spacing

- (1) Select E Stitch from the list in general toolbar.
- (2) Click the Object Properties to set E Stitch property.

The Object Properties > Fill Stitch dialog opens



(3) In the Stitch Spacing field, enter the spacing value. This value is the distance in millimeters between each perpendicular stitch.



Stitch Space: 1.0mm

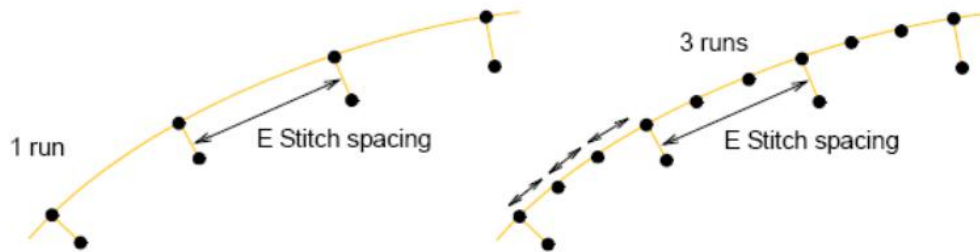


Stitch Space: 2.0mm



Stitch Space: 3.5mm

(4) In the Number of Runs field, enter the number of run stitches between each E Stitch.



(5) Click *Apply*..

4. Object Properties

Embroidery objects properties define general characteristics such as size and position, as well as embroidery-specific characteristics such as stitch type and density. The specific stitch setting determines how stitches will be regenerated when you reshape, transform or scale the object.



When creating embroidery objects, you can apply the default setting or new setting for the input methods. The default setting is stored in the design template. You can also apply current property settings to all the objects in your current designs.

4.1. Applying and managing object properties

There are three groups of object properties in this software: The default, current and existing object properties.

Note Some object properties can be modified on the screen, for example, using selection handle to scale an object to change the size. Properties like stitch spacing or stitch length and so on can be modified in the object properties dialog.

Default object property

Default property settings are the ones stored with the design template. When creating the new designs based on this template, these are automatically applied to any newly created objects in the design.

Current object property

Current property settings use to create new object value. Unless you change the current values, these will always keep the same value as 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.

Note This change has influence on the new objects in design, but not the style itself. Existing object property

The existing object properties and each object property are stored in the design settings.

4.1.1. Setting current object property

When you change the current property settings, these automatically apply to all new objects in your current created designs. You can also apply current property settings to existing objects. Before starting, you can adjust the current object properties to be the new settings.

Tip By selecting the relevant toolbar button, you can set some object properties. While selecting a button, the tool setting becomes the present.

To set current object property

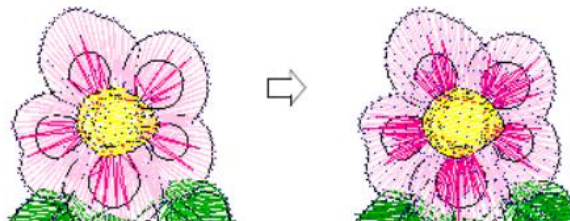
- (1) Make sure all the objects are not selected.
- (2) Click the Object Properties icon. The Object Properties dialog opens.

Object Property

Display property page on the top of object properties dialog box. They can make you to visit all the possible object properties.

- (3) You can click property page label to view the current setting value, and could change them as required.

- (4) Click *Apple*.



4.1.2. Changing selected object property

You can change one or more selected object properties. If you select more than one object, the Object Properties dialog will only display settings relevant to all selected objects. For example, if you select a Complex Fill object and an Input C object, object properties will only display one object setting.

Note Changing the existing object properties will not affect the current or default settings, as well as the non-current selected object properties.

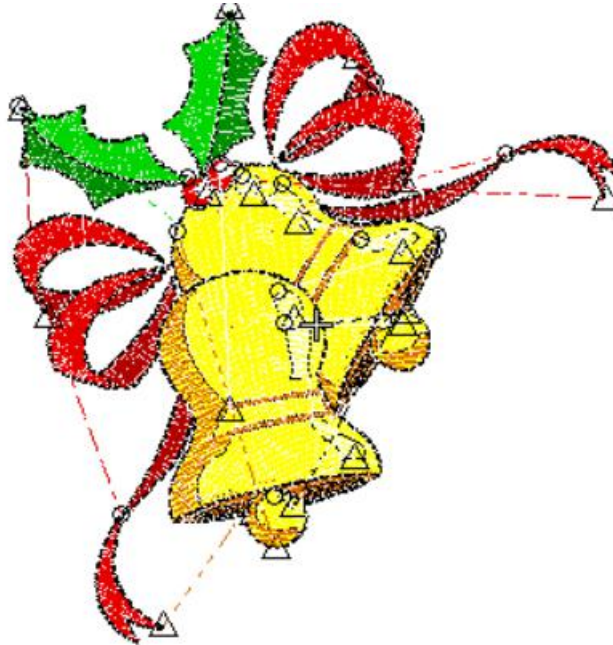
To change selected object property

- (1) Select an object (or more) you want to change its/their property/properties.
- (2) Click Object Properties icon. The Object Properties dialog opens.
- (3) Select the properties page tab you needed, change the settings as required.
- (4) Click Apply.

Note You can use some object properties by selecting objects and clicking some relevant icons in toolbar. When the t is selected, the setting is directly applying to the selected objects.

5. Connecting Embroidery Objects

Connectors 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. This chapter describes how to add connectors, tie-offs and trims to your design. It also describes adjusting settings for automatic connectors, including the stitch length for travel runs.



5.1. Types of connectors

The type of connector you use depends on whether you want it to be visible in the final design. The default connector setting in this software is for jumps. You can use automatic jumps as connectors between embroidery objects. Jumps move the frame from one part of the design to another without needle penetrations. The connecting thread generally needs to be tied-off and trimmed. You can also digitize jumps manually using the Embroidery Leaving method.

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

Runs

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.

Jumps

Jumps used as connectors which are commonly used among object designs. If objects are adjacent and connectors will be hidden, they can be used.

Note Travel runs connectors are different from runs. They connect the internal segment complex fill objects. That is to say they are not suitable for internal segment objects.

Tie-ins

You can insert tie-in stitches 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

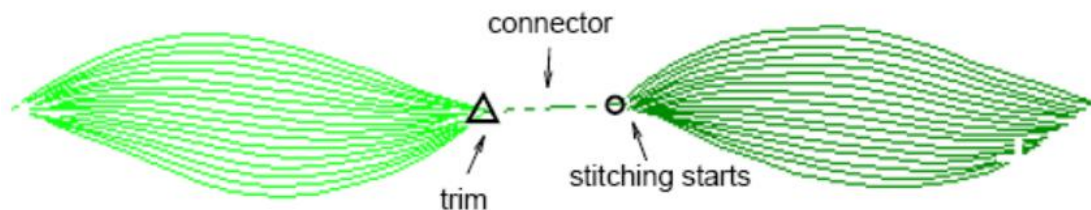
is trimmed.

Tie-offs

While using jumps, you need to tie-offs which is generally placed before trims to prevent stitches from unraveling. You can adjust connector settings to automatically add tie-offs or add them manually. You can also include trim functions so machines with trimmers cut the thread automatically.

Trims

If you are using a machine with an automatic trimmer, the trim function 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.



5.2. Using automatic connectors

This software lets you generate automatic connectors in your design based on settings in the Object Properties > Connectors dialog. You can change the connector settings for the whole design or selected objects.

Tip If you prefer to add tie-offs and trims as you digitize, you can turn off these functions in the tab to prevent them from automatically generating.

Note Intelligent connecting feature lets you digitize like-objects—e.g. the fingers of a hand—without having to think about the most efficient stitching sequence and connectors.

5.2.1. Using jumps as connectors

You can use automatic jumps as connectors between embroidery objects. Jumps move the frame from one part of the design to another without needle penetrations. You generally need to tie-off and trim the connecting thread.

You can also digitize jumps manually using the penetrations off method.



To use jumps as connectors

- (1) Click the Object Properties icon. The Object Properties dialog opens.
- (2) Select the Object Properties > Connectors tab.

Object Property

- (3) Select a connector type.
 - A. After Object: the settings of connectors among the objects.
 - B. Inside Object: the settings of connectors among joining letters within lettering object, and motifs within motif run.
- (4) Select Jump and enter a distance for each frame movement.
- (5) Enter the trim settings in Trim panel.
- (6) Enter tie-in settings in Tie In panel.
- (7) Click *Apply*.

5.2.2. Using runs as connectors

You can use runs of Runes to connect objects in a design. Because runs cannot be trimmed, they are visible on the final embroidery, unless another object is digitized to cover them. For this reason, runs are less commonly used as connectors than jumps.



To use runs as connectors

- (1) Click the Object Properties icon. The Object Properties dialog opens.
- (2) Select the Object Properties > Connectors tab.
 - A. Select a connector type.
 - B. After Object: the settings of connectors among the objects.

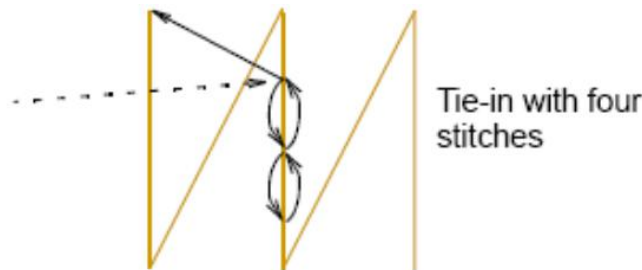
(3) Inside Object: the settings of connectors among joining letters and motifs.

(4) Select Run and enter a length for the connecting run stitches. The Trim After and Tie Off options are disabled as they do not apply to travel runs.

(5) Click *Apply*.

5.2.3. Adjusting automatic tie-in settings

You can insert tie-in stitches 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.



To adjust tie-in settings

(1) Click the Object Properties icon. The Object Properties dialog opens.

(2) Select the Object Properties > Connectors tab.

(3) Select Tie In from the tie-in panel:

A. Off: no tie-ins are inserted.

B. Always tie in: tie-ins are inserted before the object.

C. After Trim/Color Change: tie-ins are created if certain conditions are met. When you select this option, the condition check boxes become available.

(4) Set the tie-in values:

A. Stitch Length: determines length of tie-in stitches.

B. Stitch Number: determines number of tie-in stitches to generate.

(5) Click *Apply*.

5.2.4. Adjusting automatic trim settings

You can choose to turn off automatic trimming, to always trim connecting stitches, or to trim only when the connecting stitch is longer than a specified value.

To adjust automatic trim settings

(1) Click the Object Properties icon. The Object Properties dialog opens.

(2) Select the Object Properties > Connectors tab.

(3) In the Trim panel, select a trim option:

A. Off: no trims are inserted. This feature is useful if trimming causes your machine to slow down, or the needle to lose the thread. You can either add trim functions yourself, or trim the final

embroidery by hand.

B. Trim If Next Connector Is Longer Than: trims are inserted if the next connector exceeds the length you specify.

Tip Usually, connectors shorter than 3 mm are not visible on the final embroidery. You may sometimes require a smaller value—e.g. if the thread color contrasts with the background color.

(4) 4. Click Apply.

5.2.5. Adding connectors manually

You can add tie-offs and trims in a design yourself, using the Tie Off, Trim and Empty Stitch tools. This method is less efficient than using automatic connectors and it is not recommended, but gives you more control over the final design. Some machine formats are unable to read functions that appear on a normal stitch. For these machines, you need to add trim, tie-off and other machine functions to an Empty Stitch or Empty Jump. You may also need to add one or more empty stitches or empty jumps to either side of a function for the machine to read it correctly.

Note If you want to add the entire tie-offs and trims yourself, turn off automatic features in the Object Properties > Connectors dialog.

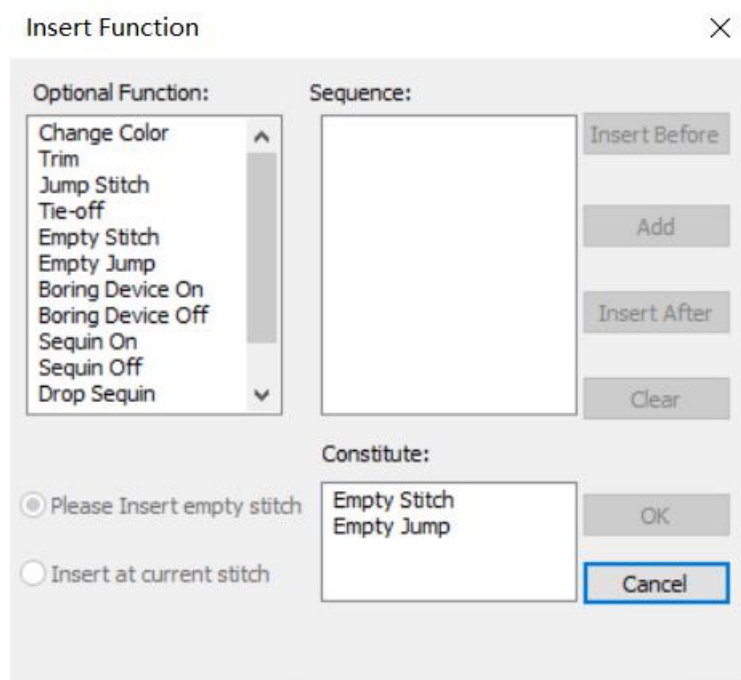
5.2.6. Adding tie-offs

You can add tie-offs in your design using the Tie Off tool. Tie-offs is usually added before a trim at the end of an object.

Tip You can also insert machine functions manually using the Insert Machine Function dialog.

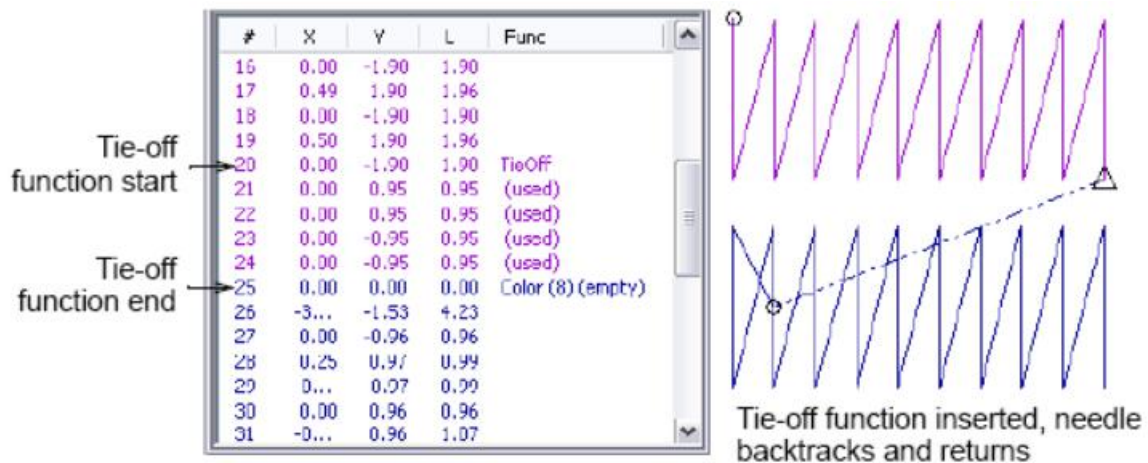
To add a tie-off

- (1) Travel to the stitch position you want to tie-off.
- (2) Click the Insert Menu > Insert Code > Tie-off icon.



A Tie-off function is inserted. The default number of tie-off stitches is two. This means the needle backtracks twice and returns at the insertion point. Adjust this value in the Object Properties > Connectors

dialog.



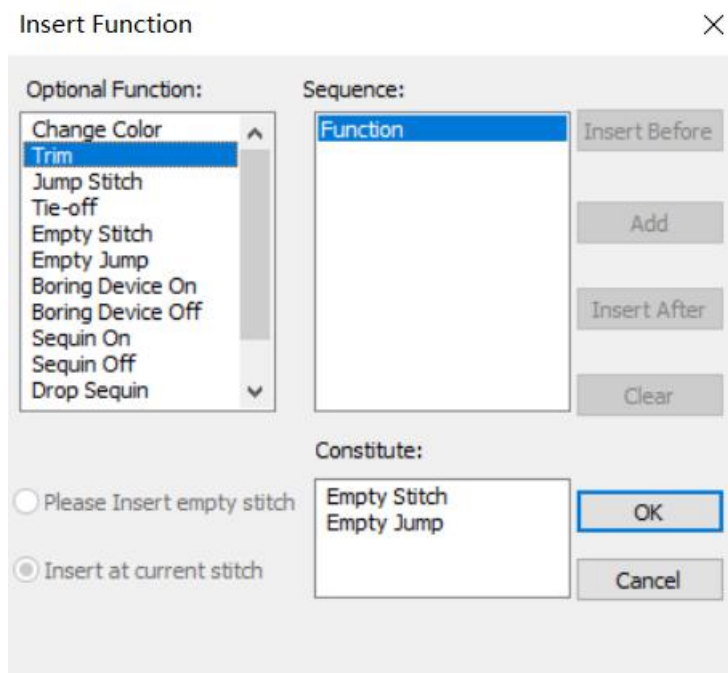
5.2.7. Adding trims

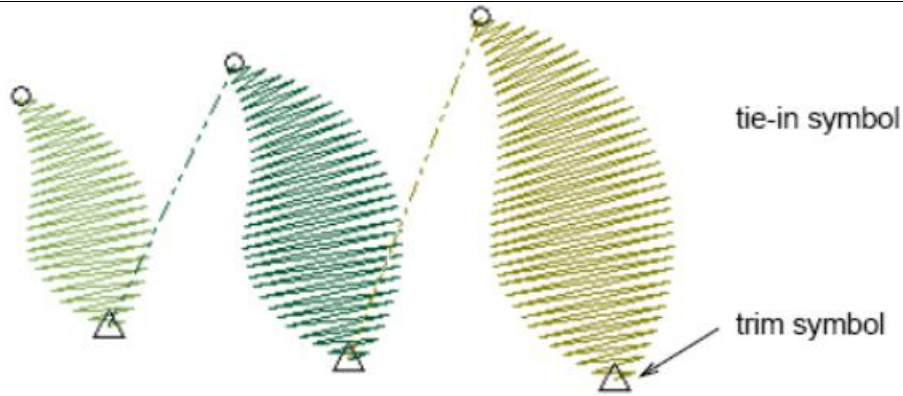
You can add trims in your design, using the Insert Menu > Insert Code > Trim. When you add a trim in this way, the trim function is added to the current stitch. Some machines require empty stitches or empty jumps on either side of the trim. If this is the case for the machine you want to stitch to, you will need to insert them.

Tip Make sure that all stitches you trim have been tied in and tied off, otherwise the stitches will be loose.

To add a trim

- (1) Travel to the needle position where you want to trim the thread.
- (2) Click Insert Menu > Insert Code > Trim.





Tip You can also insert machine functions manually using the Insert Machine Function dialog.

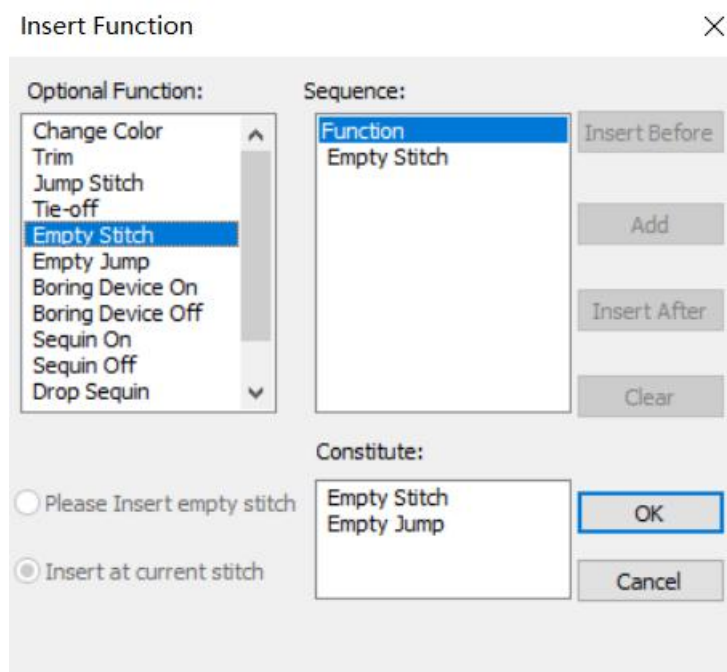
5.2.8. Empty stitches and empty jumps

Empty stitch is a tight, double-line lock stitch, used together with, or as an alternative to, tie-in and tie-off stitches. Use empty stitches instead of tie-ins or tie-offs for objects filled with light density stitching where standard tie-ins and tie-offs may be visible. Also, use empty stitches or empty jumps when required by the selected machine format.

Tip You can also insert machine functions manually using the Insert Machine Function dialog.

To add empty stitches and empty jumps

- (1) Travel to the needle position where you want to trim the thread.
- (2) Click Insert Menu > Insert Code > Empty Stitch to insert an empty stitch.
- (3) Right-click Insert Menu > Insert Codes > Empty Jump to insert an empty jump.



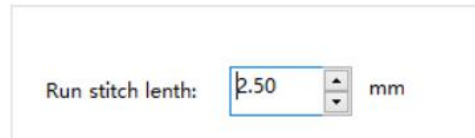
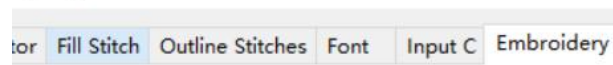
5.2.9. Adjusting travel run stitch length

Travel runs are usually used to connect segments within filled objects. They are usually covered by fill stitches when the object is stitched out. You can change the travel run stitch length to ensure travel run stitch will not display in the covering stitch. You can also adjust the travel run

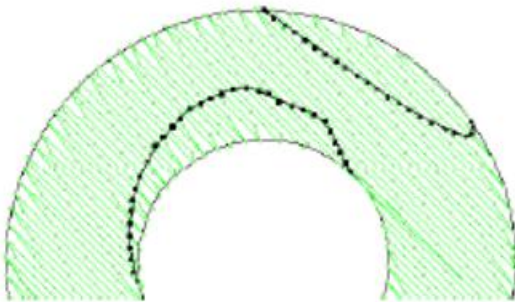
length to reduce the stitch count.

To adjust travel run stitch length

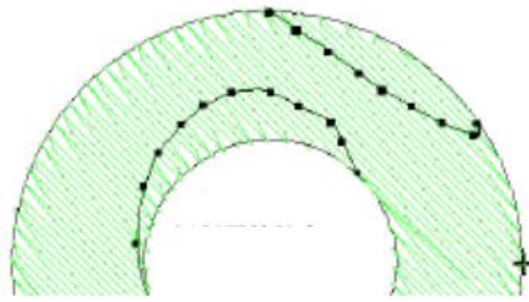
- (1) Click the Object Properties icon. The Object Properties dialog opens.
- (2) Select the Object Properties > Run Stitch Tab.



- (3) Enter a value in the Travel Run Length field.
 - A. Increase stitch length to reduce the stitch count of the design.
 - B. Decrease stitch length to ensure travel run stitch along with a sharp-turn curve is always within the internal shape.



Run stitch length: 1mm

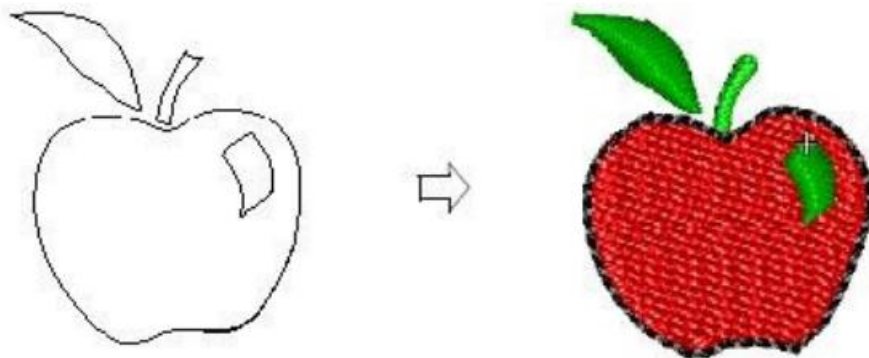


Run stitch length: 3mm

- (4) Click *Apply*.

6. Semi-automatic Digitizing

Raynen Embroidery Design Software provides a group of drawing tool, and you can draw the “draft” of shape on-screen. These tools are useful for easily creating embroidery objects by applying input method and stitch type to pattern objects. This means that it in turn frees you to spend more time on the stitch properties or stitch sequence but focus on design.



6.1. Creating images in Raynen Embroidery Design Software

Tip Raynen Embroidery Design Software lets you to select different colors for pattern object

outlines and stitch fills. As for the same embroidery objects, the colors are different.

6.1.1. Drawing line segment



Line segment

Use line segment tool to create line object in the design pattern.

Tip Use outline tool (for example Run, Triple Run, Motif Run) or Input C to convert Line segment to embroidery object.

To draw line segment

- (1) Click the line segment icon
- (2) Click to draw the starting point of the line segment.
- (3) Click to draw the end point.

Tip Hold down the Ctrl key to draw vertical, horizontal, or 15° line.

6.1.2. Drawing open shapes

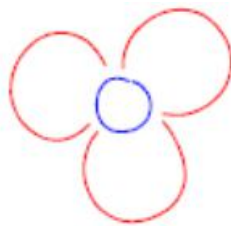


Poly Line

Use the poly line tool to create any shapes in the design pattern.

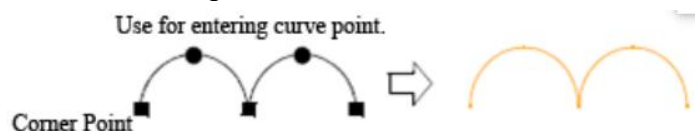
Tip Raynen Embroidery Design Software lets you to select different colors for pattern

object outlines and stitch fills. As for the same embroidery objects, the colors are different.



To draw open shapes

- (1) Click the Poly line icon.
- (2) Tab reference points to draw the shape of the line.
 - A. Click to enter a corner point.
 - B. Right-click to enter a curve point.



- (3) Press **Enter**.

6.1.3. Drawing Polygon



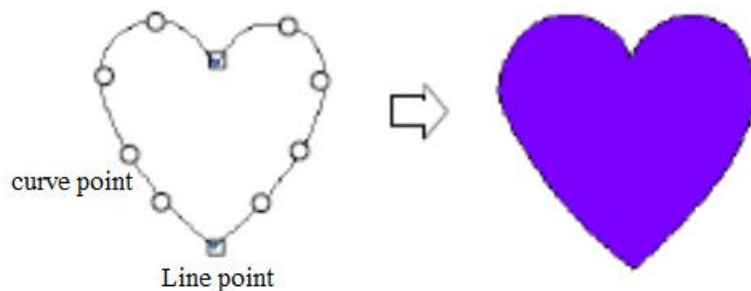
Polygon

Use the polygon tool to create closed polygon shape in the design pattern.

Tip Use outline tool (for example Run, Triple Run, Motif Run) , Input C, Complex fill to convert Line segment to embroidery object.

To draw polygon

- (1) Click the Polygon icon.
- (2) Digitize the shape through the reference points on the screen.
 - A. Click the left mouse button to input line point.
 - B. Click the right mouse button to input the curve point.



Tip Hold down the Ctrl key to draw vertical, horizontal, or 15° line between two points.

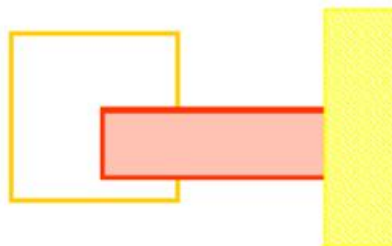
- (3) Press **Enter**.

6.1.4. Drawing rectangles and squares



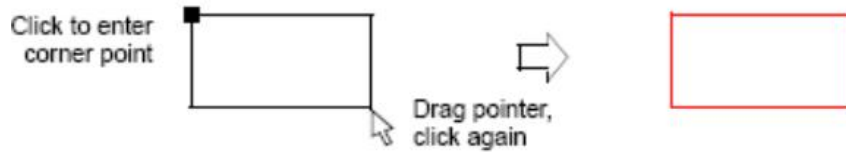
Rectangle

Draw rectangles and squares using the Rectangle tool.



To draw rectangles and squares

- (1) Select Image> Draw Vector > Rectangle.
- (2) Click to tab the corner of the rectangle. An outline attaches to the mouse pointer.
- (3) Move the pointer until the outline is the size and shape you require, and then click **Enter** again.



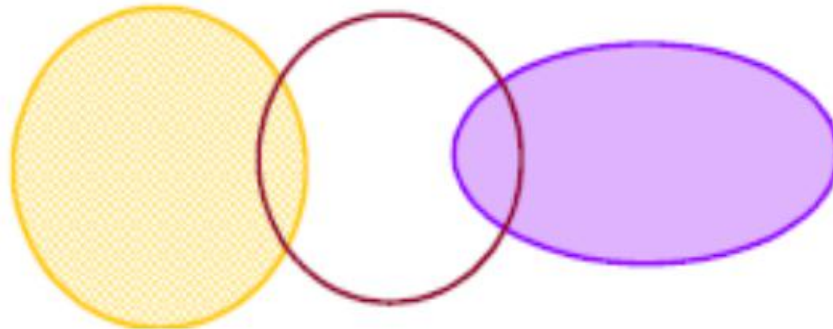
Note To draw a square, hold down Shift as you move the pointer.

6.1.5. Drawing circles and ellipses



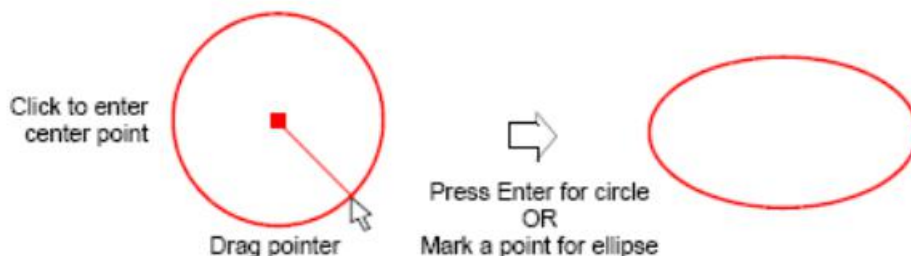
ellipses

Draw circles and ellipses using the *Ellipse* tool.



To draw circles and ellipses

- (1) Select Image> Draw Vector > Ellipse.
- (2) Click to tab the upper left point of the circle or ellipse.
- (3) Move the pointer until the outline is the diameter you require, and then press **Enter** again.



Note To draw a circle, hold down Shift as you move the pointer.

6.1.6. Creating overlapped complex shapes

If vector objects are overlapping, Make Complex Shape selects the largest area and clips off the remaining shape. Depending on the shapes you use, you can create combined or clipped shapes.



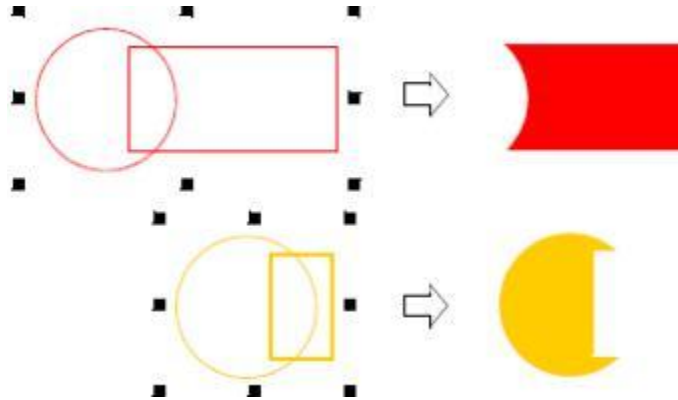
To create overlapped complex shapes

- (1) Insert a vector image or create one using the drawing tools.
- (2) Decide how you want to combine the shapes.

- A. If you want to combine the overlapping shapes, draw a box around them and select all objects.



- B. If you want to clip the overlapping shapes, simply select them.



- (3) Select Edit > Format Converting > Complex Fill.

The selected objects become a single vector object. Make Complex Shape selects the largest area and clips off the remaining shape.

6.2. Inter image and vector file

Insert the image to background in the soft.

Insert various vector format files that is saved by third-party drawing software to the soft.

To inter image or vector file

- (1) Create a new pattern file in the software
- (2) Select the *Image->Open image (or Vector) File* menu.
- (3) Select the stored "image" or "vector" file in the local path .
 - A. Image formats include BMP, JPG, etc.
 - B. vector formats include DXF, PLT, etc
- (4) Click Open to insert the Image or Vector file into the Raynen soft.

Part III MODIFYING DESIGNS

1. Combining and Resequencing Objects

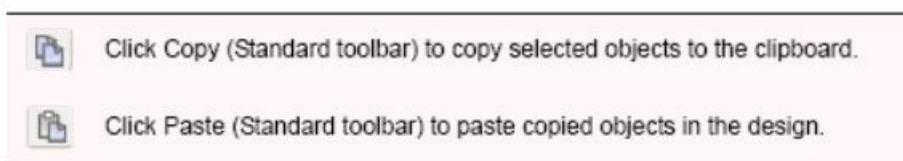
Raynen Embroidery Design Software provides methods for quickly adding objects to designs by duplicating and copying existing objects. It also can combine designs by inserting one file into another. Generally, stitching sequence is ordered according to design digitizing sequence. However, you can use different methods to change the sequence. This chapter describes how to combine objects and designs through copying, pasting, duplicating and inserting techniques. It also describes how to resequence objects by cut-and-paste, by color, with the Object List, and by number.



1.1. Combining objects and designs

You can copy or cut a design or design objects to the Windows clipboard for temporary storage. These can then be pasted any number of times to the same or another design until replaced on the clipboard. You can also cut, copy and paste lettering objects within and between designs.

1.1.1. Copying and pasting objects



You can copy objects to create multiple, identical objects, or to insert objects from other designs.

Note You can use “cut” command to clip them from the design and paste them again. Cutting and pasting can change embroidery sequence of designs.



Copy a single petal object

Paste a single petal object

Copy and paste multiple petal objects

To copy and paste objects

- (1) Select the object (or objects) 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. You can paste between other objects in the sequence, or 'nest' the copied object within an object.
- (4) Click the Paste icon. The object is pasted in the design, according to the current paste options. The object remains on the clipboard and can be pasted repeatedly until the next Copy or Cut command.

Warning When using this type of commands, make sure that there is only one copy of an object at the same position. If an object is pasted twice into the same position, it will be stitched twice.

1.1.2. 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.



To duplicate objects

- (1) Select the object (or objects) to duplicate.
- (2) Travel to the position in the stitching sequence at which you want to paste the object. You can place the duplicate between other objects in the sequence, or 'nest' it within an object.
- (3) Select Edit > Duplicate. The duplicate object is placed directly on top of the original, in the specified position in the stitching sequence.

1.1.3. Deleting objects

Select Delete (Edit menu) to delete selected objects.

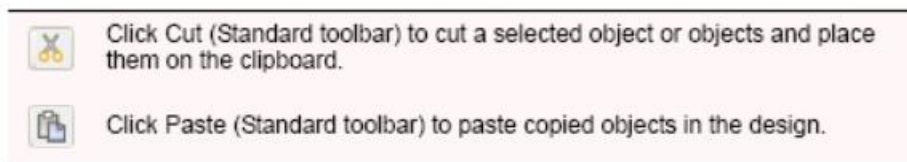
To delete objects

- (1) Select the object (or objects) to delete, and do one of the following:
- (2) Press Delete.
- (3) Select Edit > Delete.
- (4) Right-click and select Delete from the popup menu.

1.2. Resequencing embroidery objects

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 using the Object List.

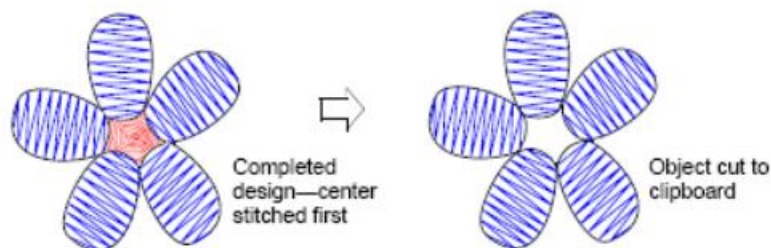
1.2.1. Resequencing objects with cut-and-paste



You can resequence objects by cutting an object from the design and pasting it back at a different point in the sequence. This does not change the physical location of the object.

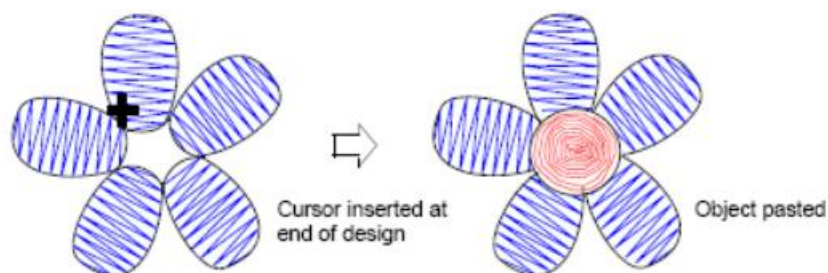
To resequence objects with cut-and-paste

- (1) Select the object (or objects) 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. You can paste between other objects in the sequence, or ‘nest’ the cut object within another object. If you do not move the current needle position marker, the object is pasted at the end of the sequence.

- (4) Click the *Paste* icon.



The object is pasted back in the design according to the current paste options.

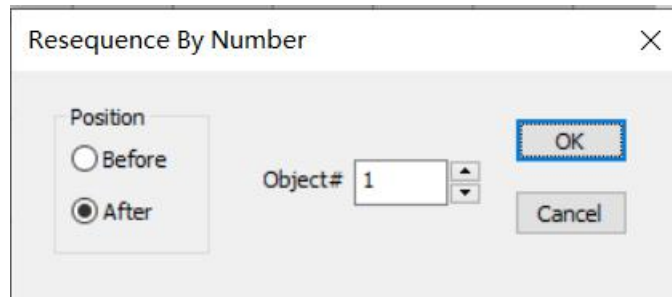
Note The object remains on the clipboard and can be pasted repeatedly until the next Copy or Cut command.

1.2.2. Resequencing objects by numbers

You can resequence objects according to numbers in the Object List.

To resequence objects by numbers

- (1) Select an object in Object List to resequence.
- (2) Right-click objects, and selects Resequence By Numbers from the popup menu.



- (3) Input object numbers (namely numbers) in this Object filed. Before this object, you should select the position for the selected object.

Tip If you like to position the selected object behind the selected number (for example, making it become the last object of the list), please select After Position option.

- (4) Click Apply.

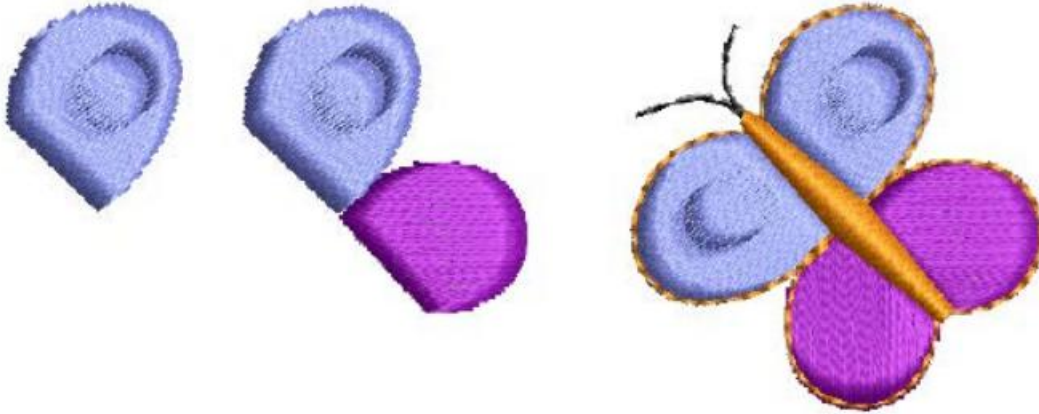
Selected object will place in the new position, and all of others will resequence accordingly.

1.3. Combining Objects

- (1) Select objects.
- (2) Select View > Object List.
- (3) Select two or above objects, and then right-click to select Combine.

2. Arranging and Transforming Objects

You can change the position, size and orientation of objects in a design by moving, scaling and transforming them. Group objects together to apply universal changes, or lock them to avoid unintentional modification. You can modify objects directly on-screen or using *the Object Properties* dialog. Access commonly used functions via the Object List or popup menu.



Warning The scalability and stitching quality of a design ultimately depend on its original source – Native Design, Imported Outlines, Processed Stitches, or Imported Stitches. Only original designs contain the complete set of design information required for 100% perfect scaling and transformation. This chapter describes how to position objects, how to lock and group, align and space objects, as well as how to scale, rotate, skew, and mirror objects.

2.1. Positioning objects

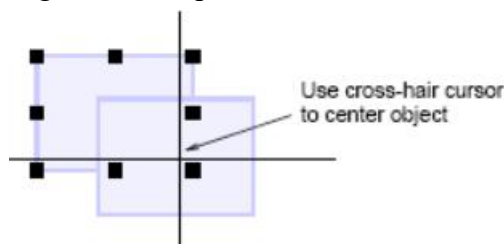
Use the mouse to drag objects in your design to a new position, nudging them with the arrow keys or by specifying the X: Y coordinates in the General Properties bar.

2.1.1. Positioning objects with click-and-drag

The simplest way to move an object in your design is to click-and-drag it to a new position. Use the arrow keys to ‘nudge’ objects into position.

To position objects with click-and-drag

- (1) Select the object/s to move.
- (2) Click the object and drag it to a new position.



(3) For more accurate positioning, use the arrow keys to ‘nudge’ the object into the required position.

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 moved distance.

2.1.2. Positioning objects by properties

You can position objects in the relative coordinate of design by entering the X: Y coordinates in the Object Properties dialog.

To position objects by properties

(1) Select object/s to move.

(2) Double-click object or  icon to open Object Properties dialog, and select General Tab.



(3) Input a new coordinate value of object in Position field.

(4) Click *Apply*.

2.2. Locking and grouping objects

When locking or grouping objects, you can apply all the changes to the whole objects immediately to save time, and make sure all the objects have universal change.

2.2.1. Locking objects

Lock objects to prevent them from being moved or modified by accident. For example, hold them in place as you digitize, transform or reshape the embroidery objects near locking backdrop or vector images. Locked objects can be unlocked for modification at any time.

To lock objects

(1) Select the object/s to lock, and select Arrange > Lock.

(2) Deselect object/s, select Arrange > Unlock.

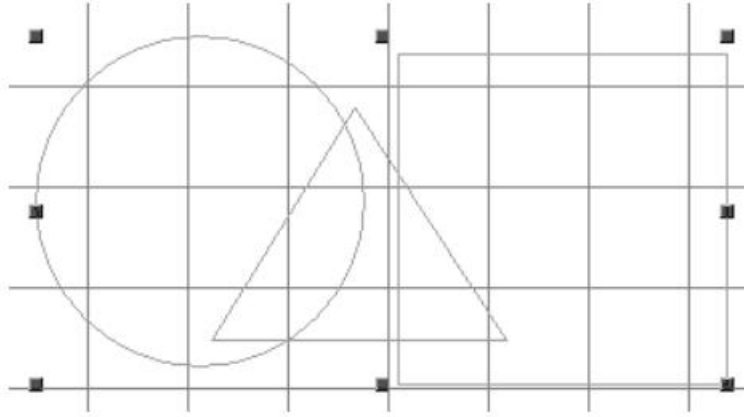
All locked objects in the design are unlocked.

2.2.2. Grouping objects

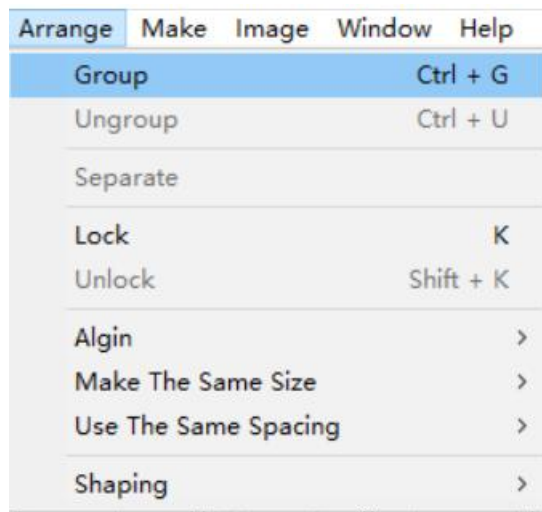
You can group selected objects, or an entire design, to keep them together for moving, scaling and transforming actions.

To group objects

(1) Select objects to group.



(2) Select Arrange > Group



Selected objects are combined into a group. This can be selected, moved, scaled and transformed as an individual object.

Tip To select with a bounding outline, simply drag the outline over one component object and the whole group will be selected.

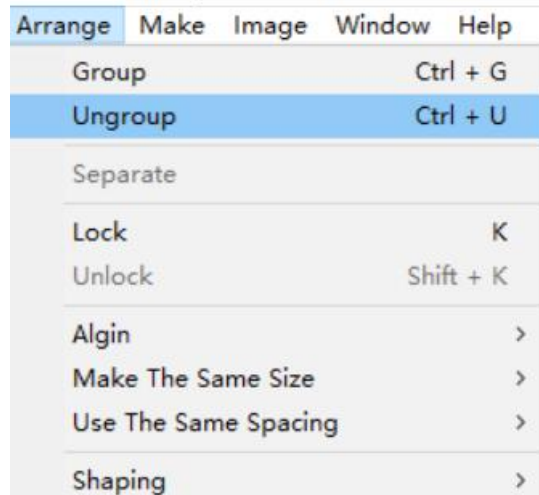
2.2.3. Ungrouping objects

When you have finished making changes to a group, you can ungroup and work with the component objects.

Note You need to ungroup before you can set properties for any individual object in the group.

To ungroup objects

- (1) Select objects to group.
- (2) Select Arrange > Ungroup.



Objects are ungrouped, grouped objects will be ungrouped.

2.3. Aligning objects and distributing objects

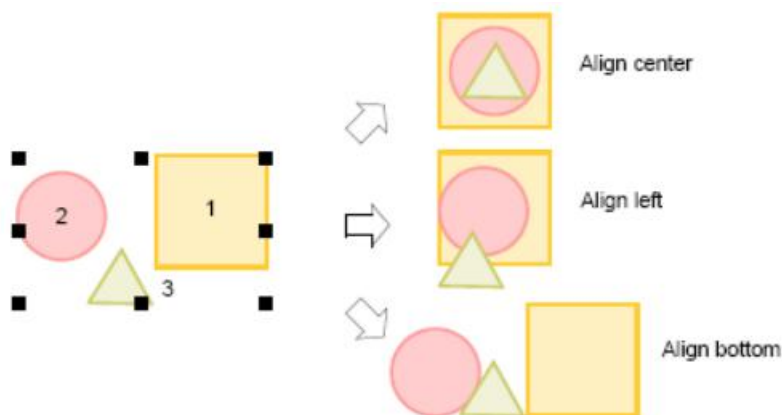
Raynen Embroidery Design Software can ensure their related position by aligning objects in the design, or distributing objects evenly in the design.

2.3.1. Aligning objects

You can align selected objects in a design to the left, right, top, bottom or center of a specific object.

To align objects

- (1) Select objects you want to align.
- (2) Select Arrange > Align, then select Align option.



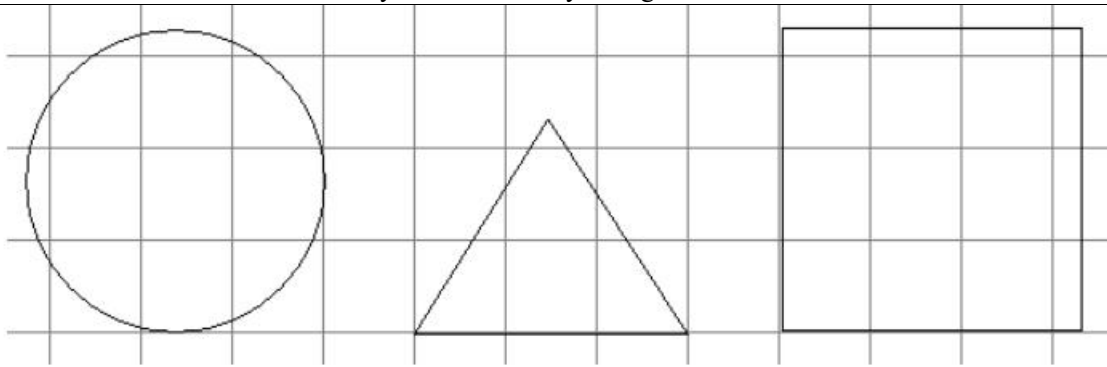
Note Objects are aligned with the last object selected.

2.3.2. Distributing objects evenly

You can set an even spacing between selected objects. Raynen Embroidery Design Software lets you set vertical or horizontal spacing.

To distribute objects evenly

- (1) Select the objects you want to space.
- (2) Select the spacing   icons you required.



A. Leaving vertical spacing evenly will influence the selected objects' vertical spacing.

B. Leaving horizontal spacing evenly will influence the selected objects' parallel spacing.

Note New spacing is based on the last two selected objects.

2.4. Scaling objects

You can drag selection handles, specifying the exact dimensions in the Object Properties dialog, or setting the distance between reference points on the design. As an object is scaled, the stitch count changes to preserve the current stitch spacing.

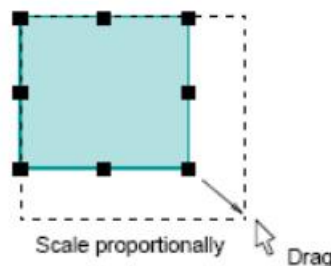
Note Only RNP designs contain the complete set of design information required for 100% perfect scaling and transformation.

