

## A Study of Angles & Curves

### Method 1: Cutting Quilt Shapes/Using the Shapes Tools

- Open BERNINA CutWork Software.
- Make sure that *Create New* is selected. Click *Next*.
- Place a dot in front of *New Graphic*.
- Select BERNINA 255 x 145 Oval Large # 44 for the hoop.
- Click on *Next*.
- Open the *Embroidery Normal* category by clicking on the +.
- Select *Cotton* from the *Fabric Type* and choose a background color.
- Click *Finish*.

### Creating Shapes: Grandmother's Flower Garden

- Select the *Create Polygon* icon.
- In *Tool Options*, change the number of sides to 6.
- While holding the Ctrl key down, click and drag the hexagon shape to the desired size. (The sample used 56.5 mm in the width dimension; see information in notes).
- Select the hexagon.
- Select *Edit> Copy*, then *Edit> Paste*.
- Move the copy to the side of the original using the arrows on your keyboard so that the sides just meet.
- Select *Edit> Select All*; then *Copy and Paste*. Move the copies below the first group. Repeat the process to fill the hoop with as many copies as you can.
- After the hoop is full of copies, select the *Manage Hoop Options* icon and place a check mark in front of *Center Design to Hoop*. Click *OK*.
- Select *Edit> Select All*.
- Click on the *Cutwork* icon.
- While the hexagons are selected, right click and select *Combine*.

### Adding a Basting Box

- Click on the *Create Rectangle* icon.
- Click and drag to form a rectangle around the hexagon shapes.
- Select the *Edit Shapes Nodes* icon.
- Click and drag on the upper left control point to round the corners of the basting box so that it will fit within the hoop.
- Hit the space bar to select the rectangle.
- Place a check mark in front of *Length* in *Object Properties*.
- Change the length to 5 mm.
- Select *File> Save As*, navigate to the desired location and name the file *Grandmother's Flower Garden*. Click *Save*.
- Click on the *Export* icon to export the file to your machine.

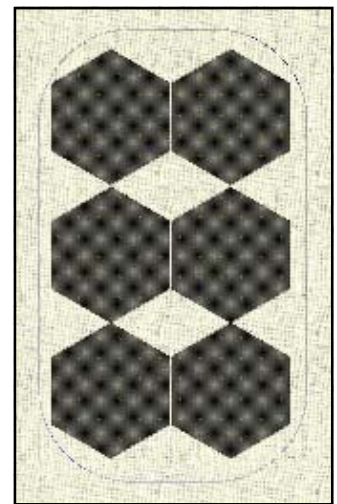
### Notes:

If the hoop is not visible, go to *View> Hoop* and place a check mark in front of *Hoop*.

To open *Tool Options*, go to *View> Toolbars*. Place a check mark in front of *Tool Options*.

Holding the Ctrl key shows diagonal guidelines to draw a symmetrical hexagon.

After drawing the hexagon, hit the space bar and make sure *Proportional* is checked. Change the width to 56.5 mm. This will change the size proportionately. Hit Enter.



The drawing tools in the software can be used to create basting frames for holding multiple layers of fabric together.

If *Object Properties* is not open, go to *View> Toolbars> Object Properties*.

## Method 2: Cutting Quilt Templates with Drawing Tools



- Open *BERNINA Embroidery Software*.
- Open the *Quilter* program.
- Select *File> Manage Blocks*.
- Click on the + sign in front of *Main Blocks*.
- Click on the *Drunkard's Path* folder.
- Right click on the *Peace Dove* block and select *Copy*.
- Right click on *Library Manager* and select *New Library*.
- Name the new library *Cutwork Templates*. Click *OK*.
- Select the new folder and right click in the right side of the dialog box and select *Paste*.
- Double click to open the block.
- If you wish to change the size of the block, select *Edit> Block Size*. Type in the new size and click *OK*.
- Select *File> Print* and click on *Block Construction*.
- Place the printed block pieces in the scanner.

