



# Intermediate Digitizing

This section will focus on how to digitize basic embroidery designs using the Tajima DG17 software. The goal of this class is to introduce you to the features and concepts required to start producing quality digitizing immediately. Some features and settings will NOT be covered, as they are supplemental and can be learned through practice and experimentation.

*At this point, you should be comfortable in the Tajima DG17 Software environment and well-versed in all of the basic functions and processes. You should have already attended the Basic Embroidery Training Class which covered Lettering and Editing. If you have questions or are unsure of a process, please feel free to ask the Instructor.*

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## **Run Stitches**

## Programmed Run Stitches

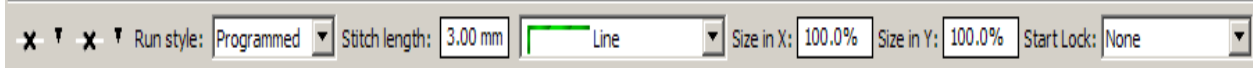
The programmed run stitch is digitized the same way as a standard run stitch but the sewing of the programmed is completely different than all others. It sews a pre-selected pattern while following the shape of the digitized segment. The sewing follows this sequence all the way to the end of the segment. The end result is not a line, but an intricate stitch pattern.

### Training Exercise – Programmed Run Stitches

1. For this exercise, you will digitize the graphic in the sixth row.



2. Make sure that the Run Tool is still selected, change the thread color.
3. From the Run Style Box, select programmed. Look to the right of the Run Style box and you will see a box which contains a pattern and the word Line. Click on the down arrow to get a complete list of programmed run patterns. Select one.



4. Digitize the graphic using the same process as in the earlier exercises. When finished, Press Enter on the key board. Tap the S on the keyboard to go back to select.
5. Each programmed run has a specific stitch length that needs to be selected for the stitching to sew properly. To determine what that stitch length is, go to Help, Fills, Working with Programmed Fill Patterns, Programmed Fill Pattern Settings.
6. From the list of programmed fills select the fill that you have selected. The lengths will be in points. When you determine what that stitch length should be go to the Stitch Length setting on the properties ribbon and type in the specific value followed by pt which will automatically convert to inches.
7. Go through the list and try a few different patterns so that you can see the end result. Once you are satisfied with a choice, switch to the stitch view and see how the pattern sews.

**Note:** The programmed run patterns have specific stitch lengths. Refer to the help files for this information.

## Run Stitch Segment Settings

With the exception of the programmed run, all run styles have the same settings which can be changed as needed. While the default settings may work fine in many cases, there will be situations where you may need to make some changes.

To view the entire segment settings for the run stitches, select one of the pieces you have digitized, left-click on the black arrow at the top right side of the workspace. The first tab that will come up will be the Run Tab.

**Run Style:** – This allows you to select different styles of run stitches. It can also be found on the upper tool ribbon on the main screen.

**Stitch Length** – This sets the specific length for each stitch within a run segment. Recommended minimum stitch length is 1.2 mm, while maximum stitch length is 10 mm.

**Run Repeat** – You can repeat Run stitches to create thicker Run stitches to create detailing and borders for designs. If you repeat a Run stitch twice, the stitches sew the entire length of the segment and then back to the start of the segment to create stitching similar to a Two Ply stitch. If you repeat a Run stitch 3 times, each stitch is sewn three times before moving to the next stitch in the segment, similar to the Bean stitch. You can enter between 2 and 9 repeats.

**Repeat Offset** – Enter the offset percentage you want to shift the penetration points of the repeated stitches. For example, 50% places the penetration points between the first row of penetration points.

**Drop Run Stitch** – This is used to ensure the proper placement of Run stitches. Choose from At Anchor, None, and Chord Gap.

This function controls where the needle penetrations for the run segment actually occur. When you digitize a run segment you place anchor points to create the proper line shape. These anchor points do not necessarily represent needle penetrations. The software will calculate the final needle penetrations and stitches based on the chosen segment settings.

When you designate a specific stitch length, it sometimes creates needle penetrations in undesirable location, which could affect the quality of the sewing. The Drop Run Stitch settings are used to allow the software to create the best stitch placement for the given situation.

**At Anchor** drops the Run stitches according to the specified stitch length as well as penetrates where ever there is an anchor point.

**None** forces the Run stitches to follow the Stitch Length setting. In the case of a 12mm long segment with a stitch length setting of 3mm, there would be four actual stitches, each one being 3mm in length.

**Chord Gap** places the stitches to fit curves smoothly by shortening the stitches at the top portion of a curve. It works in conjunction with the Maximum Chord Gap Distance setting and the Minimum Stitch Length setting.

**Repeat Swing** – Enter the number of points you want to shift the repeated stitches. For example, 0.5 pts places the repeated penetration points 0.5 pts away from the first row of penetration points. With 3 or more repeats, the swing penetration points will be on both sides of the first row of penetration points.

#### **Now select the Commands Tab.**

**Thread** – This tells you what the current thread color is for the selected segment. You can change the thread color by selecting a different choice from the drop-down box.

**Start Command** – This allows you to assign a special function command to take place at the beginning of the segment. Usually embroidery machines with special devices such as sequin devices or boring devices need some type of command to turn on the device. The start command function turns the device on.

**Stop Command** – This allows you to assign a special function command to take place at the end of the segment. Normally this is where you will assign a trim command to a segment. Other commands are available again for special devices on embroidery machines such as sequin devices and the stop command turns the device off.

#### **Now Select the Connections Tab.**

**Smart Connect** – This is a tool that automatically inserts stitches, jumps and runs between segments. Smart Connections simplifies the digitizing process by applying the proper connection method based on the distance between the segments.

**Trim at** - This setting will insert trims when the distance between segments is greater than the distance entered in the setting.

**Connection by run** – This setting will connect segments with run stitches, and will use the stitch length entered in the maximum length setting.

**Lock Stitches** – This setting will automatically insert lock stitches around trims, color changes and stops, depending on the selection of Never, Sometimes or Always.

**Lock Stitch-Start** – This places a lock stitch at the beginning of the segment. It is important to insert a lock stitch at the start of a segment any time the needle is penetrating the fabric for the first time. The purpose of the lock stitch start is to engage the top thread with the bobbin which helps prevent “no catches”.

