

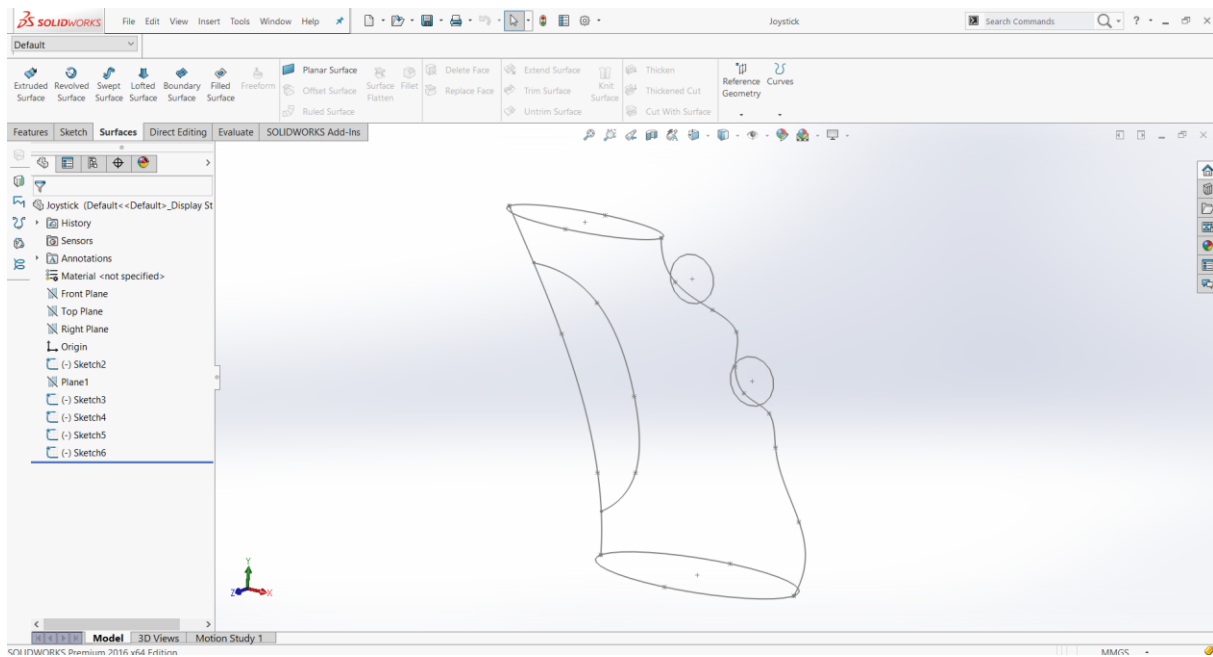
## Exercise: Joystick

**This exercise covers:**

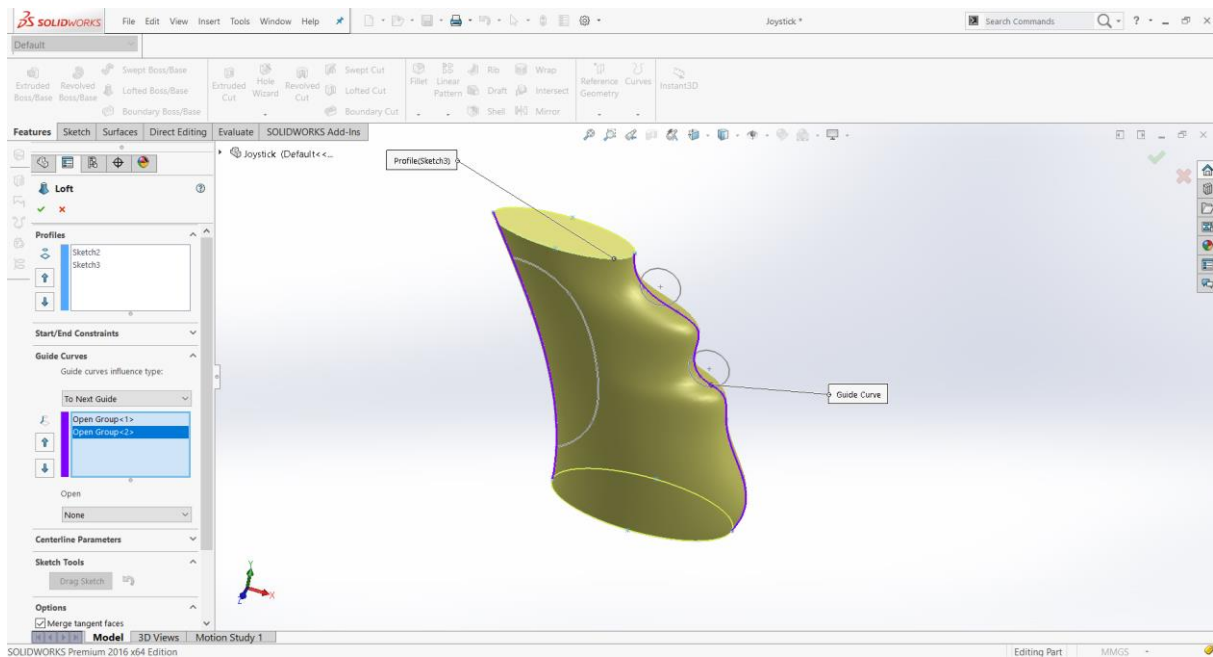
- Surface Offset
- Knit Surface
- Ruled Surface
- Delete Face
- Boundary Surface
- Cut with Surface



