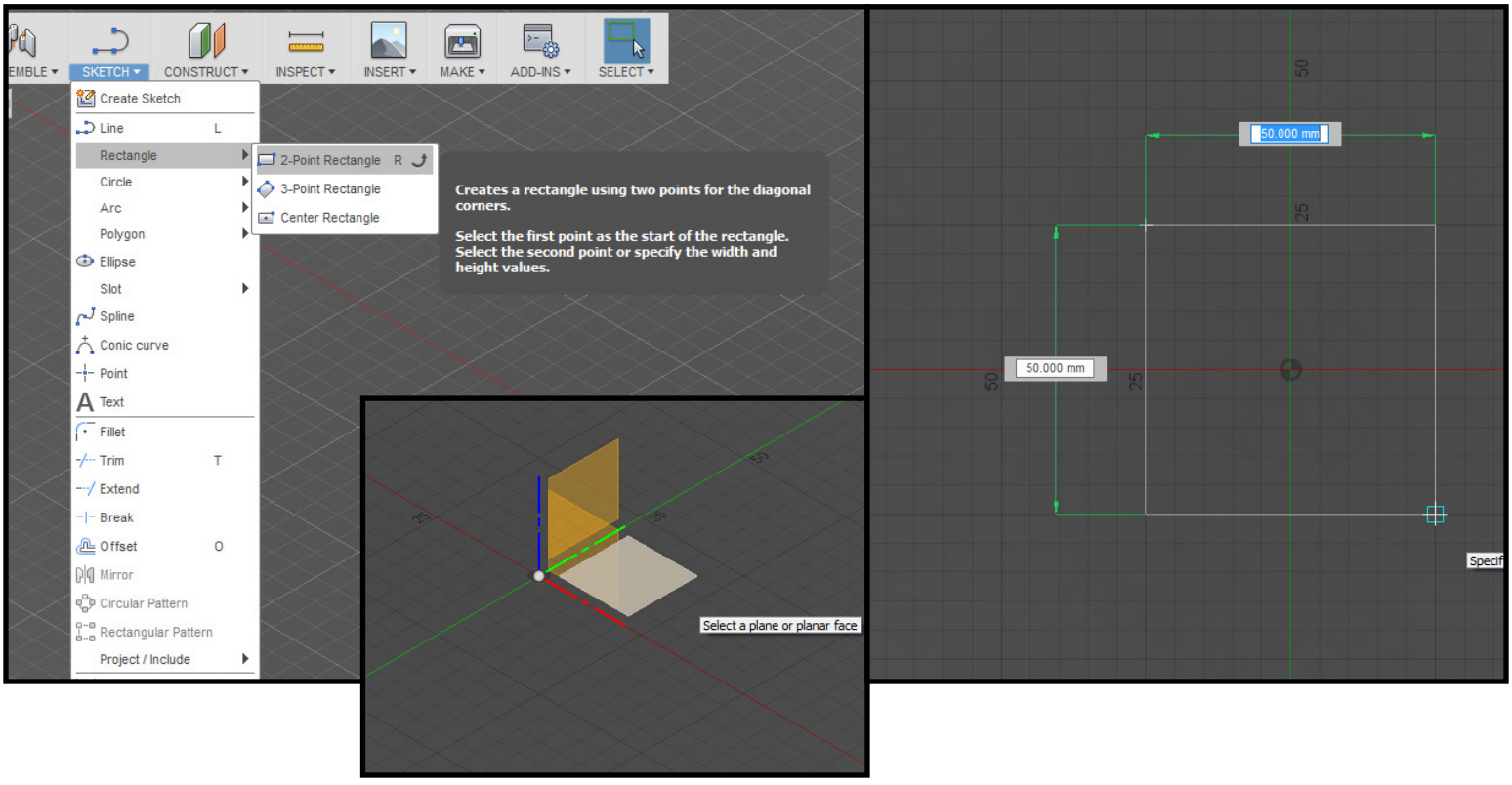
CUSTOM KEY RING CHARM IN FUSION 360

(Fusion 360 Tutorial - Beginner Level - Written by Maz a.k.a. Rose M.)

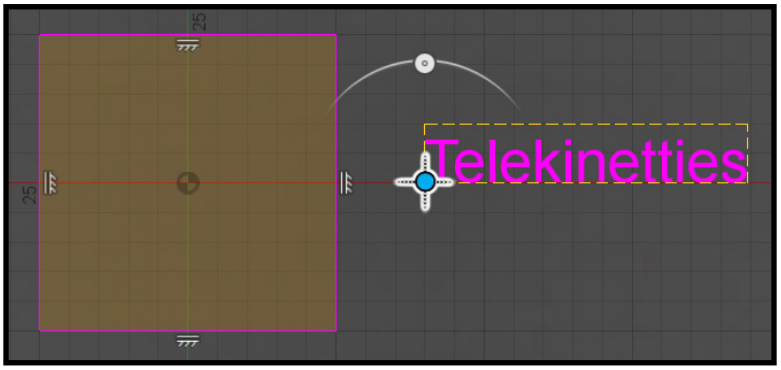
STEP 1: BEGIN SKETCH BY MAKING REFERENCE RECTANGLE

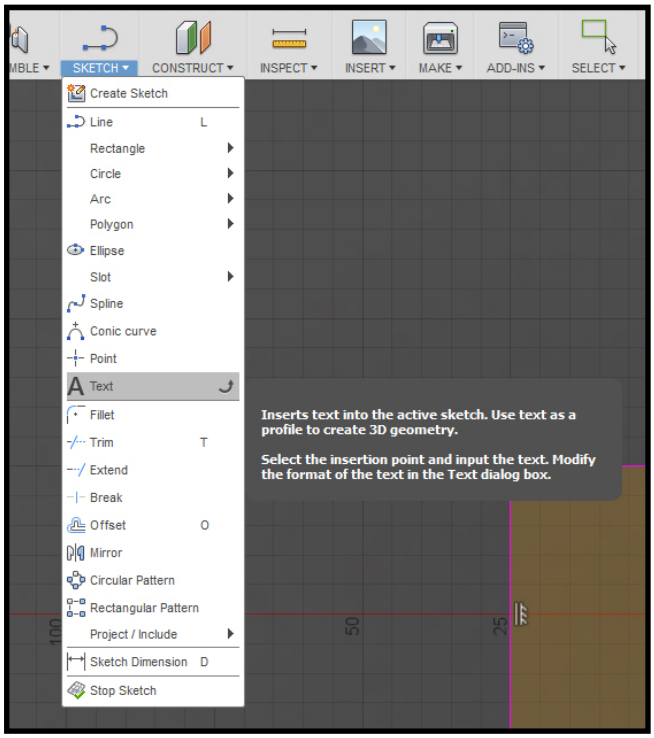
• Create rectangle sketch for size reference of key ring charm design. To do this, go to the tool bar at the top, click "Sketch ▾ " to expand the menu, hover over "Rectangle ▸ ", and click "2-Point Rectangle" (or press "R" on the keyboard). Select the floor plane for sketching. Set the first point close to the origin point and set values to "50.00mm" for both and press enter/return to accept value for each. Use this rectangle as a guide for how big to make the key ring charm.



STEP 2: MAKE SOME FANCY TEXT

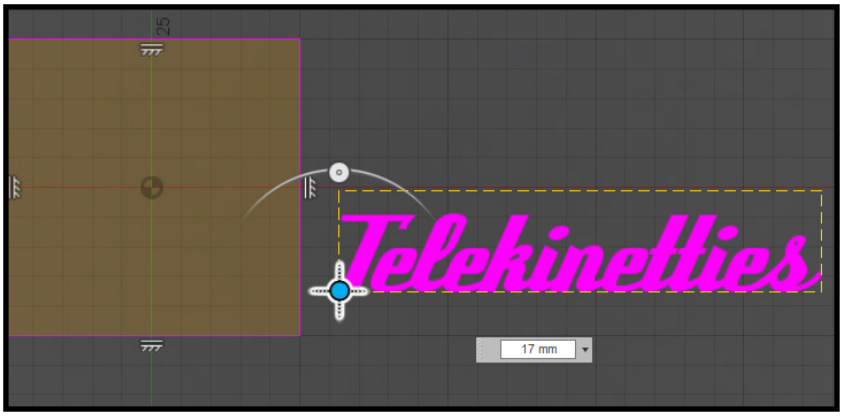
• In the tool bar at the top, click "Sketch ▾" to expand the menu, and click "Text" in the menu. Click off to the right of rectangle to set text start point. Use the dialog box on the right to enter values you desire (i.e. font, size, etc.).





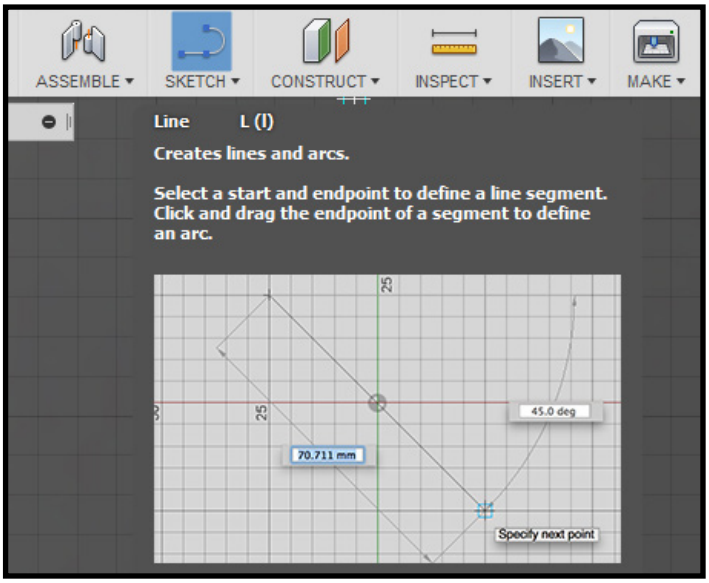
• Use the blue circle dotted cross to position the text differently if desired. Keep in mind text should not be taller than reference rectangle.

