

## Motion study

For this lecture we are going to learn how to give motion for assembled parts. The gears shown in figure (1) will be modeled and a gear motion will be given to them.

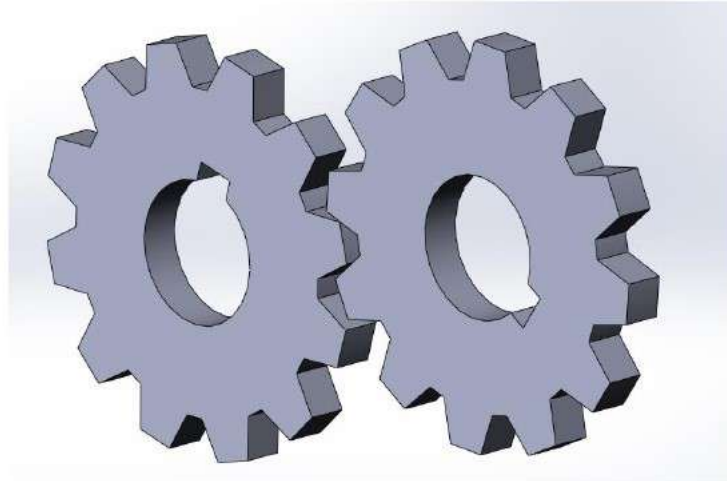


Figure (1)

⇒ On the front plane create the sketch shown in figure (2)

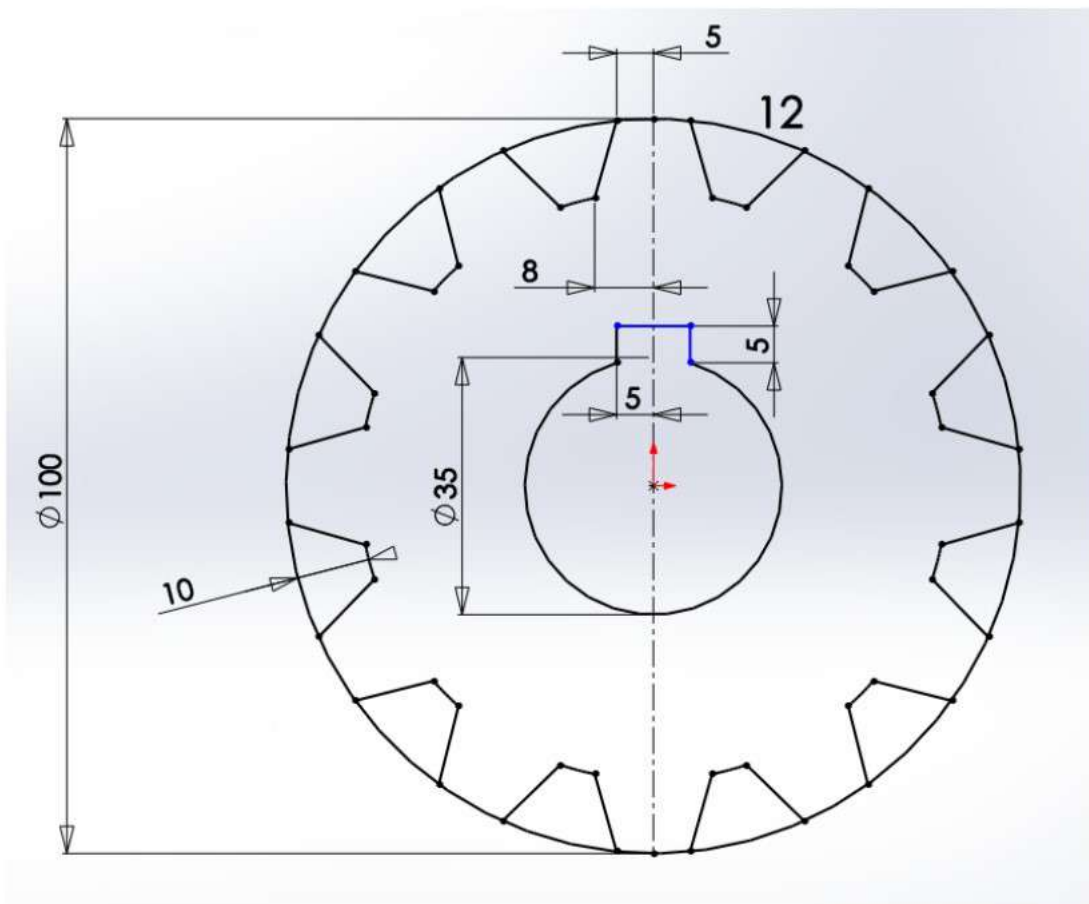


Figure (2)