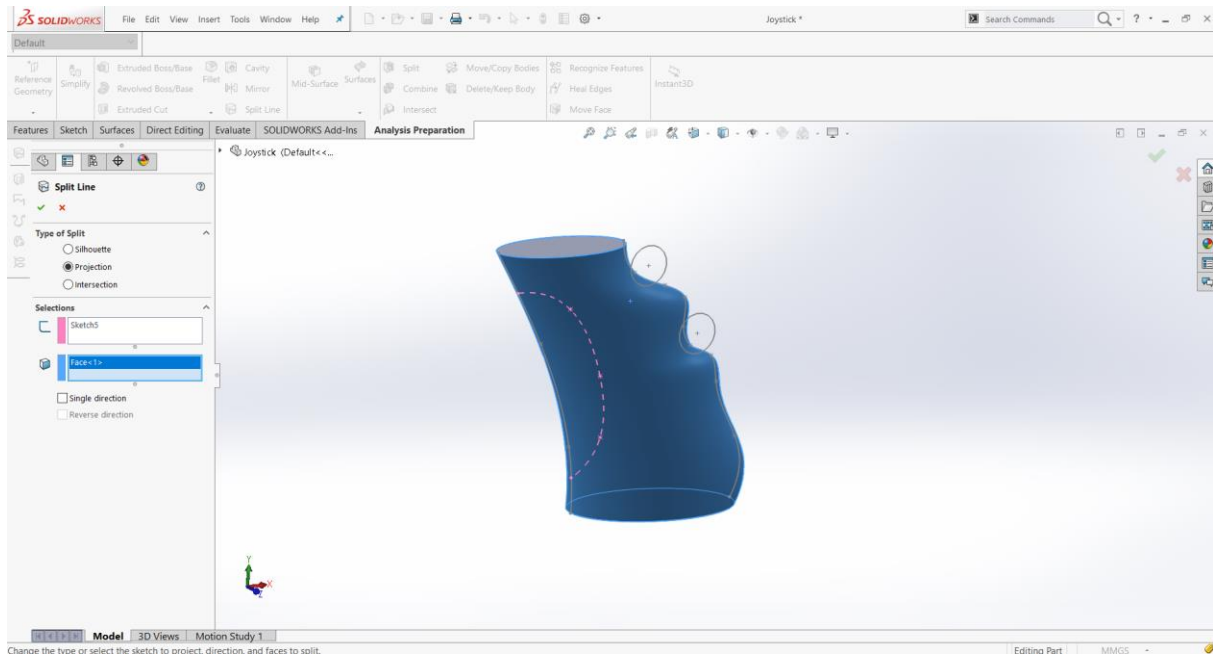
## 1. Open the file Joystick.



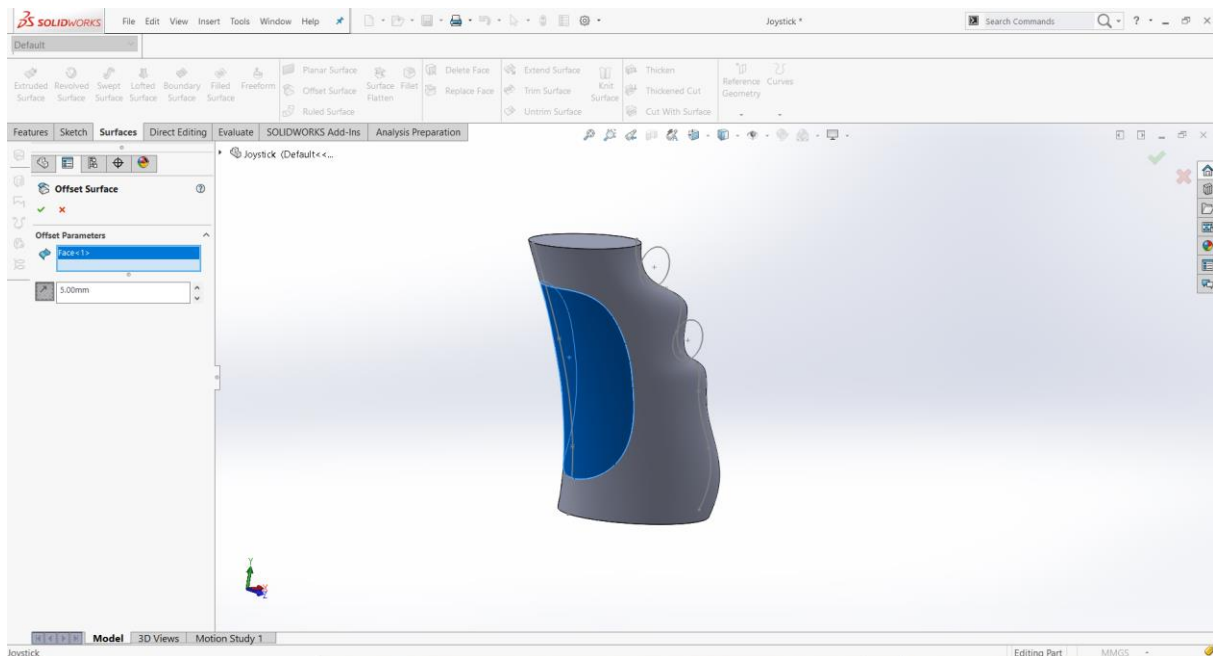
## 2. Solid Lofted Boss. Select 2 profiles and 2 guide curves as shown.



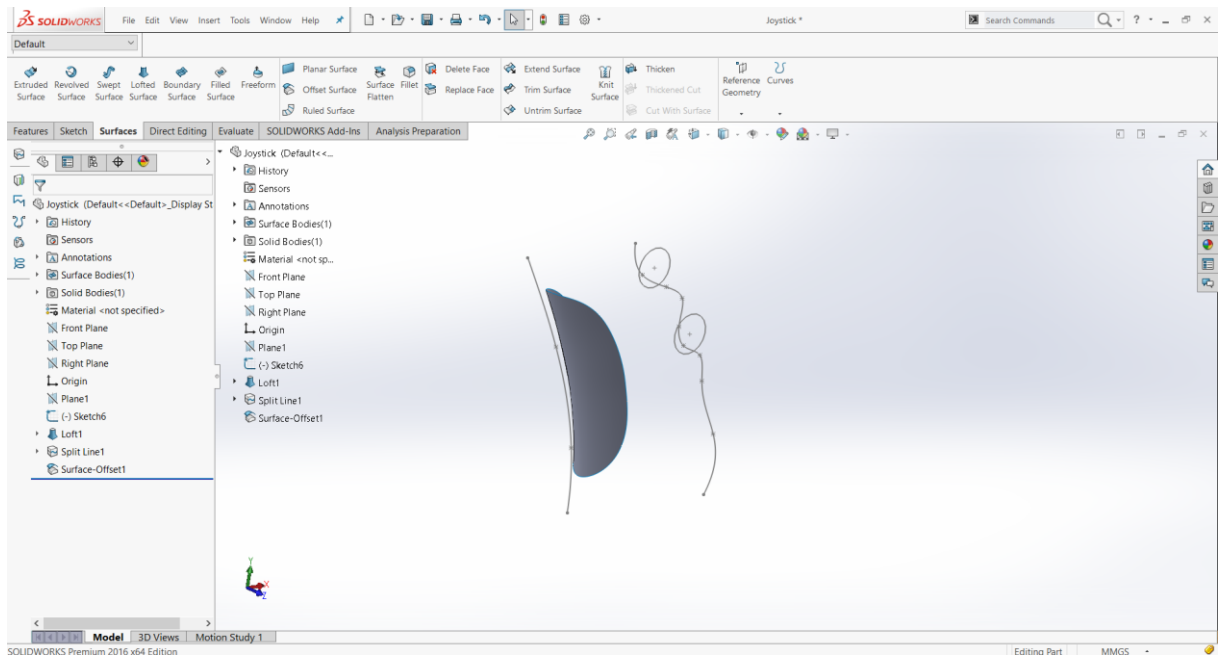
3. **Split Line.** Use created sketch and surface to create a split.