**Lock Stitch-End** – This places a lock stitch at the end of the segment. Any time a segment is going to trim, change color or jump to another segment a lock stitch end should be added to the segment. The purpose of a lock stitch at the end of the segment prevents the thread from coming undone.

## **Programmed Run Segment Settings**

Select the last segment you digitized which should be set to a Programmed Run. Click on the Segment Settings arrow.

Notice that there are four tabs when using a Programmed Run – Run, Programmed, Commands, and Connection. The Run and Command Settings are the same as covered in the last exercise. The Programmed Fill tab specifically applies to Programmed Runs.

**Pattern Size In X and Pattern Size in Y** – This allows you to increase or decrease the pattern in the specified direction. (X is left to right, Y is up and down).

To see how this works, change the setting for X to 300% and click OK. You should immediately see the changes. Experiment with different settings until you are comfortable with this function.

# **Drawing Tools**

## **Vector Files**

Up until now you have worked within the most basic form of digitizing – overlaying stitches on top of artwork. The artwork was an inactive guide that stayed in the background. You could resize and rotate it, but that's about all.

Artwork comes in two radically different forms – Bitmap and Vector. All of the static artwork files that you have used so far were bitmap images. You might think of a bitmap file as a stitch file – everything is fixed in place. The Vector file is much more impressive to work with. Vectors can be thought of as outline files, because they can be easily reshaped, resized, and modified. In fact, Vectors are very interactive. You don't necessarily lay stitches over the image; rather you convert the image to a stitch segment.

## **Object Based Digitizing**

Object Based Digitizing is the principle that the Tajima DGML system is built around. The Digitizer converts the artwork into a series of graphical objects, and then assigns stitch information to them. There are numerous ways to do this which will be covered in this chapter. It should be noted that even when using the stitch tools, you are still using this concept, as the software recognizes the created segment as an object that has stitch properties rather than just a group of stitches.

In fact, most Digitizers create all of their objects or segments first, then go back and focus on the stitch properties later.

Using the Object Based Digitizing concept, you will now focus on recreating the elements of a given design as vectorized objects, then assigning stitch properties to them.

NOTE: The Tajima DGML Software refers to objects as Art Segments.

You have the ability to convert any Art Segment into a stitch segment as many times as you wish, plus you can convert back to an Art segment or to a different stitch segment at any time.

## **Rectangle**

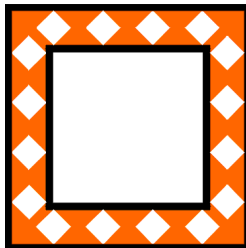
This is a simple Drawing Tool found in all graphic programs. It allows you to quickly create any rectangular shape using the mouse. It has four different variations as follows:

- To draw a rectangle, click and drag from one corner to the opposite corner to form the rectangle.
- To draw a rectangle with the centre point as reference, hold down **CTRL** and click and drag it from one corner to the opposite corner to form the rectangle.

- To draw a square, hold down **SHIFT** and click and drag from one corner to the opposite corner to form the square.
- To draw a square with the centre point as reference, hold down **SHIFT+CTRL** and click and drag to form the square.

## Training Exercise – Using the Rectangle Tool

1. Close out the file that you have been working with and start a NEW file.
2. Load the **Holes and Borders** image



3. Select the Rectangle Tool, which is found in the Artwork drawer of the Tool Cabinet.
4. Position the cursor over the top left corner (be sure to position the mouse slightly into the black border so you are creating an overlap of the segments) of the inside white square, left click and drag to the lower right hand corner of the white section. You have now created an Art Segment in the same size and shape as the inside white box of the image..
5. Tap the S on the keyboard to go to select, and then left-click on the “Convert To” button located to the right hand side of the range select tool.
6. Choose Complex Fill. Place the Start Bead at the top left corner and the stop bead at the lower right corner. The angle beads should be set so that the stitches sew from left to right.
7. Left click anywhere outside of the area that you just digitized to unselect the segment.
8. Select the Rectangle Tool and select a new color from the color pallet. You are going to digitize the orange section.
9. Position the curser over the top left inside corner of the orange section, left click and drag down to the bottom inside corner of the orange segment. This will represent the inside edge of the orange.
10. Now position the curser over the top left outside corner of the orange section, left click and drag down to the bottom outside corner of the orange which will represent the outside edge.
11. Go to window on the menu ribbon and select segment list.
12. You will see the two art pieces that you digitized to represent the orange piece, as you can see they are two separate pieces and need to be combined to make them one.
13. Select both of the pieces and right-click to bring up the short cut menu. Go to Shape and left click on Combine. You will see in the sequence view window that the individual pieces are now one.
14. Tap the S key to go back to select, choose the “Convert To” button and choose Complex Fill. Place the Start Bead closest to the point of where you placed the stop bead on the previous segment, and place the stop bead at the upper left corner. The angle beads should be set so that the stitches sew from top to bottom which should be the opposite of the first segment.
15. You should now have two separate complex fills one representing the white inside piece and the second representing the orange outside piece.
16. Now you’re going to digitize the black borders. Tap the S to go back to select, while selected on the orange piece, right click and go to Auto left click on Steil border.

## Pen Tool

The Pen Tool is basically a free had drawing tool. It works like the Run Stitch tool, except that it creates art segments instead of run segments. Just like the rectangle and ellipse tool, the created art segment can then be converted to a stitch segment.

## Training Exercise – Using the Pen Tool

1. To create the diamonds inside the orange segment.
2. Select the Pen Tool from the Artwork drawer of the Tool Cabinet. Change thread color.
3. Zoom into the top row of diamonds.
4. Left click placing points right on the edge of the white around the first diamond in the row be sure to tap the O to close the segment.

5. Press Enter to finish the first diamond.
6. Continue the above steps until the first row of diamonds (4) are done.
7. Select the last diamond you digitized and right click go to transform choose Duplicate.
8. Left click on each of the remaining diamonds to create duplicates. When completed, press enter to finish.
9. Select the first diamond, left click on the "Convert To" button and select Satin Path.
10. Left click to place the start point, left click to place the stop point and left click and drag to set the angle that you wish the stitches to sew.
11. Continue this for the remainder of the diamonds.