2.4.1. Scaling objects using click-and-drag

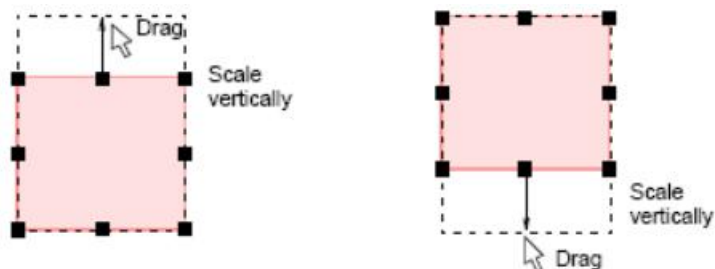
You can change the height and width of an object, or scale it proportionally using selection handles. Scale objects individually, or select multiple objects and scale them together.

To scale objects using click-and-drag

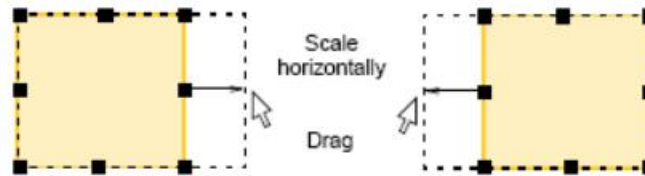
- (1) Select the object/s to scale. Eight selection handles appear around the object.
- (2) Click-and-drag a selection handle to scale the object.



A. To scale height and width proportionally, use a corner handle.



B. To change the height, use the handles at the center-top or center-bottom.



2.4.2. Scaling objects by object properties

You can scale selected objects or a whole design using their properties. In this way, stitches can be regenerated and be preserved the original stitch density.

Tip At the same time, you can adjust stitch density. Please see Adjust Stitch Density for details.

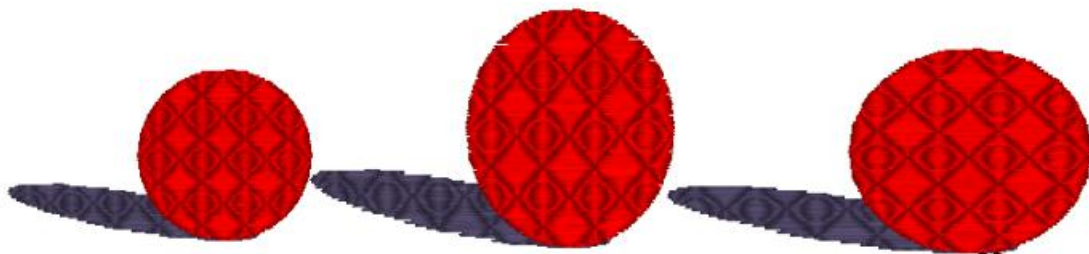
Warning If you scale a stitch design by more than 5%, changes to stitch density will affect the design quality. Please see Design Format for details.

To scale objects by object properties

- (1) Select the object/s to scale.
- (2) Double-click object to open Object Properties dialog, and select General Tab.
- (3) In the Dimension Frame, scale objects as required, either:
 - A. Enter exact height and width values.
 - B. Enter the new height and width as a percentage of the current dimensions.

General			
Size Equal Ratio ☐ Keep Station ☐ Width: 34.00 mm Height: 35.60 mm 100.00 % 100.00 %			
Position X: -24.80 mm Y: 25.20 mm			
Transform Type: Rotate Rotate Angle: 0 Mirror Angle: 0 Slant Type: Axis X Slant Angle: 0			

- (4) Click *Apply*.



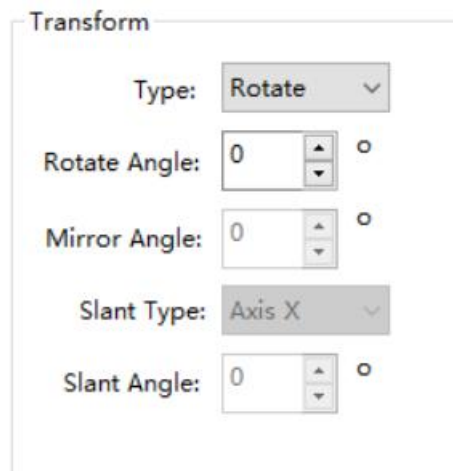
Note After scaling, the new object size is reset to 100%.

2.4.3. Rotating objects by object properties

You can rotate selected objects by entering an exact value using the Object Properties dialog.

To rotate objects by object properties

- (1) Select the object/s to rotate.
- (2) Double-click object to open Object Properties dialog, and select General > Transform Type >
- (3) Rotate Tag.
- (4) Input your required rotated angle into the Rotate field.



- (5) Click *Apply*.

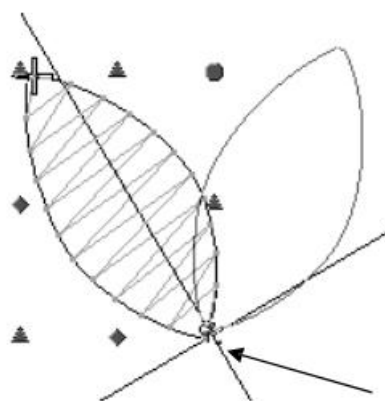
2.4.4. Rotating objects by reference line

The Transform Special tool lets you rotate selected objects with the aid of reference points alone. It can be used both with embroidery and vector objects.

Tip This technique is particularly useful to duplicate and rotate objects around an anchor point—e.g. the petals of a flower.

To rotate objects by reference line

- (1) Select the object/s to transform.
- (2) Click to tab fixed point to transform.
- (3) Click to tab the point which relative fixed point in the object rotates around it.



Outlines attach to the pointer

- (4) Drag the pointer to the required rotated position.
- (5) Click **OK** or press **Enter**

2.5. Skewing objects

You can skew objects directly on-screen or by setting a skew angle in Object Properties dialog.

2.5.1. Skewing objects using click-and-drag

You can skew objects along the horizontal plane by clicking skew handles and dragging to the required angle.

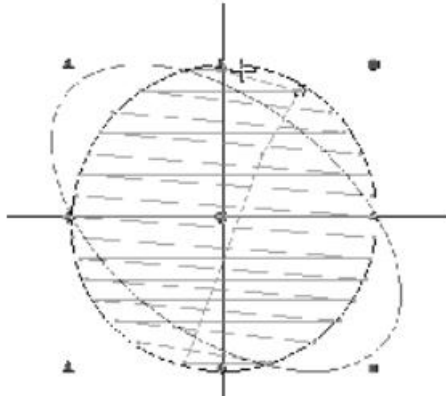
To skew objects using click-and-drag

(1) Select the object/s to skew.

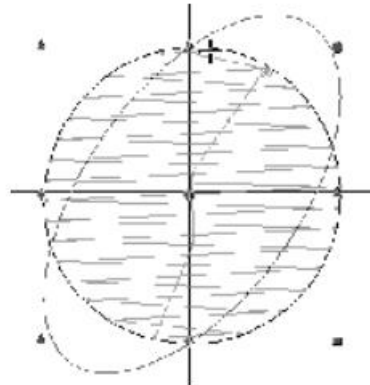
(2) Click the object a second time.

Rotation and skew handles appear around the object. Skew handles are diamond-shaped and appear at the center-top and bottom of the object.

(3) Drag the skew handles left or right.



X Skew



Y Skew

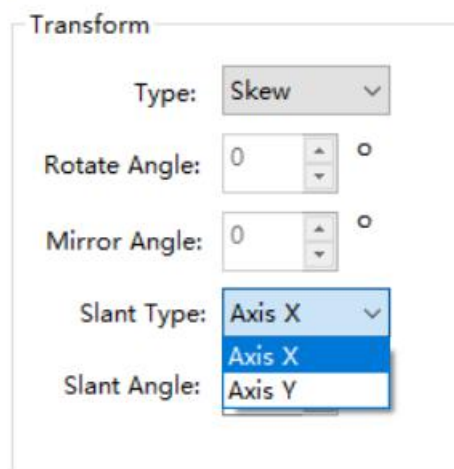
2.5.2. Skewing objects by object properties

You can skew selected objects by entering an exact angle in the Skew field.

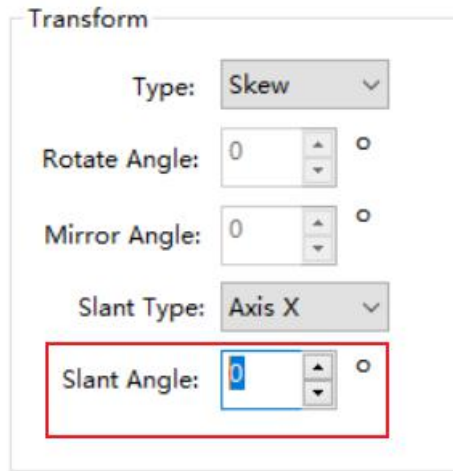
To skew objects by object properties

(1) Select the object/s to skew.

(2) Double-click object to open Object Properties dialog, and select General > Transform Type > Skew Tab



(3) Enter the required skew angle in the Skew field.



(4) Click *Apply*

2.6. Mirroring objects

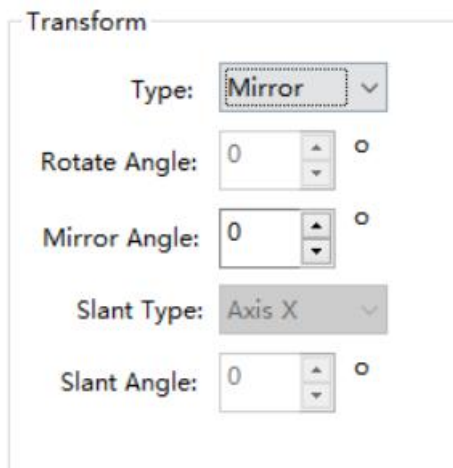
You can mirror objects horizontally or vertically by means of the Object Property dialog. You can also mirror around a defined axis using a reference line.

2.6.1. Mirroring objects by object property

You can mirror objects horizontally or vertically using the Object Property dialog.

To mirror objects by object property

- (1) Select the object/s to mirror.
- (2) Double-click object to open Object Property dialog, and select General > Transform Type > Mirror Tab.
- (3) Input angle value in mirror checkbox.



(4) Click *Apply*

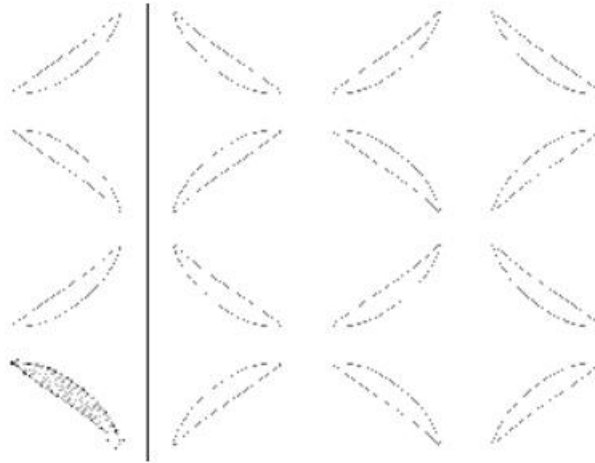
2.7. Mirror-Merge

Using the Mirror-Merge tool, you can get different effects by duplicating, rotating and offsetting around the mouse coordinate. Mirror-Merge includes Array, Reflect, Rotate Circle Copy, Mirror Circle Copy and Angle Circle Copy.

2.7.1. To reflect objects with Mirror-Merge

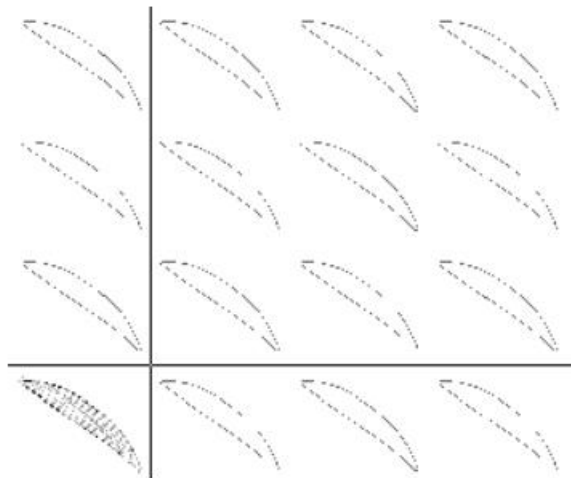
- (1) Select the object/objects.

- (2) Click the Reflect  icon.
- (3) Enter your expected value, vertical value, horizontal value and interval value.
- (4) Click **OK** or press **Enter**.



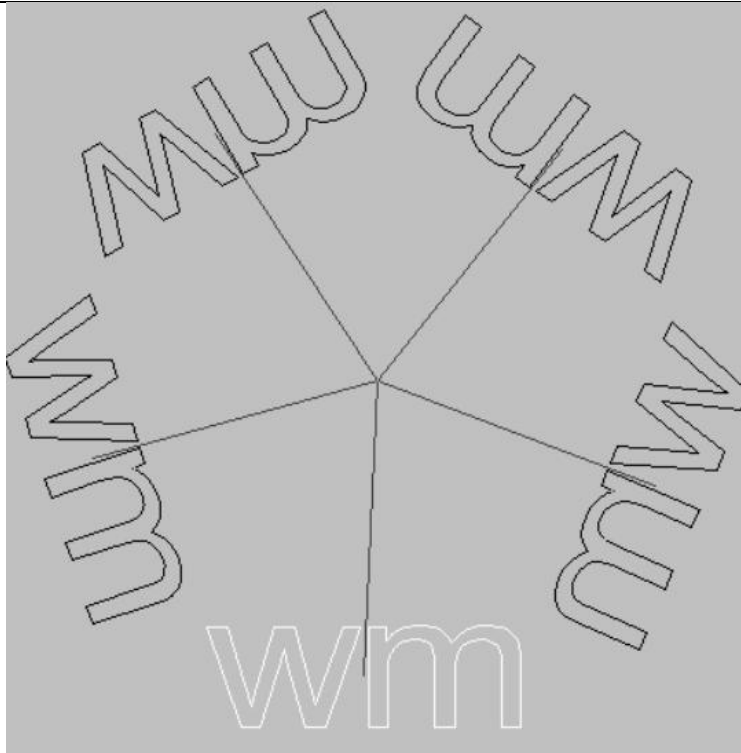
2.7.2. To duplicate objects with Mirror-Merge

- (1) Select the object/objects.
- (2) Click the Array  icon.
- (3) Enter your expected value, vertical value, horizontal value.
- (4) Click **OK** or press **Enter**.



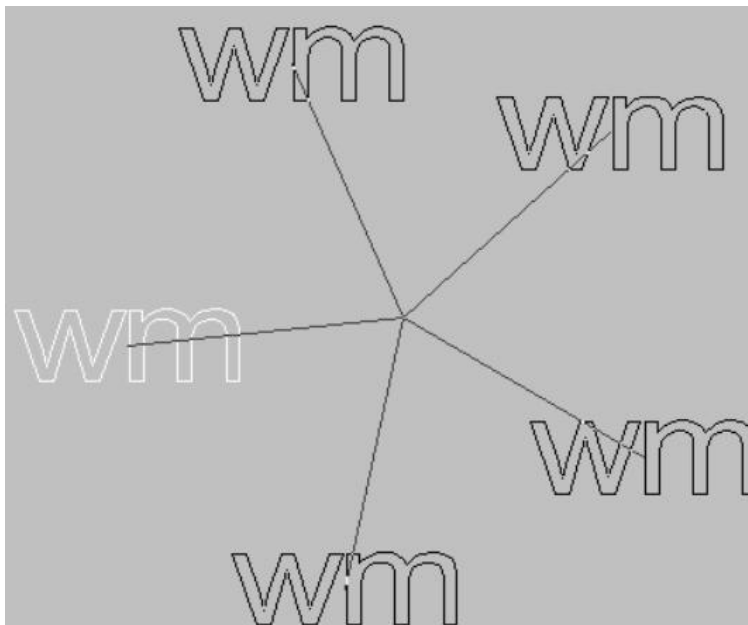
2.7.3. To duplicate objects by rotating around a central point

- (1) Select the object/objects.
- (2) Click the Rotate Circle Copy  icon.
- (3) Enter your expected value, horizontal value and rotated angle.
- (4) Click **OK** or press **Enter**.



2.7.4. To create objects with Mirror-Merge

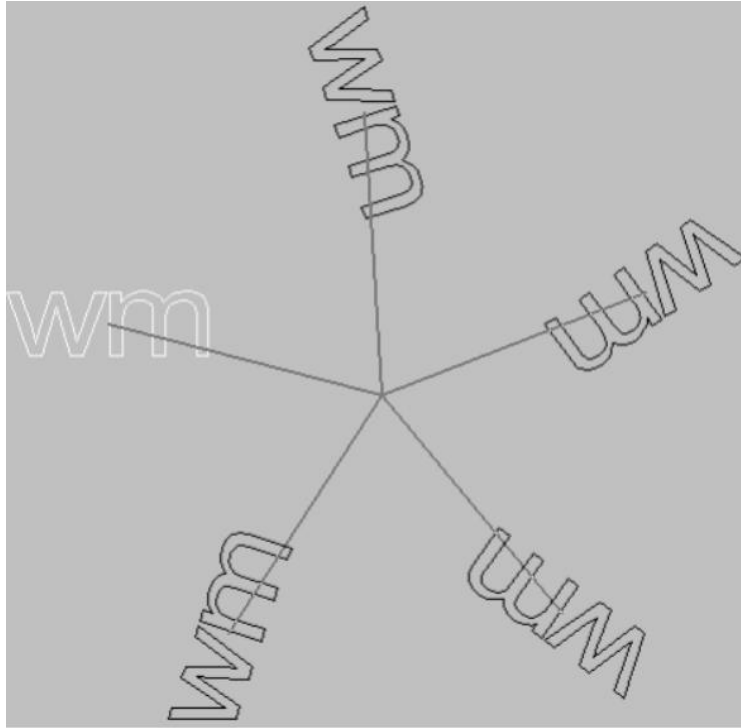
- (1) Select the object/objects.
- (2) Click Mirror Circle Copy  icon.
- (3) Enter your expected value, horizontal value and rotated angle.
- (4) Click **OK** or press **Enter**.



2.7.5. To duplicate objects with even angle around a central point

- (1) Select the object/objects.
- (2) Click Angle Circle Copy  icon.
- (3) Enter your expected value, horizontal value and rotated value.

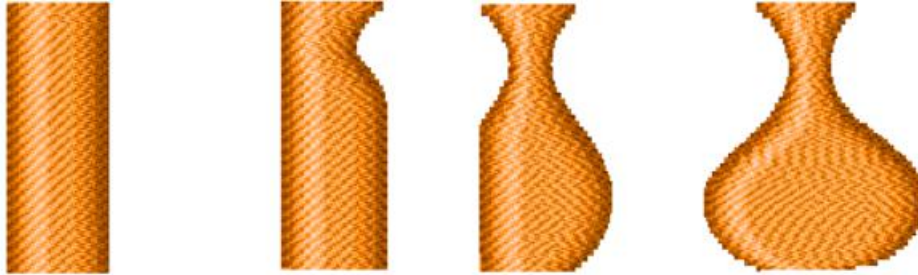
(4) Click **OK** or press **Enter**.



3. Reshaping and Editing Objects

Raynen Embroidery Design Software lets you modify object shape, stitch angle, entry and exit point by using control point. Stitch angle line and entry and exit point tab in the selected object appeared around. The control points are different because of their different types.

Tip 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 chapter describes how to reshape objects, star objects with control points. It also describes how to convert object types, adjust stitch angles (including setting multiple stitch angles), change entry and exit points.



3.1. Converting between object types

Raynen Embroidery Design lets you convert vector images directly to embroidery objects using a variety of input methods. Similarly, you can convert embroidery designs or objects to vector images. These can then be converted to any kind of embroidery object. You can also convert between different run objects as well as Input C objects. This is useful when scaling designs—e.g. for creating thicker or thinner columns and borders, or converting between Complex Fill and Input A or Input B objects. See also Object interconversion.

3.2. Converting vector objects to embroidery

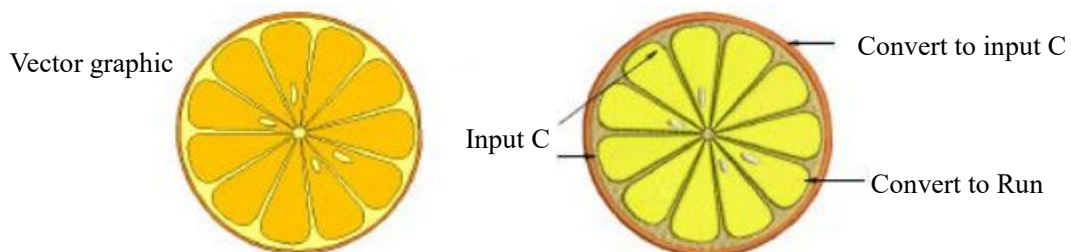
Use Convert > Complex Fill (popup menu) to convert vector objects to Complex Fill objects.

Use Convert > Input C (popup menu) to convert vector objects to Input C objects.

Use Convert > Run (popup menu) to convert vector objects to Run objects.

Use Convert > Triple Run (popup menu) to convert vector objects to Triple Run objects.

Use Convert > Motif Run (popup menu) to convert vector objects to Motif Run objects.



You can convert vector objects to embroidery objects using Complex Fill, Input C, or an outline input method. The resulting object takes the current stitch type, color and object properties set for that input method.

To convert vector objects to embroidery

- (1) Select a thread color from the color palette.
- (2) Select the vector object to convert.

Note If you select Complex Fill as the input method, you can select several vector objects to create an object with multiple boundaries.

- (3) Select an input method from the Input toolbar.

Alternatively, right-click and select Convert > from the popup menu.

Tip Before you apply an input method, select the correct properties. For Complex Fill and Input C, select a stitch type and set the desired effects, otherwise the last selected stitch types and properties are used.

3.2.1. Converting embroidery objects to vector objects

Use Convert > Drawing (popup menu) to convert embroidery objects to vector objects. You can convert embroidery designs or objects to vector images at any time.

These can in turn be re-converted to any kind of embroidery object.

To convert an embroidery object to a vector object

- (1) Select an embroidery object or design.
- (2) Right-click it and select Convert > Drawing from the popup list.
The selected embroidery objects are converted to vector objects.
- (3) Convert selected vector objects to embroidery objects as required.
See Converting vector objects to embroidery for details.

3.2.2. Converting between run objects



Use Run (Input toolbar or popup menu) to digitize and then convert to Triple Run or Input C.



Use Triple Run (Input toolbar or popup menu) to digitize and then convert to Run or Input C.

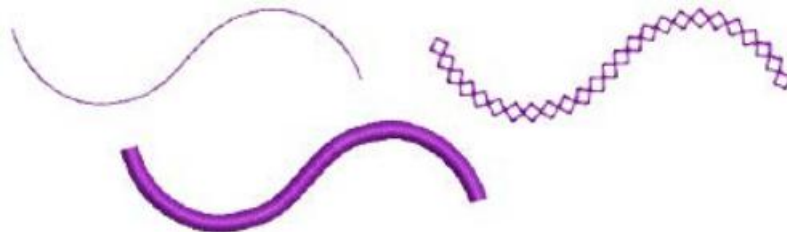


Use Motif Run (Input toolbar or popup menu) to digitize and then convert to Run or Input C.



Use Input C (Input toolbar or popup menu) to digitize and then convert to Run or Triple Run

You can quickly inter-convert objects digitized with Run, Triple Run, Motif Run, Backstitch, Stemstitch, or Input C. This is useful for creating thicker or thinner columns and borders when scaling.



To convert between run objects

- (1) Select a run object—e.g. Run, Triple Run, Motif Run, Stemstitch, Backstitch, or Input C.
- (2) Click a run stitch icon.
Alternatively, right-click and select Convert > from the popup menu
- (3) Follow the instruction in the prompt bar:

3.2.3. Converting Input A or B to Complex Fill



Use Complex Fill (Input toolbar or popup menu) to convert objects from Input A or B to Complex Fill.

You can easily convert objects from Input A or Input B to Complex Fill. This is useful for editing. For example, as curved fill effects can only be used with Complex Fill objects, you can add them to Input A or B shapes by first converting to Complex Fill. Also when scaling designs, an Input A or B shape may become too big for Turning Satin. By converting to Complex Fill, you can apply fixed or turning Tatami or some other fill stitch type.

To convert Input A or B to Complex Fill

- (1) Select the Input A or Input B object.
- (2) Click the Complex Fill icon.

Alternatively, right-click and select Convert > Complex Fill from the popup menu.

- (3) OK

3.3. Reshaping objects

Use Reshape Object tool to select, move, add, or delete control points on the object outline, you can reshape the objects. For some objects, you can also change control points by changing corner points to curves.

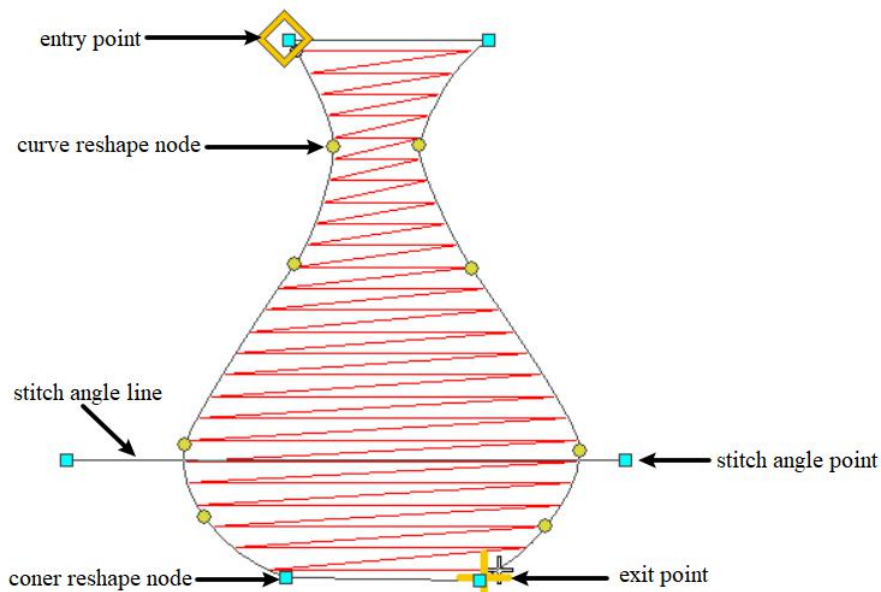
Note *Reshape* tool lets you modify shape without influencing the stitch angle.

3.3.1. Reshaping objects with control points

Use Reshape Object tool to select objects and modify object shapes with control points.

To reshape objects with reshape nodes

- (1) Select the object to reshape.
- (2) Click the Reshape Object icon. Control points appear around the object.



- (3) Depending on the object types or required changes, modify outlines by adding, deleting, changing or moving control points.

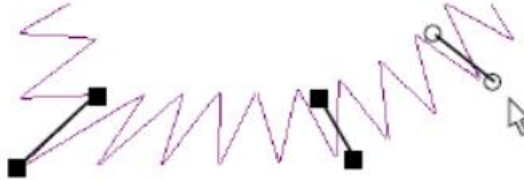
- (4) Change stitches entry and exit points, and change stitch angle as required.
- (5) Press **Enter** to apply these changes.

3.3.2. Selecting control points

To reposition and modify, you can select control points individually or in union.

To select control points

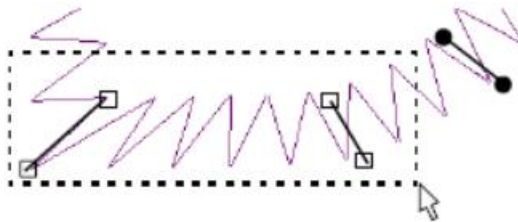
- (1) Click to select an individual control point.



- (2) Hold down **Ctrl**, click to select multiple control points.



- (3) Click-and-drag a bounding box around a group of control points to select.



3.3.3. Moving control points

You can reshape outline by moving control points.

To move control points

- (1) Click-and-drag the whole control point to the new position.
- (2) Similarly, click-and-drag multiple control points to the new position.

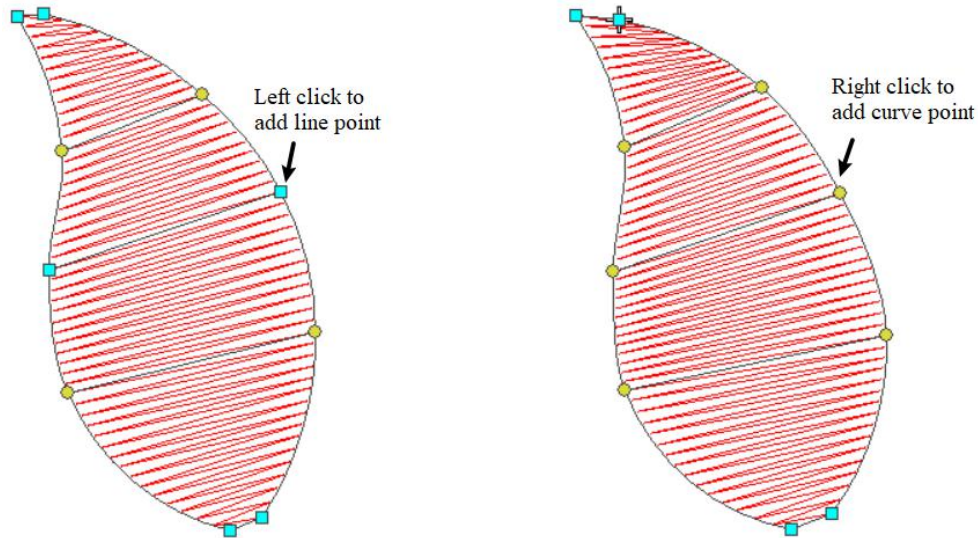


3.3.4. Adding control points

Click or right-click selected Reshape Object tool to add control points in the object outline.

To add control points

- (1) Position the pointer in the place where you want to add control points.
- (2) Click to add a corner point.
 - A. Left-click to add accorner point.
 - B. Right-click to add a curve point.



(3) Adjust the position of control points by dragging them along the outline as required.

3.3.5. Changing control points

You can reshape object outlines by changing corner control points to curves control points or vice versa.

Note You can not change any control points in objects created by *Star* tool.

To change control point

- (1) Select control points.
- (2) Press **Enter**.



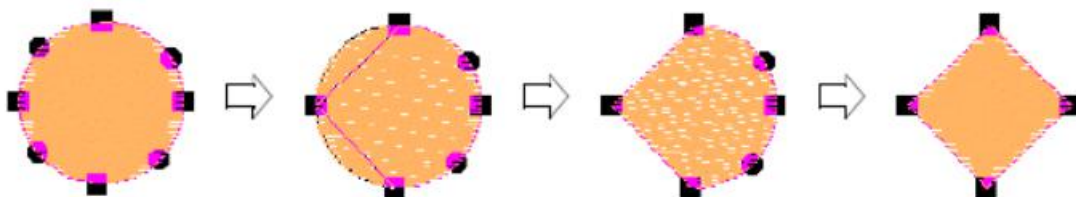
3.3.6. Delete control points

Delete unwanted control points to reshape outline or delete unwanted outline boundary in Complex Fill objects.

Note You can not delete any control points in the objects created by *Star* tool.

To delete control point

- (1) Select one or multiple control points.
- (2) Press **Delete**.



Note If the object has two control points (or in case of Input A, two pairs of control points), delete one equal to delete the whole object.

3.3.7. Reshaping circle, star and ring objects

For objects created with the Circle/Star or Ring tools, you reshape using the existing control points only. You cannot add, change or delete control points in these objects.

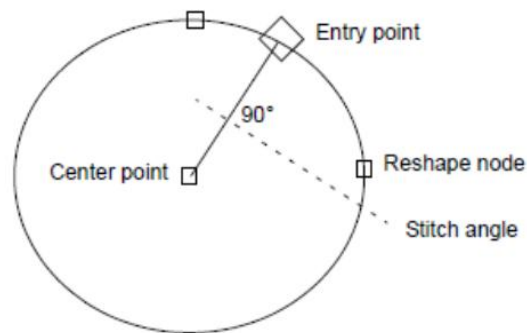
Reshaping circle/star objects



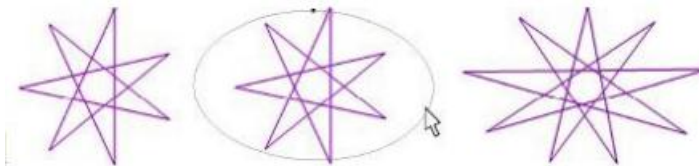
Use Toolbox > Reshape Tools Fly out > Reshape Object to reshape circle and star objects. Tip To scale a circle without changing it to an oval, select it with the Select Object tool, and use the selection handles to scale it.

To reshape circle/star objects

- (1) Select the circle/star object.
- (2) Click the Reshape Object icon. The Reshape Views toolbar appears.



- (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) To move the circle, click the center point and drag it to a new position.
- (5) Press **Enter**.

Reshaping ring objects

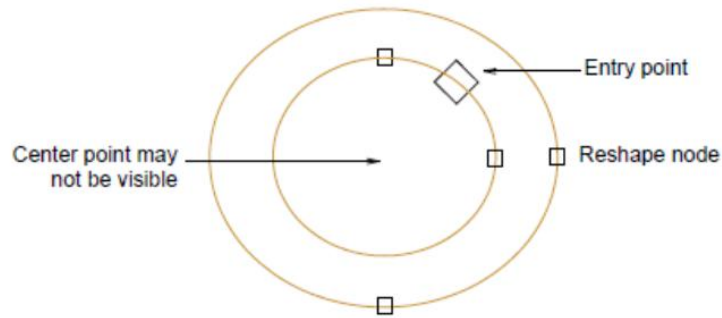


Use Toolbox > Reshape Tools Fly out > Reshape Object to reshape ring objects.

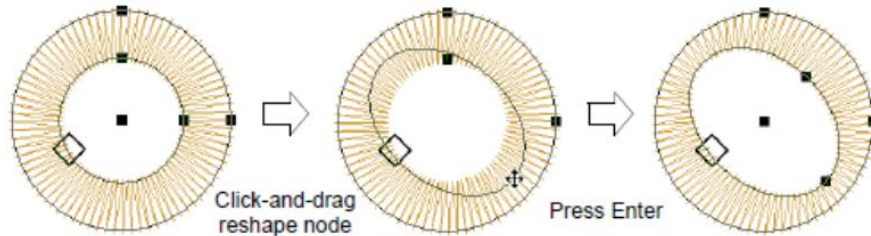
You can reshape the inner and outer boundaries of ring objects with the Reshape Object tool. Reshaping rings is similar to reshaping circle/star objects except that you reshape each boundary individually. Each boundary has two reshape nodes for changing radius and orientation, as well as a center point for moving the boundary. The object has a single entry point.

To reshape ring objects

- (1) Select the ring object.
- (2) Click the Reshape Object icon.
The Reshape Views toolbar appears.

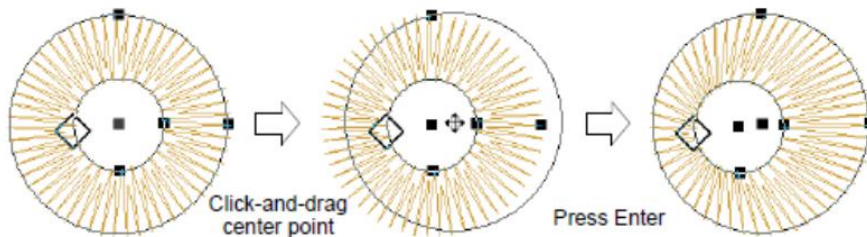


- (3) Click a reshape node on either boundary, drag it to change the outline, and press **Enter**.



To reshape without changing the orientation, use the reshape node at the top of the boundary.
To reshape and spin the boundary around its center, use the reshape node at the side.

- (4) To offset the boundaries, select the center point of a boundary, drag it to a new position, and press Enter.



Note The center points are generally on top of each other to begin with, and may not be visible.

3.4. Adjusting stitch angles

Stitch angle adjustments depend on the type of object you are working with. You can add multiple stitch angles to objects with the Stitch Angles tool. You can also adjust orientation of stitch angles with the Reshape Object tool.

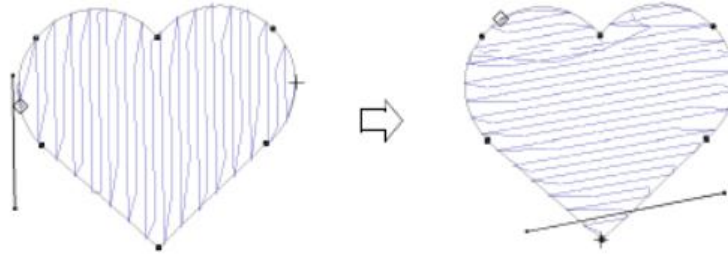
Note You cannot change the stitch angle of Star, Input C objects as the stitches automatically turn to follow the shape. You can, however, change the stitch angle of Star objects by moving the entry point.

3.4.1. Adjusting stitch angles intersectly

Using Reshape Object tool, you can change stitch angles of Input A, Input B and Complex Fill objects.

To adjust stitch angles intersectly

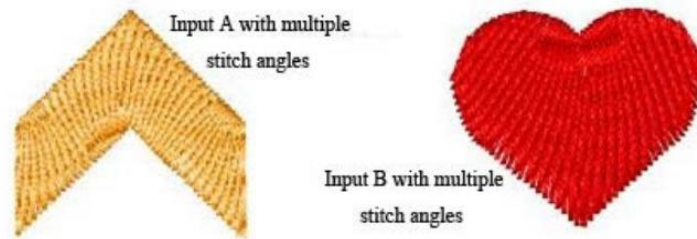
- (1) Select the object you want to adjust the stitch angles.
- (2) Click the Reshape Object icon. Display the control points with Display Stitch Angles.



- (3) Click-and-drag the required threads.
- (4) Press **Enter**.

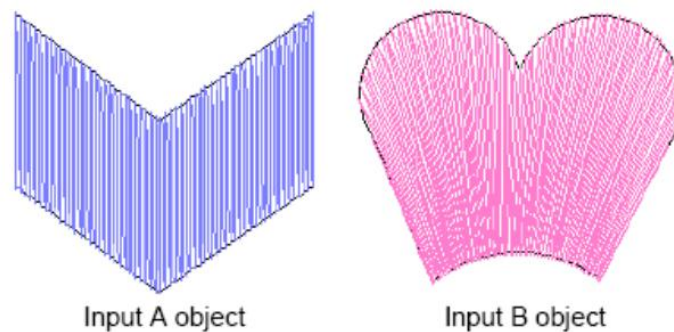
3.4.2. Setting multiple stitch angles

You can add multiple stitch angles by using Stitch Angle tool.

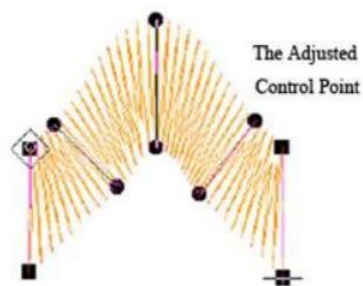


To set multiple stitch angles

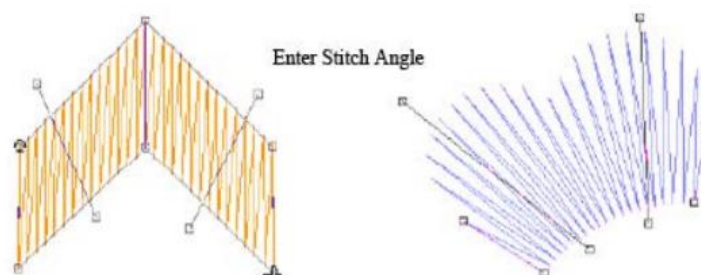
- (1) Select Input A and B and Complex Fill objects to modify.



- (2) Click *Stitch Angle* icon.



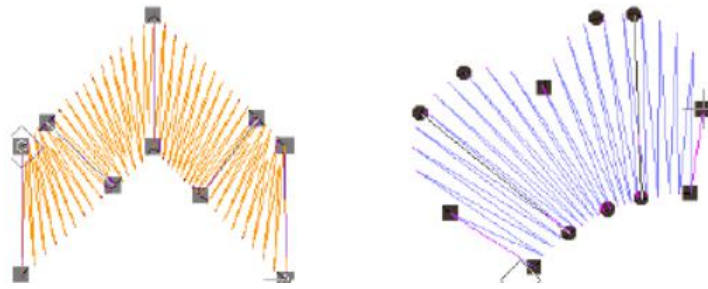
- (3) Digitize stitch angle lines so that they intersect two sides of the object. Make sure that they do not intersect each other.



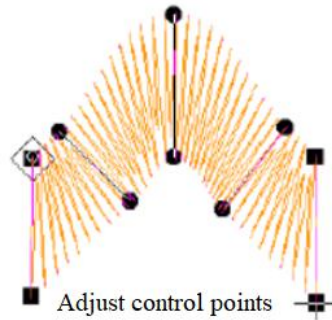
Warning New stitches should not intersect with existing stitches; otherwise the wrong

information will be displaced.

- (4) You can enter stitch angle lines for several times as required to get the turning fill effects.



- (5) Select and adjust the control points to reshape objects as required.



Objects will embroider again with new angles.

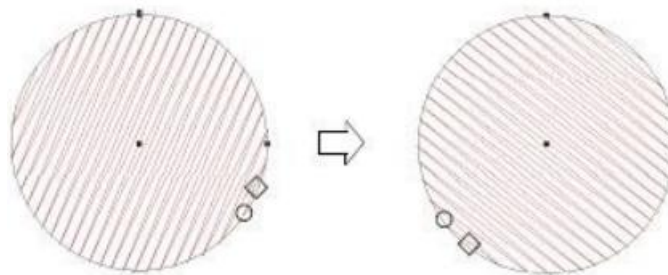
3.4.3. Changing entry and exit points

You can change the entry and exit points of individual objects. Aim to place the exit point next to adjoining objects for smaller connecting stitches, or to reduce the number of travel runs.

Note In star objects, the stitch angle is perpendicular to the line connecting the entry point to the circle center point. Thus, changing the stitch entry point of star object changes its stitch angle.

To change entry and exit points

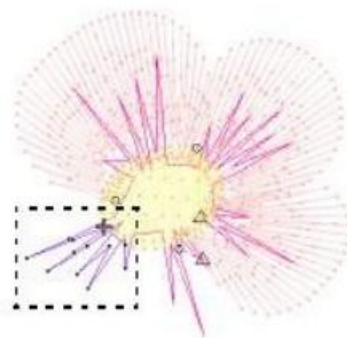
- (1) Select objects to change.
- (2) Click the Reshape Object icon and display the control points including the entry and exit points.
- (3) Select the entry or exit point as required, and drag it to a different position on the object outline.



- (4) Press **Enter**.

4. Editing Stitches and Machine Functions

As for Raynen Embroidery Design Software, stitches can be generated automatically from design outlines and properties. This means you can scale, transform, and reshape designs without affecting stitch density or quality. However, this software also lets you edit individual stitch. You simply select them like any other object and move the needlepoint position as required, especially when dealing with “stitch” files without design outline data. Please see Design Formats for details. Like stitches, most machine functions are inserted automatically whenever you select commands or specify object properties. They are stored with the embroidery object and updated whenever the object is modified. However, Raynen Embroidery Design Software also lets you manually insert machine functions and modify them. This flexibility allows you to adapt designs to almost any machine requirement.



Warning When you manually insert stitches or machine functions into non-manual objects, they need to be maintained manually. If an object’s stitches are regenerated for any reason, stitchedits are lost. For this reason, only insert functions manually if they cannot be added automatically. This chapter deals with selecting and editing stitches, and converting selected stitches to objects. It also includes instructions for inserting, checking, editing and clearing manually-inserted functions.

4.1. Selecting stitches



The *Stitch Edit* tool lets you select Runes, several stitches, or a range of stitches by selecting their needle points, or dragging a bounding box around them. Selected stitches are highlighted in a different color. You can also select individual stitches in your design using the Stitch List.

4.1.1. Selecting stitches by needle points

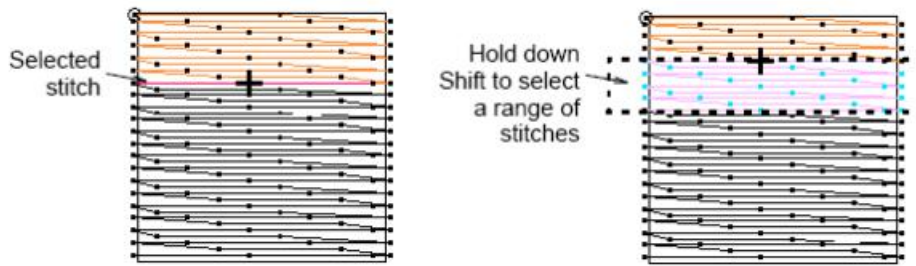
You can select individual stitches in *Stitch Edit* mode by selecting their needle points.

Tip Zoom in and display the needle points for easier selection of stitches.

To select stitches by needle point

- (1) Click the *Stitch Edit* icon.
- (2) Click a needle point.

The needle point changes color and the needle position marker moves to the selected stitch. All stitches after the needle position marker in the stitching sequence appear in black.



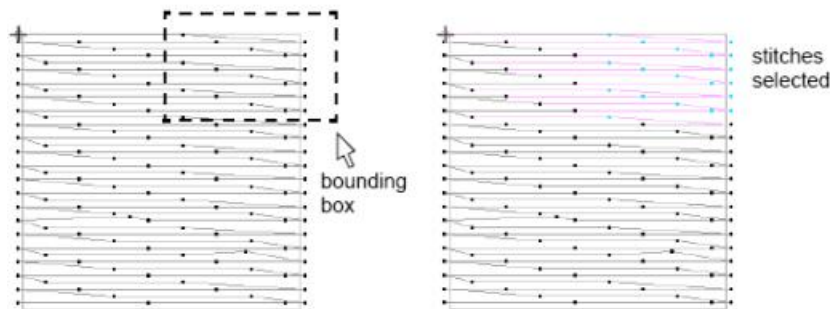
- A. To select a range of stitches, hold down Shift as you select.
- B. To select multiple stitches, hold down Ctrl as you select.

4.1.2. Selecting stitches with a bounding box

You can select all the stitches in the box quickly by dragging a bounding box around them.

To select stitches with a bounding box

- (1) Click the *Stitch Edit* icon.
- (2) Drag a bounding box around the stitches you want to select. Stitches are selected when you release the mouse button.



4.1.3. Selecting stitches with the Stitch List

You can select individual stitches in your design by means of the Stitch List.

To select stitches with the Stitch List

- (1) Select View > *Stitch List*.

The Stitch List opens. It displays stitch position coordinates and function information—e.g. whether the stitch is a jump. It also displays the length of every stitch in the design.

Stitch list ✕

#	X	Y	L	Function
3869	0.40	-1.70	1.75	
3870	0.10	-1.80	1.80	
3871	0.00	-1.30	1.30	
3872	0.80	-0.70	1.06	
3873	1.00	-1.10	1.49	
3874	-0.50	0.60	0.78	
3875	-0.50	0.50	0.71	
3876	-0.80	0.70	1.06	
3877	0.00	0.00	0.00	Change Co...
3878	-3.40	-6.30	7.16	Jump Stitch
3879	-3.50	-6.30	7.21	Jump Stitch
3880	-3.40	-6.40	7.25	Jump Stitch
3881	-3.40	-6.30	7.16	Jump Stitch
3882	-3.50	-6.40	7.29	Jump Stitch
3883	-3.40	-6.30	7.16	Jump Stitch
3884	-3.40	-6.30	7.16	
3885	-1.40	1.40	1.98	

(2) Click a stitch in the Stitch List to select it.

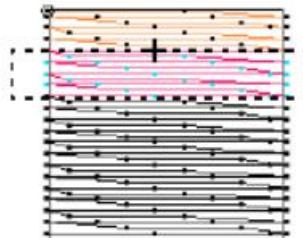
A. Stitches selected in the Stitch List are also selected in the design, and vice versa. a. To select a range of stitches, hold down **Shift** as you select.

B. b. To select multiple stitches, hold down **Ctrl** as you select.

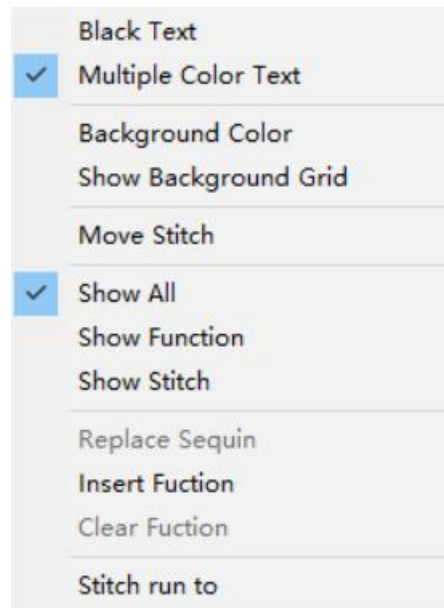
Stitch list ✕

#	X	Y	L	Function
3632	-0.30	2.40	2.42	
3633	2.40	-1.70	3.11	
3634	1.70	-1.00	1.07	
3635	1.80	-0.70	1.93	
3636	1.80	-0.40	1.84	
3637	1.90	-0.20	1.91	
3638	1.90	0.00	1.90	
3639	1.90	0.30	1.92	
3640	1.80	0.60	1.90	
3641	1.70	0.70	1.84	
3642	1.30	-1.40	1.91	
3643	1.60	-1.10	1.94	
3644	1.70	-0.70	1.84	
3645	1.80	-0.40	1.84	
3646	1.80	0.00	1.80	
3647	1.90	0.40	1.94	
3648	1.70	0.70	1.84	

Selected
stitches



Tip Right-click the Stitch List to access the popup menu options.



4.2. Editing stitches

You can insert stitches in an object to fill gaps in the design. You can move or delete individual or clusters of selected stitches.

Warning 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.