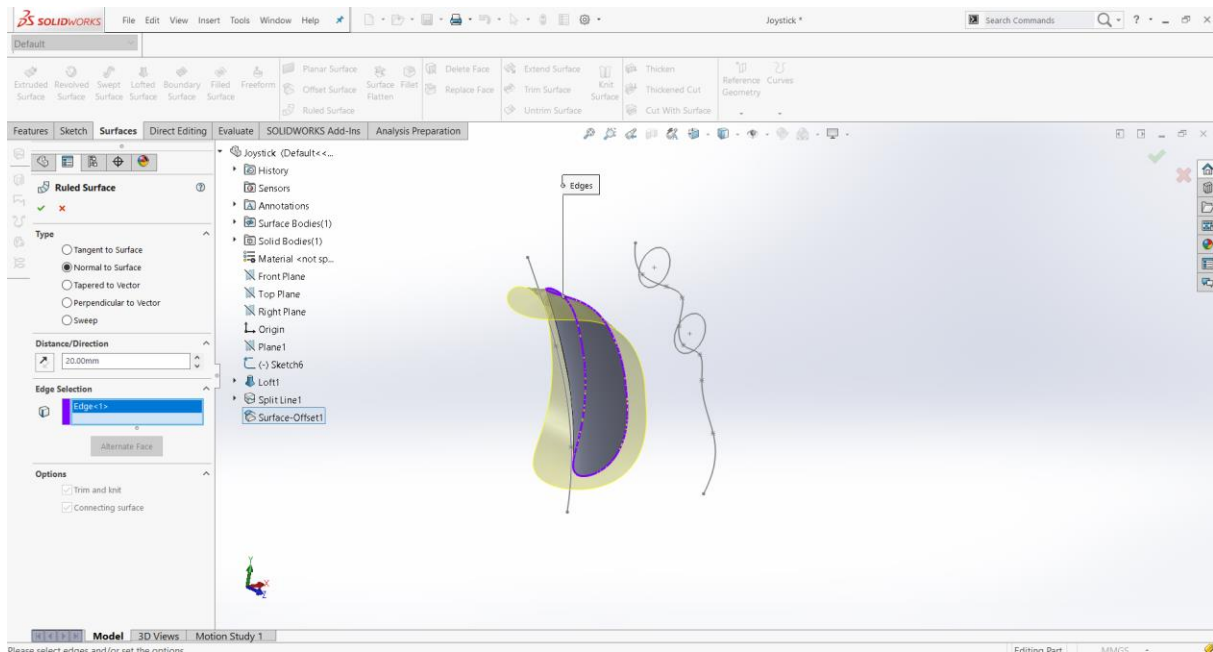
4. **Offset Surface.** Select a face that was created by Split and offset distance 5mm in reverse direction.



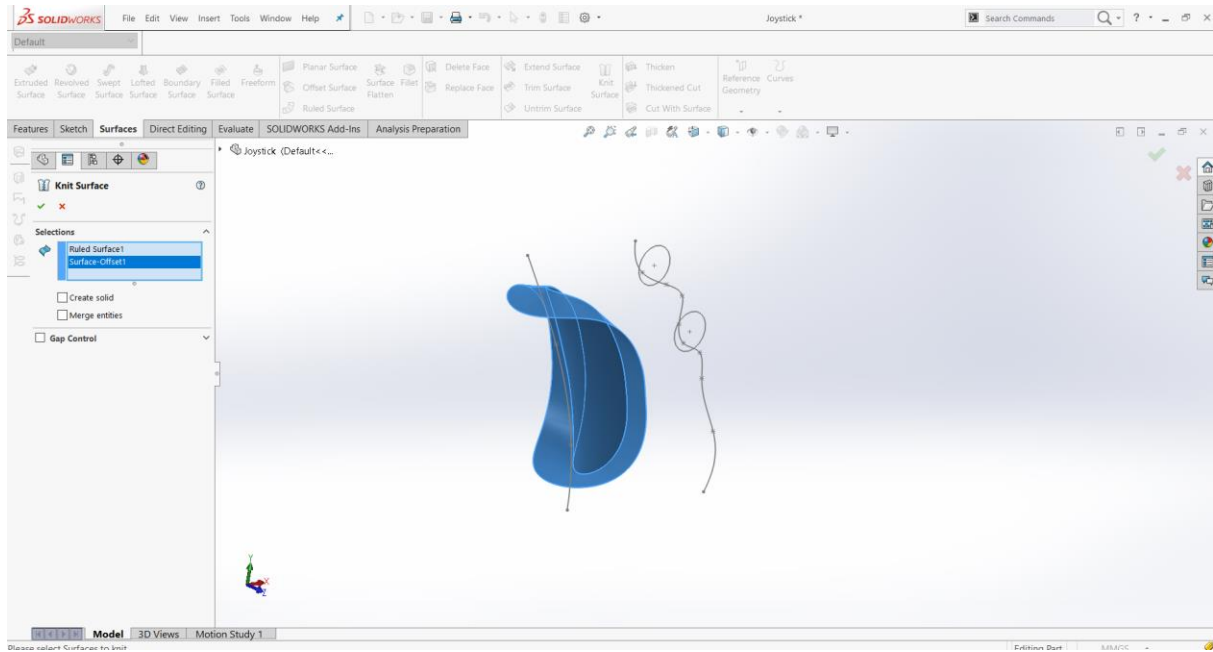
## 5. Hide the main body.