## Using the Block as a Backdrop: For traced lined drawings

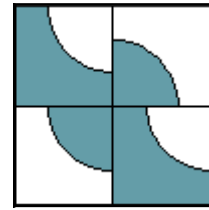
- Open the *CutWork Software*.
- Place a dot in front of *Create New* in the wizard.
- Click *Next*.
- Place a dot in front of *Get Image from Scanner*.
- Click on *Next*.
- Click on *Preview*.
- Click and drag a box around the part of the image you wish to scan.
- Click on *Scan*.
- When the *Save As* dialog box opens up, navigate to the location to save the file, name the file *Peace Dove Shape 1*.
- Click on *Save*.
- In the *Artwork Image* dialog box, place a radio dot in front of *Open as Backdrop*. Click on *Next*.
- Select the Type of fabric and the color of the background in the Wizard.
- Click on *Finish*.

## Drawing the Block with Bezier Tool



- Select the *Create Bezier Shapes Tool*.
- Use the picture in the background as a guide to draw the shape.
- Left click in corners; then move to the next corner and left click to form a straight line.
- If you left click and move to the next location and left click and drag, a curve will be formed.
- Click directly on the first node with the last node to enclose the shape.

## Notes:



*If you wish to apply Auto Trace to the scanned image, trace with a fine line Sharpie before scanning.*

*Zoom in for better accuracy when using the drawing tools.*

*You will be drawing the cutting line not the stitching line of the block.*



- Click on the space bar when finished.
- Click on *Edit Shape Nodes* and edit as necessary.
- If the scan was crooked, you can rotate the finished object to align it with a horizontal guideline. This makes it easier to cut the fabrics on grain.



**Note:** Make sure the *Rectangle Selection* is highlighted. To add a guideline, click on the ruler at the top of the design screen and drag to the desired location.

- Enter a value in the *Rotate* box in *Tool Options* and hit *Enter*. Check with the guideline for accuracy. You can select *Undo* and enter a new value if needed to align the object.
- Select the shape and click on the CutWork icon.
- Add a basting box if desired.
- Save the file as Peace Dove Shape 1.
- Export to the machine of your choice.



## Drawing the Block with the Create Outline Tool

- Repeat the scanning process to scan the second shape in the block, but name this scan Peace Dove Shape 2.
- For the second shape, let's use a different drawing tool. Select the *Create Outline Tool*.
- Use the picture in the background as a guide to draw the shape.
- To draw a straight line, click, hold the *Shift* key and click at the next location.
- To draw a curve, click in the design area then move the mouse to the next area and left click and drag to reveal the control handles of the next node. Release the mouse to set the node.
- Click on the space bar when finished.
- Click on *Edit Shape Nodes* and edit as necessary.
- Add *CutWork* to the shape.
- Add a basting box; then click on *Save*.
- Navigate to the location to save; name the file, Peace Dove Shape 2.
- *Export* the file.



## Method 3: Using the Trim Command

- Open a new file, follow the Wizard, selecting the *New Graphic* option.
- Select the *Create Rectangle Tool*.
- Click and drag while holding the *Ctrl* key to draw a square on the screen. It can be any size.
- Change the roundness to zero in *Tool Options* to give the rectangle square corners if necessary.

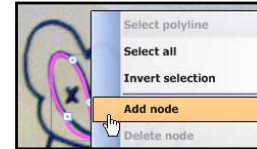


## EDITING NODES

Select a node by clicking on it. It turns blue.

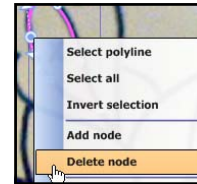
### To add a node:

Right click on the line where you wish to add the node and select *Add node* or simply double click on the position. A smooth node is always added.



### To delete a node:

Right click on the node and select *Delete node* or select the node and press delete.

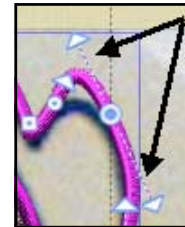


### To change a node:

Select the node you wish to change, right click and select the opposite type from the menu. A smooth node creates curves; a cusp node creates points and straight lines.