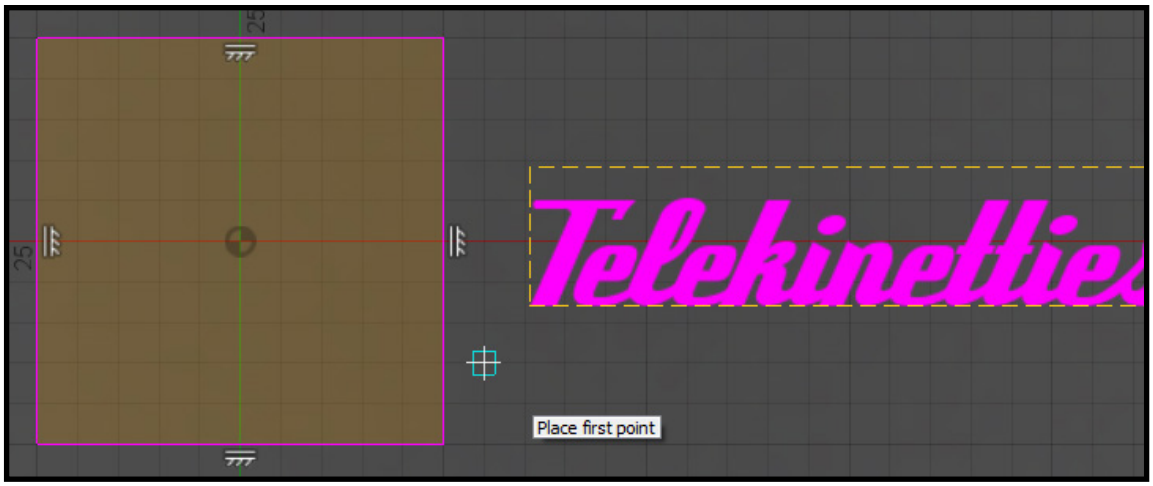
• Once text appears as desired press enter/return to accept or click "Okay" in the dialog box on the right.



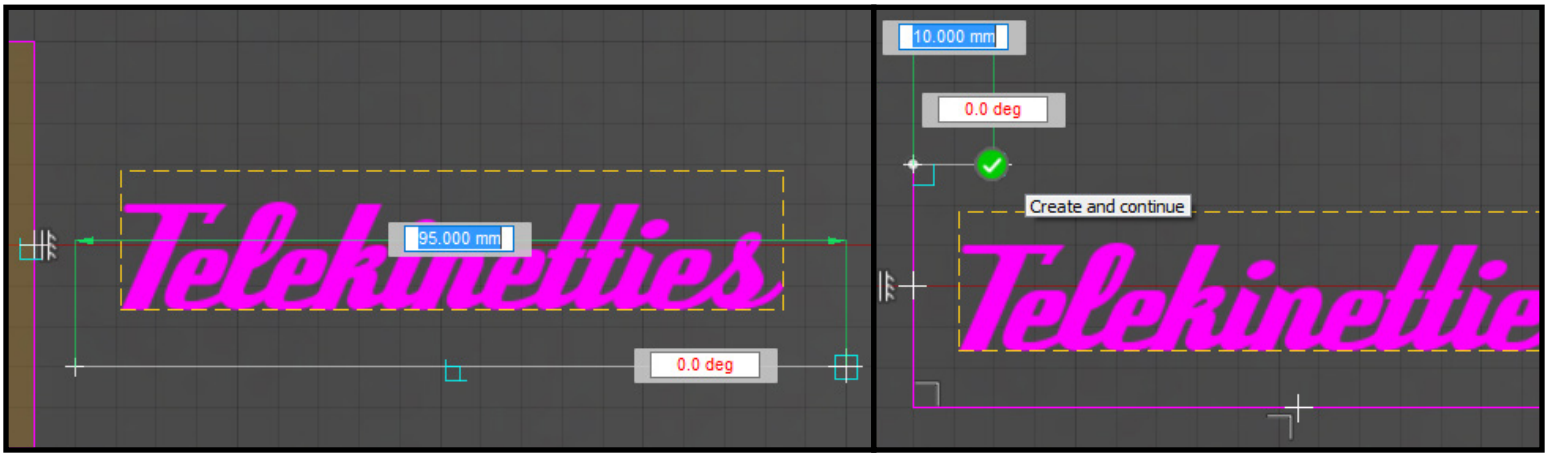
STEP 3: USE LINE & SPLINE TOOLS TO MAKE BORDER

• In the tool bar at the top, click the hooked line with three dots to activate the "Line" tool (or press "L" on the keyboard).



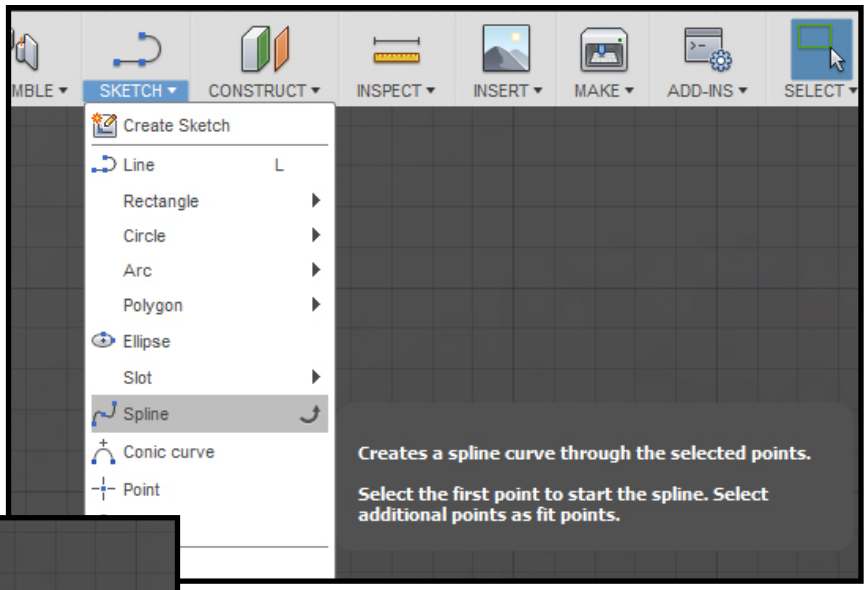


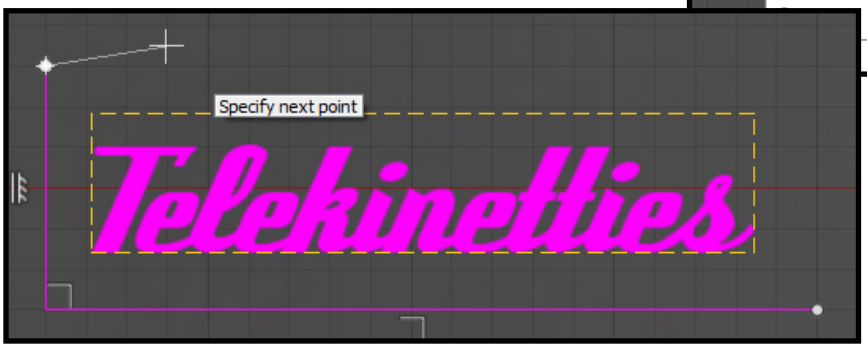
Click in the workspace to place the first point. The next point can be set by moving the mouse and clicking, or entering distance and angle values. To stop making lines click the check mark in the circle (or press "ESC" on the keyboard).



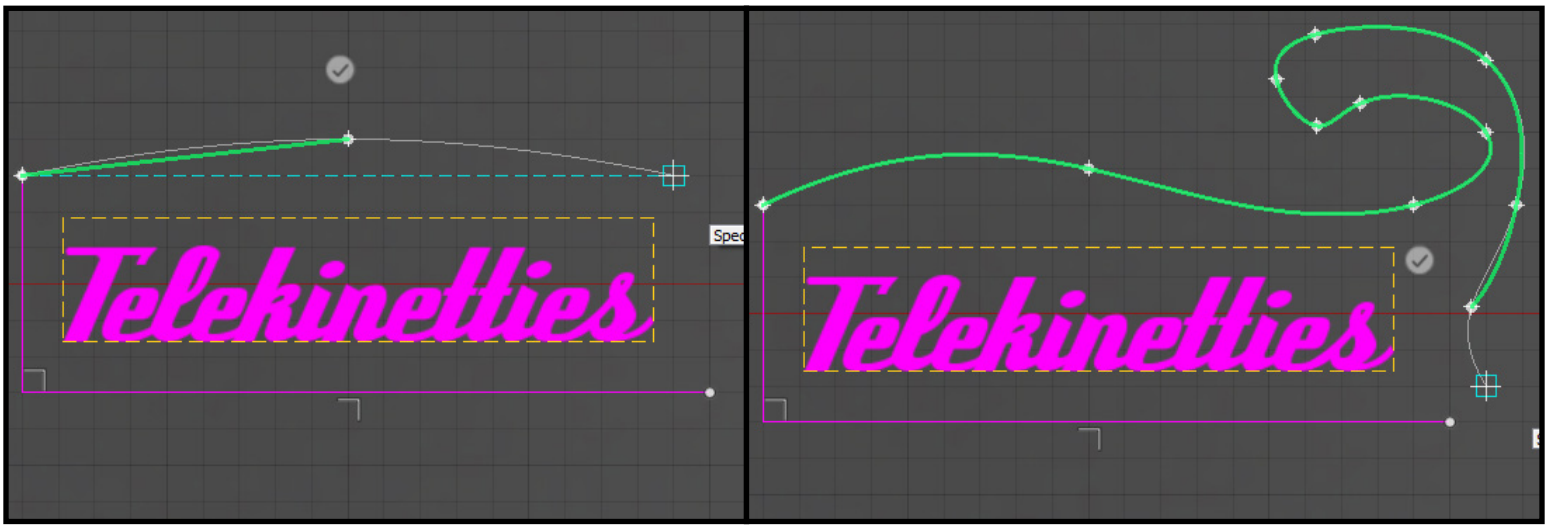
• In the tool bar at the top, click "Sketch ▾" to expand the menu, and click "Spline" in the menu.

Click in the workspace to place the first point. The next point can be set by moving the mouse and clicking.

