



EMBROIDERY  
STUDIO



*Chenille Supplement*



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Wilcom International Pty Ltd. (a.c.n. 119 508 575)  
Level 3, 1-9 Glebe Point Rd, Glebe  
Sydney, New South Wales, 2037, Australia  
PO Box 1094, Broadway, NSW 2007  
Phone: +61 2 9578 5100  
Fax: +61 2 9578 5108  
Web: <http://www.wilcom.com>

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## Chapter 1

# Introduction to Chenille

Chenille remains a popular technique for specialist embroidery houses with the right equipment. In EmbroideryStudio, the Chenille add-on Element supports a wide range of chenille work and includes special embroidery capabilities for use with chenille or combination lockstitch systems.

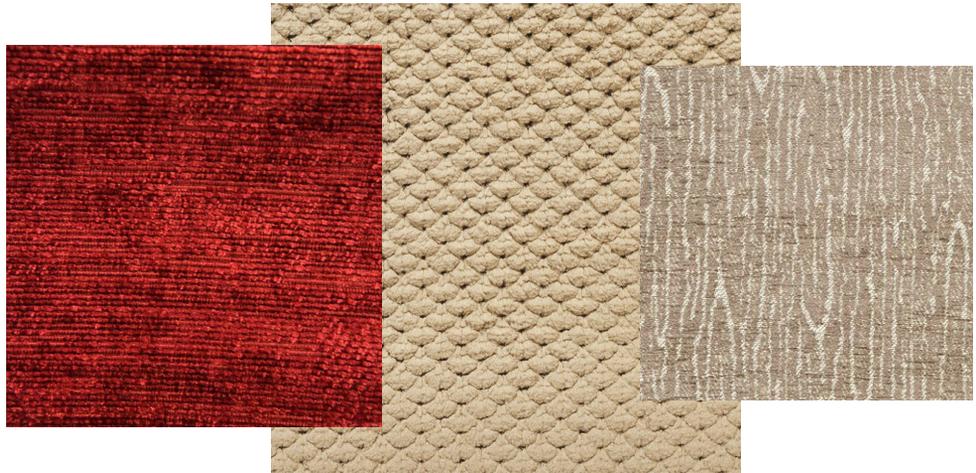


Modern chenille machines equipped with multiple loopers and automatic color-change capabilities produce chenille embroidery more efficiently than earlier mechanical machines. With chenille-capable design software such as EmbroideryStudio, it is possible to exploit these machines to the maximum of their commercial potential, and appeal to both popular as well as custom apparel and fashion markets.

This section provides an overview of the chenille terms and concepts as they relate to EmbroideryStudio. For an essential introduction to EmbroideryStudio software concepts, refer to the EmbroideryStudio Reference Manual.

## Overview

Chenille fabric dates back to 18th century France and refers to velvety fabric with the characteristic 'chenille look'. The material is made on a special loom similar to those used in carpet manufacture.



Turned in the light, the fabric takes on a lustrous, glossy appearance. Today it is typically associated with soft fuzzy sweaters, bedspreads and bathrobes. It also finds applications in home decor, from pillow covers to sofa throws.



## Chenille embroidery

Like the fabric, chenille embroidery is made from loops of yarn creating a soft, fuzzy appearance. It is one of the most commonly recognized embroidery types.



It is commonly used for sweatshirt emblems. It is often combined with regular embroidery for decorated apparel such as sports and woolen jackets. It is also widely used with children's apparel.

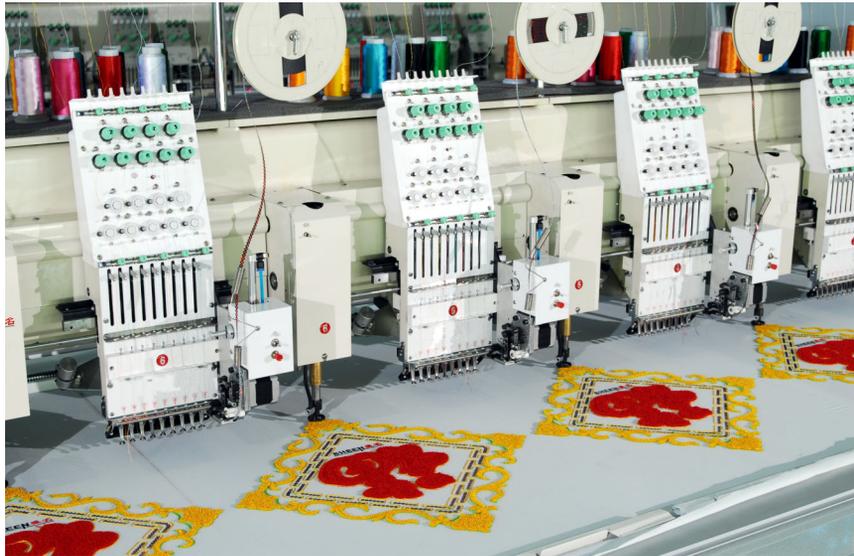


Because chain stitching forms flowing, curved lines, it is mainly used for outlines and more delicate work. It can even be used on its own to create flatter fills and Schiffli-like lacework.



## Chenille machines

There are many types of chenille machine, including machines for taping, cording and sequins as well as those with two needles for four-thread stitching.



Some machines can combine both chenille and lockstitch embroidery in the same design. Such machines are generally capable of automatic color changes and trims. They may also be capable of automatic chenille needle-height control for different depths of pile. Other derivations of chenille are produced on multihead machines using special attachments to sew down looped yarn or cord.

### Chenille yarn

Chenille embroidery is usually done with yarn instead of thread. However, chenille machines can employ a variety of threads and needle sizes for different effects. The yarn is typically made from cotton but can also be made with synthetics. Chenille sometimes employs multiple strands of yarn for distinctive looks and textures.

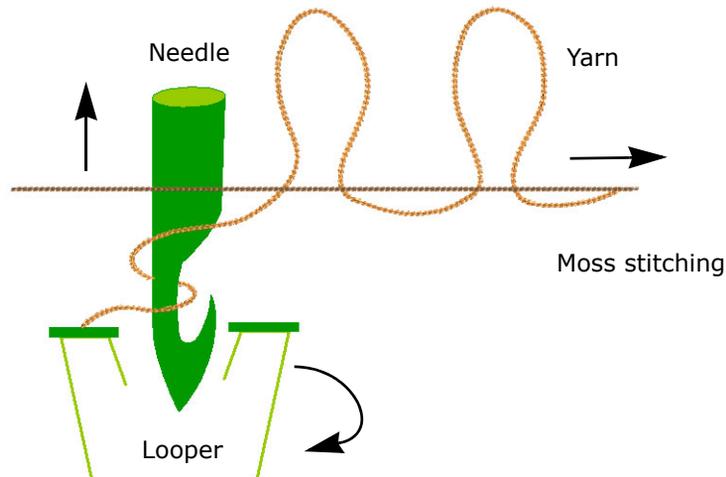


### Chenille stitching

True chenille embroidery is made using a single, continuous yarn worked into the material and raised in a loop or pile. By contrast, lockstitch machines use a top thread and bobbin thread in combination.

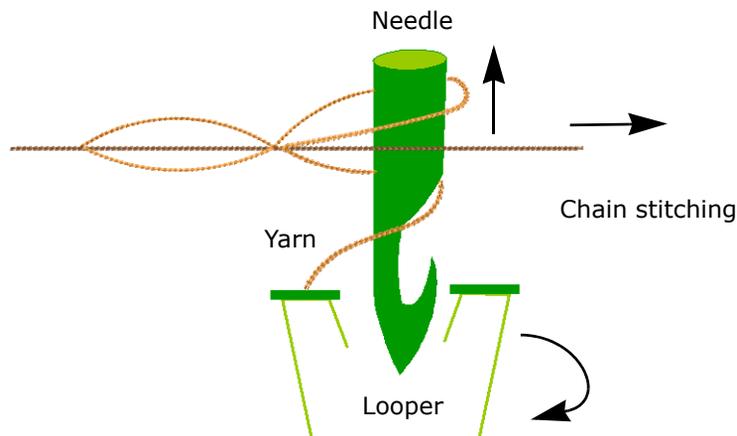


All chenille machines produce two basic stitch types, referred to as 'moss' and 'chain'. In contrast to lockstitch needles, chenille needles have a hook instead of a threaded eye. Yarn is pulled up one loop at a time by a looper housed below the needle plate.



Moss stitching, which gives chenille its characteristic look, is the loop stitch used in fills to create a sense of depth. It can produce a wide variety of effects ranging from low, compact to high, plush stitching.

Chain stitch is produced by a series of looped stitches forming a chain-like pattern. Chain stitching is in fact an ancient craft and it was the first stitch used by early sewing machines. It was later replaced by the more secure lockstitch. It still finds use, however, in chenille machines.



## Chenille backing

Chenille backing, usually felt, is softer than regular embroidery.



## Combination machines

With combination machines, patches and emblems often combine moss and chain stitch with standard lockstitch embroidery. Automation has made this type of work simpler and cheaper to produce.



## Chenille design considerations

Chenille design used to be a specialist technique. In reality, digitizing for chenille is easier than regular embroidery. In general, shapes are filled more simply and registration tolerances are broader. Otherwise, designing and digitizing for chenille is similar to standard embroidery, with these differences:

- ◀ Chenille designs look best at larger size because of yarn thickness and relative size of moss and chain stitching. Detail may be added by over-sewing with standard embroidery.

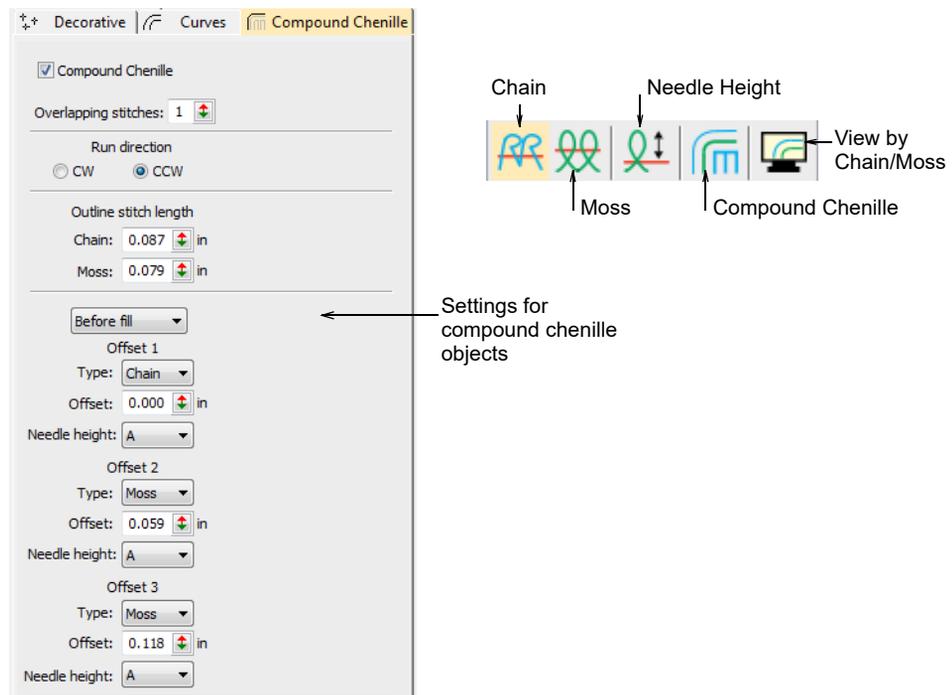
- ◀ While chenille is limited in its ability to achieve intricate detail, it is possible to achieve elaborate designs using color, texture and dimension.
- ◀ It is important to map out a design, as you would regular embroidery, so as to minimize jumps.
- ◀ Chenille shapes generally consist of a fill with one or more offsets of chain and sometimes moss stitching. The border is needed to hold the fill inside the shape. Wherever possible, use 'compound chenille' objects which include their own offset outlines.
- ◀ Otherwise, chain stitching can be used as 'tie-ins' and 'tie-offs' to stop moss stitching from unraveling.
- ◀ Chenille stitching is thicker than the lines in your digitized design so you need to recognize and compensate for this. For instance, chain stitching appears as a regular run stitch on screen.
- ◀ Because chenille yarn is thicker than normal thread, it is critical to avoid yarn pile-up caused by overlapping stitches, particularly chain stitches.
- ◀ Similarly, small clusters of stitches are not suitable for chenille work because of yarn thickness. They may cause yarn breakage or holes in the fabric. Avoid shapes with sharp angles.
- ◀ Chenille embroidery primarily 'pushes' or expands, unlike the 'pull-push' factor in traditional embroidery. Large designs require a cutaway backing to compensate for this.
- ◀ Overlocking is used to prevent chain stitches unraveling. You need to manually insert a chain for Barudan and Melco chenille machines. Tajima machines can change automatically from moss to chain if the machine has this option enabled.



# Chapter 2

## Chenille Basics

In EmbroideryStudio, you use a single design workspace for both chenille and lockstitch embroidery. In addition, with the **Chenille** add-on activated, there is a dedicated **Chenille** template, a **Chenille** toolbar with chenille-specific stitch types and machine functions, dedicated chenille fonts, and a dedicated tab on the **Object Properties** docker.



EmbroideryStudio supports a wide range of chenille work and provides:

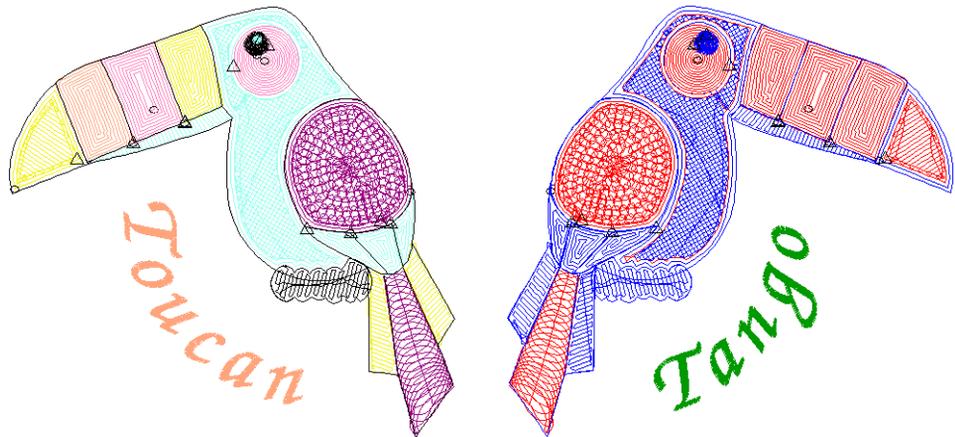
- ◀ Constant stitch length in all objects, for consistent smooth appearance
- ◀ Ability to control shortcut angles
- ◀ Variable width coil stitching
- ◀ Gaps at the ends of columns automatically filled with coil stitching
- ◀ Special 'compound chenille' objects which can include any kind of fill, with up to six offset borders in any combination of chain and moss stitching.

You should first become familiar with general EmbroideryStudio techniques before employing chenille-specific techniques. EmbroideryStudio has a certain design philosophy but once you understand it, similarities between individual functions become obvious. See the EmbroideryStudio Reference Manual for details.

This chapter provides an overview of digitizing for chenille and visualizing chenille stitching. It also introduces chenille settings in EmbroideryStudio. It also covers handling chenille design files.

## Digitizing for chenille

You digitize chenille objects using regular input methods – traditional and graphical. Chenille work involves only two stitch types – **Chain** and **Moss**. **Moss** is generally used for fills, **Chain** for borders or details. **Chain** may also be used for flatter fills.



Chenille usually involves a combination of two basic fill patterns – **Square** and **Coil**, single or double. Use these stitch patterns together with **Moss** for chenille fills. Run stitch is typically used with **Chain** for borders. For chenille, you mainly use **Compound Chenille** with **Complex Fill** to digitize objects – even narrow ones – with built-in chain borders.

## Chenille stitch types

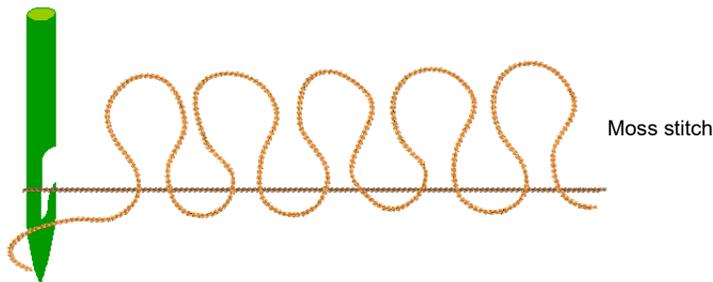
To qualify as a 'chenille object', a digitized shape must have **Chain** or **Moss** applying. These are the two basic stitch types created by all chenille embroidery machines. In EmbroideryStudio, they are added as machine functions which can be interpreted only by dedicated chenille or combination machines. As such, they cannot be displayed in TrueView.

## Moss stitch



Use Chenille > Moss to create dense cover using looped stitch typical of chenille raised stitching – best with simple shapes. Right-click for settings.

Chenille **Moss** produces the typical raised stitching associated with chenille work. It can only be applied to two basic fill patterns – **Square** and **Coil**. It can be stitched at different needle heights – lower for outlines and higher for fill. It works best with simple shapes.



Chenille has no bobbin thread. Without tie-ins and tie-offs, **Moss** stitch can loosen during washing. For this reason, **Chain** borders are used to achieve a tie-in and tie-off effect.



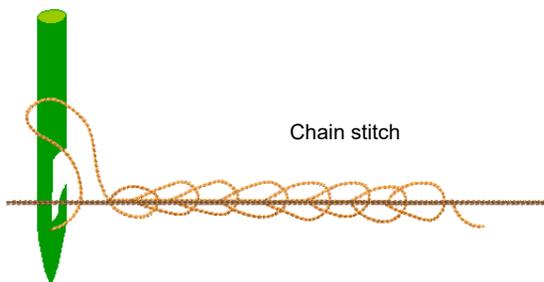
**Tip:** A sticky fabric can also be used to back Chenille embroidery using a heat and press method. Using this production process, moss fill does not require a chain border.

## Chain stitch



Use Chenille > Chain for decorative stitching resembling links of a chain. Can be used as a delicate fill or as a border for moss fills. Right-click to adjust settings.

Chenille **Chain** produces a decorative style of stitching resembling the links of a chain. It is used for outlining and bordering designs as well as monograms. **Chain** can also be used for more delicate detailing or fills.



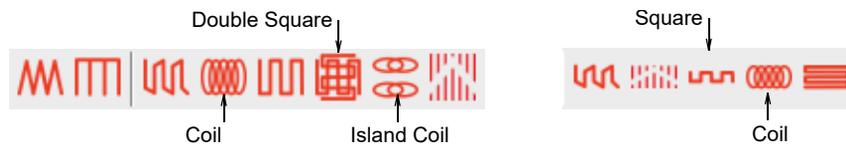
**Compound Chenille** objects generally include built-in offset chain borders. Alternatively, chain borders can be digitized separately, usually with **Run** input method. Chain fills can be created in conjunction with other, non-chenille, stitch patterns.