- ⇒ Extrude for 10 mm, the result should be as figure (3)
- ⇒ Save as Gear



Figure (3)

### **Open New assembly**

- ⇒ Insert Gear component two times
- ⇒ From assembly toolbar select mate
- ⇒ Click on the front surfaces of the two gears and select coincident, click Ok to figure (4)

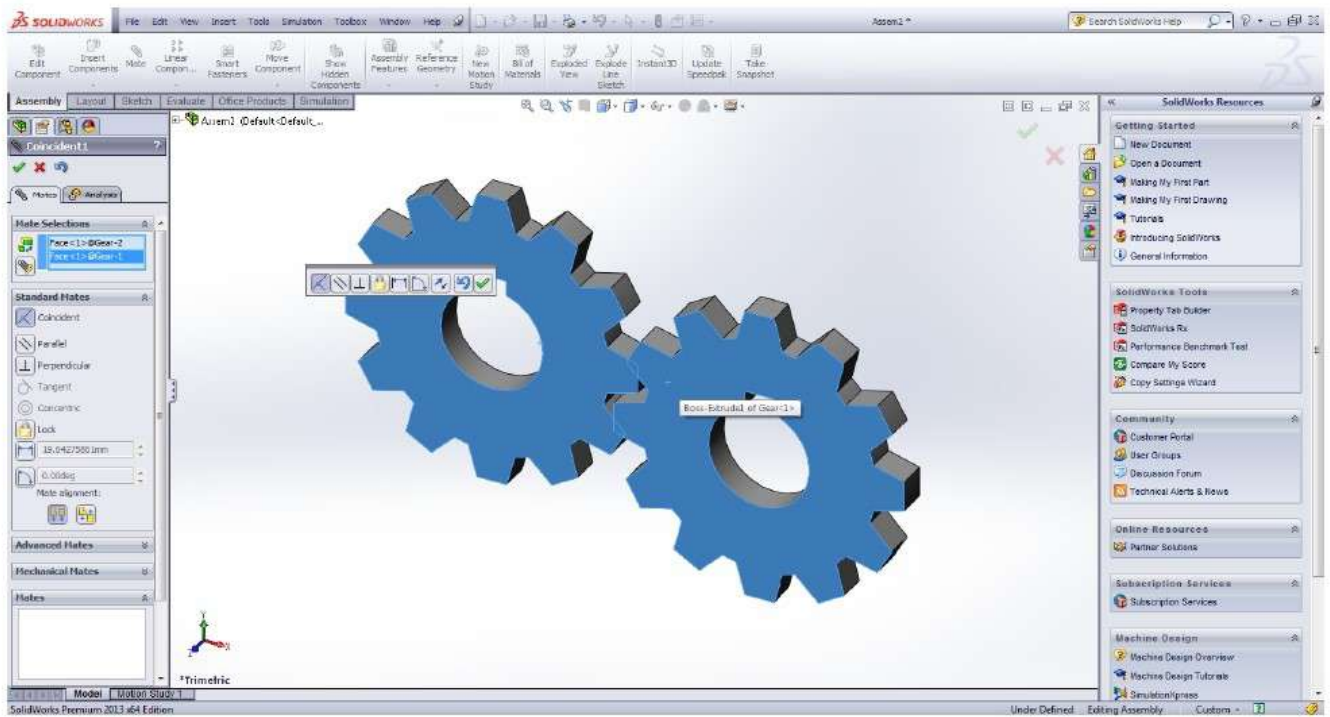


Figure (4)

