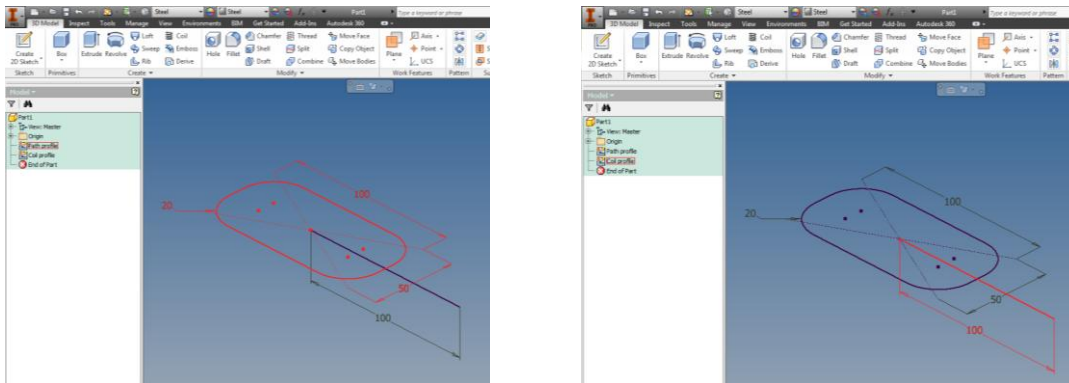


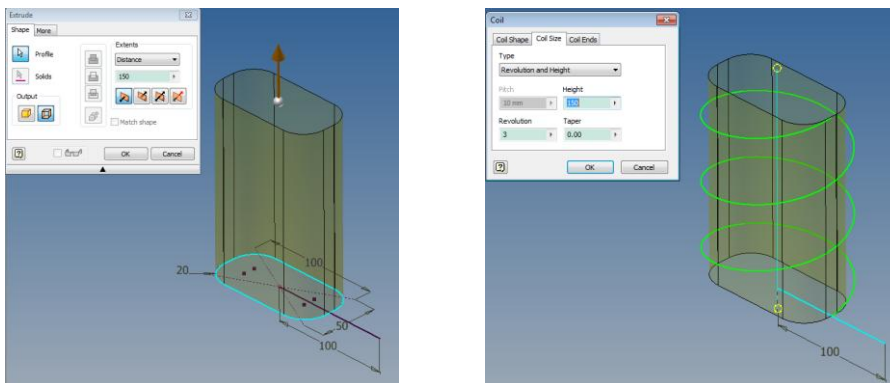
Step 1.

Create ref sketches



Step 2.

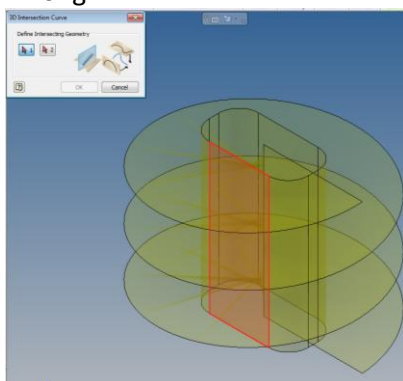
Extrude Path profile as a surface 150mm.
Coil profile sketch using Z axis “3” revolution & “150” height



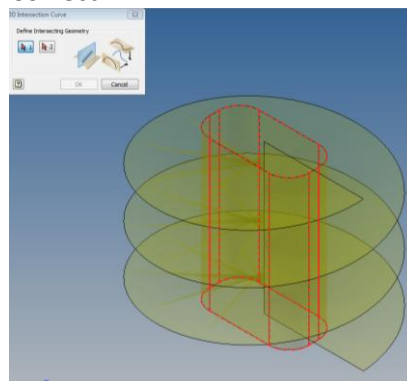
Step 3.

