

How to cut tapered cone with 4 axis foam cutter?

in Software /

HOW TO CUT TAPERED CONE WITH 4 AXIS FOAM CUTTER?

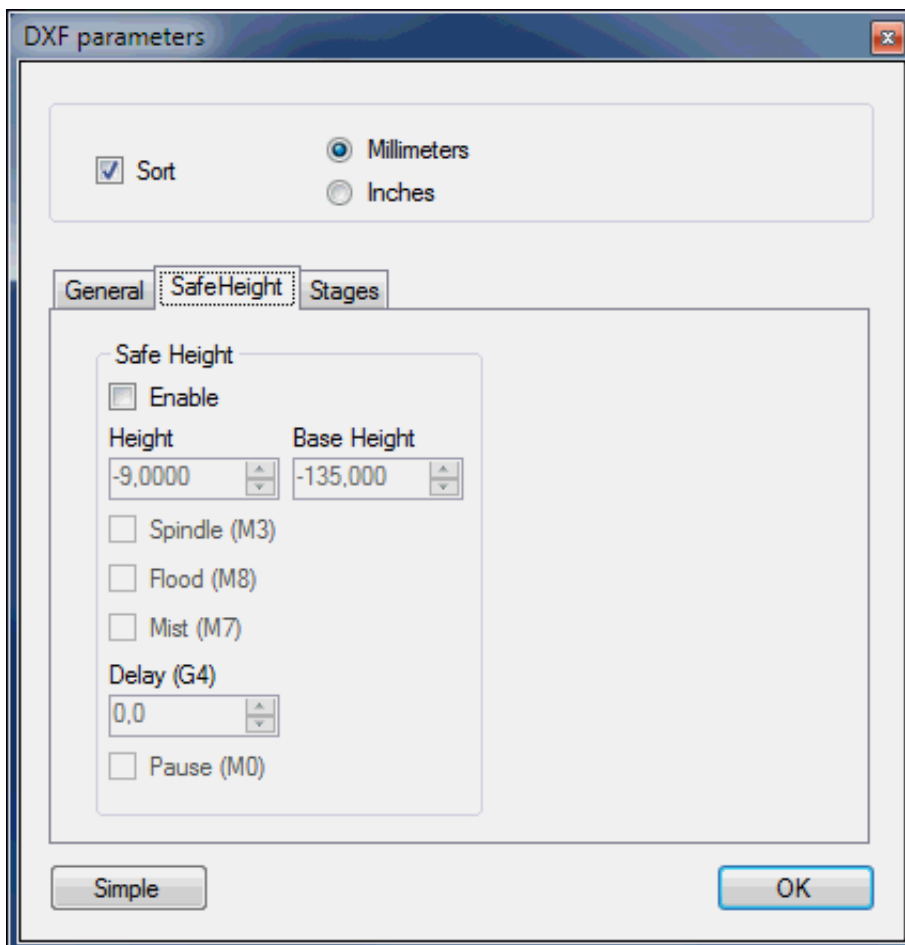
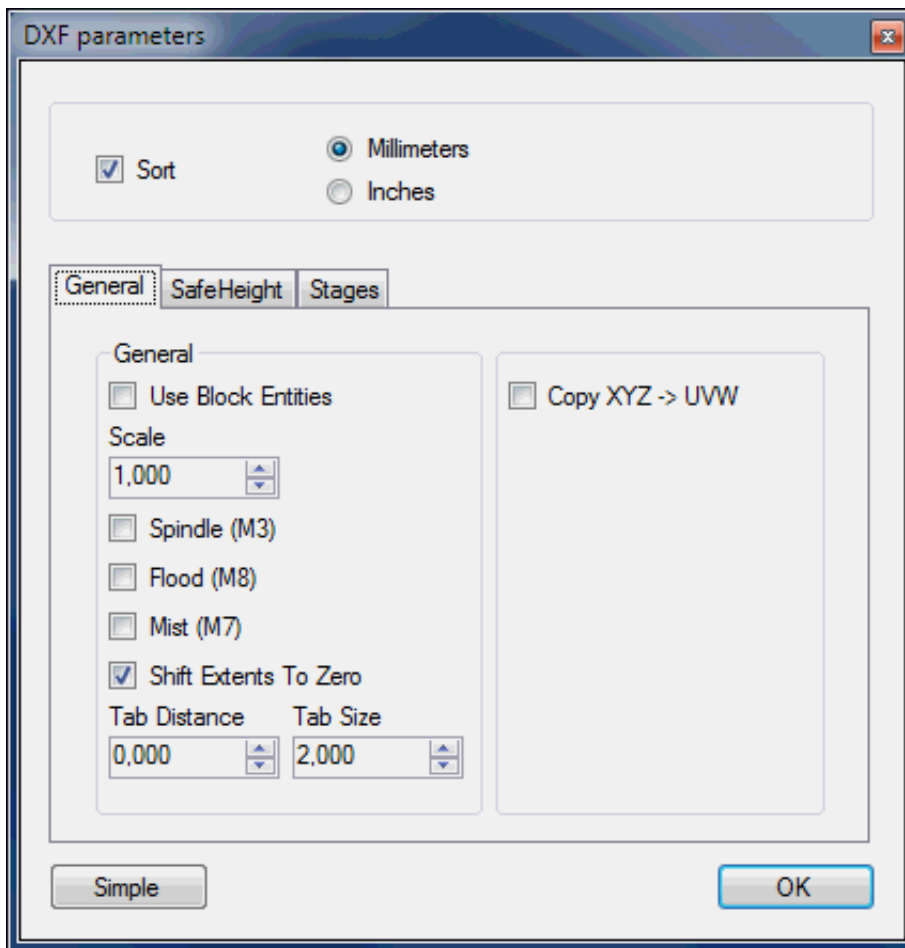
Lets make a tapered cone with 150mm diameter on one side and 50mm on other side.