⇒ Move the second inserted gear as figure (5)

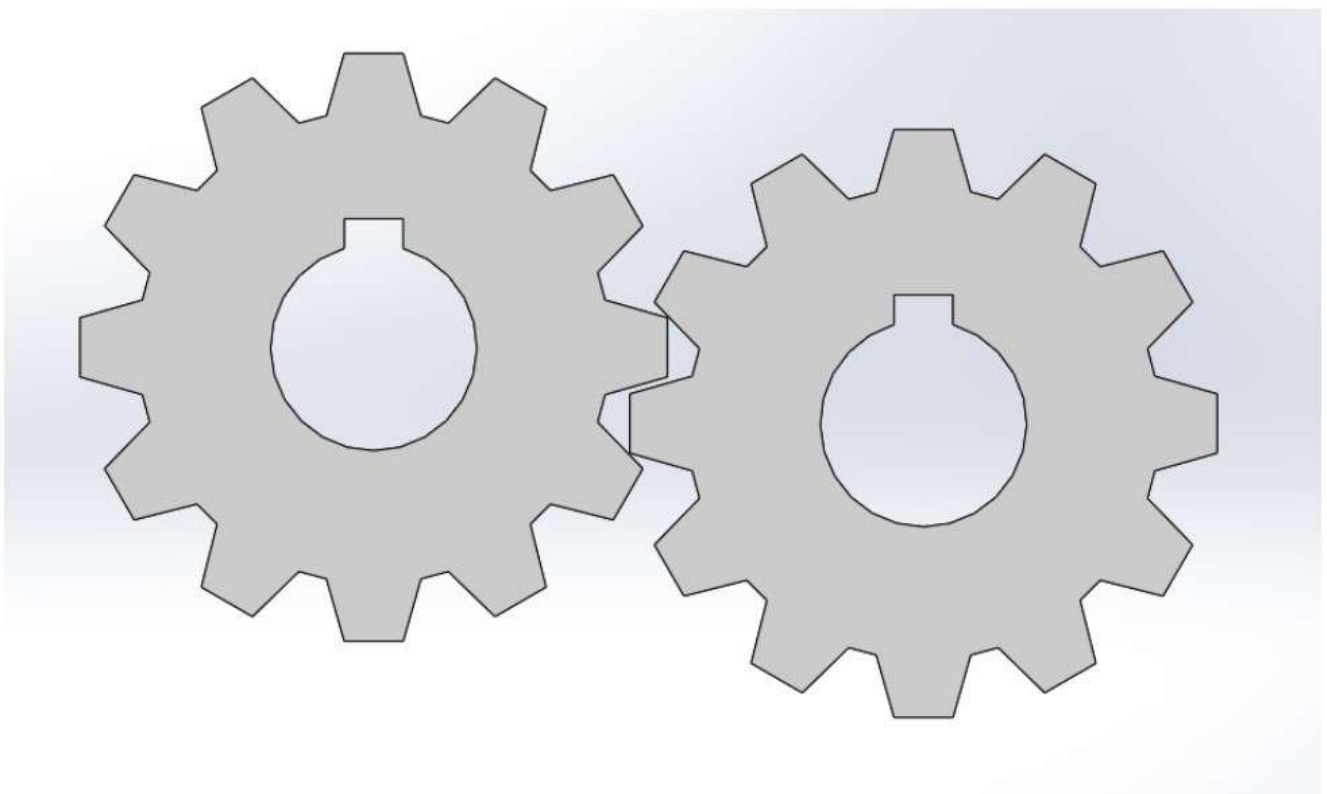


Figure (5)

- ⇒ Select Mate from assembly toolbar
- ⇒ Go to mechanical mate
- ⇒ Click on Gear
- ⇒ Select the internal cylindrical surfaces of the two gears, as shown in figure (6)
- ⇒ Click OK