Create 3D sketch, use “intersection Curve” command. Select path profile surface extrusion (tip – hover over surface end edge not face to select complete surface quilt)

Wrong

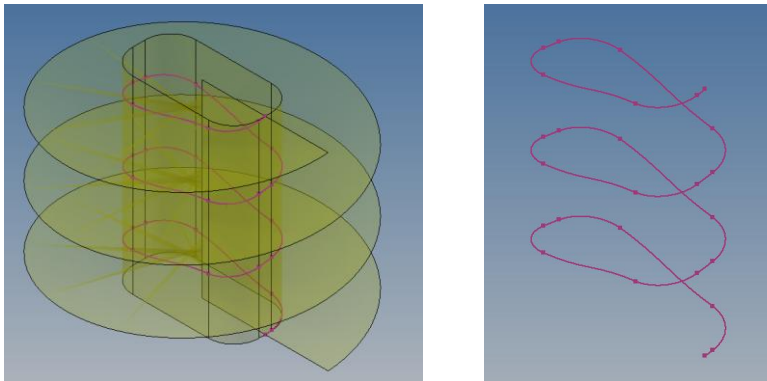


Correct



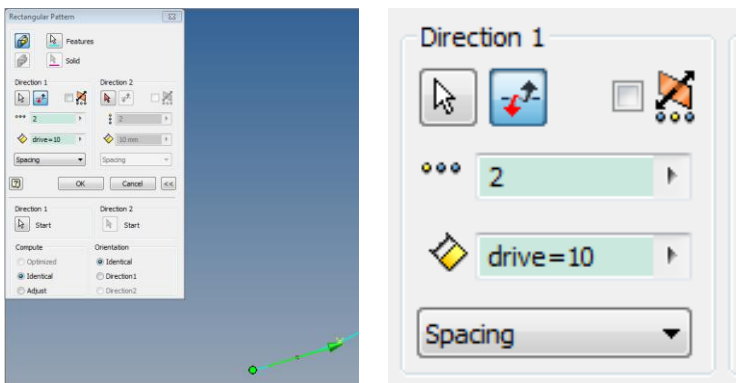
Step 4.

Hide ref surfaces to leave the 3D sketch

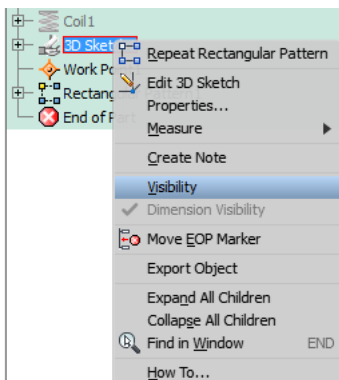


Step 5.

Create work point on the end of the 3d sketch, use “Rectangular pattern” command and select work point 1. Select the 3d sketch as Direction 1. Overwrite the distance as a parameter “drive=10”

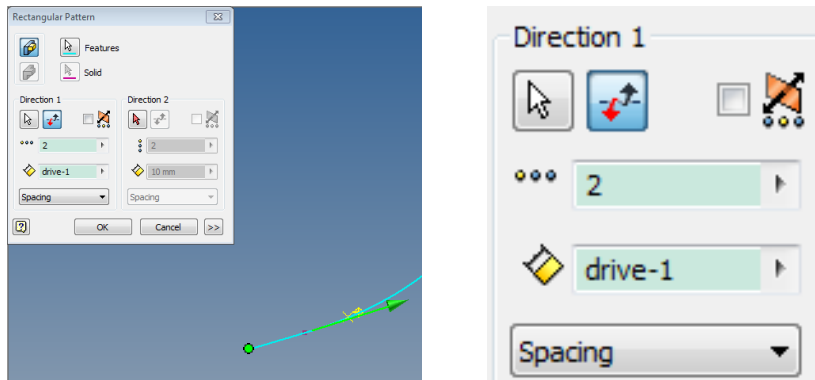


The 3d sketch is consumed and hidden from view, right click over sketch and tick visibility to make it visible again.

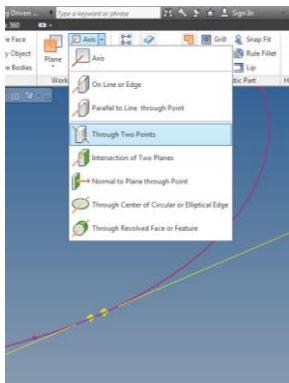


Step 6.

Create another rectangular pattern of work Point 1. Select the 3d sketch as Direction 1. Overwrite the distance as a parameter “drive-1”.