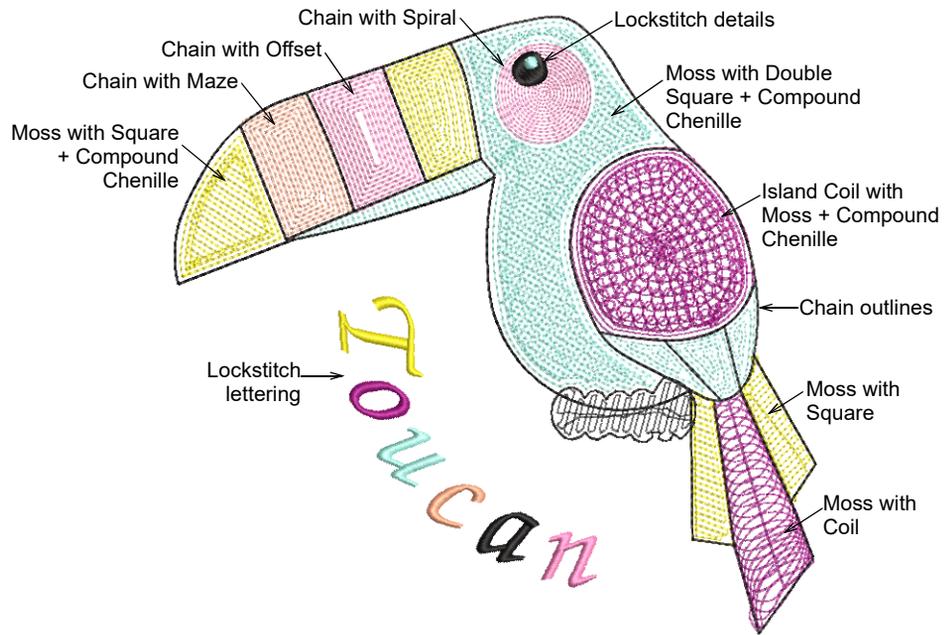
**Tip:** In conjunction with chain stitching, a chenille design typically builds in height from the edges to the middle.

## Chenille fill patterns

Traditional chenille work usually involves a combination of two basic fill patterns – **Square** and **Coil** – in combination with chenille **Moss**. The pattern you use depends on input method as well as object shape, size and the effect you want to achieve.



**Coil** and **Island Coil** are traditional forms of chenille fill. They are both stitched in spirals. This fill type mimics hand-made chenille embroidery. **Coil** may be used to fill columns or narrow areas. Larger areas may be filled with **Island Coil**.



Alternatively, use **Double Square** to generate stitches on a grid rather than coils. Similarly, **Square** can be used for narrow shapes as an alternative to **Coil**. These fill patterns are generally better suited to squarish shapes with sharper angles.

**Chain** stitching is mainly used for outlines and more delicate work. It can, however, be used to create flatter fills. We recommend using open stitch patterns such as **Maze Fill**, **Offset Fill**, or **Spiral Fill** to create the kind of effect you see in the above sample.

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### Related topics

- ◀ [Chenille patterns](#)
- ◀ [Chenille fill pattern usage](#)
- ◀ [Maze fills](#)
- ◀ [Offset fills](#)
- ◀ [Spiral fills](#)

## Chenille input methods



Use Traditional Digitizing > Complex Fill to digitize filled shapes with a single stitch angle. Right-click for settings.



Use Traditional Digitizing > Column A to create columns of varying width and stitch angle. Right-click for settings.



Use Traditional Digitizing > Column B to create asymmetrical columns of turning stitches, where opposite sides are different shapes. Right-click for settings.



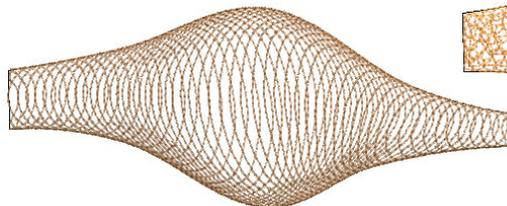
Use Traditional Digitizing > Column C to digitize columns or borders of fixed width. Right-click for settings.



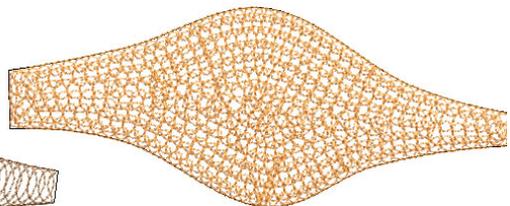
Use Traditional Digitizing > Digitize Run to create row of single stitches along a digitized line.

You can digitize chenille objects manually using practically any input method, including **Freehand**. But the main methods are summarized above. Stitch angles have limited effect on chenille embroidery.

Column A/B with coil



Complex fill with island coil



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## Tips for use

- ◀ Typically chenille objects are digitized with **Complex Fill** in conjunction with **Compound Chenille**. Resulting objects include borders to contain chenille fills and provide edge definition. This is important when using **Moss**.
- ◀ **Compound Chenille** objects will only work with two basic stitch patterns – **Square** and **Coil**. **Moss** stitch is generally applied to these fills.
- ◀ **Chain** has limited applicability to coil or double-square fill patterns.
- ◀ **Complex Fill** cannot be used with **Coil** and will default instead to **Island Coil** as shown above.
- ◀ Variable-width **Coil** stitching can only be created with **Column A** or **Column B** input methods.
- ◀ **Column C** can be used to create columns of constant width.
- ◀ Column methods cannot be used with **Compound Chenille**.
- ◀ Moss objects created with these input methods will require chain borders. These need to be added manually. This in turn makes scaling more problematic as gaps between borders and fills will change.
- ◀ While variable width coil looks artistic on screen, it won't look like this on stitchout. Moss stitching is very dense and covers the fabric entirely. Variable-width **Coil** patterns may be better employed with lockstitch embroidery.

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## Related topics

- ◀ [Start a new chenille design](#)
- ◀ [Digitizing Shapes](#)
- ◀ [Chenille Digitizing](#)

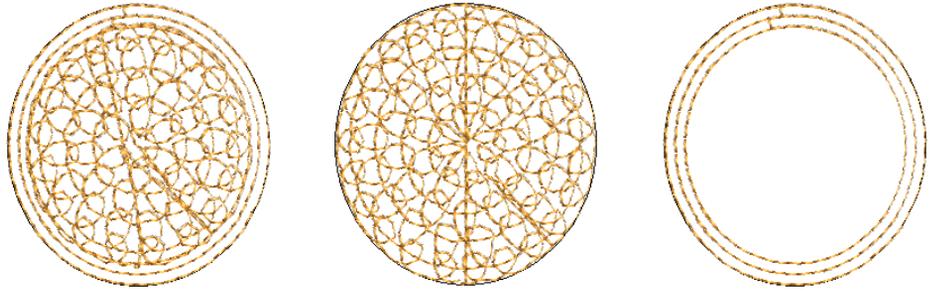
## Compound chenille



Use Chenille > Compound Chenille to automatically digitize chenille shapes with offset borders. Right-click to adjust automatic offset borders.

Chenille objects generally include a border to contain chenille fill stitching and provide edge definition. One or two offset run-arounds are usually sufficient to provide a clear edge and secure fill stitches. The **Compound Chenille** tool allows up to three (1-3) borders to be generated both

before and after the fill. When a compound object is scaled, borders are included.



**Note: Compound Chenille** objects will only work with two basic stitch patterns – **Square** and **Coil**, single or double. **Moss** stitch is generally applied. **Chain** has little applicability to these fill patterns.

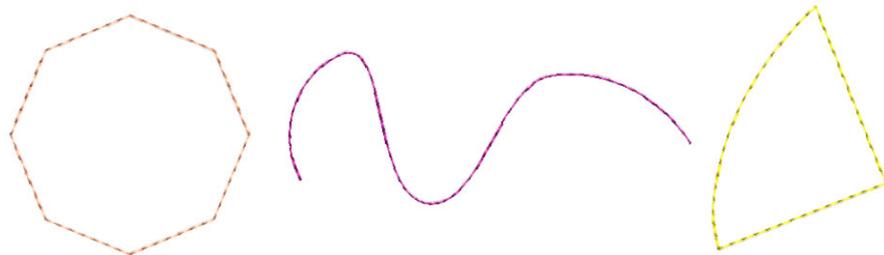
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### Related topics

- ◀ [Create compound chenille objects](#)
- ◀ [Compound chenille settings](#)

## Chenille runs & borders

While borders are built into **Compound Chenille** objects and can therefore be scaled with the object, you can also digitize single-line borders manually. For this, you typically use **Digitize Run** with **Chain** stitching. One or two offset run-arounds provide a clear edge for filled areas and help to secure chenille fill stitching. Other input methods can be used. If your machine supports it, you may combine chenille with regular stitching to tie-off chenille objects.



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### Related topics

- ◀ [Creating chenille borders](#)

## Chenille design parameters

There are two parameters of crucial importance to chenille work – needle height and stitch length. Chenille design frequently involves juggling these two parameters to achieve the desired effect.

Generally speaking, needle height controls the height of the loop formed by the chenille machine when it is sewing moss stitch. The needle height setting has less effect on chain stitches though it does affect width.

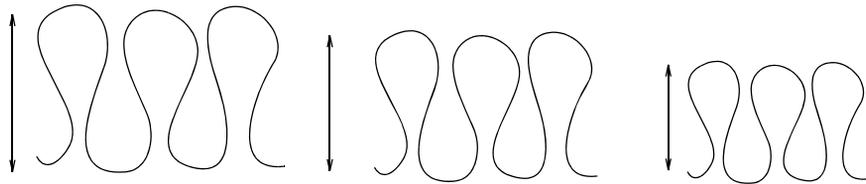
Stitch length has more of an effect on chain stitching. This value determines the size of chain. It also affects loop height, though for moss stitching, it is easier and more accurate to adjust needle height.

### Needle height

Needle height controls the height of the loop formed by the chenille machine when it is sewing a moss stitch. The needle height setting has less effect on chain stitches though it does affect width.

#### With moss stitching

You may use different needle heights for different areas of color. Or between fills and borders – lower for borders, higher for fills. When using **Compound Chenille**, you can change needle heights of each offset.



The chenille machine pulls up the same length of yarn for each loop according to the current needle height setting. Even though stitch length affects loop height, it is easier and more accurate to adjust needle height. If you intend to use loops of various height, adjust the needle height rather than stitch length.

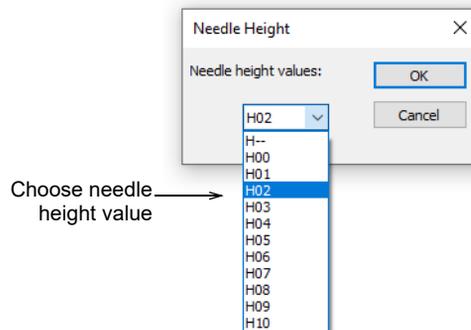
#### With chain stitching

Needle height has a thread tensioning effect on chain. For chain, the greater the needle height, the tighter the thread tension. With tighter thread tension, chain looks narrower.

#### Needle height control

With some chenille machines, needle height can be specified in the design. While stitching out, the chenille machine will automatically change needle height according to your selection. Normally, it's best to use default settings. Do a test run on the machine to check the outcome. Then, if necessary, adjust needle heights.

The Melco tape file format has specific codes assigned to each needle height position. It uses 26 different needle height positions, which are designated 'A' through 'Z'. Height 'A' is the lowest - 0.0100', 'Z' is the highest - 0.3225'. Each successive letter is 0.0125' higher than the preceding letter. The actual needle height measurement is a distance from upper surface of the needle plate to the inside of the needle hook. The Melco system is an industry standard which is also used by other machine formats. Some brands use proprietary needle height parameters. Barudan machines, for instance, use numbering rather than letters. See also [Controlling needle heights](#).



With some machines, needle height can also be adjusted on the machine. In practice, it is more common to adjust there rather than in the design. Thus you can choose whether to use heights specified in the design or not. See also [Needle height default](#).

Dahao controllers, on the other hand, do not support needle height values in the machine file. This is set manually on the machine control panel according to the heights specified in the Production Worksheet.

### Coil direction

For some machines, best results with **Coil** are achieved by sewing in a counterclockwise direction because when you sew in a clockwise direction, you are adding more twist to the yarn causing it to become tighter, distorting the moss stitch loops. Refer to your machine handbook for details.



### Stitch length

Stitch length has more of an effect on chain stitching. This value determines the size of chain. The larger the value, the larger the pattern.

It also affects loop height though for moss stitching though it is easier and more accurate to adjust needle height.

Stitch length should be constant for the same thread type throughout a design. If stitch length varies, the height of moss loops and width of chain loops will also vary, causing uneven embroidery.

Select a stitch length for a design according to yarn thickness, fabric thickness, and required density. Using inappropriate stitch length may cause yarn breakage, needle breakage, or damage to the fabric.

If the yarns in use are of the same type, the lengths of chain and moss stitch are different. The following table gives an indication of appropriate values.

Thread type	Rayon 300d/2P	Miki wool	Woolly yarn	Cotton thread #12	Softaine G
Chain stitch length	2.0-3.0 mm	2.5-3.5 mm	1.8-2.2 mm	2.3mm	2.0mm
Moss stitch length	1.5-1.7 mm	2.0-2.2 mm	1.6mm	2.1mm	1.7mm
Moss stitch spacing	1.5mm	1.8mm	1.7mm	1.5mm	1.8mm



**Tip:** These values may vary depending on the fabric used. When you use a new thread and fabric combination, sew a test design first using the above values as an initial guide.

## Other parameters

In addition to basic and decorative chenille stitch types and effects, you need to be aware of the following chenille settings...

### Scaling

As with lockstitch designs, any chenille design created in EmbroideryStudio can be scaled. Stitches are automatically recalculated from object outlines. Densities are preserved and there are no gaps or heavy over-stitching. **Compound Chenille** objects are recalculated together with their offset borders.

When old chenille designs are read from stitch data – e.g. Melco EXP, Tajima or Barudan disk – the EmbroideryStudio Stitch Processor converts them to objects. However, it does not fully recognize **Coil** and **Square** stitching. These will be converted to a series of **Run** stitch objects. This limits the scalability of these old designs to  $\pm 5-10\%$ . However, old designs can be readily stitch-edited and sections re-digitized if required. See [Opening machine files](#) for details.

## Trims

Few chenille machines have an automatic thread trim mechanism as connecting threads are under the fabric and are not visible. In this case, digitize all shapes and lines of the same color sequentially in order to minimize manual trims. This will reduce stitchout time. Be careful how you connect from one spot to another. Avoid long connecting stitches which may pull previous stitching and require trimming. Typically, most objects will include a chain run before the fill to tie-in, and another chain run after, to tie-off.

## Jumps

Jump(M) functions cause frame movements without needle penetrations. The use of jumps is not recommended because the pulling effect on the fabric during a jump may distort the design, especially if the fabric is thin. To avoid long connecting stitches, plan carefully the order in which you digitize shapes and lines. Use chain stitch rather than jumps when traveling across a shape filled with moss stitching as chain stitch will be hidden beneath moss stitching. Use **Jump** only if there is a significant contrast in colors, particularly if the current stitch is of a lighter color where the yarn may show through.

## Corners

Avoid corners with an angle smaller than 60° as this can cause a machine fault or loop stitching may be changed to chain. EmbroideryStudio automatically adds an extra stitch to avoid sharp corners within objects, including manual stitch objects. If you round off sharp corners in runs and complex fills, you can avoid both sharp angles and small stitches. However, sometimes an extra stitch causes chain stitches to swell, giving a poor finish.



**Tip:** Use **Smart Corners** to achieve smooth, even placement of stitches, and eliminate gaps in your design. **Smart Corners** can be used with **Square** stitch and **Coil** for **Column C** objects. See [Controlling corner stitching](#) for details.

## Visualizing chenille stitching



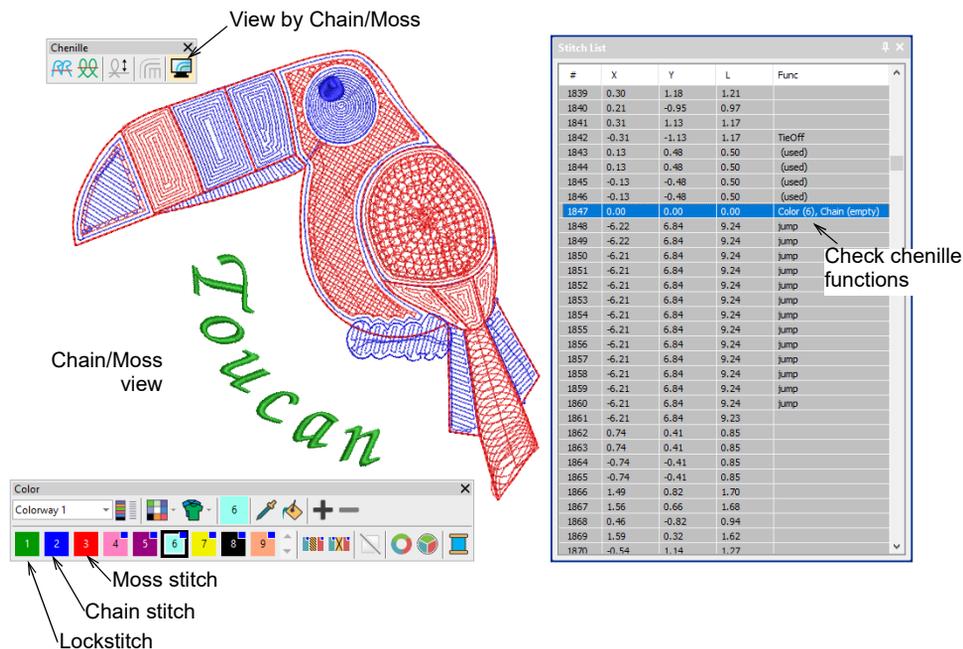
Use Chenille > View by Chain/Moss to view chenille objects in special mode to allow easy identification of chain and Moss elements – lockstitch in green, chain in blue, moss in red.

The two basic stitch types created by all chenille embroidery machines are 'moss' and 'chain'. In EmbroideryStudio, **Moss** and **Chain** are treated as machine functions which can be interpreted only by dedicated chenille or combination machines. Chenille objects cannot be viewed in TrueView

but they can be viewed in a special viewing mode which allows easy identification of chain and moss elements.

## To visualize chenille stitching

- ◀ Click the icon to activate **Chain/Moss** display or select **View > View by Machine Function > Chain/Moss**.



- ◀ The design appears using only the first three colors in the color palette. These color slots are best left for display purposes only, where:

Slot	Default	Element
1	Green	Lockstitch
2	Blue	Chain
3	Red	Moss

- ◀ Use the **Stitch List** to check machine functions in the design.
- ◀ To travel by machine function, click/right-click the **Travel by Function** tool. Alternatively, press **Ctrl + Page Up** or **Ctrl + Page Down**. The needle point will stop at every **jump**, trim, and color change in the design.



**Note:** TrueView does not display chain and moss stitching. However, it can still be useful to give an impression of the design when viewed at a small zoom factor (less than 1:1).

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### Tips for use

When examining your design prior to stitchout, note the following...