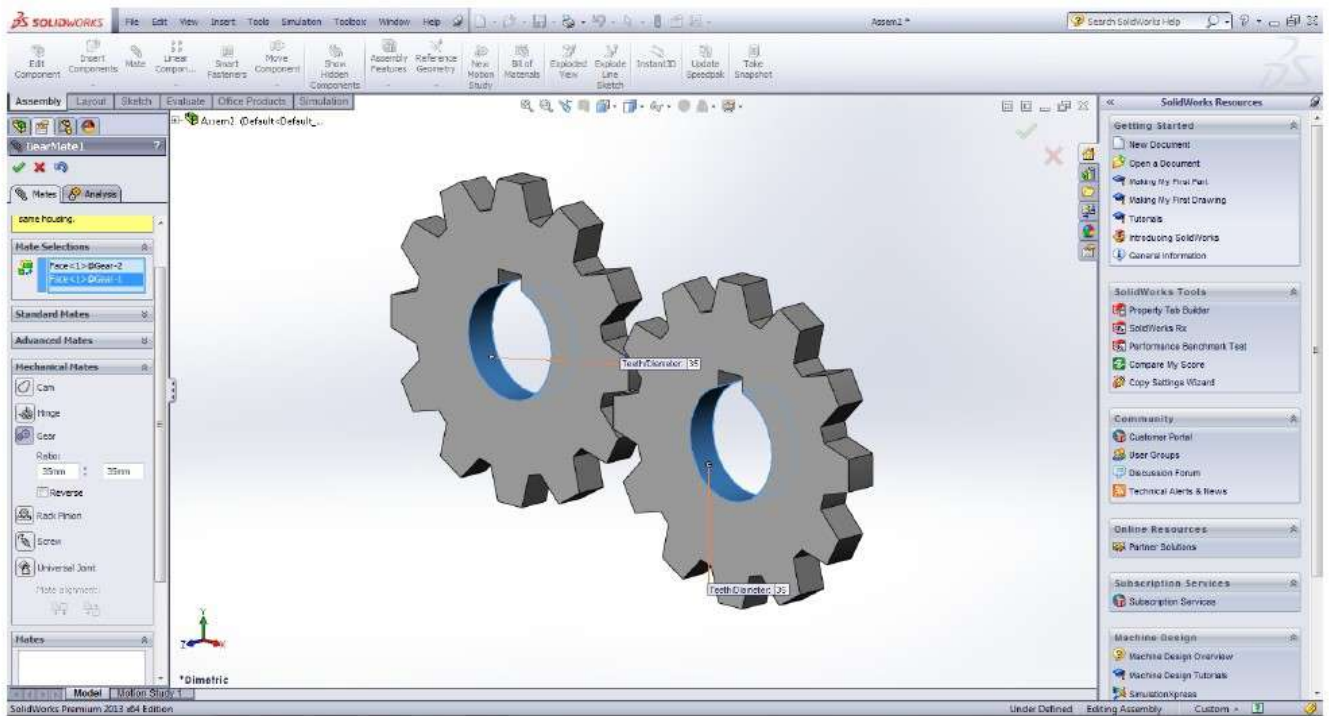


Figure (6)

- ⇒ Right click on the first inserted gear that have (f) sign by its name, which means its fixed
- ⇒ Click on float, as shown in figure (7)