4.2.1. Inserting stitches

You can insert stitches in an object to fill gaps in the design. 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.

Note Inserting stitches is different from creating stitches using the Manual input method. Using the Manual tool you can create a separate object, with its own properties and connectors. Please see Digitizing An Individual Stitch for details.

To insert stitches

- (1) Click the StitchEdit icon.
- (2) Zoom in the area you want to edit.
- (3) Select a needle point.

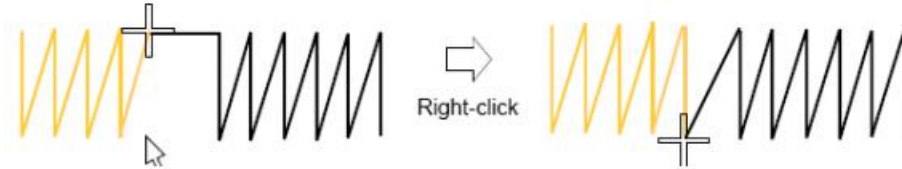
The needlepoint changes color and the needle position marker moves to the selected stitch.



- (4) Move the mouse pointer where you want to insert the new stitch, and right-click.



(5) Move the mouse to where you want to insert the next stitch, and right-click.



(6) Continue right-clicking as required.

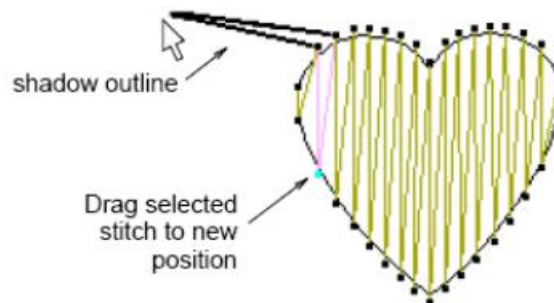
4.2.2. Moving stitches

You can move individual or groups of selected stitches.

Warning 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 and Editing Objects for details.

To move stitches

- (1) Click the StitchEdit icon.
- (2) Select stitches and drag them to a new position. The stitch shadow outline displays the new position.



- (3) Press **Enter**.

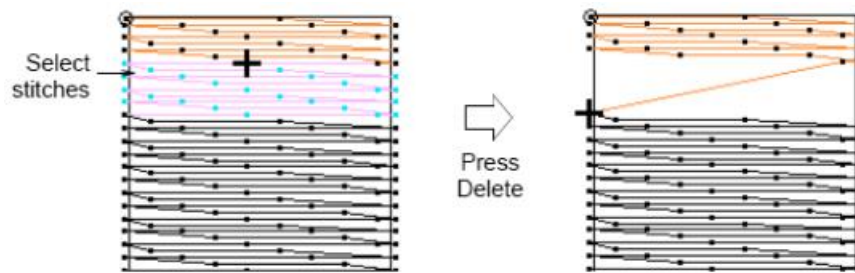
4.2.3. Deleting stitches

You can delete individual or groups of selected stitches.

Warning 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 stitch spacing, Adjusting Tatami stitch spacing and Adjusting stitch density for details.

To delete stitches

- (1) Click the StitchEdit icon.
- (2) Select a stitch or stitches.
- (3) Press **Delete**.



4.3. Editing machine functions

Most machine functions are inserted automatically whenever you select commands or specify object properties. They are stored with the embroidery object and updated whenever the object is modified. However, Raynen Embroidery Design Software lets you insert machine functions manually. Depending on your machine, different machine functions are available. The most common types are described below. See your machine manual for further details.

Warning When you insert stitches or machine functions manually, you must maintain them manually. If an object's stitches are regenerated for any reason, all stitch editing and machine functions are lost. For this reason, only insert manual functions if they cannot be added automatically.

Machine function types

Raynen Embroidery Design Software lets you manually insert color changes, thread trims, jumps, machine stops and boring functions.

4.3.1. Color change functions

Color Change functions tell the machine to use the next thread color in the design. They are automatically inserted when you select a new color from the color palette. You only need to insert manual color change functions if you cannot recolor using the standard methods, for example, when using multiple colors within a single object. See Editing Machine Functions for details.

4.3.2. Trim functions

Trim functions instruct machines with trimmers to cut connecting threads before moving to the next object. You insert trims automatically by setting connector values or using the Trim tool. See Adjusting Automatic Trim Settings and Adding Trims for details. If you need additional trims, you can insert the functions manually. See Editing Machine Functions for details.

Note If a machine does not have a trimmer, the trim function is ignored. Depending on the machine format, the trim function may be a code or a sequence of jumps. See Setting Trim Functions for details.

4.3.3. Stop functions

If the embroidery machine is to stop for any special reason during stitching, you need to manually insert a Stop function in the stitching sequence. To instruct Stop in the design, you need to insert a Stop function manually.

Tip Because a Stop function may be inserted for various reasons, you should record the purpose

of the stop on the production worksheet to assist the machine operator.

4.3.4. Jump functions

Jump functions cause frame movements without needle penetrations and cause frame moving smoothly from one part of a design to another. There are various methods for automatically entering Jump functions.

- (1) Apply Auto Jump to preserve long stitches.
- (2) Digitize individual jumps by right-clicking the Manual icon.
- (3) Select jumps as connectors.

4.3.5. Borer In/Out functions

Borer In/Out functions are available for embroidery machines equipped with a borer. They instruct the machine when to use the boring knife or tool instead of a needle. See Digitizing Borers for details.

4.3.6. Sequin On/Off functions

Sequin On and Sequin Off functions are available for embroidery machines that are equipped with a sequin dispenser. They instruct when the machine embroiders on the fabric with sequins. Use Sequin Stitching command to insert these functions automatically. See Digitizing Sequin Stitching for details. If you need additional Sequin On or Sequin Off functions, you can insert them manually. See Editing Machine Functions for details.

4.3.7. Inserting machine functions manually

You can insert machine functions manually by means of the Insert Function dialog. Depending on your machine's requirements, you will either add the function to the current stitch, or insert it on an empty stitch or empty jump. For some machines you will also need to add empty stitches or empty jumps on either side of some functions. See your machine manual for details.

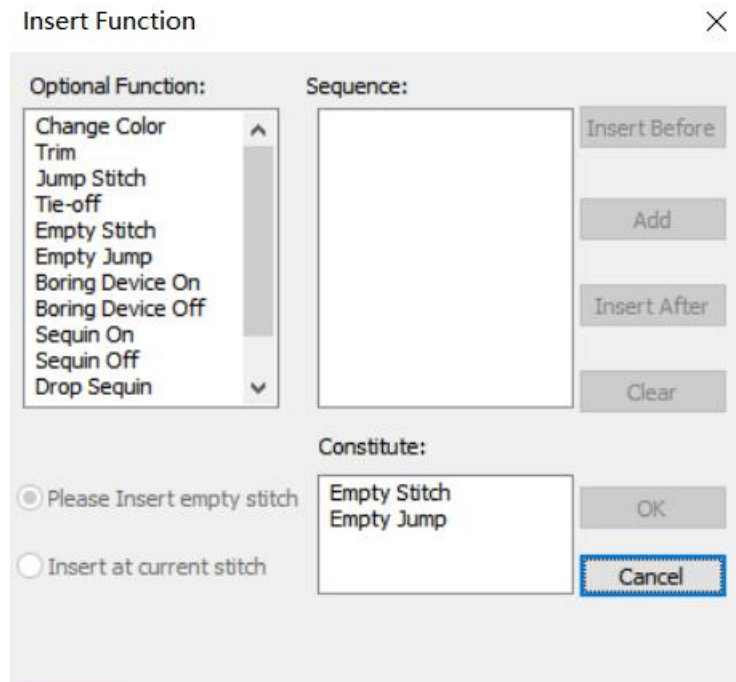
To insert machine functions manually

- (1) Click Stitch Edit  icon.

- (2) Travel to the position in the design where you want to insert a machine function.

- (3) Select View > *Stitch List*.

- (4) Right-click Stitch List and select Select > *Insert Function* from the popup menu. Select the functions you want from the available list. With some functions you can choose whether to insert on the current stitch or on an empty stitch.



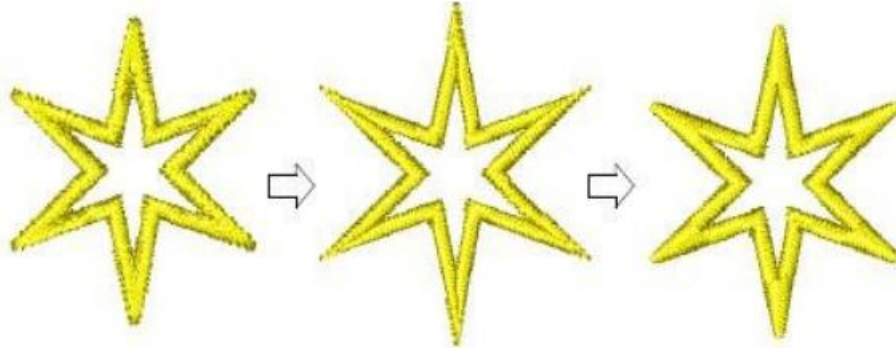
- (5) If available, choose the insertion method:
 - A. Insert on Empty Stitch: inserts the selected function on an empty stitch.
 - B. Add to Current stitch: inserts the selected function on the current stitch.
- (6) To insert empty stitches or empty jumps, select one or other in the Component field.
 - A. Insert Before: Select Insert Before.
 - B. Insert After: Select Insert After.

Tip To insert additional empty stitches or jumps, click Add.
- (7) Click OK. The names of inserted functions appear in the prompt line.

Part IV ADVANCED DIGITIZING

1. Improving Stitch Quality

Position stitches smoothly and evenly, reduce stitch spacing in designs by using automatic underlay, pull compensation and shorten run stitches. These functions are object effects. You can apply, delete or modify them at any time.



This chapter describes how to strengthen and stabilize embroidery designs with automatic underlay and how to compensate fabric stretching. It also covers to use stitch shortening to avoid stitch punch, adjust stitch density and automatically remove short stitches. Embroidery and long stitch controlled by Auto Split and Auto Jump are described as well as setting automatic start and endpoints.

1.1. Strengthening and stabilizing embroidery with automatic underlays



Use Auto Underlay (Stitch Types toolbar) to strengthen and stabilize embroidery designs with automatic underlays. Right-click to adjust underlay settings.

When embroidering, underlay stitches can stabilize fabric by reducing the transformation caused by pulling. It also provides ‘loft’, raising cover stitches and preventing them from sinking into soft fabrics. Auto stitch generates underlay stitches for the selected objects based on Effect dialog. Underlay settings are stored with each object in the same way as other object properties. They are regenerated whenever the object is scaled or transformed.

1.1.1. Applying automatic underlays



Right-click Auto Underlay (Stitch Types toolbar) to adjust underlay settings.

Apply automatic underlays to new or selected objects.



Apply automatic underlays

No automatic underlays

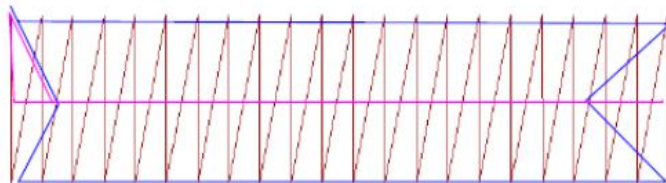
To apply automatic underlays

- (1) Right-click the Auto Underlay icon with objects selected. For both new and selected objects, automatically generated underlay stitches are based on current properties.
- (2) Click again to turn off the effect.

1.1.2. Selecting underlays

Use Auto Underlay (Stitch Types toolbar) to strengthen and stabilize embroidery designs with automatic underlays. Right-click to adjust underlay settings.

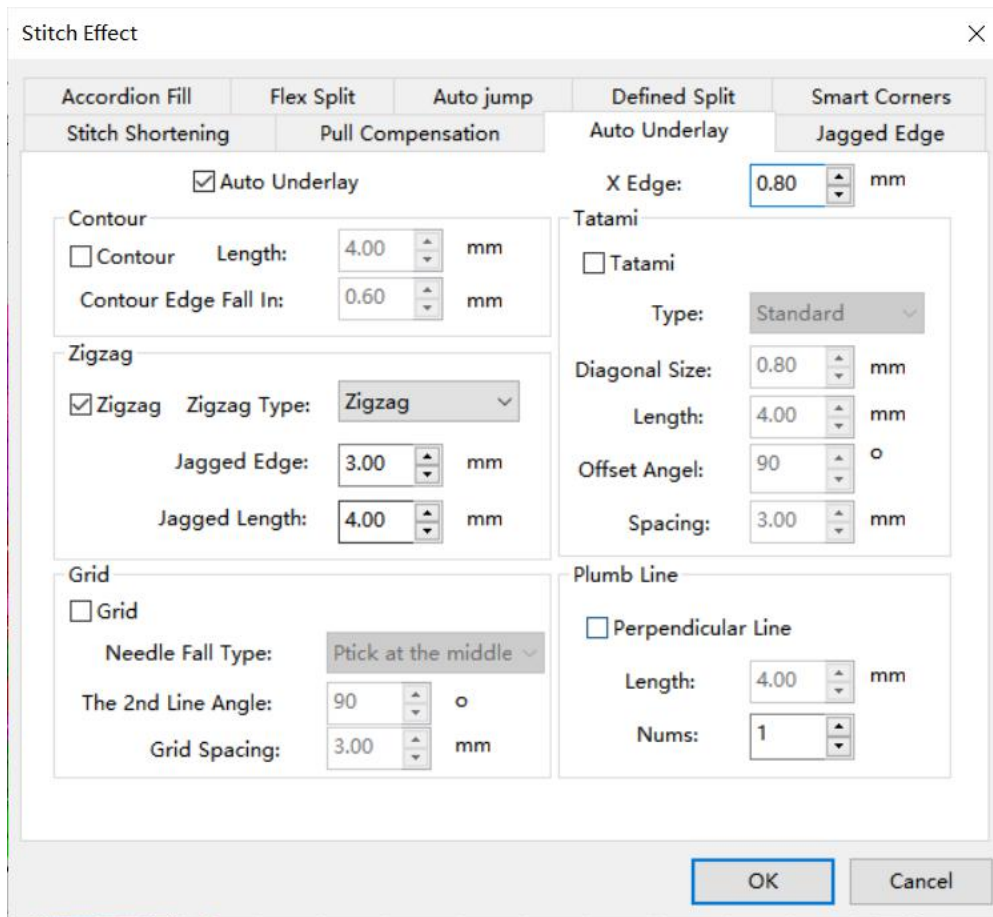
This software provides a selection of underlay types to choose from. Use a single layer of underlay, or for more support, combine two underlay types.



Center Run and
Edge Run underlays
used together

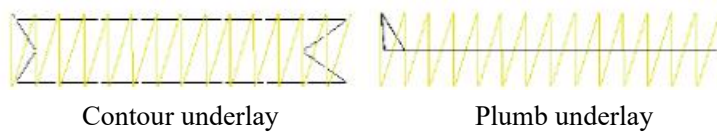
To select underlays

- (1) Right-click the *Auto Underlay* icon.
- (2) Select the Auto Underlay checkbox.
- (3) The listed underlay types are selected options.
- (4) Click **OK**.



1.1.3. Adjusting Edge Run and Center Run underlay settings

Edge Run places stitches around the edge of an object. Center Run places a row of stitches along the center of a column. It is used to stabilize narrow columns—e.g. 2-3 mm wide. Use Edge Run together with the Zigzag or Tatami underlays when digitizing large shapes.



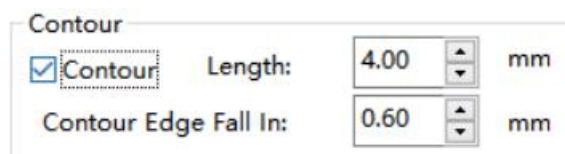
Contour underlay

Plumb underlay

Note Stitch settings for Edge and Center Run underlays are stored separately from and do not affect Run and Tripe Satin objects.

To adjust Edge Run underlay settings

- (1) Right-click the Auto Underlay icon.
- (2) Select the Underlay checkbox and select Edge Run checkbox.



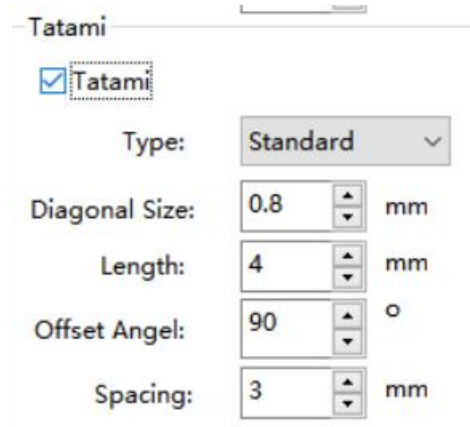
1.1.4. Adjusting Tatami underlay settings

Tatami underlay is used to stabilize large, filled shapes. It resembles an extremely open Tatami fill stitch, where rows of stitches are placed across the object to create the underlay. Change stitch spacing and length settings for Tatami underlay in the same way as for Tatami fill stitches. Select the backstitch type you require and, for Complex Fill objects, set the angle of the underlay stitches.

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

To adjust Tatami underlay settings

- (1) Right-click the Auto Underlay icon.
- (2) Select Underlay checkbox and select Tatami checkbox.



- (3) Input setting values into Tatami Stitch Values field as required:
 - A. Spacing: Distance between each row of stitching.
 - B. Length: Length of each stitch.



Spacing: 2.0mm

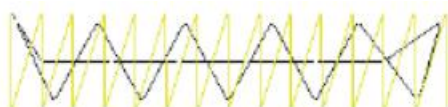


Spacing: 3.0mm

- (4) Click **OK**.

1.1.5. Adjusting Zigzag and Double Zigzag underlay settings

Use *Zigzag* and *Double Zigzag* underlay stitching to support wide columns.



Zigzag underlay



Double zigzag underlay

You can set spacing and stitch length properties for Zigzag and Double Zigzag underlay.

To adjust zigzag and double zigzag underlay settings

- (1) Right-click the Auto Underlay icon.
- (2) Select the Underlay checkbox and select Zigzag stitch checkbox.

Zigzag

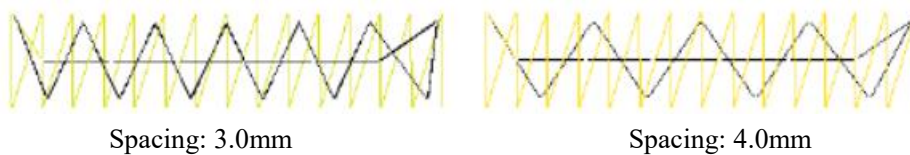
☒ Zigzag Zigzag Type: Zigzag ▼

Jagged Edge: 3 mm

Jagged Length: 4 mm

- (3) Input setting values into Zigzag Stitch Values field as required:

- A. Spacing: Distance between each row of stitching.
- B. Length: Length of each stitch.



- (4) Click **OK**.

1.1.6. Setting underlay margins

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) Right-click the *Auto Underlay* icon.
- (2) Select Underlay checkbox

X Edge: 0.8 mm

- (3) In the Margins panels, select the required margins.
- (4) Click **OK**.

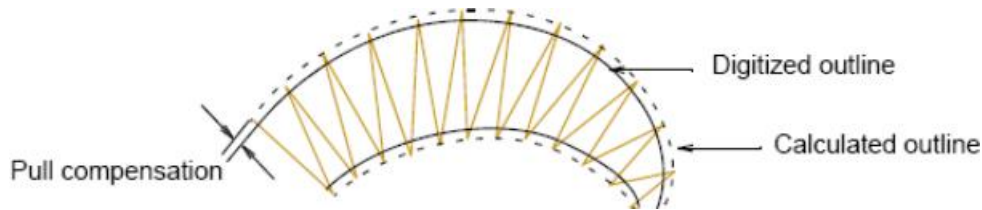
1.2. Compensating for fabric stretch



Use Pull Compensation (Stitch Types toolbar) to automatically compensate for fabric stretch. Right-click to adjust pull compensation settings.

Embroidery stitches tend to pull fabric inwards where the needle penetrates. This can cause fabric to pucker, and gaps to appear in the embroidery. Automatic pull compensation, however,

counters the pull effect by ‘over stitching’ outlines of filled shapes on the sides where the needle penetrates.

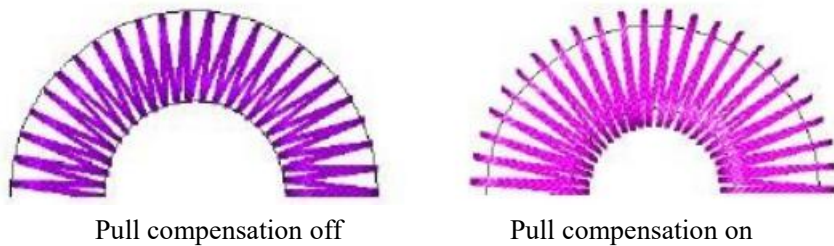


Adjust the amount of over stitching you need by varying the pull compensation setting in the *Object Properties* dialog. This is handy if you want to stitch a design on fabrics with varying degrees of stretch.

Tip Applying underlay stitching, and using appropriate backing and topping when stitching out can also reduce the push-pull effect.

1.2.1. Applying automatic pull compensation

Apply automatic pull compensation to objects in your design, either before or after you digitize.



To apply automatic pull compensation

- (1) Right-click the *Auto Pull Compensation* icon with objects selected. For both new and selected objects, pull compensation is based on current properties.
- (2) Click again to turn off the effect.

1.2.2. Adjusting pull compensation settings

To achieve the pull compensation effect, the amounts of over stitching you need are decided by your embroidery design fabric. Use the following table as a guideline.

Fabric	Pull compensation(mm)
Drills,Cotton	0.17
T-Shirt	0.25
Fleece, Jumper	0.25 - 0.4
Lettering	0.2 - 0.3

To adjust pull compensation settings

- (1) Right-click the *Pull Compensation* icon.
- (2) Select the *Pull Compensation* checkbox.

☒ Pull Compensation

Type:

Double Side ▾

Compensation Value:

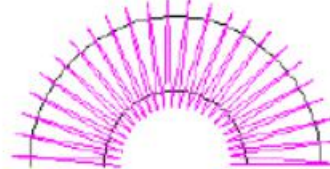
0.18

mm

(3) Enter the amount (in millimeters) by which you want to over stitch.



Pull compensation: 0.3mm



Pull compensation: 0.4mm

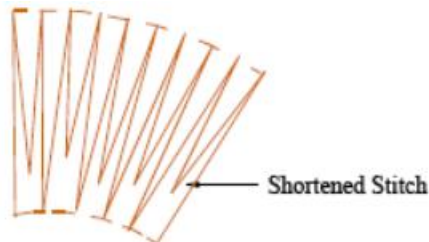
(4) Click **OK**.

1.3. Reducing stitch bunching with stitch shortening



Use Shortening (Stitch Types toolbar) to reduce stitch bunching in tight curves by shortening some stitches on the inside edge. Right-click to adjust stitch shortening settings.

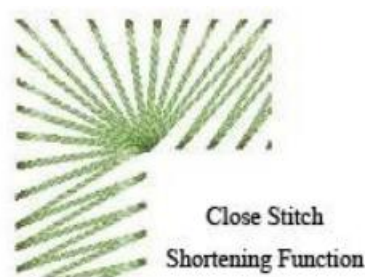
Standard stitch spacing is calculated at the outside edge of a shape. With sharp curves, spacing which provides adequate coverage on the outside edge may cause bunching along the inside edge. This may cause thread breakage when stitching out. The longer stitch means the worse problem.



Stitch shortening reduces the length of some stitches in sharp turns so that the needle penetrations are distributed evenly, creating smoother stitching.

1.3.1. Applying stitch shortening

Apply stitch shortening to sharp corners to decrease stitch density on the inside edge.



To apply stitch shortening

- (1) Click the Stitch Shortening icon with objects selected. For both new and selected objects, stitch shortening is based on current properties.
- (2) Click again to turn off the effect.

1.3.2. Adjusting stitch shortening settings

Default shortening settings are set to suit most designs. However, advanced users can adjust the way Raynen Embroidery Design Software shortens stitches by setting precise shortening settings.

Note Only change these settings if you understand how stitch shortening is calculated.

To adjust stitch shortening settings

- (1) Right-click the Stitch Shortening icon.

☒ Stitch Shortening

Type: Random

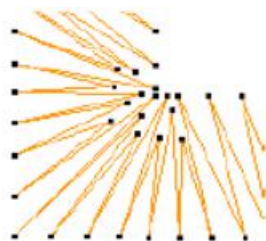
If Space < 50 %

Short Stitch <= 5

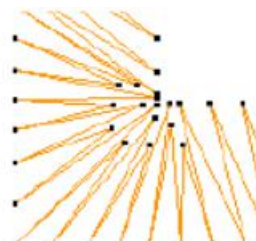
Shorten Stitch To(%)

ID	The 1st	The 2nd	The 3rd	The 4th	The 5th
1	80				
2	85	72			
3	70	90	70		
4	70	90	80	70	
5	70	87	65	83	70

- (2) Enter the minimum spacing permitted between stitches (as % of nominal spacing) before automatic shortening takes effect.

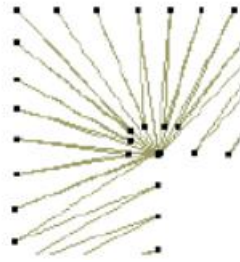


If spacing < 90%

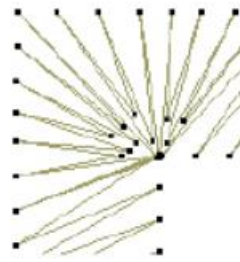


If spacing < 40%

- (3) In the *Max No Of Short Stitches* field, enter the maximum number of consecutive short stitches to allow, up to a limit of five.



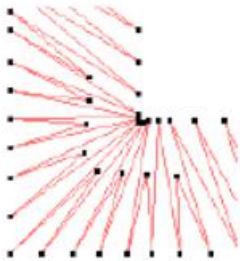
Max no. Of short stitches < 1



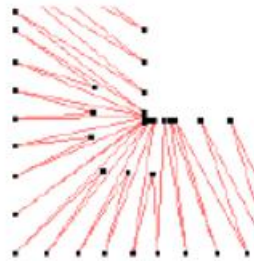
Max no. Of short stitches: 5

The higher number means the smoother distribution of stitches in the sharp turning. Thus decrease the bunching of stitches.

(4) Shorten Stitch Length to (%) panel; ensure the individual lengths of consecutive short stitches, and display with a percentage of the original.



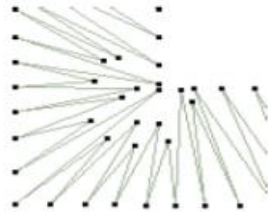
Max no. Of short stitches: 1
Shorten stitch length to 80%



Max no. Of short stitches: 1
Shorten stitch length to 50%

Note A value of 80% means that the stitch is shortened to 80% of the original length, not by 80%. The smaller percentage means the shorter stitch. If you allow three short stitches, you need only fill in the first three rows. If you allow five short stitches, fill in all five rows.

Max no. Short stitches: 5
Short stitch length to 50%
Row 1: 90
Row 2: 70 60
Row 3: 55 85 55
Row 4: 55 85 75 55
Row 5: 55 70 45 70 55

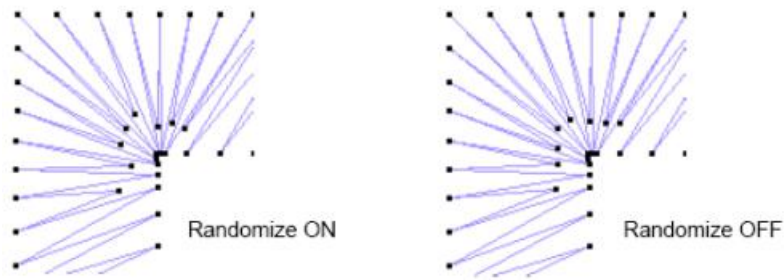


Max no. Short stitches: 5
Short stitch length to 50%
Row 1: 80
Row 2: 85 70
Row 3: 70 90 70
Row 4: 70 90 80 70
Row 5: 70 85 65 85 70

If only one short stitch is generated between normal stitches, the value in Row 1 will apply. If two consecutive short stitches are generated, the values in Row 2 will apply to 1st and 2nd stitch respectively. And so on up the scale.

Tip For best results use a jagged pattern between consecutive stitches.

(5) Select the Randomize checkbox to randomize the shortening pattern values. This will eliminate unwanted lines appearing in regular curves.



(6) Click **OK**.

1.4. Controlling corner stitching

The quality and style of corners is important in borders and appliqué, and Satin column sewing in general. Sharp corners may cause stitch bunching which can create hard spots in the embroidery and may damage fabric or needle. The Smart Corners feature helps you control sharp corners in Input A and Input C objects. There are three types – Lap Corners, Mitre Corners, and Cap Corners. Smart Corners can be used in conjunction with Input C sharp corner rounding to give you the option of sharp or round corner points.

1.4.1. Applying Smart Corners



Mitre Corners to create sharp lines at intersections of two columns. Right click to adjust settings.



Cap Corners with very sharp corners to generate fewer stitches. Right click to adjust settings.

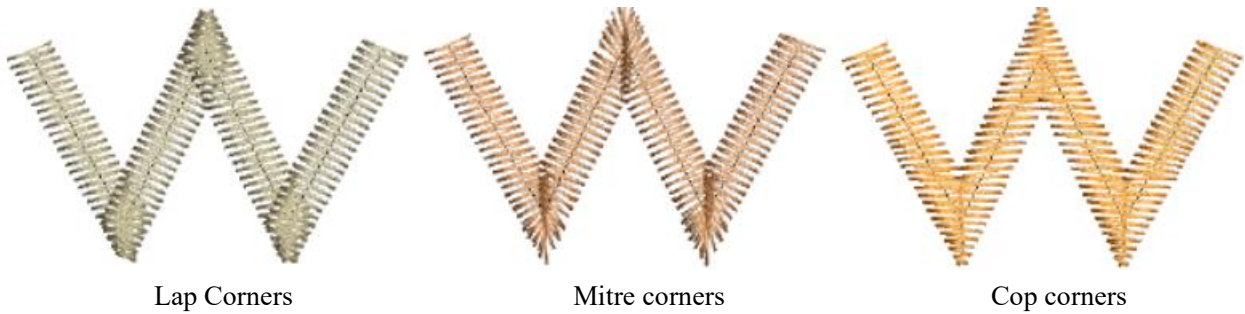


Lap Corners for ‘Tidori’ style stitching. Right click to adjust settings.

Use the Smart Corners feature to reduce the number of stitches and the risk of bunched, distorted embroidery, in sharp corners. Mitre Corners create a sharp line at the intersection of two columns. Use them primarily for corner angles of 75° to 90°. Cap Corners are suitable for very sharp corners as they generate fewer stitches. Lap Corners are suitable for ‘Tidori’ style stitching. It can be applied to Input C and appliqué objects. This style of applique stitching typically uses a Zigzag stitch and does not turn but sews parallel to the object line and crosses over at the corner point. See also Applique.

To apply Smart Corners

Click the Smart Corners icon with or without objects selected. With no objects selected, Smart Corners are automatically generated for all new objects. For both new and selected objects, Smart Corners are based on current properties. See Adjusting Smart Corners settings for details.



Click again to turn off the effect.

1.4.2. Adjusting Smart Corners settings



You can set the angles at which Smart Corners will be applied, and specify the overlap and stitch length allowances. See Setting corner fractions for details.

Note You can use Mitre Corner and Cap Corner options together. For example, you may wish a corner with an angle less than 75° to be mitred, but sharp corners of less than 45° to be capped. The Lap Corners effect is incompatible with Mitre or Cap corners. When an object is selected which allows all three effects, turning on Lap Corners will switch off the other two. Turning on Mitre or Cap corners will switch off Lap Corners.

To adjust Smart Corners settings

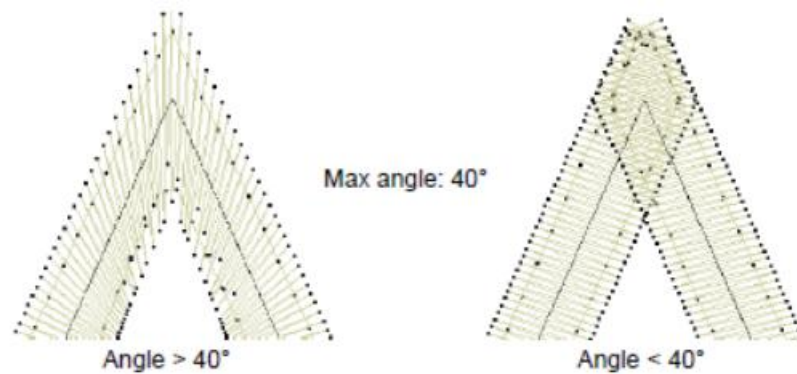
- (1) Right-click any one of the Smart Corners icons.

The Object Properties > Smart Corners dialog opens.

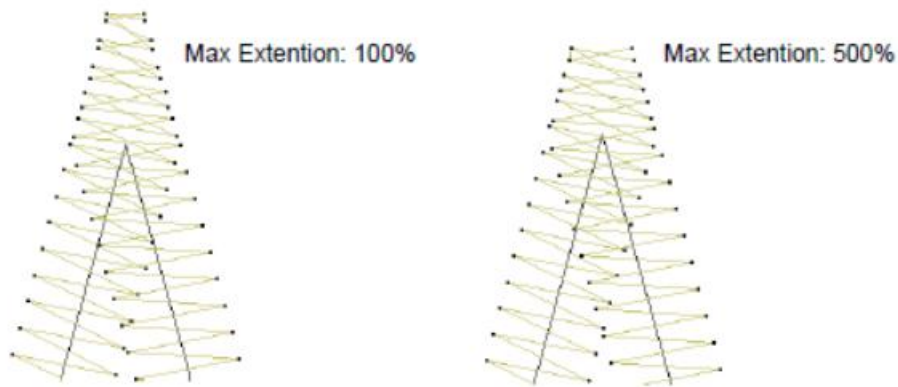
☐ Lap Corners	
Max Angle:	95 °
Max Extension:	200 %
☐ Mitre Corners	
Miter Below:	75 °
Overlap:	0.50 mm
☐ Cap Corners	
Cap Below:	45 °
Overlap:	1 row
Max Length:	8.00 mm

- (2) Click the checkbox to enable Lap Corners and adjust settings as required:

Max Angle: angle below which to apply Lap Corner – any corners greater than this are not lapped.

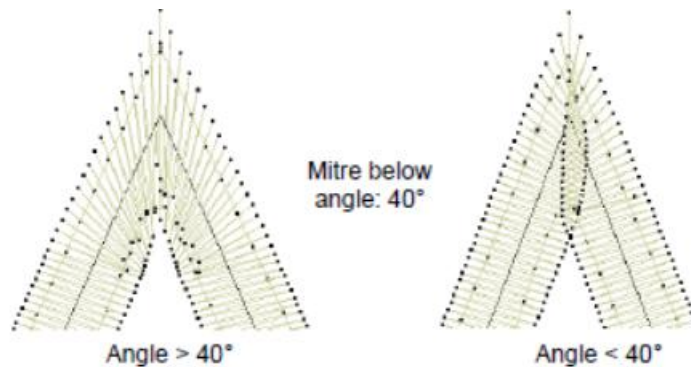


Max Extension: extension of corner point from curve as a percentage of width.

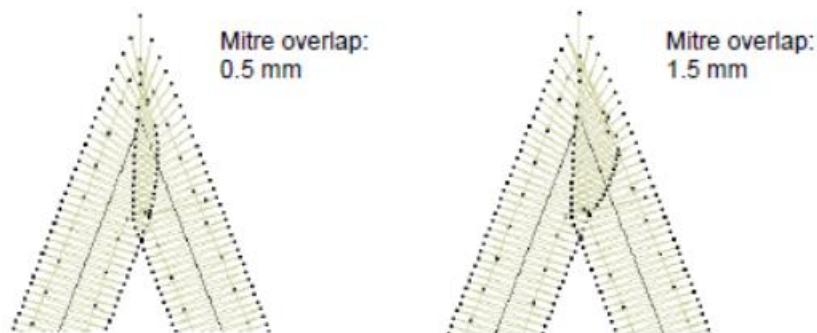


(3) Click the checkbox to enable Mitre Corners and adjust settings as required:

Mitre Below: angle below which to apply Mitre Corner – any corners greater than this are not mitred.

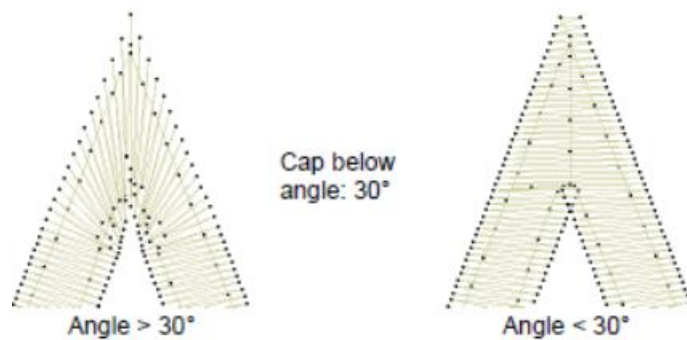


Overlap: distance by which stitches are allowed to overlap in the center of the corner.



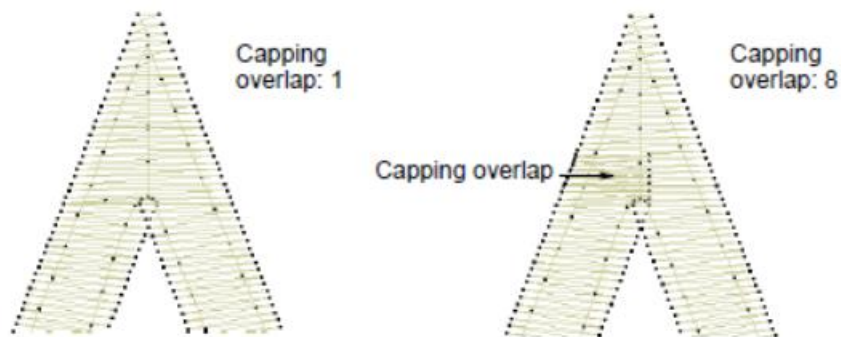
(4) Click the checkbox to enable Cap Corners and adjust settings as required:

Cap Below: angle below which to apply capped corners – any corners greater than this are not capped.



Tip: If Mitre Corners is also selected, the cap angle is usually smaller than the mitre angle.

Overlap: number of overlapping rows to allow where the sections of the cap join.

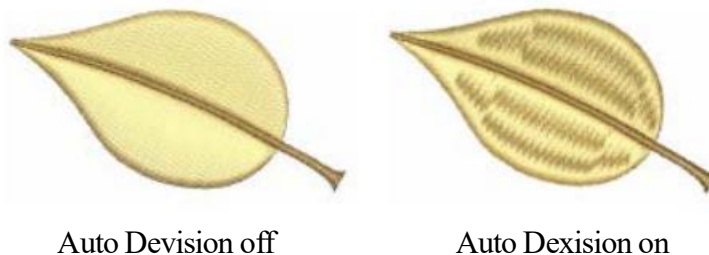


Max Length: maximum length of cap stitches. Cap Corners with stitches exceeding this length will become Mitre Corners. This prevents long and short stitches appearing next to each other.

(5) Press Enter or click Apply. See also Setting Object Property 'apply' options.

1.5. Optimizing long Satin stitches

Auto Split breaks long Satin stitches into shorter ones. It also distributes needle penetrations in a random pattern so that they do not form a line down the middle of the shape.



If you want to preserve the Satin effect – for example, if only a few stitches are too long – you can use Auto Jump instead. This preserves long stitches offset fraction 0.00 Offset fraction 0.33 Offset fraction 0.66 59 stitches 49 stitches 43 stitches Chapter 23 Optimizing Stitch Quality 614 in an object by turning them into a series of jumps. Auto Split must be turned off for Auto Jump to take effect. Auto Jump is applied by default to connectors. See also using jumps as connectors.



Note: The maximum frame movement is defined in the software by the machine format values. See Adjusting standard machine format settings for details.

1.5.1. Splitting long stitches with Auto Split



Right-click Stitch Types > Satin to apply Auto Split to new or selected Satin objects.

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

To split long stitches with Auto Split

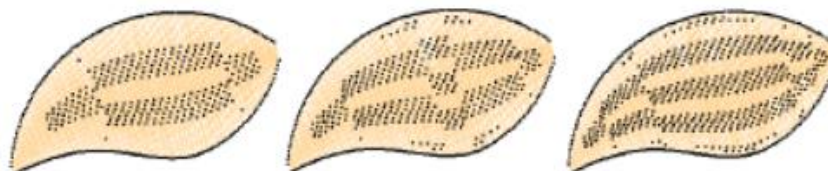
- (1) Right-click the Satin icon.

The Object Properties > Fills dialog opens.



- (2) Select the Auto Split checkbox.

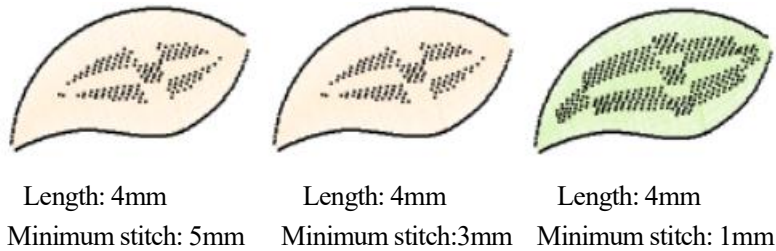
(3) In the Length field, enter the maximum Satin stitch length to allow before Auto Split is applied. Stitches that exceed this value will be split into smaller stitches. This value can be smaller than the maximum stitch generally used in the design.



Length: 5mm Length: 4mm Length: 3mm
Minimum stitch: 0.4mm Minimum stitch: 0.4mm Minimum stitch: 0.4mm

Tip Use a length of 7.00 mm to preserve the Satin effect.

(4) In the Minimum Stitch field, enter the shortest stitch that can be generated when using Auto Split.



(5) Press Enter or click Apply. See also Setting Object Property 'apply' options.

1.6. Preserving long stitches with Auto Jump



Use Auto Jump (Stitch Types toolbar) to preserve long stitches in new and selected objects. Right-click to adjust settings.

You can preserve long stitch in the object by using Auto Jump to divide long stitch into a series of jumps. Embroidery machines have a maximum stitch length which is determined by the frame movement limitations of the machine itself. If a stitch exceeds this and is not selected by Auto Split, it is broken into smaller stitches. This can affect the appearance of the embroidery, especially Satin fills. Auto Jump will insert jumps between needle penetrations of long stitch. This will avoid machine inserting unwanted needle penetrations when the stitch is over the maximum frame movement.

1.6.1. Applying Auto Jump

You can apply Auto Jump in design objects before or after digitizing. Apply Auto Jump to objects with stitches that exceed the maximum stitch length.



Auto Jump off



Auto Jump on

Note Auto Jump is used to connectors in default setting.

To apply Auto Jump

- (1) Right-click the Auto Jump icon with objects selected. For both new and selected objects, Auto Jump is based on current properties.
- (2) Click again to turn off the effect.

1.6.2. Adjusting Auto Jump settings

You can adjust Auto Jump settings to vary the length at which stitches are converted to jumps, the length of the jumps themselves, and the method of calculating stitch length.

To adjust Auto Jump settings

- (1) Click the Object Properties > Fill > *Auto Jump* dialog opens.
- (2) Select the Auto Jump checkbox.

☒ Auto Jump

Max Length: mm

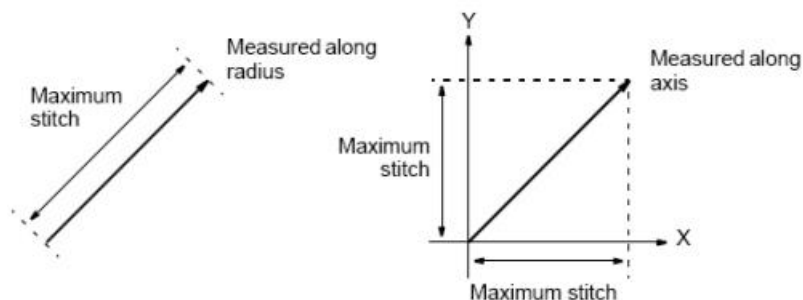
Jump Length: mm

Type

Slant: 

Vertical: 

- (3) In the Maximum Stitch field, enter the maximum stitch length to allow. Stitches exceeding this value will have Auto Jump applied.
- (4) In the Jump Length field, enter the length of each jump. Smaller jumps increase the time required to stitch out, but move the frame more smoothly across the design.
- (5) In the Length Calculation panel, click the required method of calculating stitch length.
 - A. Along Radius: measures the distance between two consecutive needle penetrations.
 - B. Along Axis: measures either the horizontal or vertical movement required for the stitch.



The option you select depends on the way your machine measures stitch length. See your embroidery machine documentation for details.

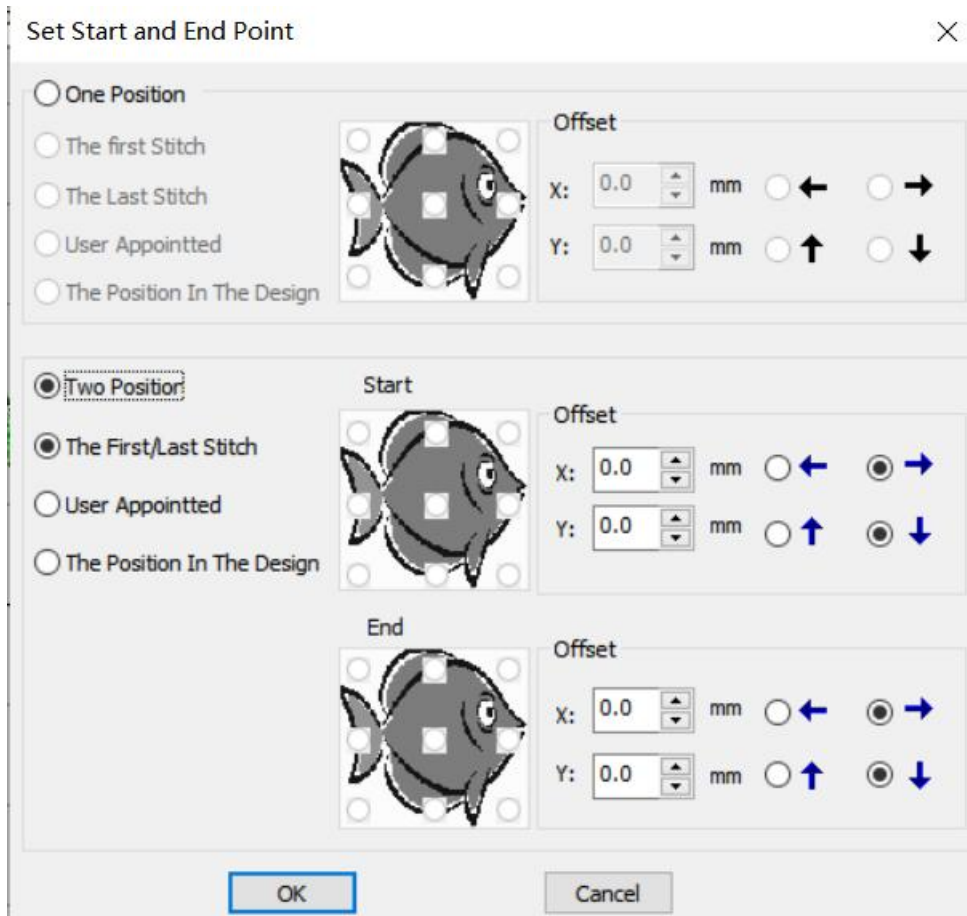
- (6) 6. Click Apply.

1.7. Setting automatic start and end points

Before stitching, some embroidery machines require you to position the starting needle exactly above the first needle penetration point. Use Auto Start and End to connect the first and last stitches in the design. This makes it easy to position the needle before stitching, and reduces the chance of the needle hitting the side of the frame.

To set automatic start and end points

- (1) Select **Stitch > Auto Start and End**. The Auto Start and End dialog opens.



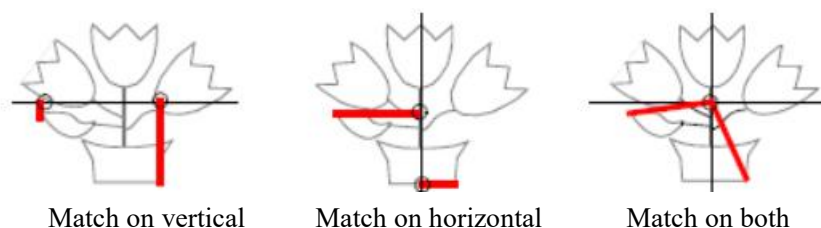
- (2) Select the *Maintain Automatically* checkbox to maintain the design center after modifying the design.

- (3) Select the *Maintain Automatically* checkbox to maintain the design center after modifying the design.

- (4) Select a centering method.

- A. a. Auto Start and End: by default, connecting stitches are created from the start and end points to the center of the design. Select one of the nine preset endpoints.
- B. b. Return to Start Point: creates a connecting stitch from the end point to the start point.
- C. c. Digitize Center Point: creates connecting stitches from the start and end points to a point you define. If you select this, you are prompted to select the point after you click **OK**. Click the Reshape checkbox to modify this point.

- (5) Select to match connecting stitches on the Horizontal plane, Vertical plane or both in the Match On panel.



Select the type and length of the connecting stitches in the Connectors panel.

(6) Click OK. Connecting stitches will be inserted as required before the first and after the last stitch of the design.