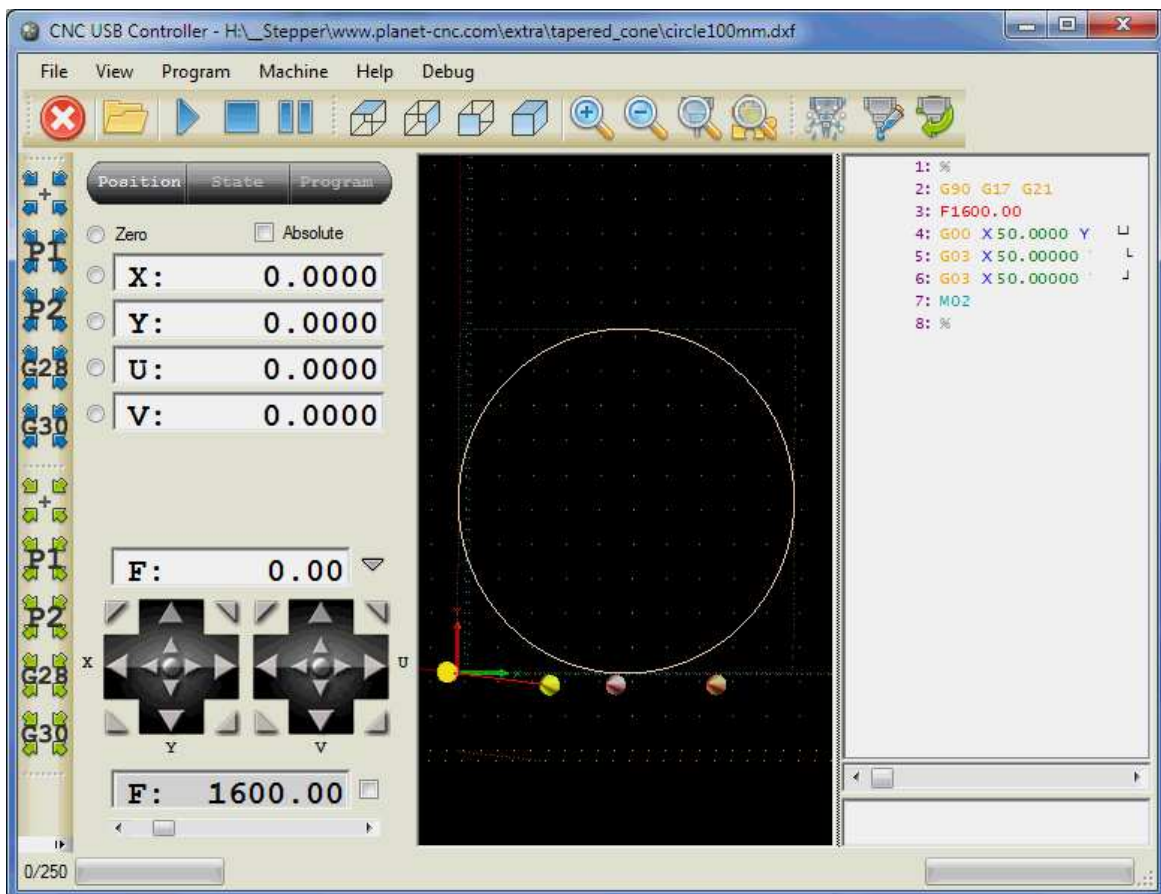