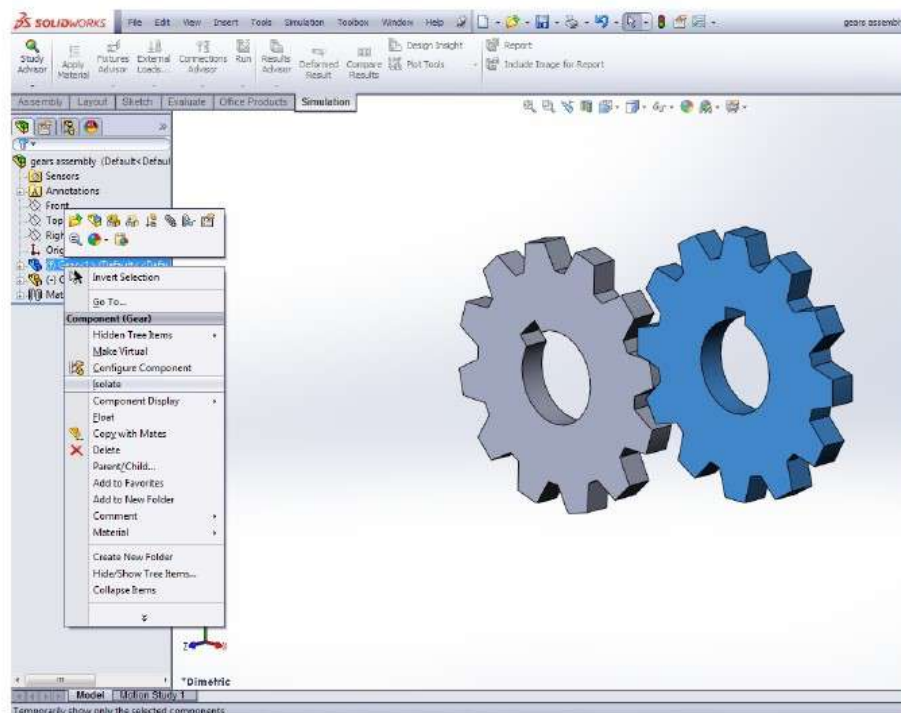


Figure (7)

On you on check the interference of your components

- ⇒ From insert select New Motion study, or select Motion study in the bottom of the program window
- ⇒ Click on Motor, as shown in figure (8)

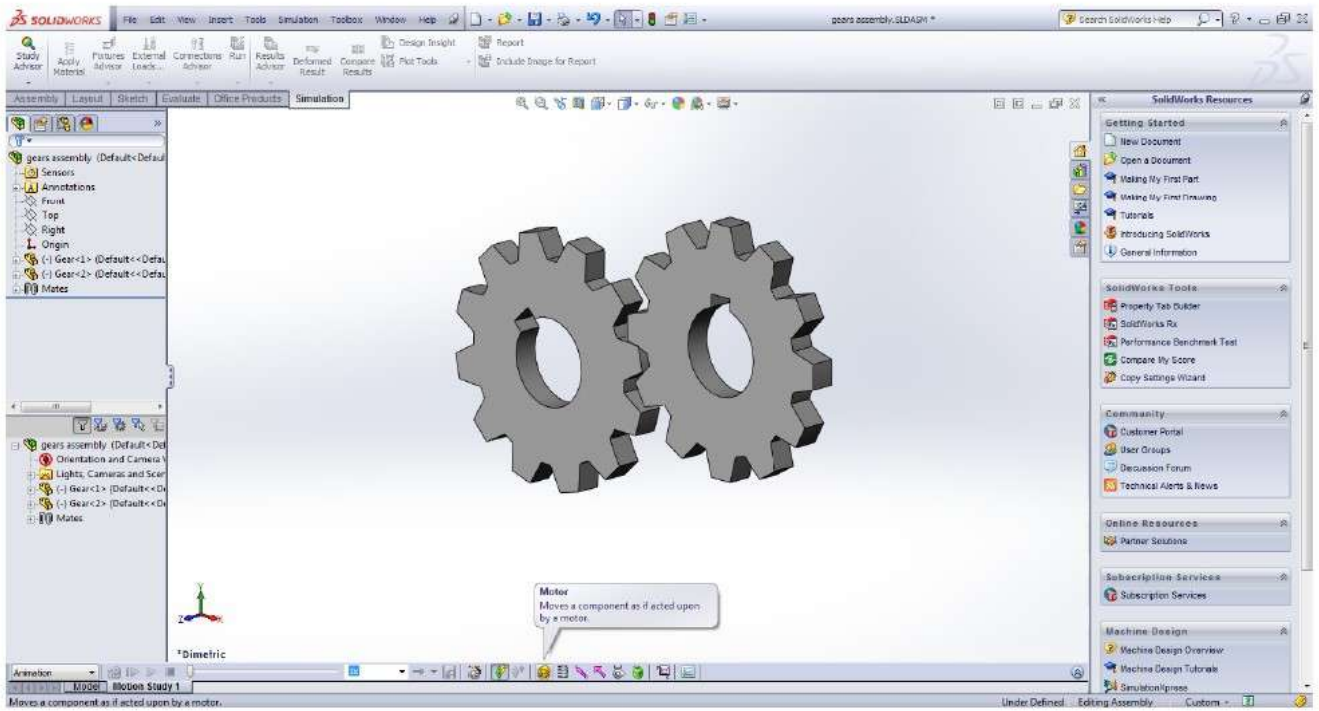


Figure (8)