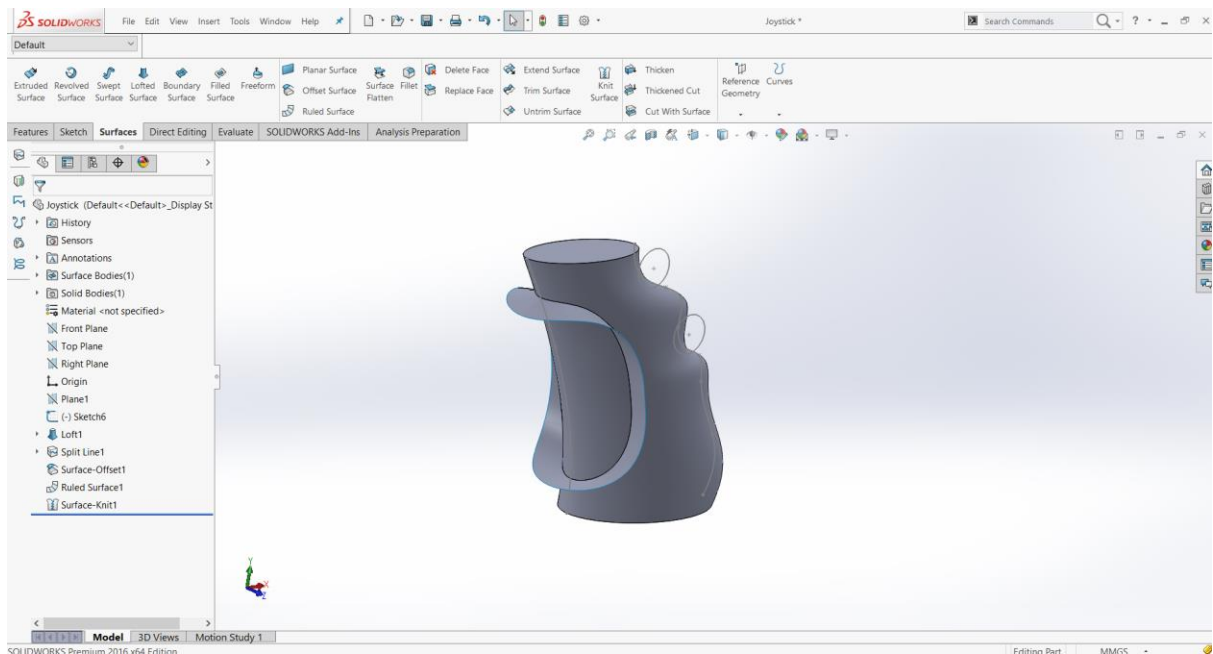
## 6. Ruled Surface. Select an edge of the surface with distance 20 mm.



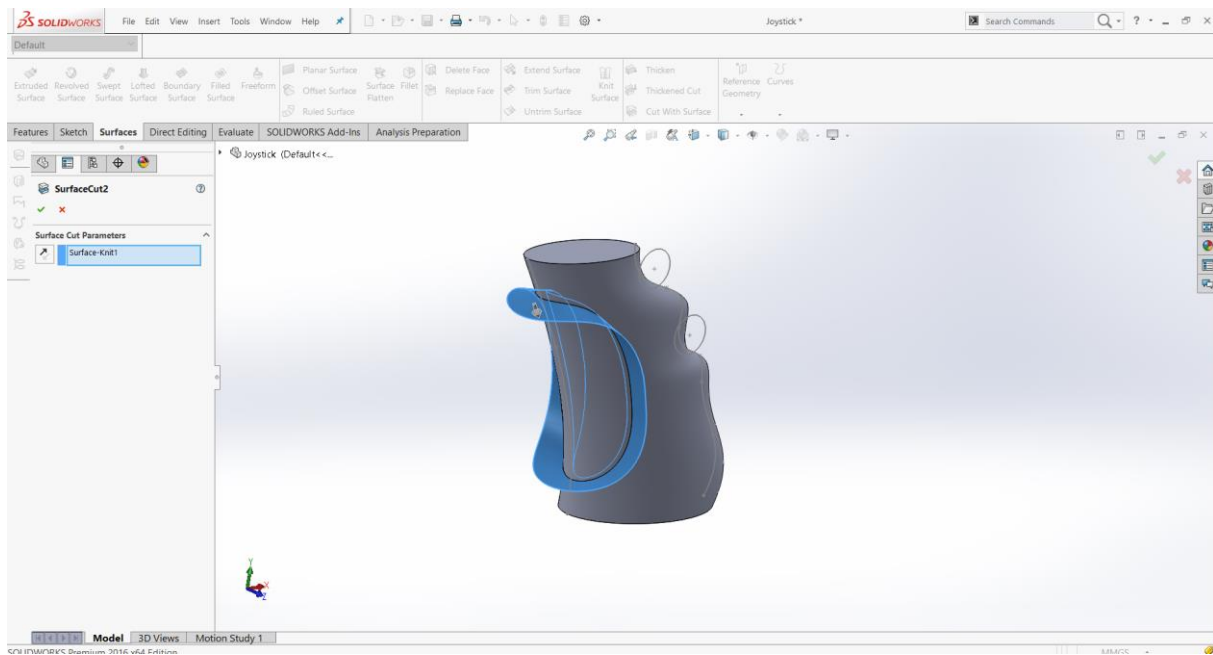
## 7. Knit surfaces. Knit the following surfaces.



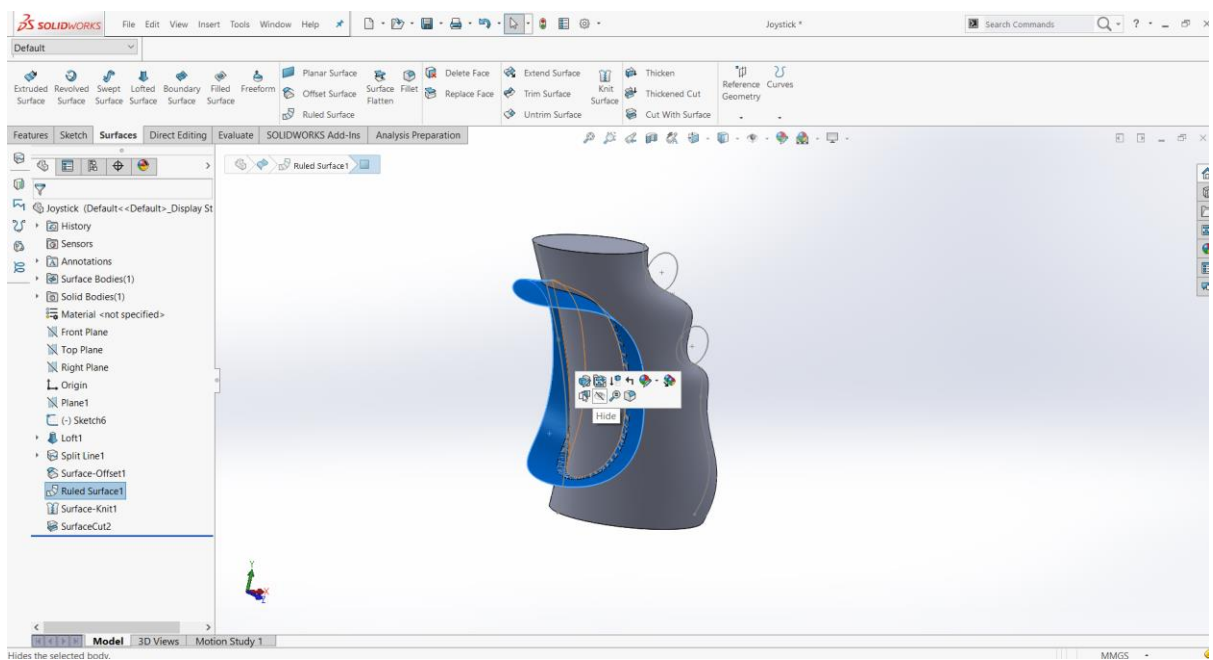
## 8. Show hidden body.