## Ellipse

The Ellipse Tool works the same as the Rectangle Tool, except that it is used to create rounded shapes – ellipses and circles. It has four different variations as follows:

- To draw an oval, click and drag to form the oval.
- To draw an oval with the centre point as reference, hold down **CTRL** and click and drag to form the oval.
- To draw a circle, hold down **SHIFT** and click and drag to form the circle.
- To draw a circle with the centre point as reference, hold down **SHIFT+CTRL** and click and drag to form the circle.

## Auto Trace

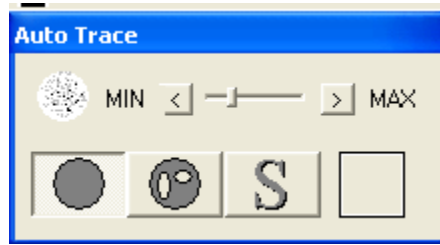
You can use Auto Trace mode to detect contours and trace an image to produce an artwork segment. Auto Trace mode supports Bezier curves; allows you to adjust the color tolerance of an image; recognizes holes; and allows you to ignore specific colors when tracing a shape.

With .bmp artwork, the software can "see" the different areas based on color. Auto Trace attempts to trace the boundaries of an area and create an art segment (vector file), based on color. You designate the area to be "traced" by moving your mouse over the desired region.



## Training Exercise – Using the Autotrace Tool

1. Close out the file you were working with and start a New File.
2. Load the artwork entitled **Earth**
3. Select the Auto Trace Tool.



4. A control box will open in the top left of the screen. In the control box, there are four small boxes along the bottom. The one on the left is for tracing a solid object without holes. The next one is for tracing an object with holes. The next one is for tracing lines. The next one is the Current Color box.
5. While watching the Current Color Box, move your cursor over different sections of the design. Notice that the color displayed in the box is the same as the color the cursor is over.
6. Move the cursor over the blue portion of the sky on the image and left-click. The software will create an art segment based on the boundaries of the blue area. This may not be capturing the exact lines of the piece that you are tracing.
7. Move your cursor into the Auto Trace control box and start left clicking on the arrow box next to MAX. This is the tolerance control. Clicking on the slider will adjust the sensitivity of the color that you are tracing.
8. When you are satisfied with the result, press enter and the art segment will be completed.
9. Once the segment has been completed left click on the "Convert To" button and turn the piece into your desired stitched type.
10. Experiment with different areas of the design and different stitch types until you are comfortable with these functions.
11. To create segments with holes select the Auto Trace Tool from the Artwork drawer of the Tool Cabinet and left click on the black section of the design to auto trace it.
12. Left click on the "holes" icon in the auto trace control box. Notice that all of the black has been created.
13. Press enter to complete the trace. To turn this into a Satin path type of segment you must first slice the piece and then break it up before converting it just as you did in the previous exercise.

## **Training Exercise - Using Auto Trace & Offset to Create a Fill With A Border**

### **Using Auto Trace To Create Your Complex Fill**

1. Create a New File
2. Go to Image Load
3. Choose Heart.BMP
4. Resize Image to 3 inches
5. Choose the Complex Fill Tool
6. Hit the **T** on the keyboard to activate the Auto Trace feature
7. Left Click on the design, the points will automatically be placed around the design.
8. Press Enter on the keyboard.
9. Set your Start Point
10. Set your Stop Point
11. Set Your Fill Angle
12. Right click
13. Go to Auto
14. Select Auto Steil Border

## **Drawing Modes**

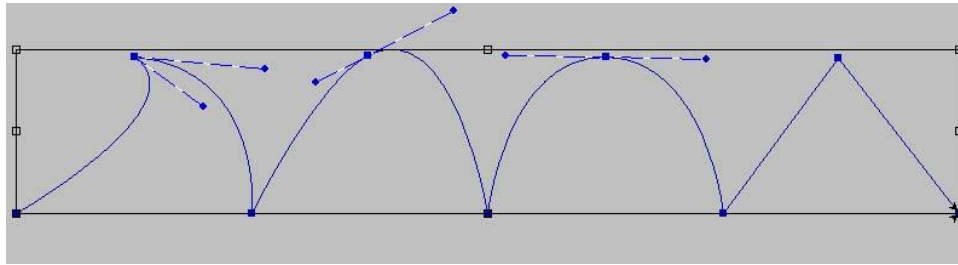
A drawing mode is a method of inputting anchor points. The drawing mode chosen depends on the shape you are creating. The punching levels let you use all the drawing modes that include Bezier, Straight, QuickDraw, Arc, Circle, Auto Trace, and Freehand. The status line displays the letters associated with the drawing modes. You can use the drawing modes with the Run, Complex Fill, Steil, and Satin Path, tools, but the punching tools available depend on the Tajima DG/ML by Pulse level you are using. Typically, the drawing modes are used in conjunction with the Run Tool and the Pen Tool.

**Bezier Mode:** In Bezier mode, you can enter both straight and curved points. When you click the mouse you insert an anchor point and you can drag direction lines to change the shape of the curve. It can be difficult to punch shapes with many straight angles using Bezier mode.

To switch back to Bezier mode, press **B** on your keyboard.

## Bezier Curves

One of the most advanced features of the DGML system is the Bezier Curve function. This feature allows you to create curved shapes using a minimal number of anchor points. Each point that you place also has direction lines and points that allow you to easily adjust the shape of the curve.



**Quick Draw Mode:** QuickDraw mode gives you the flexibility and control you need to toggle between entering straight and curved points. To place a straight point, left-click the design workspace. To place a curved point, Right click your mouse.

To use QuickDraw mode press **Q** on your keyboard after you have clicked the punching tool you want to use.

**Arc Mode:** Arc mode requires you to place three points to make an open arc. If you have already placed an anchor point with another drawing mode, you need to enter two more points to create the arc.

To use Arc mode , press **A** on your keyboard after you have clicked the punching tool you want to use.