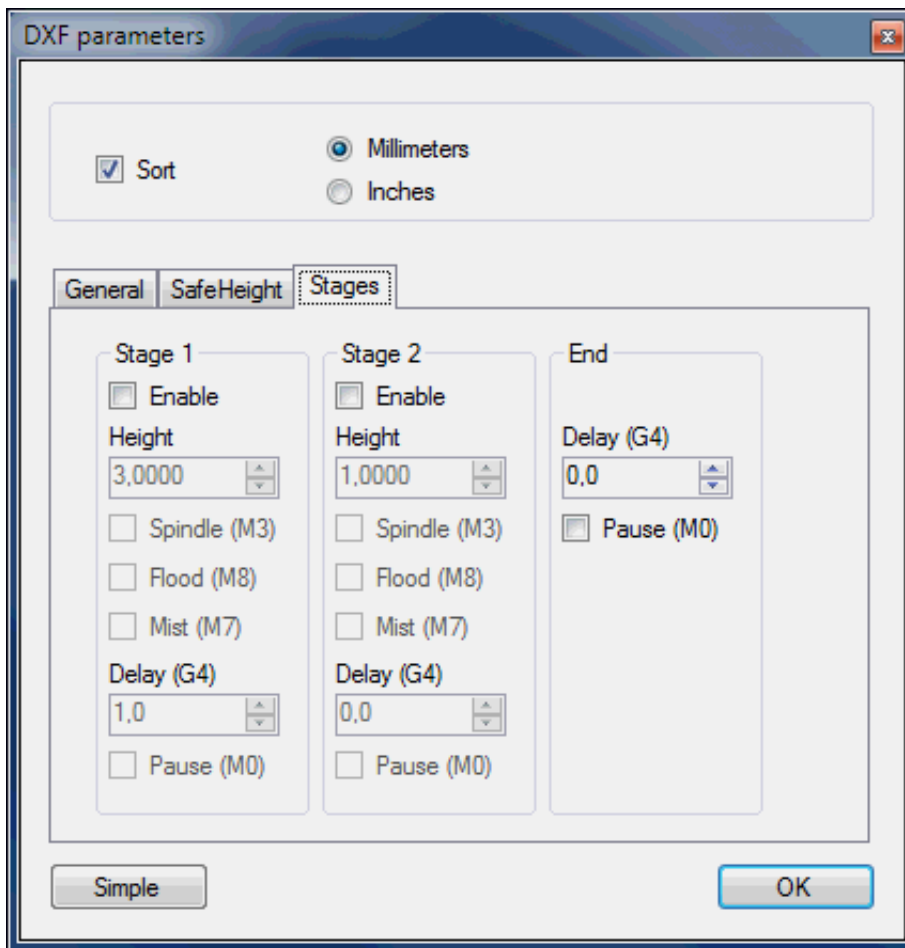
1. Create DXF file with circle