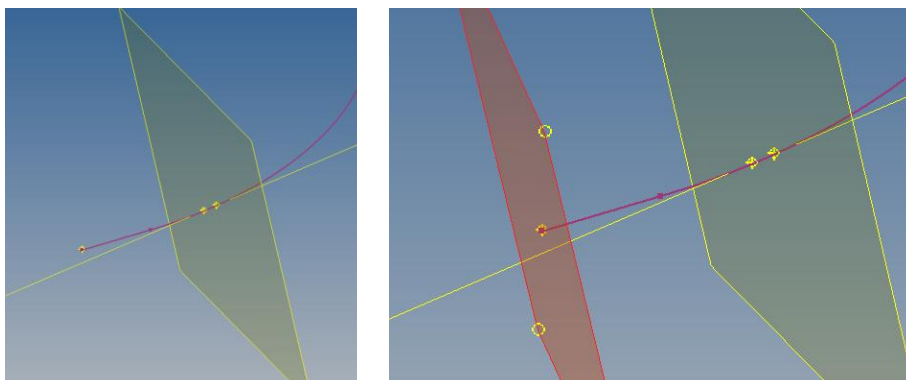


Create an Axis using “through 2 points” the 2 new work points.



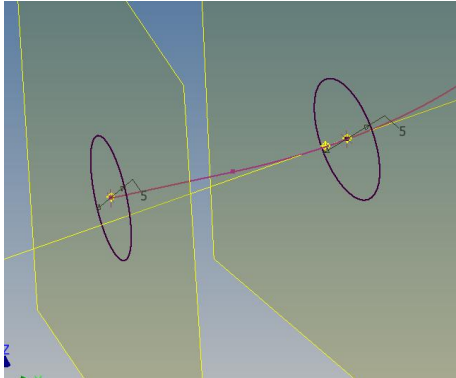
Step 7

Create a plane on the first patterned work point using the newly created Axis and create a plane at the end of the 3d sketch.



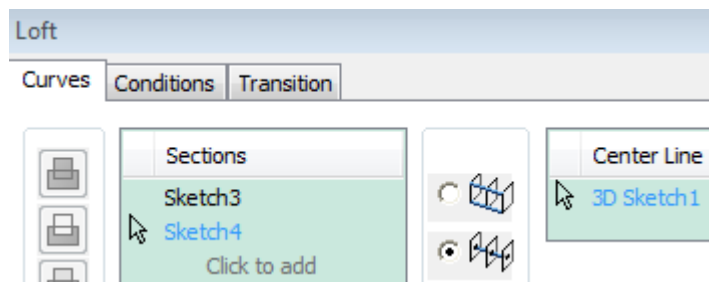
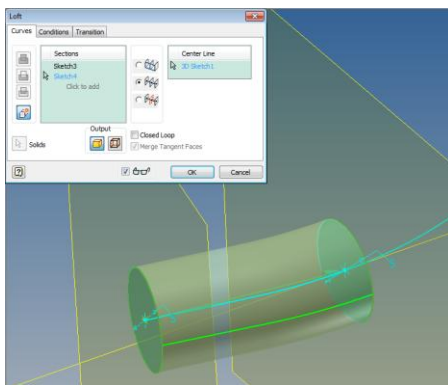
Step 8

Create sketches on the 2 new planes to represent the size of the wire. Use project geometry on the work point to get an origin reference for each sketch. Draw a circle 5mm Dia, repeat this on both Sketches.



Step 9

Loft the profiles using the 3d sketch as Centre line guide rail



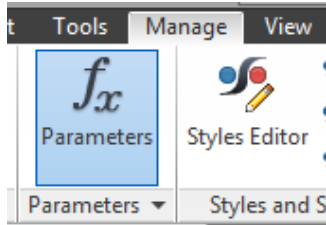
Now hide the planes and Axis from view



Step 10

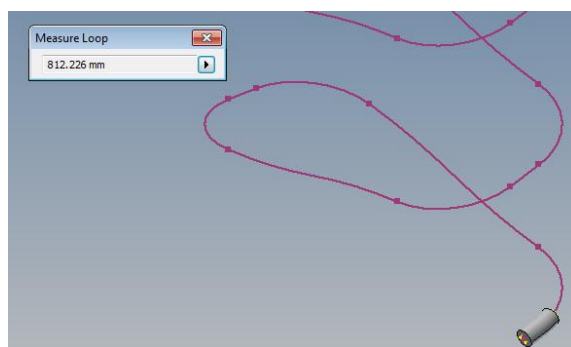
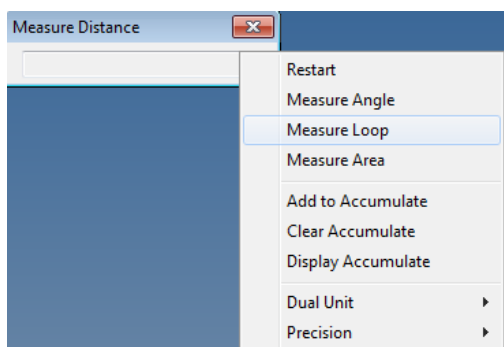
Ok, now we can move to animating the model.