**Auto Trace Mode:** Auto trace mode works exactly the same as the Auto trace tool in the Artwork drawer of the Tool Cabinet. The difference is that when you use the Auto trace mode with the punching tools the stitch type is already determined based on the tool that you are working with.

To use the Auto trace mode, press **T** on your keyboard. To turn the Auto trace mode off again you must press **T** again.

**Circle Mode:** Circle mode requires you to place three points. Once you place the third point, you see the circle.



To use Circle mode, press **R** on your keyboard after you have clicked the punching tool you want to use.

**Freehand Mode:** Freehand mode allows you to plot points by clicking and dragging. It does not allow you to see the shape until all points are plotted and you press enter on the keyboard to complete the route. Using Freehand mode produces many anchor points giving you increased control over the shape of the curves. Once you complete the segment, you see anchor points and direction lines.

To use Freehand mode, press **F** on your keyboard after you have clicked the punching tool you want to use.



# Slice And Curved Slice

Outline segments may be split by using the Slice  tool or the Curved Slice  tool.

The Slice tool lets you split complex shapes into simple shapes, as well as slice outline segments. You can create open or closed segments when you split segments with the Slice tool.



The Curved Slice tool works similarly to the Slice tool, but give you the ability to slice along any kind of curved path. You punch a path in much the same way as you would create a path using the run tool.

## Special Notes:



Do not confuse the Slice or Curved Slice tools with the Split Anchor option. The Slice tools slice between two anchor points on a path. Split Anchor converts one anchor point into two anchor points, possibly splitting a path in the process.

You can also click outside the location of the segment and the first slice bead will snap to the closest point on the segment shape.

To use the Slice tool:

- Select an outline segment
- Click the Slice  tool
- To create an closed segment, click the location on the segment from where you want to slice and drag to the location where you want to end the slice.
- To create an open segment, hold down **SHIFT** and click the location on the segment from where you want to slice and drag to the location where you want to end the slice.
- Click Breakup  in order to have the separate pieces

To use the Curved Slice tool:

- Select an outline segment
- Click the Slice  tool
- Choose the drawing mode you want to create your curve—Bezier, Arc, Quick Draw or Free Hand
- To create an closed segment, click the location on the segment from where you want to slice and drag to the location where you want to end the slice.
- To create an open segment, hold down **SHIFT** and click the location on the segment from where you want to slice and drag to the location where you want to end the slice.
- Click Breakup  in order to have the separate pieces

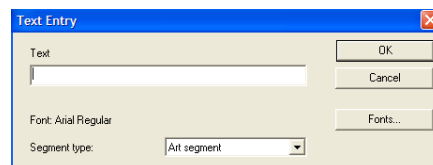
## Importing TrueType fonts

Use the Import TrueType tool to import TrueType fonts as a variety of segment types. You can edit artwork segments to create shapes that are appropriate for embroidery by using the Slice tool. Satin Path segments require special consideration since angle lines need to be assigned to individual segments. By selecting segment types other than artwork, you can apply stitch types immediately. You can also use the Auto Breakup command to slice a segment and add angle lines for Satin Path segments.

### To import a TrueType font:

In the Artwork toolbar or the Artwork drawer of the Tool Cabinet, TrueType tool. You will see the Text Entry dialog box.

In the Text box, enter the text for the design.



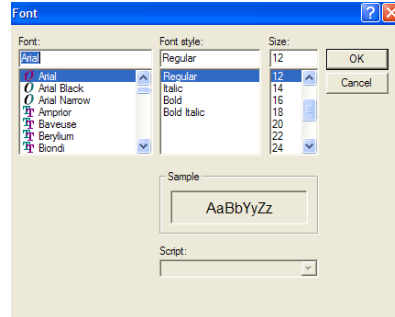
click the Import

In the Segment Type list, choose the segment type. Art Segment, Run Segment, Complex Fill Segment, Satin Path, etc.

To choose the style of font for your segment, click the Fonts....button.  
Select your desired font and size. OK.

To complete the lettering, click OK.

Left-click to place the text artwork. Enter to complete the segment.



## **Branching**

Branching allows you to punch multiple Satin, Run, and Steil segments that are automatically sequenced and given one start and one stop point. Branched segments are combined without jumps and behave as one large segment. This feature also sequences the underlay of all branched segments, instead of one segment at a time. This can be done as you digitize by hitting the character T on your keyboard between each segment or after completing all the segments by selecting all of them, right click go to shape and left click on Combine from the drop down menu then setting your stop and start positions. Then hit G on the keyboard. Remember, you can only branch like stitch types.

### ***Training Exercise-Branching Existing Segments***

1. *Select all the segments on the left side of the branch.*
2. *Right-click and go to shape and select Combine.*
3. *Move the start point to the top smallest leaf, move the stop point to the bottom biggest leaf closest to the leaves on the right side. Press G on the key board.*
4. *Select all the leaves on the right side of the branch.*
5. *Right click and go to shape and select Combine.*
6. *Move the start point to the bottom biggest leaf closest to the leaf on the left side and move the stop point to the top smallest leaf. Press G on the key board*
7. *Choose the clock and watch how the segments will sew. Notice that the software automatically enters in running stitches where needed.*

Note: You can “Un-Branch” a branched segment by selecting it, right-clicking go to shape and choosing breakup.

## **Symbol Tool**

You can save a design segment as a symbol (\*.sym) using the Symbol tool. Once the symbol is saved, the motif can be reused in any design. You can add multiple copies and resize of the motif while you add it.

