

Drawing a Heart

8 inches wide and 7 inches tall

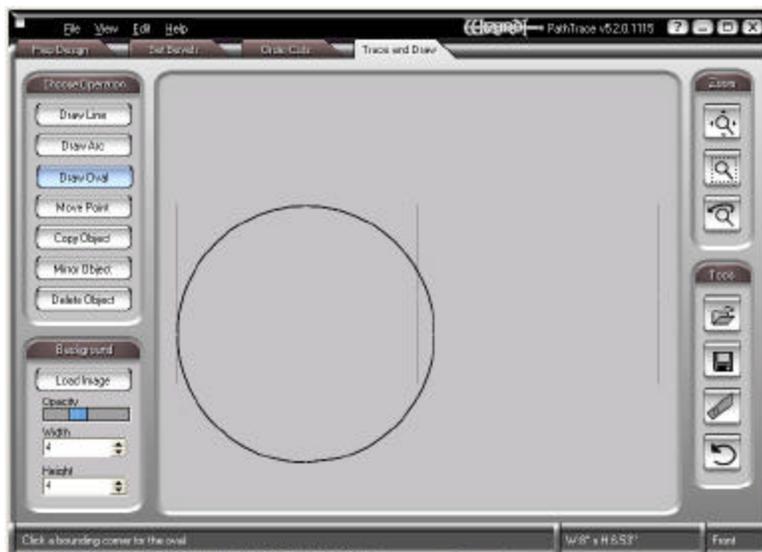
Start with a vertical line. Hold the Control key to draw in ortho mode.

Offset it 4 inches to the right and 4 inches to the left. The outer lines are now 8 inches apart.



If the offset lines are not visible, click the Zoom All button. The complete drawing will now be in the field of view.

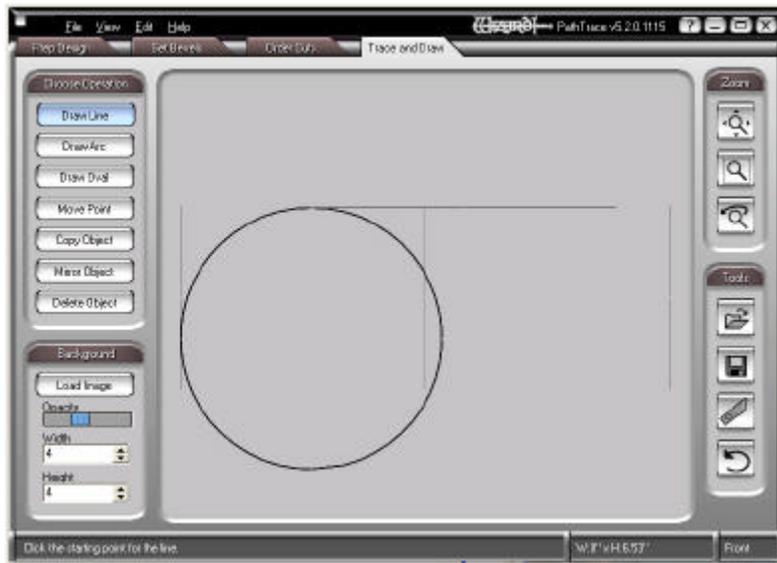
Draw a circle. Start it by snapping to the point at the top of the line on the left side.