- ◀ Chenille design always starts with a Chain code.
- ◀ A Moss code must be present at the start of any Moss section.
- ◀ The Moss section must conclude with a Chain code.
- ◀ When continuing after a color change or trim, no additional function code is required. The new block will follow on with the same Chain code as the previous block.
- ◀ To conclude the Chenille section of design, a 'Chenille Off' code must be present. In TBF format, this is equivalent to a 'Lockstitch' code.
- ◀ After a 'Chenille Off' or 'Lockstitch' code is encountered, machine heads switch from Chenille to Lockstitch.

## Handling chenille designs

Chenille files open in EmbroideryStudio like any other EMB design. Similarly, you save chenille designs to native EMB format or export them as machine files. They can be output to embroidery floppy disk, punched to a paper tape or sent directly to embroidery machine connected to the computer. The same file can be used by combination machines for both Chenille and Lockstitch embroidery.

### Start a new chenille design



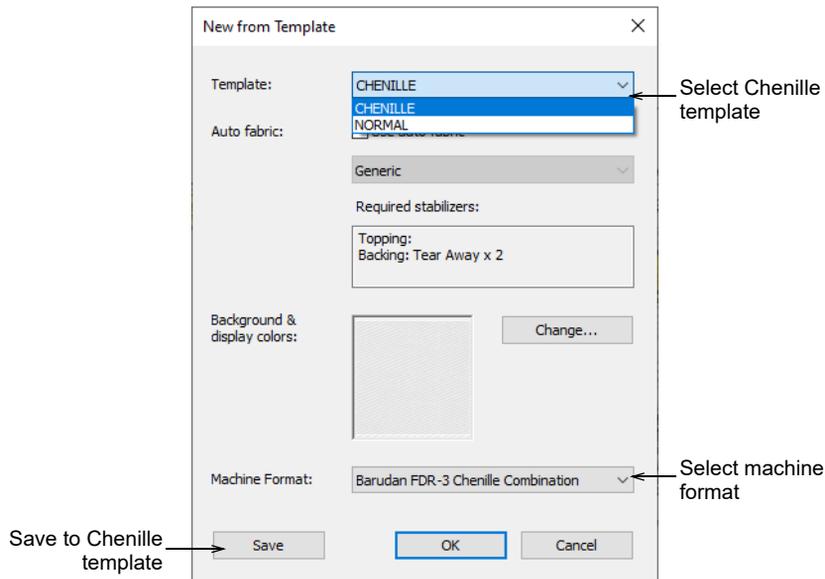
Use File > New Design to start a new design with the chenille template.

When you start EmbroideryStudio, a new file – Design1 – is automatically created ready for you to start digitizing. By default, Design1 is based on the NORMAL template. Use the CHENILLE template to create new chenille designs.

---

## To start a new chenille design

- ◀ Start EmbroideryStudio and select CHENILLE as your template.



- ◀ Alternatively, with the design workspace already open, hold down **Shift** and click **New Design**. Or select **File > New From Template** to access the dialog.

The CHENILLE template defaults the system to chenille values. The machine format will switch to the default chenille machine.



**Note:** Auto fabric is not applicable to chenille embroidery. Presets for pull compensation, underlay, backing, density, etc, have no relevance to chenille work.

- ◀ Select your preferred machine format from the droplist if different to the default.  
Finished designs can be sent direct to most chenille machines, or saved to your preferred chenille machine file format.
- ◀ If you choose a different machine, you can save it to the CHENILLE template via this dialog.



**Tip:** You can change machine format at any time on a design-by-design basis via the **Design** menu.

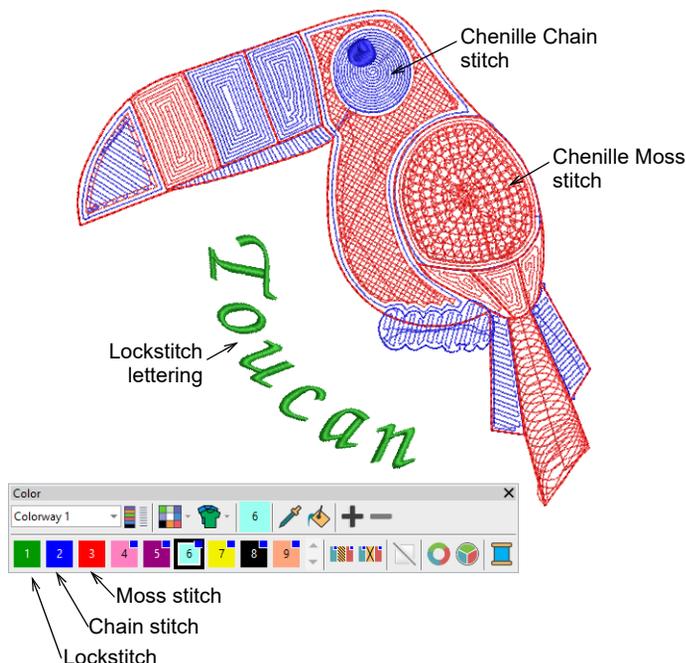
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## Related topics

- ◀ [Switch machine formats](#)

## Standard machine formats

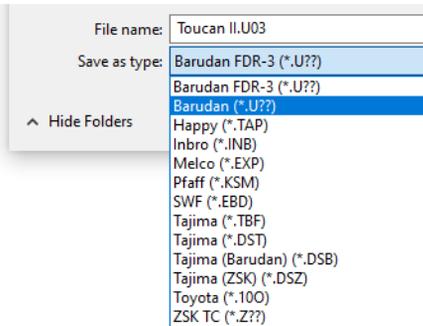
Different embroidery machines speak different languages. They have their own control commands for various machine functions. If a design was created as a chenille design, you need to select the associated machine format when opening the file in order to display the chenille functions correctly. Similarly, before you can stitch a design, it must be in a format which can be understood by the machine. Chenille stitch types – **Moss** and **Chain** – can only be used with a chenille machine format.



EmbroideryStudio supports Tajima – both the old TMCE-100 and new TMCE-600 models – Barudan and Melco chenille machines. Chinese machines are capable of chenille with Dahao and other brands of control panel. Support is provided for these machine types:

Machine format	File format
Tajima TBF	TBF
Tajima TMCE-100	DST
Tajima TMCE-600	DST
Barudan FDR-II Chenille Combination	U??
Barudan Chenille	U??

Machine format	File format
Barudan FDR-II Twin Sequin Chenille Combination	U??
Barudan FDR-3	^ (FDR-3) U??
Barudan FDR-3 Chenille Combination	(FDR-3) U??



Dahao	* DST
Melco Chenille	EXP
ZSK	Z??

### Tips for use

- ◀ ^ When exported, the file extension appears as 'U01' or 'U02', etc. The difference between the two formats is that FDR-3 U?? is compatible with newer machine function codes.
- ◀ \* EmbroideryStudio does not support Dahao DHB machine file format. Only WilcomDahao ES can export to this format. However, the Dahao control panel can receive DST files. With DST, the machine operator must manually assign the Chenille yarn sequence as well as the lockstitch needlebar sequence.

### Related topics

- ◀ [Chenille machine formats](#)
- ◀ [Machine format settings](#)
- ◀ [Chenille machine files](#)
- ◀ [Outputting chenille designs](#)

## Open & save chenille designs



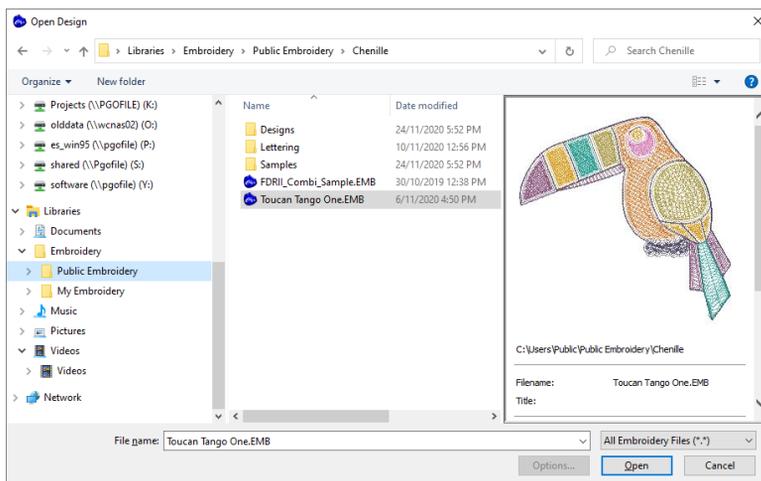
Use Standard > Save Design to save the current design. Right-click to open the Save As dialog.

As with lockstitch designs, all information about a chenille design is stored in the native EMB file format, regardless of machine format. This

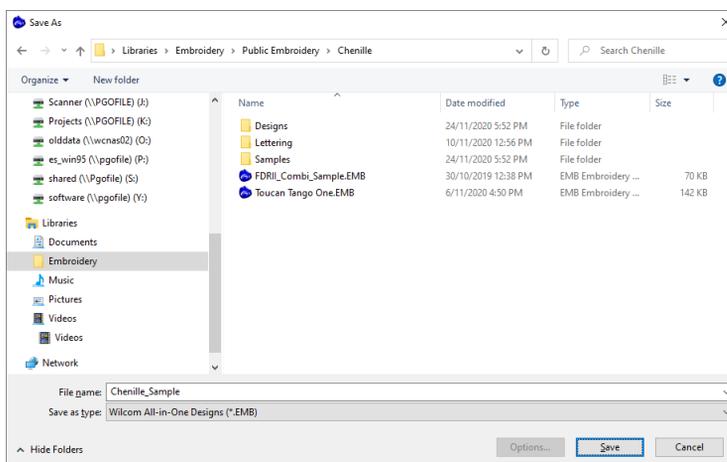
makes it easy to write designs to different formats. Chenille files open in EmbroideryStudio like any other EMB design. Similarly, you save chenille designs to native EMB like any other embroidery file.

## To open or save a chenille design

- ◀ Click the **Open** icon or select **File > Open**. Open your EMB chenille design file like any other native design file.



- ◀ Click the **Save Design** icon. If this is the first time you have saved the design, the **Save As** dialog opens. Alternatively, choose **File > Save As**. File type will default to the latest EMB, but you can save to previous versions via the **Save as type** droplist.



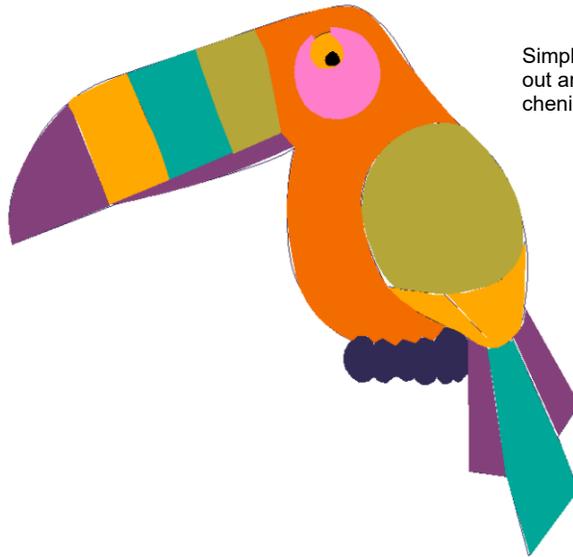
## Related topics

- ◀ [Outputting chenille designs](#)

## Chapter 3

# Chenille Digitizing

Chenille design used to be a specialist technique. In reality, digitizing for chenille is easier than regular embroidery. In general, shapes are filled more simply and registration tolerances are broader.



Simplify shapes and map out artwork for use with chenille embroidery

It is important to map out a design, as you would regular embroidery, so as to minimize jumps. Even more than with regular embroidery, chenille designs need to employ simple, clear shapes which can be easily converted to chenille 'stitch blocks'.

Concepts to keep in mind:

- ◀ Chenille work involves only two stitch types – **Chain** and **Moss**.
- ◀ Chenille usually involves a combination of two basic fill patterns – **Square** and **Coil**, single or double.
- ◀ For chenille, you mainly use **Compound Chenille** in combination with **Complex Fill** to digitize objects – even narrow ones – with built-in chain or moss borders.

This chapter covers chenille input methods including creating compound chenille objects. It also covers creating chain-stitch fills, narrow chenille shapes, and borders. It also deals with needle heights.

## Creating compound chenille

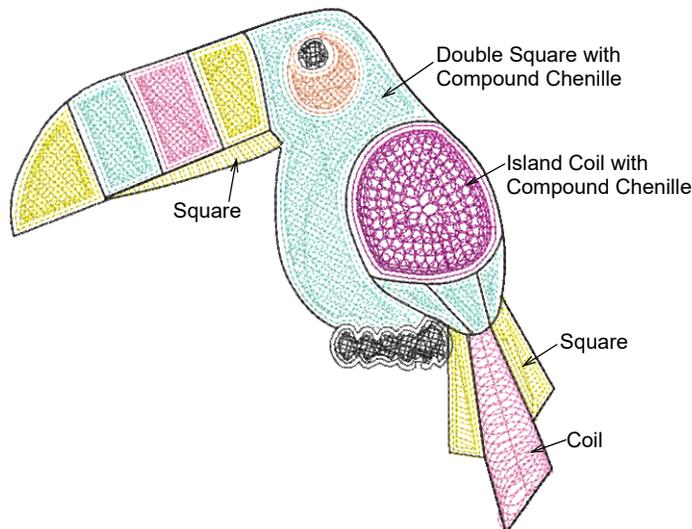
Because borders are used so frequently, chenille digitizers have to apply some thought and special techniques to their work. As much as possible, chenille designs should be planned to use **Complex Fill** together with **Compound Chenille**. The advantage of compound chenille is the tie-in/tie-off. However, other techniques are available if you intend to use **Chain** fills. And if your machine supports it, you can use regular embroidery for tie-offs at the end of chenille objects, as well as details and embellishments.

### Chenille fill pattern usage

Chenille work usually involves a combination of four fill patterns – **Coil**, **Square**, **Double Square** and **Island Coil**. The pattern you use depends on input method as well as object shape, size and the effect you want to achieve.

#### Pattern types

**Coil** and **Island Coil** are traditional forms of chenille fill. They are both stitched in spirals, typically of moss stitching. This fill type mimics hand-made chenille embroidery. **Coil** may be used to fill columns or narrow areas. Larger areas may be filled with **Island Coil**.



Alternatively, use **Double Square** to generate stitches on a grid rather than coils. Similarly, **Square** can be used for narrow shapes as an alternative to **Coil**.

## Moss stitching

**Compound Chenille** is usually digitized with **Moss** stitching as the fill type. Chenille objects generally include a **Chain** border to contain the fill and provide edge definition. Single offset run-arounds before and after are usually sufficient.



Moss stitch, by its nature, is designed to provide dense cover. In stitchout, you should see only the fluffy 'moss' and not the underlying stitch pattern. In fact, if you are able to see fabric beneath the tufts, pattern density should be increased.

So in theory, it makes little difference to the end result whether you use an underlying square or coil pattern. In practice, however, moss appearance with square or coil patterns is somewhat different. Bear in mind...

- ◀ With **Coil**, the moss effect looks consistent from any direction.
- ◀ **Square** pattern moss varies with the direction of view.
- ◀ There is a limitation with **Coil** in handling sharp corners. Square patterns are generally more suited to stitch blocks with sharp corners.
- ◀ While stitch angle has no effect on **Coil** patterns, it can affect the appearance of **Square** patterns. Recommended angles are 30° or 120°.

---

## Related topics

- ◀ [Other parameters](#)
- ◀ [Chenille patterns](#)
- ◀ [Creating compound chenille](#)
- ◀ [Creating chain-stitch fills](#)
- ◀ [Creating narrow chenille shapes](#)
- ◀ [Creating chenille borders](#)

## Create compound chenille objects



Use Traditional Digitizing > Complex Fill to digitize filled shapes with a single stitch angle. Right-click for settings.



Use Chenille > Moss to create a looped pile look.



Use Chenille > Compound Chenille to automatically digitize chenille shapes with offset borders.

Digitizing chenille objects involves the same techniques as regular lockstitch embroidery with the addition of chenille stitch types, **Moss** and **Chain**. For chenille work, you mainly use **Complex Fill** in combination with **Compound Chenille** to digitize objects – even narrow ones – mainly in combination with **Moss** stitching and built-in chain or moss borders.

### To digitize a compound chenille object

- 1 Open a new design using the **Chenille** template and select a machine format to suit.
- 2 Select a closed shape input tool such as **Complex Fill**. Some graphic tools can be used in combination with **Compound Chenille**, such as **Closed Shape**, **Rectangle**, **Ellipse**, and **Basic Shapes**.
- 3 Select **Moss** stitch and click the **Compound Chenille** icon. **Chain** has limited applicability to coil or double-square fill patterns.
- 4 Select a fill pattern. **Compound Chenille** objects will only work with these:

Fill pattern	To fill...
 Square	Narrow shapes with single layer of straight lines.
 Double Square	Larger shapes with two layers of straight lines.
 Island Coil	Larger shapes with double-spiral stitches.



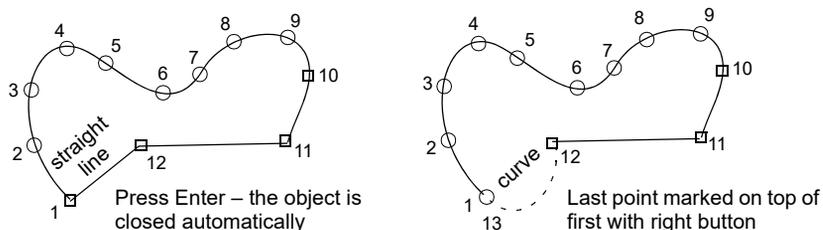
**Tip:** In theory, it makes little difference to the end result whether you use an underlying square or coil pattern. In practice, square patterns produce fills that vary in appearance with the direction of view. However, they are generally more suited to squarish shapes with sharp corners.

- 5 Select a yarn color from the palette. Remember, the **View by Chain/Moss** function uses the first three colors in the palette. Color slots 1-3 are best left for display purposes only, where:

Slot	Default	Element
1	Green	Lockstitch
2	Blue	Chain
3	Red	Moss

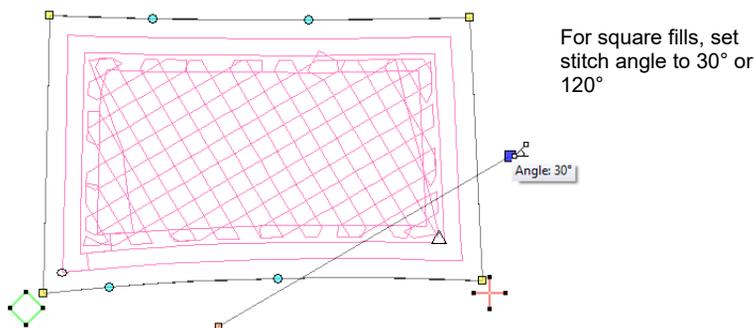
- 6 Digitize the boundary like any embroidery object:

- ◀ Left-click for corner points
- ◀ Right-click for curve points.