On the Manage toolbar click the Fx Parameter icon. Look for the Model Parameter “drive” and Select the Key activation and Export Parameter buttons. Press Done.



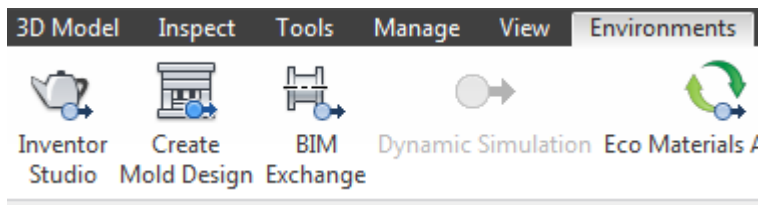
Parameter Name	Unit/Type	Equation	Nominal Value	Tol.	Model Value	Key	Exp	Comment
Sheet Metal Paramet...								
Model Parameters								
d0	mm	100 mm	100.000000	●	100.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d1	mm	50 mm	50.000000	●	50.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d2	mm	20 mm	20.000000	●	20.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d3	mm	100 mm	100.000000	●	100.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d4	mm	150 mm	150.000000	●	150.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d5	deg	0.0 deg	0.000000	●	0.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d7	mm	150 mm	150.000000	●	150.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d8	ul	3 ul	3.000000	●	3.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d9	deg	0.00 deg	0.000000	●	0.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d14	ul	2 ul	2.000000	●	2.000000	<input type="checkbox"/>	<input type="checkbox"/>	
drive	mm	10 mm	10.000000	●	10.000000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
d17	ul	2 ul	2.000000	●	2.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d19	mm	drive - 1 mm	9.000000	●	9.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d20	mm	5 mm	5.000000	●	5.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d21	mm	5 mm	5.000000	●	5.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d22	ul	0 ul	0.000000	●	0.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d23	deg	90 deg	90.000000	●	90.000000	<input type="checkbox"/>	<input type="checkbox"/>	
d24	ul	0 ul	0.000000	●	0.000000	<input type="checkbox"/>	<input type="checkbox"/>	

Now we need to find out how long the 3d sketch is for the loft animation. Use the measure tool – measure loop command. Make a note of the length (812.226 – lets say 812 for ease of explanation)

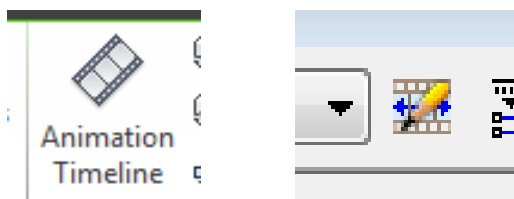


Step 11

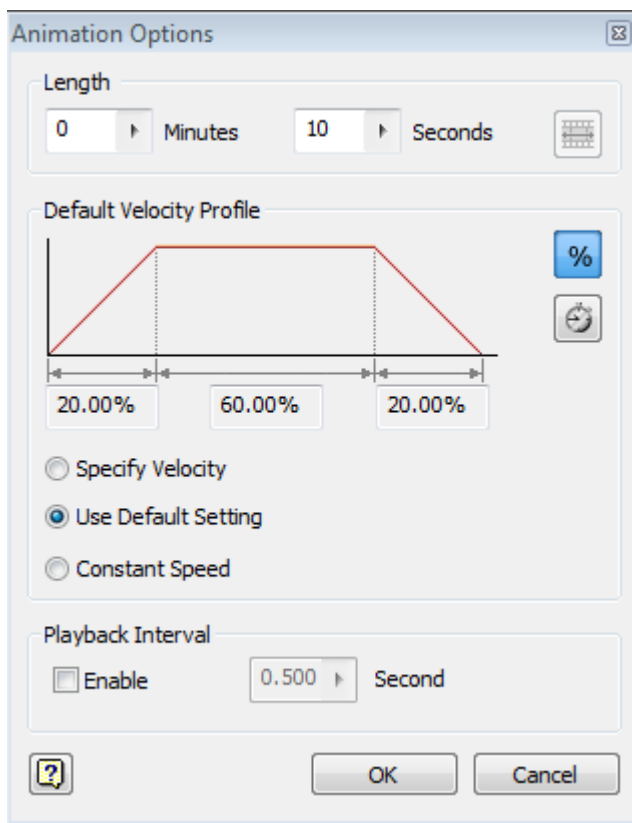
Now go to the Environments toolbar and start Inventor studio