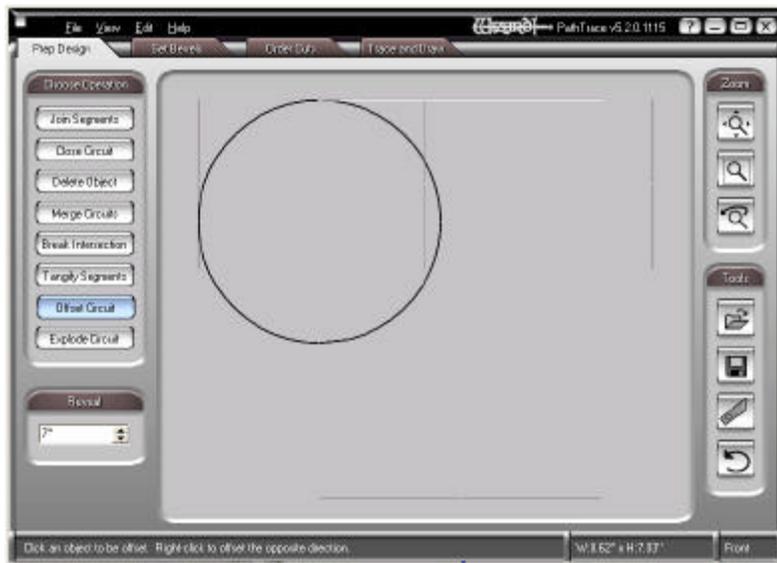
Hold the Control key and draw the circle down and to the right.

Make sure that the circle stays against the line on the left.

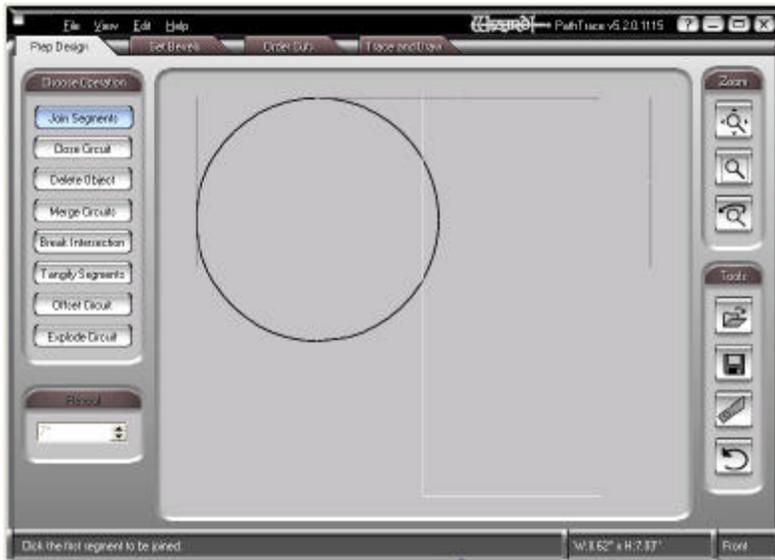
Look at the intersection of the circle and the center line. Imagine the other side of the heart in place and what the crevice would look like. Make it deep enough to be dramatic looking.



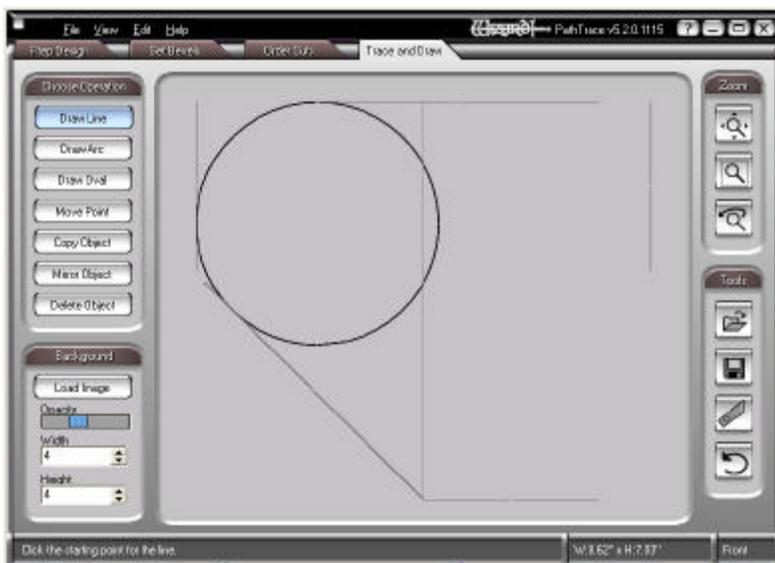
Snap (right click) the start of a line to the top of the circle.
Hold the Control key and draw the line a little to the right.