- ⇒ Select the internal cylindrical surface of one of the two gears
- ⇒ Click OK to figure (9)

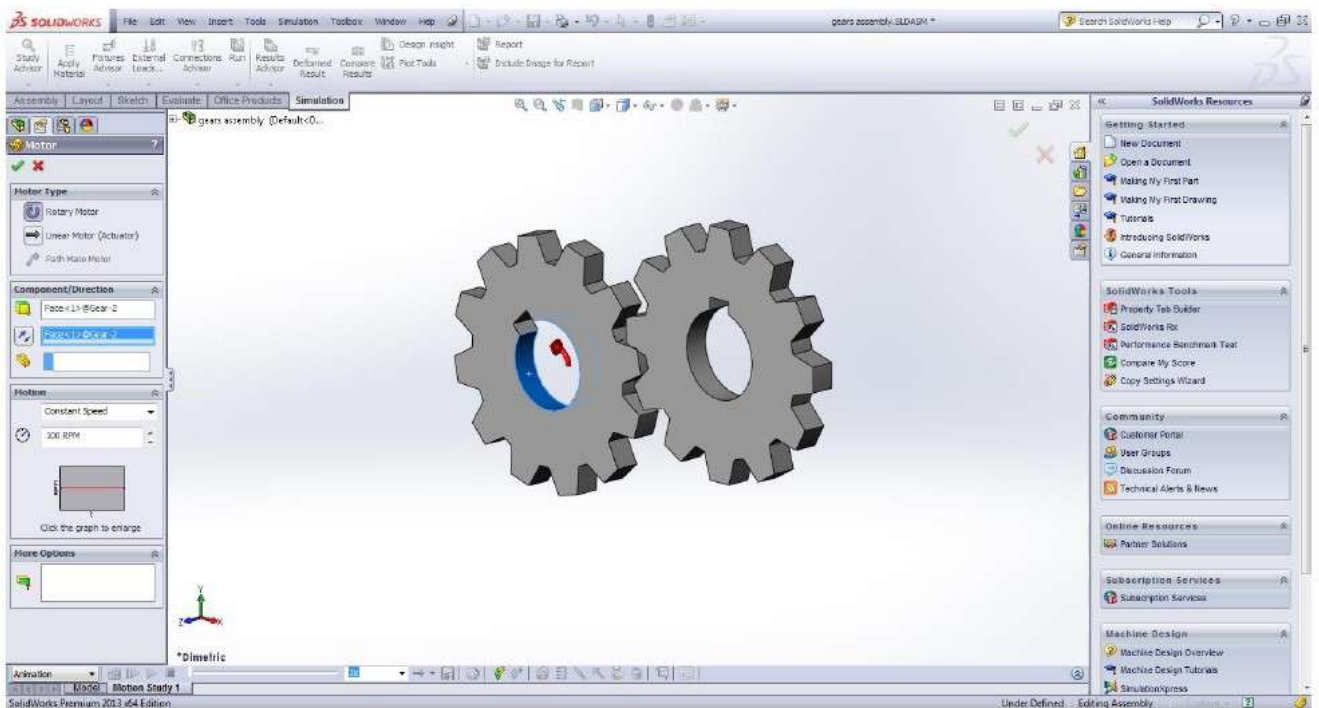


Figure (9)

- ⇒ Change the playback speed to 10 sec as shown in figure (10)

