Tuesday, December 6, 2016 4:57 PM

Just for your curiosity the model is a simple one.

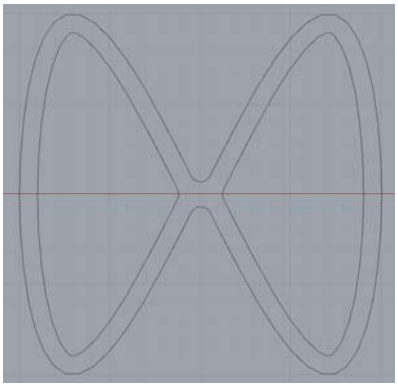
The software is not that important. You can use any 3D CAD software that you are familiar with.
The important thing is the method which is commonly found on almost all 3D modeling software.

1, The method is 'SWEEP' or 'Sweeping'
Sweeping curves to form surfaces or shapes is one of the common methods in 3D modeling just like 'Revolve', 'Loft' .
If you like to explore more on sweeping you can begin from wiki link : https://en.wikipedia.org/wiki/Solid_modeling#Sweeping
More can be found online.
Find out how to sweep in the modeling software you are using (I believe sketchup)

2, The base curve.
The base curve is also referred as polyline or spline depending on the modeling tool.
Basically it is 2D sketch.

In this particulate model it is a mathematics infinite symbol '∞' . Most probably a Greek letter.

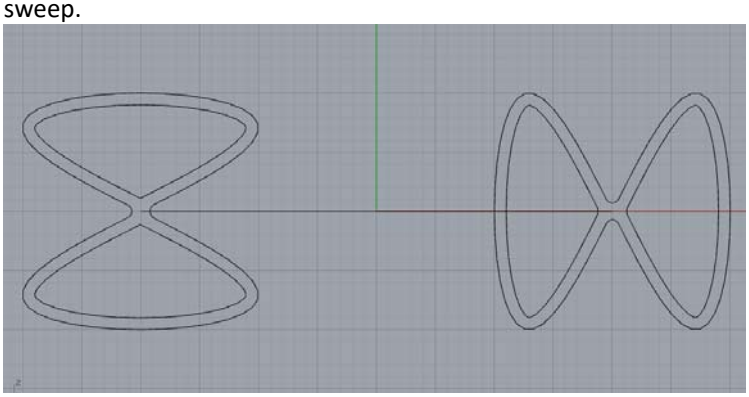
What I did is :-
When you model for 3D printing the model should have thickness. Therefore I gave it thickness.
The base cure is drawn as follows.

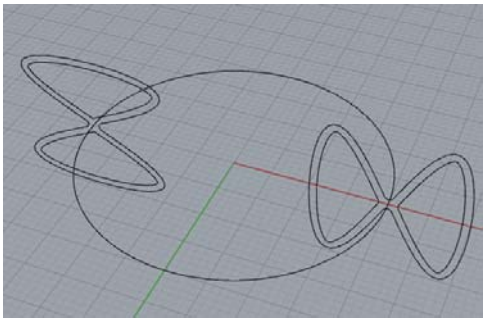


This 2D sketch has three continuous closed curves [polyline or spline].

If you simply sweep those three closed curves 365 degree on a circle as a path cure you will get simple shape that can be printed.
[you can also revolve them to get similar result]