### **Saving a selected segment as a symbol:**

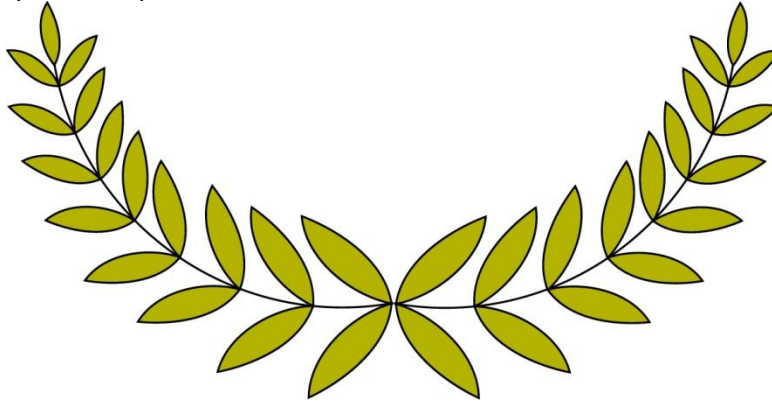
- Select the segment that you want to save as a symbol.
- Right-click your mouse to open right click short cut menu go to save left click on symbol.
- The cursor becomes a cross.
- Click and drag a baseline across the segment.
- You see the Save as dialog box.
- In the File name box, enter the symbol name.
- Click Save.
- Now you can select any saved symbol from the ribbon and add it to any design whenever you select the Symbol tool.
- Click and drag to copy the symbol to your workspace.
- Press Enter when you are done adding the symbols.

### **Useful commands:**

**CTRL** Adds the symbol in its original size  
**ALT** Adds the symbol at the angle of its original baseline  
**SHIFT** Adds the symbol at increments of 15 degrees to the original

**R**  
**BACKSPACE**  
**Enter**

Mirrors the symbol across the original baseline  
Removes the last symbol placed before you complete the placement.  
Completes the placement.

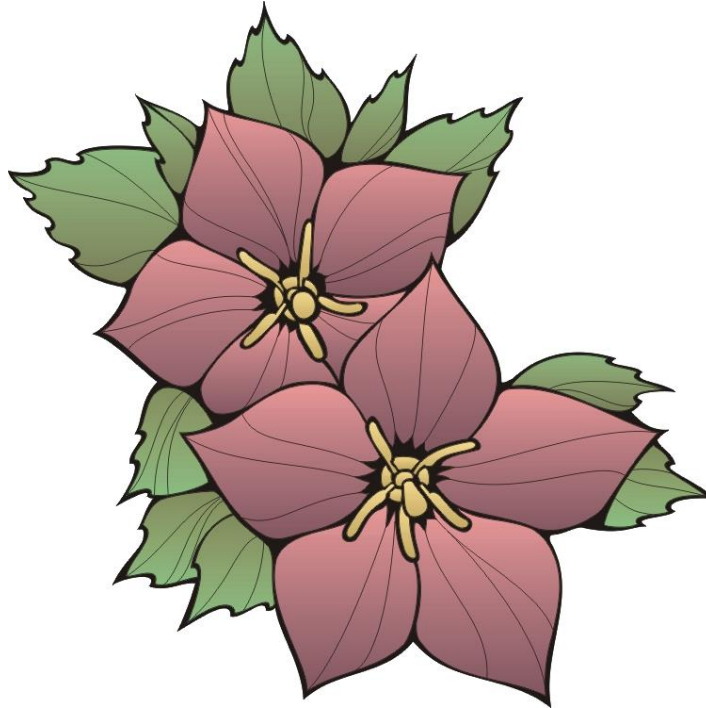


### **Training Exercise-Creating and using a Symbol**

1. Start a new file.
2. From the Menu Ribbon at the top of the workspace, select Image, Load and in the Training folder select the artwork called Symbol.
3. Select the Satin Path tool and digitize one of the leaves on the branch. Set the start, stop and add angle lines.
4. Select the segment that you want to save as a symbol.
5. Right-click the mouse and go to save and left click on symbol.
6. The cursor becomes a cross, click and drag a line through the segment.
7. You will see the Save as dialog box, in the File name box, enter the symbol name.
8. Click Save.
9. From the Digitizing Drawer of the Tool Cabinet select the Symbol Tool.
10. Notice the Symbol selection box at the top of the workspace.
11. Select the saved symbol, point to the first leaf and left click and drag.
12. Continue clicking and dragging until all the leaves are created.
13. Press enter to generate stitches.

# **Contour Stitch**

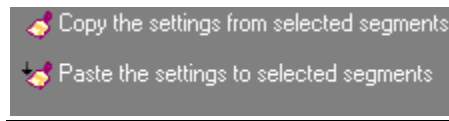
You can create Contour stitches instead of Satin stitches for Satin Path segments. Contour stitches follow the contour of the shape, instead of stitching side to side. Contour stitches are useful for special stitching effects such as leaves. The Contour setting for Satin stitch types is found on the Satin Path/Column Effects property page. The Chord Gap setting helps to place stitches to fit curves smoothly by shortening the stitches at the top portion of a curve. It works with the Minimum Stitch Length setting. If the contour stitches are too narrow, use the Short Stitch settings to improve the stitch quality.



## **Training Exercise-Creating Contour Stitches**

1. Start a new file.
2. From the Menu Ribbon at the top of the workspace select Image, Load.
3. select the artwork called Contour Stitch.
4. Select the Complex fill tool first and digitize each of the green leaves. Be sure to connect each leaf with a run stitch.
5. Select the Satin Path tool and digitize each of the petals on the flowers.
6. Select the Petals and left click on the Segment Settings Arrow.
7. Click the arrow on the ribbon. You see the Segment Settings property pages.
8. Click the Satin Path/Column Effects property page.
9. Select the box to activate the Contour Stitch.
10. Do any of the following steps to make adjustments for the design:
  - To adjust the space between the contour stitches , enter the amount in the Contour Stitch Spacing box.
  - To adjust the density based on the Contour Stitch Spacing, choose Maximal Spacing, Minimal Spacing, or Average Spacing from the Density Type list.
  - To set the limit for the length that the stitches can be shortened to fit the top portion of a curve, enter the amount in the Min. Stitch Length box.
  - To set a short stitch setting, choose Sharp End or Squared End from the Short Stitch End Type list.
  - To adjust the percentage of the short stitch, enter the value in the Short Stitch Percent box.
11. Click OK to see the results.

## Settings Painter



Copying segment settings using the Settings Painter tools:

The Settings Painter tools allow you to save time editing your embroidery designs. There are two Settings Painter tools that you can use: Copy Settings and Paste Settings.


You can easily copy segment settings from one segment to one or more other segments. Tajima DG/ML by Pulse also allows you to copy settings into various Segment Settings property pages. Only the settings that are shared between the segments will be copied over.