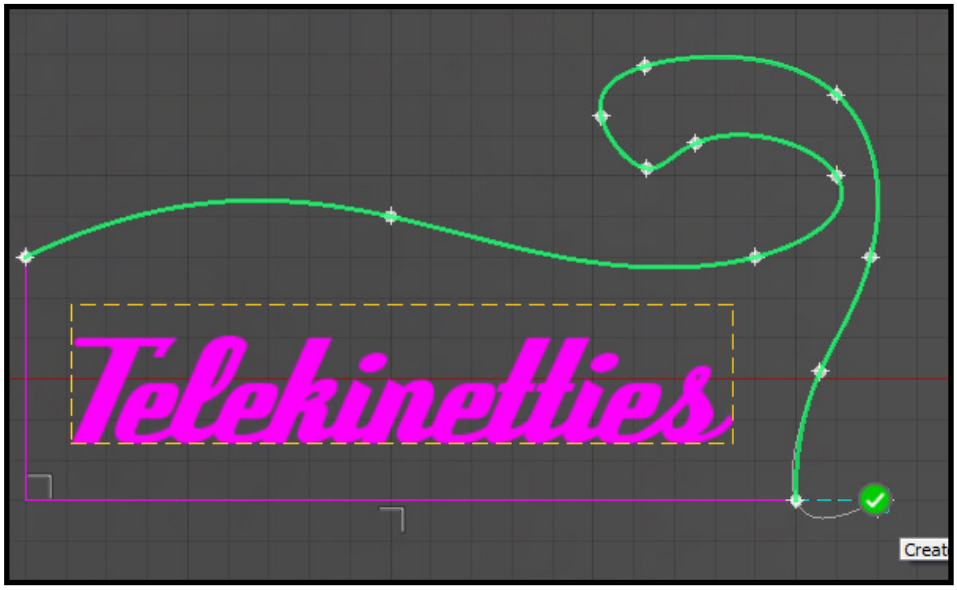




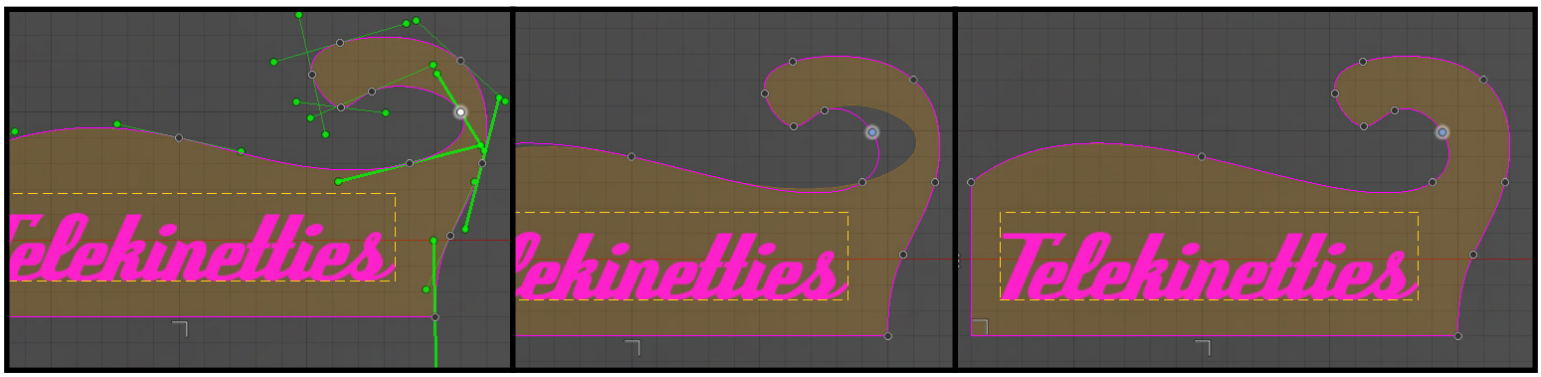
The spline tool will automatically create a curve between points once a second point is set. A continuous spline will alter curves with every point added to the line. To create a sharp spike in the spline, reactivate the spline tool while still in an active spline.



To end a spline click the check mark in the circle (or press "ESC" on the keyboard).

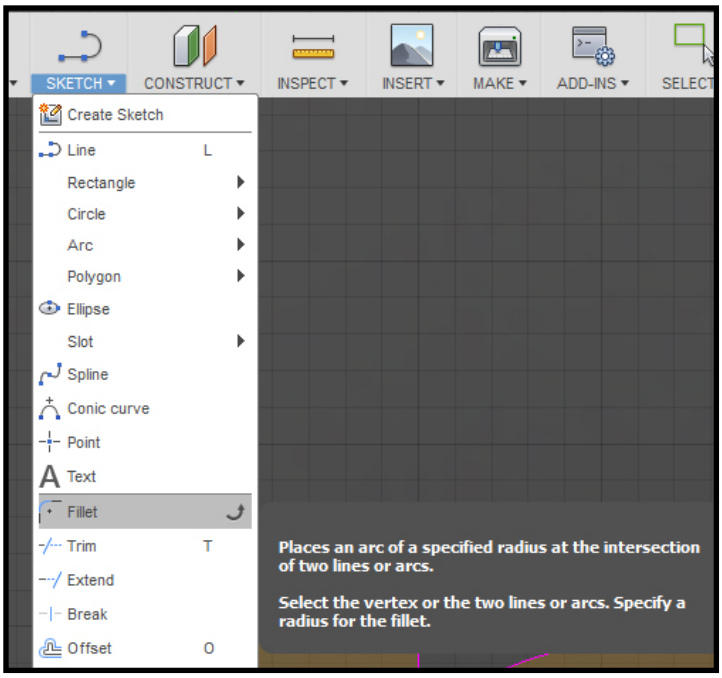


Note: Spline curves can be edited by clicking the spline to activate selection, curves with handles will appear, click + drag on handle to change curve.

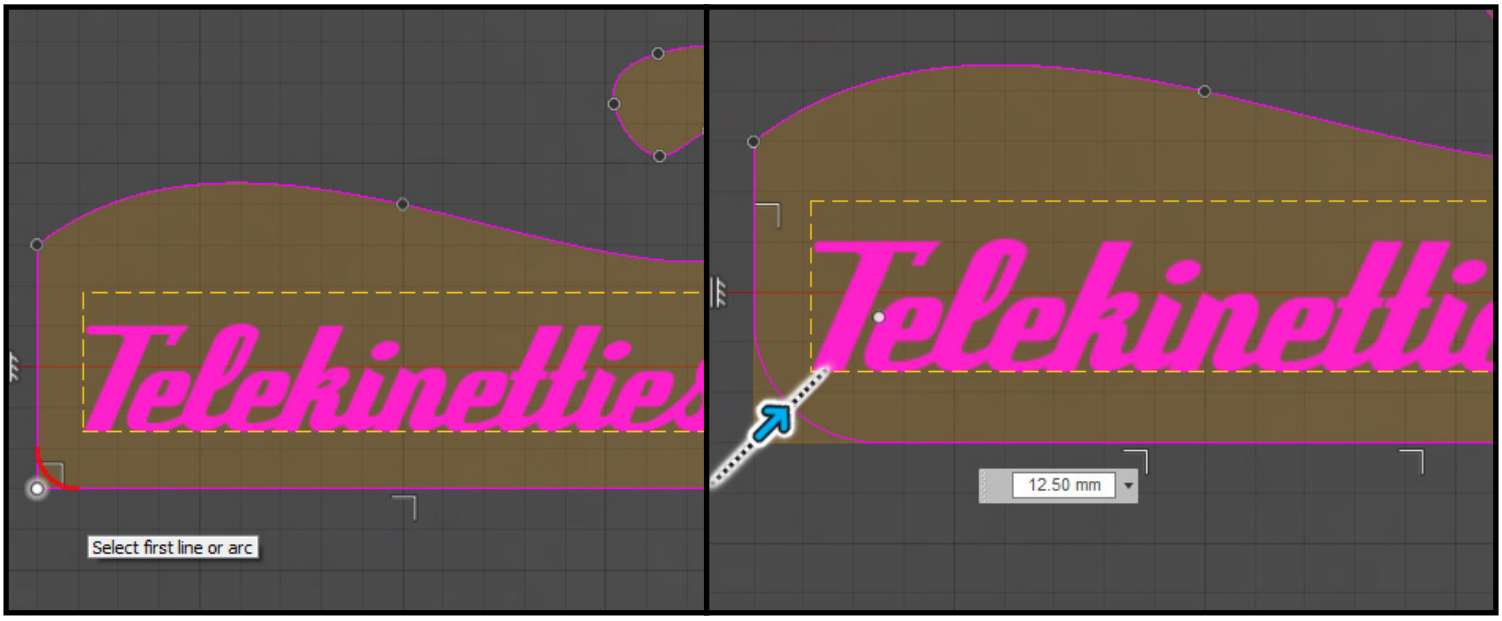


STEP 4: SMOOTH SHARP CORNERS

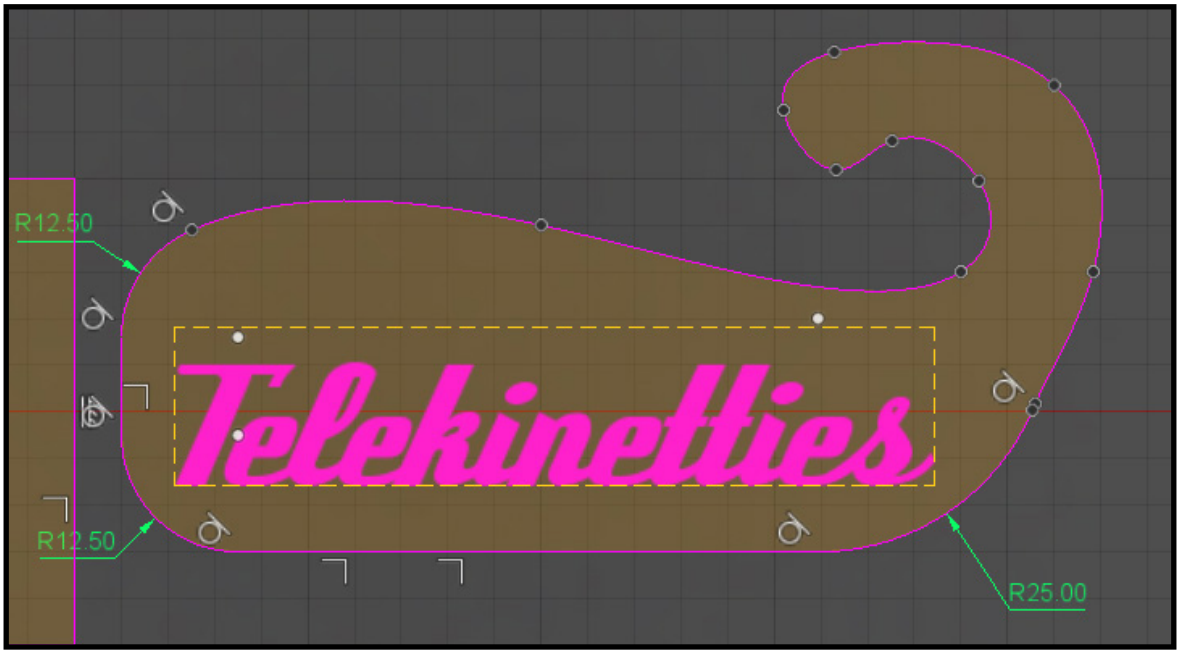
• In the tool bar at the top, click "Sketch ▾" to expand the menu, and click "Fillet" in the menu.