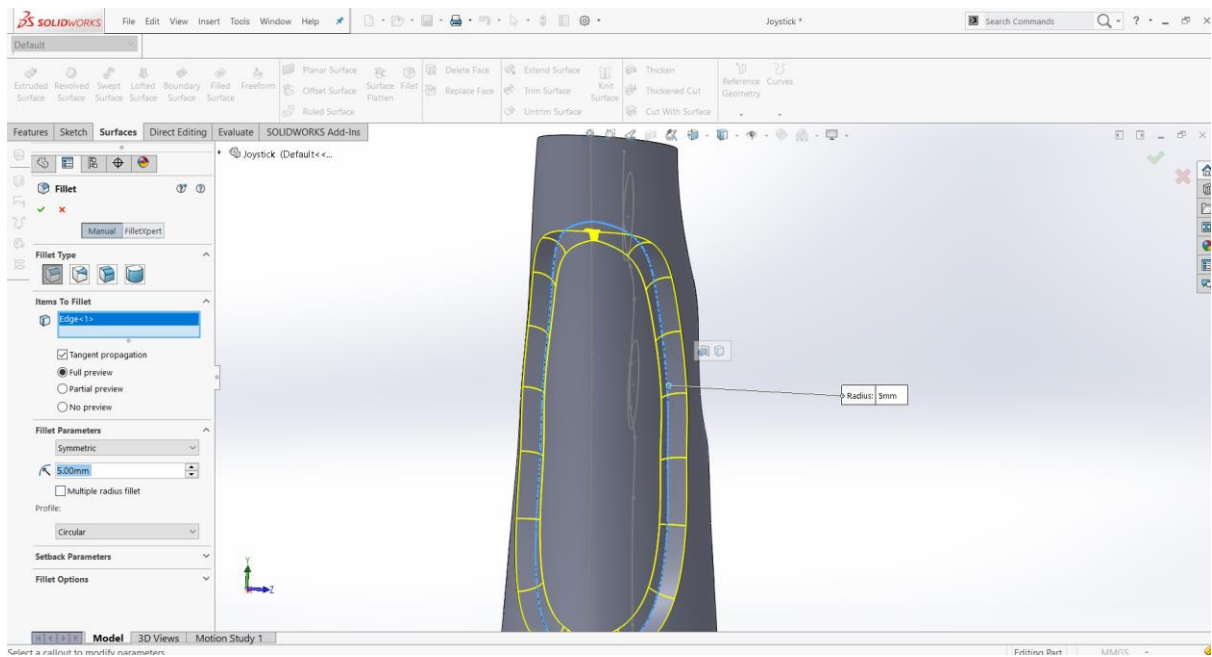
## 9. Cut with Surfaces. Select previously knitted surface.



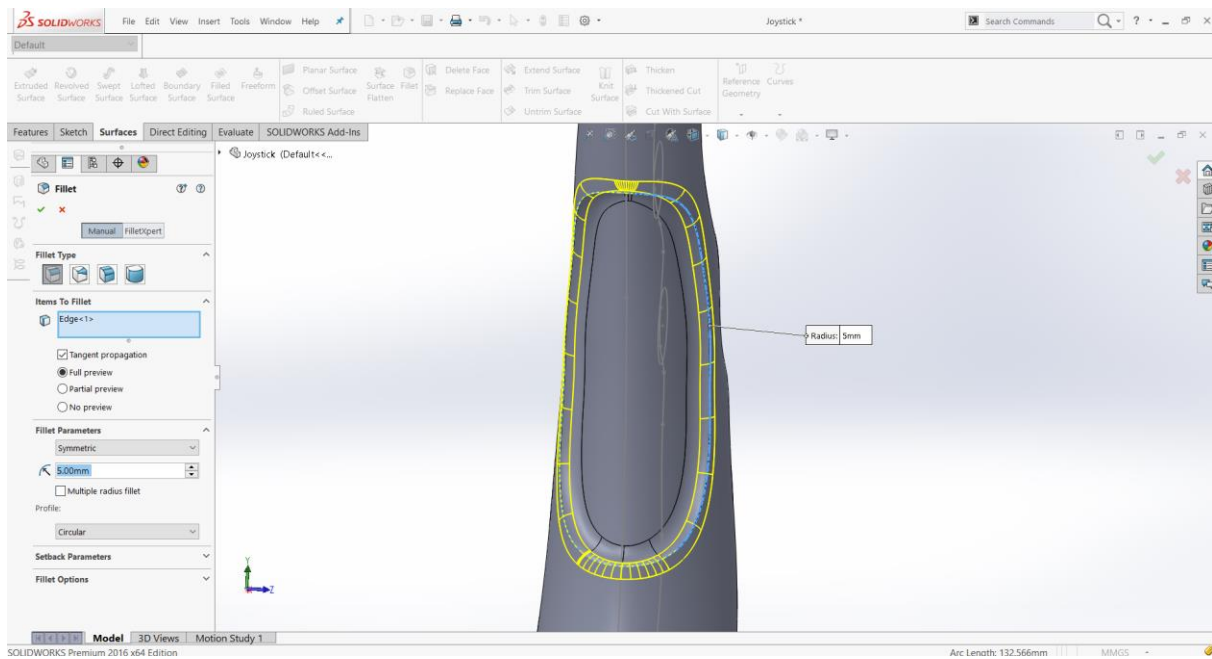
## 10. Hide Ruled Surface.