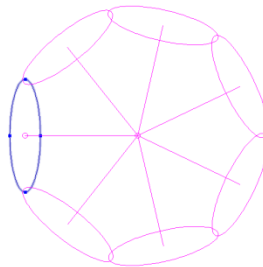
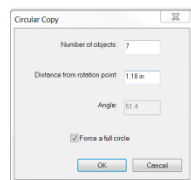
If you used more than one segment for copying, you will not be able to copy shared settings that have different values. If the copied segments had different density values, for example, the density settings will not be copied.

## Circular Copy

The Circular Copy feature duplicates a segment and places a number of copies, rotated around a defined rotation point. You can control the number of copies to be created, the distance from the rotation point and the angle between each copy.

To use Circular Copy:  
Select the segment to be copied

Click the Circular Copy  tool on the Transformation toolbar, You see the Circular Copy dialog, and a preview of the copies (In outline) appears on the workspace window.



Choose a number of repeats for the Number of Objects box. When the Force a full circle box is checked, Circular Copy determines the angle between each copy made, based on the number of objects you specify. Uncheck this box to set the angle such that only part of a circle is created.

Input a displacement from the center of rotation in the Distance from Rotation Point box. You can also change the radius of the copy and position of the center by clicking and dragging the handles in the the preview on the workspace.

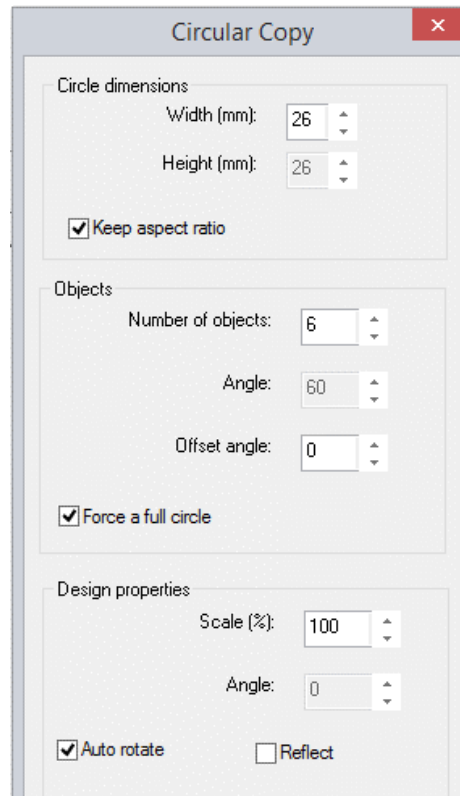
Click OK, The finished copies are generated and placed into your design

### Circular Copy Improvements

Extra functionality has been added to the Circular Copy tool.

In addition to the existing settings (the number of objects, the angle between objects, distance from center), Tajima DG16 by Pulse adds the following new settings:

- **Offset angle:** Offsets all copies of the selection by the angle that you input; positive angles rotate the objects clockwise, negative angles rotate them counter-clockwise.
- **Design Scale:** Changes the size of the copies, as a percentage of the original segment.
- **Design Angle:** Use to pivot the copies around their centers (only applicable as long as auto-rotate is not activated.)
- **Auto Rotate:** Rotates the copies so that each one is at the same angle, compared to an imaginary line between the copy and the center of the circle.
- **Reflect:** Reflects each copy through 180°.

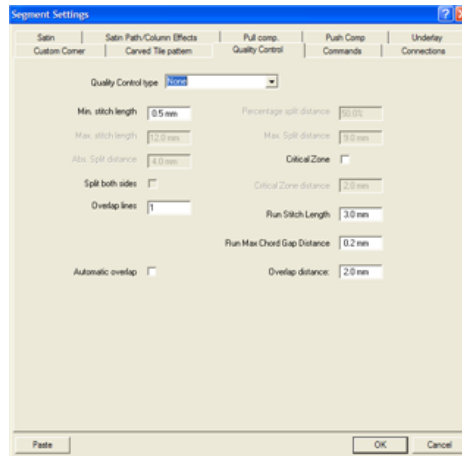


## Automatic Functions

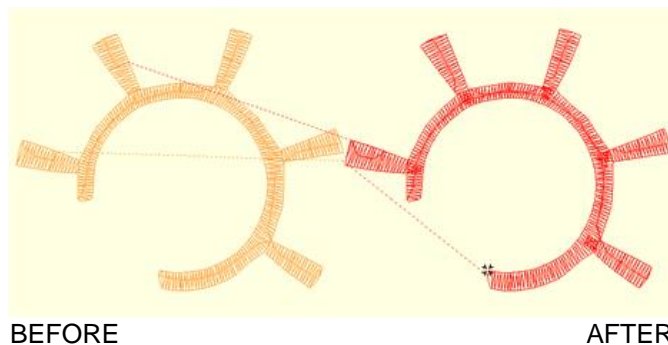
These functions take the tedious manual steps out of the digitizing process.

### **Automatic Overlap**

This function determines how branched or combined satin segments are joined. It's now possible for you to set these segments to have a certain amount of overlap, which is generated automatically by the software. This function is found on the Quality Control tab and is not selected as a default.



When checked, the Overlap distance value can be entered therefore creating an automatic amount of segment that is overlapped.



Notice on the After example the rays of the sun are overlapping into the ring around the sun.

## Auto Breakup

The auto-breakup function is a quick way to create the separate pieces of a complex shape so that it can be functional as a satin type of segment. For example when importing TrueType fonts, before the lettering can be seen as satin stitches the columns must be separated. The Auto-Breakup function will break apart the shape and add angle lines so that when generated the satin stitches are in place.

### To use the auto-breakup function:

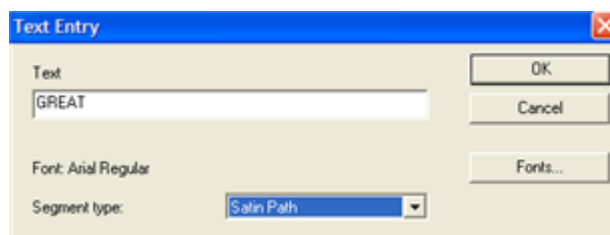
From the Artwork tools, left-click on Import True Type Font.