Offset this line 7 inches down.
Once again, if you cannot see it, click the Zoom All button.

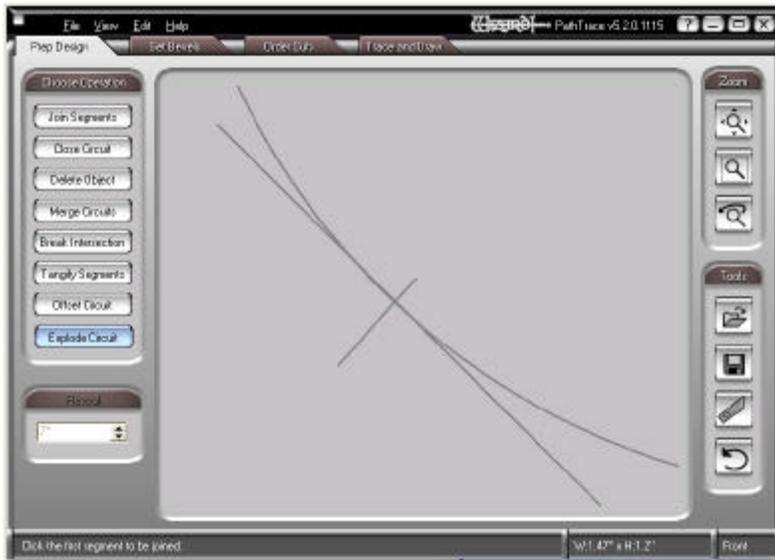


Click the Join Segments button and join the center line to the horizontal line at the bottom.
 We now have a point at the center, 7 inches down, where we can snap the start of the next line

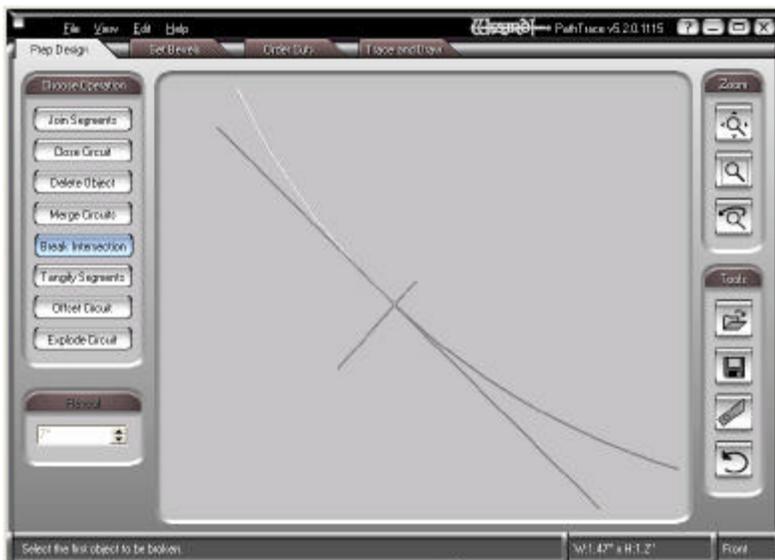


Click Draw Line and snap (right click) to the point at the bottom.
 Drag the line up and land it as closely tangent to the circle as you can.

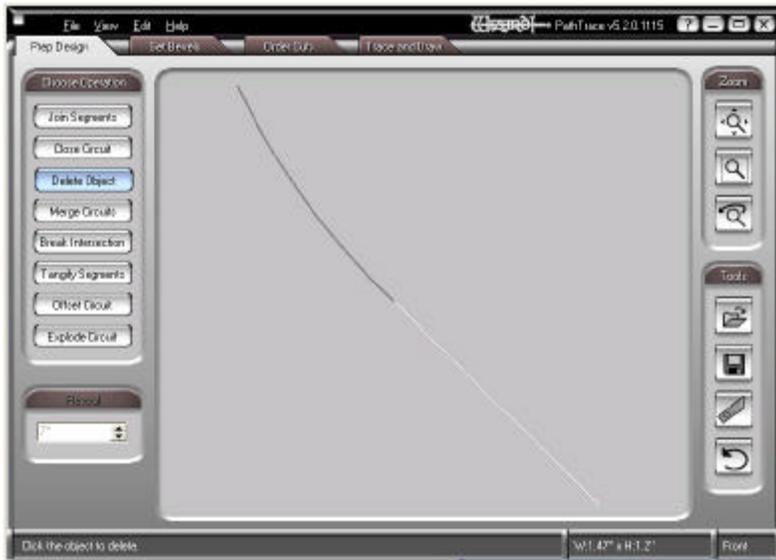
Explode the circle to separate it into its four arcs.
 Zoom in on the intersection of the line and the circle.