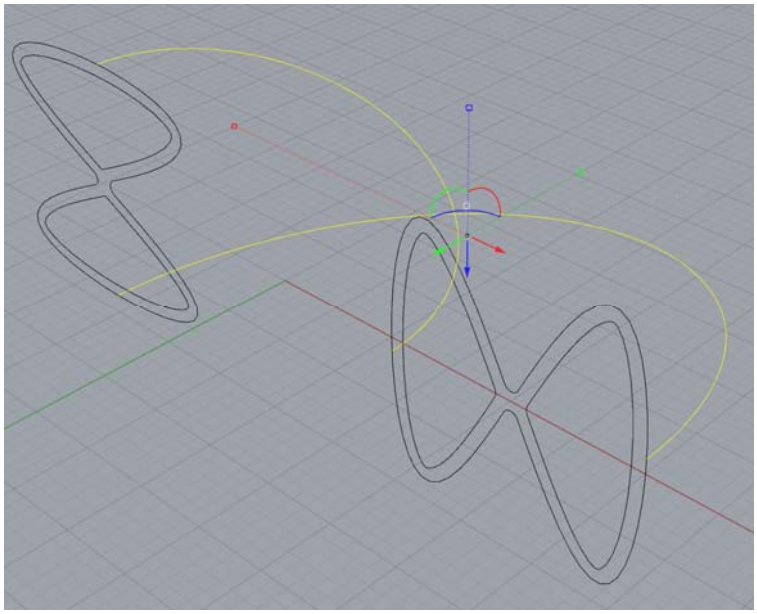
But in our case the three curves will be rotated by 90 degree at half sweep.



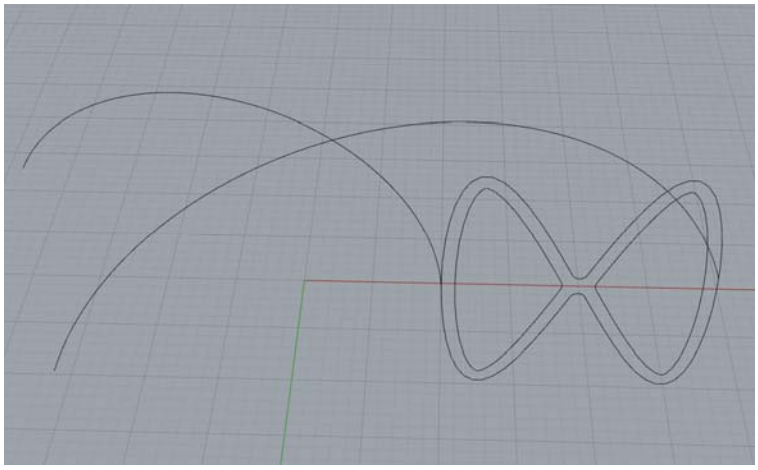


What I did is :

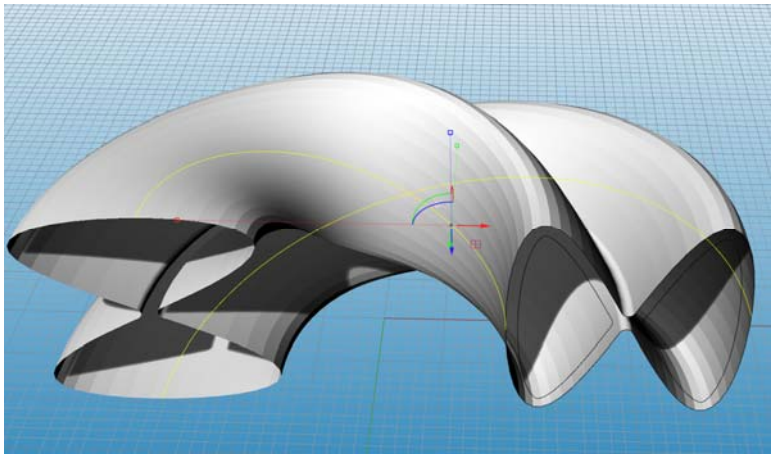
- I drew 2 circular arcs to be used as Rails to sweep. [just like train rail]