Choose Comic Sans at a size of 72

Choose Satin Path for the Segment Type

Type in the word GREAT.

Left-click and then tap the enter key to place screen.



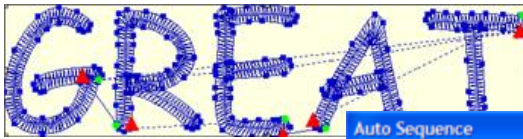
the artwork on the



The lettering will appear on the workspace with starting and stopping beads but the pieces are not separated so the stitches don't work properly.



Right Click and angle lines to

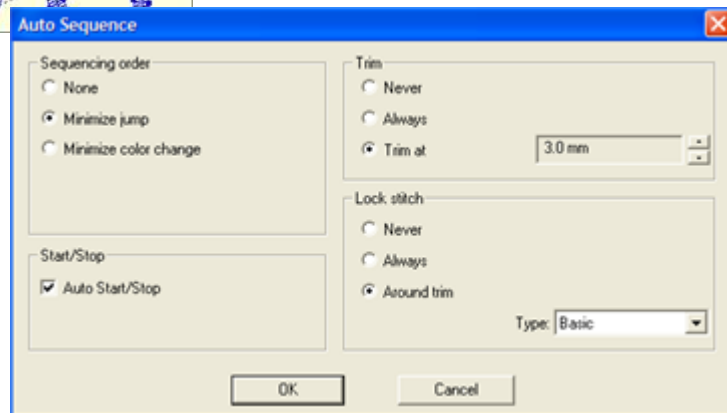


## Auto

You can set the sewing sequence for in one step. The Auto Sequence command segments you select and, depending on the you choose, determines the sequence order, stops and starts, and lock stitches for the

### To use the Auto-Sequence:

Select all the letters, right-click and choose Sequence. The Auto-Sequence dialog box appear.



## Sequence

segments takes the settings trims, segments.

Auto, will

In the Sequencing order box, choose between the following:

None-This will not change the sewing sequence of the segments selected.

Minimize jump-This will change the sewing sequence of the segments based on the distance they are from each other. Re-sequencing the segments so that they are sewing in the order that is closest to each other.

Minimize color change-This will change the sewing sequence of the segments based on their color keeping the sequence so that the same colors sew together.

In the Start/Stop box you have the option by checking the box to move the starting and stopping beads so that they are in conjunction with each other. This will prevent a lot of jumping around for the machine.

In the Trim box, choose from the following:

Never-No trims will automatically be added to the segments.

Always-Trims will be added at the stop/end point of every segment.

Trim at-Trims will only be added based on the value that is put on this option. For example if the value is set to 3.0 mm than if the distance between the segments is 3.0 mm or more a trim will be added. If the distance is less than 3.0 mm than no trim will be added.

In the Lock stitch box, choose from the following:

Never-No lock stitches will be automatically added to the segments.

Always-Lock stitches will be added to the stop/end point of every segment.

Around trim-Lock stitches will only be added when a trim command is on the segment.

Type-Choose from Basic or Line.

Click OK to finish.

## Auto Start/Stop

The Auto-Start/Stop function allows you to move the starting and stopping points of each of your segments so that they are sewing at the closest point. This function allows you to set them without going through the Auto-Sequence functions.

### To use the Auto Start/Stop:

Select the segments.

Right-click and choose Auto, Start/Stop.



## **Density Profile**

### **Creating density effects**

You can use density effects to create special effects in your embroidery designs. You use the Density Profile settings to vary the density between a normal and maximum density value to achieve a special look. The normal density value is displayed on the title bar. The maximum density value is displayed and can be changed in the Segment Settings property pages.

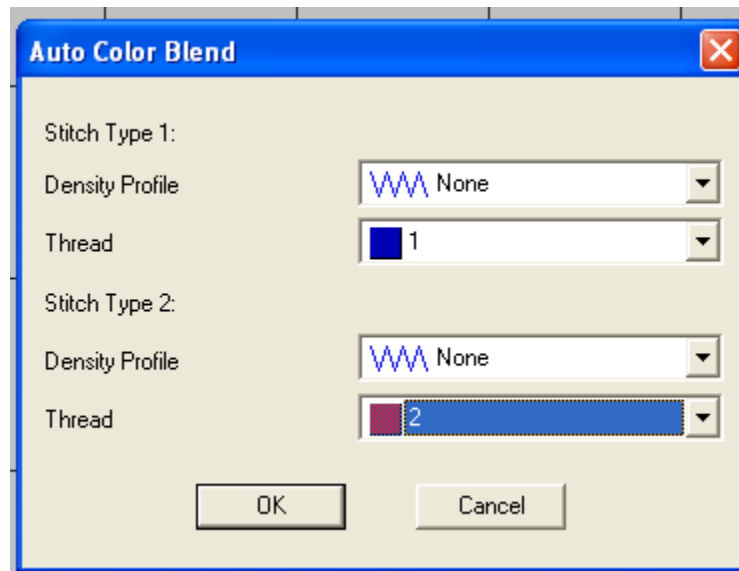
Density Profile setting	What it does
Linear Increasing	Gradually increases the density in a selected segment from the Normal density value to the Maximum density value.
Linear Decreasing	Gradually decreases the density in a selected segment from the Maximum density value to the Normal density value.
Convex	Starts gradually increasing the density in a selected segment from the Normal density value to the Maximum density value. Then, begins gradually decreasing the density from the Maximum density value to the Normal density value at the center of the selected segment.
Concave	Starts gradually decreasing the density in a selected segment from the Maximum density value to the Normal density value. Then, begins gradually increasing the density from the Normal density value to the Maximum density value at the center of the selected segment.