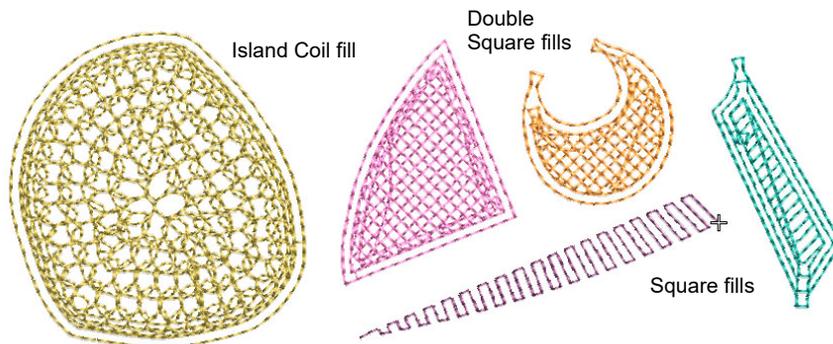
**Tip:** Use the prompts in the **Prompt Bar** to help you digitize. If you make a mistake, press **Backspace** to delete the last reference point. Press **Esc** to undo all new reference points.

- 7 Press **Enter** to complete.  
 8 Mark entry and exit points on the boundary.  
 9 Define stitch angle by digitizing two points.



**Tip:** While stitch angle has no effect on coil fill patterns, it can affect the appearance of square fill patterns. Best angles are 30° or 120°.

10 Press **Enter** to complete. The **Compound Chenille** object is generated according to current settings.



11 With the object selected, open the **Object Properties > Compound Chenille** tab to adjust settings.



**Tip:** The **Compound Chenille** tool in fact allows for up to three (1-3) offset borders, before and after. Borders can employ either moss or chain stitching, at specific offsets and needle heights. If you intend to use loops of different height, adjust needle height rather than the stitch length. This method is easier and more accurate.

### Related topics

- ◀ [Start a new chenille design](#)
- ◀ [Digitizing with graphical tools](#)
- ◀ [Creating free-form shapes](#)
- ◀ [Chenille design parameters](#)
- ◀ [Compound chenille settings](#)
- ◀ [Controlling needle heights](#)
- ◀ [Visualizing chenille stitching](#)

### Convert lockstitch to chenille



Use Chenille > Moss to create a looped pile look.



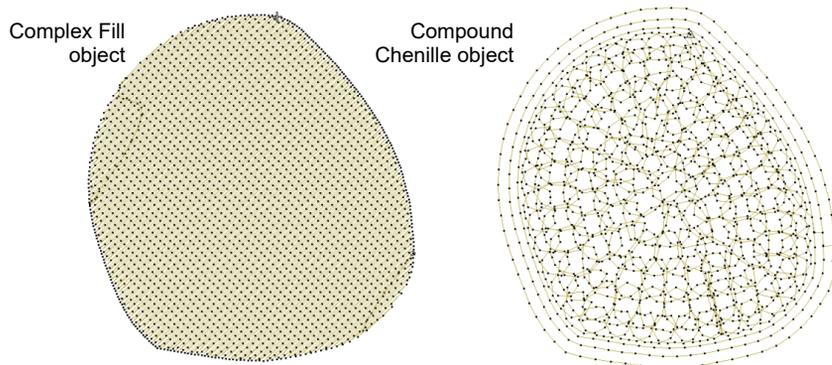
Use Chenille > Compound Chenille to automatically digitize chenille shapes with offset borders. Right-click to adjust automatic offset borders.

You can convert complex fill and other closed objects to chenille using **Compound Chenille**. Multiple offset runs are generated automatically from the same boundary.

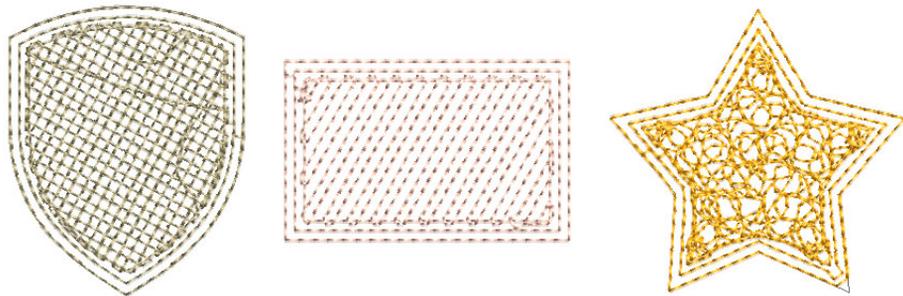
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## To convert lockstitch to chenille

- 1 Open a new design using the **Chenille** template and select a machine format to suit.
- 2 Select the complex fill or other closed object.
- 3 Select a chenille stitch type – usually **Moss**.
- 4 Select a chenille fill pattern – **Square**, **Double Square** or **Island Coil**. Once you have selected a pattern, the **Compound Chenille** icon becomes active.
- 5 Click the icon. Offset borders and a chenille fill are generated according to current settings.



**Compound Chenille** can be applied to many closed objects, including standard shapes.



- 6 With the object selected, open the **Object Properties > Compound Chenille** tab to adjust settings.

---

## Related topics

- ◀ [Start a new chenille design](#)
- ◀ [Compound chenille settings](#)
- ◀ [Controlling needle heights](#)
- ◀ [Visualizing chenille stitching](#)

## Creating chain-stitch fills



Use Traditional Digitizing > Complex Fill to digitize filled shapes with a single stitch angle. Right-click for settings.



Use Chenille > Chain for decorative stitching resembling links of a chain. Can be used as a delicate fill or as a border for moss fills. Right-click to adjust settings.

Because chain stitching forms flowing, curved lines, it is mainly used for outlines and more delicate work. It can, however, be used to create flatter fills. Because chenille yarn is thicker than normal thread, it is critical to avoid yarn pile-up caused by overlapping stitches, particularly chain stitches. For this reason, we recommend using open stitch patterns such as **Maze Fill**, **Offset Fill**, or **Spiral Fill** to create the kind of effect you see in this sample.



**Tip:** With **Chain** stitch blocks, there is no need for borders as such. Chain itself provides a good border.

### To digitize a chain-stitch fill

- 1 Open a new design using the **Chenille** template and select a machine format to suit.
- 2 Choose an input method – graphical or traditional.  
Since stitch angle has no relevance to chain stitching, **Complex Fill** is fine for most shapes. Some graphic tools may be used – **Closed Shape**, **Rectangle**, **Ellipse**, and **Basic Shapes**.
- 3 Select **Chain** stitch and choose a suitable fill pattern:

Fill pattern	Uses
 Maze Fill	Create maze-like stitching which follows object contours for open fills.
 Offset Fill	Create offset fill stitching in any closed shape.

## Fill pattern

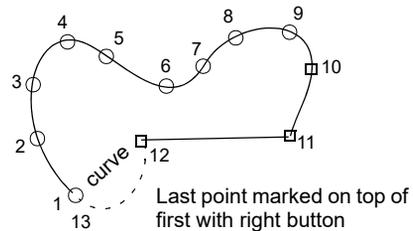
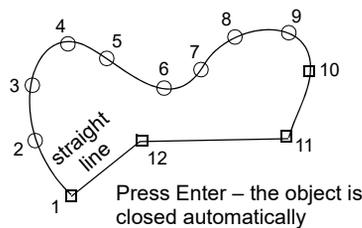
## Uses



Spiral Fill

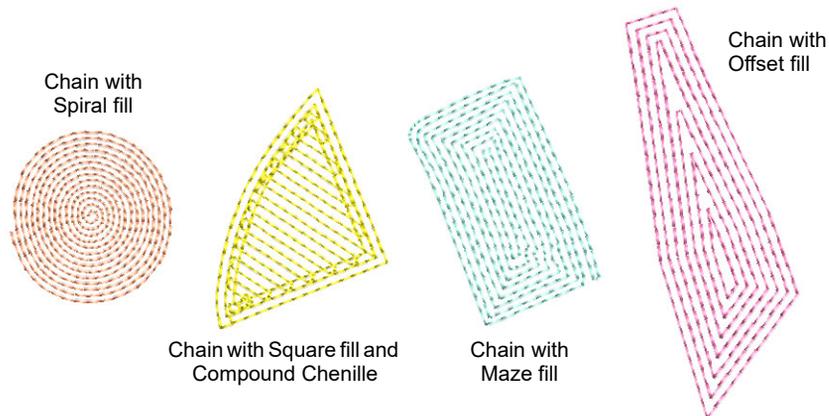
Create spiral stitching from the center of any closed object.

- 4 Right-click for settings and adjust spacing and length as necessary. Stitch length determines the size of chain. The greater the value, the larger the pattern. Spacing needs to accommodate yarn thickness.
- 5 Digitize the boundary like any embroidery object:
  - ◀ Left-click for corner points
  - ◀ Right-click for curve points.



**Tip:** Use the prompts in the **Prompt Bar** to help you digitize. If you make a mistake, press **Backspace** to delete the last reference point. Press **Esc** to undo all new reference points.

- 6 Press **Enter** to complete. The chain-fill object is generated according to current settings.



- 7 With the object selected, open **Object Properties** to adjust fill settings, including spacing.

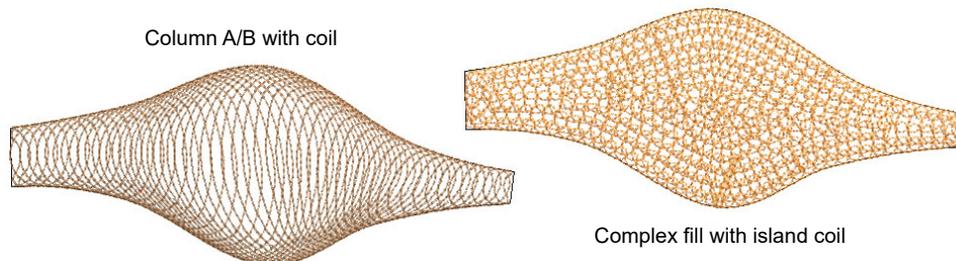
## Related topics

- ◀ [Start a new chenille design](#)

- ◀ Chenille design parameters
- ◀ Digitizing with graphical tools
- ◀ Creating free-form shapes
- ◀ Maze fills
- ◀ Offset fills
- ◀ Spiral fills
- ◀ Visualizing chenille stitching

## Creating narrow chenille shapes

**Complex Fill**, and by extension **Compound Chenille**, cannot be used with **Coil** and will default instead to **Island Coil**. Variable-width **Coil** stitching can only be created with **Column A** or **Column B** input methods. **Column C** can be used to create columns of constant width. **Square** fill can also be used for narrow shapes. **Moss** stitching is usually applied to both fill types.



## Create narrow shapes of varying width



Use Fill Stitch Types > Coil to stitch narrow shapes or columns where each stitch traverses the column width. Right-click to adjust settings.



Use Fill Stitch Types > Square to create open straight parallel fills. Right-click for settings.



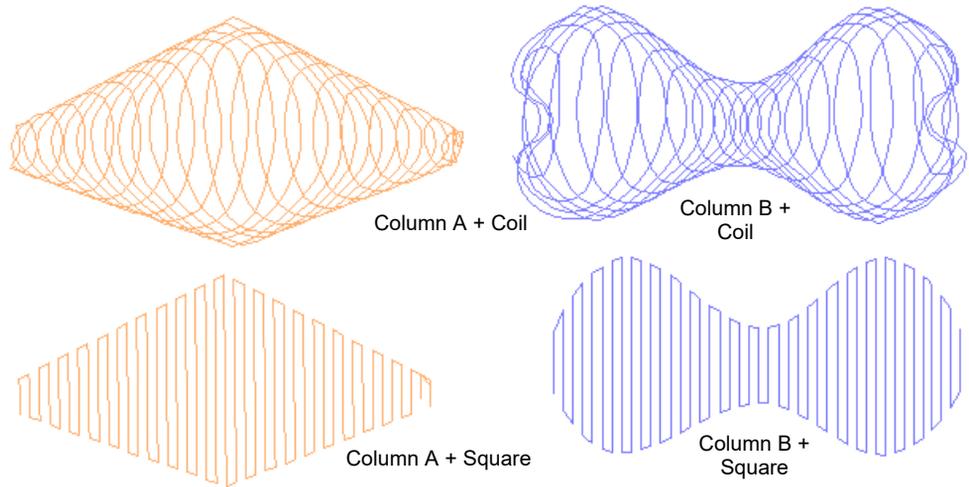
Use Traditional Digitizing > Column A to create columns of varying width and stitch angle. Right-click for settings.



Use Traditional Digitizing > Column B to create asymmetrical columns of turning stitches, where opposite sides are different shapes. Right-click for settings.

To fill narrow shapes of varying width, use **Coil** or **Square** fill with **Moss** stitching. **Coil** stitches are generated in spirals. Each stitch traverses the width of the column. With **Square** fill you can fill areas diagonally, or on

the horizontal and vertical. Stitch length is consistent even over different widths. For more delicate work, use **Square** fill with **Chain** stitching.

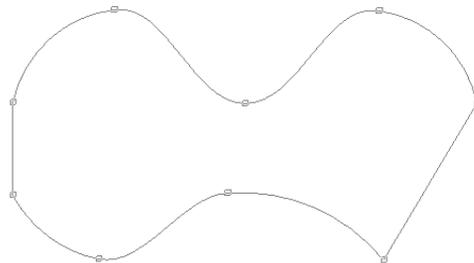


### To digitize shapes of varying width

- 1 Select your preferred stitch pattern with **Fill Stitch > Coil** or **Square**.
- 2 Select the preferred chenille stitch type:

Chenille stitch	Uses
 Moss	Create dense cover using looped stitch typical of chenille raised stitching. Can be used with Coil or Square fill patterns.
 Chain	Create decorative stitching resembling links of a chain. Can be used with Square fill pattern.

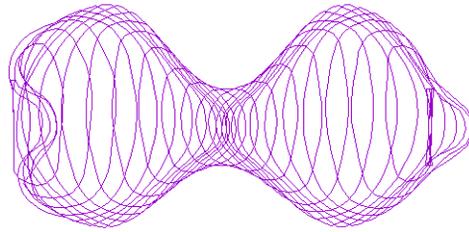
- 3 Create a chenille object using **Column A** or **Column B** as your input method.



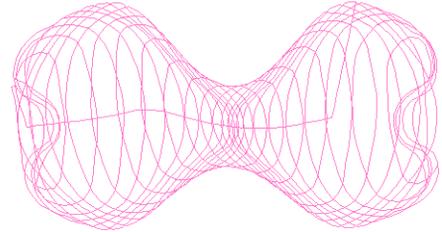
**Tip:** Use the prompts in the **Prompt Bar** to help you digitize. If you make a mistake, press **Backspace** to delete the last reference point. Press **Esc** to undo all new reference points.

- 4 Press **Spacebar** or **Enter** to generate the shape.

- ◀ Use **Spacebar** to generate open-ended coil stitching. This is useful for joining objects.
- ◀ Use **Enter** to generate closed-ended coil stitching.



Press Spacebar for open coil



Press Enter for closed coil



**Note:** Because moss stitching tends to unravel, you need to create a border around the object. For this, you typically use the **Run** method with **Chain** stitching. If your machine supports it, you may also combine chenille with regular tie-off stitching.

### Related topics

- ◀ [Digitize columns of varying width](#)
- ◀ [Creating chenille borders](#)
- ◀ [Chenille design parameters](#)
- ◀ [Chenille patterns](#)
- ◀ [Visualizing chenille stitching](#)

## Create narrow shapes of constant width



Use Outline Stitch Types > Coil to Use to create borders or columns of even width for an open 'coil' effect. Right-click to adjust settings.

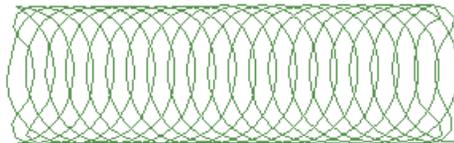


Use Outline Stitch Types > Square to create open borders or columns of even width for an open 'toothed' effect. Right-click for settings.



Use Traditional Digitizing > Column C to digitize columns or borders of fixed width. Right-click for settings.

To fill narrow shapes of constant width, use **Coil** or **Square** outlines with **Moss** stitching.



Column C + Coil



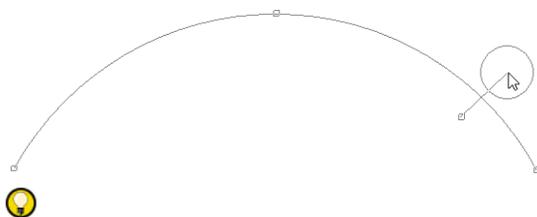
Column C + Square

## To digitize coil shapes of fixed width

- ◀ Select your preferred stitch pattern with **Outline Stitch > Coil** or **Square**.
- ◀ Select the preferred chenille stitch type:

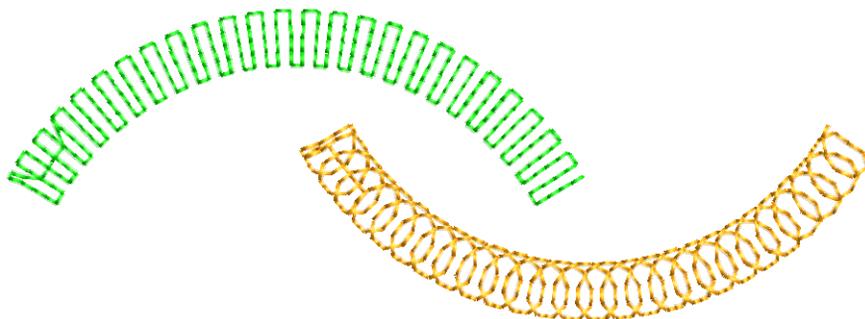
Chenille stitch	Uses
 Moss	Create dense cover using looped stitch typical of chenille raised stitching. Can be used with Coil or Square fill patterns.
 Chain	Create decorative stitching resembling links of a chain. Can be used with Square fill pattern.

- ◀ Create a chenille object using **Column C** as your input method.

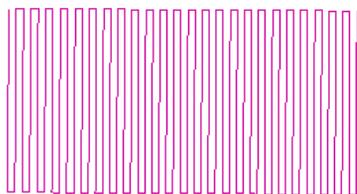


**Tip:** There is a limitation with **Coil** in handling sharp corners. **Square** patterns are generally better suited. The **Smart Corners** effect can be used with Column C objects.

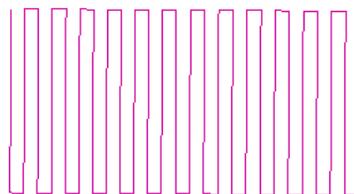
- ◀ Press **Enter** to generate the shape.



- ◀ Juggle spacing settings in accordance with yarn thickness.

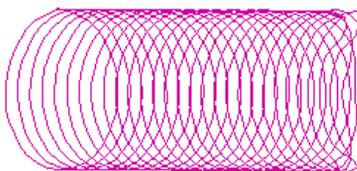


Stitch spacing: 2.5mm

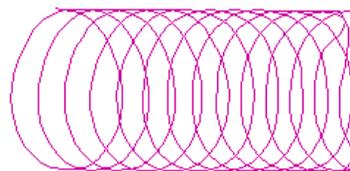


Stitch spacing: 5.0mm

- ◀ Adjust coil spacing for looser or tighter looking chenille. Combine with width to achieve the desired chenille look.

