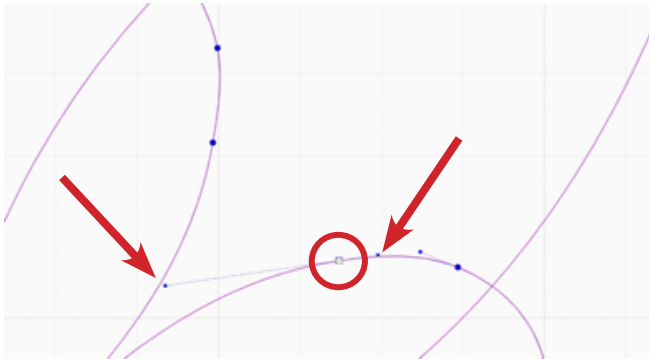


Nodes are the blue dots in PS Designer (and all other types of vector-based artwork) that generate the lines associated with the design. It is all done by the software with some behind-the-scenes math formulas. Nodes also have two handles, which allow the designer to manipulate the amount of curve.

In Designer when selected, the blue dot becomes yellow/white. The red arrows below indicate the handles.

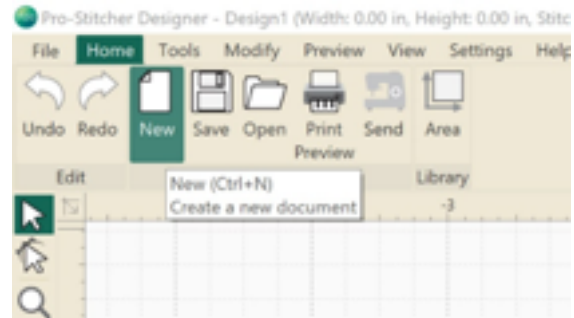


There are four types of nodes for Designer.

- Line
- Cusp
- Smooth
- Symmetrical

This tutorial will tell what each type does and when to use it.

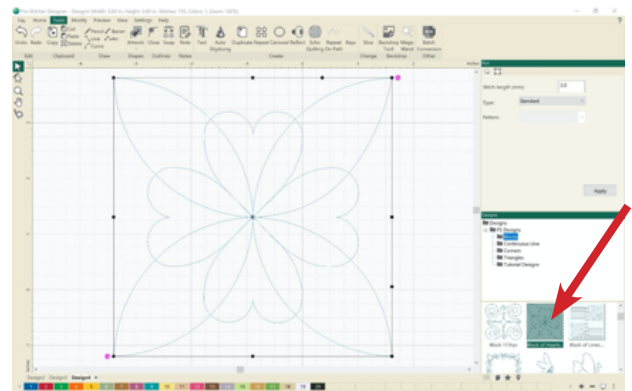
- Open a **New Design**.



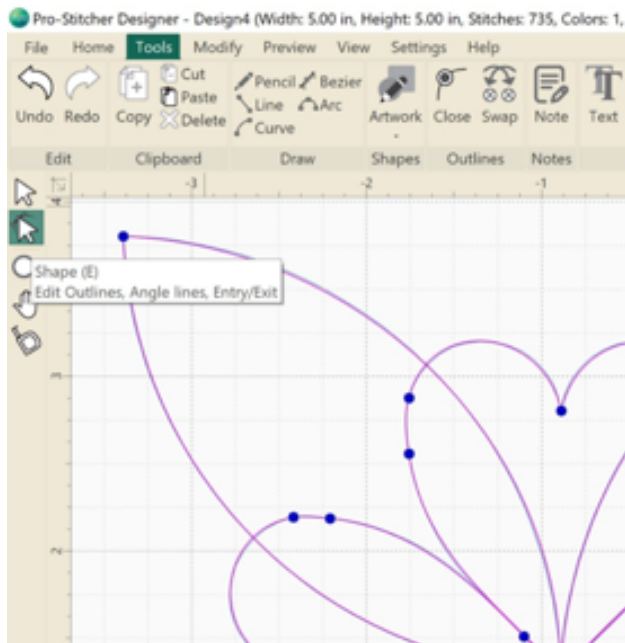
- In lower right hand side bar menu, select the small **library book** to access Designer's pre-stocked artwork library.



- Click **Designs-> PS Designs-> Blocks** and then scroll down to select **Block of Hearts**. Click, drag, and drop this block into the design workspace.