Hover over point of two perpendicular lines, red curve will appear, click to select, and click + drag arrow to edit curve. Press enter/return to accept.

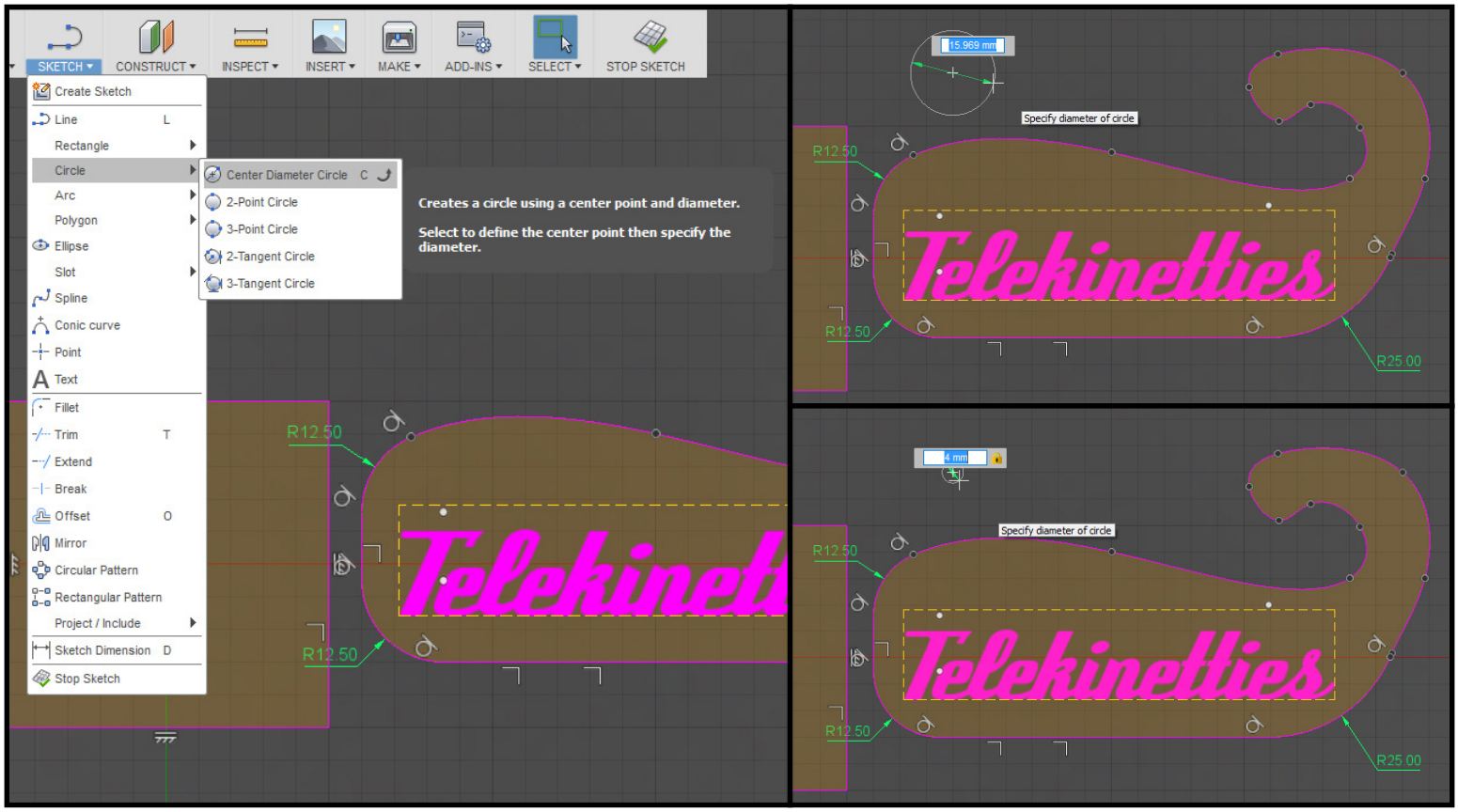


Note: Some sharp corners cannot be edited with the Fillet tool.



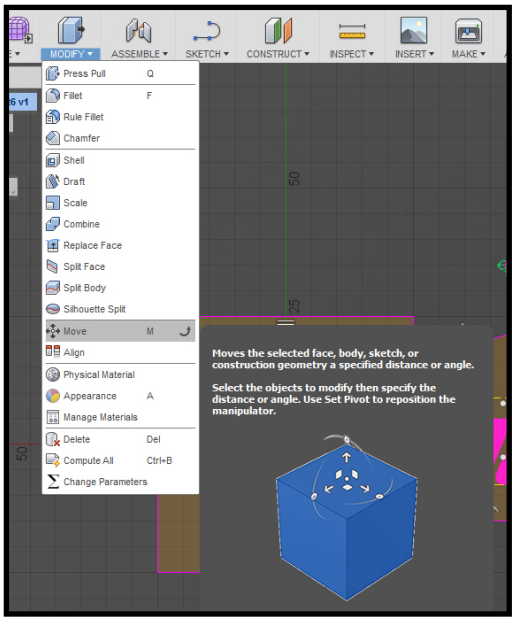
STEP 5: SKETCH HOLE FOR KEY RING

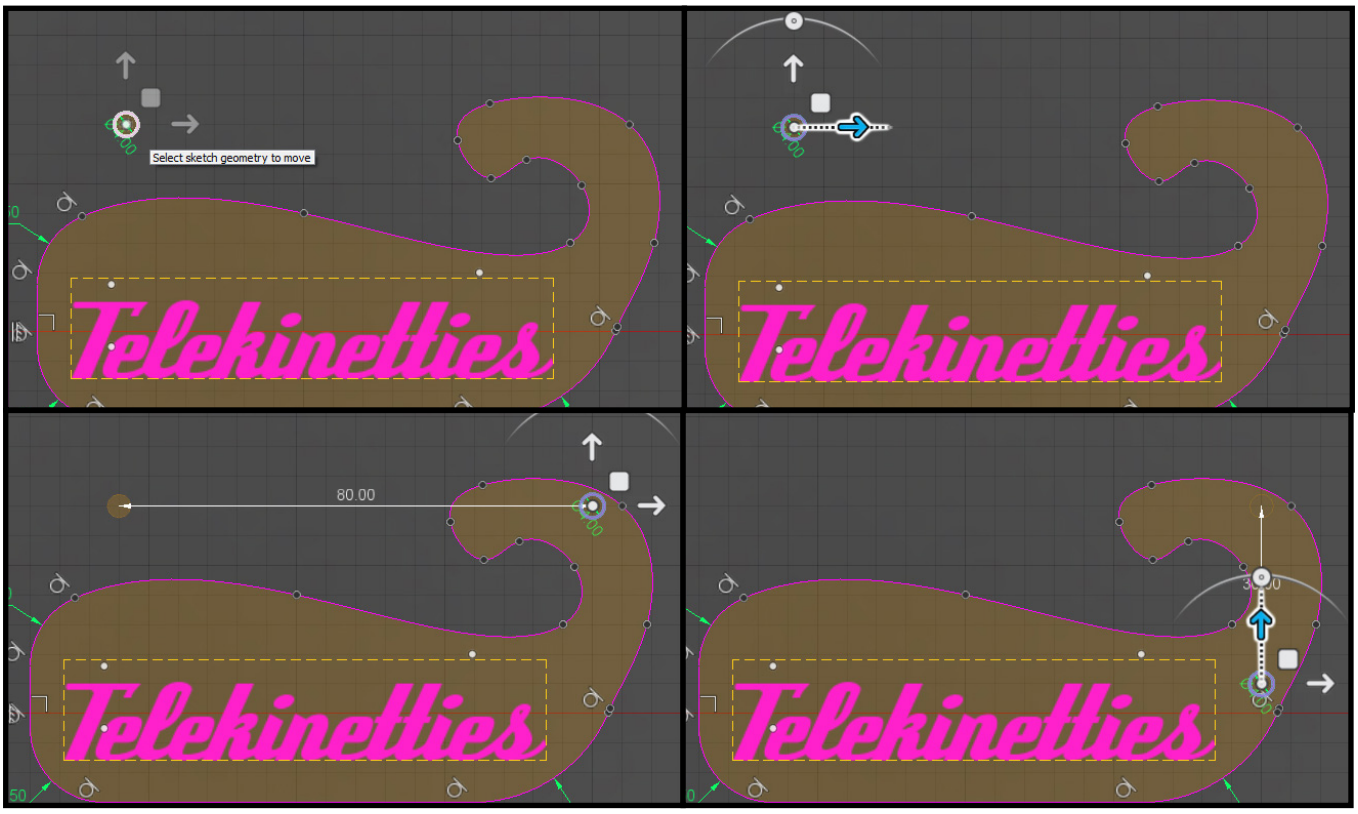
• In the tool bar at the top, click "Sketch ▾" to expand the menu, hover over "Circle ▸", and click "Center Diameter Circle" (or press "C" on the keyboard). Click outside design to place center point of circle, set diameter value to "4.00mm", press enter/return to accept, and click to place (or press enter/return twice to place circle and exit circle sketch tool).