The intersection will not be a single point. We now need to break the line and the arc then join them at so that the intersection will be a single point.
Draw a short line that goes through the middle of the area where the intersection occurs.

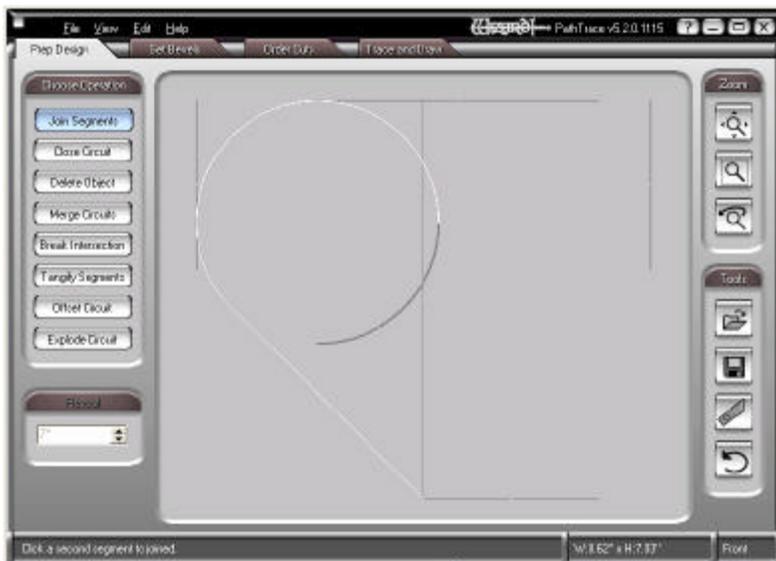


Click on Break Intersection and break the intersection that the arc has with the short line.
Then break the intersection that the short line has with the long line.



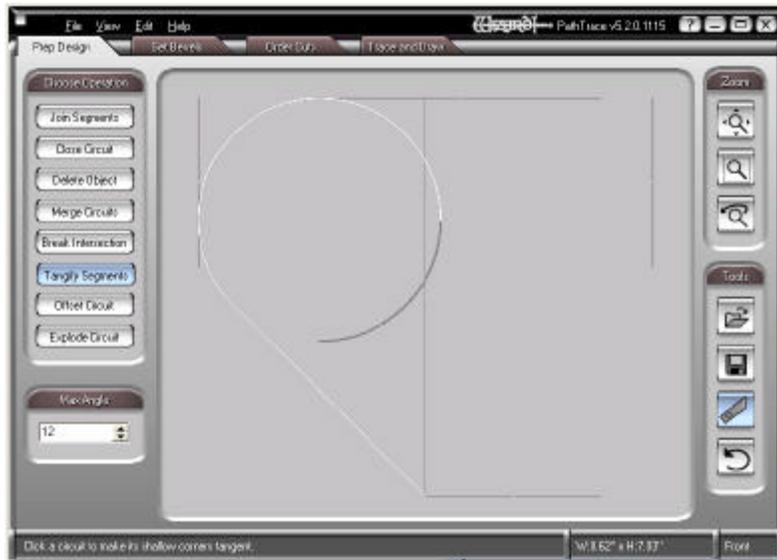
Delete the piece of the arc below the short line, the piece of the long line above the short line, and the broken pieces of the short line. All that is left will be the line and the arc.

Click the Zoom All button so that you can see the drawing so far.