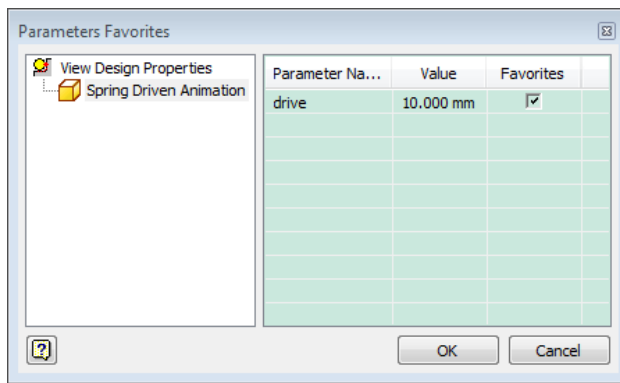
Click Animation TimeLine Icon, Click Animation options icon (bottom right of screen)



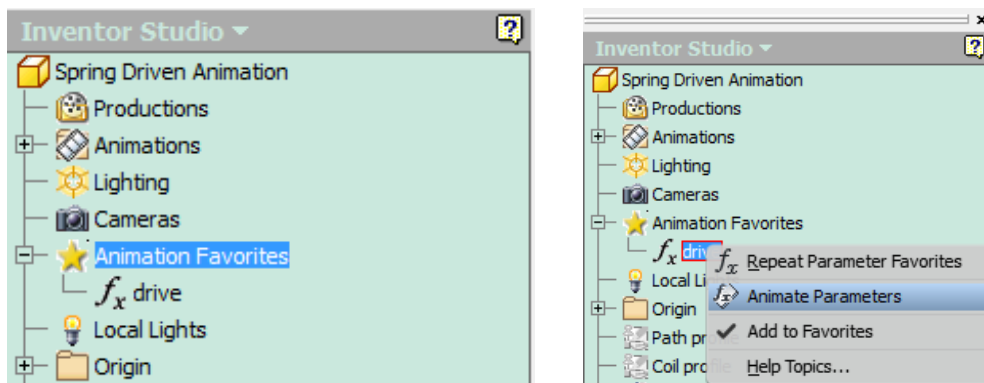
Set the Animation options to run for say 10 seconds. Click Ok



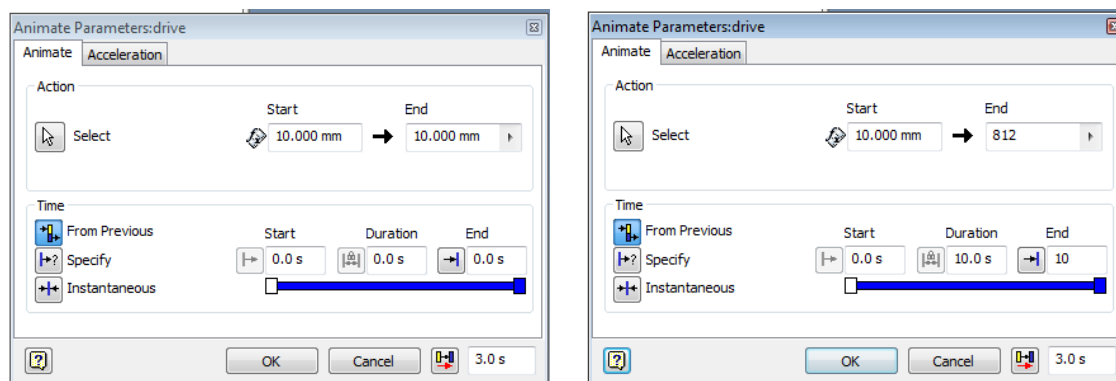
We need to tell Inventor studio what parameters we want to use in the animation.
Click on the Fx Parameter Favorites icon. Select the “drive” parameter Favorites tick box. Select ok