**To move a node:** Select the node and drag it into a new location.

**To reshape** the outline, you may also change the direction or shorten/lengthen the control handles.



To hide a picture in the background, select *View > Backdrop > Hide*.

To make the picture re-appear, go to *View > Backdrop > Below Embroidery*.



- Select the rectangle with the *Rectangle Selection* icon.
- In *Tool Options*, make sure *Proportional* is checked.
- Change the Width value to 5 inches (127 mm).



- Select *Enter* to activate.
- Select the Circle Tool.
- Hold the *Ctrl and Shift* key down as you draw a circle on the upper right corner of the square (see picture).



- Select the circle and change the dimension in the Tool Options to 1.6875" (42.86 mm). Hit *Enter*.
- Select the *Create Pie* Tool.
- Create a pie shape by holding the *Ctrl and Shift* keys; click and drag to form a quarter pie shape from the lower left corner of the square to the upper right.



- Change the dimension of the pie shape in *Tool Options* to 5" (127 mm).
- Select the square and the pie shape while holding the *Shift* key, click on *Align Left and Align Bottom*.

## Trimming the Pieces



- *Edit> Select All*. Select *Edit> Copy*, then *Edit> Paste*. Move the copy away from the original by clicking and dragging on one of the object's outline or by using the arrow keys on your keyboard.
- Select the original pie shape.
- Click on *Mirror X and Mirror Y*.
- Select the circle and select the pie while holding the *Ctrl* key.
- Click on *Trim*.
- Select the circle and delete. Delete the square.
- Select the copy.
- *Ungroup* the copy by right clicking and selecting *Ungroup*.
- Select the circle by clicking on its outline and move it away from the square/pie combination.
- Select the pie; then select the square while holding the *Ctrl* key.
- Click on *Trim*.
- Select the square and delete.
- Arrange the pieces in the hoop as desired.

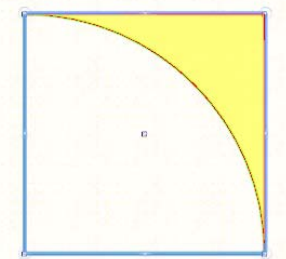
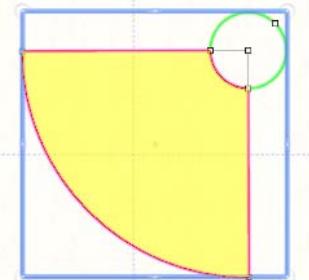
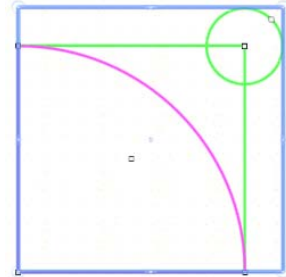
## Adding CutWork to Shapes



- Select each of the shapes while holding the *Ctrl* key.
- Click on *CutWork* icon.
- To add a 1/4" seam to all the pieces, change the *Cutting Offset* to 6.35 mm.
- Add a basting box to the shapes.

To open Tool Options, go to *View> Toolbars*. Place a check mark in front of Tool Options.

If units are in mm, go to *Tools> Options; General tab*. Change from metric to US in Measurement systems. You must restart the software for the change to take effect.





- *File*> *Save As*.
- Navigate to the location to save the file.
- Name the file, *Transforming Shapes*.
- Select *Save*.
- Export the file to the machine of your choice.

## Creating a Quilt Label



- Open a new file and work through the Wizard, selecting the *New Graphic* option.
- Select the *Edit Text* icon.
- Click on the drop down box of *Font Name* and choose the font you wish to use. Click on the design screen and type on the screen, "Designed by (your name)".
- Change the Font Size to .75" (19 mm) in Tool Options.
- Deselect the lettering.
- Select another font and change the size to .50" (12.7 mm). Click on the screen below the first lettering.
- Type in the date of your creation below the first line.
- *Edit*> *Select All*. *Align Centers Vertical*.
- *File*> *Save As*, name the file *Quilt Label*.