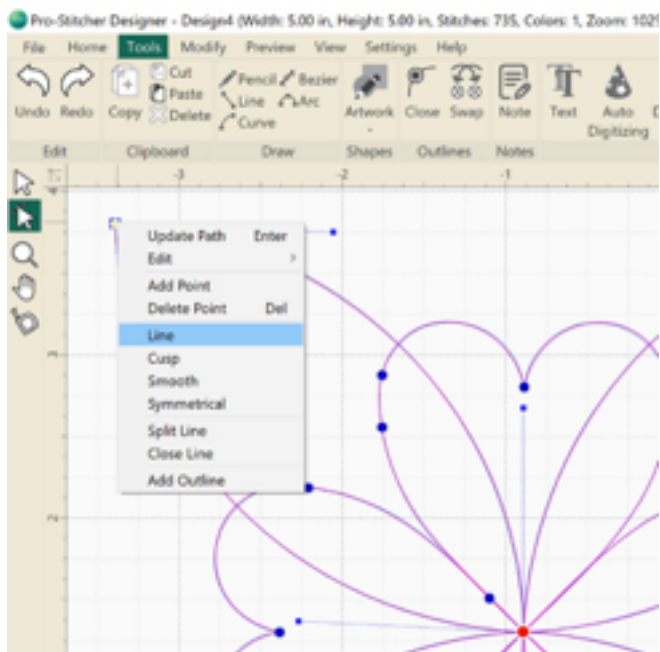


- Click the **Shape Tool** on the left side tool bar to reveal the nodes in this design. The nodes will show up as blue dots. Green or red dots are the entry and exit points for stitching.



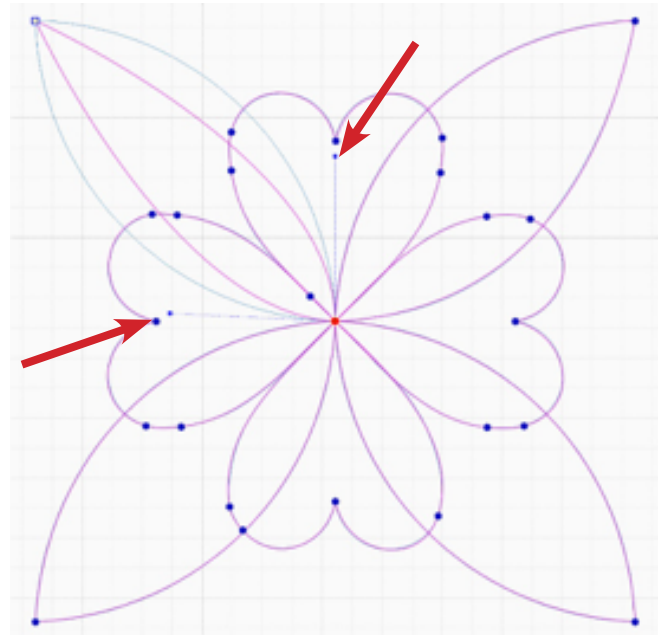
LINE: Line is used to make corners. The Line option basically, discards any handles or additional information that would add curve to a line.

- Right Click on the **furthest northwest node**. Select **Line**, which will change this node.



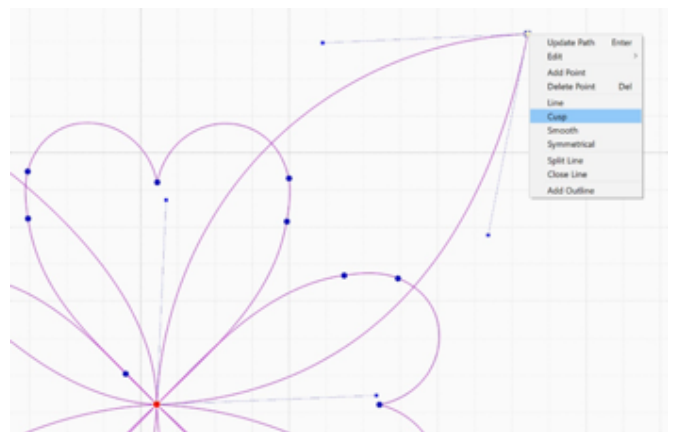
By choosing Line, any curve associated with that point has been removed.

Notice, though the pink lines coming into the point still appear to have curve in them. This is a result of the node at the other end of the line. It has long stretched-out handles which creates the curve. (Red arrows are pointing to handles.)

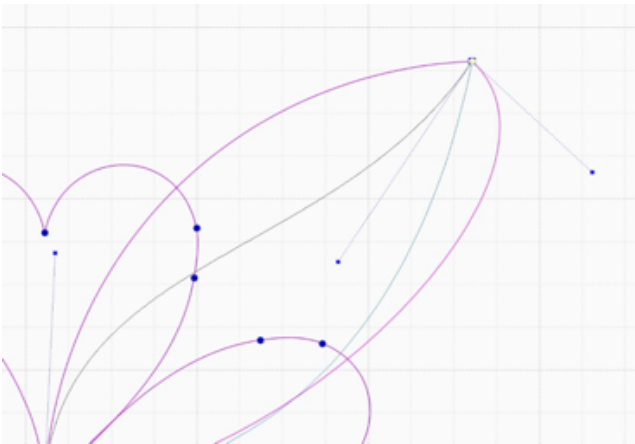


CUSP: A cusp is a node with two independently moving handles. Cusp points give the most control over a design.