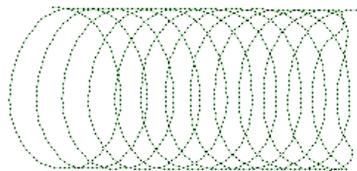


Coil spacing: 5mm

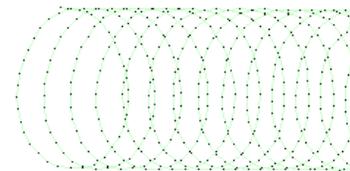


Coil spacing: 10mm

- ◀ Stitch length determines the gap between needle points. For chain stitching, 2mm is standard. For moss stitching, it may be adjusted for yarn thickness.



Stitch length: 2mm



Stitch length: 5mm



**Note:** If you are using moss stitching, you need to create a border around the object. For this, you typically use the **Run** method with **Chain** stitching. If your machine supports it, you may also combine chenille with regular tie-off stitching.

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### Related topics

- ◀ [Create columns & borders](#)
- ◀ [Controlling corner stitching](#)
- ◀ [Chenille design parameters](#)
- ◀ [Chenille patterns](#)
- ◀ [Visualizing chenille stitching](#)

## Creating chenille borders



Use **Chenille > Chain** for decorative stitching resembling links of a chain. Can be used as a delicate fill or as a border for moss fills. Right-click to adjust settings.



Use **Traditional Digitizing > Digitize Run** to create row of single stitches along a digitized line.



Use **Graphics Digitizing > Digitize Open Shape** to digitize open shapes. Press <Ctrl> to constrain.



Use **Toolbox > Simple Offsets** to create simple outlines for any filled embroidery or closed vector object.

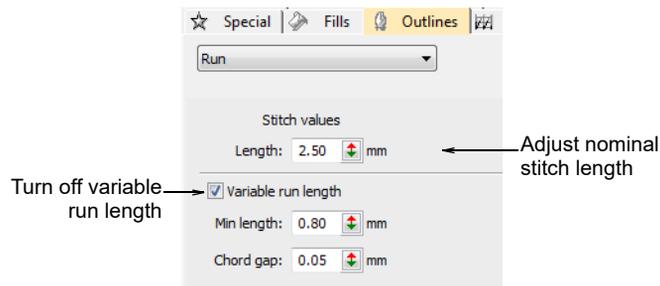
Chenille objects, particularly with moss stitching, need to have a border to contain stitches within the shape and provide edge definition. One or two offset run-arounds provide a clear edge and help to secure chenille fills. The **Compound Chenille** tool allows up to three (1-3) offset borders to be generated before and after the fill. Typically, a compound object will include moss fill with a chain run border before and after to tie it all together. You can, however, digitize single-line borders manually. For this, you often use the **Run** method with **Chain** stitching.



**Tip:** If your machine supports it, you may also combine chenille with regular tie-off stitching.

### To digitize a chenille border

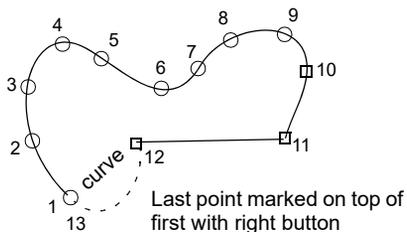
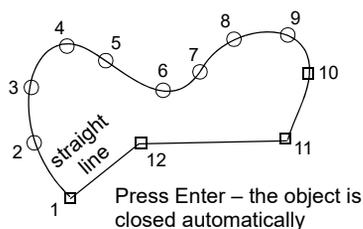
- 1 Select **Digitize Run** input method. Chenille **Run** stitches are similar to lockstitch except that stitch length should be constant.
- 2 Open **Object Properties** and turn off **Variable run length**.



- 3 Set a suitable stitch length. This value determines the size of chain. The larger the value, the larger the pattern. It is a matter of experience and preference based on yarn thickness.
- 4 Choose **Chain** stitch type for chenille runs and borders.

5 Digitize the boundary like any embroidery object:

- ◀ Left-click for corner points
- ◀ Right-click for curve points.



**Tip:** Use the prompts in the **Prompt Bar** to help you digitize. If you make a mistake, press **Backspace** to delete the last reference point. Press **Esc** to undo all new reference points.

6 Press **Enter** to complete.

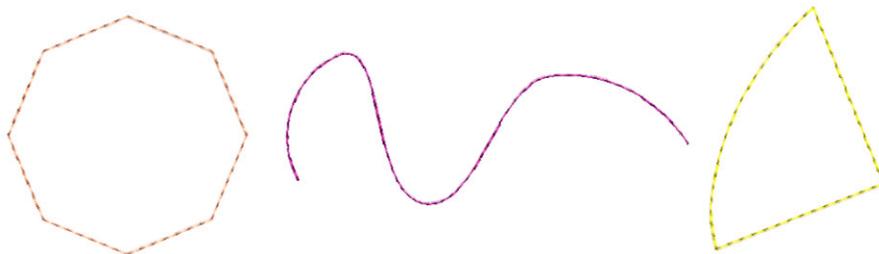


**Tip:** Use **Backtrack** and **Repeat** to reinforce outlines while specifying the direction of stitching.

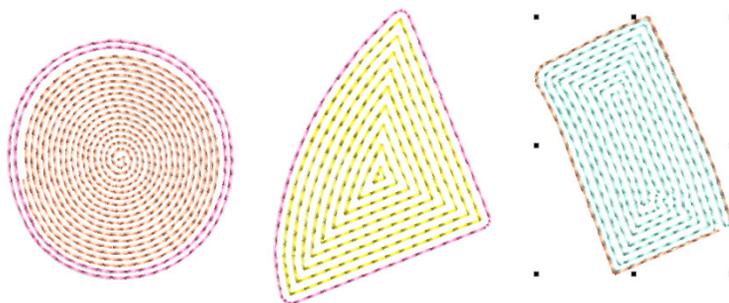
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**Tips for use**

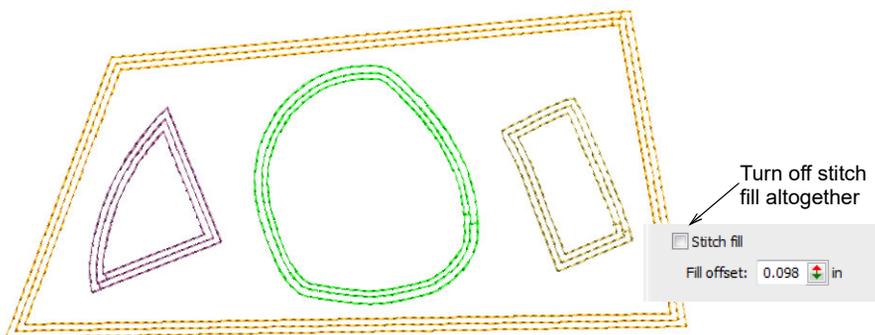
- ◀ You may also create closed chenille borders with most of the graphical input methods in combination with **Run** outlines, including **Basic Shapes**.



- ◀ You can also generate chenille borders by duplicating or cloning objects and applying **Run** with, say, **Chain** stitch. Or use the **Simple Offsets** tool to quickly generate one or multiple borders.



- ◀ Remember too that you can create standalone chenille boundaries by turning off stitch fills in **Compound Chenille** objects.



### Related topics

- ◀ [Digitizing outlines & details](#)
- ◀ [Duplicate & clone objects](#)
- ◀ [Generating outlines & offsets](#)
- ◀ [Reinforce outlines](#)
- ◀ [Chenille design parameters](#)
- ◀ [Visualizing chenille stitching](#)

## Compound chenille settings



Use Traditional Digitizing > Complex Fill to digitize filled shapes with a single stitch angle. Right-click for settings.

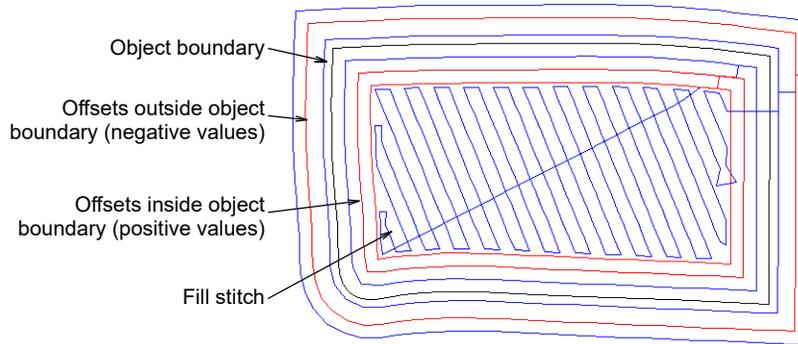


Use Chenille > Moss to create a looped pile look.



Use Chenille > Compound Chenille to automatically digitize chenille shapes with offset borders.

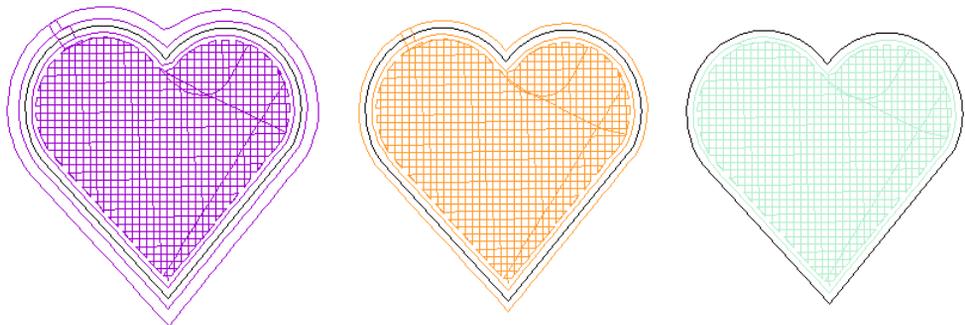
Most chenille objects are digitized with **Complex Fill** in combination with **Compound Chenille** to create objects – even narrow ones – with built-in chain or moss borders. Some graphical tools can be used in combination with **Compound Chenille**, including **Closed Shape**, **Rectangle**, **Ellipse**, and **Basic Shapes**. Compound chenille objects must include a fill of **Coil** or **Square** stitching, usually with **Moss** stitch applying.



The **Compound Chenille** tool allows for up to three (1-3) offset borders, before and after. Borders can employ either moss or chain stitching, at specific offsets and needle heights.

### Border settings

Chenille has no bobbin thread. Without tie-ins and tie-offs, **Moss** stitching can loosen during washing. It is common for a chenille object to employ moss fill with a chain border, before and after. Normally you first run a chain border as a tie-in. After the fill, a chain border is again applied as a tie-off.

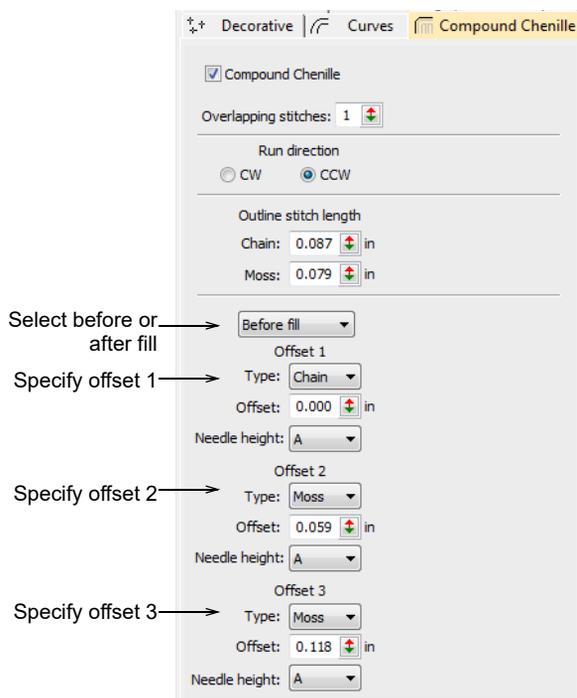


As mentioned, **Compound Chenille** allows for up to three (1-3) offset borders, before and after. The number you add depends on size of object

– the bigger the object, the more borders can be added. You have independent control over offset distance, stitch type – chain or moss – as well as needle height. As well as holding chenille objects in place, borders provide edge definition and embellishment. Variable heights can also be used to create gradations from center fill to outside edge.

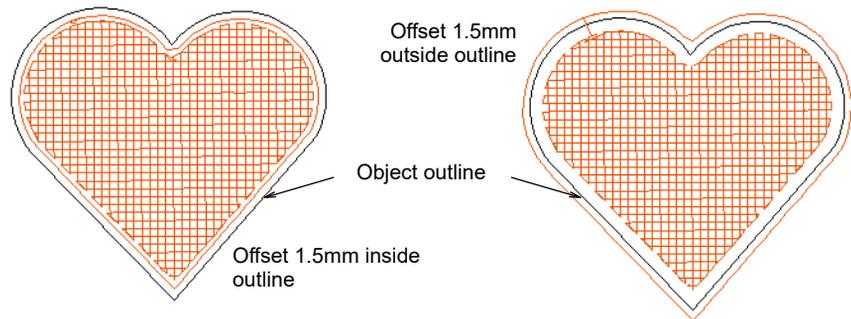
## To set border properties

- ◀ Select a **Compound Chenille** object and right-click the icon. The **Object Properties > Compound Chenille** docker opens.



- ◀ Set the 'before fill' offsets as required:
  - ◀ Set a stitch type for each: 'Chain', 'Moss', or 'None' (no offset). The first, and possibly only border, is usually stitched with **Chain** to act as a tie-in.
  - ◀ Add borders as preferred: depending on object size, you may add more borders for edge definition and embellishment – the bigger the object, the more borders can be added.
  - ◀ Set offset distance: use a positive value to position the border **within** the boundary, a negative value to offset it **outside** the boundary.

- ◀ From the droplist, set a needle height for each offset. This determines the height of loop formed when sewing moss stitch. It also affects the width of chain stitches.



- ◀ Repeat the operation for 'after fill' borders as required. Again:
  - ◀ Set border stitch type: the first, and possibly only border, is usually stitched with **Chain**. This helps 'tie-off' the chenille object.



**Tip:** In practice, multiple borders tend to be stitched **before** rather than **after** the fill. From a stitch quality point of view, borders 'after fill' should be reserved for tie-off stitching. In the final stitch-out, you will see the number of borders but you won't be able to tell which were stitched 'before' or 'after' the fill.

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### Related topics

- ◀ [Create compound chenille objects](#)
- ◀ [Chenille design parameters](#)
- ◀ [Controlling needle heights](#)

### Other settings

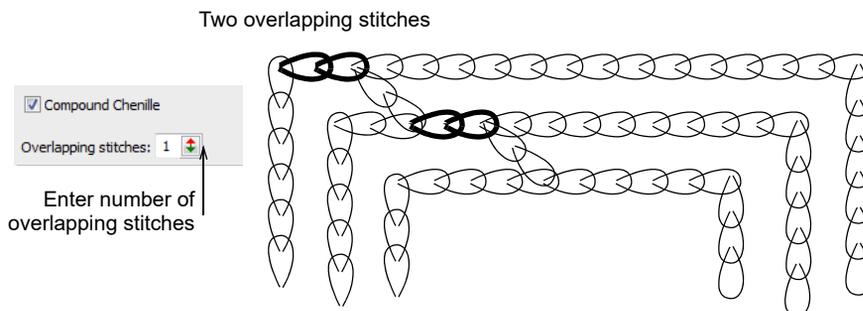
The **Compound Chenille** docker allows you to:

- ◀ Set the number of overlapping stitches between offset runs.
- ◀ Change run stitch direction, clockwise or anti-clockwise.
- ◀ Set offset stitch length – both chain and moss.
- ◀ Set offset needle height for machines which support it.
- ◀ Exclude stitch fill altogether.

### Overlapping stitches

The **Overlapping Stitches** setting allows you to set the number of overlapping stitches between offset runs. This shifts connectors between

offset runs by a few stitches to prevent stitch buildup at the joins. Also, connectors are less visible if they are not in one line.



## Run stitch direction

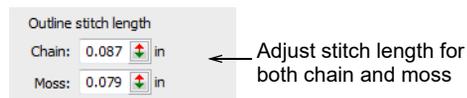
You can set the run stitching direction for offset borders.



The correct direction is important for moss borders. When stitching out, the yarn should not loosen due to any counter-twisting effect. Instead, it should be more tightly twisted. When purchasing yarns, some embroiders check the twisting direction to make sure it is right for the machine.

## Offset stitch length

You can adjust stitch length for both chain and moss offsets.

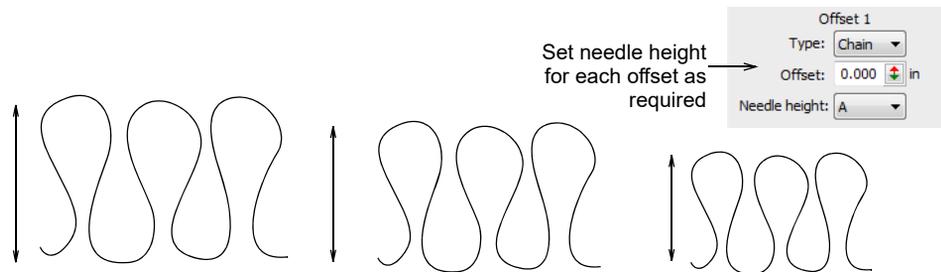


Stitch length should be constant for the same thread type throughout a design. If stitch length varies, the height of moss loops and width of chain loops will also vary, causing uneven embroidery. The chenille machine pulls up the same length of yarn for each loop according to the current needle height setting.

## Offset needle height

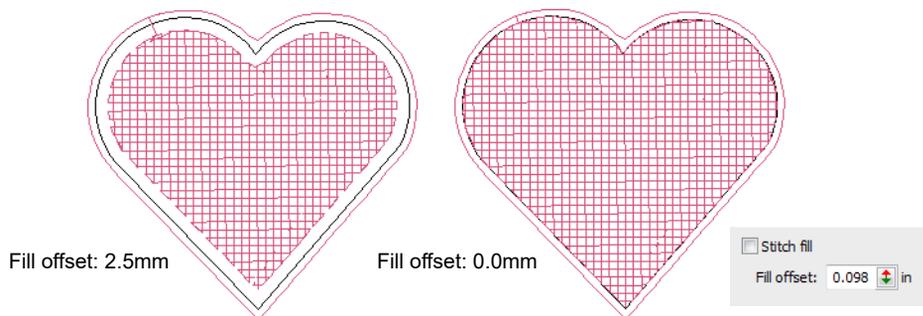
**Needle Height** controls are available for each offset. If you intend to use loops of varying height, always adjust needle height rather than stitch length. Even though stitch length also affects the loop height, it is easier and more accurate to adjust needle height. Needle height has less effect

on chain stitches although it does affect width. See also [Controlling needle heights](#).

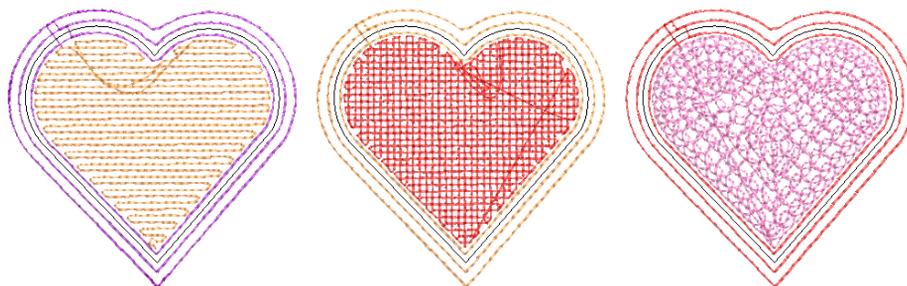


### Fill offset

Optionally, enter a **Fill Offset** value. **Fill Offset** sets the gap between the digitized boundary and fill area. It is always measured from the object boundary, not from the last offset. Use a positive value to position the border **within** the boundary, a negative value to offset it **outside** the boundary.