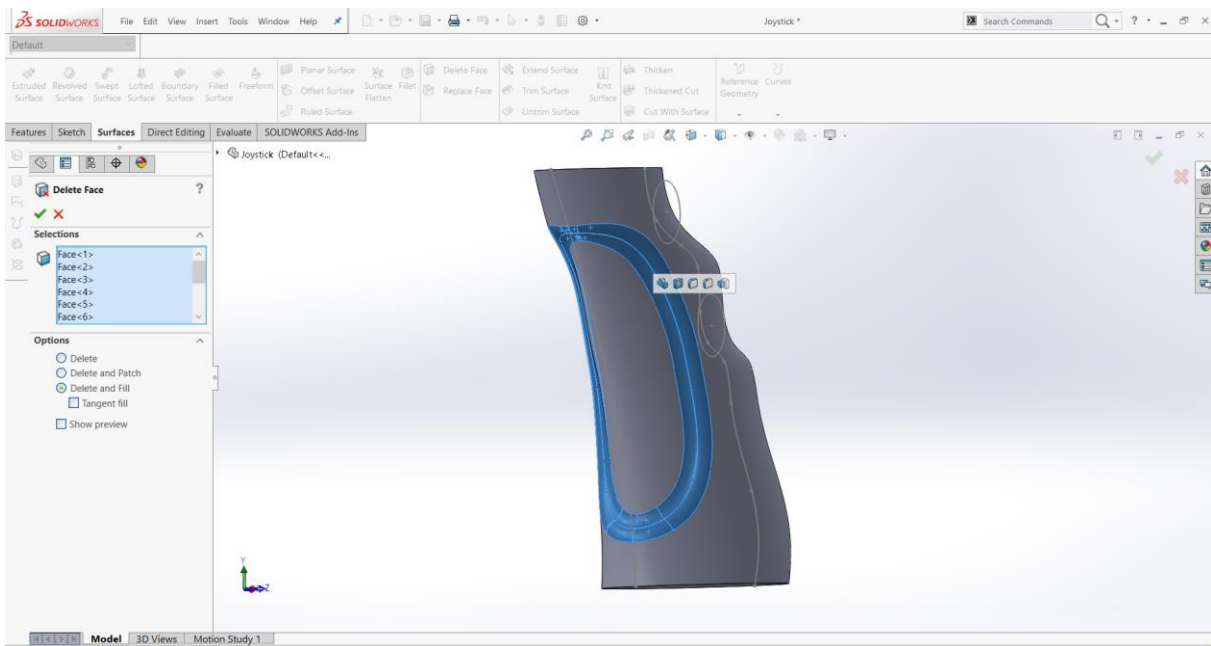
## 11. Fillet. Fillet the inner edge with radius of 5 mm.



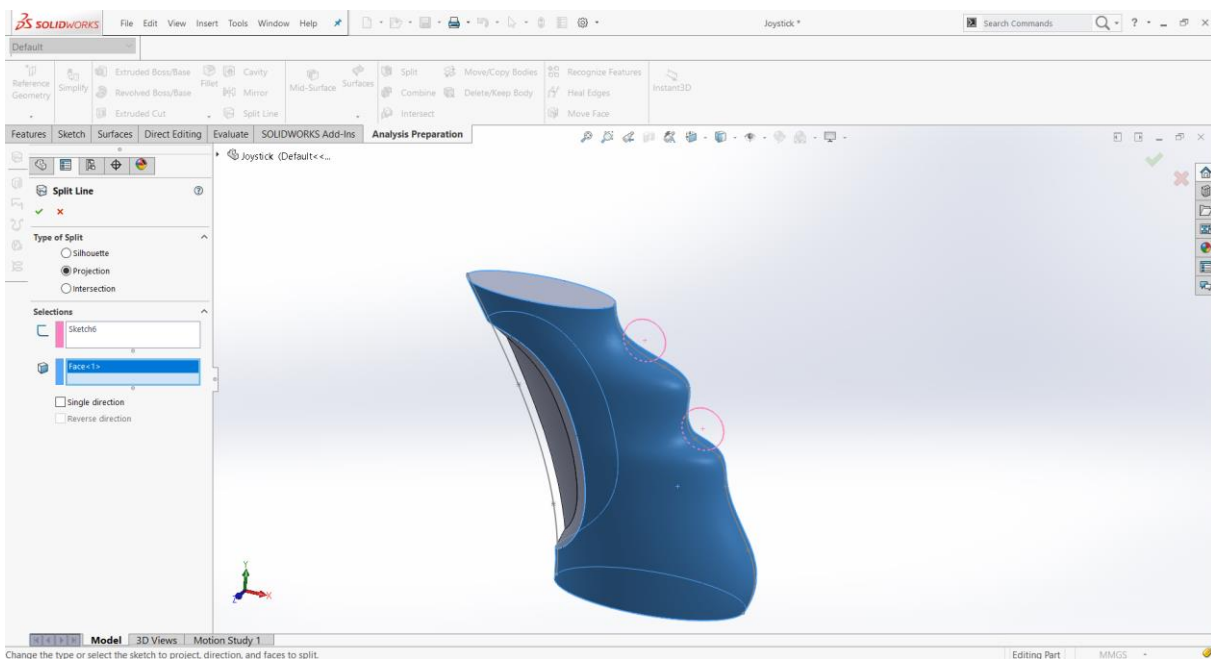
## 12. Fillet the outer edge with radius of 5 mm.