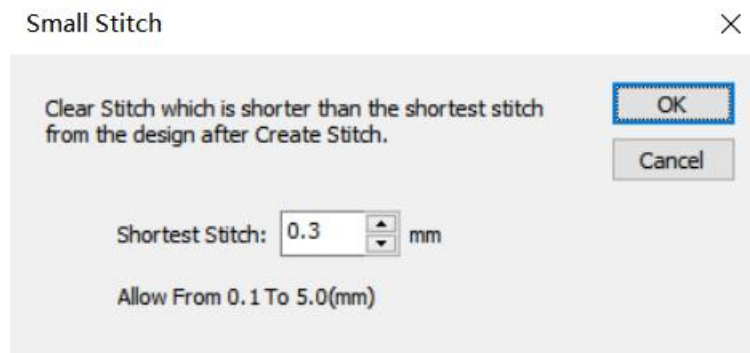
1.8. Removing small stitches automatically

Very small stitches can damage the fabric and cause thread or needle breakage. Before you stitch out a design, you can remove unwanted small stitches automatically.

Tip For small stitches to be removed automatically whenever you output the design, select the Run Small Stitch Filter on Output checkbox in the Options dialog.

To remove small stitches automatically

(1) Select Stitch > Small Stitches.



(2) Enter the minimum stitch length you want to keep.

(3) Click **OK**. All stitches shorter than the specified length will be removed from the design.

Tip If the new value is smaller than the previous value, regenerate stitches for the object before you stitch out. Check the Status bar for the new stitch count.

2. Specialized Digitization Techniques

To save your digitization time and to use special effects and machine functions, Raynen Embroidery Design Software provide you specialized digitization techniques, so as to enable you to use digitalize star, circle and annulus input methods, and copy the objects by repeat and return function, and adding boundary method as well. If your machine supports boring embroidery and sequin embroidery, you can also digitize these effects via our software.

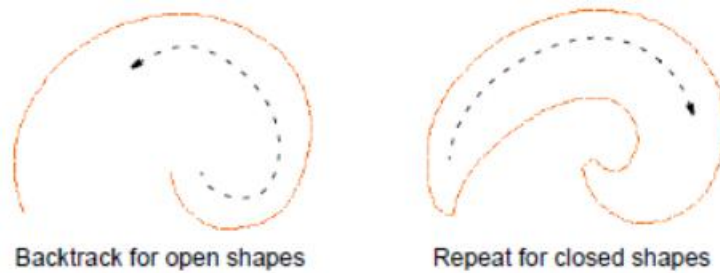


This chapter describes how to highlight the outline, and how to digitize annulus. Specialized digitization techniques about sequin embroidery and boring embroidery can also be refer in this chapter.

2.1. Deepen the Outline



Use return/repeat to highlight the outline, and embroider along the same direction or opposite direction. The typical use of return can make the outline of running stitches bold so that you do not have to create needless connecting stitching mark. Repeat is to repeat embroidering the original stitching direction, and its typical use is to seal the shape.



Note: If you want to use repeat stitches for open shapes, then you should insert one connecting stitching mark from the endpoint to start point. The stitching mark needs for trimming.

How to deepen the outline

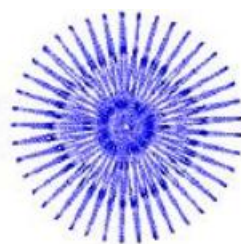
- (1) Select the object.
- (2) Click Return/Repeat icon to realize return function, and right click the mouse to repeat. When the object is copied, put it on the original one. The color of the new object is the same with the original one, and it is behind the original one in embroidery sequence.
- (3) Check whether the object is copied through one of the following methods.
 - Check the stitching mark number on the status bar.
 - Redisplay the stitching mark in low speed. Check the relevant details.
 - Operate by stitching mark. Check the relevant details of embroidery sequence.

2.2. Digitize circle, star and annulus

This software provides you time-saving and digital circle, star, annulus, and special input methods. To get smaller proportion in circle effect, you can use annulus and circle tools or star tool to digitize the circle. Though contour stitch can generate better effect for long and narrow ellipse, you can use any stitch filling type for circle and ellipse.



Digitize circle



Star



Annulus

2.2.1. Digitize circle and ellipse

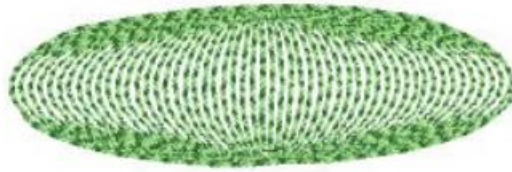


Use circle to digitize and fill in the embroidery of circle and ellipse. .

The circle and ellipse can be digitized by clicking the mouse a few times. Though contour stitch can generate better effect for long and narrow ellipse, you can use any stitch filling type for circle and ellipse.



Digitize circle

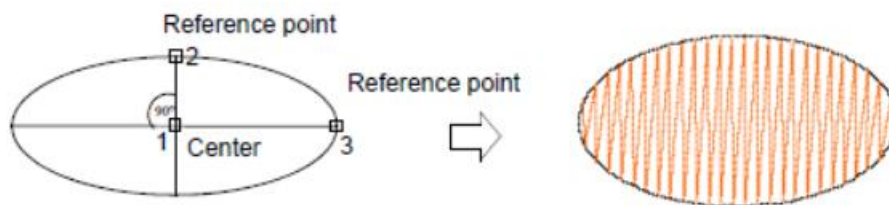


Annulus

Note: To make the circle get a spiral effect on filling stitches, you can use different input methods to digitize the circle (e.g. annulus), and leave a small hole in the middle.

How to digitize circle and ellipse

- (1) Click circle/start icon.
- (2) Digitize circle or ellipse.
 - A. Mark the center of a circle or ellipse by clicking the mouse. The outline of the circle attaches on the cursor.
 - B. Move the cursor till the outline reaches to the required size, and mark the reference point of the radius by clicking the mouse. The point also marks the entry point of the stitch. The angle line of the stitch is perpendicular to the connecting line between the center
 - C. and the reference point.
 - D. To create circle, press Enter.
 - E. To create ellipse, you should click the mouse again to mark the second reference point, and press Enter.

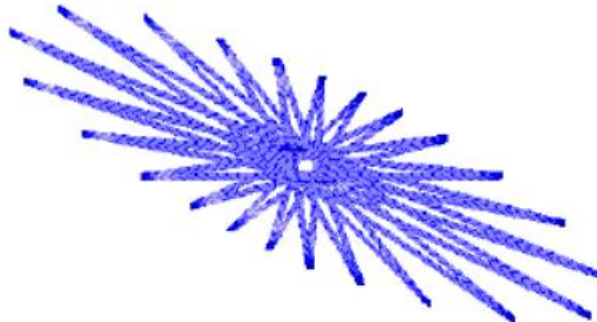


2.2.2. Digitize the star



Use star method to digitize the star embroidering in zigzag stitching mark.

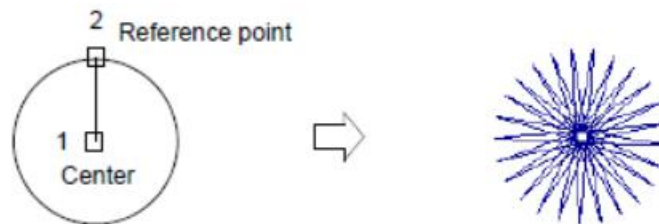
Create “star” or “French dot” by using spiral zigzag stitching mark.



Note: Star can only embroider in zigzag stitching mark. You can not achieve this effect via using other stitching mark type.

How to digitize star

- (1) Right click the circle/star icon.
- (2) Digitize the reference point of the star.
 - A. Mark the center of the star by clicking the mouse. The outline of the circle attaches on the cursor.
 - B. . Move the cursor till the outline reaches to the required size, and mark the reference point of the radius by clicking the mouse. The point also marks the entry point of the stitch.
 - C. . Press Enter to confirm star.



- D. To create a star in ellipse, you should click the mouse again to mark the second reference point, and press Enter.

2.2.3. Digitize the annulus



Use annulus method to digitize the annulus of the circle or ellipse.

Through the above operation, you can create annulus and different effect via the combination of the internal and external edge shape.



Circles in Ellipses



Ellipses in a circle



Ellipses in a ellipses

You can use any stitch filling type for annulus digitization. Contour stitching is best for annulus, for it embroiders by encircling the annulus in spiral way.



Satin circle



Tatami circle

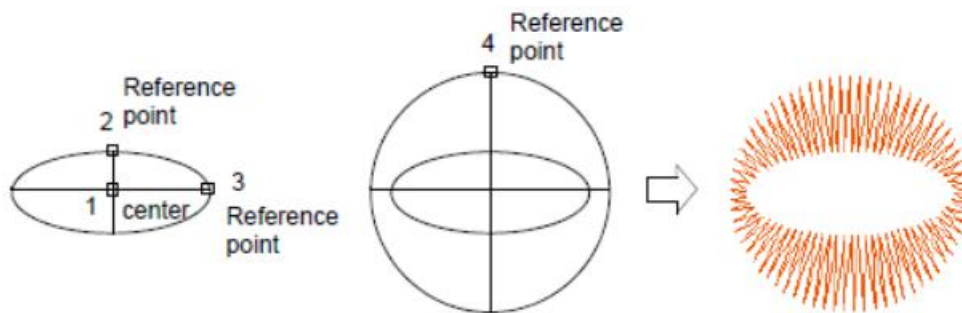


Contour circle

Note: Please digitize the inner circle, so as to ensure that the stitching mark stretches outward.

How to digitize annulus

- (1) Click the annulus icon.
- (2) Digitize the internal edge of annulus.
 - A. Mark the center of the internal edge by clicking the mouse. The outline of the circle attaches on the cursor.
 - B. Move the cursor till the outline reaches to the required size, and mark the reference point of the radius by clicking the mouse.
 - C. The point also marks the entry point of the stitch.
 - D. Press Enter to create the circle, or click the mouse again to mark the second reference point of the ellipse.
 - E. The outline of the second edge attaches on the cursor.
- (3) Digitize the external edge of the annulus with the same method, and then press Enter.



2.3. Automatically digitize the sequin

Some embroidery machines are equipped with sequin distributor which will help placing sequins on the clothing in embroidery process. Some also are equipped with boring knife or needle, so that they can produce lace-like effect on the materials. These two techniques usually used together, and our embroidery design software support both of the two operations.

Digitizing sequin embroidery

There are two kinds of digitizing sequin embroidery: manual sequin and automatic sequin. With these two methods, you can digitize the sequin design in machines which are compatible with these functions. However, you should carefully plan the embroidery sequence, so as to lessen the unnecessary stitches. To add up sequins, please select manual sequin and right click the mouse, so as to place the sequins on the design, and then fix the sequins with manual stitches.

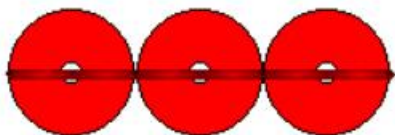


How to manually digitize sequin embroidery

- (1) Click the stitching mark icon .
- (2) Left click the mouse to run the stitch, right click the mouse to jump stitch (drop sequins).



- (3) Press Enter to end the operation.



How to automatically digitize sequin embroidery

- (1) 1. Right click the icon , the object property window will pop up, in which you can set the style, function code and other properties.

Object Property

✕

Connector SequinFill

Pos

☐ Edge

☐ Center

Distance: mm

Fixline Type

  23 

☐ Add Center Pos

Size

☒ Match

Span: mm

☐ Manual

Size: mm

Option

☐ Begin Runin

☐ Runin End

☒ Stitch Center

☐ Direct Connect

☐ Center Begin

☐ Center End

Stitch

Min: mm

Flat stitch: mm

Max: mm

Other

☐ Underlay

Flat Stitch: mm

☐ Begin mm

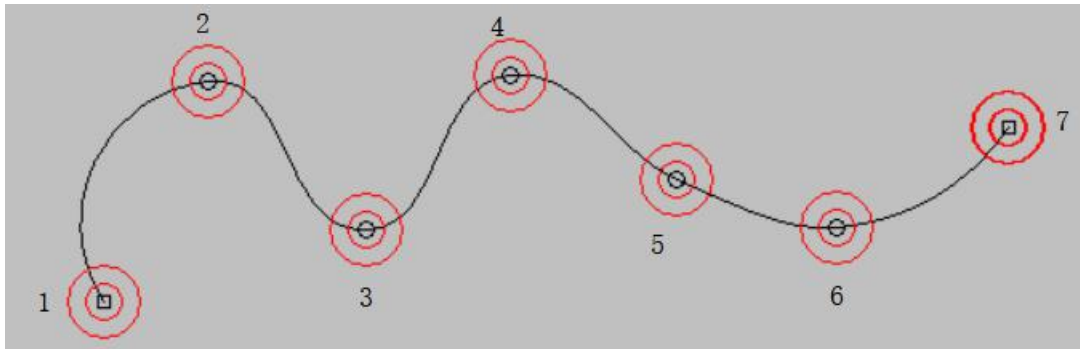
☐ End mm

☐ Up Down mm

Display

OK Cancel Save

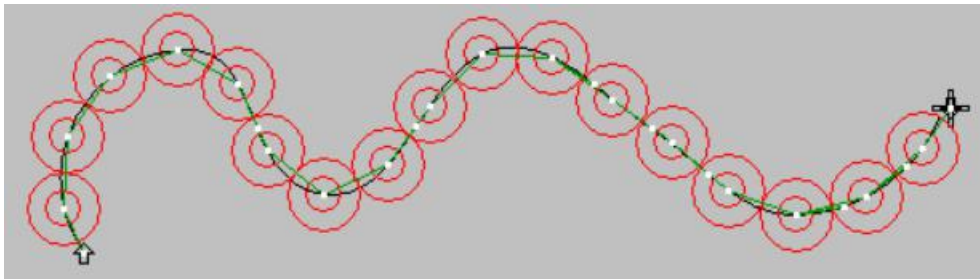
- (2) Click “Auto Sequin”  tool.
- (3) Digitize the outline shape by marking the reference point.
- A. Input the poly line point by clicking the mouse.
 - B. Input the curve point by right clicking the mouse.



Note: If you accidentally mark a wrong point, you can press Backspace key to delete the last marked point, and then continue digitizing.

(4) When you complete a digitizing shape, you can:

- A. Press Enter key to end digitized object in open way.
- B. Press H key to end digitized object in close way.

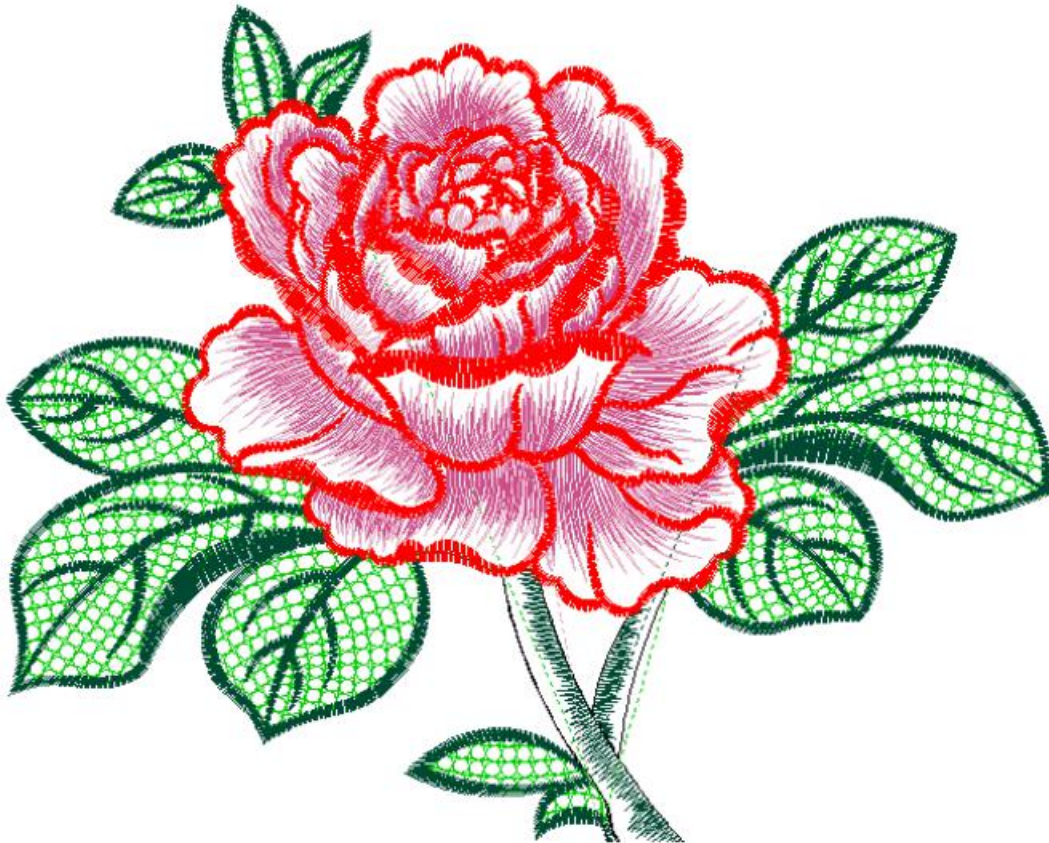


Note: Please precisely place each stitching point, so as to ensure the sequins will not be damaged by the needle when embroidering. And please enlarge the design so as to digitize more accurately.

3. Chapter 3 Artistic Stitch Effects

Raynen Embroidery Design Software provides many artistic effects and stitch types to create texture and pattern fill stitching. You can create Jagged Edge effect or create fluffy stitch and shading effects by using straight run or gradient interval value. Use contour stitch, you can make stitches run after curved shape or get the screw effects. This chapter describes how to apply artistic stitches types and effects to objects and how to adjust their settings to get the results you want.

Tip Raynen Embroidery Design Software provides special tools to create patterns from needle penetrations. Please see Textured Fills for details.



3.1. Creating jagged edges



Create jagged edges

Use Jagged Edge, you can create rough edges, shading effects, or imitate fur and other fluffy textures.

Note Jagged Edge does not work with Contour stitch.



3.1.1. Applying Jagged Edge

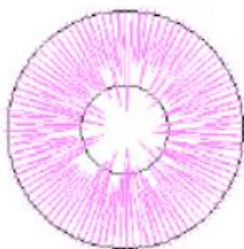


Click Jagged Edge (Stitch Types toolbar) to apply the effect to new or selected objects.

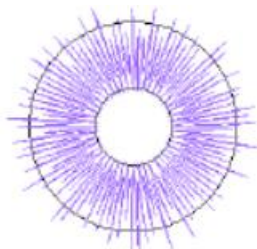
Apply Jagged Edge to create a rough edge along one or more sides of an object. Use Jagged Edge through the current Jagged Edge value in the Effect dialog. Change settings before or after applying the effect. See Adjusting Jagged Edge Settings for details.

To apply Jagged Edge

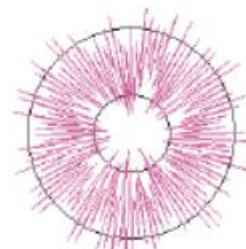
Click the Jagged Edge icon. The effect is applied to new or selected objects, based on the current Jagged Edge settings.



Side 1 jagged



Side 2 jagged

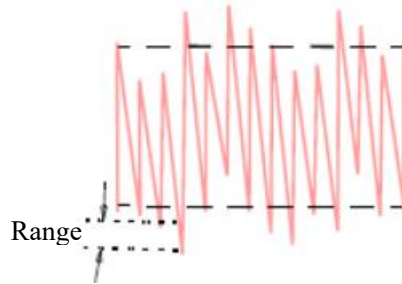


both sides jagged

Tip For objects filled with Tatami, use Diagonal backstitch for the best results. See Selecting A Tatami Backstitch for details.

3.1.2. Adjusting Jagged Edge settings

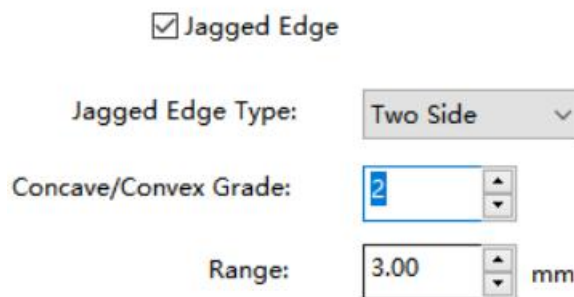
Adjust *Jagged Edge* value to change the roughness degree; the object bar edge applied this effect and change border edge of which the stitch falls.



To adjust Jagged Edge settings

(1) Right-click the Jagged Edge icon.

The Stitch > Stitch Effect > Jagged Edge tab opens.



(2) Select the objects applied this effect from list of the *Jagged Edge* bar.



(3) In the *Roughness* field, enter a value between 1 and 10 to indicate the required degree of jaggedness. The larger value means the more variation in the stitch length.



Roughness: 1

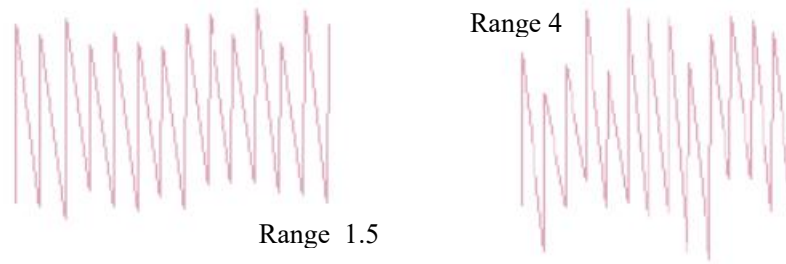
Range: 5



Roughness: 10

Range: 5

(4) In the *Range* field, enter the margin within which you want the stitches to fall.



(5) Click *Apply*.

3.2. Creating accordion spacing effects



Creating accordion spacing effects

Accordion Spacing varies the stitch spacing between dense and open fill, producing shading and color effects which are difficult to achieve manually. Eight different Accordion Spacing effects are available. When you use Accordion Spacing, the current spacing settings—including Auto Spacing and Fractional Spacing—are ignored. However, other stitch effects will still apply.

Tip Apply accordion spacing to blend colors. Thus, duplicate this object and select anti-accordion spacing effect (for example, fractions increase/decrease). Put one object on the top of the other one. Increase the upper stitch spacing, making two kinds of colors can be seen. However, you can also use Accordion Spacing over standard Tatami to create interesting shading effects.

3.2.1. Applying Accordion Spacing

Use Accordion Spacing to create color blends, perspective effects and shading.



You can apply it by setting the current effect in the dialog. These can be adjusted and the types of Accordion Spacing changed either before or after you apply it.

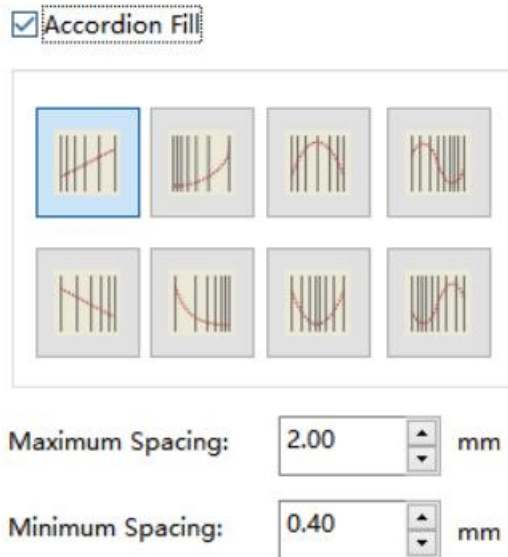
Tip You cannot use Accordion Spacing with Contour stitch or Motif Fill.

3.2.2. Adjusting Accordion Spacing settings

Use the *Object Properties* dialog to select the Accordion Spacing type and set the minimum and maximum spacing.

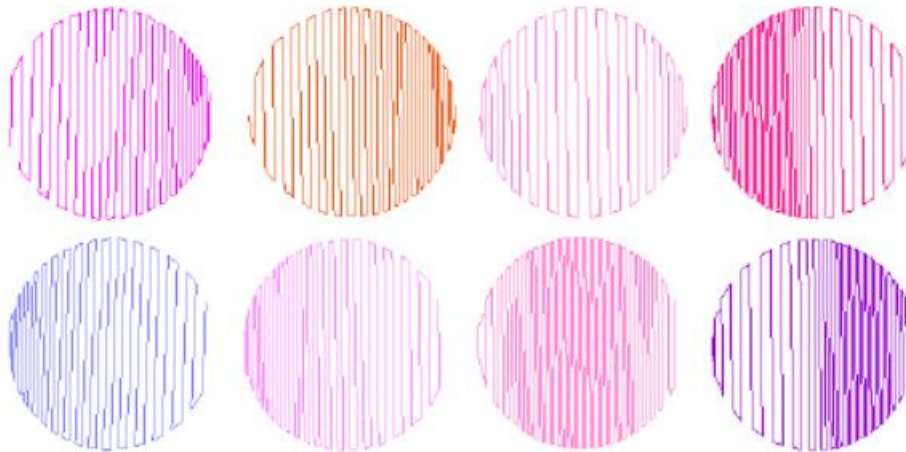
To adjust Accordion Spacing settings

(1) Click *Stitch > Stitch Effect > Accordion Spacing*.



(2) Select *Accordion Fill*.

(3) In the *Accordion Fill* panel, click an *Accordion Fill* icon.



(4) In the Values panel, enter new spacing values as required.

A. Maximum Spacing: the largest spacing value to allow.

B. Minimum Spacing: the smallest spacing value to allow.



Max spacing: 3.5mm

Max spacing: 6mm

Min spacing: 1mm

Min spacing: 3mm

Tip Click auto underlay tab and deselect auto underlay checkbox to prevent underlay stitches appear. You also can see Strengthening Auto Underlay and Stabilizing Embroidery Designs for details.

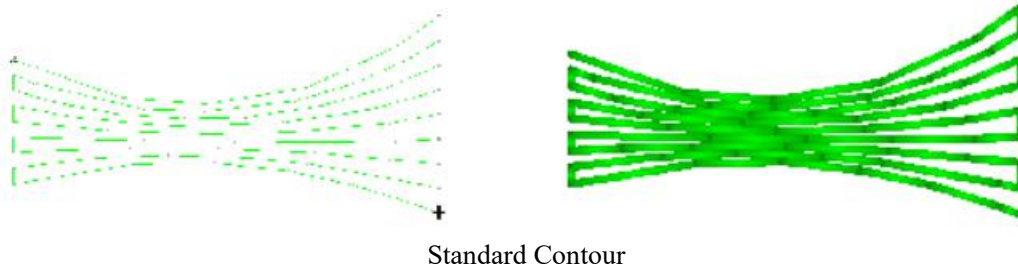
(5) Click Apply.

3.3. Creating contoured stitch effects

‘Contour’  is a curved fill stitch type—stitches follow the contours of a shape, creating a curved, light and shade effect. There is one type—Standard—which can be applied to Input A and Input B objects.

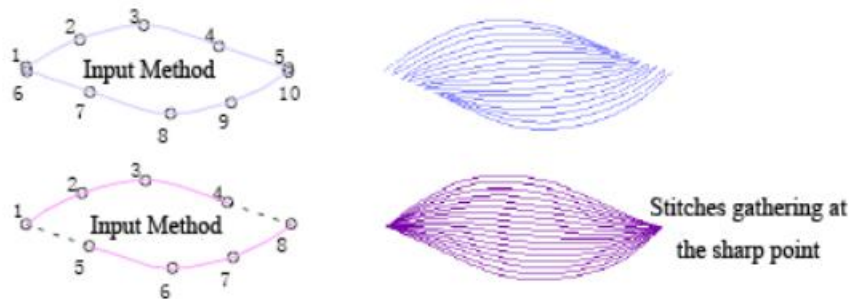
3.3.1. Standard Contour

Standard Contour creates rows of stitches across the shape, perpendicular to the digitized stitch angle. The number of stitch lines is constant, so the stitching is denser where the shape is narrower and more open where the shape is wider.



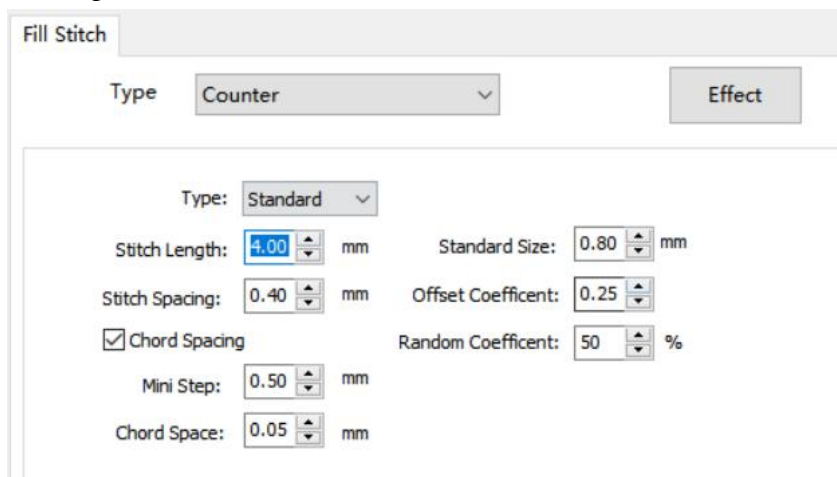
3.3.2. Applying Contour stitch to fills

Apply *Contour* to filled objects in the same way as other stitch types—by selecting it from the toolbar either before or after digitizing.



To apply Contour stitch to fills

Stitch > Object Properties > Fill > Contour



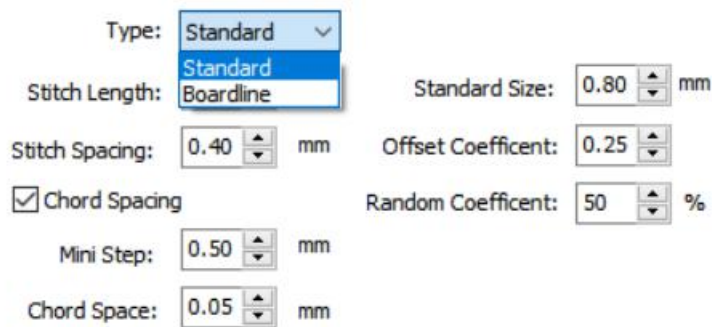
Contour stitch is applied to selected objects based on the settings in the *Object Properties* dialog. See Adjusting Contour Stitch Settings for details.

3.3.3. Selecting Contour stitch types

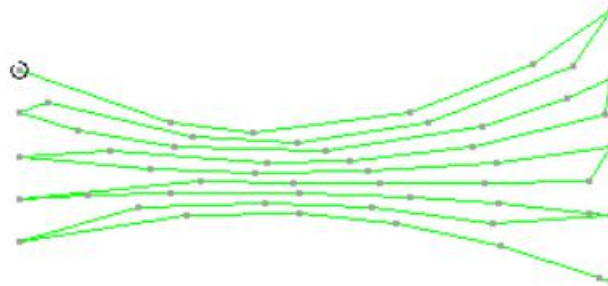
Apply Standard Contour to new or existing objects in a design.

To select Contour stitch types

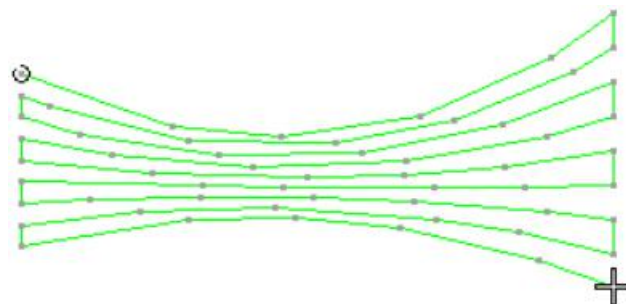
- (1) Select Contour objects .
- (2) Select *Stitch > Object Properties > Fill > Contour*
- (3) In the Type panel, click a Standard icon.



A. Type: Standard.



B. Type: Borderline.



- (4) Click *Apply*. Set stitch value for contour fills to adjust stitch length, spacing and offset index.

To adjust Contour stitch settings

- (1) Select the contour object .
- (2) Select *Stitch > Object Properties > Fill > Contour*.
- (3) In the Length field, enter an approximate stitch length.

Each stitch is adjusted to distribute the stitches evenly throughout the shape. See Adjusting

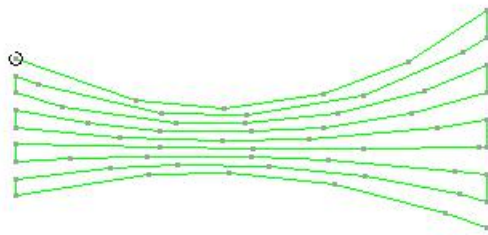
Contour Stitch Length for details.

Stitch Length: mm

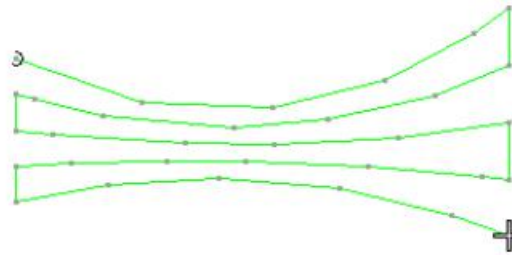
- (4) In the *Stitch Spacing* field, enter the spacing value.

This value is used at the widest part of the shape. As the shape narrows, the spacing decreases.
See Adjusting Contour Stitch Spacing for details.

Stitch Spacing: mm



Stitch spacing: 0.8mm



Stitch spacing: 1.6mm

- (5) In the *Offset Fraction* field, enter the required offset value.

Offset Coefficient:

The offset fraction controls the pattern of needle penetrations to achieve even distribution of stitches and prevent needle penetrations from forming unwanted lines.



Default offset: 0.25mm

Stitches evenly distributed



Too big offset: 6mm

unwanted lines

- (6) In the Vary Stitch Length panel, set the variable stitch length values, if required.

Random Coefficient: %

- (7) Click *Apply*

4. Textured Fills

The software provides special tools to create textured effects from needle penetrations. These tools include Tatami, Textured Fills and Flexi Split. In addition to that you can apply offset fractions and partition lines to Tatami fills to create split-line patterns



This chapter describes how to apply textures to fills, and how to adjust their settings to get the results you want.

4.1. Creating textures with Tatami offsets

With Tatami fills you can specify how each row is offset in order to create patterns formed by needle penetrations. You do this by adjusting either offset fractions or partition lines. With only two offsets available, the number of patterns is limited, but even with small offsets, visible lines are produced. Partition lines, with up to eight offsets, can create more patterns. Using a random factor you can eliminate patterns formed by regular needle penetrations and distribute stitches randomly inside the shape.



Offset



Split Line



Random Coefficient

4.1.1. Setting Tatami offset fractions

The Tatami offset default settings are designed to create a needle penetration pattern or texture in the stitched embroidery that is uniformly flat and smooth. The texture is like a woven Tatami mat without obvious split lines. By manipulating offset fractions, you can create textured fills where the stitch penetrations are more clearly visible.



Default Offset Value

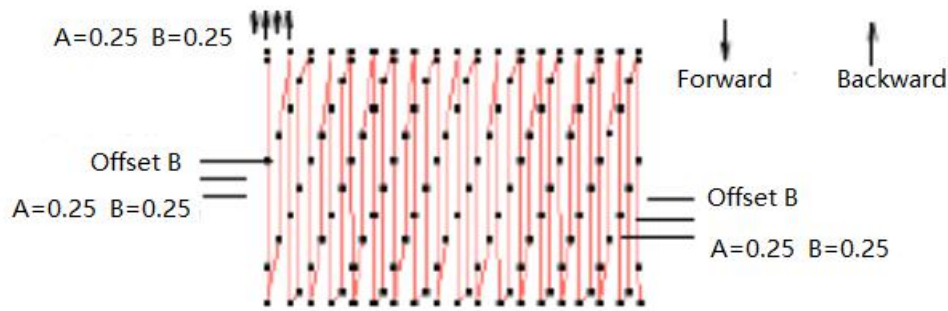


Texture Fill



Needle Point Can Be Seen

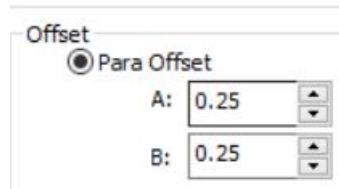
To control the patterns created by needle penetrations you set offset fractions for both forward and backward rows.



Tip By adjusting the offsets, you can also improve the quality of turning Tatami where the pattern maybe disturbed by non-parallel stitches. Changing the offsets can reduce this interference.

To set Tatami offset fractions

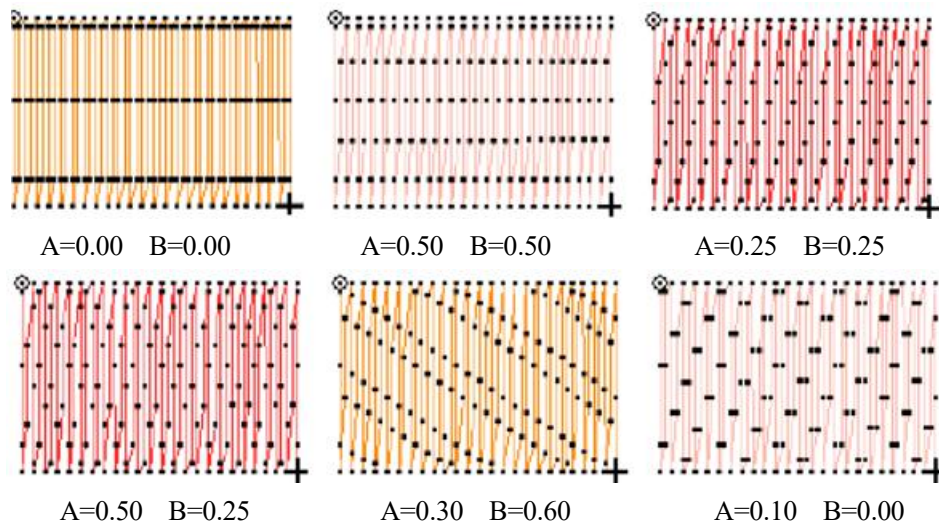
(1) Select-click the Tatami object and select object properties. The *Object Properties > Fill dialog* opens.



(2) Select the *Offset Fraction* option.

(3) In the A: and B: fields, enter the offset fraction values you require.

Different combinations of offset settings create different effects.



A. Even stitching: set both fields to 0.25.

B. Strong horizontal lines: set both fields to 0.00 or 1.00. The distance between each line of needle penetrations is the stitch length.

C. Light horizontal lines: set both fields to 0.5. Lines are produced at half stitch-length intervals.

D. Diagonal lines: set both fields to any value other than 0.00, 0.50 and 1.00. Diagonal lines are less noticeable than horizontal or vertical lines. Vary both values to change the angle of the lines and the distance between them.

E. Other: set one field to 0.00, and experiment with the other values to place the needle

penetrations on the forward and backward rows close to each other, but with different effects.

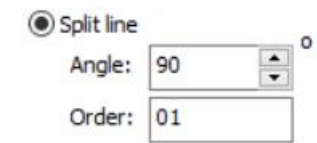
(4) Click Apply.

4.1.2. Applying Tatami partition lines

The Partition Line feature provides an alternative method for offsetting needle penetrations in Tatami fills.

To apply partition lines

(1) Select-click the *Tatami* object and select object properties. The *Object Properties > Fill* dialog opens.



(2) Select the Partition Line option.

(3) In the *Angle* field, enter the grid angle you require.



Angle: 45°

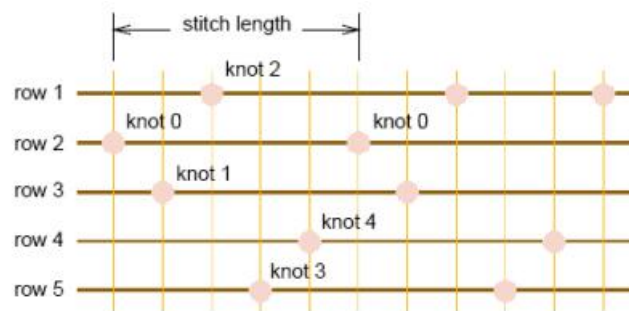


Angle: 135°

(4) Click Apply

4.1.3. Applying Tatami Standard Pattern

Standard pattern allows you to specify up to sixteen Tatami offsets. Each stitch length is split into 'knots' numbered anywhere from 0 up to 16. For example, a typical partition sequence number might be 20143. This translates to the following pattern.



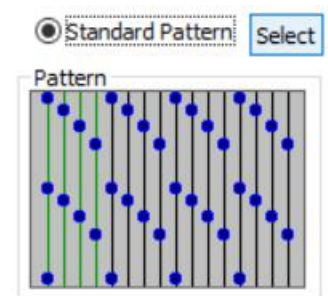
In this partition sequence (20143), there are five rows of stitches indicated by the five digits. The stitch length is also divided into five knots numbered 0 to 4. (In any pattern, both the number of rows and the number of knots are determined by the number of digits in the sequence number.)

The first digit in the sequence, 2, is the knot number at which the needle penetration will occur in the first row. The second digit, 0, is the knot assigned to the second row. And so on. Thus, each row in a partition sequence is assigned a digit which represents a particular knot.

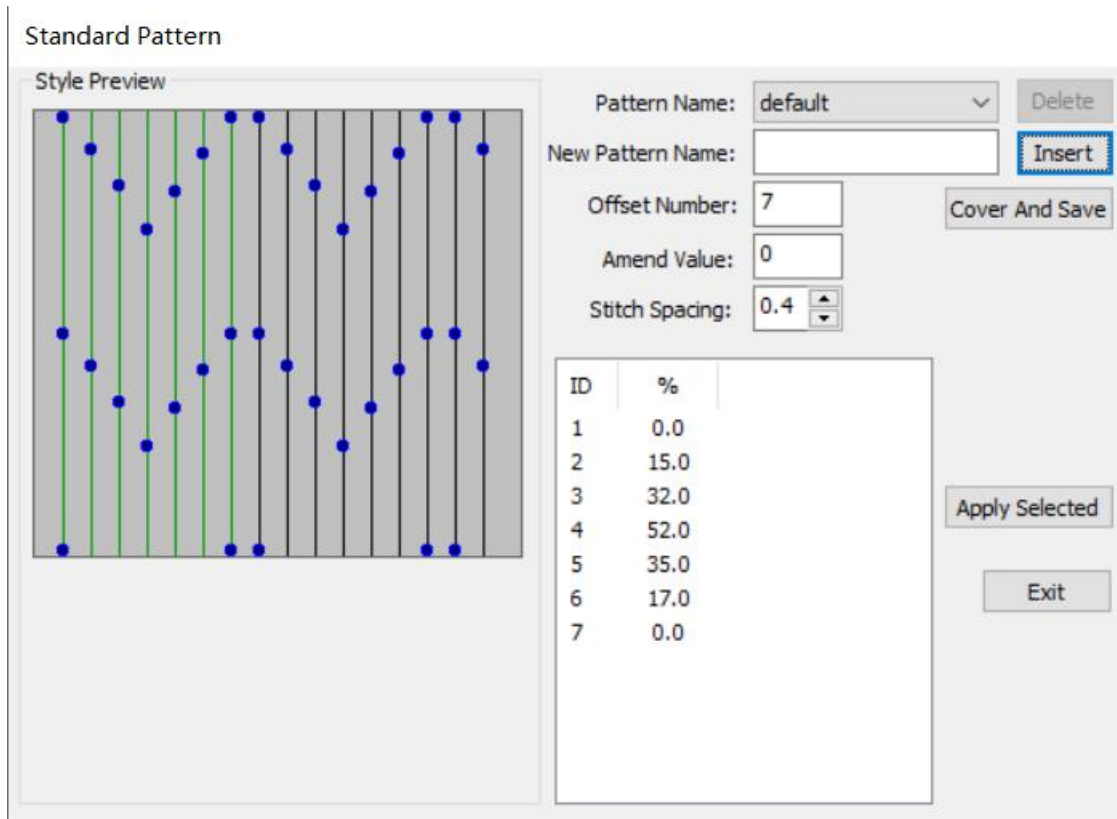
To apply standard pattern

(1) Select and click Tatami objects and select object properties. Object Properties > Fill dialog opens.

(2) Select Standard Pattern option.



(3) Click “Select” button.



(4) Enter specify value in the popup dialog, and click “Apply Select” to back to Tatami dialog.

(5) Click Apply.

4.1.4. Applying random factors

Using a random factor you can eliminate the split line patterns formed by regular needle penetrations and distribute the stitches randomly inside the shape. This can create interesting mottled effects.



Random Coefficient: 0%



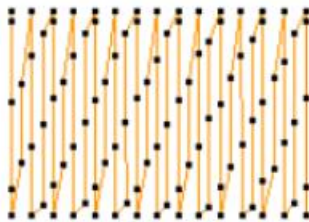
Random Coefficient: 50%

To apply random factors

- (1) Select-click the Tatami object and select *Object Properties* > Fill.
- (2) In the *Random* field, specify a random factor between 0% and 100%.

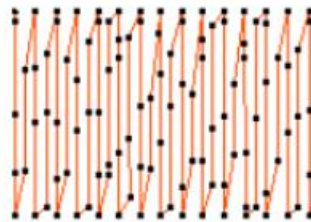


- (3) Click Apply.



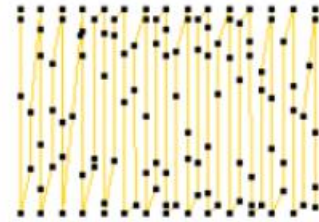
Random factor: 10%

Offset faction A: 0.25, B:0.25



Random factor: 50%

Offset faction A: 0.25, B:0.25



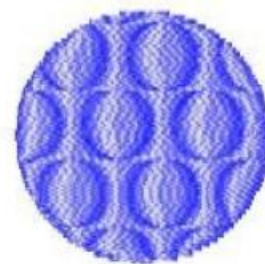
Random factor: 100%

Offset faction A: 0.25, B:0.25

Tip A value of around 50% generally gives good results.

4.2. Creating textures with program splits

Program Split is a decorative fill stitch in which the needle penetrations form a tiled pattern. Select a predefined pattern or create your own.



You can apply Program Split to a wide variety of objects like Input A, Input B, Input C and Complex Fill objects. The current Program Split values are set in the *Object Properties* > *Fills* dialog. You can adjust these either before or after applying the effect.

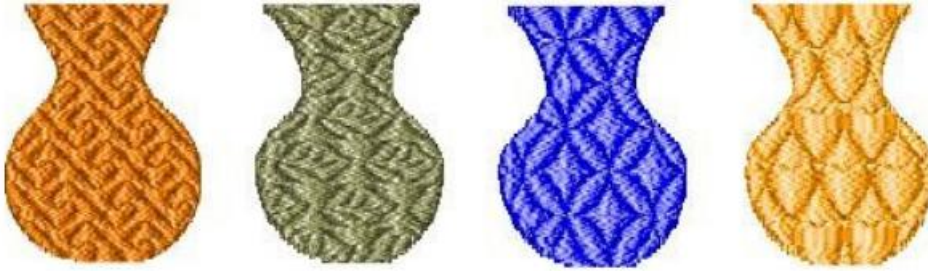
To apply Program Split

Select the Program Split from stitch type list in general toolbar.

Program Split stitching is applied to new or selected objects, based on the current Program Split settings.

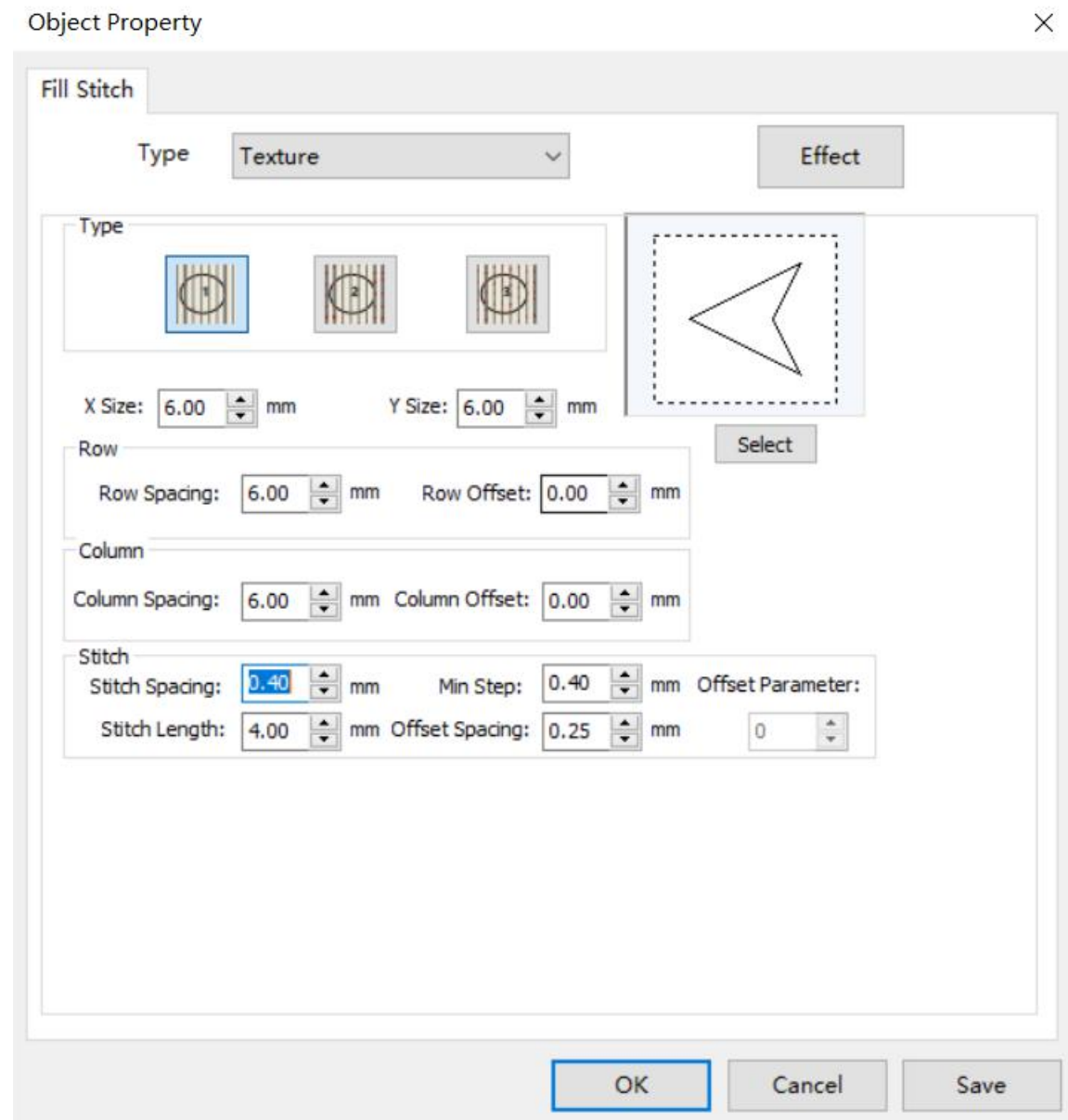
4.2.1. Selecting program split patterns

You can select a wide variety of program split patterns from the Object Properties dialog to apply them to the Program Split. Select the pattern either before or after digitizing the object.