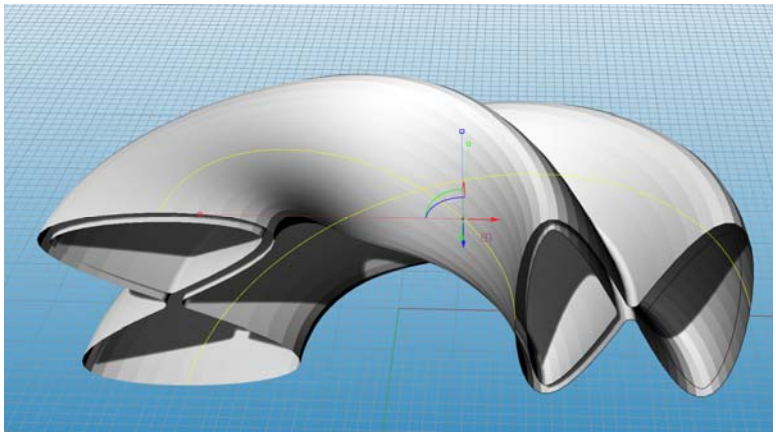


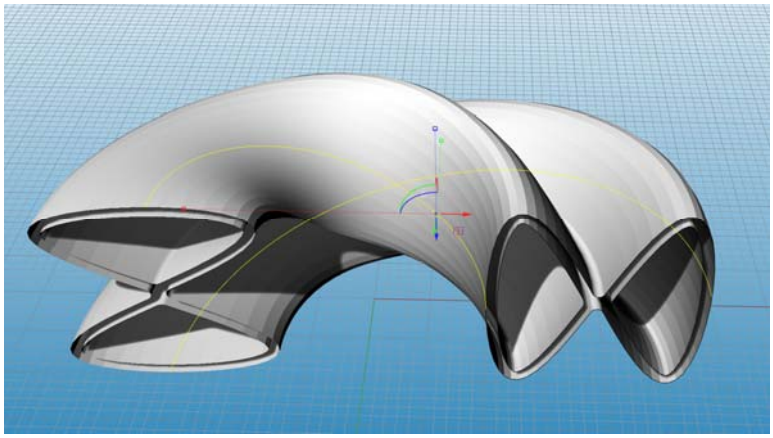
- The 2 circular arcs and the 2D base curve is enough to sweep half of the shape then we will mirror it.



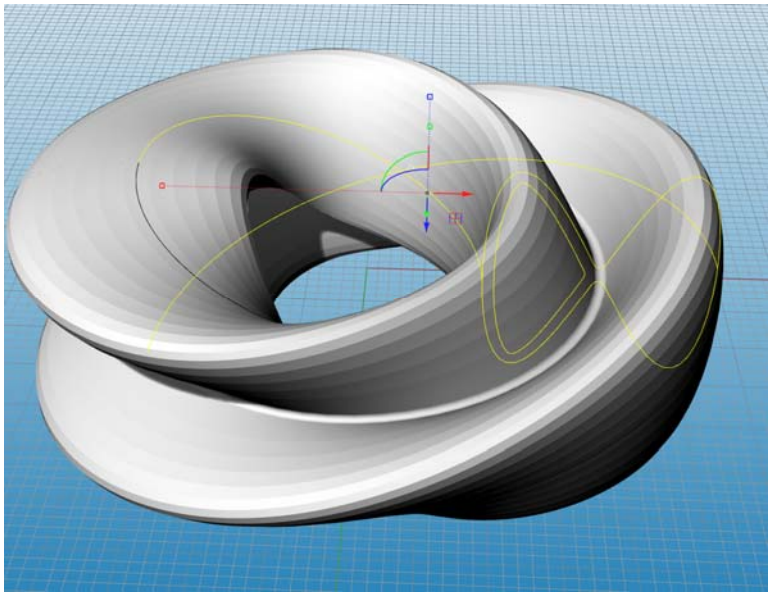
- In my case I just sweep the shape first by choosing the two circular curves and the base curve.
  Three times for the three closed curves on the 2D base curve.







When you mirror the above three open surfaces you will get the final Shape. Now
You need to weld the six open surfaces and delete the curves.



Once you weld the surfaces check for volume.
If your software gave you a volume result that means the surfaces are Successfully welded or closed.
Now you can save it as .stl format and slice it using kisslicer.

I hope this is helpful.
It would have been best if I recorded a video…

Generally to remodel such kind of abstract shapes

- Try to identify the base curves used
- And figure out the best surface creation method to use.

The same 3D model can be created using various methods.
You just need to find out the easiest method on your modeling software to create the model.

Some software such as 3D Max might create the same shape by revolving the infinite symbol curve first and twisting. Some modeling tools have 'twisting' feature.