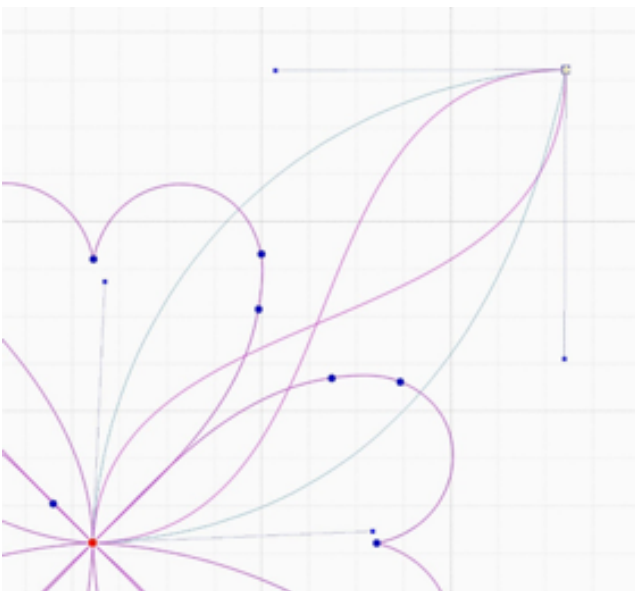
- Right Click on the furthest northeast node. Select **Cusp**, which will change this node.



- While still in the **Shape Tool**, click and drag the cusp node's handles to change the shape.

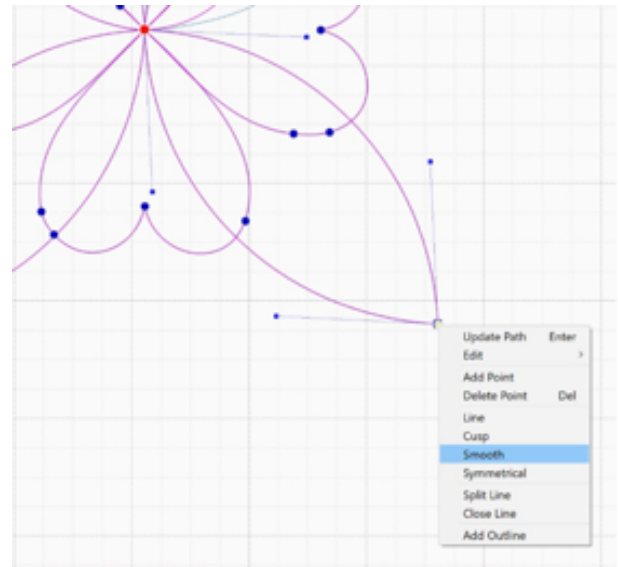


NOTE: Crossing the handles from one side to the other will create a loop. It is a neat effect. Try that next.

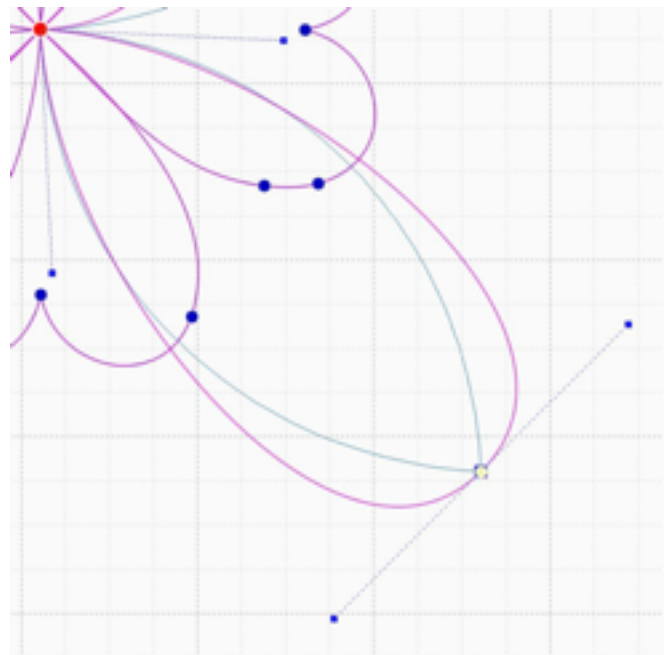


SMOOTH: The Smooth node option simply balances the handles on the right and left side of the node. The objective is generally to flatten out the curve associated with the chosen node. The behind-the-scenes formulas take all the credit for how smooth and in what direction the newly altered line will lay.

- Right Click on the furthest **southeast node**. Select **Smooth**, which will change this node.