**13. Delete Face.** Select all faces that are created with fillets. Under options go with Delete and Fill.

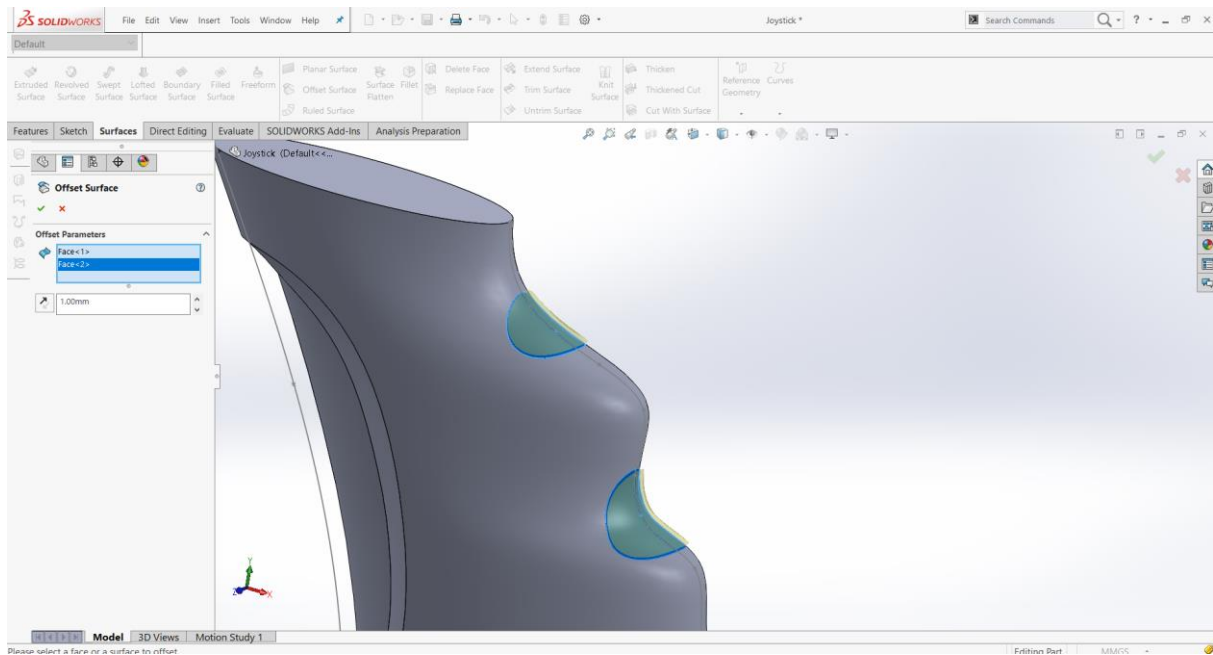


**14. Split Line.** Select two circles and a body to create a split.

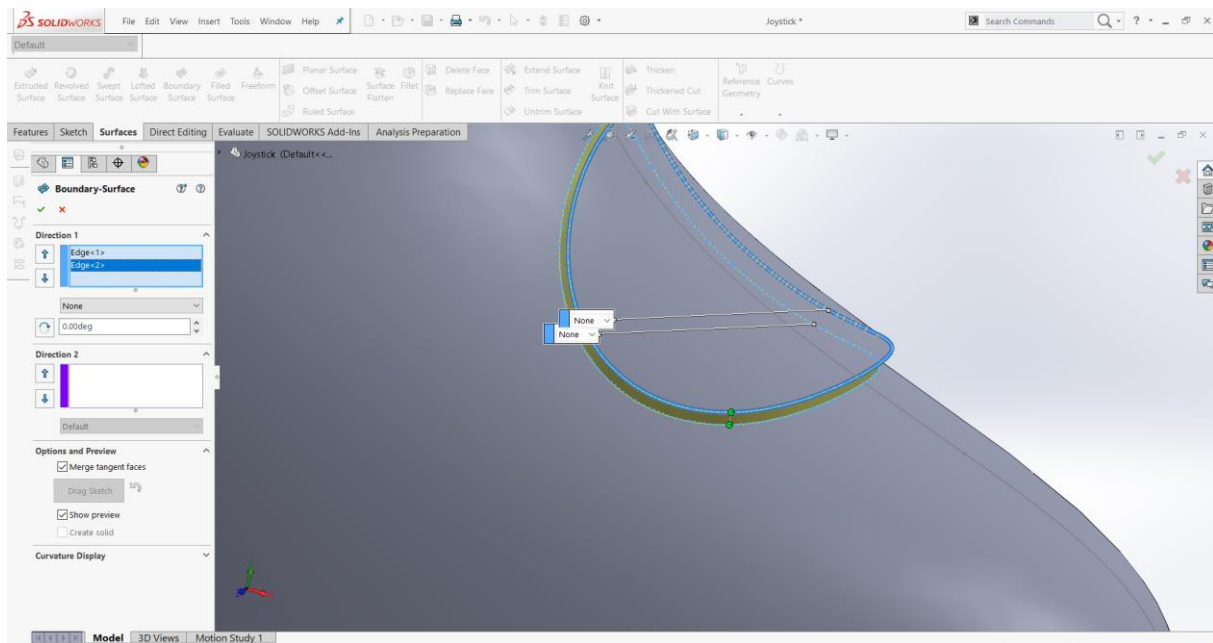




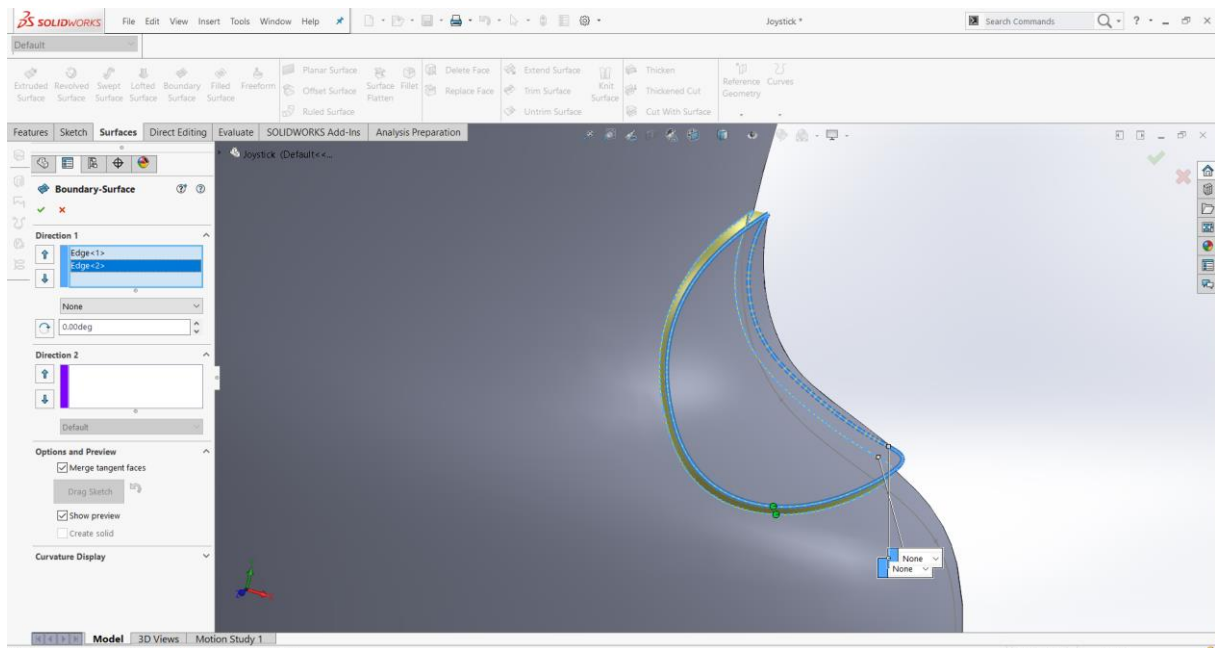
15. **Offset Surface.** Select two faces previously created and create offset surfaces 1 mm as shown.