It is important to know diameter of circle. I'll use 100mm circle which I created with CAD software. You can also get 100mm circle from sample files in your PlanetCNC software installation folder.

2. Import DXF

Uncheck everything except "Shift Extents To Zero".

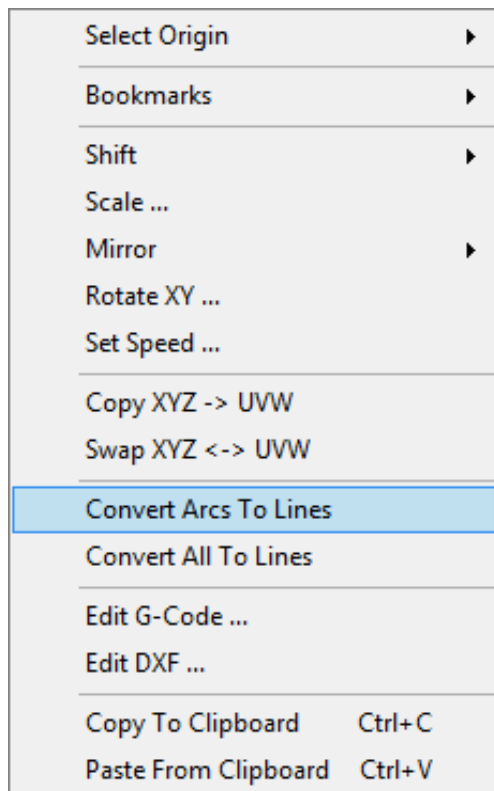




[<https://planet-cnc.com/wp-content/uploads/2016/02/004.png>]

3. Convert Arcs to Lines

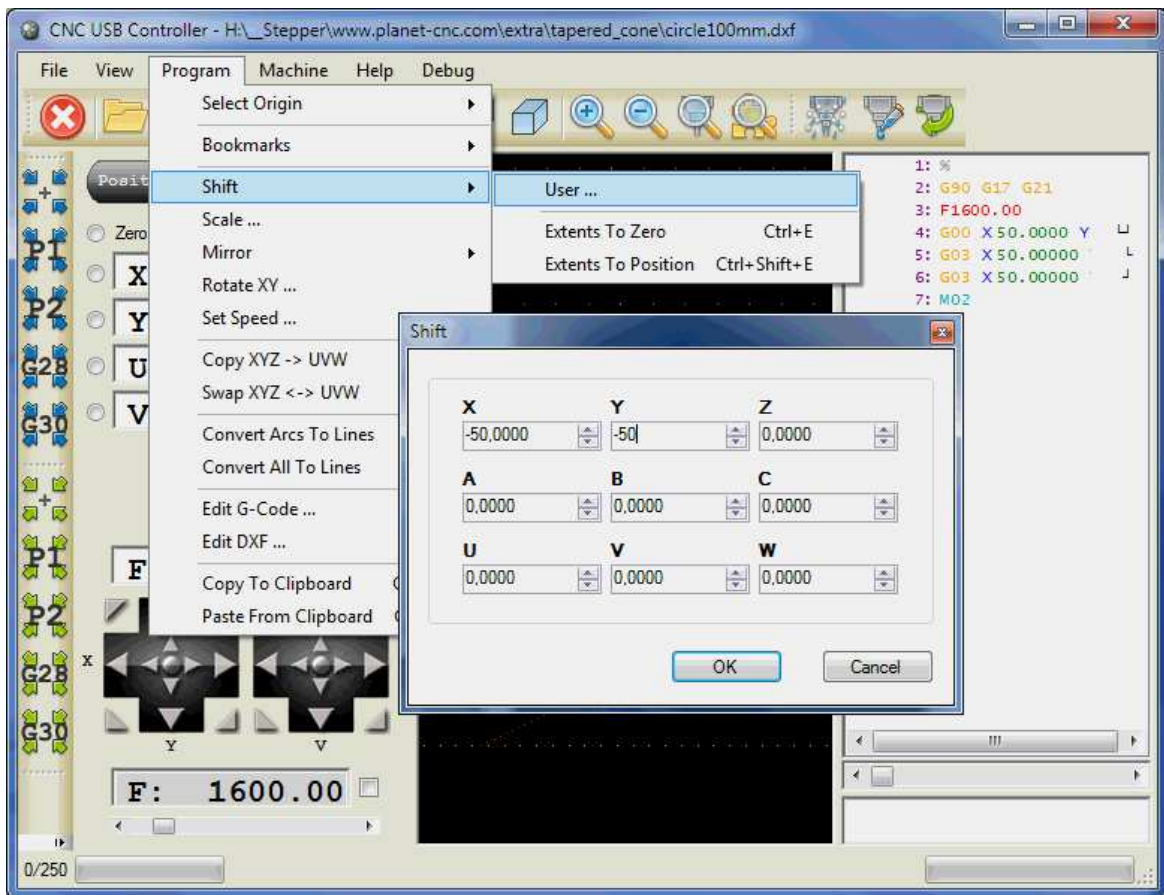
Because in g-code you can not use arcs with coordinates U, V and W you need to convert all arcs to lines.