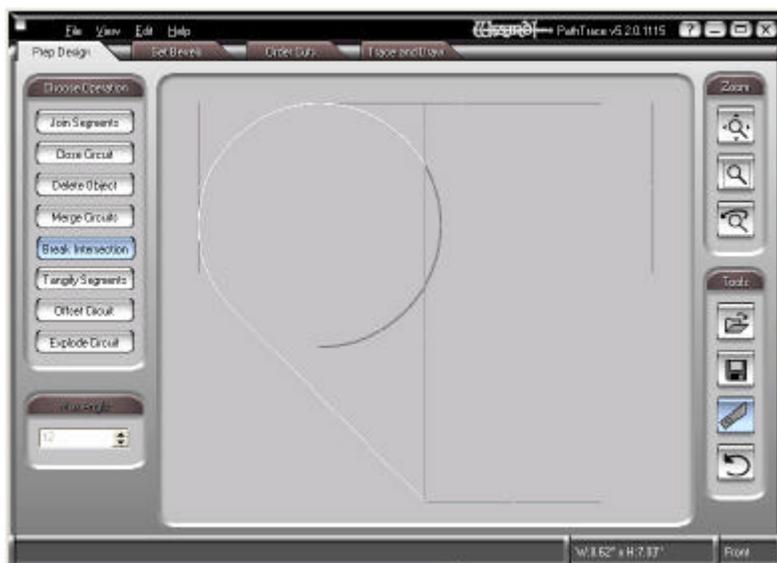


Click Join Segments and join the line and all the broken pieces of the circle you need to form the left half of the heart. Even if there is a separation between the line and the arc, the segments will still join.

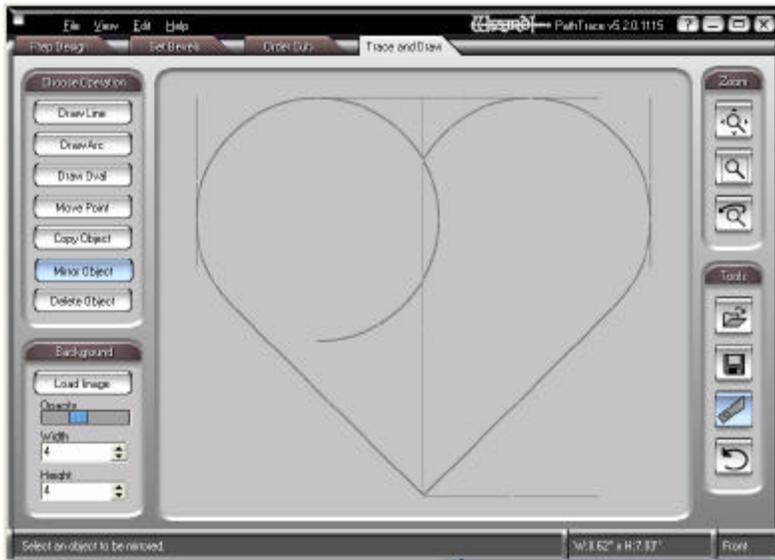
In order for the Wizard to cut designs as smoothly as possible, it is important that lines and curves join each other as smoothly as possible. Chances are that this line and this curve join at a slight angle. We need to smooth the junction so that the angle is zero.



Click the Tangify Segments button. Move the mouse so that the half of the heart highlights, then click. You will probably not see anything unless the two met at a severe angle, but now you are assured that the cut will be smooth.