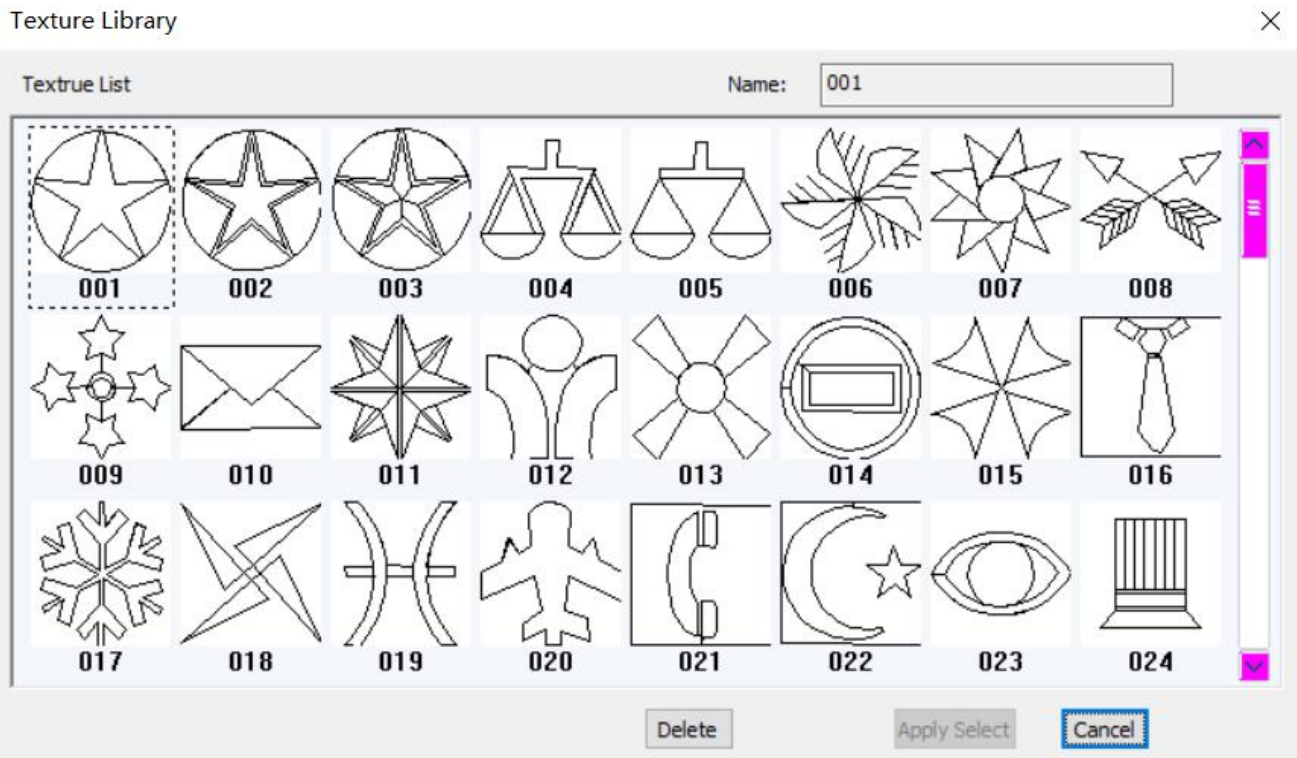


To select program split patterns

- (1) 1. Select and right-click the *Program Split* object.
- (2) 2. Click the *Object Properties* icon. The *Object Properties > Fill* dialog opens.
- (3) 3. Click “Select” button.



- (4) Click “Select” button.



- (5) Select the required patterns from the popup dialog.
 (6) Click Apply.

4.2.2. Scaling Program Split patterns

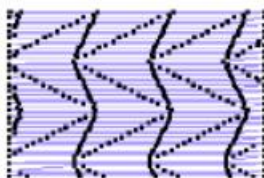
Set the precise size for Program Split patterns in the *Object Properties* dialog.

To scale Program Split patterns

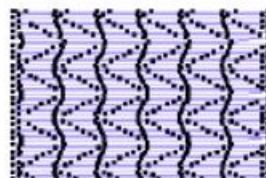
- (1) Select and right-click Program Split objects.
 (2) Click Object Properties icon. Object Properties > Fill dialog opens.

X Size: mm Y Size: mm

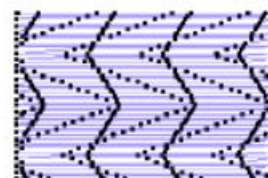
- (3) In the *Size X* field, enter the required width of each fill pattern.
 (4) In the *Size Y* field, enter the required height of each fill pattern.



Default values



Size X and Size Y decreased



Size X increased

- (5) Click Apply.

4.2.3. Selecting Combination Split options

Select variety combinations of Satin and Tatami stitch from Program Split to create different effects with the same pattern. There are three combination split options—*Satin-in-Satin*, *Satin-in-Tatami* and *Tatami-in-Tatami*.



Satin-in-Satin



Satin-in-Tatami



Tatami-in-Tatami

To select Combination Split options

- (1) Select and right-click the *Program Split* object.
- (2) Click the Object Properties icon. The *Object Properties > Fill* dialog opens.



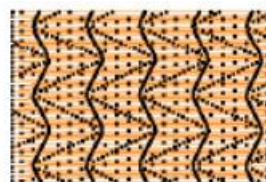
- (3) In the Combination Split panel, click the icon you require.
 - A. Satin-in-Satin: The needle penetrates the fabric only where the patterns intersect the stitch rows. This is the standard program split stitch type, which produces the smallest number of stitches.
 - B. Satin-in-Tatami: The foreground of the pattern uses Satin stitching, while the background is filled with Tatami. Use this option to avoid long stitches when the patterns are small but the column and row spacing are wide.
 - C. Tatami-in-Tatami: Both foreground and background use Tatami. Select this option for large objects and patterns to avoid long stitches.



Satin-in-Satin



Satin-in-Tatami



Tatami-in-Tatami

- (4) Click Apply

4.2.4. Adjusting column and row spacing settings

Set the exact row and column spacing in program split objects. Column and row spacing settings determine the distance between grid lines. Patterns are placed at intersection points—the center of each pattern coincides with an intersection.



Default Spacing



Column Spacing Increase



Row Spacing Decrease

The initial settings define a simple grid, where the spacing equals the dimensions of the pattern. The row offset is set to 0.00 mm so columns and rows are perpendicular.

Note Spacing is measured from the start of each pattern. Thus, to define a new spacing setting, add the distance you require between patterns to the original setting. Reducing it will cause the patterns to overlap.

To adjust column and row spacing settings

- (1) Select and right-click the *Program Split* object.
- (2) Click Object Properties icon, the *Object Properties > Fill* dialog opens.



- (3) In the Column panel, set the spacing and offset settings for columns in the pattern grid.
 - A. Spacing: the distance between each vertical column of patterns.
 - B. Offset: the distance by which to offset patterns in each column.
- (4) In the Row panel, set the spacing and offset settings for rows in the same way as for columns.



Default Spacing



Column Spacing Increase



Row Spacing Decrease

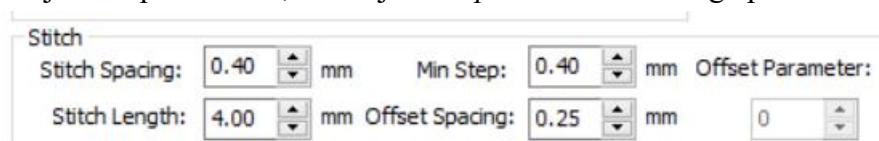
- (5) Click Apply

4.2.5. Adjusting program split stitch settings

Specify the stitch length, minimum stitch length and spacing settings for program split objects, in the same way as for other fill stitch types.

To adjust program split stitch settings

- (1) Select and right-click the *Program Split* object.
- (2) Click Object Properties icon, the *Object Properties > Fill* dialog opens.



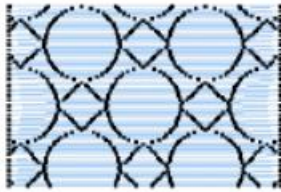
(3) In the *Stitch Spacing* field, enter the required spacing.

For Tatami this is the distance between two forward rows of stitches, for Satin, the distance between each forward stitch.

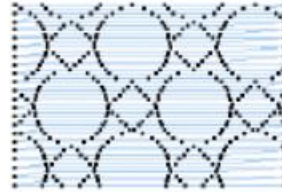
(4) In the Length field, enter the stitch length.

This is the maximum stitch length to be generated in the fill.

(5) In the Minimum Length field, enter the length of the shortest stitch to be generated.



Default Spacing



Stitch Spacing Increase



Stitch Spacing Decrease

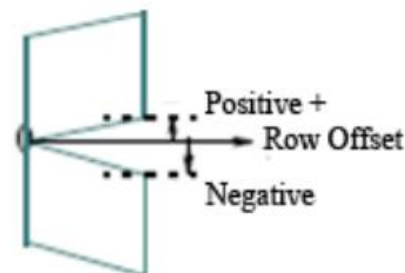
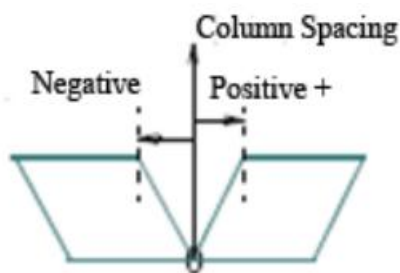
(6) Click Apply

4.2.6. Adjusting program split offset settings

You can apply offset settings to rows, columns and Tatami stitch in the Program Split objects.

Column and row offsets

The column and row offsets determine the angle of the grid lines. If both offsets are set to '0', the grid lines are perfectly vertical and horizontal.



Stitch offsets

You can control the needle penetration split by making each stitching forward row offset



Non Offset



Column Positive Offset



Row Positive Offset

Tip You just need to enter the stitch offset setting for Program Split used Satin-in-Tatami or Tatami-in-Tatami combinations.

To adjust program split offset settings

(1) Select and right-click the Program Split object.

(2) Click Object Properties icon, the Object Properties > Fill dialog opens.

X Size: 6.00 mm Y Size: 6.00 mm

Row

Row Spacing: 6.00 mm Row Offset: 0.00 mm

Column

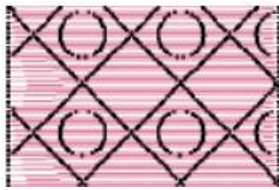
Column Spacing: 6.00 mm Column Offset: 0.00 mm

Stitch

Stitch Spacing: 0.40 mm Min Step: 0.40 mm Offset Parameter: 0

Stitch Length: 4.00 mm Offset Spacing: 0.25 mm

- (3) Enter an offset for each row of the pattern in the *Row > Offset* field.



Row Offset: 0

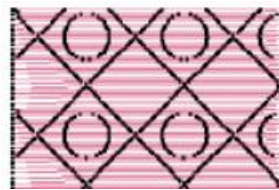


Row Offset: 1

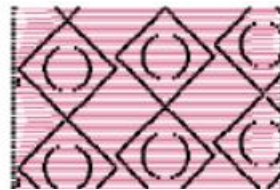


Row Offset: Negative

- (4) Enter an offset for each column of the pattern in the *Column > Offset* field.



Column Offset: 0



Column Offset: 1



Column Offset: Negative

- (5) Enter a stitch offset for Tatami-in-Satin or Tatami-in-Tatami settings combinations in the *Stitch Settings > Offset Spacing* field.

This offset controls where the needle penetrations line up for each row of stitching.



Offset Parameter: 0.00



Offset Parameter: 0.25



Offset Parameter: 0.50

- (6) Click Apply.

4.2.7. Applying program split random factors

You can eliminate unwanted patterns and distribute stitches evenly within a shape using a random factor. Apply random factors to program splits that use combinations of Satin-in-Tatami or Tatami-in-Tatami.

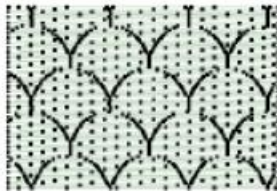
Note The random factor does not affect the deliberate needle penetrations that form the pattern.

To apply program split random factors

- (1) Select and right-click the Program Split object.

(2) Click Object Properties icon, the Object Properties > Fill dialog opens.

(3) Enter a value in the *Random* field—specify a factor between 0% and 100%. Values of around 50% generally give good results.



Random factor: 0%



Random factor: 25%



Random factor: 50%

(4) Click Apply.

4.3. Creating textures with Flex Split



Flex Split is a decorative effect where one or more lines of a program split pattern are used in the object fill. The pattern follows the stitch angle and may be scaled to fit the width of the object. There are four different Flex Split effects. You can use the existing patterns for Flex Split.



Applying Flex Split

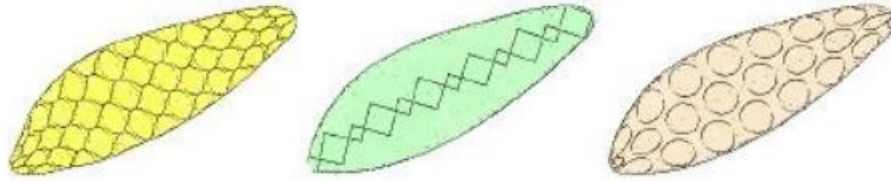
You can apply Flex Split to Input A, Input B and Input C objects which use Satin, Tatami or Textured Fills stitches. This is useful for objects with turning stitches or varies column width. Set current Flex Split value in the Effect dialog. You can adjust Flex Split values either before or after applying the effect.

Note Flex Split and Complex Fill is incompatible.

To apply Flex Split

Click the Flex Split icon.

The effect is applied in new or selected objects based on the current Flex Split settings.



4.3.1. Selecting Flex Split patterns and options

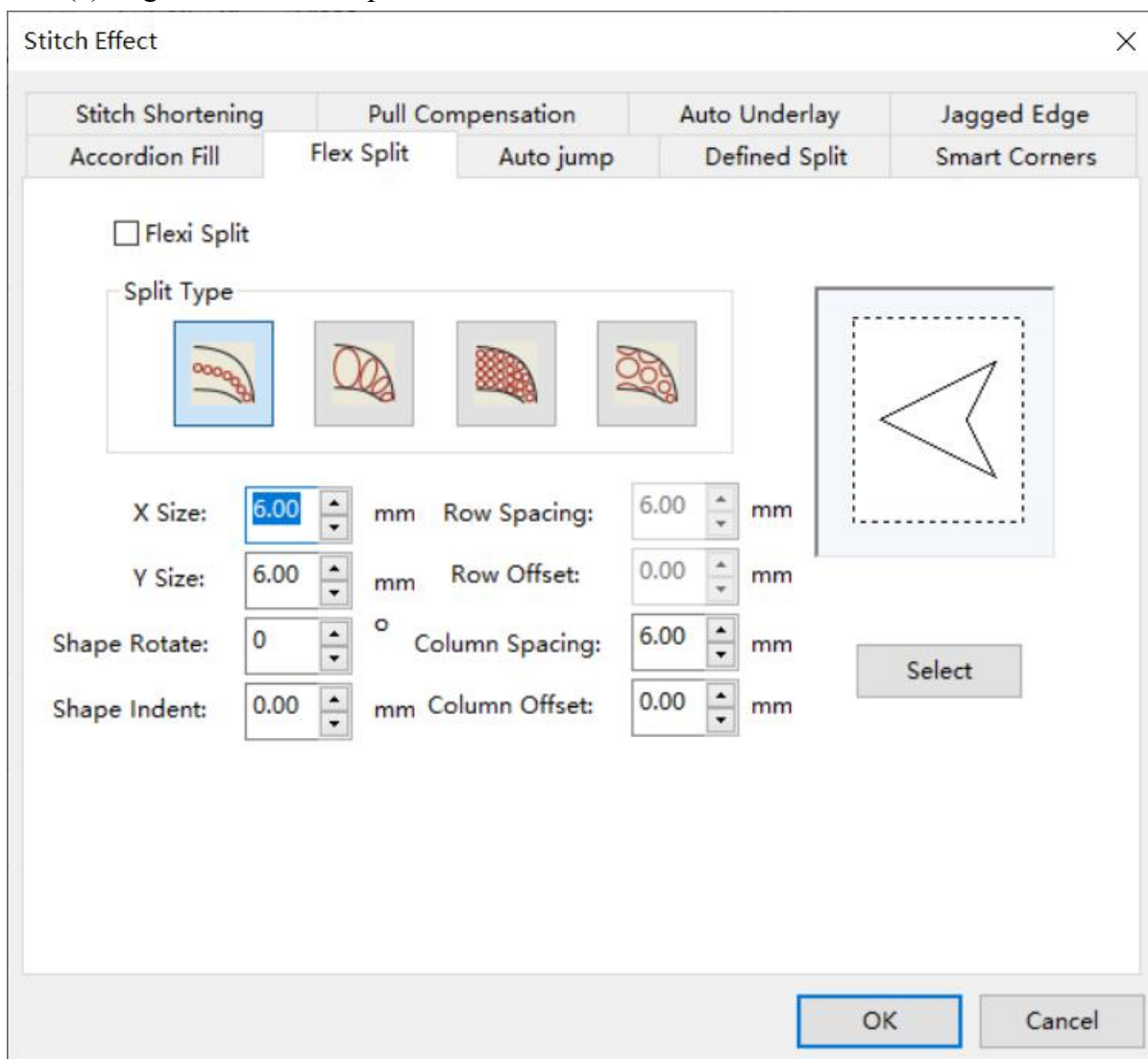
You select flex Split patterns and options from the *Effect > flex Split* dialog.



Use Flexi Split (Stitch Types toolbar) to apply a decorative effect to new or selected objects. Right-click to adjust settings.

To select flex Split patterns and options

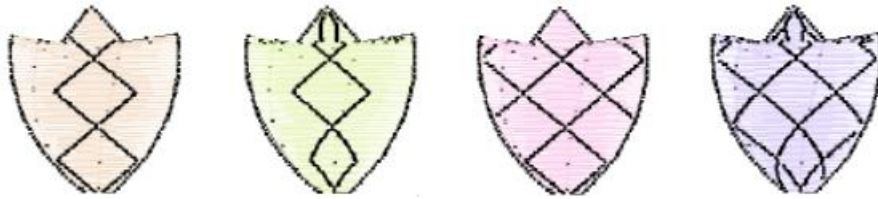
(1) Right-click the flex Split icon.



(2) Select the *flex Split* checkbox.

(3) Click Select and select the pattern from pattern list in the popup dialog.

- (4) Click *flex Split* icon in the option box.



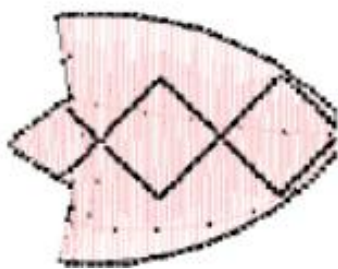
- (5) Adjust size and spacing settings as required.
 (6) Click Apply.

4.3.2. Adjusting flex Split settings

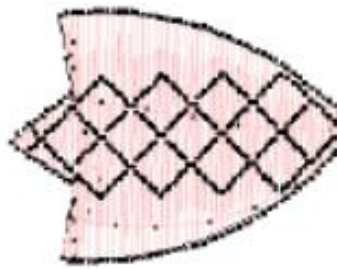
You can adjust flex Split settings to vary size, shape indent, spacing and pattern offsets.

To adjust flex Split settings

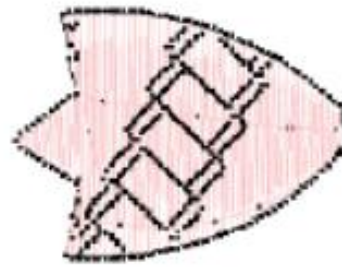
- (1) Right-click the *flex Split* icon.
- (2) Select the *flex Split* checkbox.
- (3) In the *Size X* and *Size Y* fields, enter the dimensions of the largest pattern in the effect.
- (4) In the *Indent* field, enter the distance between the first pattern and the first stitch line.
- (5) In the *Column* panel, enter spacing and offset settings as required:
 - A. *Spacing*: the distance between each column of patterns in the effect.
 - B. *Offset*: the distance by which each pattern repeat is offset.



Default Column and Row Values



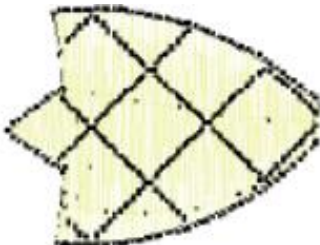
Column and row spacing decreased



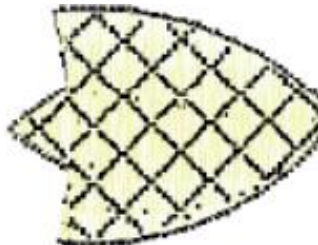
Row offset value changed

Note If you selected an option that uses more than one row of patterns, the fields in the Row panel are available.

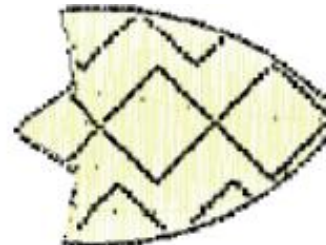
- (6) 6. In the Row panel, enter spacing and offset settings as required.



Default Column and Row Values



Column and row spacing decreased



Row offset value changed

- (7) Click Apply.

4.4. Creating user-defined splits

User-Defined Split lets you add detail to filled objects by digitizing lines of needle penetrations called ‘split lines’. Split lines are stored as object properties. They are preserved when stitches are regenerated even if you apply a different stitch type.



Note Split lines are not part of the object outline and cannot be reshaped with the rest of the object.



Use User-Defined Split (Stitch Types toolbar) to create your own split line effects. Right click to adjust settings.

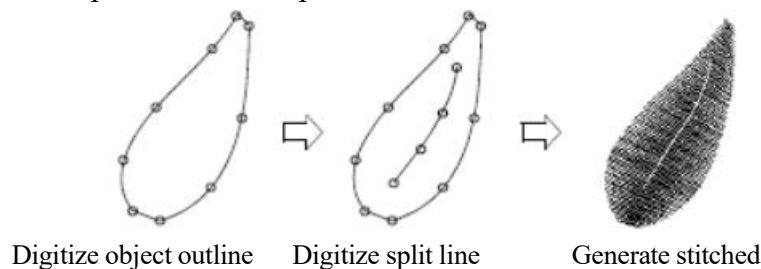
Select User-Defined Split before digitizing to add split lines to new objects. As you digitize, you are prompted to enter the split lines. You digitize them in the same way as Run objects. You can define multiple splits if required.



Tip Satin is the most suitable stitch type for User-Defined Split as there are no initial needle penetrations inside the shape.

To create new objects with User-Defined Split

- (1) Select a fill input method and stitch type.
- (2) Click the User-Defined Split icon.
- (3) Digitize the object boundaries, entry and exit points and stitch angle as you normally would, following the prompts in the Prompt Line.
- (4) Digitize a split line over the object when prompted, and then press Enter.
Repeat this step for additional split lines.



Tip For best results, digitize split lines approximately perpendicular to the stitch angle.

- (5) Press Enter.

4.4.1. Applying User-Defined Split to selected objects

Add split lines to an existing object by digitizing the required line over it, then converting it to a split line. Digitize the split line using an input method—e.g. Run—or a vector drawing tool.

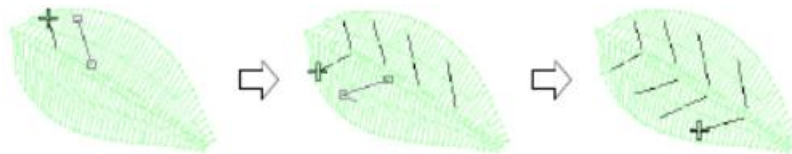


To apply User-Defined Split to selected objects

- (1) Select an input method or drawing tool to digitize the split line.

Tip Use any input method—including fill input methods—as only the outlines are used to create the split lines.

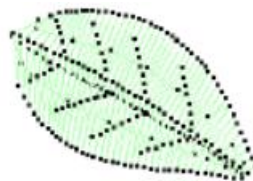
- (2) Digitize a split line on top of the filled object, using left and right-clicks to enter reference points, and press Enter.



To create more than one split line, repeat this step.

Tip To use existing objects to create split lines, simply move the object on top of the filled object you are creating lines for.

- (3) Select the split line object (or objects).
- (4) Select the “Make > User Defined Split” menu.
- (5) Press Delete to remove the split line object (or objects).
- (6) Select the filled object on which you digitized split lines.
- (7) Click the User Defined Split icon.



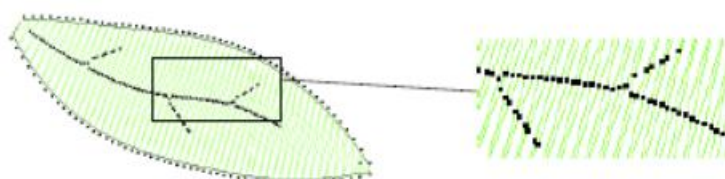
Tip Turn on TrueView or click the Show Needle Points icon to view the effect.

4.4.2. Splitting alternate lines

The Split Alternate Stitch Lines setting softens the split line.

To split alternate lines

- (1) Select a user-defined split object.



User defined split

(2) Right-click the User Defined Split icon.

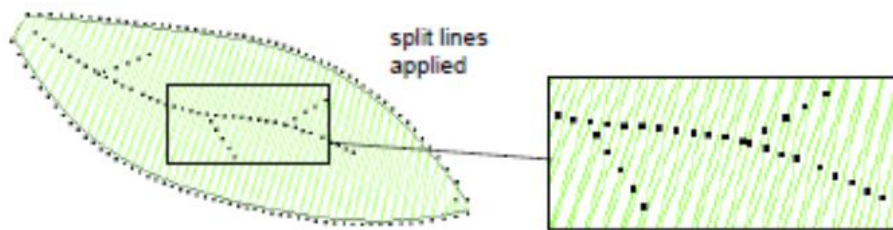
The Object Properties > Effect dialog opens.

(3) Select the Split Alternate Stitch Lines checkbox on the “Define Split” interface.

☒ User Defined Split

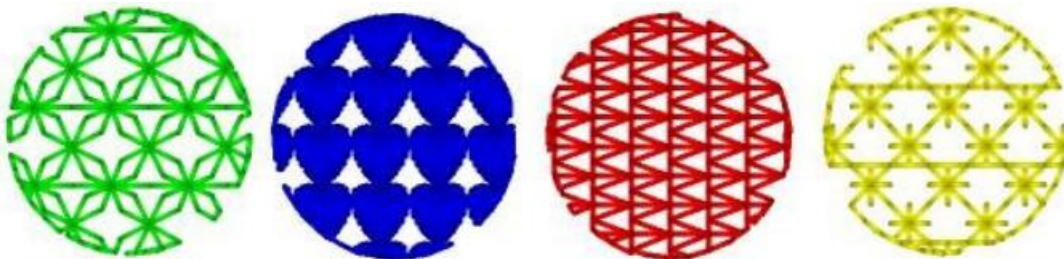
☒ Split Alternate

(4) Click Apply. Split lines are softened.



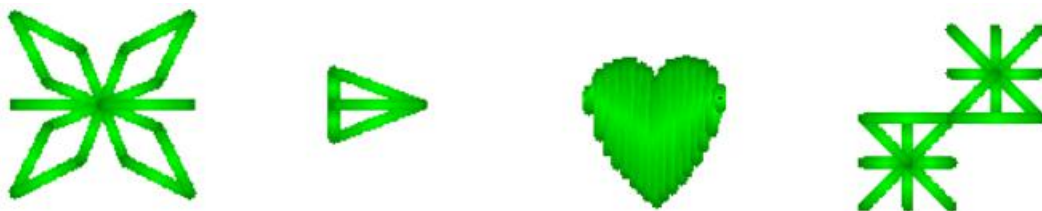
5. Motif Runs and Fills

Motifs are pre-digitized design elements, such as hearts, leaves or border patterns; you can quickly insert them into the design. They generally consist of one or more simple objects, and are stored in a special motif set.



5.1. Select and insert Motifs

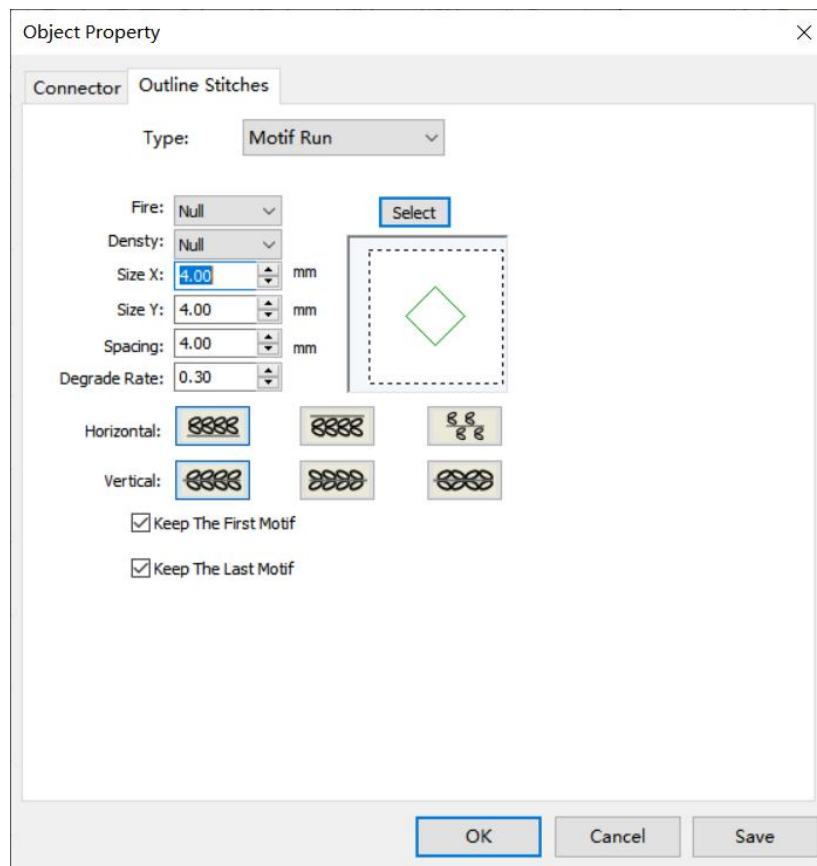
You can insert motifs in your design by selecting motifs from Select Motifs dialog.



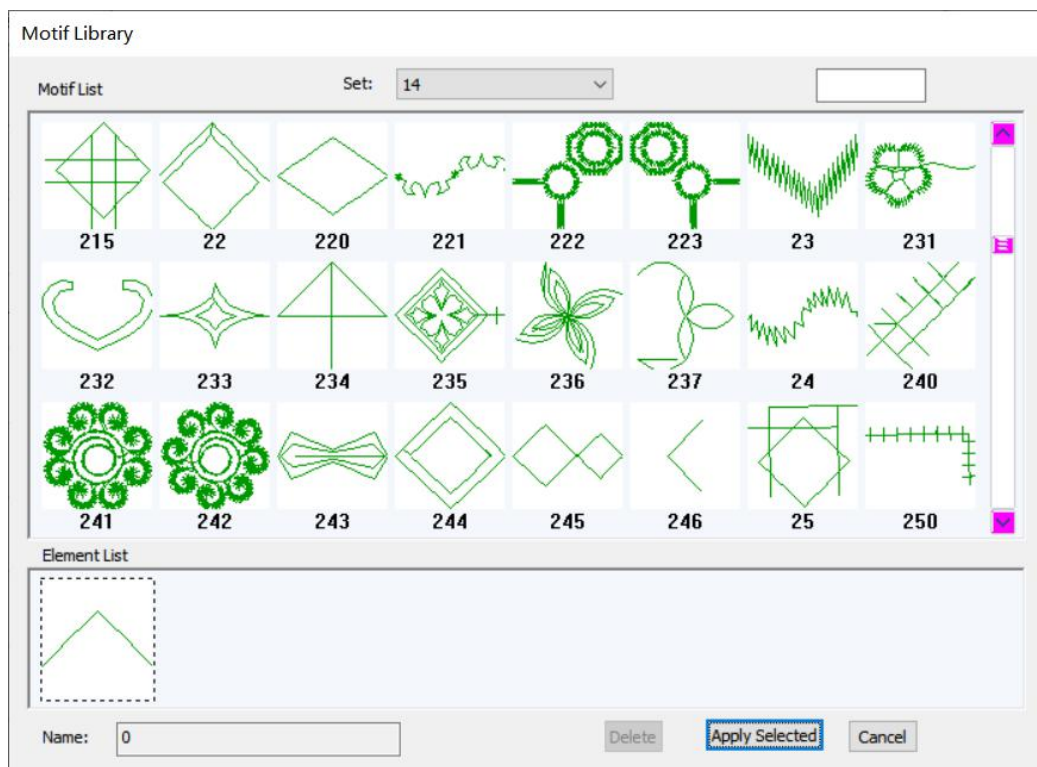
Note If motifs of two or more objects, they will be combined automatically while inserting.

To select and insert motifs

(1) Right-click Motif Run  icon.



(2) Click the “Select”.



(3) Select Motifs from the drop down list of Motifs list.

(4) Select one Motif.

The selected motifs names will appear in the Select field.

- (5) Click to apply selected motifs.

Dialog closes, motifs attached to mouse pointer appear.

- (6) Press Enter. Stitches generate.

You can repeat this step so that you can insert motifs again.

They also can be rotated, scaled and mirrored when insert motifs.

- (7) Press Esc to close.

Note Each motif is handled as an individual object. Deselect motif combination in order to edit the part of motif.

5.2. Managing motifs

5.2.1. Applying motif runs

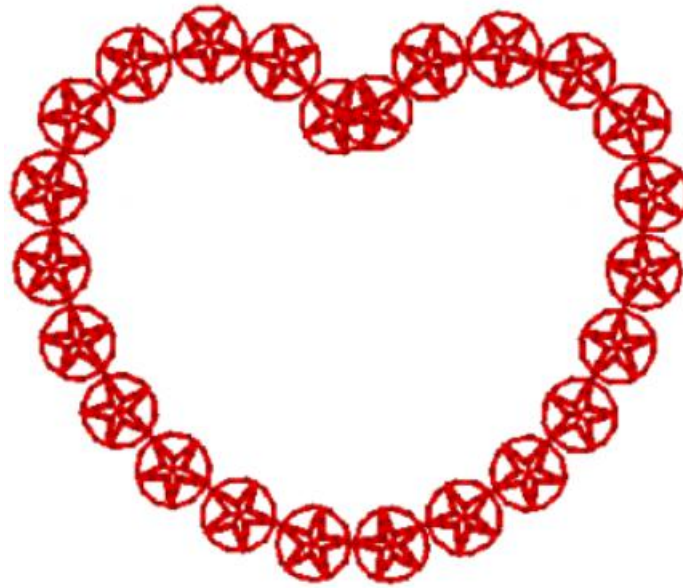
Use motif runs input method to create a string of motifs along with digitized line. You can select motifs from object properties dialog before or after digitizing. You also can adjust scale and spacing setting.

To apply motif runs

- (1) Select Insert > Stitching Objects > Motif Runs.
- (2) Input reference point to digitize the line which you want the motifs appear.
 - A. Click to add corner point.
 - B. Right-click to add curved point.



- (3) Press Enter when you have digitized the line.



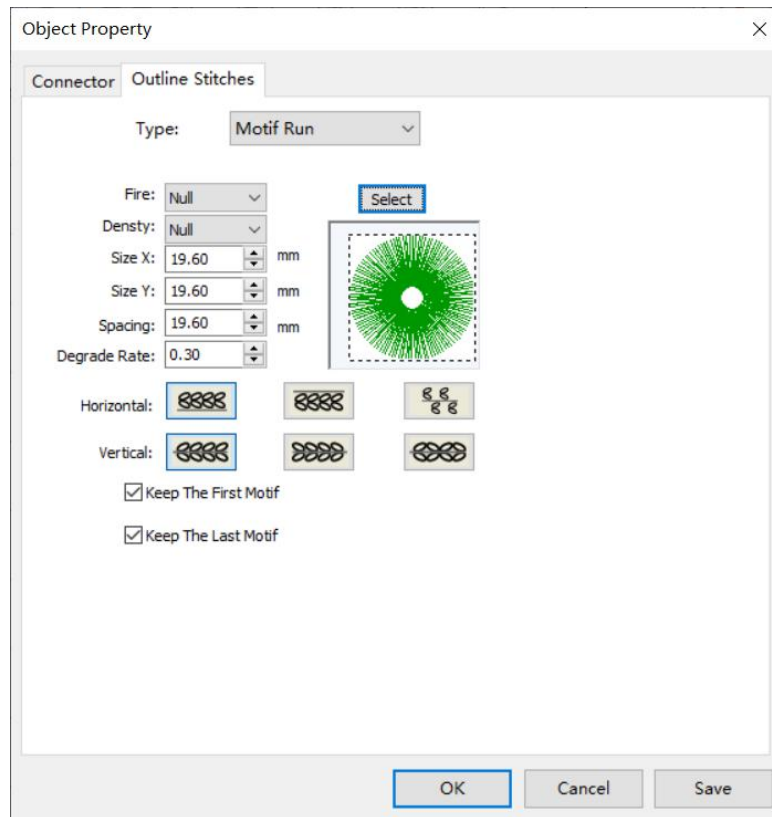
5.2.2. Adjusting Motif Run spacing

You can adjust the spacing between each motif in a Motif Run. The initial spacing of motif in the motif runs is the spacing that between the reference points marked when creating motifs.



To adjust motif run spacing

- (1) Select motif run objects.
- (2) Right-click and select *Object Properties*.
Object Properties > Run dialog opens.



(3) In the Spacing field, enter the distance between each repetition of the motif.



After adjusting spacing



Initial spacing

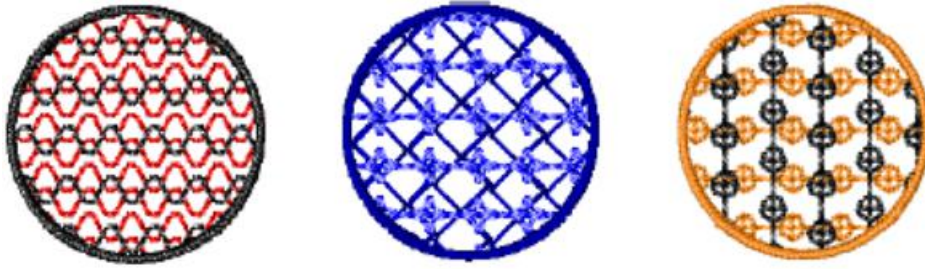
If they do not fit the baseline exactly, Raynen Embroidery Design Software adjusts the spacing to make them fit:

- A. If the space remaining at the end of the baseline is less than half a motif, the extra space is spread evenly between the motifs.
- B. If the space remaining is larger than half a motif, Raynen Embroidery Design Software inserts an extra motif, and slightly overlaps the motifs to distribute them evenly along the baseline.

Tip You can reshape the baseline to achieve the exact spacing you require. See Reshaping Motif Run Objects for details.

5.3. Creating motif fills

Motif Fill is a decorative stitch used for filled Complex Fill objects. This feature repeats motifs in parallel rows to fill the shape. You can design the motif layout on-screen, or by adjusting settings in the *Object Properties* dialog.



使用主题花纹填针

	Use Complex Fill (Input toolbar) to create an object to apply Motif Fill to.
	Use Motif Fill (Stitch Types toolbar) to apply Motif Fill to objects using current settings. Right-click to change settings.

Digitize Complex Fill objects with Motif Fill or apply it to existing Complex Fill objects to create decorative fill stitching using current settings. You can select motifs, or change layout and setting before or after digitizing. Please see Design Motif Fill and Adjust Motif Fill Spacing and Offset Settings.

To apply motif fills

- (1) Click Complex Fill icon.
- (2) Digitize complex fill objects as usual.

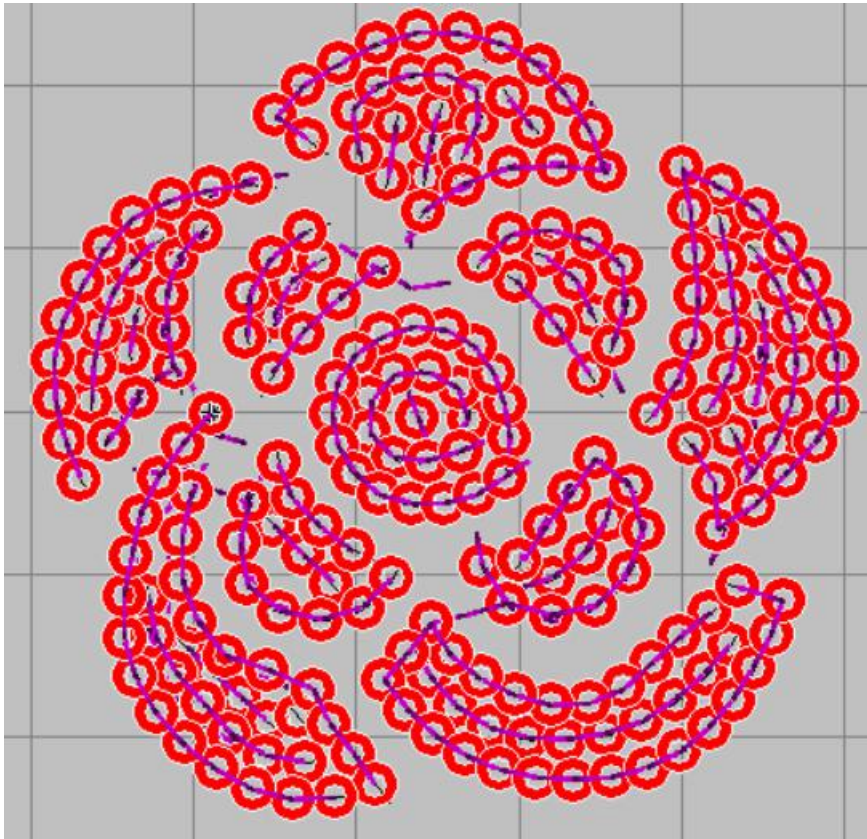
Note Stitch angle have no influence on the arrangement of motifs.

- (3) Select complex fill objects.
- (4) Select Stitch > Stitch Type > Motif.
- (5) Press **Enter**. Current motif fills stitch the digitized objects.



Part VI SEQUIN EMBROIDERY

Input method of sequin and the setting of multi-sequin



As a kind of special embroidery , sequin/bead embroidery is to use the sequin/bead feeding devices added at the first/last needle position to sew the colorful plastic chips/beads on the fabric. The sequin/bead embroidery almost can be used on any embroidery products that are applicable for the normal flat embroidery. The sequin/bead embroidery can be used as the small part interspersion or as the main body of the embroidery product. Due to its special color and luster, the sequin/bead embroidery has gained the favor from the consumers since it was invented.

Multi-sequin is the derivative embroidery method of the sequin. The traditional sequin/bead embroidery is the single sequin mode, which can only embroider one kind of sequin at one stitch point. But the multi-sequin sequin can have the sequins at different sizes embroidered at a single needles point simultaneously. The overlapped sequin mode and the alternative feeding mode are the exclusive characters for the multi-sequin. In the overlapped sequin mode, the sequins at different sizes will be overlapped from small to big in order; while in the alternative feeding mode, the sequins at different sizes will be alternatively and continuously embroidered on the fabric in the sequence set by the users.

Multi-bead can have the beads at different sizes embroidered at a single needle point simultaneously. the different beads will be alternatively and continuously embroidered on the fabric in the sequence set by the users.

Multi-sequin and Multi-bead is an embroidery method that combines gold sequin and beads.

Multiple sequins and beads can be embroidered on the different needle positions, or on the same needle point. If there are on the different needle positions, sequins are usually embroidered first and then beads are embroidered. If there are on the same needle position, multiple sequins and beads can be alternatively and continuously embroidered on the fabric in the sequence set by the users.

1. Sequin and Bead setting

Raynen embroidery design soft support the 8 sequins and the 8 beads.

Multiple-sequins support the single sequin of the A to H, and the combining and overlapping sequin (Maximum overlap of the 4 sequins). Because the default principle is sequin size $A < B < C < D$, the overlapping sequin mode can only be used from small to large, such as AB and BD, while overlapping sequins in other orders are illegal and therefore do not exist in the options.

Multiple-sequins support the single Bead of the A to H. Bead overlap mod is not exist.

Click the button  on the sequin toolbar. The settings dialog box will be displayed.

Sequin And Bead Setting

SequinSetting BeadSetting

	Electri...	Pattern	Frontal Color	Back Color	Out Diameter	In Diameter
1	SequinA	Circular			3.00	1.50
2	SequinB	Circular			3.00	1.50
3	SequinC	Circular			3.00	1.50
4	SequinD	Circular			3.00	1.50
5	SequinE	Circular			3.00	1.50
6	SequinF	Circular			3.00	1.50
7	SequinG	Circular			3.00	1.50
8	SequinH	Circular			3.00	1.50

OK Cancel

	Scheme name
1	3 beads and 2 sequins
2	8 sequins

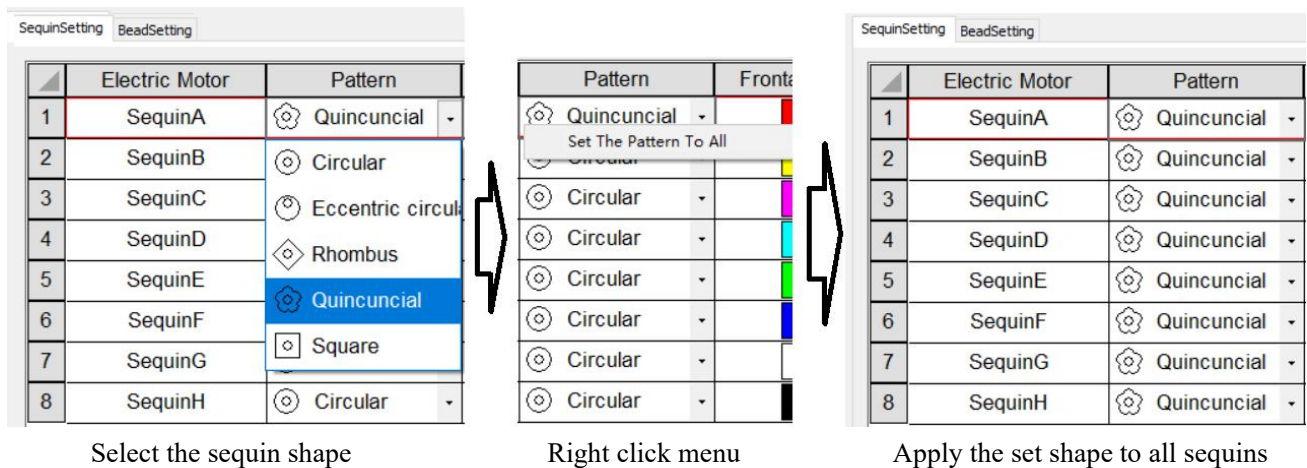
Save Delete Apply

1.1. Sequin setting

The shape, color, outer diameter, and hole diameter of the sequins can be set in the setting dialog box. Various effects of the sequin embroidery can be displayed after user settings

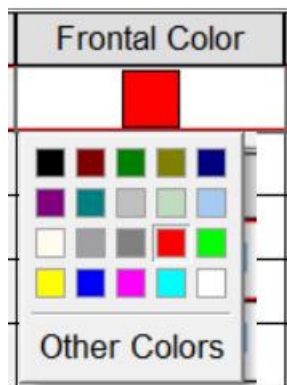
To set the shape, color, outer diameter, and hole diameter of the sequins

- (1) Pattern: Set the shape of the sequin, left click and select the shape of the sequin from the drop-down box. Support right clicking to apply the set shape to all sequins.

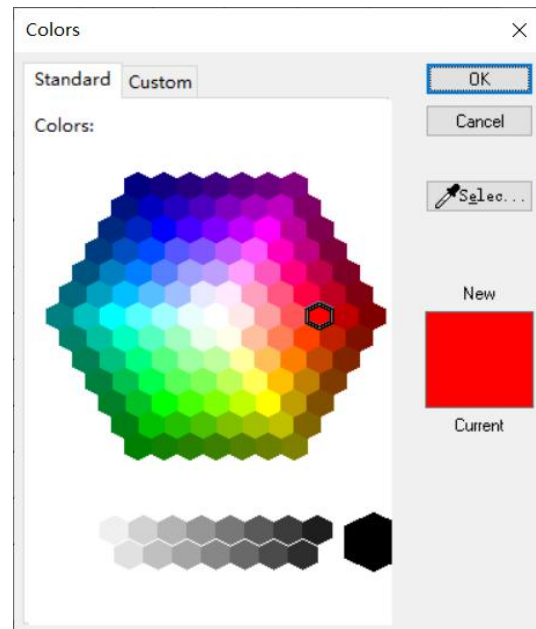


(2) Frontal/Back color: Left click to select color to set the front and back colors of the sequins

Click on “Other Colors” to set more colors.