## **Auto Color Blend**

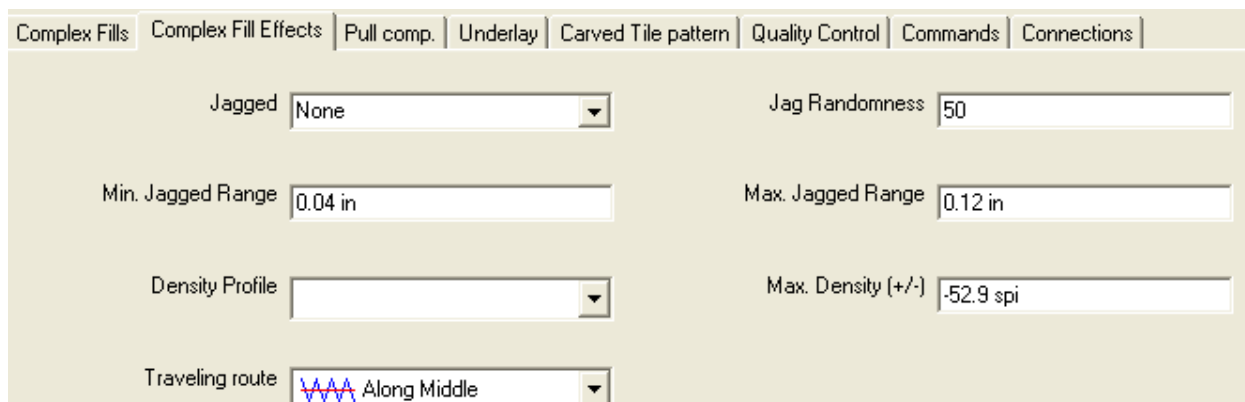
Color Blending lets you blend two colors in the same segment. This is available for satin path or complex Fill Segments.

### **Using the Auto Color Blend Function**


1. Start a new file.
2. Select your Complex Fill tool from the digitizing drawer of the tool cabinet.
3. Tap the R on your keyboard to activate the round drawing mode.
4. Create a 3.00 in. Circle.
5. Select your circle and Right Click go to auto and in the drop down menu select Color Blend.

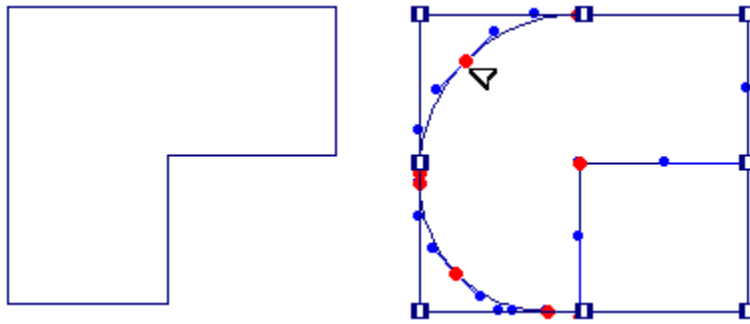


- 6 .Choose Linear Decreasing for Density Profile under stitch Type 1.
7. Choose desired Thread Color.
8. Choose Linear Increasing for Density Profile under stitch Type 2.
9. Choose a different Thread Color.
10. Click O.K.
11. Tap the (G) key on your keyboard to regenerate stitches.
12. For best results, right click and choose Properties, select the first Complex Fill and left click on properties again and change the connection end to square and choose along the edge for the travel route click O.K.
13. Then Select the second Complex Fill and do the same thing for the settings.
14. You may need to change the Max. Density for one or the other Fill. You can always go back and change your Density Profile on one or the other Fill to create different effects.



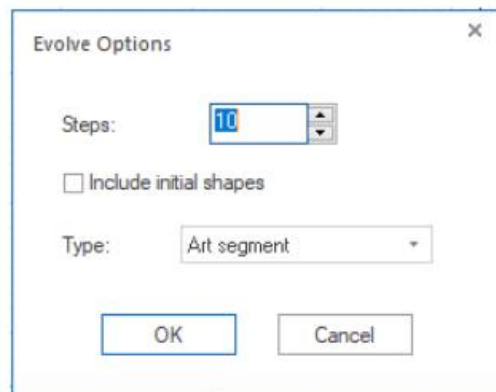
## Rounded Corner Tool

This tool allows the designer to quickly create a rounded corner from a right-angled corner. Simply select the Rounded Corner  tool (on the Path Edit toolbar), and then select an anchor point at a corner. Drag the anchor, and the amount of curvature will correspond to the amount of distance the anchor point is pulled away from the initial position.



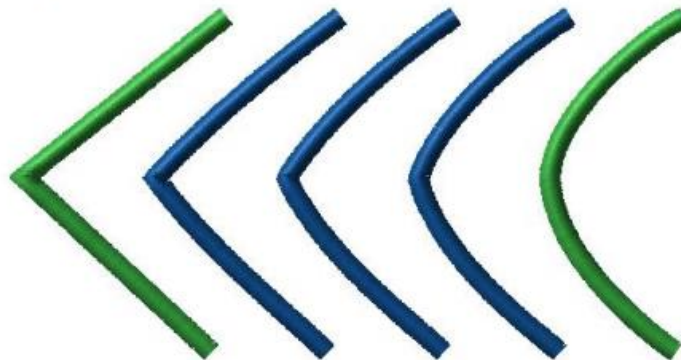
### 3.2 Evolve Tool

The Evolve Tool is an easy way to add segments to a design that are intermediate in shape between two selected outline segments. When you invoke this function, it opens a dialog that allows you to select the number of steps that are created between the two original segments.



There is also a field on the dialog that allows you to choose the segment type (i.e., artwork, run, steel, or appliqué) you want to apply to the newly-created shapes.

To apply the Evolve function, select the two segments, right-click, and select Shape-Evolve from the context menu.



*Example of the "Evolve" tool applied to a pair of steel segments. The original segments are shown in green, and the created segments are shown in blue.*

*Note that in this case the "Include original shapes" option has been checked "on" in this case.*

*Product level availability: Illustrator Extreme*

## 4.6 Color Blend Option extended to new segment types

Previously, color blends could be applied only to a limited number of stitch types (e.g., satin path and Complex fill). This functionality has now been expanded to include some different segment types, specifically the following: Cross-stitch fill, Spiral fill, Cascade fill and Fur Stitch.

To apply a color blend, right-click on the embroidery select and select Auto-Color Blend from the context menu.

*Product level availability: Illustrator Extreme or higher*