STEP 6: POSITION KEY RING HOLE TO BE PART OF DESIGN

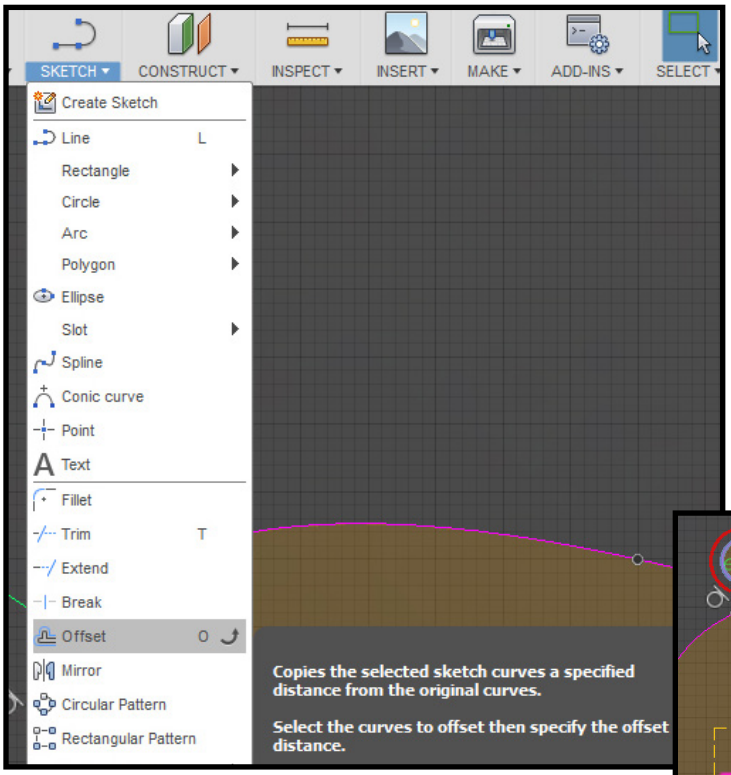
• In the tool bar at the top, click "Modify ▾" to expand the menu, click "Move" (or press "M" on the keyboard), and click 4mm circle.



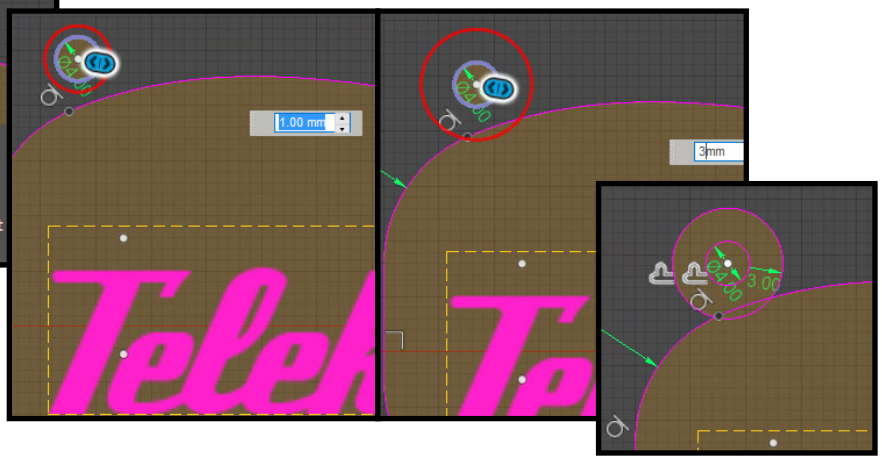


Use the arrows to move circle into place on design. Once positioned as desired press enter/return to accept or click okay in the dialog box on the right.

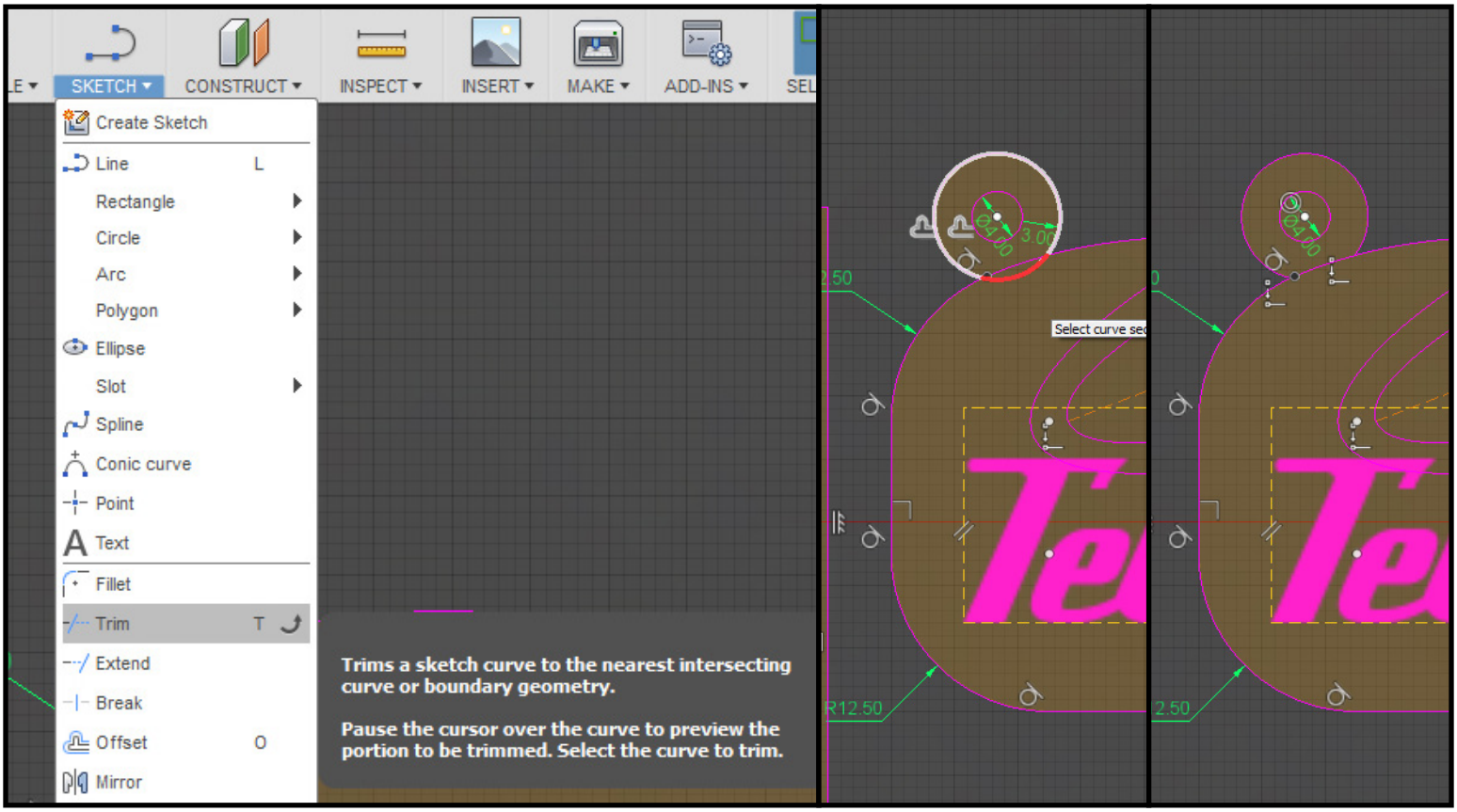
STEP 7: ADD THICKNESS TO KEY RING HOLE (OPTIONAL)



• In the tool bar at the top, click "Sketch ▾ " to expand the menu, and click "Offset" in the menu (or press "O" on the keyboard). Hover over 4mm circle and click to select. Click and drag "<|>" to offset sketch loop "3.00mm" outside 4mm circle (or enter "3.00mm" value into text box) and press enter/return to accept or click okay in the dialog box on the right.



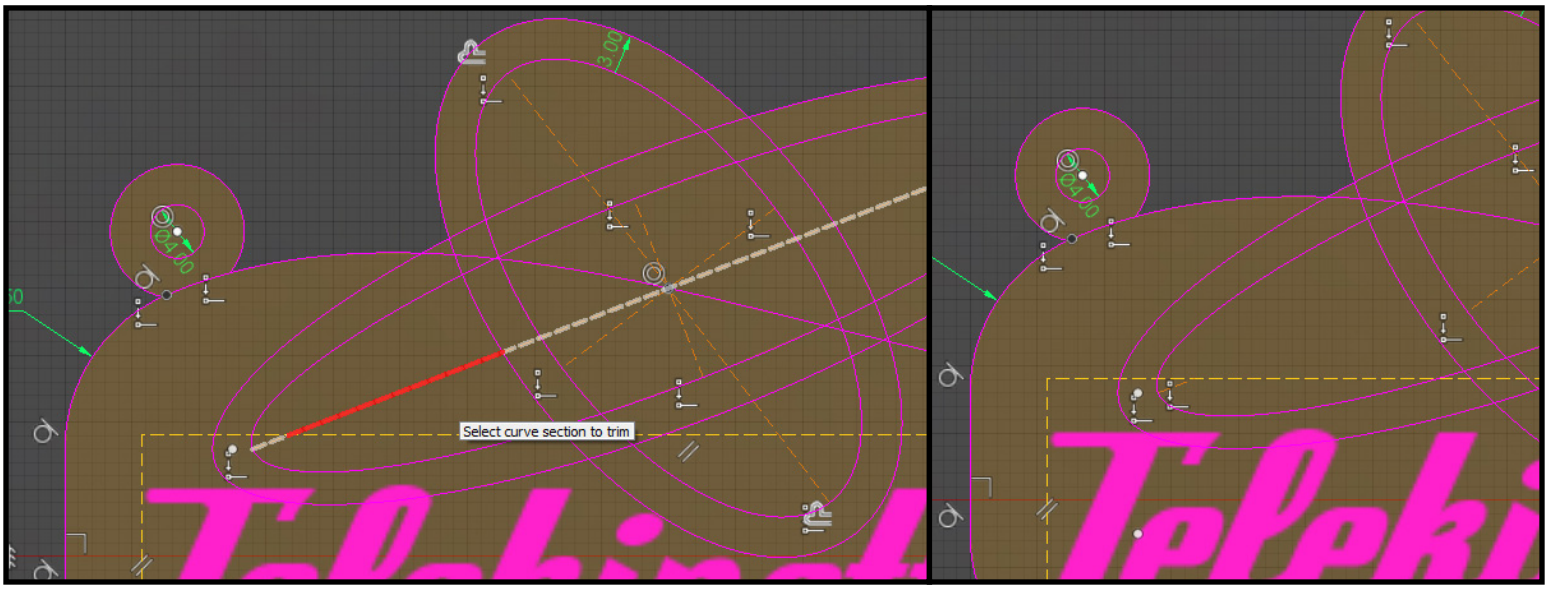
STEP 8: CLEAN UP SKETCH



In the real world of CAD, clean sketches are a necessity for proper workflow.