单击颜色



其他颜色

(3) Outer/inner diameter: Left click on the input box and enter the size of the glitter (outer diameter) and hole size (inner diameter) on the keyboard

1.2. Bead setting

Select the Bead Settings tab, where the color, outer diameter, hole diameter, and height of the beads can be set. Color settings are only used for interface display.

Sequin And Bead Setting

SequinSetting BeadSetting

	Electri...	Pattern	Frontal Color	Out Diameter	In Diameter	Height
1	BeadA	⊙ Circular		2.00	1.50	2.00
2	BeadB	⊙ Circular		2.00	1.50	2.00
3	BeadC	⊙ Circular		2.00	1.50	5.00
4	BeadD	⊙ Circular		3.00	1.50	3.00
5	BeadE	⊙ Circular		4.00	1.50	4.00
6	BeadF	⊙ Circular		2.00	1.50	2.00
7	BeadG	⊙ Circular		2.00	1.50	2.00
8	BeadH	⊙ Circular		2.00	1.50	2.00

OK Cancel

Scheme name	
1	3 beads and 2 sequins 12#
2	4 beads and 12 sequins 8#
3	8 sequins 3#
4	8 sequins

Save Delete Apply

To the color, outer/hole diameter, height of beads

- (1) Color: Left click to select to set the bead color.
- (2) Outer/inner diameter: Left click on the input box and enter the size (outer diameter) and hole size (inner diameter) of the beads on the keyboard.
- (3) Height: Left click on the input box and enter the height of the beads on the keyboard.

1.3. Sequin and bead scheme

According to the configuration of the sequins and beads on the embroidery machine, save the shape, color, size, height, and other information of the sequins and beads from different devices in the scheme list for easy application next time.

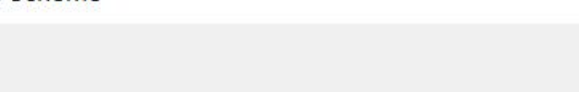
Tip Suggests naming with embroidery machine sequins and bead devices+numbers, such as “3 beads 2 sequins 12#”. And correspond with the names of **signal scheme**, **material scheme**, and **DST conversion scheme** one by one.

	Scheme name
1	3 beads and 2 sequins 12#
2	4 beads and 12 sequins 8#
3	8 sequins 3#
4	8 sequins

To save the sequins and beads scheme

- (1) **Save:** Save the current sequin and bead configuration as a scheme.

Left click to display the naming dialog box.



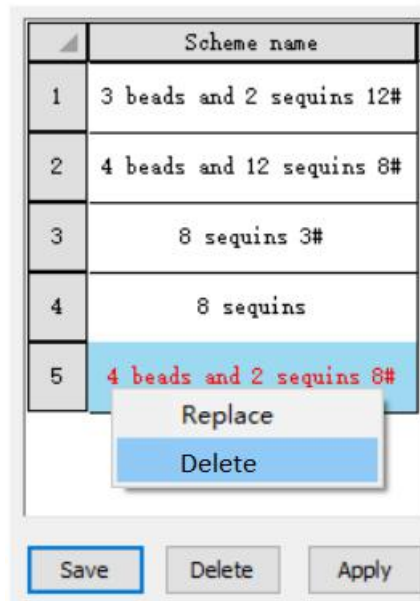
Make Scheme

Scheme Name: 4 beads and 2 sequins 8#

OK Cancel

- (2) **Delete:** Delete the selected scheme from the scheme list.

The selected scheme can also be deleted through the right-click menu.



- (3) Apply: Apply the selected scheme to the current configuration. You can also double-click on the scheme name in the list to apply it

Tip The red text represents the currently used scheme in the list.

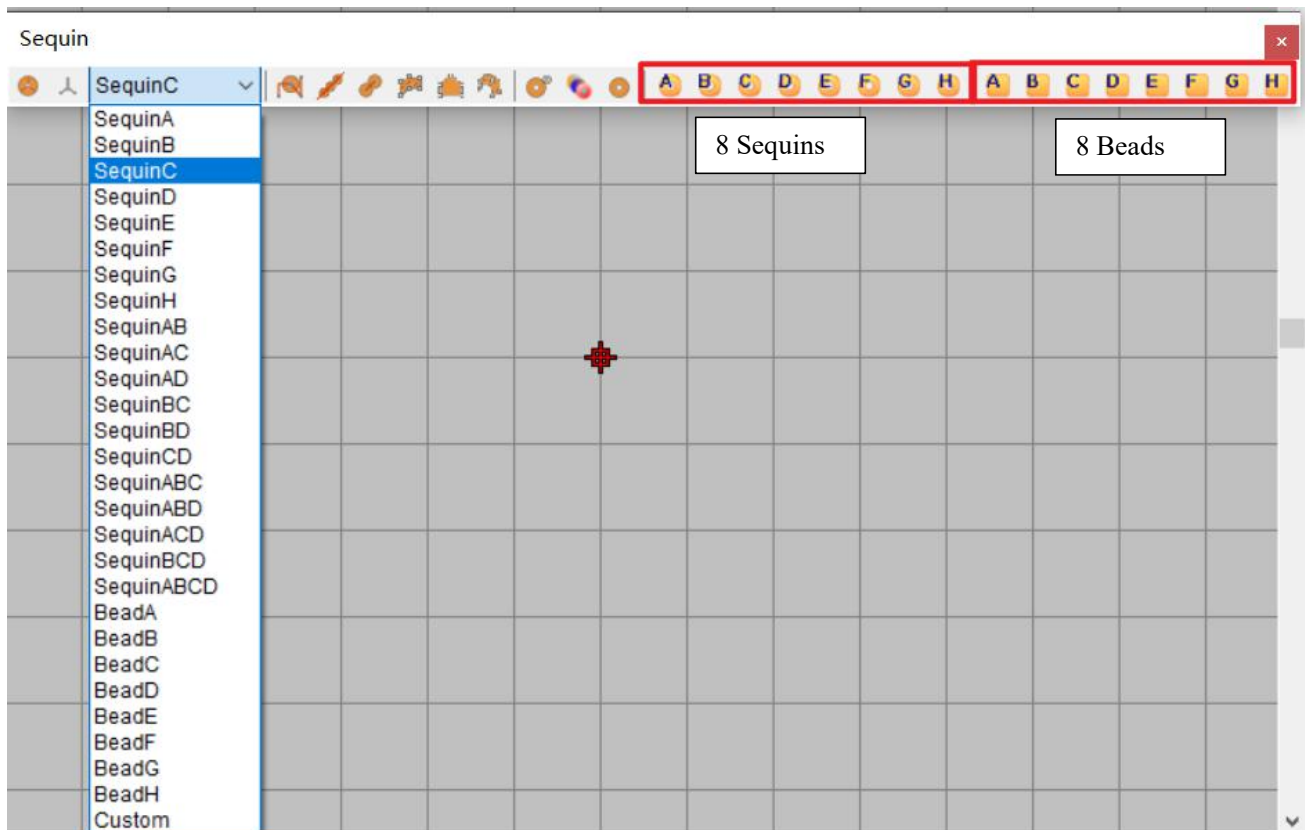
- (4) Replace: Replace the current configuration information of sequins and beads with the selected scheme.

2. Output sequins/Beads mode

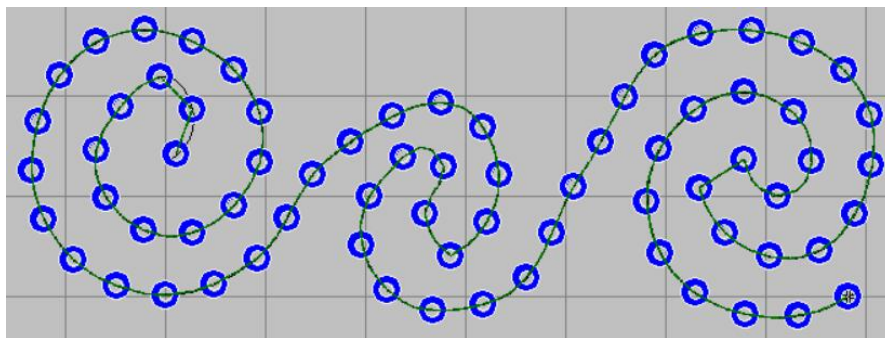
Set the output signals for sequins and beads.

To set the output signals

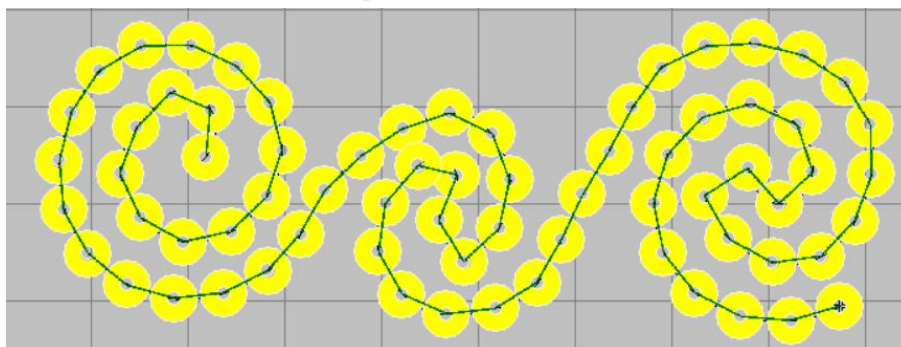
Select the output sequin or bead from the drop-down box in the sequin toolbar.



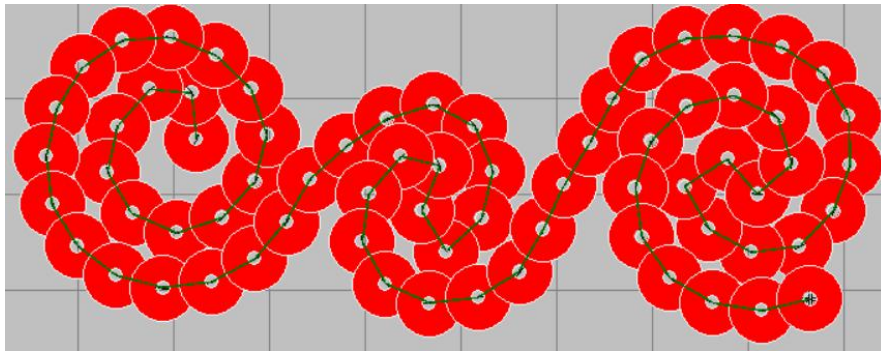
Based on the selected signal, use the sequin tool to create objects with sequins/beads. You can also modify the output signal for selecting sequins and bead objects in the list.



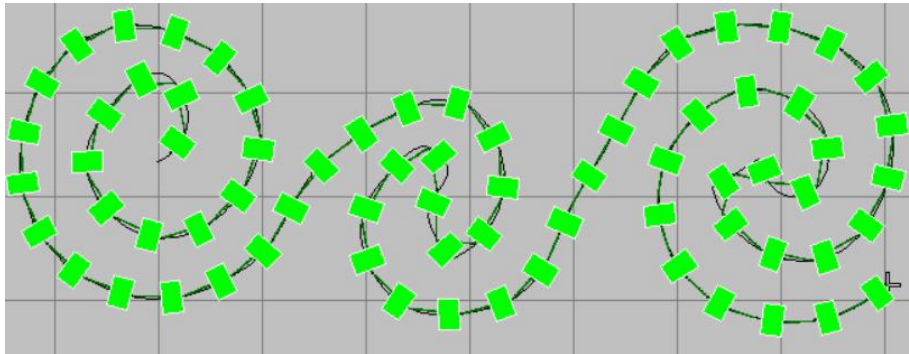
Sequin A 3mm blue



Sequin B 5mm yellow



Sequin C 7mm red



Bead A 2mm height green

Tip Beads usually require special fixing methods (such as 02, 12, etc.)

To set alternating output sequins and beads

Select Custom in the drop-down box to open the Multiple Sequins dialog box, where you can set alternating output of sequins and beads modes.

Click on the icon  to open the multi gold sheet dialog box.

Multi Sequin Rule

	Sequin	Number of...	Overlap	FixLine Type	Spacing
1	SequinA	2	☐	 0	3
2	SequinAB	3	☐	 0	5
3	BeadB	2	☐	 02	5
4	BeadA	3	☐	 02	5

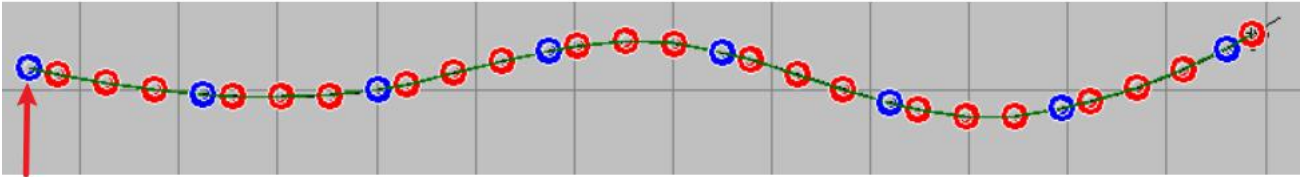
Insert Delete OK Cancel

Output sequins alternately and cyclically according to the set order and quantity



- (1) Insert: Insert a new row after the selected row.
- (2) Delete: Delete the selected row.
- (3) Sequins: Select alternating sequins and beads from the drop-down menu.
- (4) The number of the repetitions: The number of times to repeat the output of sequins or beads..
- (5) Overlapping: The repeated output sequins are fixed in the same position.
Only applicable to sequins. Beads cannot be fixed in the same position.

	Sequin	Number o...	Overlap	FixLine Type	Spacing
1	SequinA	2	☒	0	3
2	SequinAB	3	☐	0	5



Two sequin A are fixed in the same position

- (6) Fixed line type: Set the fixed line method for sequins/beads.
- (7) Spacing: The distance between adjacent sequins/beads.

3. Linear sequins/beads

There are three input modes for linear sequins/beads. They are Sequins Manual, Run sequin, and Run Sequin Manual.

3.1. Sequin/Bead Manual

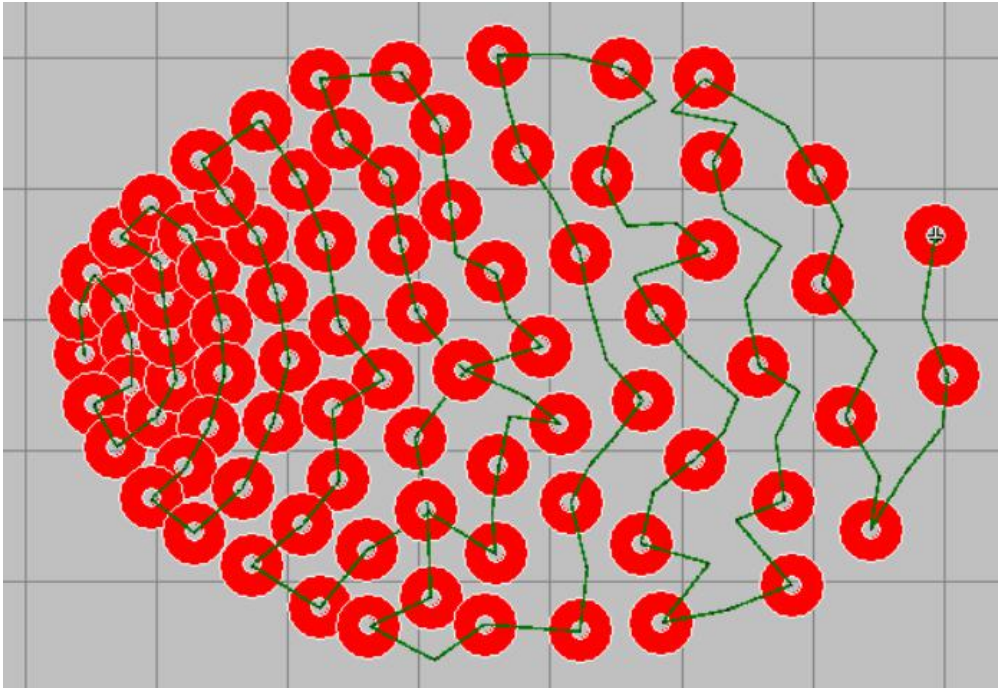


Sequin/Bead Manual

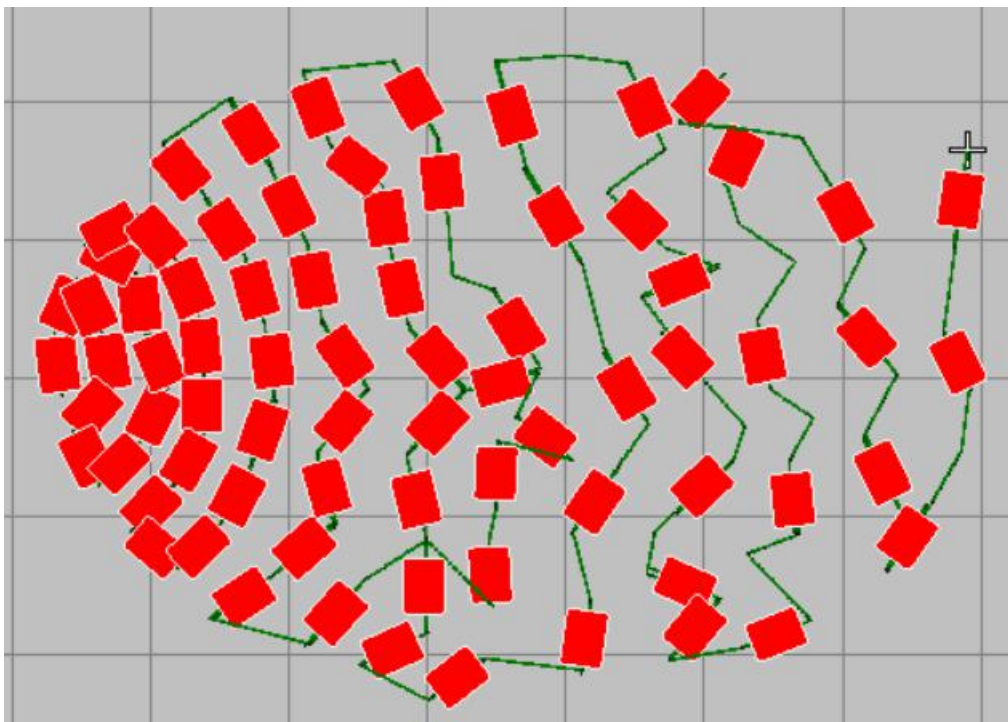
To Create the Sequin/Bead Manual object

The creation process is similar to manual needles

- (1) Left click to input stitch points, right click to output sequin signals.
- (2) During the process of creating objects, the output signal can be modified using the Q or W hotkeys.
- (3) The position and fixing method of the sequin output are customized by the user, which is relatively flexible, but the input efficiency is low, and the later modification and maintenance are relatively cumbersome.



The manual sequin is suitable for realizing the irregular sequin effect like the graded filling.



Tip The fixation method of output beads is different from that of sequins.

3.2. Run Manual Sequin/Bead

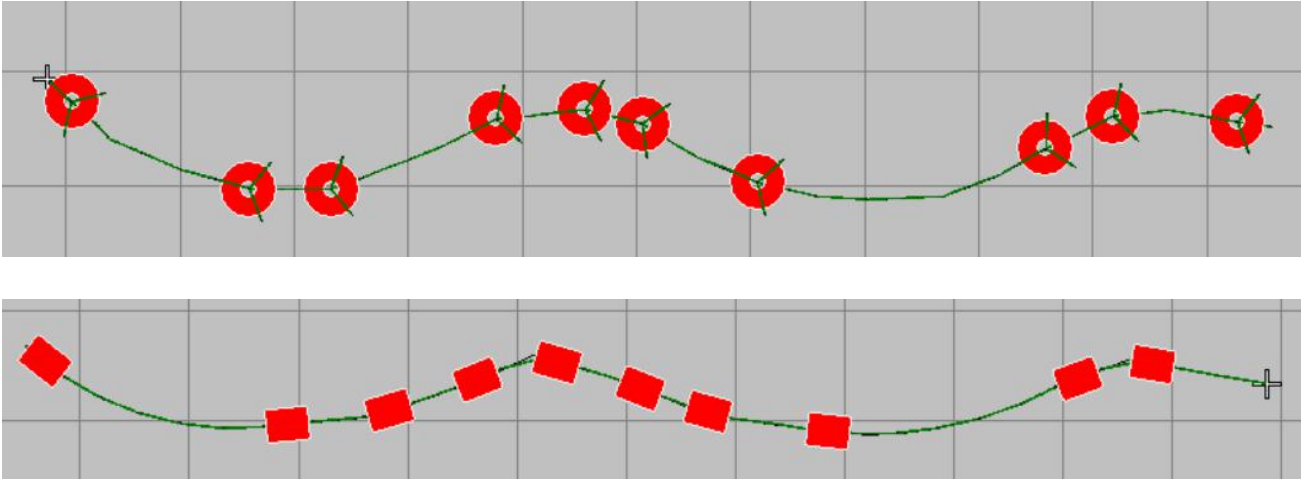


Run Sequin/Bead Manual

To Create the Run Sequin/Bead Manual object

The input method is similar to Linear Stitch

- (1) the left key is used to input the linear point, while right key is used to input curve points.
- (2) In default, at each control point the system will create a sequin feeding code.
- (3) When holding down the Shift key to input a point, only the stitch point is present and there is no sequin/dead signal.



Tip It is suitable for filling the blocks and the lines formed by the continuous sequins.

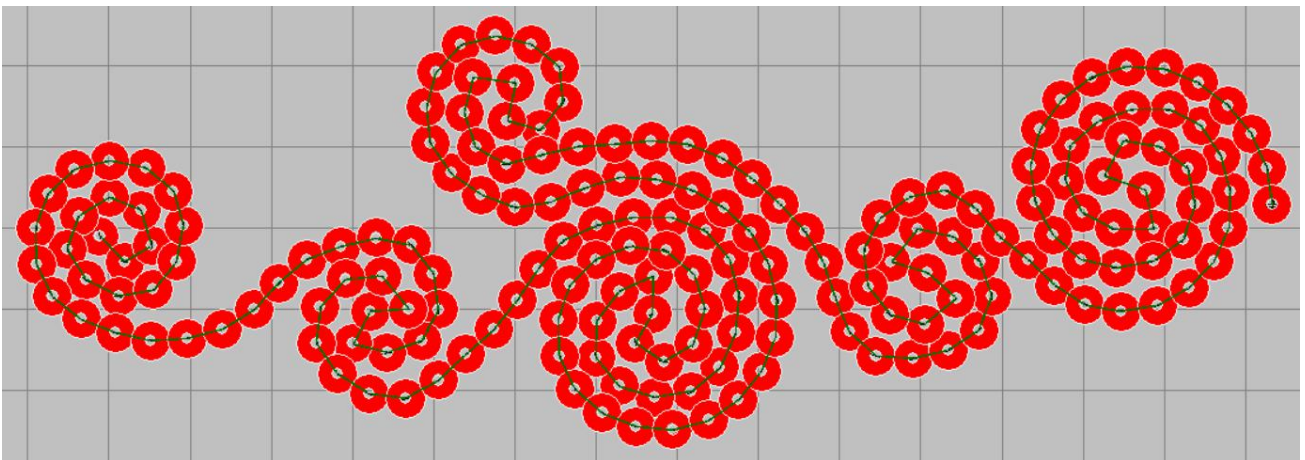
3.3. Run Sequin/Bead

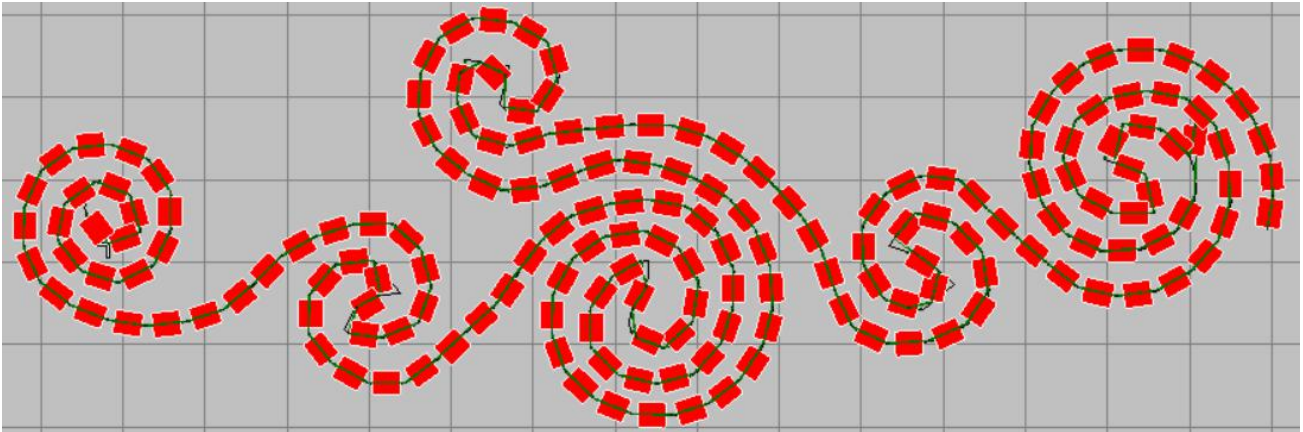


Run sequin/Bead

The input method is similar to Linear Stitch

- (1) the left key is used to input the linear point, while right key is used to input curve points.
- (2) After the object is created, the system will automatically generate the sequin feeding order on the outline according to the set sequin interval.



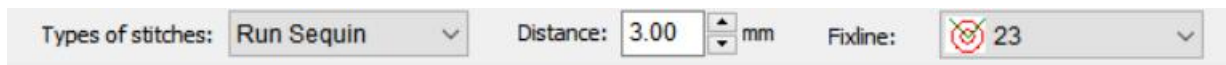


It is suitable for filling the blocks and the lines formed by the continuous sequins.

4. Properties of Sequin/Bead Feeding

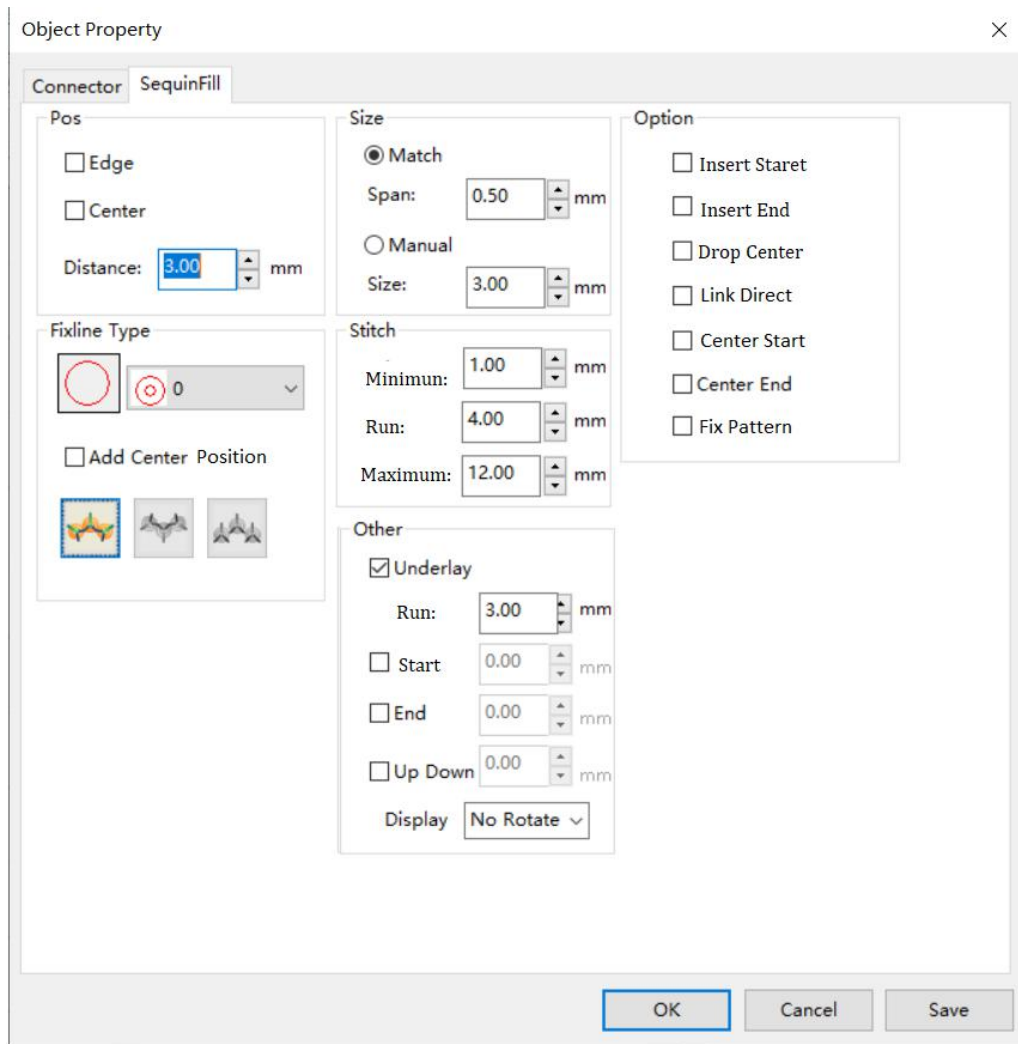
Mainly, the relevant properties of the sequin/bead can be set, such as the feeding mode, arrangement type, feeding direction, fixed stitch length.

Distance and fixed line common attributes can be set on the Properties toolbar.



To set the propertied of Sequin/Bead Feeding

Select the sequin object, double click the left key on object to activate the property page, and select the outline stitch.



4.1. Positioning

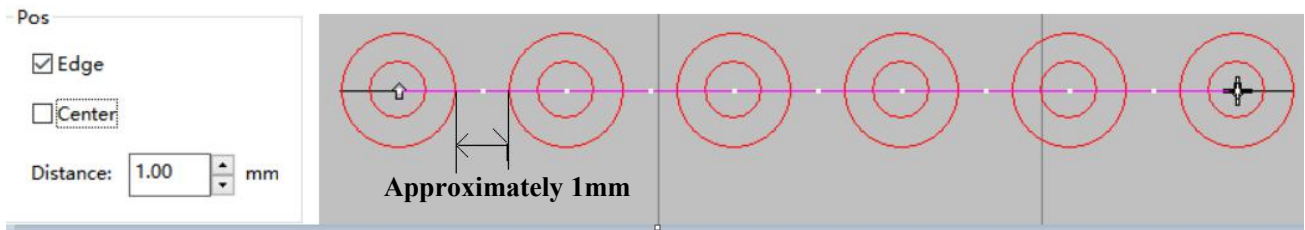
set the sequin interval at the auto sequin run mainly.



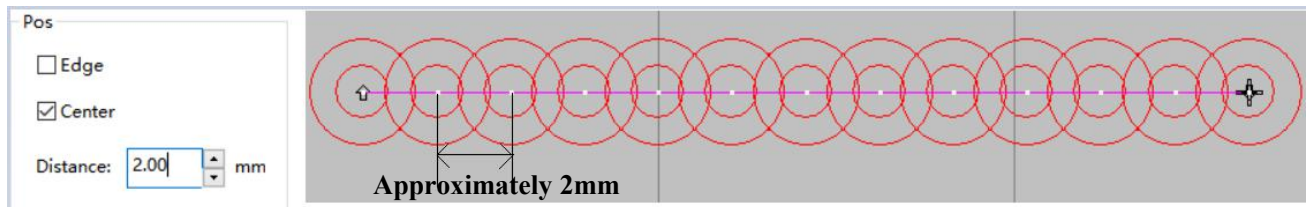
To set Position:

Two spacing methods: Edge spacing and Center spacing.

(1) Edge spacing: The spacing between the edges of adjacent sequins/beads.



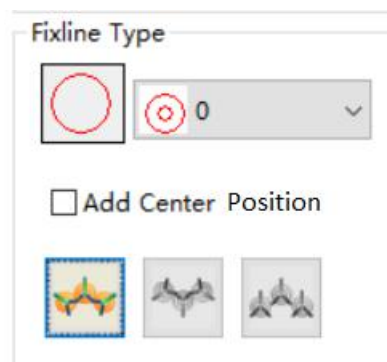
(2) Center spacing: The spacing between the center of adjacent sequins/beads.



Tip When "edge" is selected, adjacent two sequins will not overlap

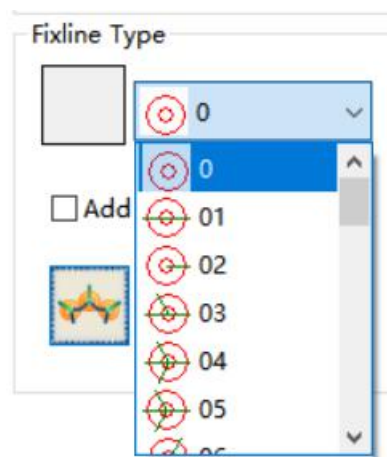
4.2. Fixline type

The fixline type is the sequin feeding type including the feeding stitches and the fixing stitches.



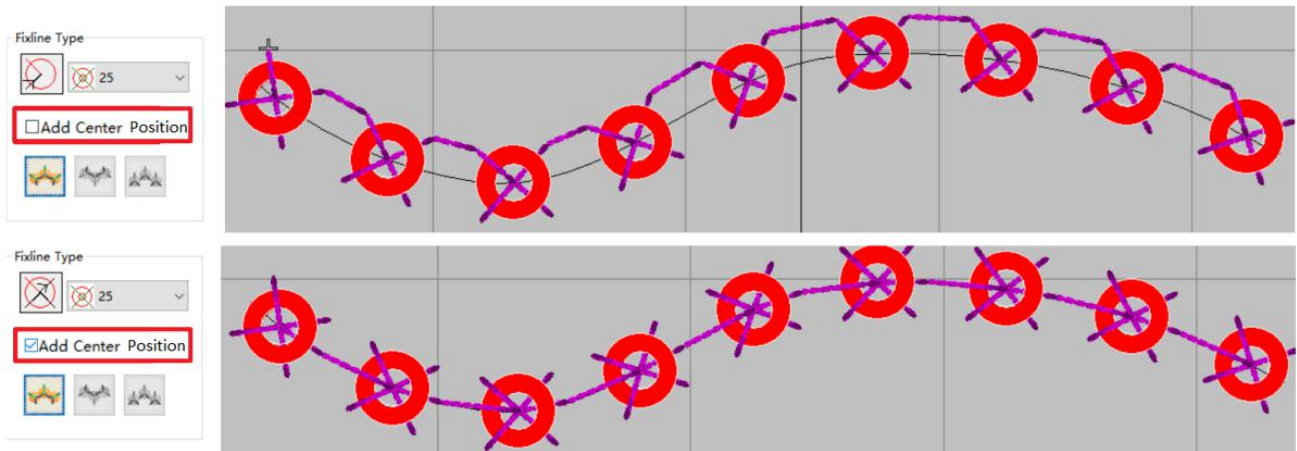
To set fix-line

- (1) Left click on the drop-down box and select the fixed line method. There are 30 default fixed line methods in the system. And it supports **custom fixed lines**.



Tip Beads need to be folded down, commonly fixed thread positions 02, 12, etc

- (2) Add Center position: Ensure that the starting and ending points of each sequin fixed line are in the center.

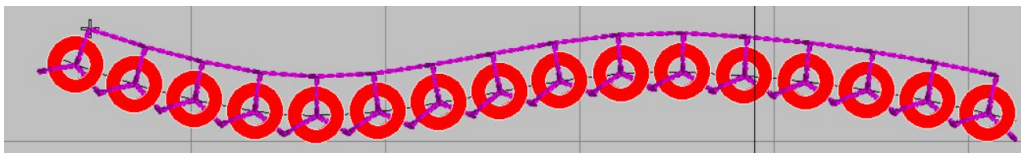


- (3) Direction: The placement of the sequin style on the contour line.



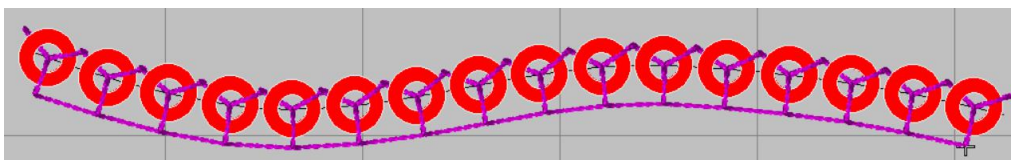
- A. Place along the left side of the contour line

Adjust the angle of the sequin along the tangent direction of the contour line, and it can be seen that the starting and ending points of the sequin are on the left side of the advancing direction of the contour line.



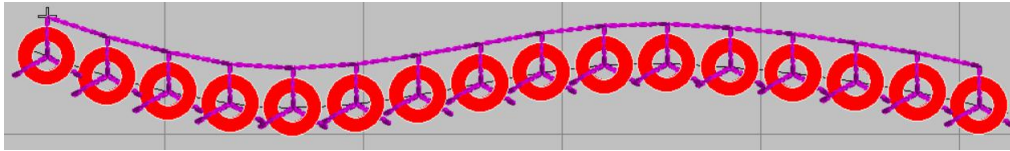
- B. Place along the right side of the contour line

Adjust the angle of the sequin along the tangent direction of the contour line, and it can be seen that the starting and ending points of the sequin are on the right side of the advancing direction of the contour line.



- C. Centered placement

The sequins do not adjust their angle, keeping the original style angle unchanged, and the starting and ending needle points have no distribution pattern.



Tip Some symmetrical sequin styles do not show significant changes after modifying their directional properties

4.3. Adjustment of Size

Mainly, it is to adjust the length of the fixing stitch in sequin embroidery.

Size

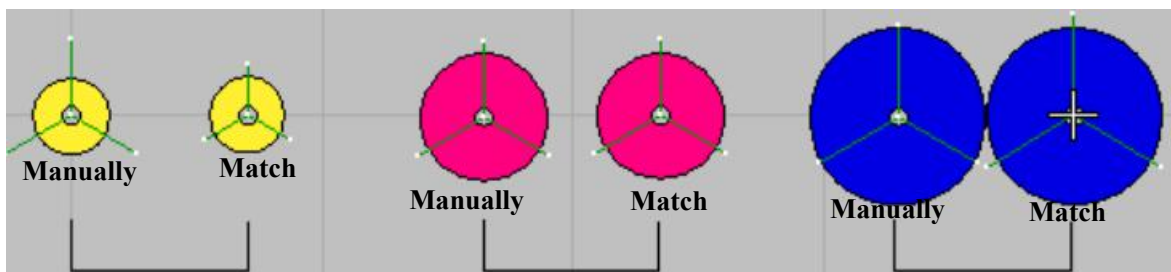
☒ Match

Span: 0.50 mm

☐ Manual

Size: 3.00 mm

- (1) The default setting is the **Match Sequin**. In this mode, the system will automatically adjust the length of the fixing stitch according to the size of the sequin.
- (2) In the mode of **Set Manually**, the length of the fixing stitch will not be change along with the size of the sequin.



The comparisons among the three groups of sequins: in each group, the fixing stitch on the left one keeps unchanged, while the fixing stitch on the right one is adjusted according to the actual size of the sequin (The stitch point always keeps 0.5mm to the edge of the sequin).

4.4. Adjustment of stitch

Mainly, it is to adjust the distance between adjacent stitches when sequins are not output.

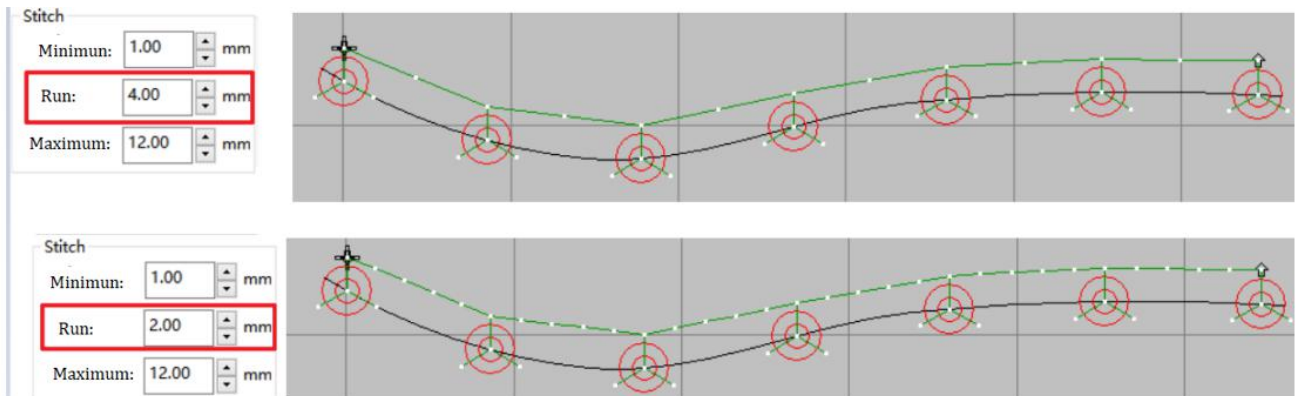
Stitch

Minimum: 1.00 mm

Run: 4.00 mm

Maximum: 12.00 mm

- (1) Run: distance between adjacent Run stitches
- (2) Minimum: Ensure that the distance between adjacent stitches is greater than or equal to the set minimum value.



- (3) Maximum: Ensure that the distance between adjacent stitched is less than or equal to the set maximum value.

4.5. Others

Adjust the Underlay and rotation .etc.

Other

☒ Underlay

Run: 3.00 mm

☐ Start 0.00 mm

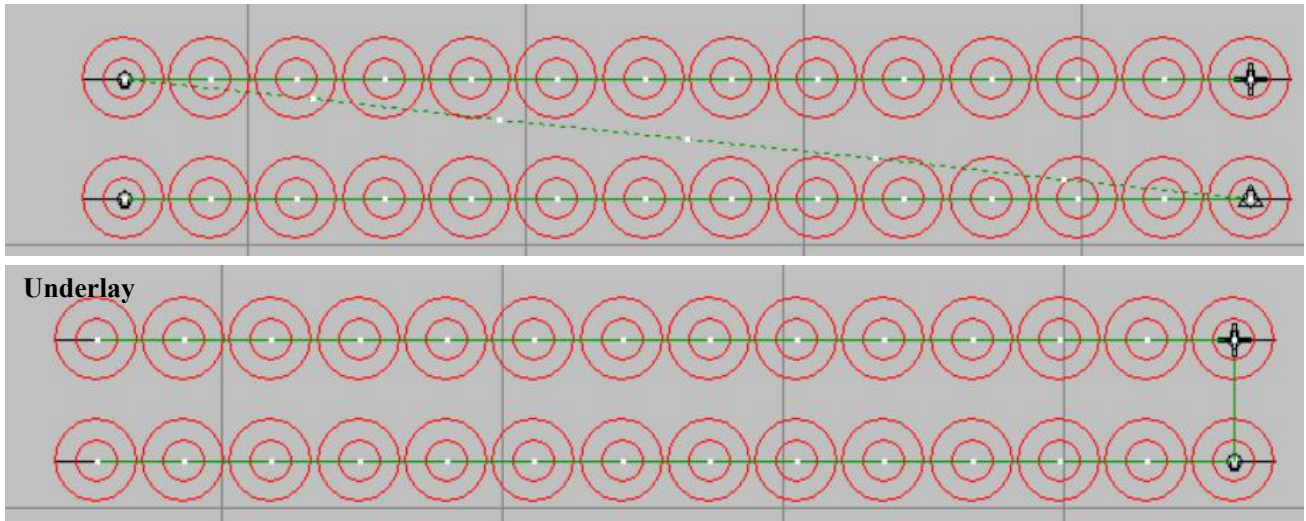
☐ End 0.00 mm

☐ Up Down 0.00 mm

Display No Rotate

Underlay

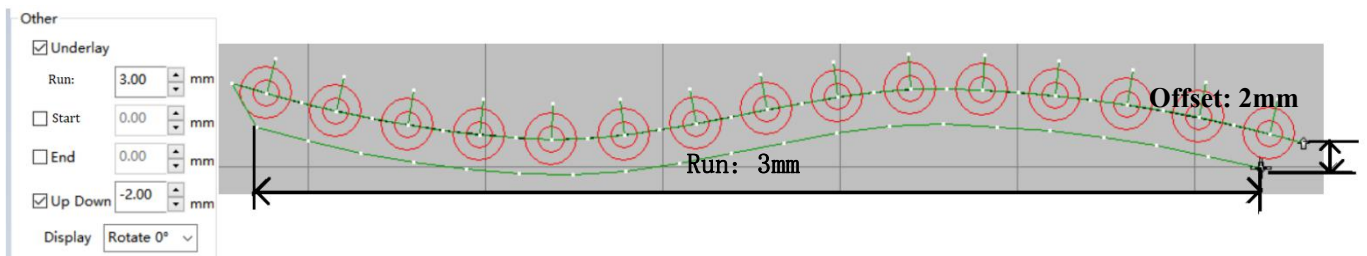
For the convenience of connecting multiple objects, the function of walking a straight needle from the end of the object to the beginning is provided.



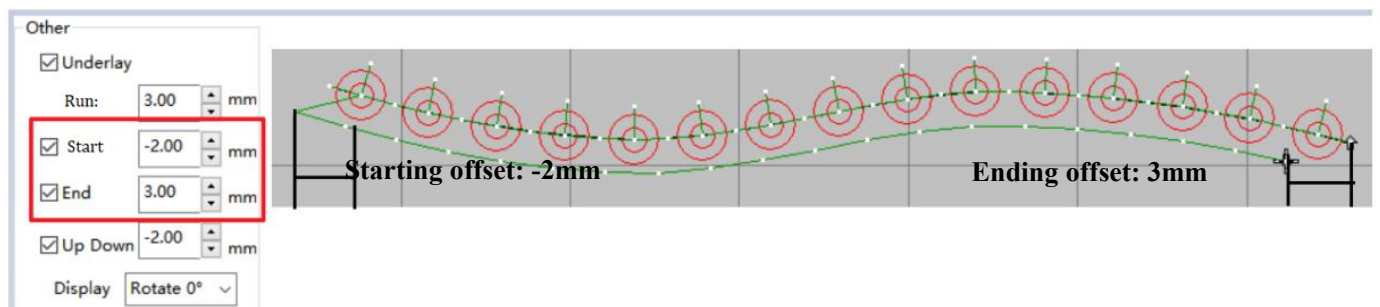
Underlay is effect to the Run Sequin  and Run Sequin Manual .

- (1) Run: The distance between adjacent run stitches,
- (2) Up Down: The distance of the Run stitches offset from the contour line.

Value range: -50~50mm.

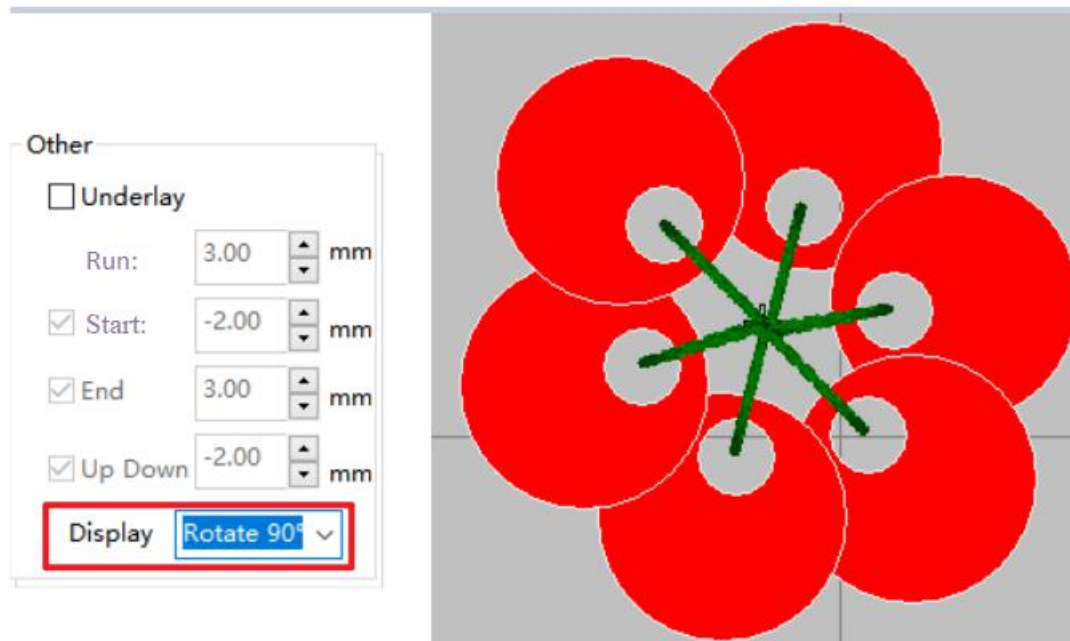


- (3) Start: The offset distance of the starting point. Value range: -50~50mm.
- (4) End: The offset distance of the ending point. Value range: -50~50mm.



Rotate:

Used to display angles of the skewed center sequin.