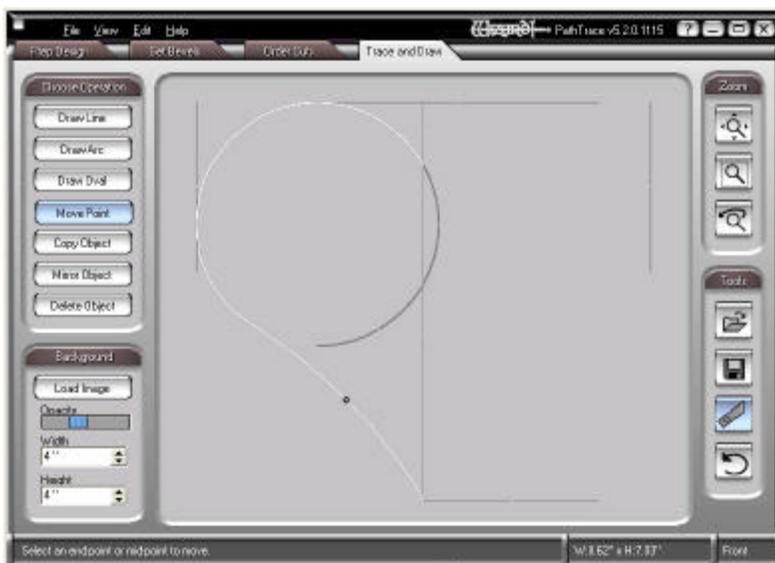


Before we mirror this half of the heart to finish it, break the intersection that the arc has with the center line so that we get a proper joint at the top of the heart.



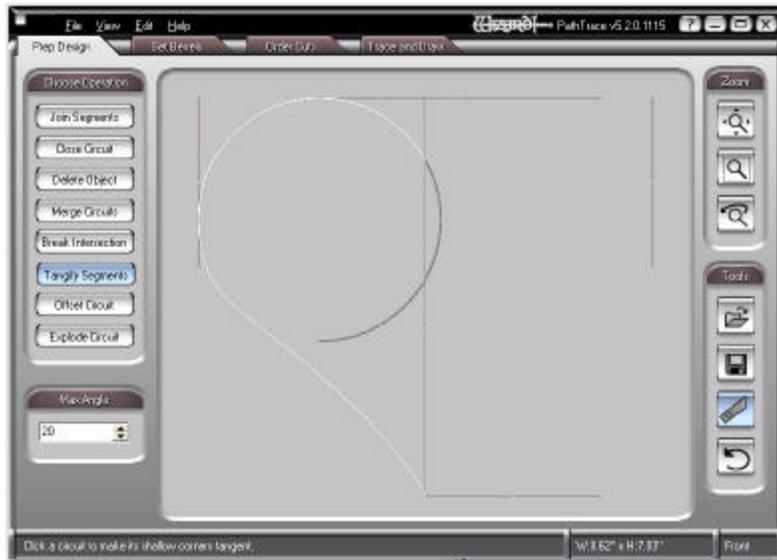
Mirror the left half of the heart onto the right side to complete the design.

OR...



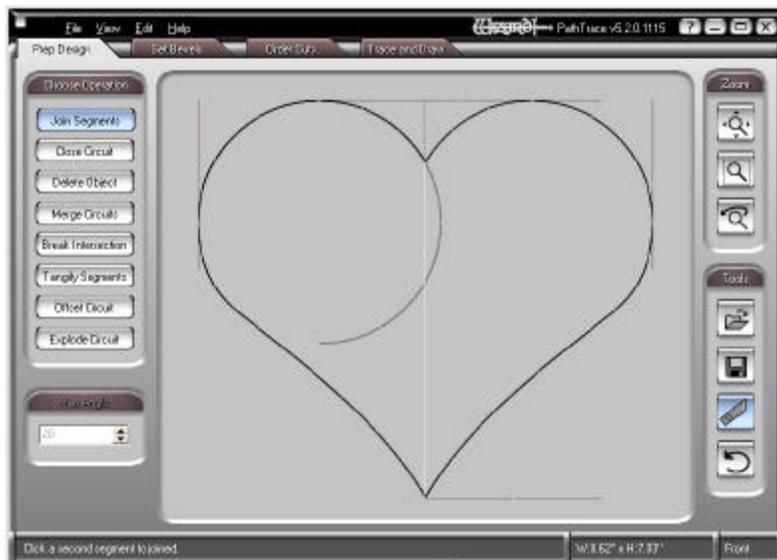
If you'd like to make the straight side slightly concave, click Move Point, grab the midpoint of the line, and move it in a little. Watch that you don't move it in too much. Remember that the point at the bottom could easily become too sharp.