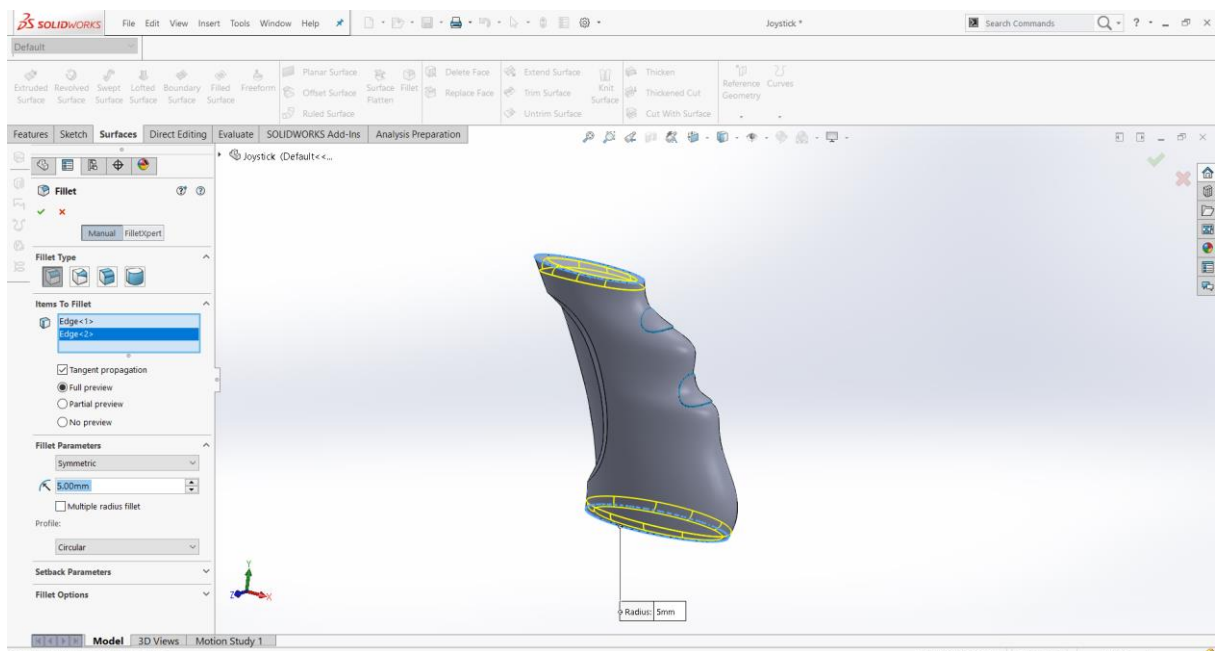
16. **Boundary Surface.** Select two following edges to close the gap.



**17. Boundary Surface.** Repeat the process (Step 16) for the other split and offset surface.

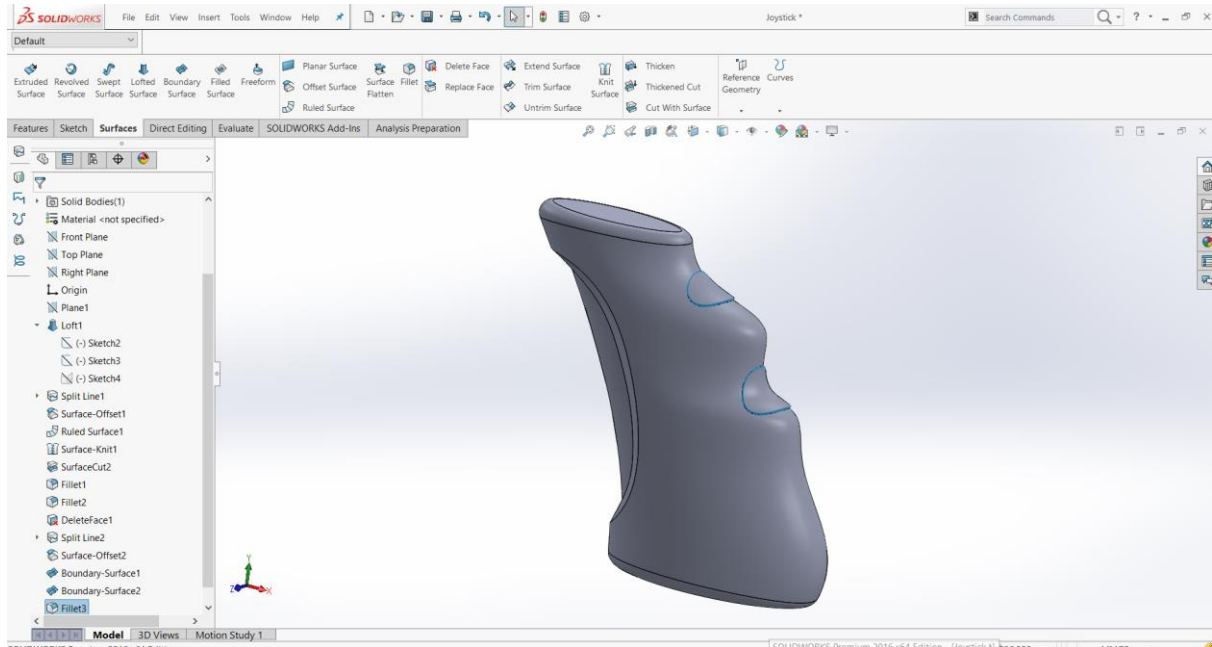


**18. Fillet.** Select two edges as shown to create a fillet with radius of 5 mm.



If your final model looks something like this one below you have made it.

**CONGRATULATION!!!**



**OPTIONAL:** Apply appearance by your own choice.