4. Shift to center

We need to position our circle to center. Without this we will have problems later when we'll scale this.

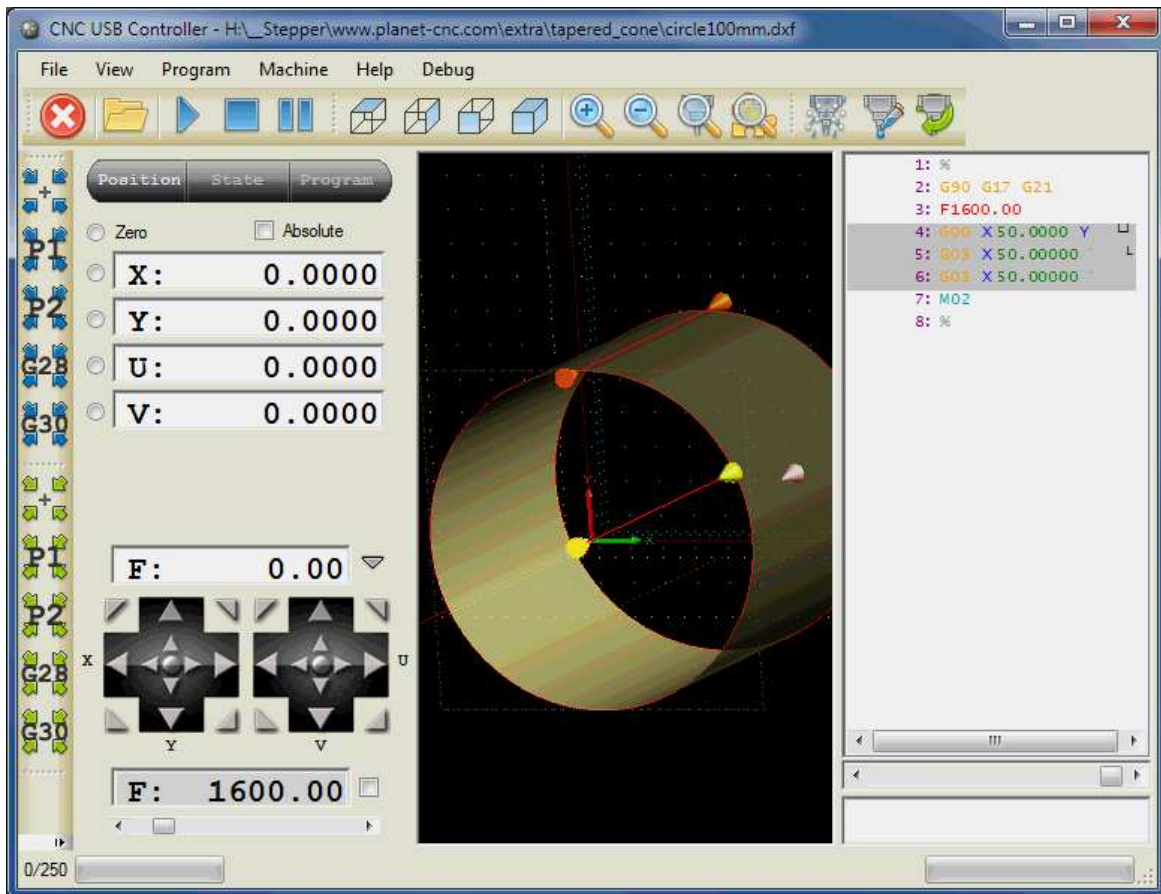
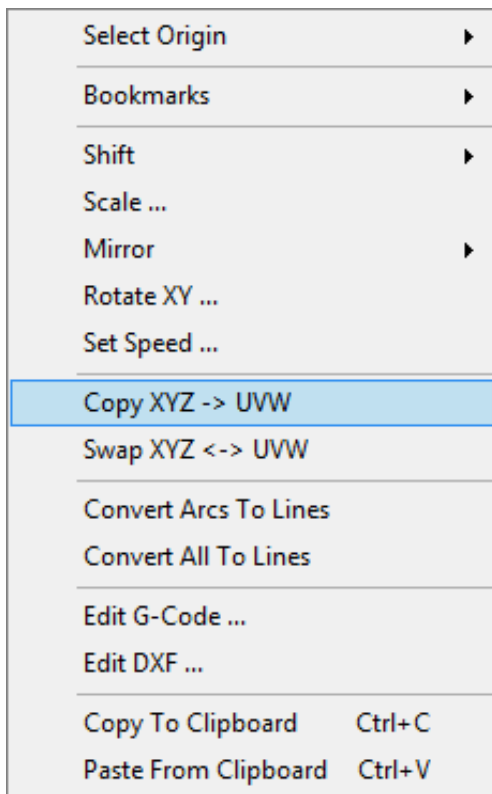
Because our circle diameter is 100mm we need to shift X and Y by value -50.