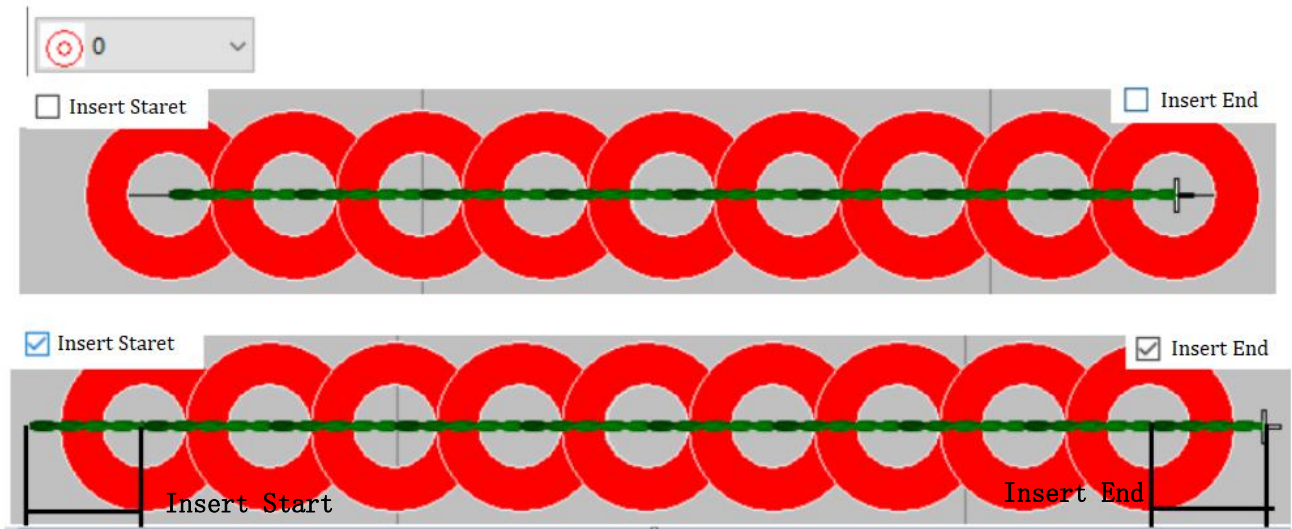
4.6. Option

Set some fixed line details for sequins

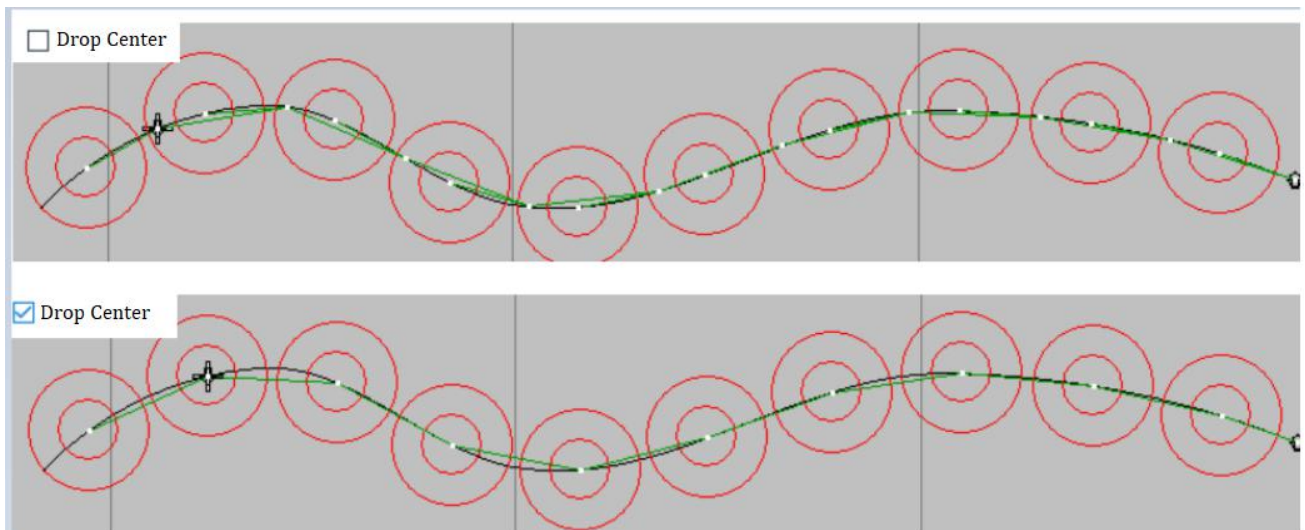
Option

- ☐ Insert Startet
- ☐ Insert End
- ☐ Drop Center
- ☐ Link Direct
- ☐ Center Start
- ☐ Center End
- ☐ Fix Pattern

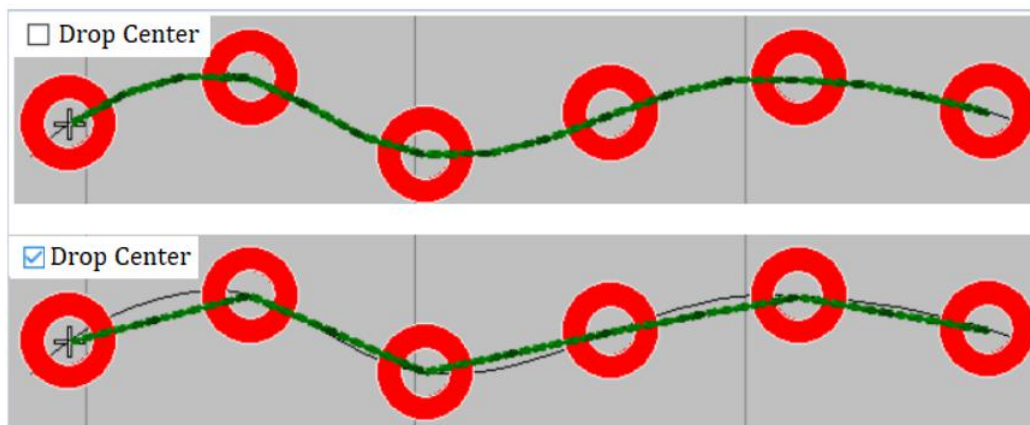
- (1) Insert Start: Effective when the starting point of the fixed line is at the hole center. Insert one stitch at the beginning of the object and fix the first sequin.
- (2) Insert End: Effective when the ending point of the fixed line is at the hole center. Insert one stitch after the last of the object and fix the first sequin.



- (3) Drop center: When there is a needle point passing through the sequin area, move it to the hole center.



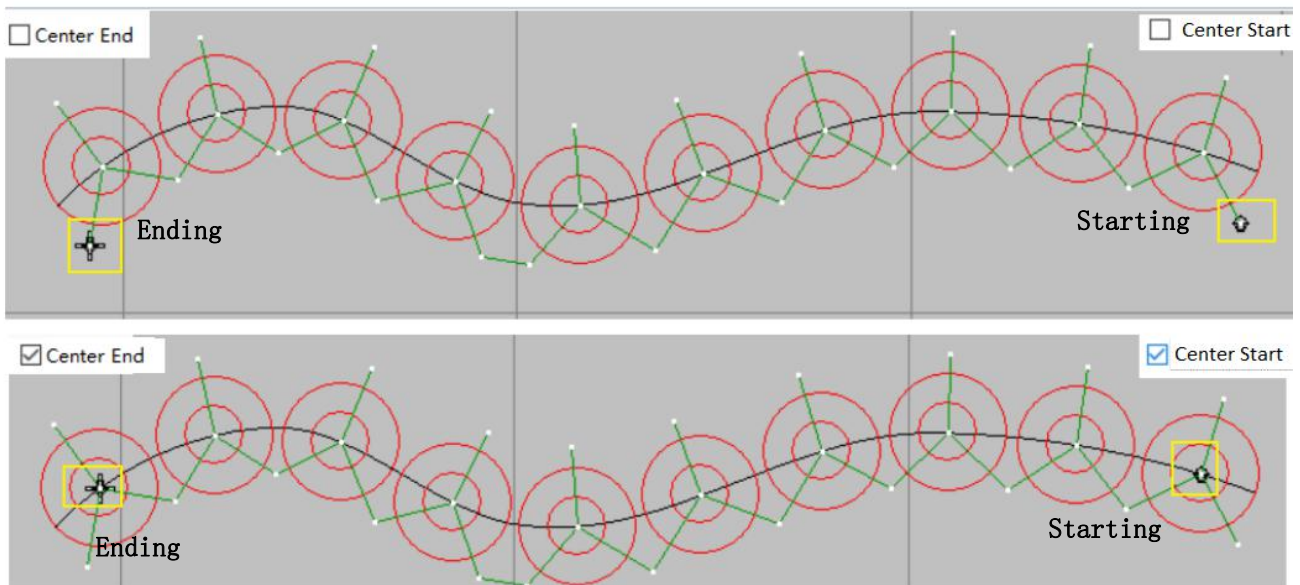
- (4) Direct Connect: Directly connect adjacent sequin fixing line.



- (5) Center Begin: Effective when the starting point of the fixed line isn't at the hole center.

Insert one stitch point in hole center at first sequin..

- (6) Center End: Effective when the ending point of the fixed line isn't at the hole center. Insert one stitch point in hole center at last sequin..



5. Sequin/Bead Filling

Create the object of the Sequin/Bead filling(Sequin Input A , Sequin Input B , Sequin Input C ). Support the line stitch, contour and E-stitch, etc.

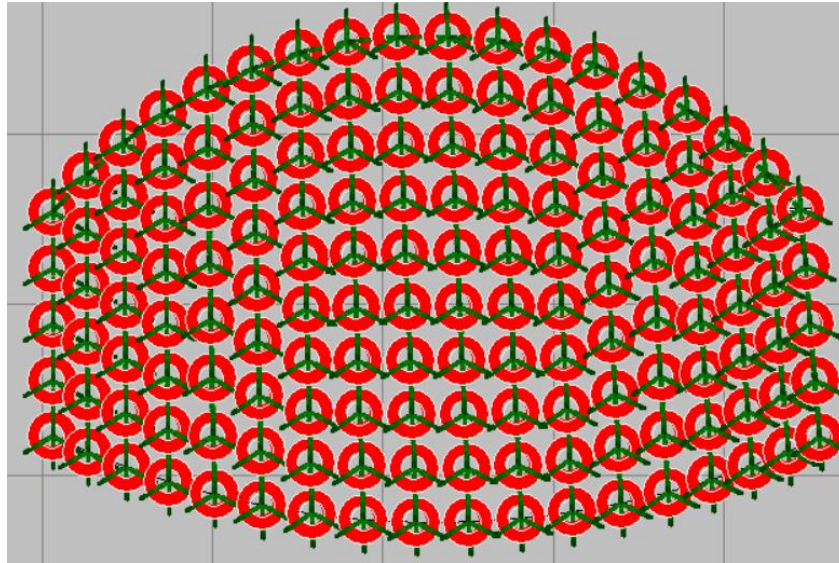
5.1. Sequin Input A

The creation steps are the same as the **input A** object.

Select the sequin input A tool, and the filled stitches support E-stitches and line stitches. The arrangement of sequin filling is controlled by the filling stitches and properties setting.

In the Properties toolbar, commonly used properties can be adjusted.



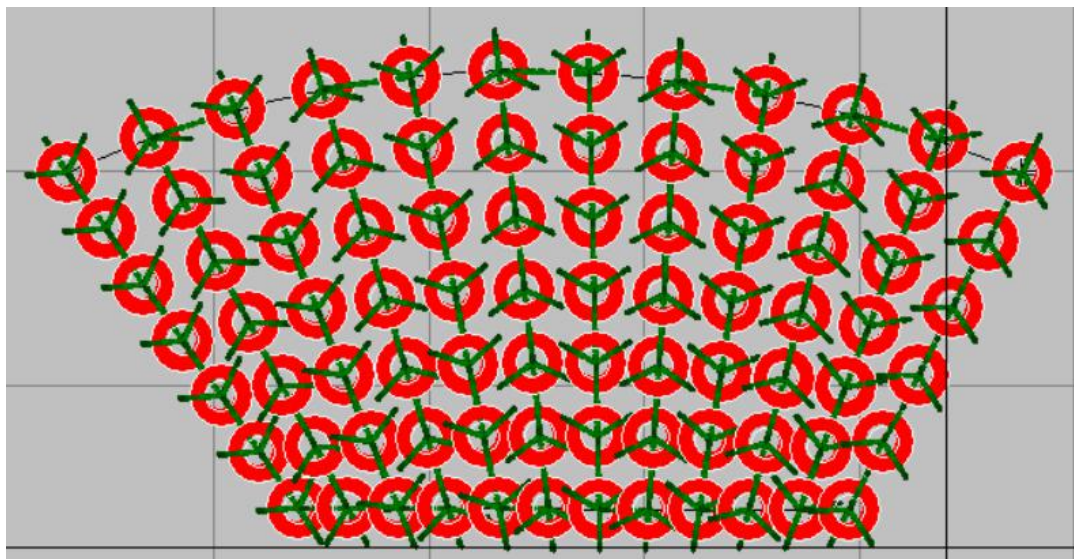


5.2. Sequin Input B

The creation steps are the same as the **input B** object.

Select the sequin input B tool , and the filled stitches support Zigzag, E-stitches and line stitches. The arrangement of sequin filling is controlled by the filling stitches and properties setting.

In the Properties toolbar, commonly used properties can be adjusted.



5.3. Sequin Input C

The creation steps are the same as the **input C** object.

Select the sequin input C tool , and the filled stitches support Zigzag, E-stitches and line stitches. The arrangement of sequin filling is controlled by the filling stitches and properties setting.

In the Properties toolbar, commonly used properties can be adjusted.

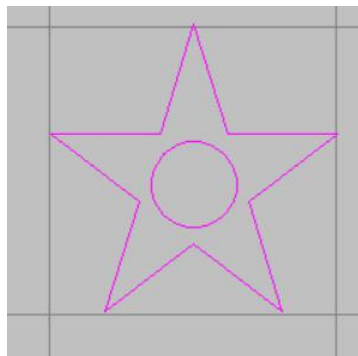


6. Custom sequin shape

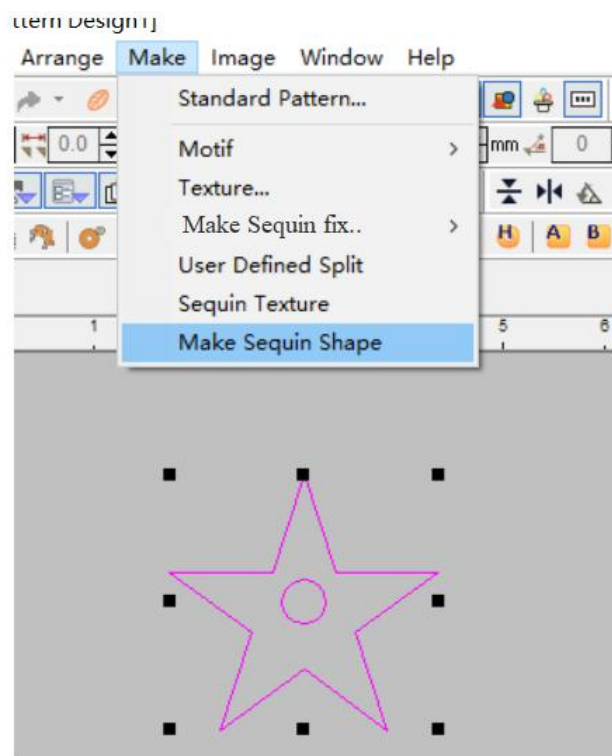
Create 2 closed vector objects to customize the sequin shape. Support right clicking to apply setting to all sequins.

To customize the sequin shape

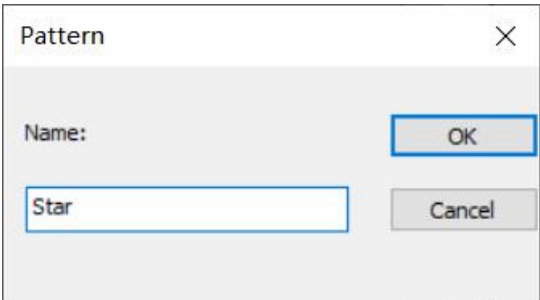
- (1) Create 2 closed vector objects



- (2) Customize the sequin shape
 - A. Select the created objects
 - B. Click on the make menu -> Make sequin shape.



C. Input the name on the pop-up window



D. Click **OK**.

(3) Custom sequin shapes can be selected from the selection drop-down box

	Electri...	Pattern
1	SequinA	 Star
2	SequinB	 Circular
3	SequinC	 Eccentric circular
4	SequinD	 Rhombus
5	SequinE	 Quincuncial
6	SequinF	 Square
7	SequinG	
8	SequinH	 Star

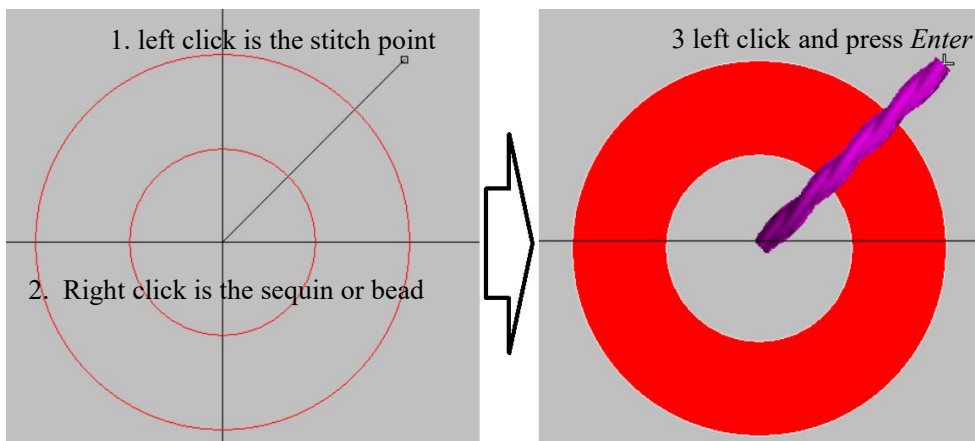
Tip Customized sequin shapes also support color and size settings.

7. Custom fixed line

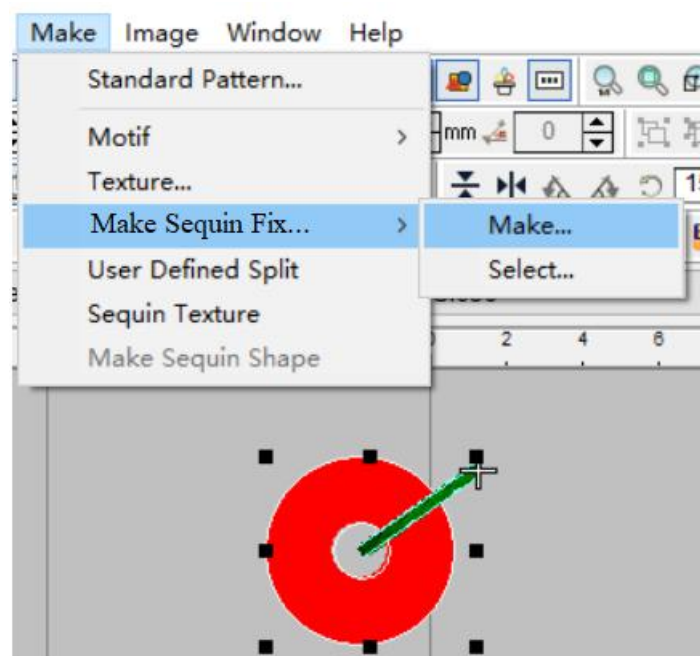
Custom the Sequin or Bead fixed type. Saved fixed line can be selected and used directly next time.

To custom fixed line

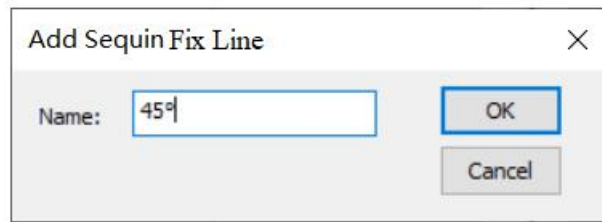
- (1) Use the *Sequin Manual* tool to create the sequin or bead fixed type.



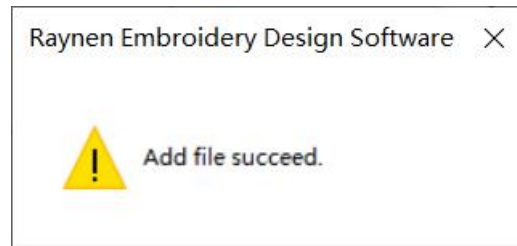
- (2) Select the *Sequin Manual* object, then click on the *Make* menu -> *Make Sequin Fix* -> *Make...*



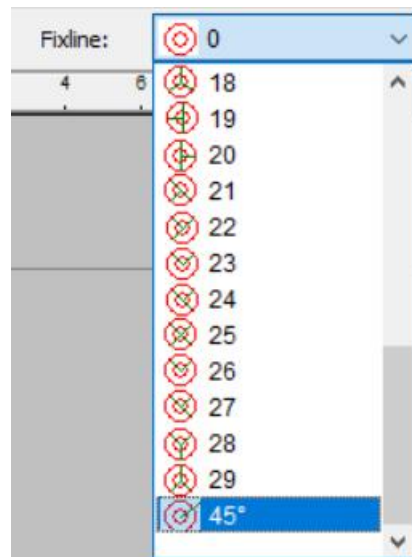
- (3) Input the name on the pop-up window



(4) Click *OK*. Prompt for successful addition



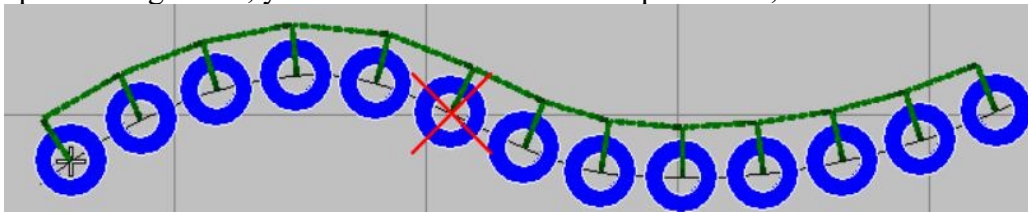
(5) Select the customize fixed line In the drop-down box when the sequin tool is used.



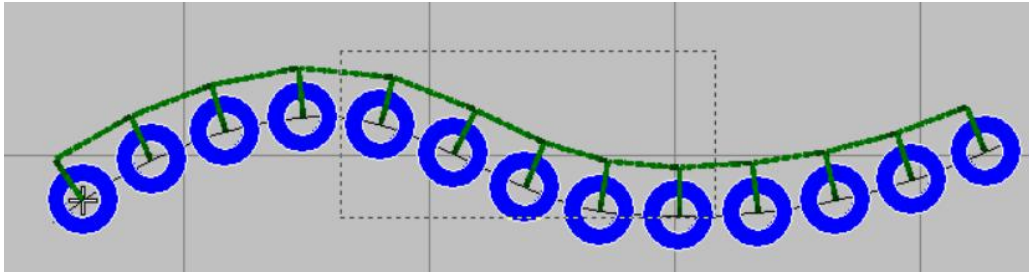
8. Sequin Edit

the sequin mode can be modified in the raynen embroidery design software. Press button  to sequin editing statues.

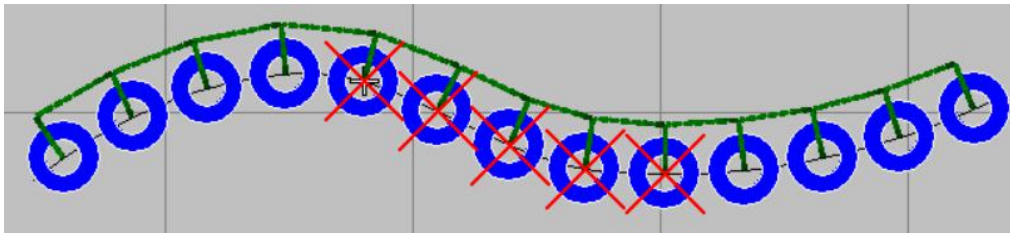
In sequin editing statue, you can click or frame the sequin codes, which hints with red X.



Click the sequin to make it selected

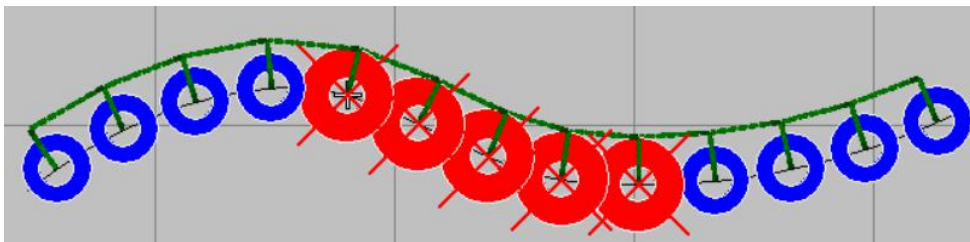


Frame to select some sequins



Some sequins is selected

After selecting sequins, sequins mode can be changed In the drop-down box.



Selected sequins A are changed to the sequin B

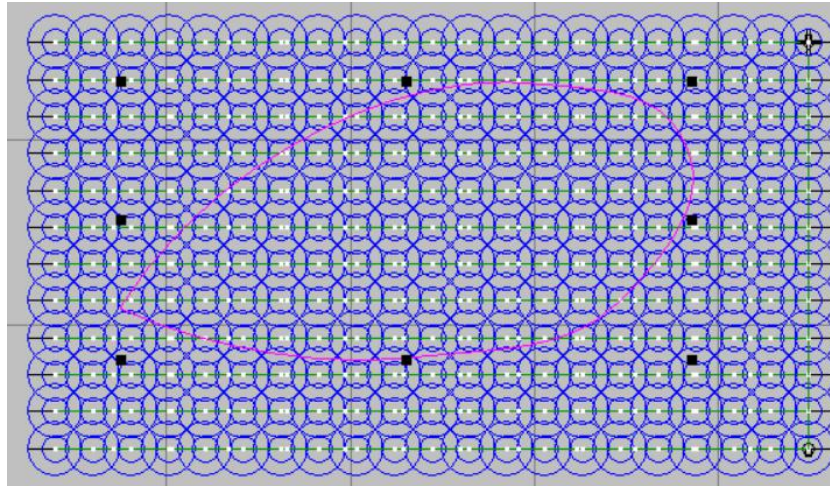
The length of the fixed line will be change according to the modified sequin/bead mode. The sequin editing tool is used for post-processing editing of sequins/beads.

9. Sequin Texture

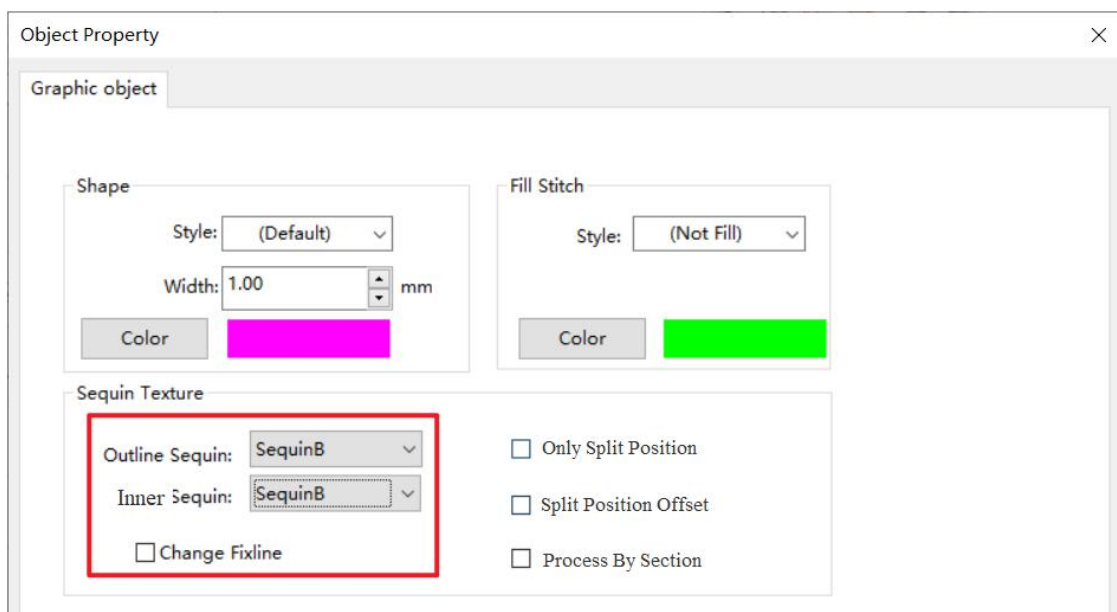
The sequin texture is used to make the sequins to form as a special pattern. By combining the sequin-filled object and a close shape, user can change the properties of the sequins within the shape and the sequins in the outline of the shape respectively. With the texture function, user can easily create the mixed sequin-filling pattern instead of departing the original object to create that pattern.

To set Sequin Texture

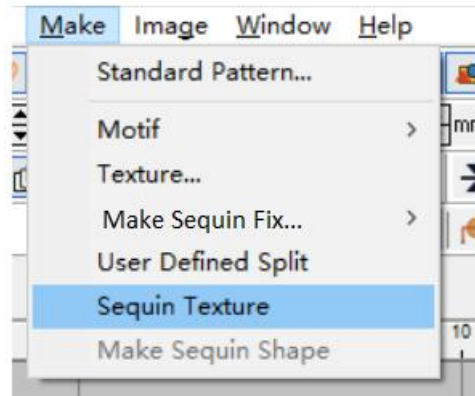
- (1) Firstly, create the close shape  respectively



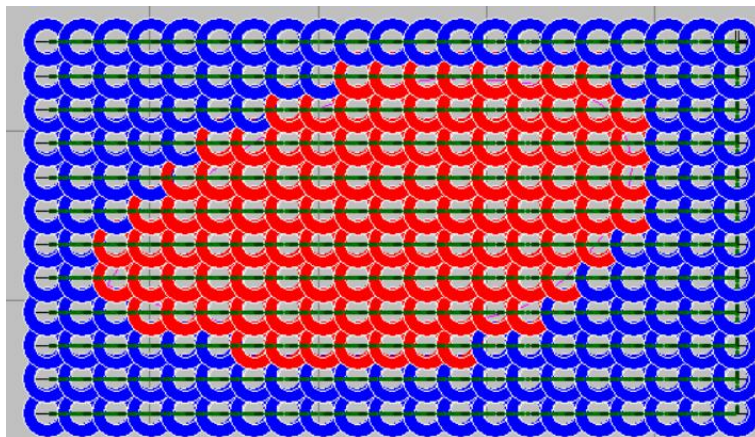
- (2) Secondly, open the window of combined object properties. Then user can set the attributes of the outline sequin and the internal sequin. There are 15 available modes for the sequin code, but usually we just select the sequin combination relating to the mode of the original sequin object. The item of Change Stitch Length is used to automatically change the satin length of sequin.



- (3) Select the drawing object, and make it as sequin texture object. Do menu operations: *Make -> Sequin Texture*.



- (4) Move the close shape to the proper position of the sequin-filling object. Please refer to the current sequin position. The sequins passed by the curve will be handled as the outline. The sequin within the close shape will be treated as the internal sequins. After selecting the sequin object, click .



Sequin-filling effect after using the texture

10. Cutting Sequin/Bead object

Selected single or multiple objects are cut into any shape.

To cut sequin/Bead object

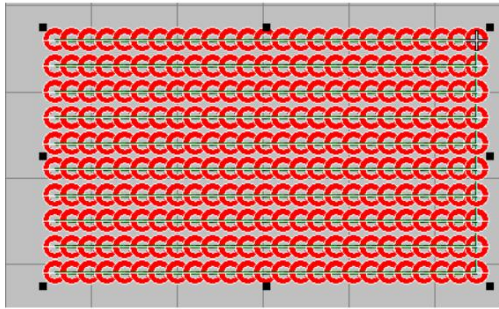
- (1) Use the tool of the *cutting object*

A. Select single or multiple objects.

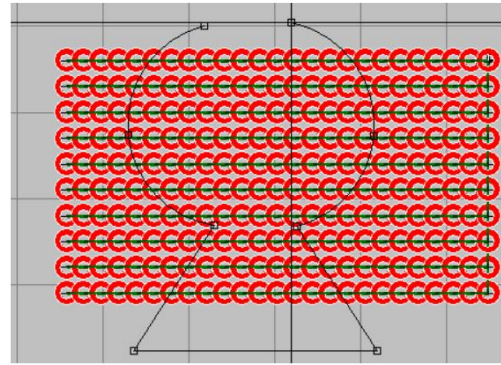


B. Click the *cutting object* tool on the left toolbar, then draw vector graphics in the drawing area.

Left click is a straight point, right click is a curved point



Select objects

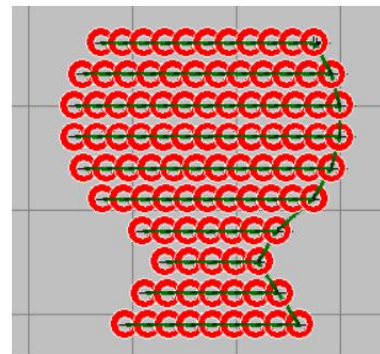


Draw the graphics

- C. Press *Enter* to end drawing.
D. Delete unnecessary objects after cutting



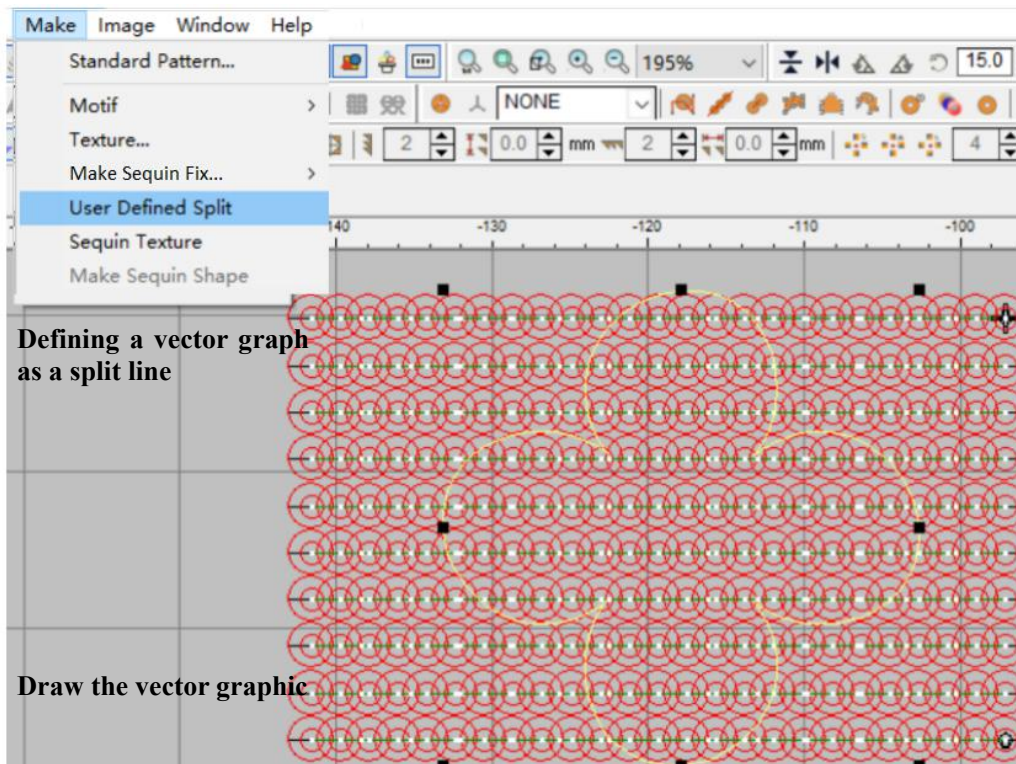
Press enter to end cutting



Delete the unnecessary objects

Tip Use the tool  to select objects, then press the Delete key to delete selected objects

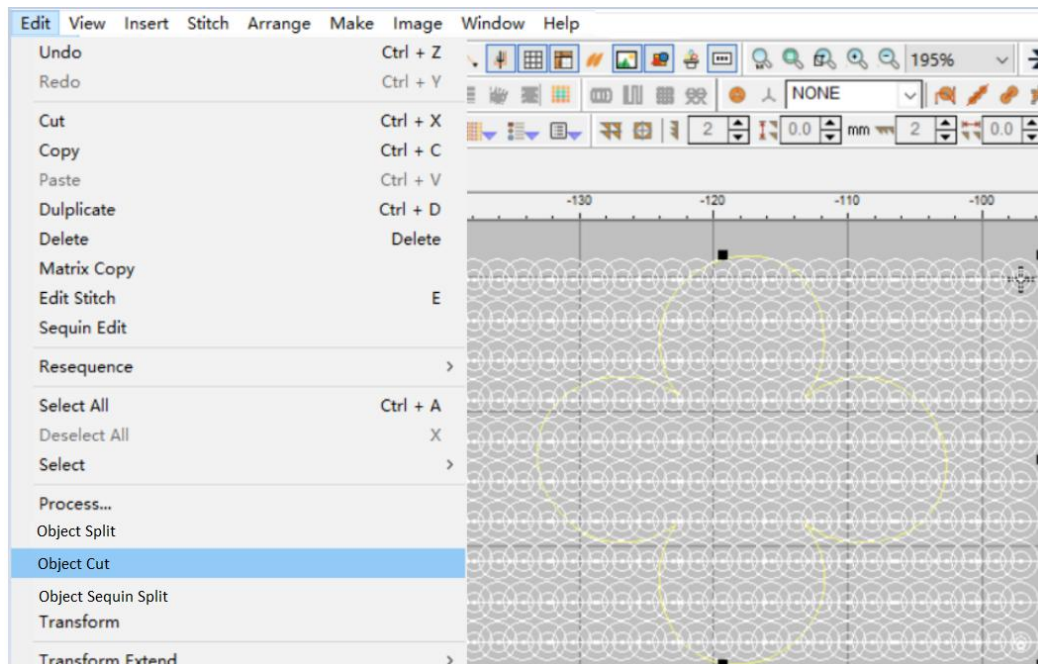
- (2) Use the menu function of the *User defined split*.
A. Draw single or single or multiple vector graphics.
B. Select tall graphics, then click the menu: *Make -> User Defined Split*.



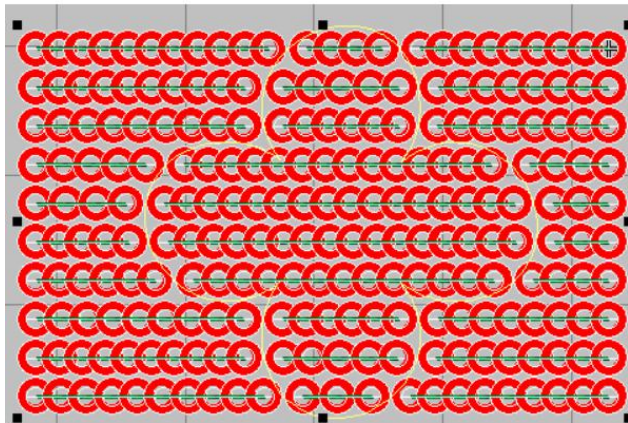
Tip use the tools to merge or Split multiple vector graphics.



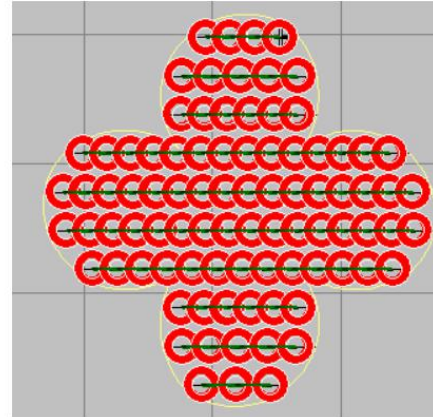
C. Select the sequin/bead objects, then click the menu: *Edit -> ObjectCut*.



D. Delete the unnecessary objects after split.



cutting



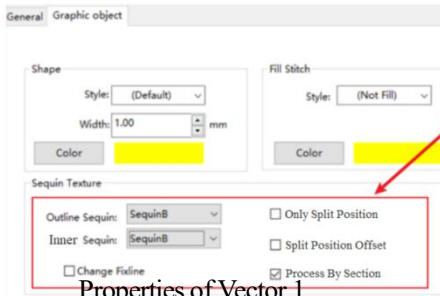
Delete unnecessary objects

11. User Defined Segmentation of Sequin/Bead Objects

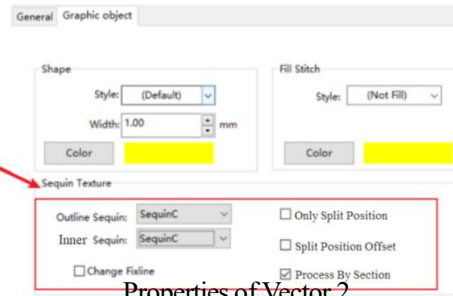
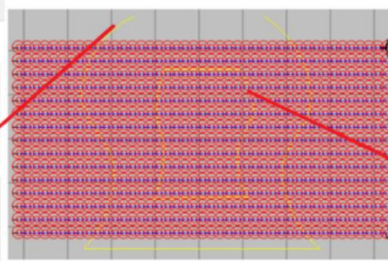
Segment and change the Sequin/Bead signal to Sequin/Bead pattern according to the vector graphics.

To Segment sequin/Bead objects

- (1) Create single or multiple vector graphics.



Properties of Vector 1



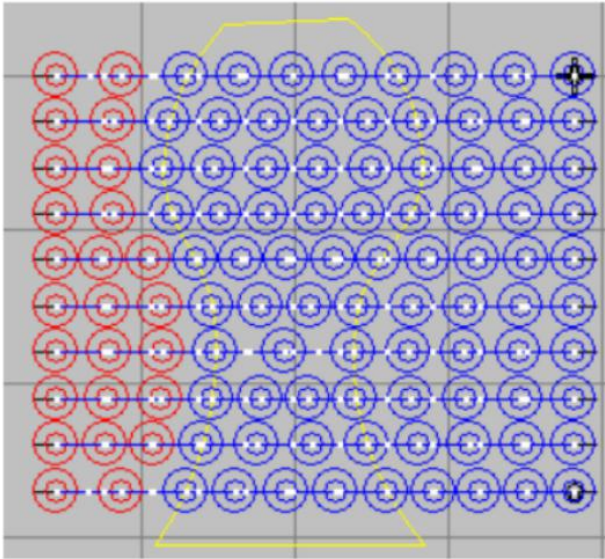
Properties of Vector 2

- A. Handle segmentation Points: Only sequins is passed by the vector count line, sequins signal is changed.
- B. Segmentation Point Offset: Align the center or edge of the sequin with the segmentation line.
- C. Process by paragraph: Sequins/Beads is changed in the vector region.

☐ Only Split Position

☐ Split Position Offset

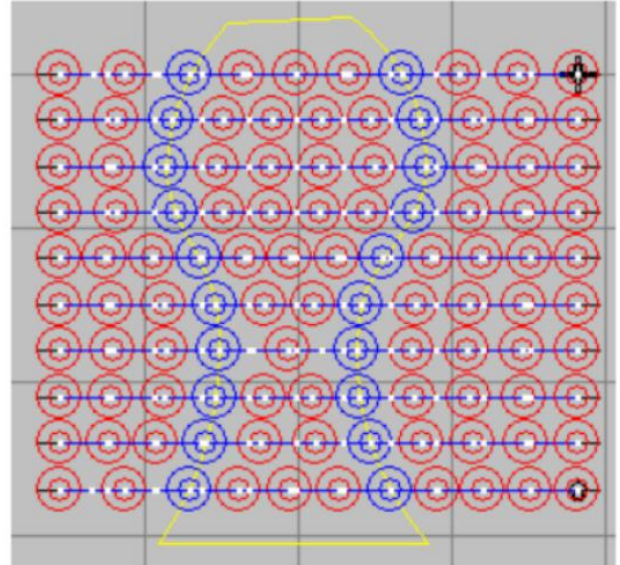
☐ Process By Section



☒ Only Split Position

☐ Split Position Offset

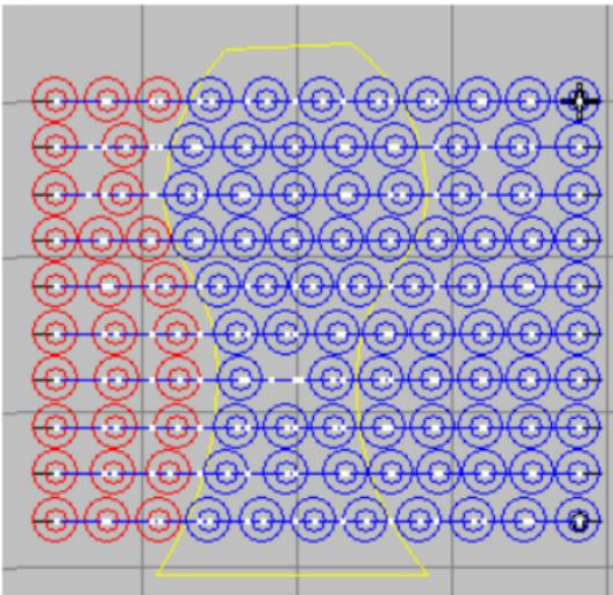
☐ Process By Section



☐ Only Split Position

☒ Split Position Offset

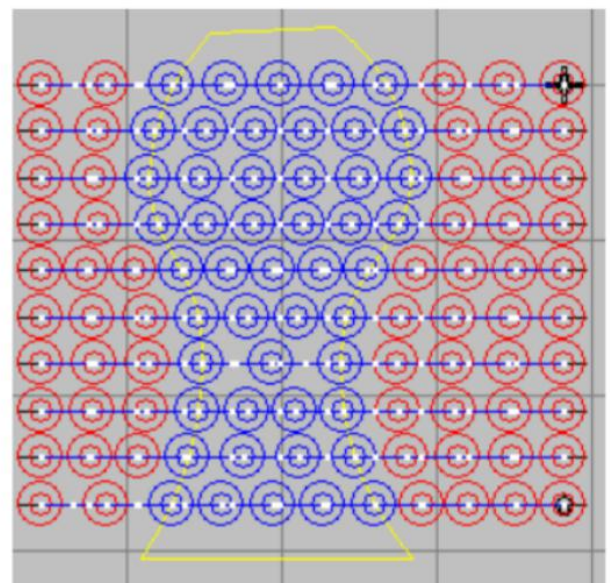
☐ Process By Section



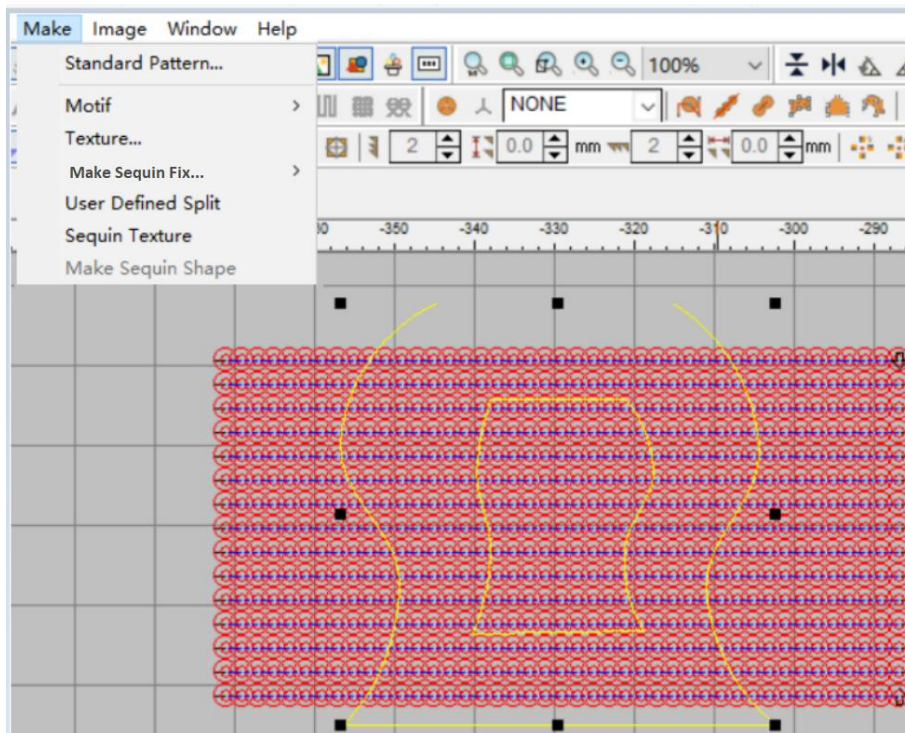
☐ Only Split Position

☐ Split Position Offset

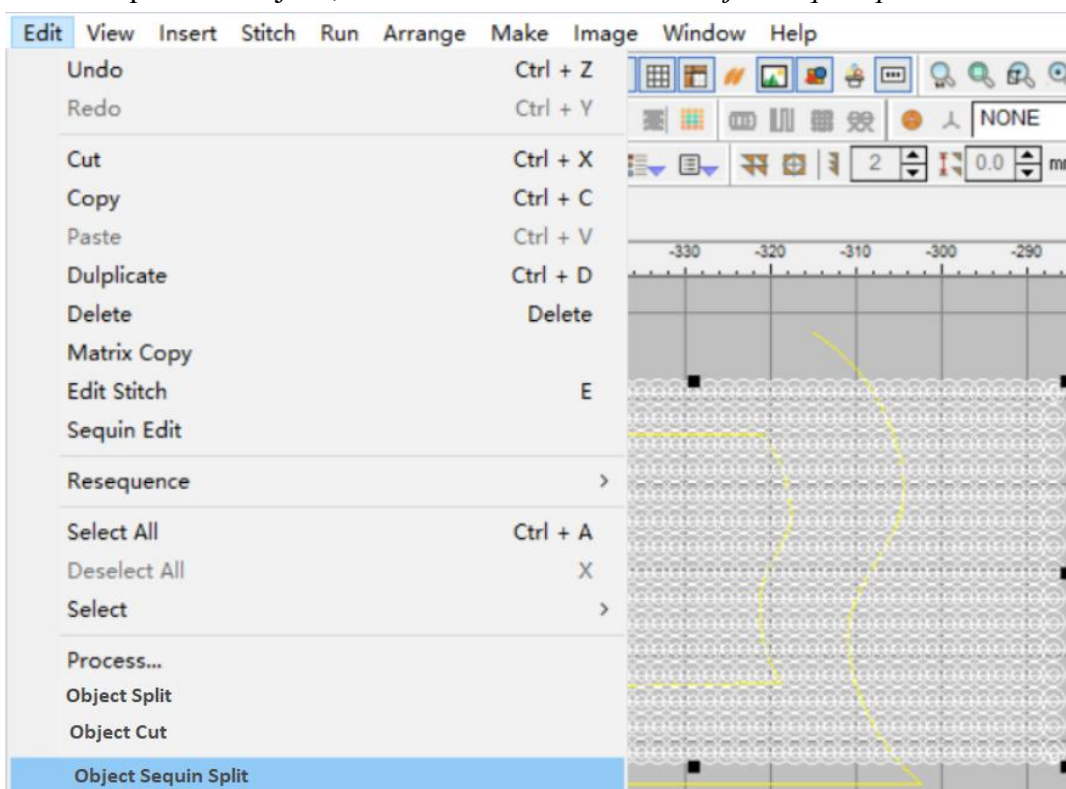
☒ Process By Section



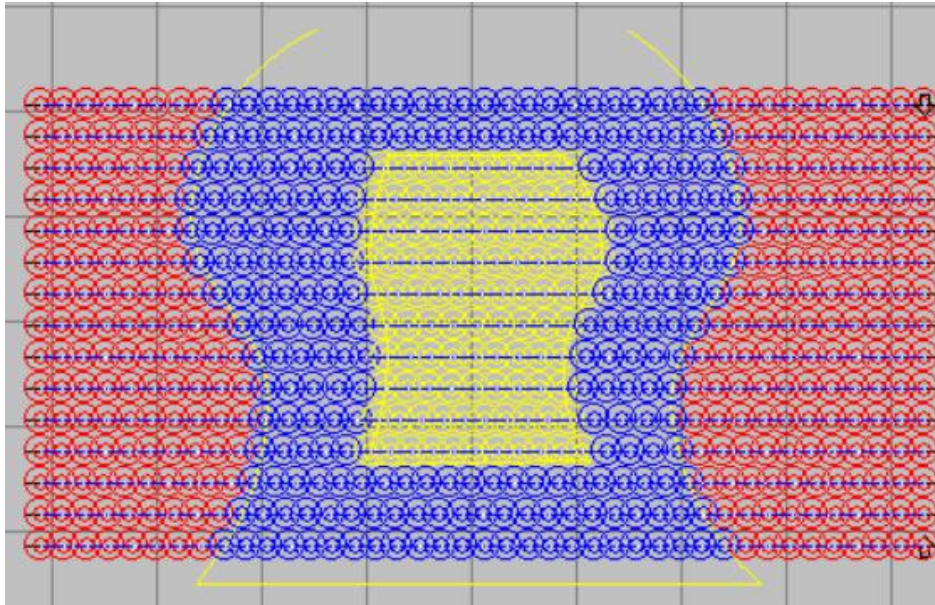
(2) Select tall graphics, then click the menu: *Make -> User Defined Split*.