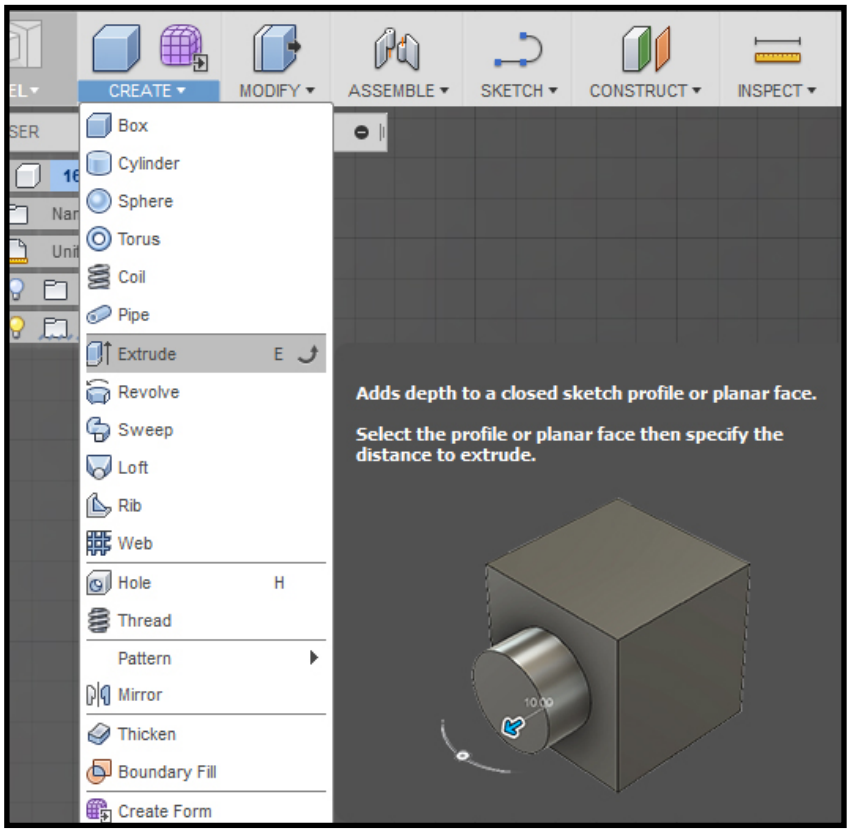
• In the tool bar at the top, click "Sketch ▾" to expand the menu, and click "Trim" in the menu (or press "T" on the keyboard). Hover over a section in sketch that is unnecessary, the line turns red, and click to remove. Continue removing unnecessary line segments in sketch.

Note: Sometimes sketch restrictions need to be removed first in order to remove a line segment (e.g. angle, radius, diameter, etc.).



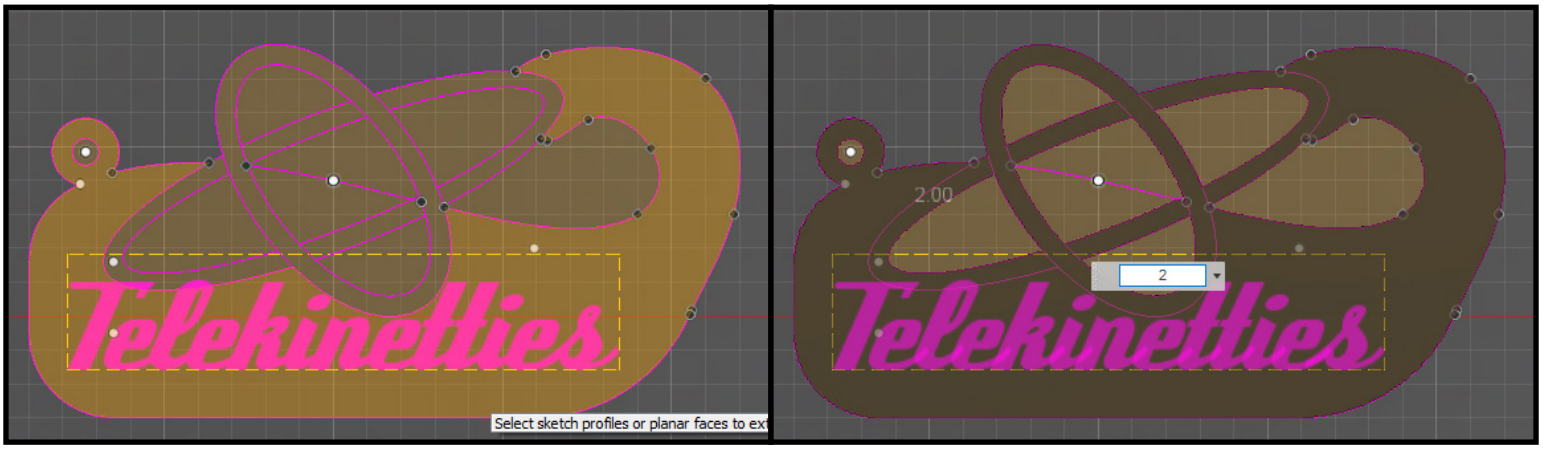
STEP 9: TURN SKETCH INTO SOLID GEOMETRY

• In the tool bar at the top, click "Create ▾ " to expand the menu, and click "Extrude" (or press "E" on the keyboard). Draw a selection box over key ring charm design. To do this, click + drag from one corner outside design to the other enclosing whole design in selection box.

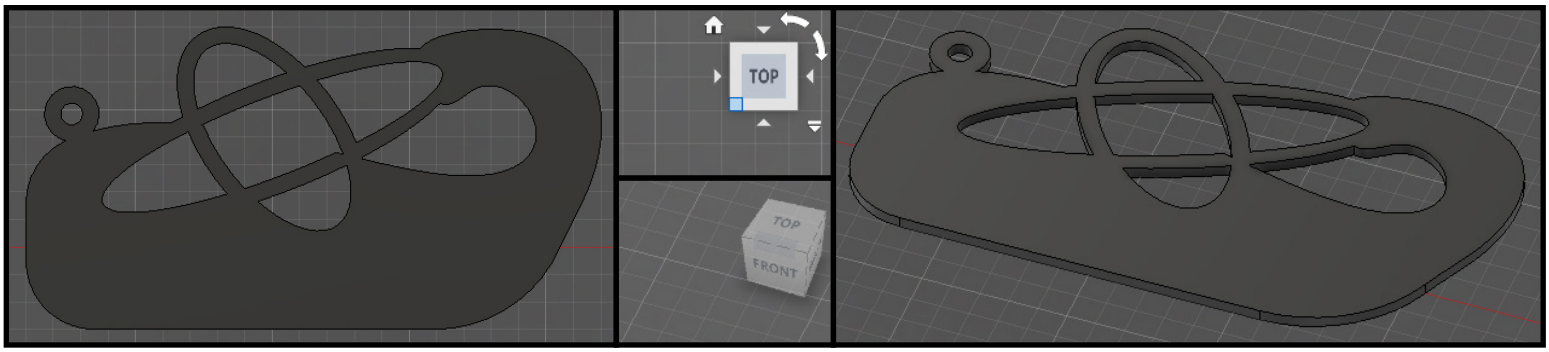


Note: If there are parts of the sketch you do not want to extrude, press + hold CTRL to deselect parts of sketch.

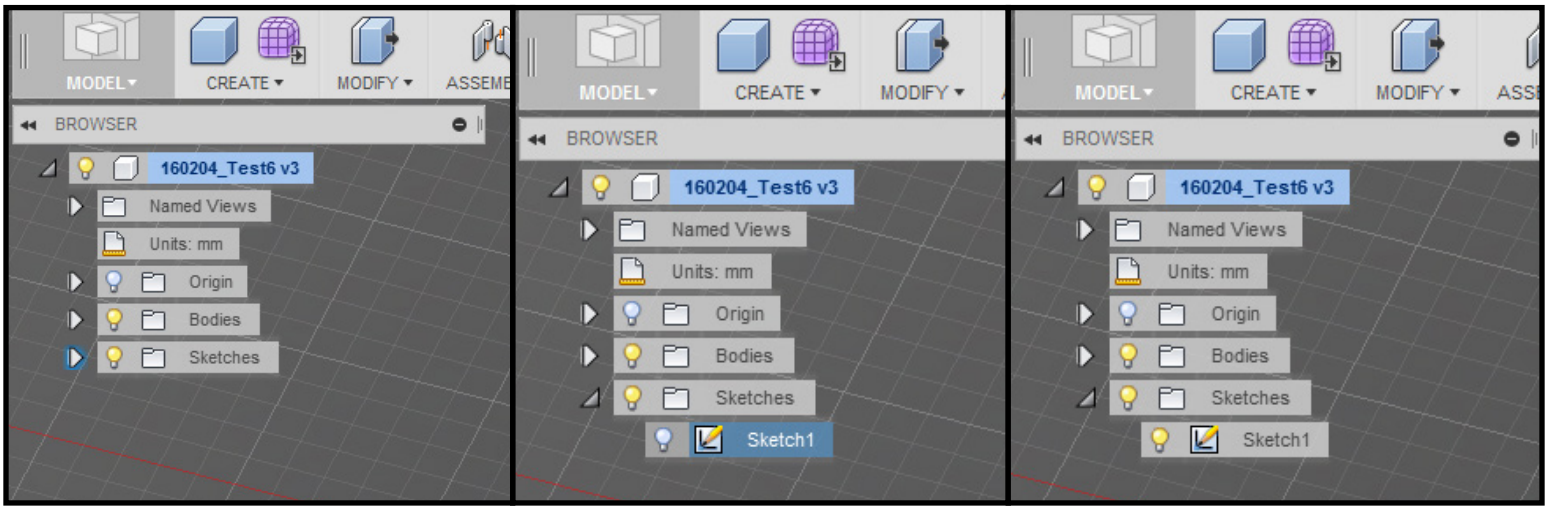
Set the extrude value to "2mm" and press enter/return to accept or click okay in the dialog box on the right.