## Creating a Flower with Clones

- Open a new file and work through the Wizard, selecting the *New Graphic* option.
- Add a horizontal and vertical guidelines so they intersect at 0,0.
- Add a diagonal guideline by right clicking on the ruler, selecting *Add New Guideline*, and selecting *Diagonal*.
- Click on the center of the diagonal line till the *Move Guideline icon* appears and drag to move into place at the intersection of the horizontal and vertical guidelines.
- Zoom in to check for accuracy. Move the lines as needed so they all intersect at 0,0.
- Select the *Create Ellipse* tool.
- Draw a long, narrow ellipse.
- Hit the space bar to select the ellipse.
- In *Tool Options*, enter 0 in the X axis and 0 in the Y axis. Hit *Enter*.
- Select *Edit*> *Add New Objects As Clones*.
- Place the cursor on the upper right hand corner of the selected object to get a rotation handle. You will use the diagonal guideline for placement.
- Rotate the ellipse to the left and before releasing the left click, right click and select *Copy* from the menu options.
- Select *Edit*> *Repeat Last Transformation* two times.



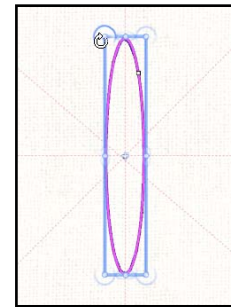
If you wish to use the same font for both lines, simply hit *Enter* after typing the first line to take you to the next.

To add center guidelines, click on the horizontal ruler and drag the guideline to 0. Click on the vertical ruler and drag the guideline to 0.

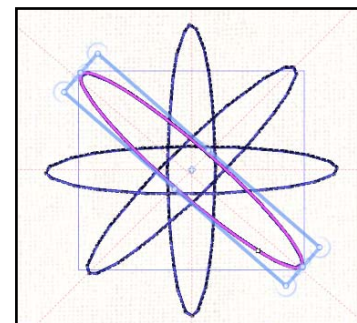
Move guideline icon:



Rotate guideline icon:



If you edit the original ellipse, all clones will change accordingly.



- Select the original ellipse, right click, and from the menu, select *Clones*; then *Select all Clones*.
- Choose stitch 23 from *Object Properties*.
- While the flower is selected, select *Edit> Copy*.
- Go to *File> Open* and browse to find the Quilt Label file. Open the file.
- Select *Edit> Paste* to add the flower to the label. Position as desired.
- Save the file.

## Cutting the Label



- Select the flower and the lettering and right click.
- Select *Group* from the right click options.
- Select the *Create Rectangle Tool* and draw a rectangle around the grouped objects.
- *Edit> Select All*.
- *Align Centers Horizontal* and *Align Centers Vertical*.
- Select the rectangle.
- Click on the *CutWork* icon.
- Place a checkmark in front of *Running Before* and change the value to  $-7$ . You will ravel out the edges of the label to this stitching line.
- Change the stitch in *Object Properties* to a decorative stitch.
- *Edit> Select All*.
- Rotate the label to fit in the hoop by clicking and dragging on a corner when the *Rotate symbol* appears.
- Save the file.
- *Export* the file to the machine of your choice.

*You could also add appliqué to the label and stitch the label to the quilt back before finishing the quilt.*

## Stitching the Shapes

- Spray 10 layers of fabric with spray starch.
- Stack the 10 layers on two layers of Heavy Cut-Away or one layer of HydroStick stabilizer. Spray the layers with 505 Temporary Spray Adhesive.
- Stitch the basting frame then convert the machine for use with the CutWork tool. Cut the pieces.
- Repeat for each of the quilt files.
- For the quilt label, use one layer of stabilizer and one layer of fabric in the hoop.

*Sixty Grandmother's Flower Garden will be cut in one file. If you do not want this many pieces, adjust the number of fabric layers accordingly.*

*For the other quilt files, adjust the number of fabric layers as necessary to cut the number of pieces you need for your project.*