[\[https://planet-cnc.com/wp-content/uploads/2016/02/006.png\]](https://planet-cnc.com/wp-content/uploads/2016/02/006.png)

5. Copy XYZ->UVW

We can now copy circle to UV plane. Now we have cylinder with 100mm diameter with center at 0,0.

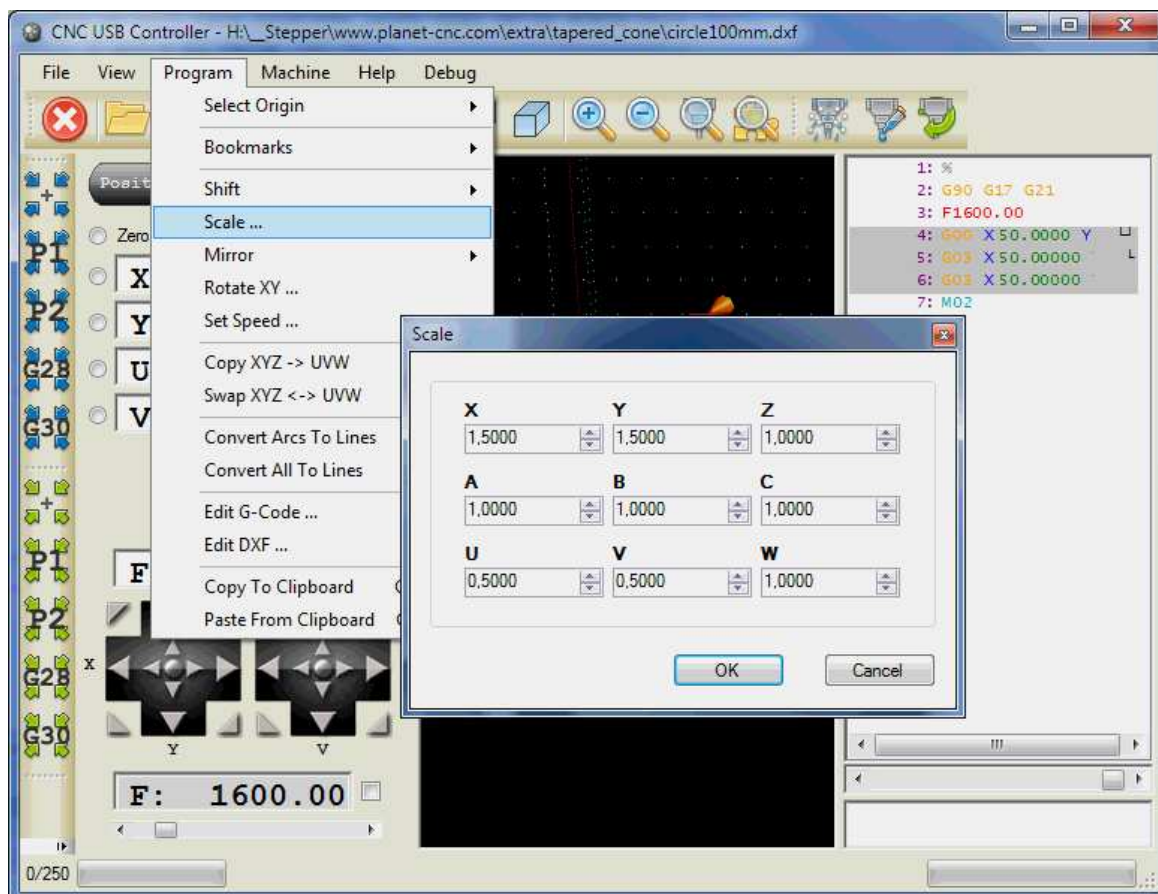


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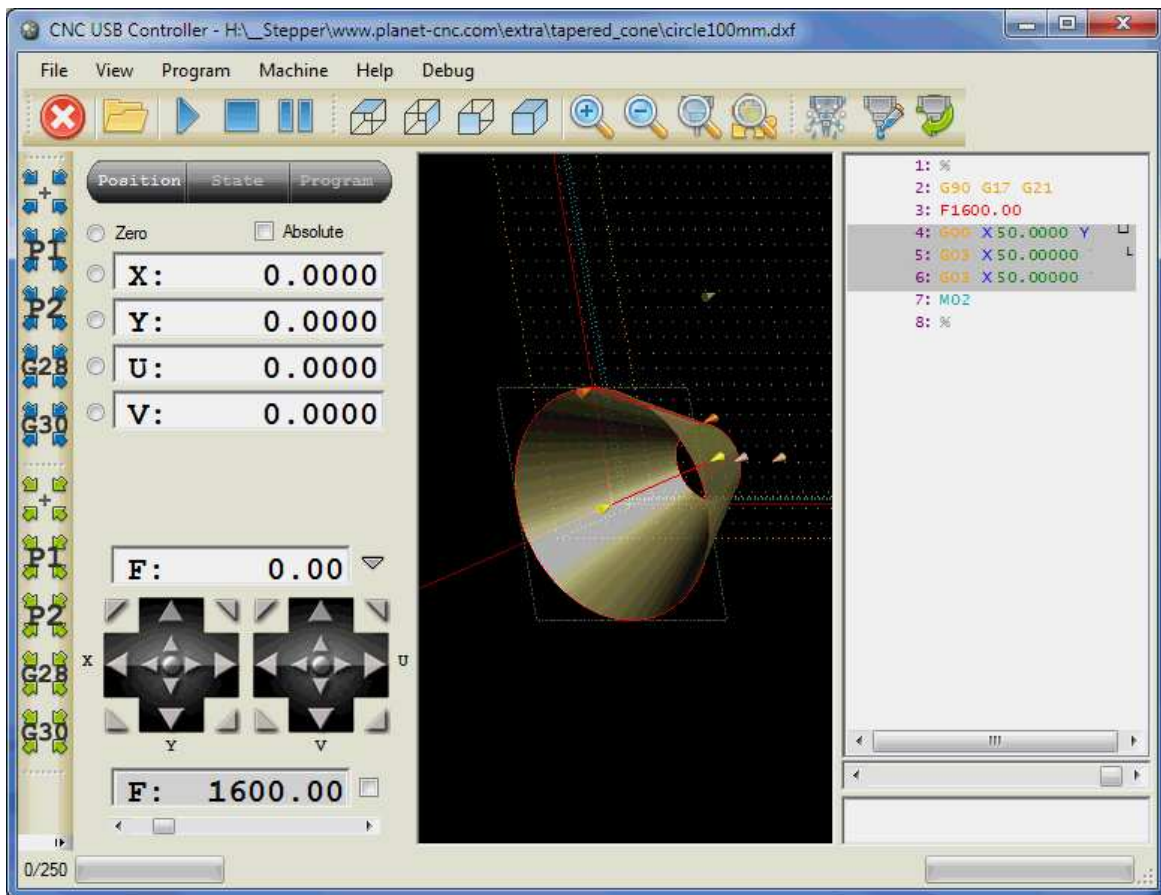
6. Taper cylinder

To create 150mm on XY side and 50mm on UV side we need to

scale out 100mm cylinder by 1.5 on XY and 0.5 on UV side. As a result we have tapered cone with required dimensions. You may need to shift it away from center before cutting. You may also need to rotate it get correct entry point for hot wire.



[\[https://planet-cnc.com/wp-content/uploads/2016/02/009.png\]](https://planet-cnc.com/wp-content/uploads/2016/02/009.png)



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Try with different values and different DXF files. There are a lot of shapes you can get. Experiment.

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