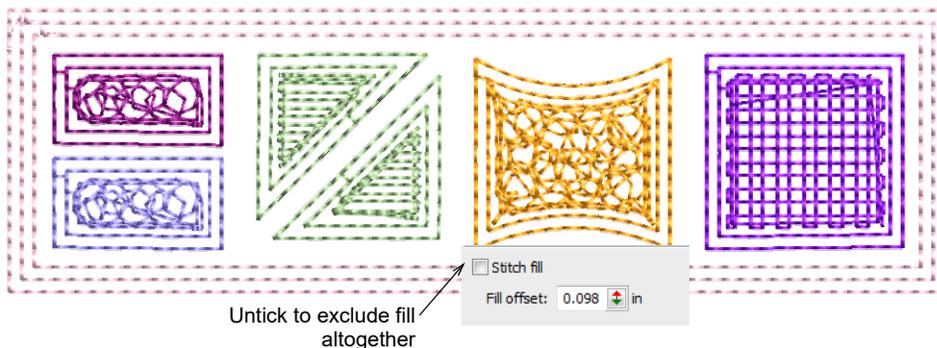
**Tip:** Color changes can be manually inserted between fill and offsets.



### Borders without fills

The fill in a compound chenille object is included by default. However, you can choose to include or exclude it and just use offset borders. You might,

for example, want to exclude the fill when creating a common chenille border around multiple chenille objects.



### Related topics

- ◀ [Create compound chenille objects](#)
- ◀ [Chenille design parameters](#)
- ◀ [Controlling needle heights](#)

## Controlling needle heights



Click Chenille > Needle Height to set needle height values.

Needle height controls the height of the loop formed by the chenille machine when it is sewing a moss stitch. The needle height setting has less effect on chain stitches though it does affect width. Normally, it's best to use default settings. Do a test run on the machine to check the outcome. Then, if necessary, adjust needle heights.

If you intend to use loops of varying height, you can insert **Needle Height** functions and set their positions during digitizing. Even though stitch length affects loop height, it is easier and more accurate to adjust needle height. For safety, apply needle height values to each **Moss** block, even of the same height.

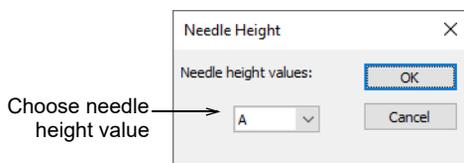


**Note:** When you apply an explicit needle height to **Compound Chenille** objects, it only affects the fill, usually moss. It does not affect the values associated with included borders.

### To adjust needle heights

- ◀ Select the **Moss** object, including **Compound Chenille**, you want to adjust.

- ◀ Click the **Needle Height** icon. The dialog opens.



- ◀ Select a needle height value from the list and click **OK**. When stitching out, the chenille machine will automatically change needle height according to your selection.
- ◀ In the **Stitch List**, check that the setting has been applied.



**Tip:** With some machines, needle height can optionally be adjusted on the machine. In practice, it is more common to adjust there rather than in the design. If so, clear the checkbox in the **Machine Format Values** dialog if you want to select needle heights manually on the machine.

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### Related topics

- ◀ [Chenille design parameters](#)
- ◀ [Machine format settings](#)
- ◀ [Needle height default](#)

## Chapter 4

# Chenille Lettering

EmbroideryStudio allows you to create special chenille lettering. The chenille fonts provided with the software can be scaled and recolored like other fonts. Or you can create your own.



This chapter deals with chenille lettering. It covers scaling chenille lettering and using other fonts with chenille.

### Adding lettering to chenille designs



Click Toolbox > Lettering to enter text on screen. Right-click to enter text in the docker and adjust settings for embroidery lettering.



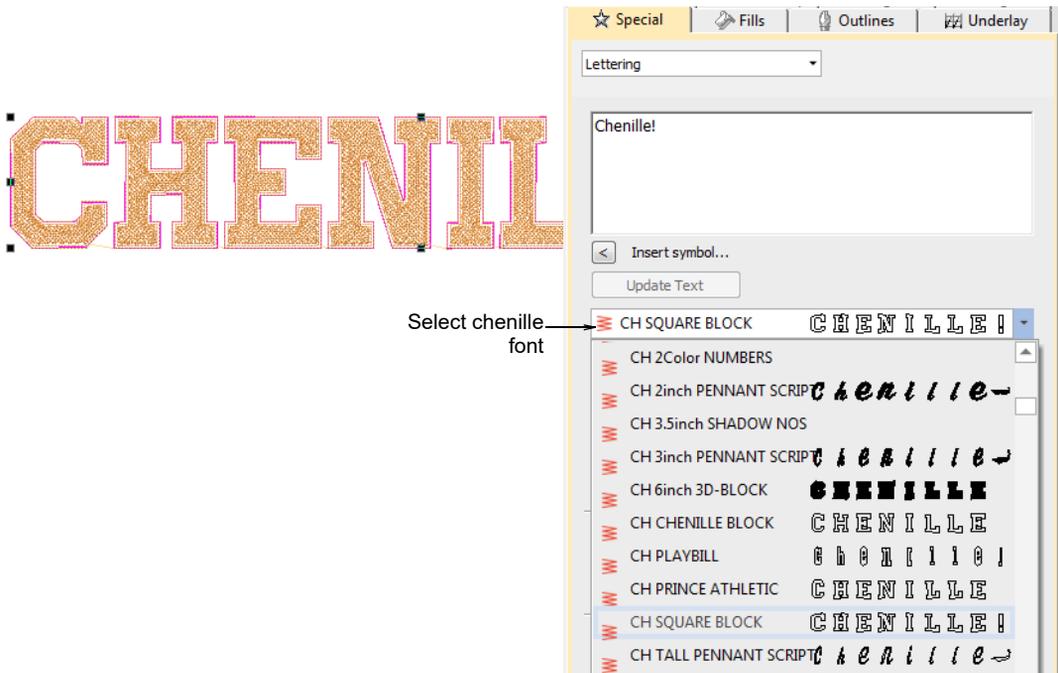
Use Chenille > Moss to create a looped pile look. Right-click to adjust settings.

The **Chenille** add-on Element includes dedicated chenille fonts. These fonts can be scaled and colored like regular fonts. By their nature,

however, chenille fonts are digitized for relatively large applications – anywhere between 2" (50mm) and 6" (150mm).

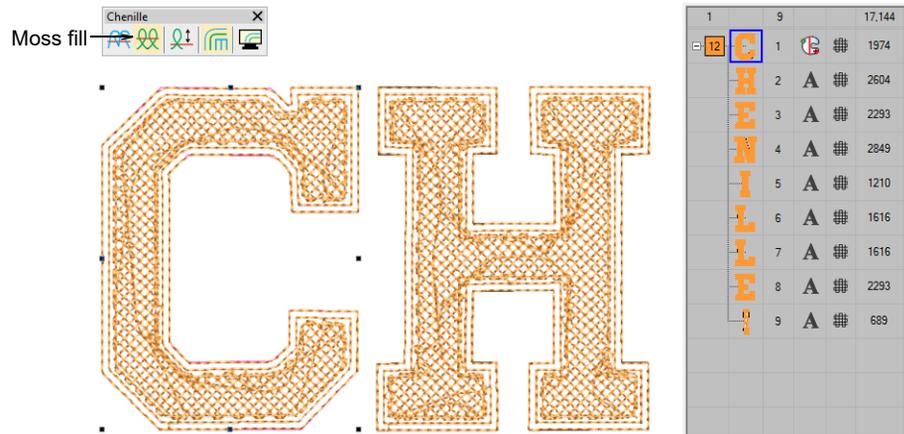


Add chenille lettering as you would regular lockstitch lettering. Select a chenille font via the **Lettering** docker. Chenille fonts are tagged with the prefix 'CH'.

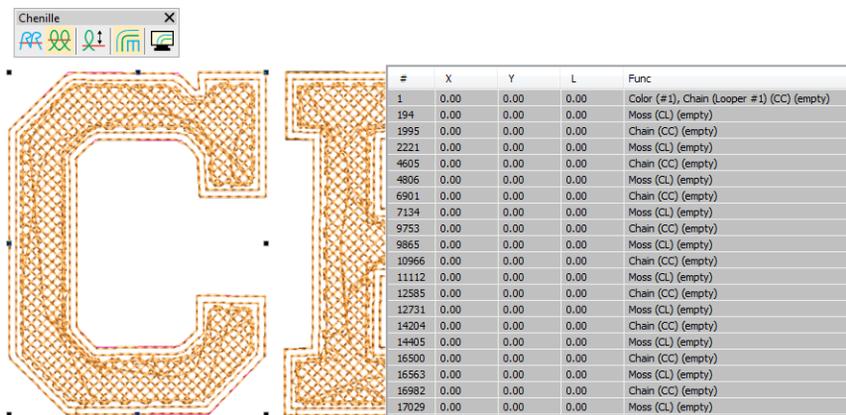


Chenille fonts can be used like regular fonts except that they must employ the 'As Digitized' joining method. Some are digitized with **Coil** fill, others with **Double Square**. If you break chenille lettering into its

component letters, you will find each one is a compound chenille object with a single chain and two moss offsets before the moss fill.



If you check the **Stitch List**, you will see again that each letter is stitched with its own chain and moss stitching.



## Related topics

- ◀ [Creating Embroidery Lettering](#)
- ◀ [Chenille fonts](#)

## Scaling chenille lettering

Some chenille fonts are made to suit a particular letter size and one type of thread (thickness) only. The size of these fonts cannot be successfully varied by more than 5-10% from that recommended. It is not recommended that you change the stitching values (stitch length, spacing, etc) of these fonts at all. Other chenille fonts have been designed for use within certain size ranges and of these some **Double**

**Square** fonts allow object properties such as stitch length, spacing and offsets to be varied.



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### Related topics

◀ [Modifying lettering](#)

## Using other fonts with chenille

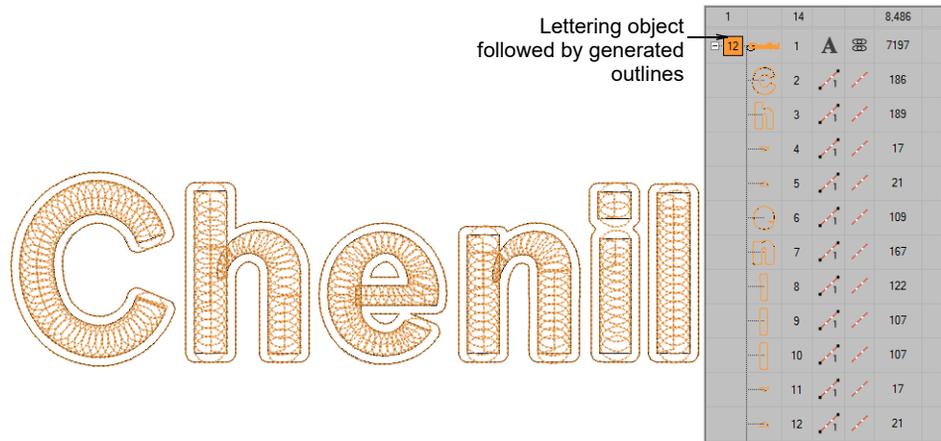
You can, with some effort, use standard embroidery fonts and even TrueType font for chenille lettering. Font letters are usually digitized with **Column A** so you cannot automatically add borders with **Compound Chenille**. You need to add a border either manually or by generating offsets. For instance, let's say you want to create chenille lettering with a regular block font and coil fill. Each letter would quickly unravel without traditional chenille chain and moss outlines.



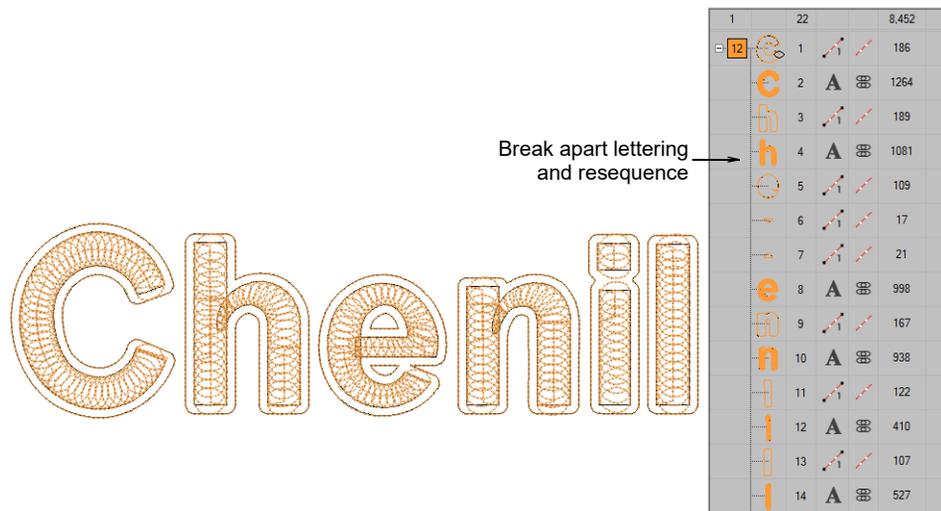
You could attempt to use the **Simple Offsets** to generate outlines and turn them into chain runs. However, as shown here, you are likely to end up with a single outline around the entire lettering object.



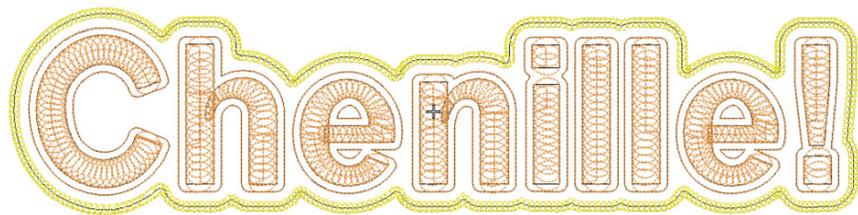
A solution can be found by increasing letter spacing before generating simple offsets. However, there is a problem in that the offsets are generated as separate objects following the lettering.



The lettering object must be broken apart and everything resequenced.

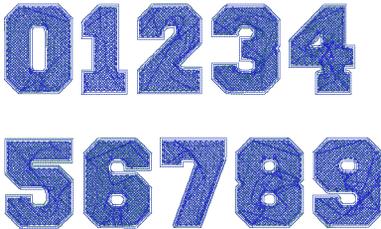
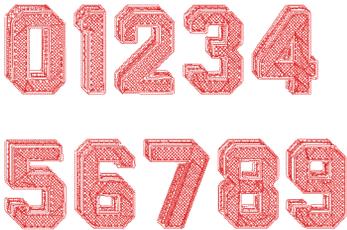


For additional embellishment, you could generate other offsets around the entire object – e.g. **Column C** with **Coil** and **Moss**.



## Chenille fonts

A selection of standard fonts is included, both **Coil** and **Double Square** filled fonts. Chenille fonts can be used like regular fonts except that they must employ the 'As Digitized' joining method. By their nature, chenille fonts are digitized for relatively large applications – anywhere between 2" (50mm) and 6" (150mm). They are not suitable for, say, a chest pocket. The table lists the **Chenille** fonts with their recommended size ranges:

Font	Sample	Recommended Sizes				Join Method
		Min		Max		
		in.	mm	in.	mm	
CH 2Color Numbers		2	50	5	125	AD
CH 2inch Pennant Script		2	50	2	50	AD
CH 3inch Pennant Script		3	75	3	75	AD
CH 3.5inch Shadow Nos		3.5	87	3.5	87	AD
CH 6inch 3D-Block		6	150	6	150	AD

Font	Sample	Recommended Sizes				Join Method
		Min		Max		
		in.	mm	in.	mm	
CH Chenille Block	 	2	50	6	150	AD
CH Playbill	 	4	100	6	150	AD
CH Prince Athletic	 	2	50	6	150	AD
CH Square Block	 	2	50	6	150	AD
CH Tall Pennant Script		3	75	4	100	AD

## Chapter 5

# Chenille Output

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. When you select a machine format, EmbroideryStudio translates the functions that were applied during digitizing into machine functions that can be understood by the machine. Chenille stitch types – **Moss** and **Chain** – can only be used with a chenille machine format.



Chenille files open in EmbroideryStudio like any other EMB design. Similarly, you save chenille designs to native EMB format or export them as machine files. They can be output to embroidery floppy disk, punched to a paper tape or sent directly to embroidery machine connected to the computer. The same file can be used by combination machines for both Chenille and Lockstitch embroidery.



**Tip:** From the same design file, you can also output a [production worksheet](#) for the embroidery machine operator. See [Design Reports](#) for details.

This chapter deals with chenille machine formats and settings. It also covers chenille machine files and chenille output.

## Chenille machine formats

If you select the CHENILLE template when opening a design, the machine format will default to a chenille machine. You can change machine formats at any time. Finished designs can be sent direct to a Melco chenille machine, or stitched on Tajima and Barudan chenille machines.

If your machine is different, you can customize machine format settings. For example, different models of the same machine may require different values for the same functions. You have three options:

- ◀ Modify the format for a specific design, creating a custom format to use only with that design.
- ◀ Modify one of the standard formats provided. Obviously, you would only do this if you no longer needed the original values.
- ◀ Create a new format, based on the original, and make it available to all designs.

## Switch machine formats

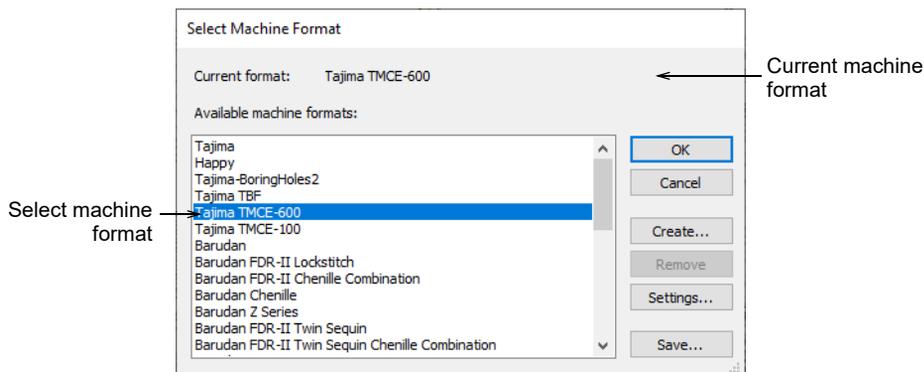
Once a design is complete, you can output to any supported embroidery machine without changing the original machine format. Explicit support is provided for these machine types:

- ◀ Tajima TBF
- ◀ Tajima TMCE-100
- ◀ Tajima TMCE-600
- ◀ Barudan FDR-II Chenille Combination
- ◀ Barudan Chenille
- ◀ Barudan FDR-II Twin Sequin Chenille Combination
- ◀ Barudan FDR-3
- ◀ Barudan FDR-3 Chenille Combination
- ◀ Melco Chenille

If a selected machine format does not support a particular function in the design – either automatically or manually inserted – it is simply ignored.

