# Revu Tutorial: Draw and Customize Arcs and Curves

Sketch any shape you want using Bluebeam's arc and curve annotations. This tutorial will show you how to create and customize these rounded markups.

Create an Arc

To place a simple arc annotation, select the ◠ **Arc** icon from the toolbar, or use keyboard shortcut "Shift + C". Draw the arc by holding down the left mouse button and dragging your mouse along the PDF.
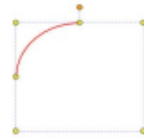
To extend the arc up to 360°, select one of the yellow Control Points and drag it with your mouse into the desired shape. Just like any other markup, you can customize the appearance from the Revu toolbar or the Properties tab.

Create a Curve

Use Revu's curve technology to create more complex shapes with multiple curves. Curve annotations start out as either polygons (for closed shapes) or polylines (for shapes with a start and end point). There are two ways to create Curve annotations:

Option 1: Transform angles into curves

1) Select either the ◢ **Polygon** or ⬀ **Polyline** icon from the Revu toolbar, or use keyboard short cuts "Shift + P" (polygon) or "Shift + N" (polyline).
2) Place the annotation on your PDF by using the left mouse button to define the length and direction of each segment of the shape. Double-click on the last point to finish.

Polygon   Polyline
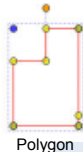
As you can see from the images above, each segment connects into a point. Each of these connections has a yellow Control Point for adjusting the markup's size and shape. Transform these connections from angles to curves by doing one of the following:

- Click the **Control Point** while holding down the "Ctrl" key.

- Right-click on the **Control Point** to display a context menu with a Control Point section, and select **Convert to Arc**.

- Click the ⚡ **Convert** icon from the Control Point toolbar. You can turn this toolbar on by going to *View/Toolbars*.

Polygon   Polyline
with curve   with curve
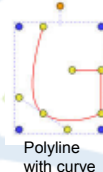
Option 2: Curve as You Go

A second option for creating curves is to curve the markup's connections as you make them. To do this, hold "Ctrl" and drag the mouse as you click a line segment for a Polygon or Polyline. The connection will instantly curve.

Hold down "Ctrl", drag your mouse and curve the annotation as you draw it.
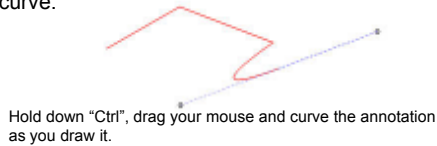
Customize a Curve

Now that you have a curve annotation, it's time to manipulate its shape. Each curve has its own set of Control Points, called Handlebars.

To adjust the shape of the curve, select the **Handlebar** and rotate it.

Handlebars

Rotate the Handlebars to adjust the curve's shape.
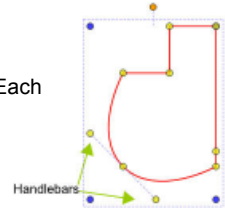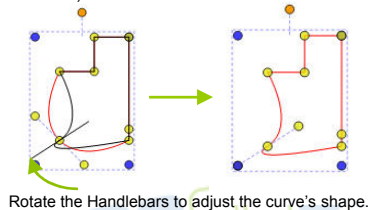
If you need to fine tune the shape or size of the curve annotation even further, you can add or remove Control Points by performing one of the following:

1) Click the markup while holding down the "Shift" key to add a Control Point, or click on an unwanted Control Point while holding down "Shift" to remove it.

2) Right-click on the shape and select **Add** from the Control Point context menu. A new Control Point will automatically be inserted. To remove a Control Point, right-click on it and select **Subtract** from the Control Point context menu.

3) From the Revu toolbar, click the **Add Control Point** icon and then click anywhere on the markup to place new Control Points. Or, click the **Subtract Control Point** icon then select unwanted Control Points to remove them.

As with all other annotations, you can customize a curve's appearance from the Revu toolbar or the Properties tab.

Examples of Curves
You can use curves to create a variety of types of markups. The images below show the different ways that the annotation's segments can be joined:

When Handlebars are parallel (left), the curves will be connected as smooth. Otherwise, the curves will come to a point (right).
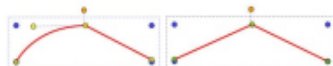
Handlebars don't have to exist on both sides of a point. The curve on the left is connected to a straight line segment. The case of no Handlebars (right) will result in connected line segments.