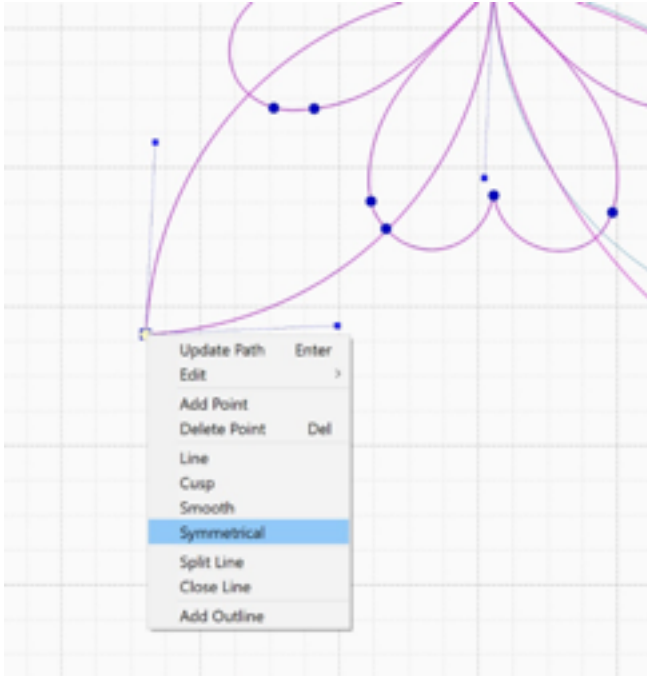
Notice how the node's handles are automatically in a near straight line with each other to create a full round (smooth) curve, rather than a more sharply pointed curve.



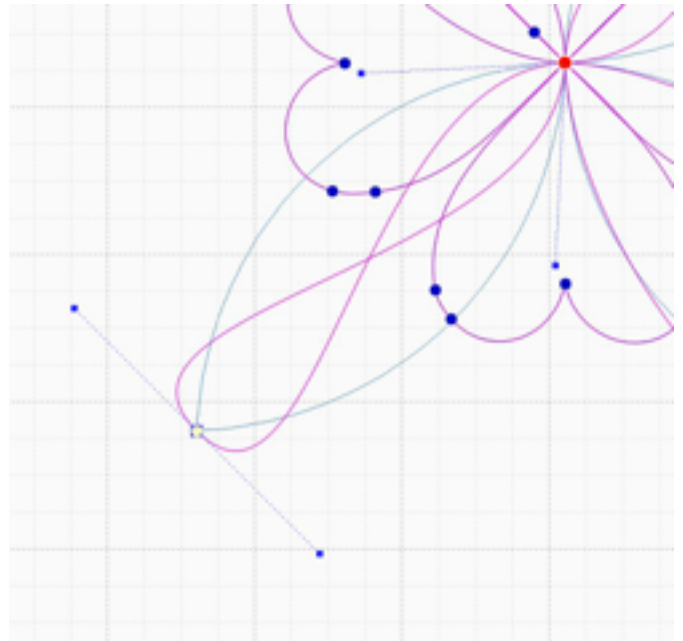
- Click to drag either one of the handles. Find that they move around the node together. The handles can, however, be shortened or lengthened independent of each other.

SYMMETRICAL: Change to a symmetrical node to create handles that move symmetrically to each other in rotation and length. This is very useful when creating quilting designs.

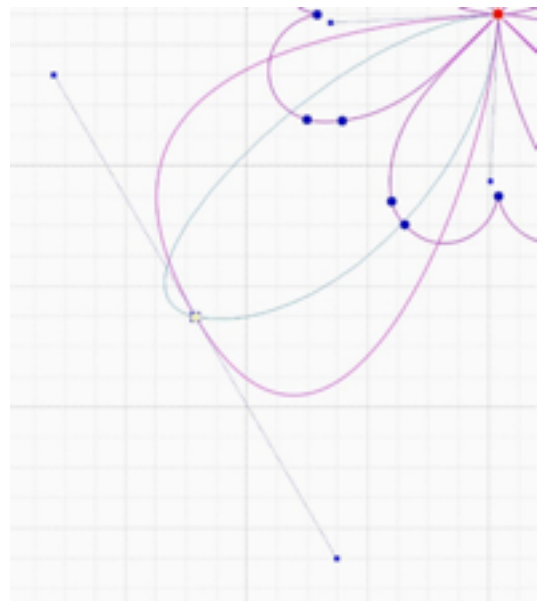
- Right Click on the furthest **southwest node**.
- Select **Symmetrical**, which will change this node.



Notice the handles are now symmetrical. The enter and exit the node at the same angle and are exactly the same length.



- Click and drag either handle to see it move in tandem with the other side.



- Depending on the design customization and needs, choose the node type that best suits the work.