(3) Select the sequin/bead objects, then click the menu: *Edit -> Object Sequin split.*

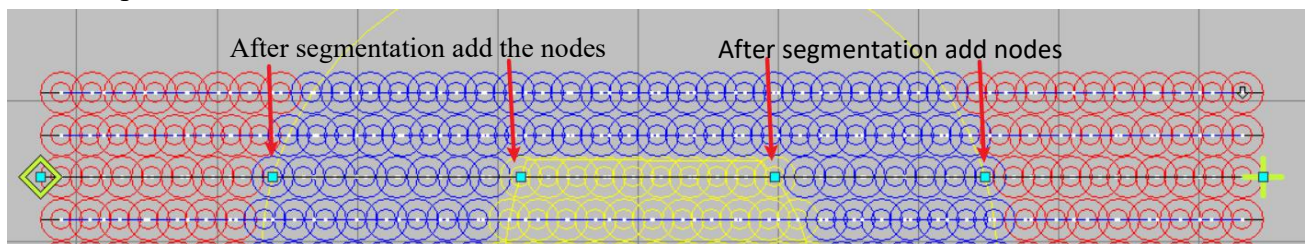


(4) The effect is shown in the following figure



Tip There nodes are added at the handover point. This nodes can viewed and modified when

the reshape tool  is selected.

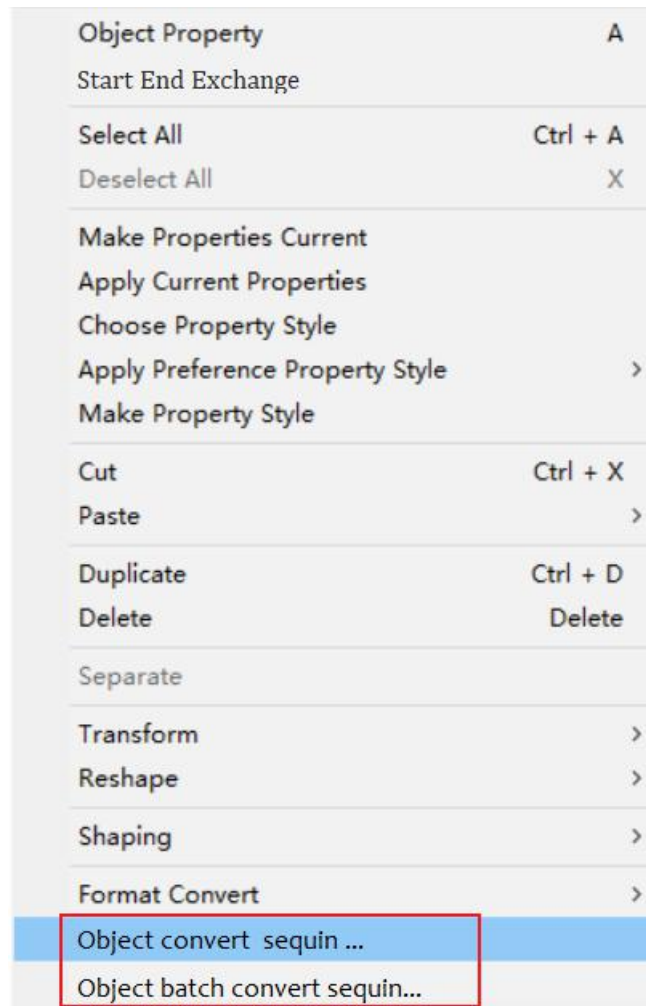


12. Convert the Sequin/Bead signal

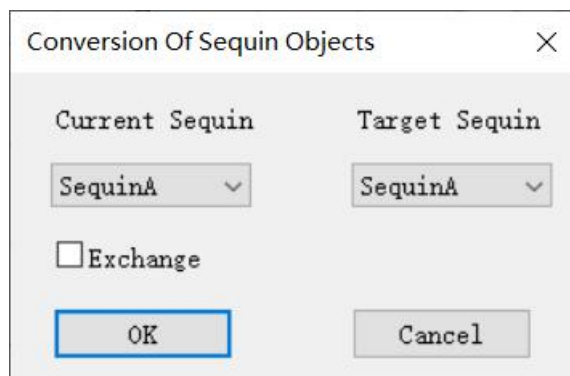
Sometimes, user would change the sequin A to sequin B. After select sequin object, click the right key

To convert the Sequin/Bead signal

- (1) Select the single or multiple sequin/bead objects. Right click it, then click the *Object convert sequin* or *Object Batch convert sequin*.



(2) The following interface is “the Object convert Sequin”:



(3) The following interface is the “Object batch convert Sequin”:

Sequin Obj Exchange

Transform Rules

☒ 8 Sequin 1 (E<->AB)

☐ 8 Sequin 2 (E<->ABC)

☐ Double Bead stack

☐ Multi-Colored Beads

☐ 3, 4 Beads

☐ Custom

	Original signal.	Target signal.
1	SequinAB	SequinE
2	SequinAC	SequinF
3	SequinBC	SequinG
4	SequinCD	SequinH

Restore Default ☐ Exchange

OK Cancel

(4) Replace or exchange sequin/bead signals according to settings.

Part VI EMBROIDERY LETTERING

1. Basic Procedure of Lettering

Add lettering directly and easily to designs using current settings on-screen or with the aid of Object Properties > Lettering dialog. You can edit your text directly on-screen, or with the help of dialog, lettering box or toolbar. Apply formatting just like a word processor, including italics, bold, and right/left justification. Scale lettering or leave spacing for lettering by using intersect and digital techniques.



This chapter describes how to add and edit lettering, change formatting settings, and adjust lettering size and spacing.

1.1. Adding lettering to embroidery designs

You can add lettering to a design by typing it directly in the design window, or entering it via the *Object Properties*> Lettering dialog.

1.1.1. Creating lettering on-screen



Use Lettering (Input toolbar) to add lettering directly on-screen.

If it is not essential to fit letters precisely to a certain area, you can type them directly on-screen as with a word processor. Current lettering settings are used. You can change these before or after you digitize. You can also modify lettering objects directly on-screen to achieve various artistic effects.

To create lettering on-screen

- (1) Click the Lettering icon.
- (2) Select a color from the color palette.
- (3) Click where you want to insert the text and start typing.
- (4) Press the lettering you want to embroidery.
- (5) Press Enter to complete.

New York London Paris

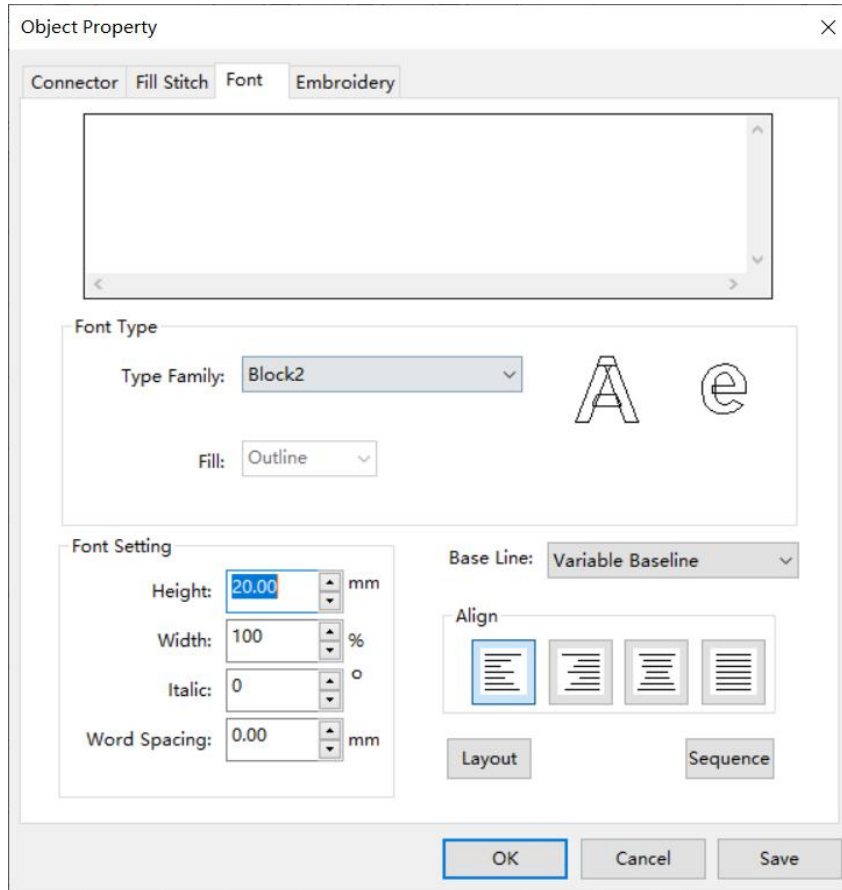
Note Appearance and layout depend on current settings in the *Object Properties*> Lettering dialog. You can change them at any time. See Adjusting Lettering Layout for details.

1.1.2. Creating lettering with Object Properties

Using the Object Properties > Lettering dialog, you can specify letter formatting before adding it to the design. This is the more traditional method and is useful with more complex designs.

To create lettering with object properties

- (1) Click *Stitch > Object Properties* menu. Select Lettering from the popup dialog.



- (2) Enter the text you want to embroider in the Text Entry panel.
- (3) Select alphabet, formatting and baseline settings for the lettering.
- (4) Click Apply.
- (5) Click where you want to place the lettering, or tab reference points for the baseline you selected.
- (6) Press *Enter*.



Note Fill lettering according to the Fill Stitch from Lettering dialog and the current settings specified in connector marks. You can change them at any time.

1.1.3. Selecting alphabets

This software provides an alphabet range suitable for many applications. Select from the supplied alphabets, create your own, or convert vector fonts.

To select alphabets

- (1) Open alphabets dialog.
- (2) Select an alphabet from the Alphabet list.

Tip Consider letter size before you change alphabets. Some alphabets look best in a smaller size. Others can be stitched at a larger size.

- (3) Click Apply.

1.2. Editing lettering objects

When you have created a lettering object, you can select it and make changes to it directly on-screen by toolbox or toolbar or by lettering dialog in object properties.

1.2.1. Editing lettering text on-screen

Use Lettering (Input toolbar) to add lettering directly on-screen.

The most easily way for editing lettering is to change it directly on-screen.

To edit lettering text on-screen

- (1) Click the Lettering icon then click inside the lettering object.

An I-beam appears where you clicked.



- (2) Edit the text as required.
- (3) Press **Enter** to complete.

1.2.2. Editing lettering via object properties

When you have created a lettering object, you can select it and make changes to it by adjusting lettering tab of lettering dialog in object properties.

To edit lettering via object properties

- (1) Open lettering dialog.
- (2) Edit text in Text Field as required.
- (3) Apply any adjustment as you required.
- (4) Click Apply.

Note Letters are filled with stitches according to the filled stitches in lettering dialog and current settings in connectors.

1.3. Digitizing lettering

You can control the appearance of lettering by adjusting the object properties settings. Change the current setting before or after adding lettering used the same method as other objects.

1.3.1. Making italic lettering

You can slant letters to the left or right for an italic effect. Enter the degree of slant in the Angle field. The default angle is 0°.

To make italic lettering

- (1) Open letter dialog.
- (2) Enter an angle in the Italic field.

The largest angle that the lettering can lean at is 45°. (0° is equivalent to no italics.)



Italic angle: 45°



Italic angle: 0°



Italic angle: -45°

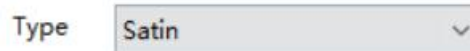
- (3) Click *Apply*.

1.3.2. Making bold lettering

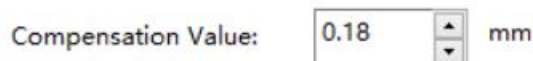
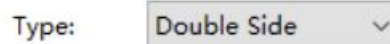
You can create the effect of bold lettering by increasing the pull compensation settings for selected lettering objects.

To make bold lettering

- (1) Open Properties dialog.
- (2) Select *filled stitch* tab, Select stitching dialog.



- (3) Open *Effect dialog* to set compensate values.



- (4) Increase the value of Pull Compensate field.



Close Pull Compensation



Pull Compensation 0.3 mm

- (5) Click *Apply* to return to filled stitch tab.
- (6) Click *Apply* again.

1.3.3. Setting letter justification

Justification is the way that lettering aligns itself on a baseline. You can justify lettering left or right, center it, or fully justify it. Full justification spreads the letters out to fill the length of the

baseline.

Note You can not apply fully justification to free line baseline or vertical line baseline because they do not have fixed length.

To set letter justification

- (1) Open letter dialog.
- (2) Select a justification setting—Left, Right, Centered, or Justified.



- (3) Click *Apply*.

1.4. Scaling lettering

When you first create lettering, it maybe too big or too small. Size can be adjusted in three ways:

- (1) by scaling on-screen with the Select Object or Reshape Object tools.
- (2) by adjusting width and height settings in the Text Tab.
- (3) by adjusting width and height settings in the General Properties bar.

1.4.1. Adjusting letter height and width



Use Lettering (Input toolbar) to adjust letter height and width.

You can scale your lettering objects vertically, horizontally and proportionally via the Special tab of the *Object Properties*.

Tip Change the appearance of an alphabet by changing the letter width in proportion to the height. The original width value is 100%.

To adjust letter height and width

- (1) Open the Lettering dialog.
- (2) In the Height field enter the height of your lettering object in millimeters.
Note Letter height can be between 2.5 mm and 1000 mm.
- (3) Enter the width of your lettering object in the Width field as a percentage of the height.
 - A. For wide letters, increase the percentage—e.g. 140%.
 - B. For narrow letters, decrease the percentage—e.g. 70%.



- (4) Click *Apply*.

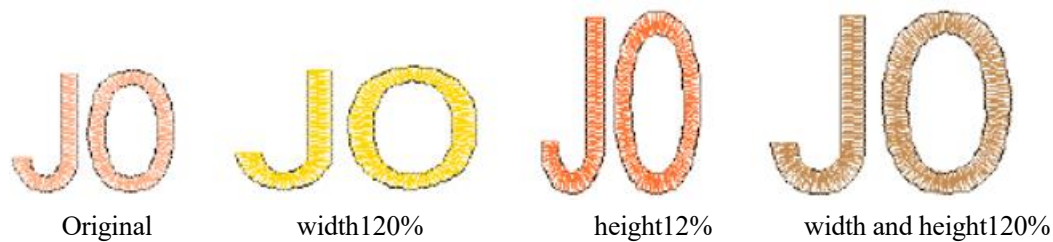
1.4.2. Adjusting lettering dimensions

You can scale your lettering objects vertically, horizontally and proportionally using the general tab from *Object Properties > Lettering* dialog.

Tip Change the appearance of an alphabet by changing the letter width in proportion to the height. The original width value is 100%.

To adjust lettering dimensions

- (1) Open the lettering dialog.
- (2) Adjust width and height settings either as absolute values (mm) or as a percentage of the current settings.



- (3) Click *Apply*.

1.5. Adjusting letter spacing

Letter, word spacing can be determined before or after creating lettering objects and placing them in your design. You can edit spacing directly on-screen or via the dialog. Letter spacing is calculated automatically according to justification—Left, Right, Centered, or Full Justified.

Note When the justification setting is full, letters are evenly distributed along the baseline. To change the spacing for fully justified lettering, simply change the length of the baseline.

Adjusting word spacing

You can adjust word spacing of lettering objects by dialog at any time.

To adjust word spacing

- (1) Open lettering dialog.



- (2) Enter spacing as absolute values (mm).
 - A. Lettering spacing: Spacing between all letters.

London London

- B. Word spacing: Spacing between all words.

Note No matter you enter absolute values or not, the else will update automatically.

- (3) Click *Apply*.

Tip If you want to delete the spacing between words (such as Name 1 and Name 2): set word spacing as 0 mm.

2. Adjusting Lettering Layout

This software gives you interactive and precise numeric control over many settings affecting lettering objects. Adjust lettering objects as a whole by both group and individual letter. Apply horizontal, vertical, and curved baselines to your lettering objects. Modify baseline type, length, radius and angle, as well as position. You can even define the rotation angle of letters relative to the baseline or the design itself.



This chapter describes how to adjust lettering objects as well as individual letters. It also describes how to apply and adjust lettering baselines.

2.1. Transforming lettering objects

Apart from scaling, you can use the Select Object and Reshape Object tools to skew and rotate lettering objects.

2.1.1. Transforming lettering with Select Object

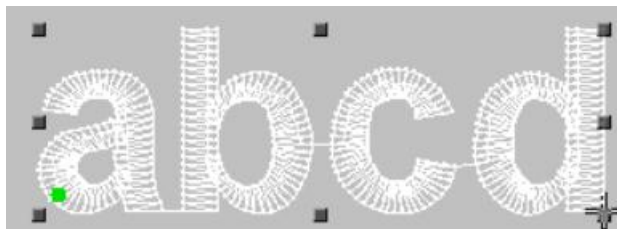


Use Select Object (Pointer toolbar) to transform lettering objects on-screen.

You can transform lettering objects by manipulating control points on-screen with the Select Object tool.

To transform lettering with Select Object

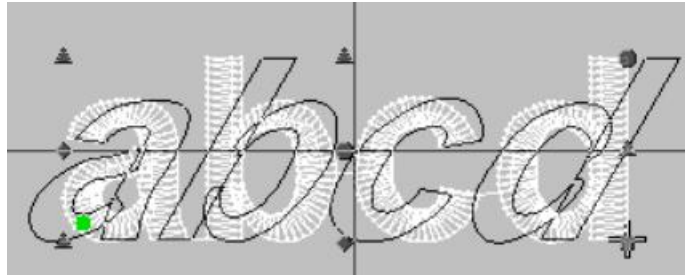
- (1) Click the Select Object icon and select the lettering object. The selection handles appear.



- (2) Click the lettering object again. Rotate and skew control points appear.



(3) Click-and-drag one of the diamond-shaped control points to skew the lettering object horizontally.



A shadow outline displays the skewed lettering object as you drag.

(4) Click-and-drag one of the hollow square control points to rotate the lettering object.



A shadow outline displays the rotated lettering object as you drag.

Tip Click-and-drag the rotation point itself to a new position before rotating.

(5) Release the mouse to complete.

2.1.2. Reshaping letters on-screen



Use Reshape Object (Pointer toolbar) to scale lettering objects on-screen.

Create special lettering effects by reshaping letter outlines with the Reshape Object tool.

To reshape letters on-screen

- (1) Select the lettering object.
- (2) Click the Reshape Object icon.

Control points appear around the lettering object.

(3) Click the diamond-shape control point in the center of the letter to select it and click letter outline. The additional control points appear around the outline.



(4) Reshape the letter by dragging the reshape nodes.

(5) Release the mouse to complete.

2.2. 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 or, if you are working from an enlargement drawing, on a digitizing tablet. Baselines use default settings to determine their size, spacing and angles. Raynen Embroidery Design 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. You can numerically define the rotation angle of letters relative to the baseline or the design itself.

2.2.1. Selecting baselines



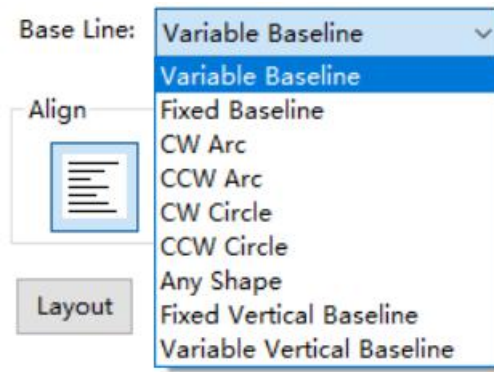
Right-click Lettering (Input toolbar) to select baselines and adjust baseline settings.

You can select different baselines through the Object Properties > Lettering dialog or Layout dialog. You can also adjust baseline settings. You can apply baselines to new or existing objects.

Tip To create the same baseline or copying baselines in your design.

To select baselines

- (1) Open letter dialog.
- (2) Select a baseline from the list.



The baseline you choose depends on the effect you want to achieve. You have to digitize different reference points depend on the baseline type you selected. Options include:

- A. Horizontal (Free Line and Fixed Line baseline).
 - B. Vertical (Free Line Vertical and Fixed Line Vertical baseline).
 - C. Arc (Arc CW and Arc CCW).
 - D. Circle (Circle CW and Circle CCW).
 - E. Custom (Any Shape).
- (3) Adjust baseline settings in the Layout dialog.
- (4) Click Apply.

2.2.2. Creating horizontal baselines

Free Line and Fixed Line baselines are straight, horizontal baselines. Free Line does not have a fixed or pre-determined length—the baseline extends as long as you keep adding letters. Fixed Line has a fixed length which you can digitize or specify numerically. If the text extends beyond the baseline, letter spacing is reduced and letters may overlap. The letter width, however, does not change.

Edinburgh

Free Line

Edinburgh Edinburgh

Fixed line

To create horizontal baselines

(1) For variable-length horizontal lines, select Free Line from *Object Properties > Lettering dialog* and click the screen to establish the start-point of the baseline.



Free Line--Click on-screen to mark start point



Fixed Line--Click on-screen to mark start and end points

(2) For fixed-length horizontal lines, select Fixed Line from Object Properties > Lettering dialog and click the screen to establish the start and endpoints of the baseline.

Note You can define any angle. Depending on the reference points you marked, the text will be placed from left-to-right or right-to-left.

2.2.3. Creating vertical baselines

Free Line and Fixed Line baselines are straight, horizontal baselines. Free Line Vertical baselines do not have a fixed length, and extend to fit the letters you enter. Fixed Line Vertical baselines are a fixed length. Letter spacing may be compressed to make the letters fit. Line spacing is calculated horizontally while letter spacing is calculated vertically. Letters, by default, are centered along vertical lines. New lines are placed by default from right to left to suit Asian languages.



Tip For Western languages, vertical lettering is best suited to uppercase because descender in lowercase letters are not accommodated in the letter spacing.

To create vertical baselines

(1) For variable-length vertical lines, select Free Line from Object Properties > Lettering dialog and click the screen to mark the start-point of the baseline.

Free line Vertical -- click the screen to mark mid-point



Fixed line Vertical -- click the screen to mark start and end points



(2) For fixed-length horizontal lines, select Fixed Line Vertical from *Object Properties > Lettering* dialog and click the screen to establish the start and endpoints of the baseline.

Note You can define any angle. Depending on the reference points you marked, the text will be placed from left-to-right or right-to-left.

2.2.4. Creating arc baselines

Use *Arc Clockwise* (Arc CW) and *Arc Counter-Clockwise* (Arc CCW) baselines to place lettering objects in a curved arc. You can place the lettering clockwise (CW) or counter-clockwise (CCW) along the arc. By default, letters are positioned above the Arc CW and below the Arc CCW baseline. They are also centered by default.



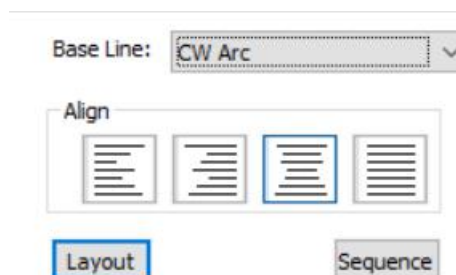
Arc clockwise (CW)



Arc Counter-clockwise (CCW)

To create arc baselines

(1) Select Arc CW or Arc CCW from *Object Properties > Lettering* dialog as a baseline and click Apply.



(2) Click the "Layout" to set the parameters of the baseline.

Layout

Base Line

Type: **CW Arc**

Segment Length: 100.00 mm

Segment Angle: 0°

Radius X: 50.00 mm

Radius Y: 50.00 mm

Align Angle: 0°

Oblique Angle: 0°

Arc Angle: 180°

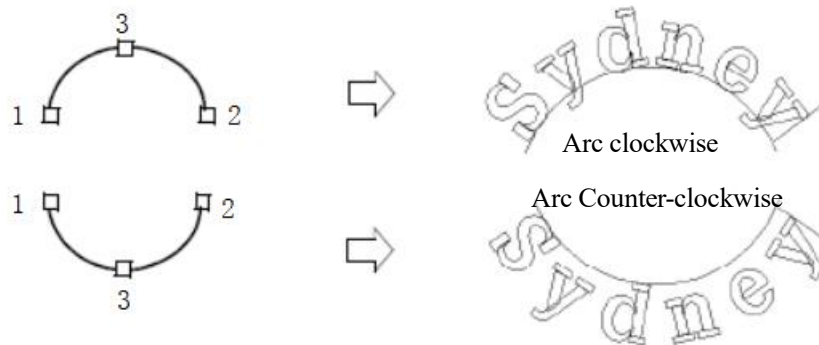
Position: **ABC** ABC ABC

OK Cancel

Word Direction

☒ Base Line 90°

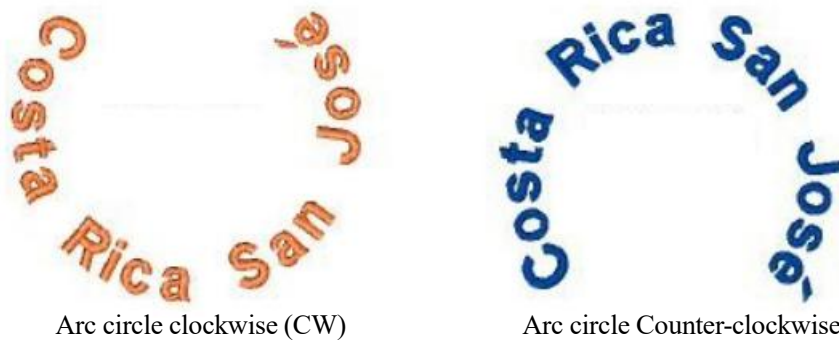
☐ Design



(3) Press Enter to complete.

2.2.5. Creating circular baselines

Use *Circle Clockwise* (Circle CW) or *Circle Counter-Clockwise* (Circle CCW) baseline to place letters around a full circle.

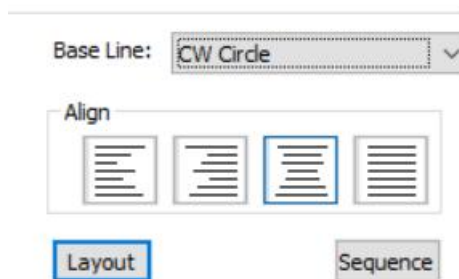


As for circular, you need to mark two points while oval need to be marked three points. The

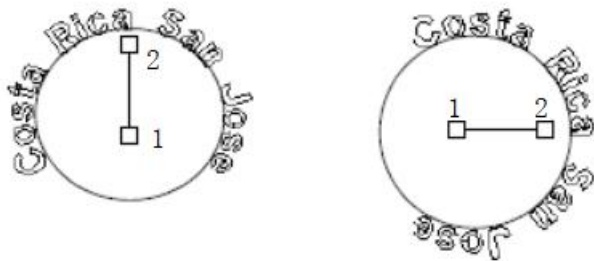
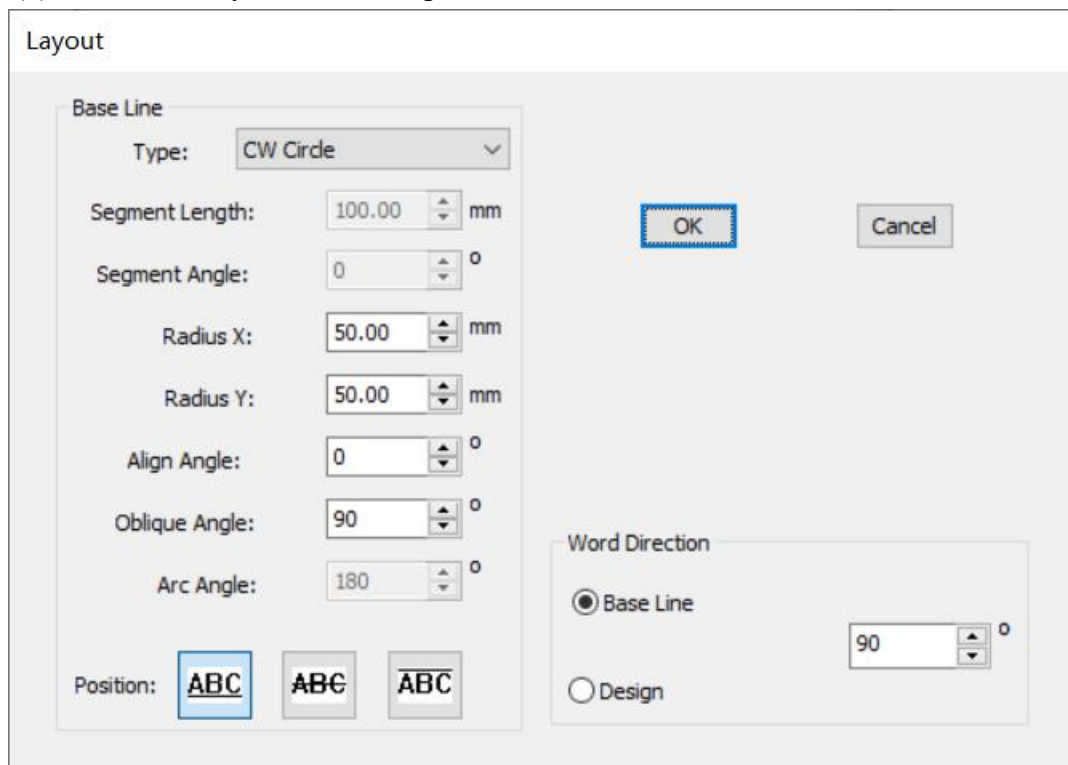
second point position decides the center point of the text. This text center justifies according to this point.

To create circular baselines

(1) Select Circular CW or Circular CCW from Object Properties > Lettering dialog as a baseline and click Apply.



(2) Click the “Layout” to set the parameters of the baseline.



(3) Click the “Layout” to set the parameters of the baseline.

Tip Depend on your selected justification settings, the left, center, right sides of lettering objects justify to the reference point of radius.

2.2.6. Creating custom baselines

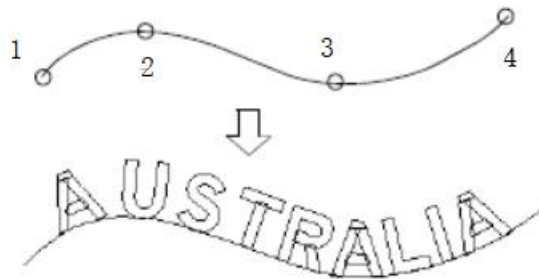
Use *Any Shape* baselines to shape lettering around elements in your design. Digitize *Any Shape* baselines by marking reference points to form the required line. The number of reference points and length of baseline are practically unlimited.



Tip 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) Select any shape from Object Properties > Lettering dialog as a baseline and click Apply.
- (2) Mark the baseline reference points.
 - A. Mark curve points with the right mouse button.
 - B. Mark corner points with the right mouse button.



- (3) Press **Enter** to complete.

2.3. Adjusting baselines

Baselines can be modified after placement either directly on-screen or via the Object Properties > Lettering dialog. With the exception of Free Line, baselines allow you to set the final length of the finished lettering. Once you have placed a baseline, Raynen Embroidery Design Software attempts to fit all the letters without altering the baseline length. As a baseline is filled with letters, letter spacing decreases. Eventually, letters may overlap. If so, you can adjust the baseline length to accommodate them, or change the lettering width.

2.3.1. Adjusting straight baseline settings



Use Lettering (Input toolbar) to adjust baseline settings.

You can set your own length, spacing and angle by adjusting horizontal and vertical line

baselines.

To adjust straight baseline settings

- (1) Open letter dialog.
- (2) Click Layout. The Layout dialog opens.
- (3) Select a horizontal or vertical line baseline from the list.
Length and Line Angle field will be applied.

- (4) Adjust the Length and Line Angle values as required.
 - A. Length: Enter the default length of fixed line baselines. For free line baselines and vertical line baseline this is not available.
 - B. Line Angle: Enter the default angle of the baseline to the horizontal axis.

- (5) Select a baseline position.

When creating lettering for a badge, for example:

- A. For lettering above the badge, select a baseline below.
- B. For lettering below the badge, select a baseline above.

- C. For horizontal lettering through the middle of the badge, select a centered baseline.
- (6) Specify the letter, word and line spacing as required.
 - (7) Select the letter orientation.
 - (8) Click **OK** to return to lettering dialog and click Apply.

2.3.2. Adjusting curved baseline settings

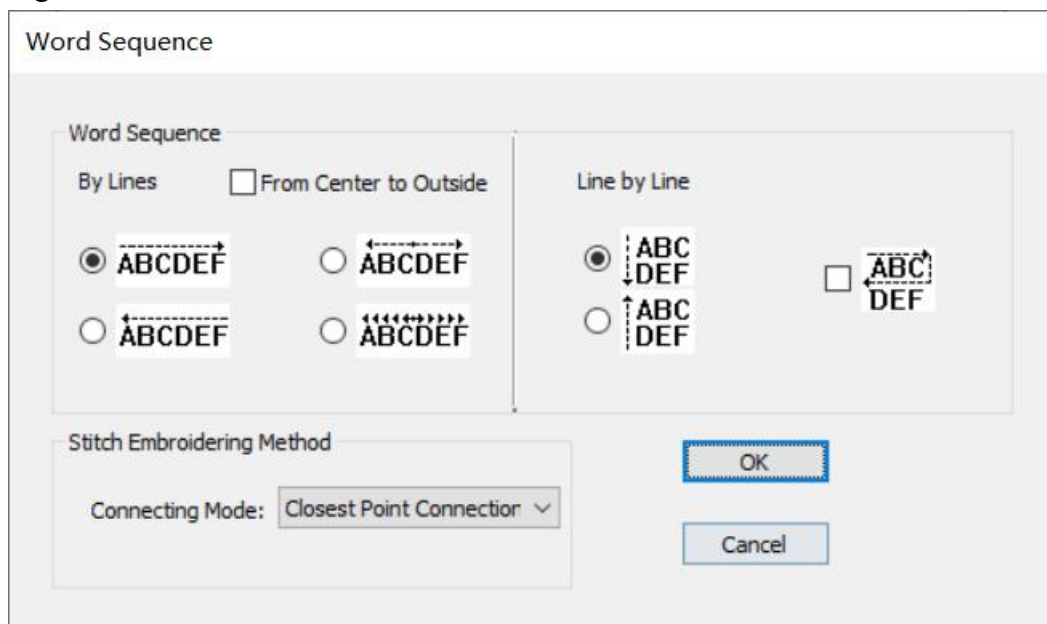


Use Lettering (Input toolbar) to adjust baseline settings.

You can set your own radius, angle and justification by adjusting circle and arc baselines.

To adjust curved baseline settings

- (1) Right-click lettering icon or double-click a selected lettering object/s.
The Object Properties > Lettering dialog opens.
- (2) Click Layout to open Layout dialog.
- (3) Select a circle or arc baseline type from the list. The Radius X, Radius Y, Justification Angle, Tilt, and Arc Angle fields are activated.



- (4) Adjust Radius X, Radius Y, Justification, Tilt, and Arc Angle values as required:
 - A. **Radius X**: enter default radius of the baseline arc (X-axis).
 - B. **Radius Y**: default radius of the baseline arc (Y-axis).

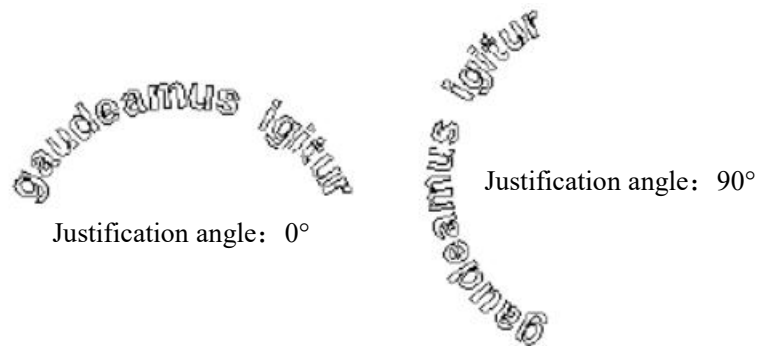
gaudeamus igitur

Radius X: 50
Radius Y: 50

gaudeamus igitur

Radius X: 40
Radius Y: 80

- C. **Justification Angle**: enter text reference point relative to the horizontal axis. For example, for center justification, enter the point that you want to justify to the letter.



D. **Tilt**: enter angle absolute value of the baseline relative to the horizontal axis.



E. **Arc Angle**: enter default arc. This constrains the baseline so the text falls within the arc specified degree.



F. Click **OK** to return to Lettering dialog and click Apply.

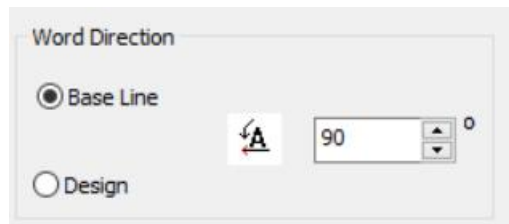
2.3.3. Changing letter orientation

You can define the rotation angle of letters relative to the baseline or the design itself. The latter lets you keep letters vertical regardless of baseline angle in order to achieve a 'staircase effect'



To change letter orientation

- (1) Open letter dialog.
- (2) Click **Layout** to open the Layout dialog.
- (3) 3. Select an Orientation setting.



A. Baseline: adjust letters relative to the lettering baseline.

B. Design: adjust letters relative to the horizontal.

(4) Enter an orientation angle.



(5) Click **OK** to return to Object Properties > Lettering dialog and click *Apply*.

3. Adjusting Lettering Stitch Settings

Like all embroidery objects, each lettering object has its own stitch properties. You may adjust the stitch type settings before creating lettering objects. In addition, you may need to change the stitch values and effects of existing lettering objects. Raynen Embroidery Design Software also gives you precise control over the stitch angles of individual letters. You can also specify the join method and stitching sequence you prefer.



This chapter describes changing lettering stitch types in lettering objects, and adjusting lettering stitch angles and adjusting the lettering stitching sequence.

3.1. Applying different stitch types to lettering objects

By default, lettering objects are filled with Satin stitch. You can also apply other basic fill stitch types, such as Tatami or E stitch, as with other embroidery objects.

3.1.1. Adjusting Satin stitch settings for lettering objects

By default, lettering objects are filled with Satin stitch. Where a letter is narrow, stitches are

tight, thus requiring fewer stitches to cover the fabric. Where a column is very narrow, stitches need to be less dense because too many needle penetrations can damage the fabric.



To adjust Satin stitch settings for lettering objects

- (1) Right-click Satin stitch icon.
- (2) Select fill stitch marks.
- (3) Select Satin stitch from stitch type list.

The screenshot shows the 'Satin' stitch settings dialog box. At the top, the 'Type' dropdown is set to 'Satin'. Below this, the 'Stitch' section contains 'Stitch Spacing' set to 0.40 mm, 'Repeat Times' set to 1, and an unchecked 'Both sides' checkbox. The 'Auto Devision' section has an unchecked 'Auto Devision' checkbox, 'Length' set to 7.00 mm, and 'Min Stitch' set to 0.40 mm.

- (4) Click *Apply*.

3.1.2. Adjusting Tatami stitch settings for lettering objects

You can fill lettering shapes with Tatami stitching. It is suitable for filled large, irregular lettering shapes.



To adjust Tatami stitch settings for lettering objects

- (1) Right-click Tatami icon.
- (2) Select fill stitch marks.
- (3) Select Tatami stitch from stitch type list.

Type: Tatami

Effect

Spacing: 0.40 mm Length: 4.00 mm

Min Length: 0.40 mm Random: 0 %

Type

Standard Borderline Diagonal

Offset

☒ Para Offset ☐ Standard Pattern Select

A: 0.25 B: 0.25

☐ Split line Angle: 90 Order: 01

Pattern

- (4) Adjust stitch spacing to increase or decrease density.
- (5) Adjust stitch length to increase or decrease needle penetrations.
- (6) Choose a backstitch type—Standard, Borderline, or Diagonal.
- (7) Select the Offset Fraction option to specify how each row is offset in order to create special embroidery effects.
- (8) Select the Partition Lines option as an alternative method for offsetting needle penetrations in Tatami fills.
- (9) Specify a random factor to eliminate the split line patterns formed by regular needle penetrations.
- (10) Click Apply.

4. Adjusting letter stitching sequence

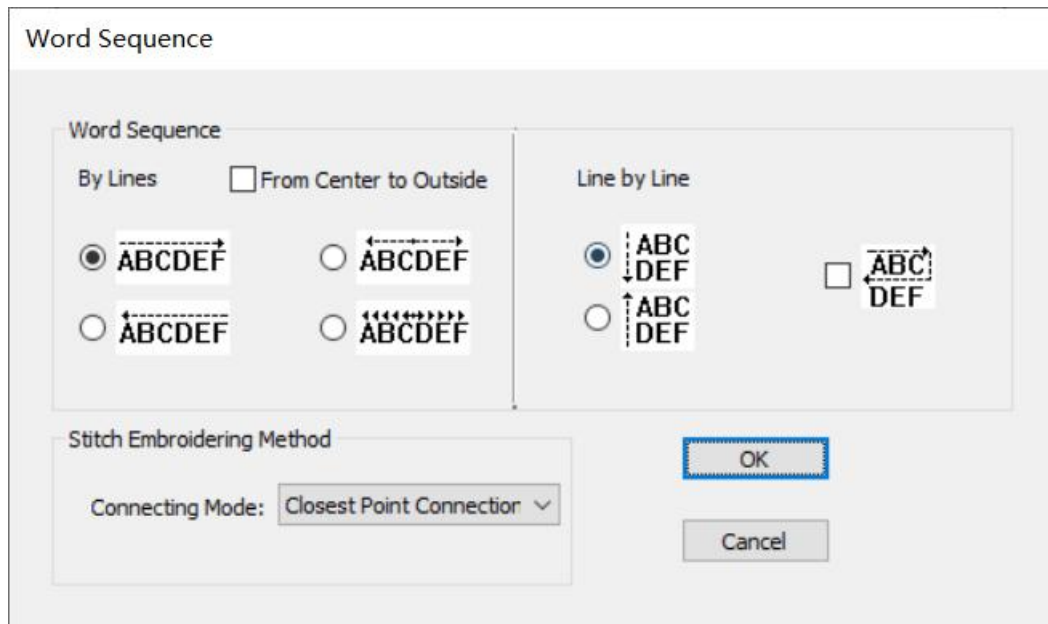
You can specify the sequence in which letters are stitched to minimize registration problems such as the embroidery on caps or difficult fabrics. Sometimes, you need to back to the factory default setting.

4.1. Adjust letter sequencing

You can specify the sequence in which letters are stitched to minimize registration problems such as embroidery on caps or difficult fabrics. For example, the Center Out option is especially useful when stitching on caps. There are also options for multiple lines of lettering which are useful for machines without trimmers.

To adjust letter sequence

- (1) Open letter dialog.

(2) Click **Sequence**.

(3) Select a stitching sequence. Options include:

A. **In Line:** Select whether you want the lettering to be stitched left-to-right or right-to-left in each line.



Right side stitched first



Left side stitch first

B. **Center Out:** Select this checkbox if you want the lettering stitched from the center out. You can specify that one side of the center is stitched followed by the other, or that each letter is stitched alternatively on either side of the center.



Right side stitched first



Left side stitched first

C. **Line by Line:** Choose whether you want multiple lines of lettering to stitch top-to-bottom or bottom-to-top. You can also specify that the first line should be stitched left-to-right, and the second right-to-left.

Stitched
bottom-to-topStitched
top-to-bottom

Note You can combine both In Line and Line by Line sequencing options.

- (4) Click OK to return to the Lettering tab.
- (5) Click Apply to close.

4.1.1. Changing lettering join method

The lettering stitch method is preset to give the best results for each alphabet. In most cases, *Closest Join* is recommended in order to minimize connectors.

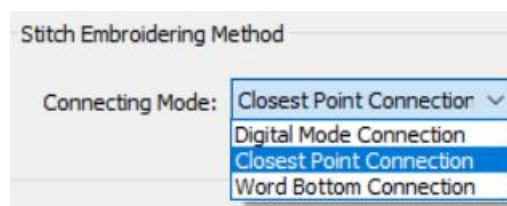
The *As Digitized* setting is used with alphabets which include multiple colors or special effects. Such alphabets may include machine functions, as for two-color alphabets, or run stitches as part of the cover stitching.



Lettering objects normally consist of one stitch type only. However, the *As Digitized* join method together with Original Stitch Values setting can be used with special fonts which combine several stitch types—e.g. Satin with Run, or Tatami, or Motifs.

To adjust lettering join method

- (1) Open letter dialog.
- (2) Click Sequence.



- (3) Select a join method from the list:
 - A. Bottom Join: Letters are joined along the baseline. Use it if you trim the connectors manually.
 - B. Closest Join: Letters are joined at the closest point. Use it to minimize trims.
 - C. As Digitized: Letters are stitched out the same way they were originally digitized. Use it with alphabets combining different fill stitch types or special effects



(4) Select the Original Stitch Values checkbox as required.

(5) This setting is only available if the As Digitized join type is selected. Select it when using special fonts which combine several stitch types. If not selected, these letters will be stitched with a Run type.



(6) Click **OK** to return to the Letter tab.

(7) Click **Apply** to close.

Keyboard Shortcuts

1. General functions

Function	Keyboard
start new design	Ctrl + N
open design	Ctrl + O
save design	Ctrl + S
print design	Ctrl + P
display/hide Grid	Shift + G
display /hide Rulers	D
display Object List	Shift + L
display Stitch List	Shift + J
open Lettering dialog	A
measure distance on-screen	M
undo command	Ctrl + M
redo command	Ctrl + Y
cancel command	Esc

2. Selecting objects

Function	Keyboard
select all objects	Ctrl + A
deselect all objects	X
select multiple objects	Ctrl + Left click
select range of objects	Shift + Left click
select next object	Tab
select previous object	Shift + Tab
add next object to selection	Ctrl + Tab
add previous object to selection	Ctrl + Shift + Tab

activate Polygon Select tool	Ctrl + L
group selected objects	Ctrl + G
Ungroup selected objects	Ctrl + U
lock selected object	K
unlock selected objects	Shift + K

3. Viewing designs

Function	Keyboard
toggle TrueView on/off	T
display/hide stitches	Shift + S
display/hide outlines	L
display/hide needle points	.
display/hide connectors	Shift + C
display/hide function symbols	Shift + S
zoom in 2X	Z Or F9
zoom out 2X	Shift + Z Or F10
zoom out in 2X used mouse as center	N
zoom to 1:1 scale (100%)	1
zoom box	B
return to previous view	V
redraw screen	R
activate Slow Redraw	Shift + R
all display object	F2

4. Cutting&pasting objects

Function	Keyboard
cut object	Ctrl + X
copy object	Ctrl + C
paste object	Ctrl + V

duplicate object	Ctrl + D
delete selected objects	Delete

5. Digitizing functions

Function	Keyboard
finish digitizing object	Enter
finish digitizing Complex Fill boundary outline	Delete
delete last input point	Backspace
switch auto underlay on/off	U

6. Modifying objects & stitches

Function	Keyboard
move selected object	← → ↑ ↓
activate Reshape Object tool	F
change reshape node type	Backspace
activate Stitch Edit tool	E

7. To travel in design

Function	Keyboard
to design start	Home
to design end	End
to next color	PageDown
to previous color	PageUp
to previous object	Shift + T
to next object	Ctrl + T
Previous 100 stitches	+
Next 100 stitches	-
Previous 10 stitches	↓
Next 10 stitches	↑
Previous 1 stitches	→
Next 1 stitches	←



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