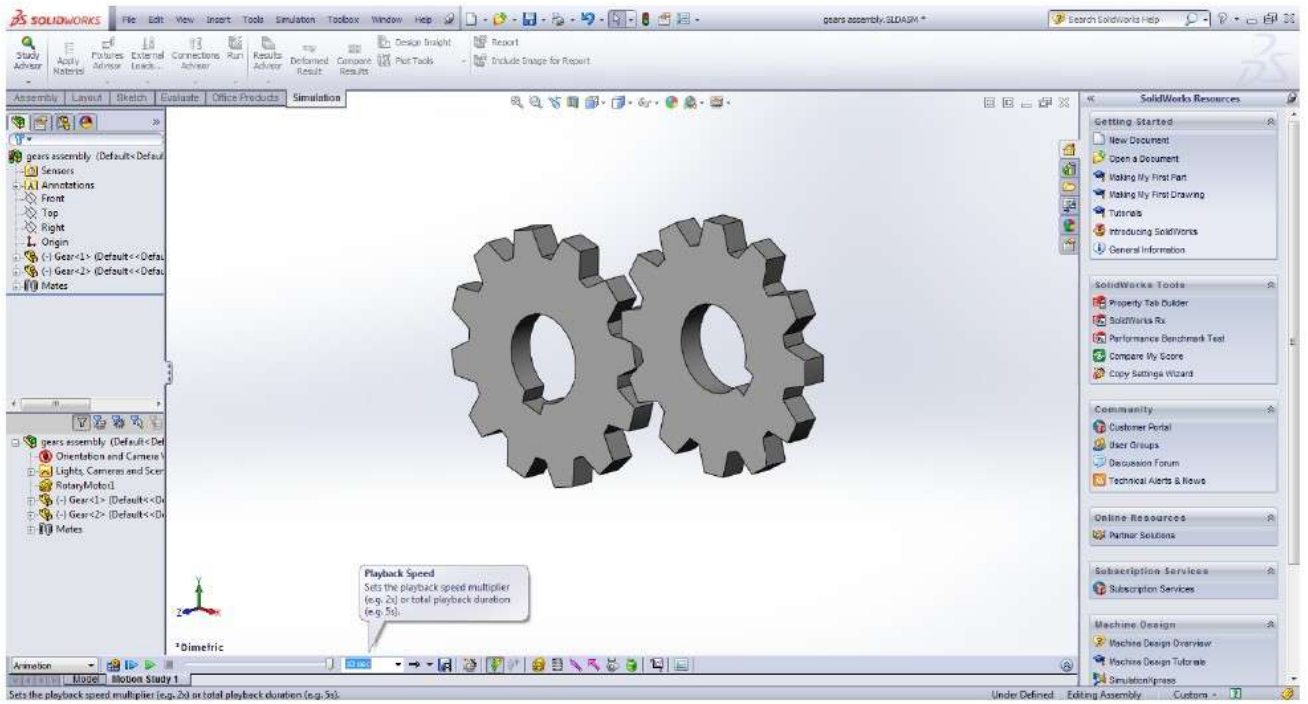


Figure (10)

⇒ Click play

## H.W

The technical drawing consists of five numbered views and a 3D exploded view of a roller assembly. View 1 shows the 'SOPORTE DE EJE' (shaft support) with dimensions: 32, 64, 10, R15, and 8. View 2 shows the 'BASE DE RODILLO' (roller base) with dimensions: 66, 77, 10, and 45°. View 3 shows the 'RODILLO DE CAMPANA' (roller) with dimensions: 47, 40, 6, 4x45°, and 4. View 4 shows the 'EJE Y ENBONADURA' (shaft and roller) with dimensions: 44, 10, 17, 2.5, 3, 8, 6, 12.5, 60, 22.5, 3.5, and 6. View 5 shows the 'EJE Y ENBONADURA' with detailed dimensions: 60, 50, 7, 1.25, 1, 1.25x0.5, 13, 6, 19, 13, 16, 66, 16, 25, 22, 3, 25, and 32. The 3D exploded view shows the assembly with parts numbered 1 through 5. The drawing is signed by IISOFT and Autodesk, with the name 'Ing. Martin Mestanza Professional CAD Designer'.

CURSO:	Diseñador CAD Diseño Avanzado con AutoCAD 2012	CODIGO:	PRACTICA
TEMA:	Rodillo de Campana	ESCALA:	1