We now have the drive parameter in the Animation favorites. Right click on drive and select “Animate Parameters”

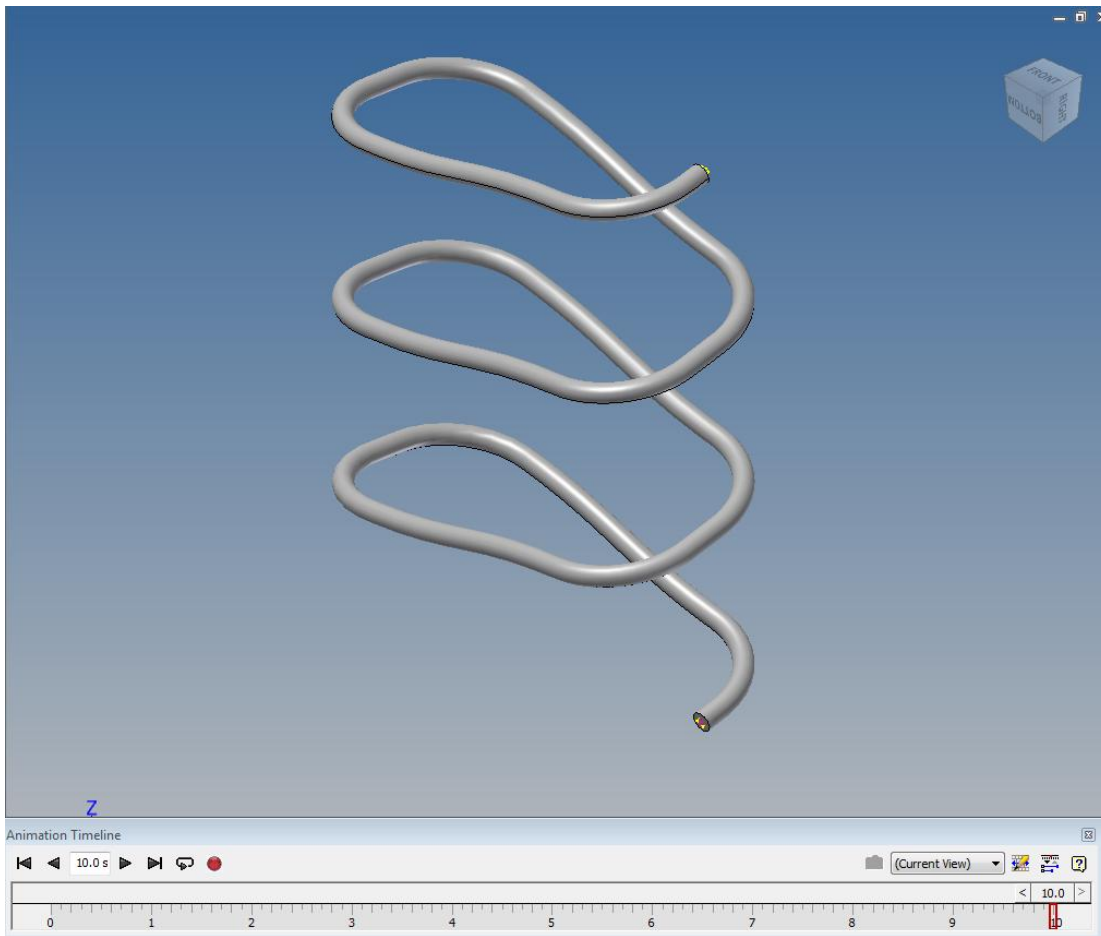


You should now have the default Animate Parameters:drive window showing



Modify the “Action Start and End” to Start 10mm End 812mm, and “Time” End to 10 seconds.
Click Ok

You now have the model animated, use the forward and backwards buttons to play the animation, or record icon button to record your animation



This principle can be used on 2D or 3D sketches, so try to use this on other models and see how changing the profile shape on the loft and having different sketch paths can make.