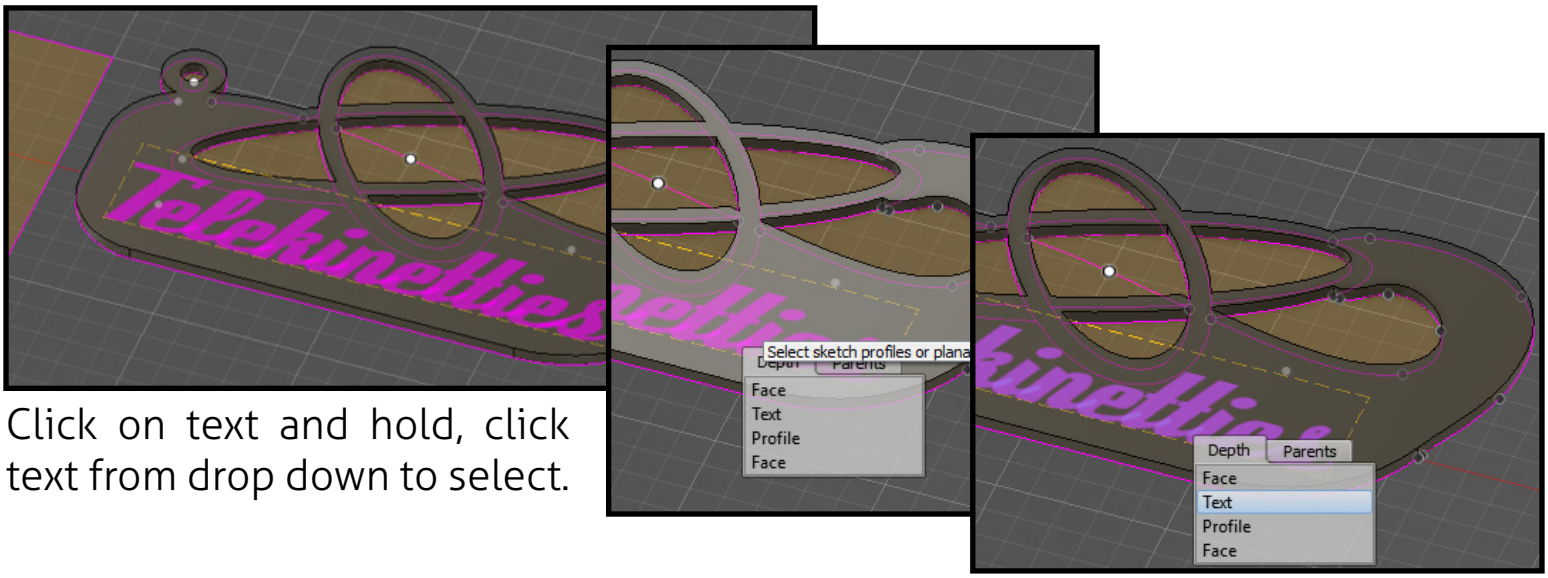
Note: if you are still in the top view, the key ring charm design may not look 3 dimensional. Change to a perspective view to see the solid object. Use the view cube in the top right to change views (or press, hold, and drag "middle mouse wheel + Shift").



• Use the browser tree on the left to show sketch. To do this, click the " ▸ " to expand the "Sketches" browser tree. Click the light bulb to turn it yellow to show sketch.



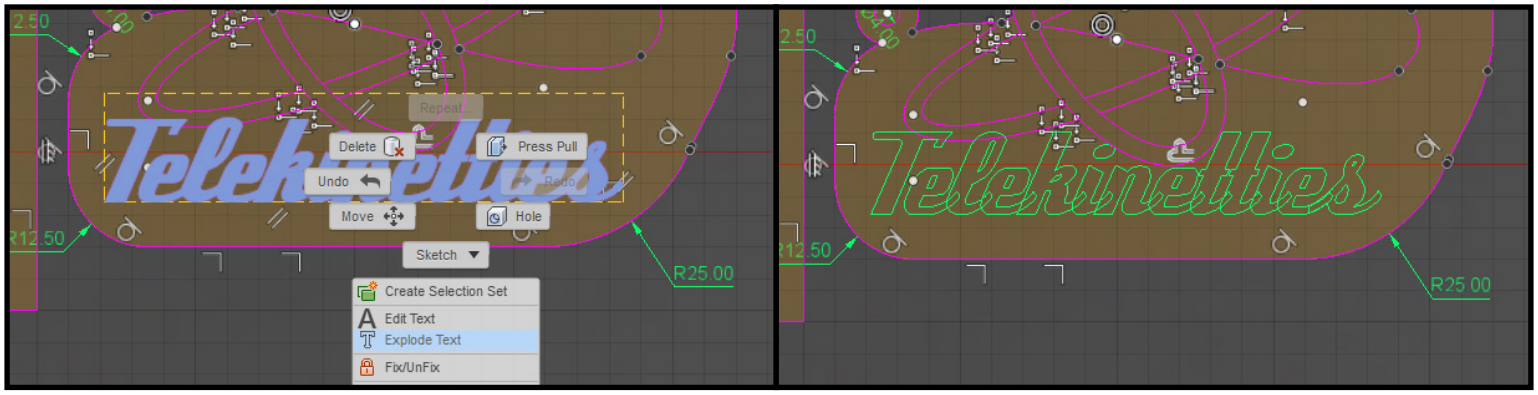
• Select different parts of key ring design sketch to extrude at different levels. For instance select the text, extrude at "2.50mm", and be sure operation is set to "Join" in the dialog box on the right.



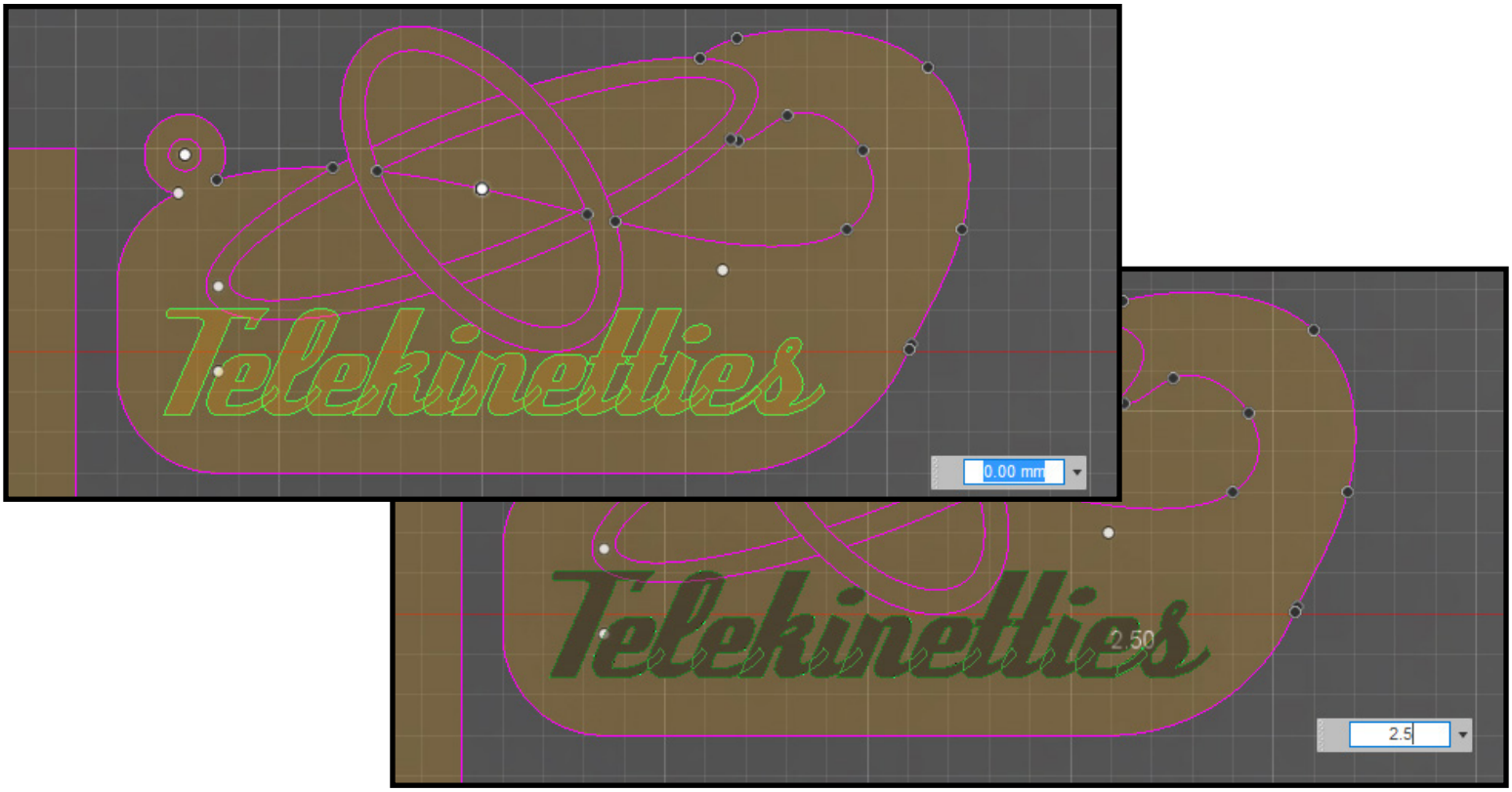
Click on text and hold, click text from drop down to select.

NOT ALL FONTS WORK PROPERLY IN FUSION! OH NO!