## To switch machine formats

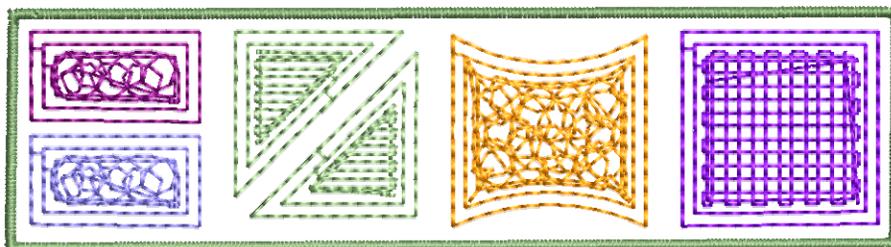
- ◀ Select **Design > Select Machine Format**.



- ◀ Select the required chenille machine format from the list.
- ◀ To check the settings for the selected format, click **Settings**.
- ◀ Click **OK**.

## Combined chenille & lockstitch

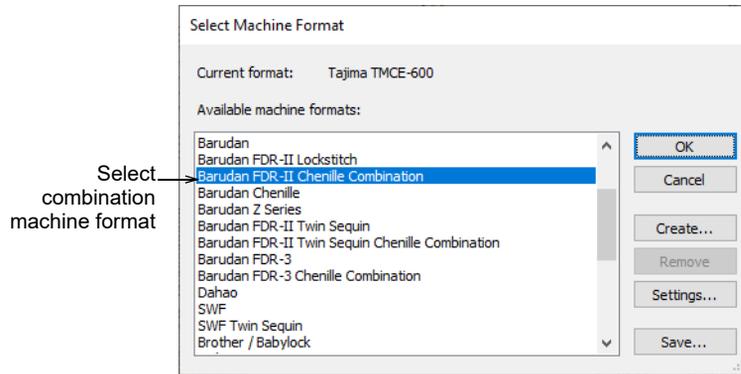
Chenille designs can be converted to any machine format, including lockstitch machines. This is useful when you wish to combine regular embroidery and chenille embroidery in a single design. Combined chenille and lockstitch design can be output to machine from a single file.



## To combine chenille and lockstitch

- ◀ Plan your chenille and lockstitch design.

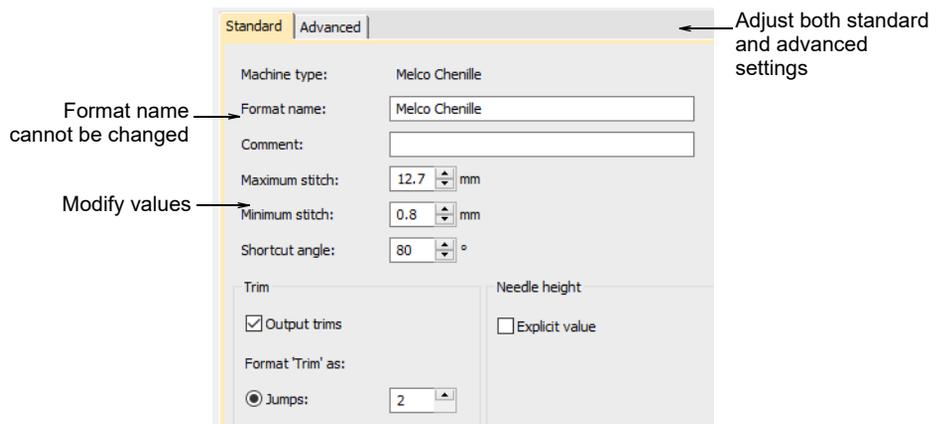
- ◀ Select a combination machine format via the **Design** menu.



- ◀ Design you design using a combination of chenille and lockstitch stitch types.
- ◀ When using a machine that supports both lockstitch and chenille, you can easily interchange lockstitch and chenille objects by selecting or deselecting chenille stitch types – **Chain** or **Moss**.

## Modify format for specific designs

Use this method if you intend to modify machine format values for a specific design without changing the original format. Select **Design > Machine Format Settings**.



Adjust format settings as required. A new machine format is created for the particular design. It is automatically named after the original machine format together with the design name – e.g. **Melco - Design1**. This appears in the **Select Machine Format** dialog and is saved with the design.

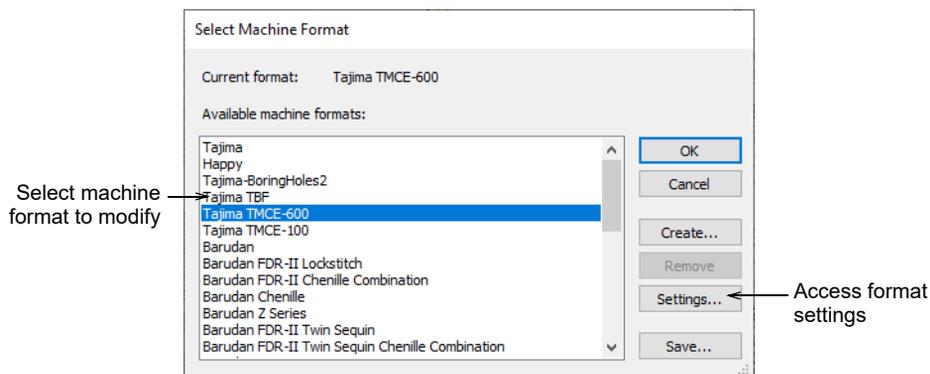
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## Related topics

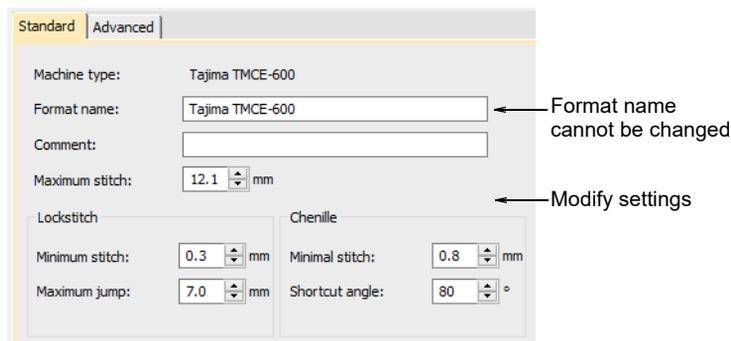
◀ [Machine format settings](#)

### Modify standard formats

If the standard machine values are incorrect for your particular machine, you can change them. From the **Select Machine Format** dialog, select a machine format to modify.



Click **Settings** to access the format settings. Adjust format settings as required. The new settings are saved with the selected format and are available to all new designs.



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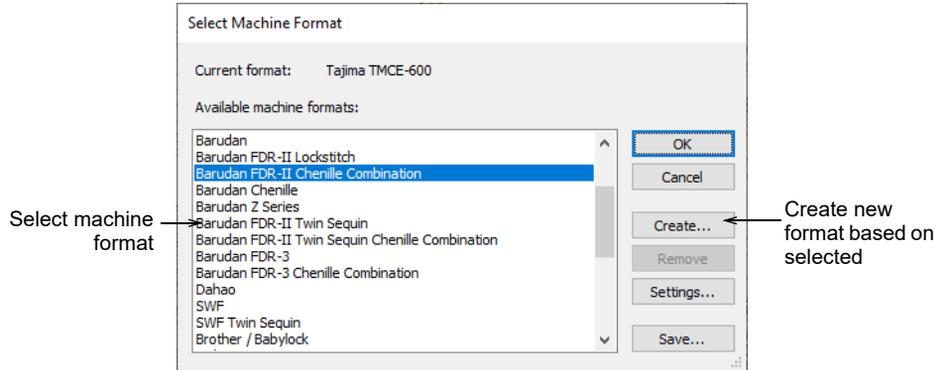
## Related topics

◀ [Machine format settings](#)

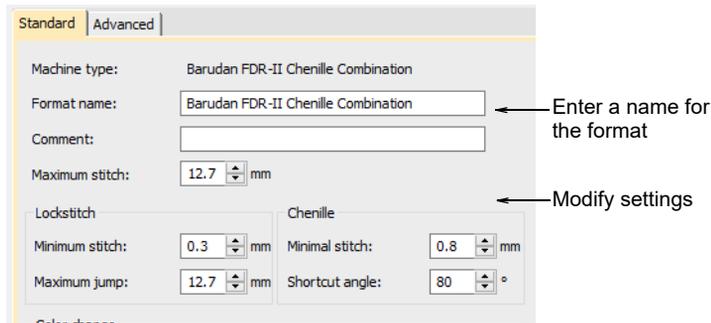
### Create custom formats

If you don't want to overwrite standard machine formats, you can create a new format, based on an original, and make it available to all designs.

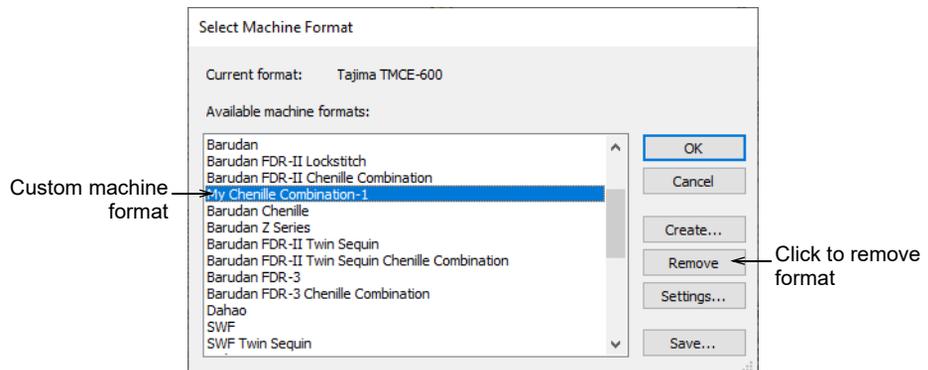
Select **Design > Select Machine Format** and select a machine format on which to base the new format.



Click **Create**. The **Machine Format Settings > Standard** tab opens.



Enter a name for the new format. Overwrite the default – e.g. 'Chenille Combination-1'. In the **Comment** field, enter any information that will help you identify the format – e.g. 'No Trim'. Adjust machine format settings as required. The new format appears in the **Available Machine Formats** list.





**Note:** You can't remove standard formats but you can remove custom machine formats from your system when they are no longer required.

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### Related topics

◀ [Machine format settings](#)

## Check control commands

If you change the machine format of a design that contains manual machine functions, you may need to check whether the functions are compatible with the new format. Generally, functions that cannot be performed by the machine are simply ignored. If an ignored function was inserted on an **Empty Stitch** or **Empty Jump**, the stitch or jump is automatically removed. Sometimes, however, functions may not be correctly translated. For example, trim commands may be misinterpreted, as some machines use trim codes, and others a sequence of jumps.



**Note:** If a function is not available in the new machine format, the word **Ignored** appears in brackets after the function name.

---

### To check control commands

- ◀ Travel to the position of the machine function.
- ◀ Alternatively, use the **Stitch List** to identify and select a given machine function.

The machine function name appears in the **Prompt Bar**. Extra information may appear in brackets after the function name – e.g. needle number.

## Machine format settings

Different machines require different settings. When you select a machine format, only fields relevant to the selected machine format will appear. To modify settings, access the **Machine Format Settings** dialog. Typical modifiable values are maximum and minimal stitch and shortcut angle values.

## Chenille machine format values

Chenille machines have the same machine format values as standard lockstitch, except for the following:

Machine	Additional values
Melco Chenille	Minimal Stitch, Shortcut Angle, Needle Height Explicit value
Tajima TMCE-600	Minimal Stitch, Shortcut Angle
Tajima TMCE-100	Minimal Stitch, Shortcut Angle, No Boring Maximum frame movement is 4.0mm

The **Advanced** tab lets you set additional machine format options. Again, available settings depend on the selected machine format. You can set color change sequence, and insert special codes for the start or end of a design.



**Warning:** Only change settings if you are familiar with the codes used by your embroidery machine.

## Minimal & maximal stitch values

The chenille stitch length settings avoid small stitches during chenille stitch generation. This filter operates only on chenille stitch types and has no effect on lockstitch stitch types. That is, unless the format pertains to a combination machine. In that case, you can set values independently for lockstitch and chenille.



In the **Minimal Stitch** field, enter the smallest stitch to allow when outputting to the selected machine. The **Maximum Stitch** value depends on the tape code used by your machine:

System	Value
Binary	12.7 mm
Ternary	12.1 mm

---

## Related topics

◀ [Machine Formats](#)

### Shortcut angle values

Some chenille machine types require that the angle between one stitch and the next is not very sharp – e.g. Tajima chenille machines require it to be at least 60°. The Chenille **Shortcut Angle** setting avoids sharp changes in stitch direction during chenille stitch generation.



This filter operates only on chenille stitch types and has no effect on lockstitch stitch types. Chenille automatically applies the shortcut angle to all cover stitches inside an object. However connections between travel stitches and offsets and fills are not always checked. Also, the shortcut is not applied to connecting stitches and jumps between objects.

### Design checker

A design checker is provided to identify chenille **Shortcut Angle** violations. The design checker is activated by hot key **Ctrl+K**. The stitch cursor will jump to the first stitch which violates the **Shortcut Angle**. You must correct this problem by stitch editing. Press the hot key combination again for the software to detect any problems further into the design.



**Note:** Non-EMB embroidery format chenille designs can be shortcut-checked when opened into EmbroideryStudio by clearing the **Outlines/Objects** checkbox.

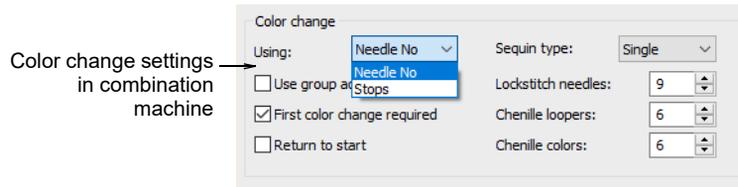
---

## Related topics

◀ [Machine Formats](#)

## Color-change values

Chenille machines interpret 'Color Change' functions in the design either as a Needle Number or Stop functions on the machine.



The following rules apply:

- ◀ Single-needle machines simply stop when a Color Change or Stop function is encountered.
- ◀ Some multi-needle machines default to the next color without stopping.
- ◀ Some multi-needle machines support direct needle addressing.

Function	Purpose
Stop	Stop functions allow the operator to manually change threads. They are generally used with machines that only have one needle. Stop functions are sometimes combined with Jump functions to indicate color changes.
Color Change	For those machines that support them, Color Change functions tell the machine to move to the next needle whenever a CC function is encountered. The machine must have the correct thread colors loaded according to the production worksheet.
Needle Number	For needle addressing machines, each color 'slot' on the color palette corresponds to a needle number. Needle Number functions are sometimes combined with Jump functions to indicate color changes.

### Needle addressing

For needle addressing machines, you need to specify how many needles or loopers are on the machine. Or both, in the case of combination machines. This tells the machine how often it needs to stop for the operator to change threads. For example, for a design with 15 colors to be stitched out on a machine with five needles, it must stop after every three color changes in order for the operator to change threads.

## Other settings

Other settings may include:

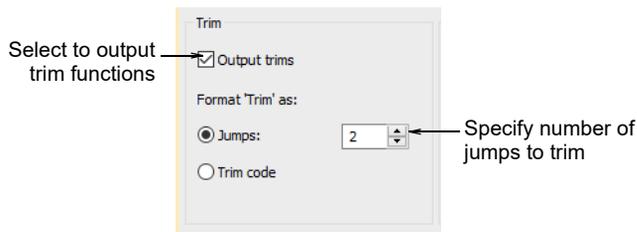
Setting	Purpose
Use group addressing	Some machines can group two heads together so you can stitch a design using needles from both heads. For example, if a machine has two heads and nine needles per head, the machine moves the hoop from the first head under the second head, which allows you to stitch 18 colors without a manual change.
First CC required	Some machines require a First CC code to initialize the machine and bring the head back to the first color change needle position.
Return to start	This returns the needle to the start of design, preparing the machine for the repeat run.

## Related topics

◀ [Machine Formats](#)

## Trim functions

Trim functions in chenille are basically the same as lockstitch. The difference is the absence of tie-ins and tie-offs due to mechanical limitation of the chenille head. With some machine formats you can specify how to format and interpret trim commands. Some machines understand specific trim codes. Other machines interpret multiple jumps as a trim command.



Machines without an automatic trimmer may not know how to interpret trim commands, and may even shift the design when a trim code is encountered. For these machines you need to deselect the **Output trims** checkbox so that trim functions are ignored when the design is stitched.



**Note:** If you deselect the **Output Trims** checkbox, the trim functions are not removed from the design but simply ignored for the selected machine format.

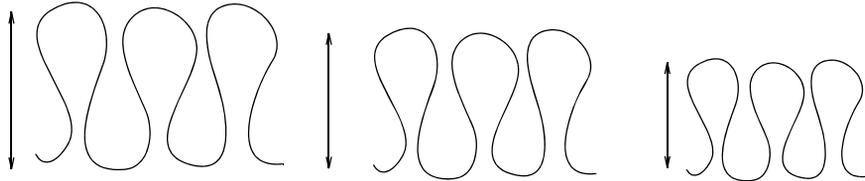
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## Related topics

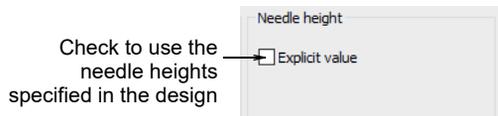
◀ [Machine Formats](#)

### Needle height default

On some chenille machines, needle height can be set to control the loop size formed when a machine sews moss stitch.



With some machines, needle height can also be adjusted on the machine. Thus you can choose whether to use heights specified in the design or not. Clear the checkbox if you want to select needle heights manually on the machine.



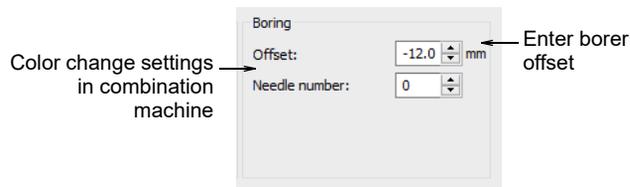
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## Related topics

◀ [Machine Formats](#)

### Borer functions

Some embroidery machines are equipped with a borer. The borer often replaces one of the needles.



Borers are often 'knife' attachments where the cutting position is offset 12mm from the main needle. You need to specify the needle position of the borer and its offset value.

- ◀ If your machine automatically enters an offset when a **Borer In** function is encountered, enter an offset of 0mm.
- ◀ If your machine requires an offset value, enter an offset of 12.0mm.

---

## Related topics

◀ [Machine Formats](#)

### Color-change sequence

Some machines cannot interpret **Color Change** commands unless they form part of a 'color change sequence' made up of **Empty Jumps** and **Empty Stitches** before and after each **Color Change** command. Check the requirements of your machine to determine whether you need to enter color change sequence values.