Notice, too, that the intersection of the arc and the now curved line is no longer smooth.



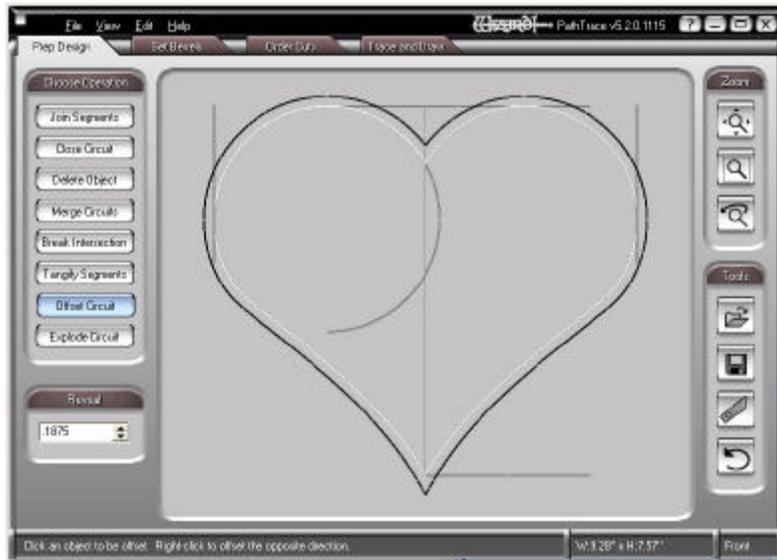
Tangify it again.

Notice the Max Angle field at the bottom left. This is the maximum allowable angle. Any angle less than this setting will be smoothed. If you leave it set to 12 degrees, it may not work – this angle could easily be greater than 12 degrees. Set it to something higher where this transition will certainly be smoothed out. In this case the setting is 20 degrees.

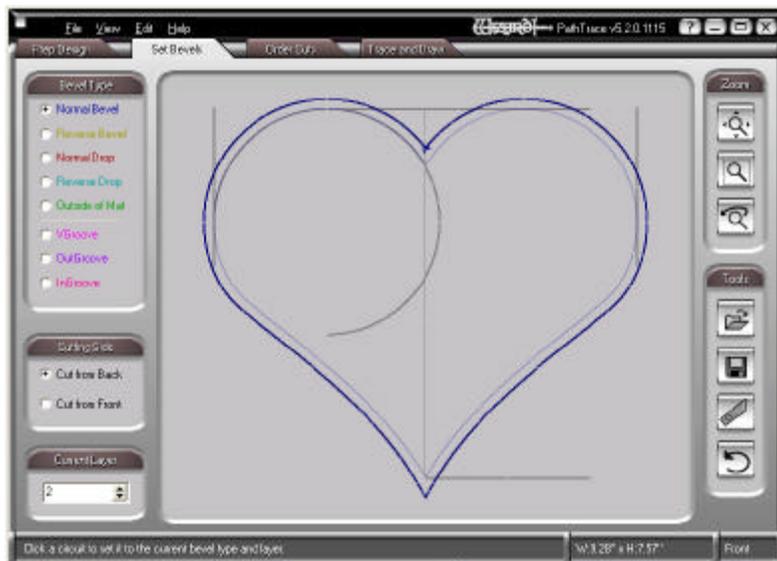


Mirror to complete the heart just as you did before.

Whichever variation you've done, click Join Segments, click the left half, then the right half, then right click to close the circuit. The heart will turn black.



If you would like to make this a double mat, click Offset Circuit, type the reveal size you'd like into the Reveal field at the bottom left, and click.
 Notice how the point at the bottom is sharper on the outside heart - another reason to be careful how concave you make that diagonal line.



Click the Set Bevels tab and trace the design to cut. Layer 1 is the inside heart, Layer 2 is the outside one. Both will cut as normal bevels from the back.
 Notice that it doesn't matter that we left all those undeleted lines behind.

Save the design as a Wizard CutArt.