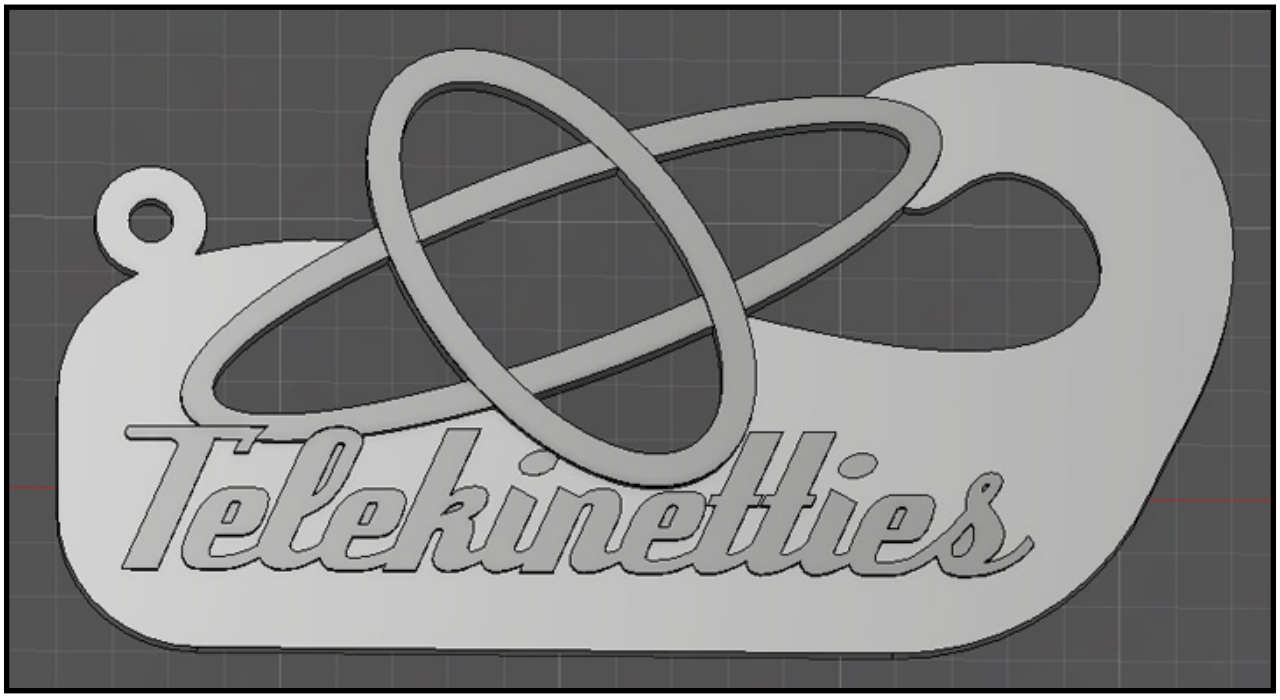
• If text isn't extruding, it will have to be manually fixed as a sketch. First change the text to a sketch. To do this, select the text, open the right click wheel menu, and select "Explode Text". (If the explode text did not work, you'll need to select a different font entirely.) After Exploding text attempt to Extrude again.



• Clean up the text. Using the trim tool, trim any parts of the text sketch that are inside the letters. To activate trim sketch tool, press "T" on the keyboard. Sometimes there are weird triangles inside the points of letters, especially cursive. If at any point the sketch turns clear instead of staying orange, undo the trim, and avoid trimming the one line that makes the sketch not closed.



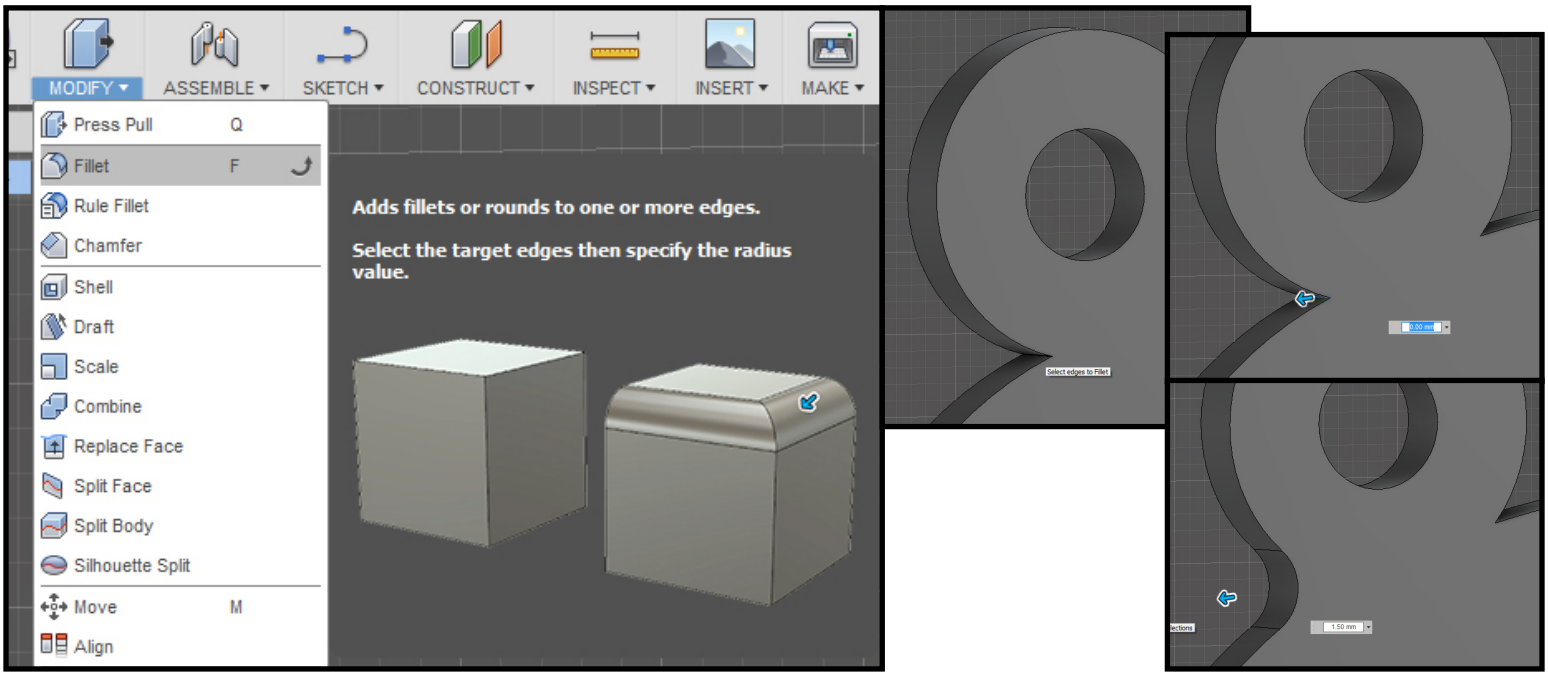
• Once the sketch is cleaned up, extrude the text sketch. Activate extrude tool by pressing "E" on the keyboard or in the tool bar at the top go to "Modify > Extrude".



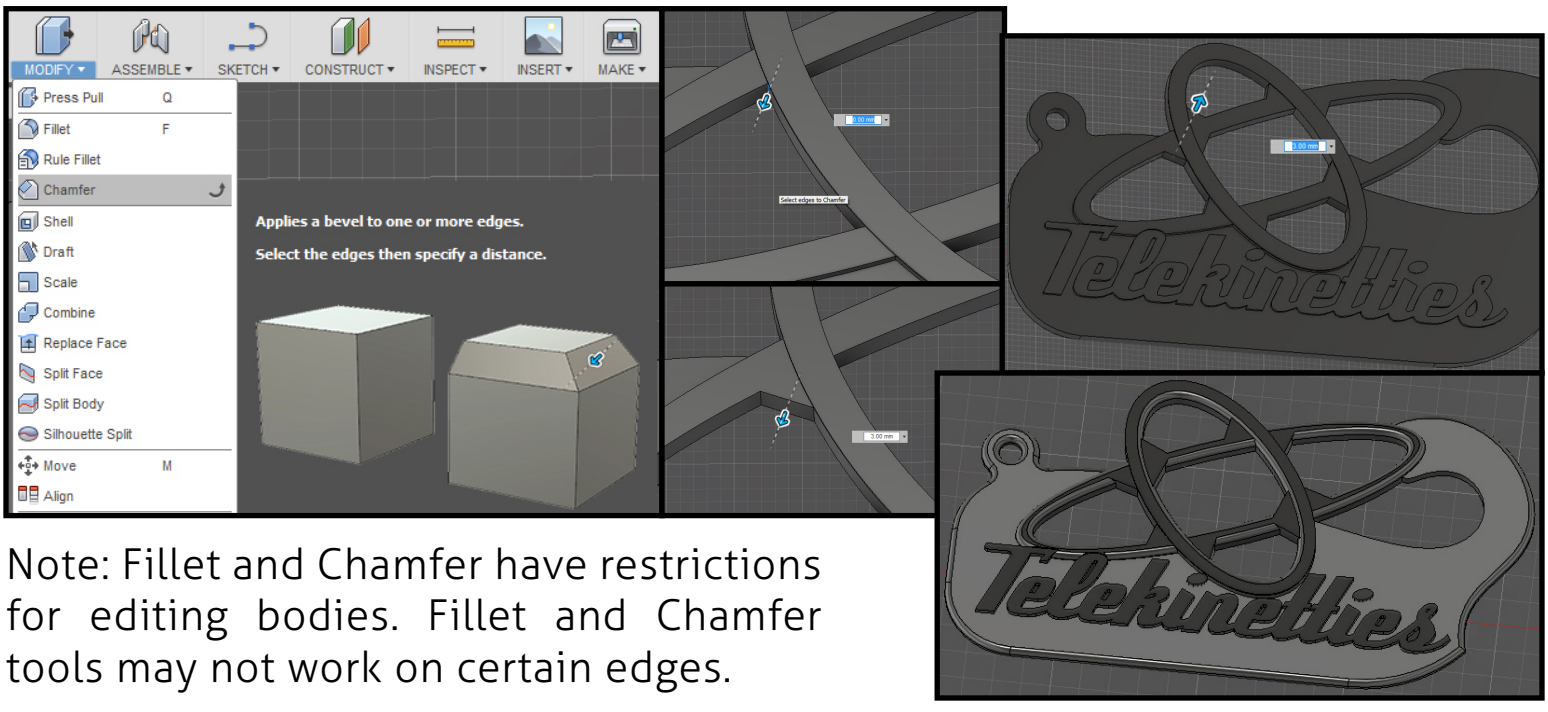
Note: Be sure to subtract 4mm circle for key ring to attach. To do this, click inside 4mm circle to select, extrude through whole design, and set operation to "Cut".

STEP 10: POLISH DESIGN WITH FILLET OR CHAMFER

• Use Fillet tool to smooth sharp edges. To do this, change a perspective view to view design in 3D, hover over edge to highlight, click edge to select, go to the tool bar at the top, click "Modify ▾" to expand the menu, and click "Fillet" (or press "F" on the keyboard). Click and drag arrow to desired radius.



• Make sharp edge into chamfer. To do this, select the edge to chamfer by clicking on it, go to the tool bar at the top, click "Modify ▾" to expand the menu, and click "Chamfer". Click and drag arrow to set distance or enter value in the dialog box on the right, or hovering text box. Press enter/return to accept or in dialog box on the right click okay to accept.



Note: Fillet and Chamfer have restrictions for editing bodies. Fillet and Chamfer tools may not work on certain edges.