#	X	Y	L	Func
39	-0.17	0.00	0.17	
40	1.00	0.00	1.00	
41	1.00	0.00	1.00	
42	-1.00	0.00	1.00	
43	-1.00	0.00	1.00	
44	0.17	0.00	0.17	
45	0.00	0.00	0.00	
46	0.00	0.00	0.00	
47	0.00	0.00	0.00	jump
48	0.00	0.00	0.00	Col (2)
49	0.00	0.00	0.00	jump
50	0.00	0.00	0.00	
51	0.00	0.00	0.00	
52	-0.11	-1.11	1.11	
53	-0.42	-0.37	0.55	
54	0.48	-0.73	0.87	
55	0.71	-0.48	0.86	
56	1.08	0.83	1.36	
57	-0.13	0.56	0.57	
58	-0.02	0.18	0.18	
59	-1.94	0.00	1.94	

Color change sequence

0,0: 0

0,0 jump: 0

Color change code(s)

0,0 jump: 0

0,0: 0

The color-change sequence in Stitch List corresponds to sequence defined in the machine format settings.

In the **Advanced** tab, the **Color Change Sequence** panel reads from top to bottom, in the order the codes appear in the sequence. The first two fields show the number of **Empty Stitches** and **Empty Jumps** to insert **before** the **Color Change** command. The other fields show the **Empty Jumps** and **Empty Stitches** to insert **after** the command.

---

## Related topics

◀ [Machine Formats](#)

### Start/end of design sequence

In addition to any **End of Design** function, some machines require extra Empty Stitches and Empty Jumps in order to stitch the start and end of a design. Other machines require a Stop function. Depending on the machine type, you may also require commands to initialize the machine or trigger the frame out exit after stitching. Remember that these fields

show the number of **extra** codes you want to insert in addition to the default values.

Start of design

0,0 jump: 0

0,0: 0

End of design

0,0: 0

0,0 jump: 0

Specify extra codes to insert in addition to default values

When starting with chain stitching, an empty stitch (non-data) code will automatically be inserted at the start of the design. When starting with moss stitching, an empty stitch (non-data) and a stop code will be automatically inserted at the start of the design.



**Warning:** Do not digitize two Empty Stitches at the beginning of the design, as this will affect registration. Avoid using Empty Stitches elsewhere in the design. Other Tajima chenille values are the same as the standard lockstitch Tajima machine values.

---

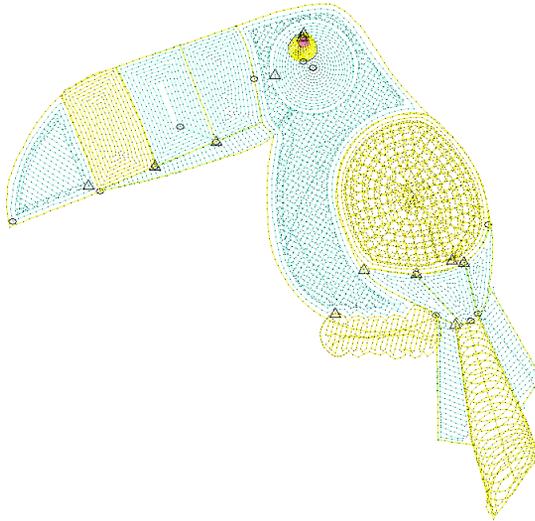
## Related topics

◀ [Machine Formats](#)

## Chenille machine files

Different embroidery machines understand different languages. Each has its own control commands. Before you can stitch out a design, it must be in a format which can be interpreted by the machine. [Machine](#) or 'stitch' 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. Or they are converted when saving to disk or memory stick.



**Tip:** There is no chenille-specific machine file format as such. However, if a design was created as a chenille design, you will need to select the associated machine format when you open the file in order to display it correctly.

## Read chenille designs



Use Standard > Open to open an existing design.



Use Legacy Features > Embroidery Disk to open designs from or save to proprietary embroidery disk formats.

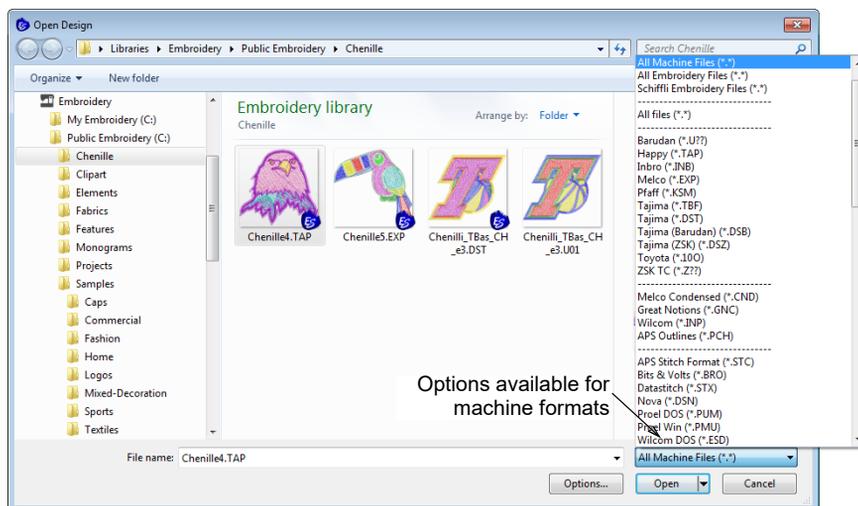
When you read a chenille machine file, it is converted to EMB format. The chenille functions appear in the converted design in the same way as they are stored in the machine file or on paper tape. When reading a chenille design from stitch data – e.g. Melco EXP, Tajima or Barudan disk – **Stitch Processor** converts stitches to objects. However, it does not fully recognize **Coil** and **Square** stitching. These will be converted to a series of **Run** stitch objects. This limits the scalability of these designs to  $\pm 5-10\%$ . However, old designs can be readily stitch-edited and sections re-digitized if required.

---

### To read a chenille design

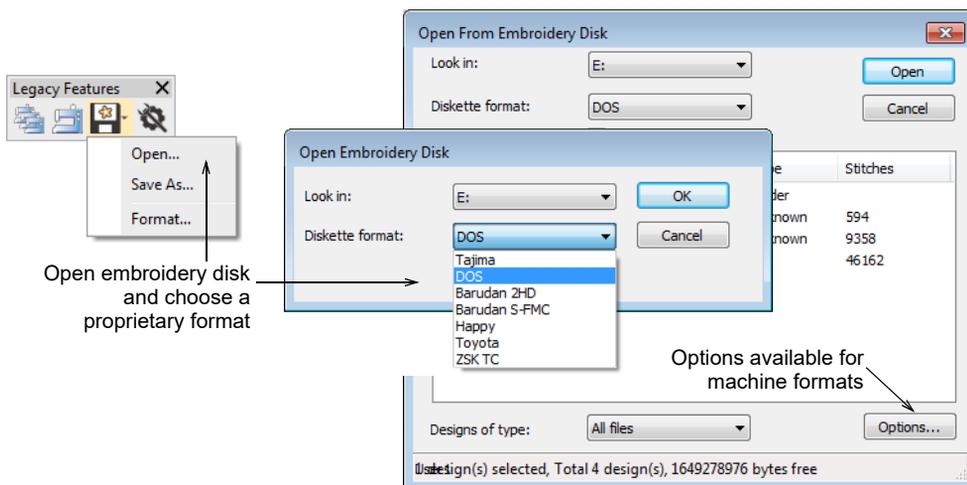
◀ Open a chenille design from DOS or embroidery disk as follows:

- ◀ To open a chenille machine file, choose a specific machine file format from the droplist or choose 'All Machine Files'.



Options available for machine formats

- ◀ If your chenille design is saved to proprietary disk, select **Embroidery Disk** from the **Legacy Features** toolbar and choose your format from the dialog.

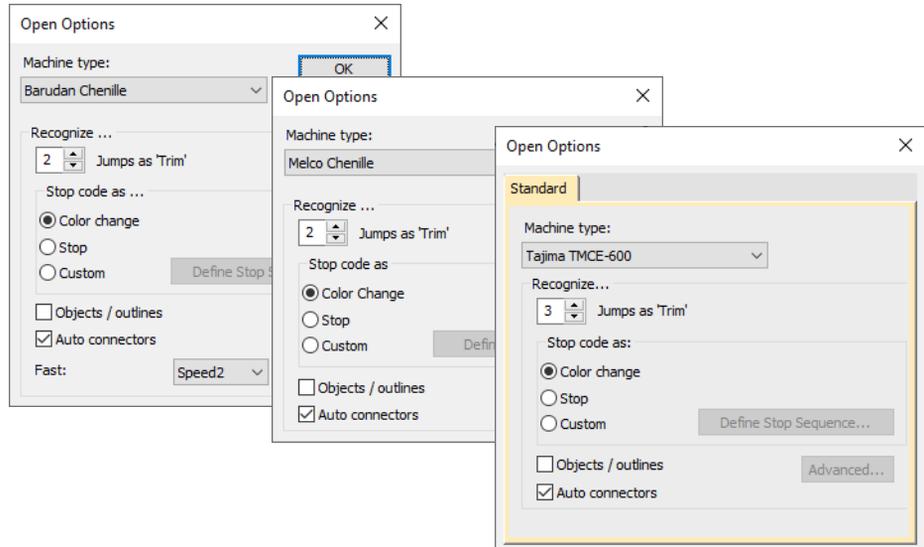


Open embroidery disk and choose a proprietary format

Options available for machine formats

- ◀ If you are opening a machine file, the **Options** button is activated. Chenille designs cannot be automatically distinguished from lockstitch

designs. You need to tell the system which machine format you are using.



**Tip:** In Tajima TMCE-600, all Chenille stops are interpreted as color changes.

- ◀ Select a chenille machine from the **Machine Type** list and click **OK**.

## Related topics

- ◀ [Machine format settings](#)
- ◀ [Read chenille designs](#)
- ◀ [Open machine files](#)

## Chenille machine file encoding

Select the correct machine format before outputting the design. Each machine requires its own machine file format. There is no chenille-specific machine file format as such. Typically:

Machine type	File type	Purpose
Tajima	DST	For pure chenille machines
	TBF	For combination chenille and regular embroidery (including sequin)
Barudan	DSB	For pure chenille machines
	U??	For combination chenille and regular embroidery (including sequin)
	(FDR-3) U??	Barudan FDR-3 machines

Machine type	File type	Purpose
Dahao	DST	For Dahao-controlled chenille machines
Melco	EXP	For pure chenille machines
ZSK	Z??	For ZSK chenille machines

Upon output, EmbroideryStudio translates chenille stitch types – **Moss** and **Chain** – into machine functions that can be understood by the selected machine. TBF and U?? are newer formats intended for combination chenille machines. Upon export, machine head assignments are automatically encoded in the machine file.

### Machine file encoding

Most chenille machine files are encoded in DOS format. Some older style files are encoded in proprietary embroidery disk formats.

Disk type	Melco format	Barudan format	Tajima format
DOS	Melco EXP	Barudan 2HD Barudan S-FMC	Tajima T01 Tajima DST
Embroidery	Melco	Barudan	Tajima

Check the following values before sending the design.

Machine type	Format	Check...
Melco	Melco EXP	
Barudan	Barudan	Jump stitch length is within 4mm.
Tajima TMCE-100	Tajima DST	Shortcut angle is set to 60°
Tajima TMCE-600	Tajima DST	Shortcut angle is set to 60°

### Stop code sequence

- ◀ Tajima DST file uses 'Stop Code' to switch between **Chain** and **Moss**. By default, it starts with **Chain** on Tajima Chenille machines.
- ◀ Later, Tajima introduced the multi-color TMCE-600 Chenille machine. Some Stop codes are used for switching between Chain and Moss, while others are for color changes.
- ◀ It is machine operator's task to set Stop codes correctly. Some may be used for switching between Chain and Moss, some for color changes.
- ◀ Later, Tajima introduced multi-color Chenille combination machine, mixing chenille with normal machine heads. In this scenario, the Stop code sequence becomes more complicated. In addition to switching between Chain and Moss, they also trigger normal head color changes.
- ◀ Needle height is another setting which operators need to program into the machine.

## Outputting chenille designs

Chenille files open in EmbroideryStudio like any other EMB design. Similarly, you save chenille designs to native EMB format or export them as machine files. They can be output to embroidery floppy disk, punched to a paper tape or sent directly to embroidery machine connected to the computer. The same file can be used by combination machines for both Chenille and Lockstitch embroidery.

### Export chenille designs

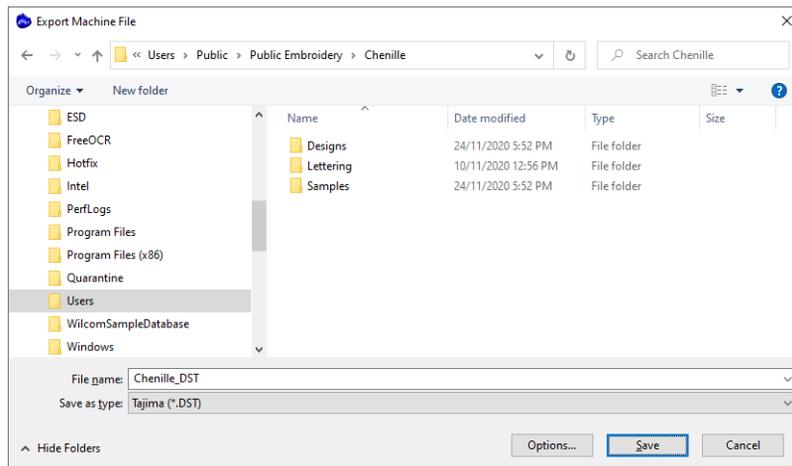


Use Legacy Features > Embroidery Disk to open designs from or save to proprietary embroidery disk formats.

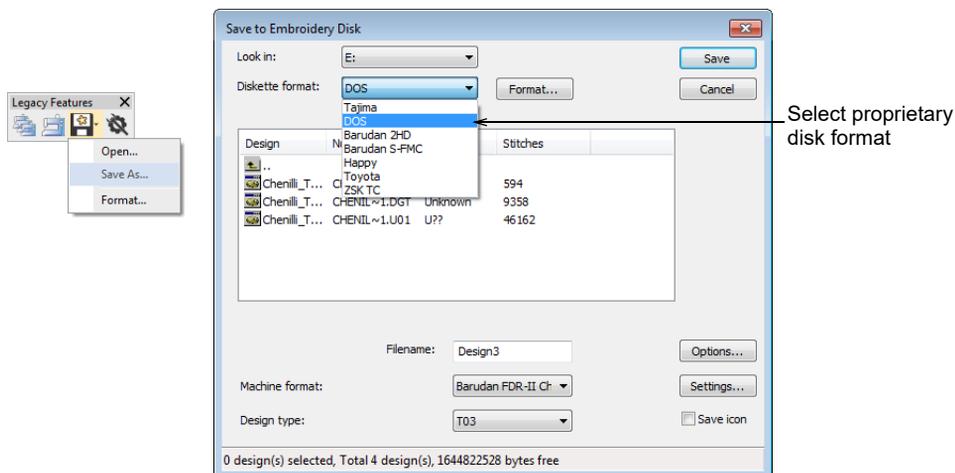
While chenille design files are saved to native EMB format, this cannot be read by machine. You can export designs to local disk, embroidery disk, or even punch them to paper tape.

### To export a chenille design

- ◀ To export a chenille design as a machine file, select **File > Export Machine File**.



- ◀ To save a chenille design to a proprietary embroidery disk, choose **Legacy Features > Embroidery Disk > Save As.**



**Tip:** Once a design is complete, you can output to any supported embroidery machine without changing the original machine format. If a selected machine format does not support a particular function in the design – either automatically or manually inserted – it is simply ignored.

## Related topics

- ◀ [Chenille machine formats](#)
- ◀ [Exporting designs for machine](#)

## Send chenille designs to machine

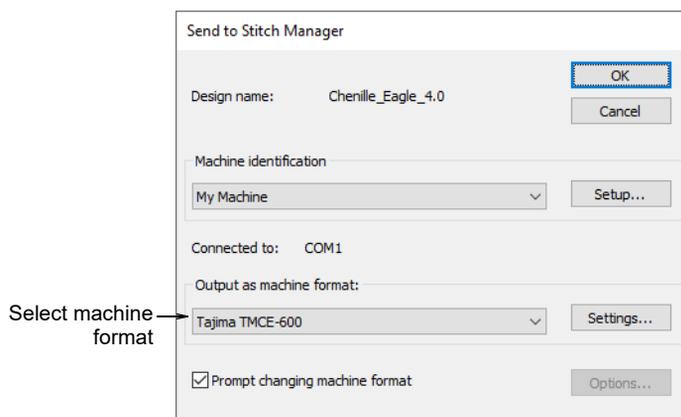


Use Standard > Send to Connection Manager to connect to supported machines via proprietary machine software.



Use Legacy Features > Send to Stitch Manager to send a design to any supported embroidery machine without changing the original design format.

Chenille designs can be sent directly to an embroidery machine if connected to the computer. Select the correct machine format before sending the design.



Newer machines use USB or Wired-Wireless network connections. EmbroideryStudio supports these connections via the **Connection Manager**. Older-style machines generally use serial port connections. EmbroideryStudio supports connection to these machines via the **Stitch Manager**.

---

### Related topics

- ◀ [Chenille machine formats](#)
- ◀ [Machine format settings](#)
- ◀ [Sending designs to machine](#)

## Output to Tajima chenille machines

Tajima chenille machines have three functions – **Chain, Moss** and **Color Change**. The Tajima code system does not have specific codes assigned to these machine functions; each Tajima chenille machine uses different combinations of empty stitch and stop codes to indicate these machine functions. Chenille provides machine formats for both Tajima chenille machines.

There are two types of Tajima chenille machine – TMCE-100 and TMCE-600. The newer Tajima TMCE-600 machine only uses single stop codes for switching between chain and moss stitching. The old 'multistop' TMCE-100 machine uses different combinations of multiple stop codes and empty stitch codes for the chain, moss and needle height functions. If you intend to stitch a design on one of these machines, make sure that you select the 'Tajima Chenille multi-stop' machine format. The chain,

moss and needle height functions will be automatically converted to the correct combinations of empty stitch and stop codes.

From	Change color	Change needle height	To	Function codes	Machine setup for needle height
Chain	3	7	Chain	stop	-
Chain	7	3	Chain	stop	set new height
Chain	3	3	Chain	stop-empty-stop	set new height 2
Chain	7	7	Moss	stop-stop	-
Chain	3	7	Moss	stop-stop-stop-stop	-
Chain	7	3	Moss	stop-stop	set new height
Chain	3	3	Moss	stop-stop-stop-stop	set new height 2
Moss	3	7	Moss	stop-stop	-
Moss	7	3	Moss	stop-stop	set new height
Moss	3	3	Moss	stop-stop-stop-stop	set new height 2
Moss	7	7	Chain	stop-stop	-
Moss	3	7	Chain	stop-empty-stop	-
Moss	7	3	Chain	stop	set new height
Moss	3	3	Chain	stop-empty-stop	set new height 2

The Tajima TMCE-S chenille machine only uses single stop codes for switching between chain and moss stitching. These machines cannot distinguish between the functions, so you need to select a function for each stop at the machine, in the same way as you select needle numbers for color stops. If you are using one of these machines, select the Tajima chenille TMCE-600 machine format. Each chain, moss and needle height function will be output as a single stop code.

### Condition file

When using TMCE-600 format and saving a design as a DST file, a condition file (\*.cc0) is saved alongside the design. This file contains information that the machine can read so that the setup process is partially automated.

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