MACHINE THEORY
Bachelor in Mechanical Engineering

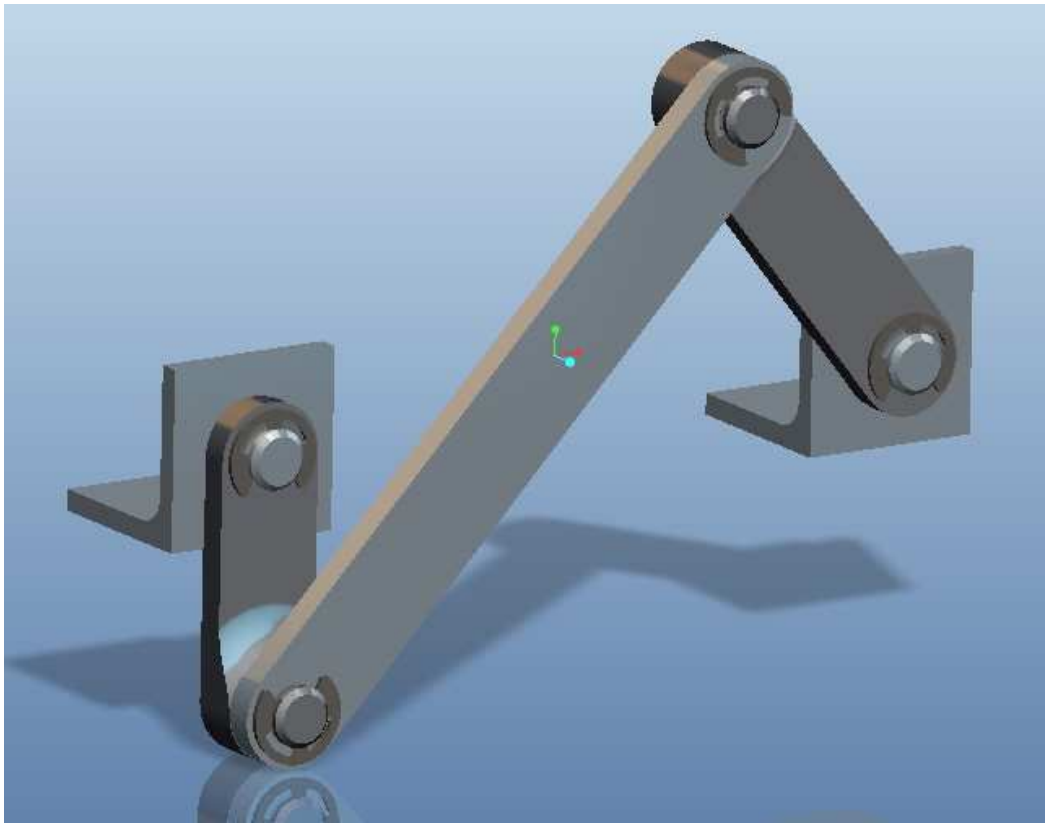
INTRODUCTION TO CREO/PROENGINEER 5.0
PART 1/2

David Mauricio Alba Lucero
José Luis Pérez Díaz
Ignacio Valiente Blanco
Efrén Díez Jiménez

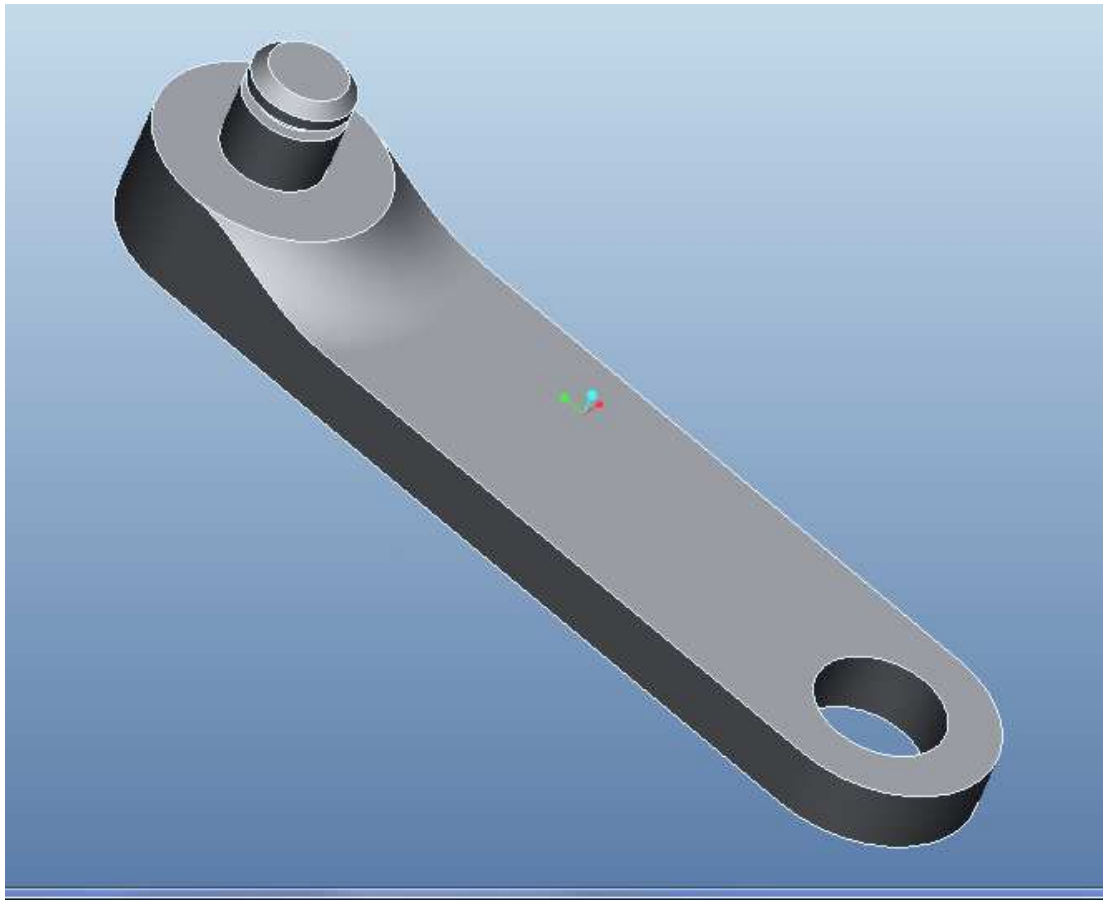
Universidad
Carlos III de Madrid

Universidad Carlos III de Madrid

Objective

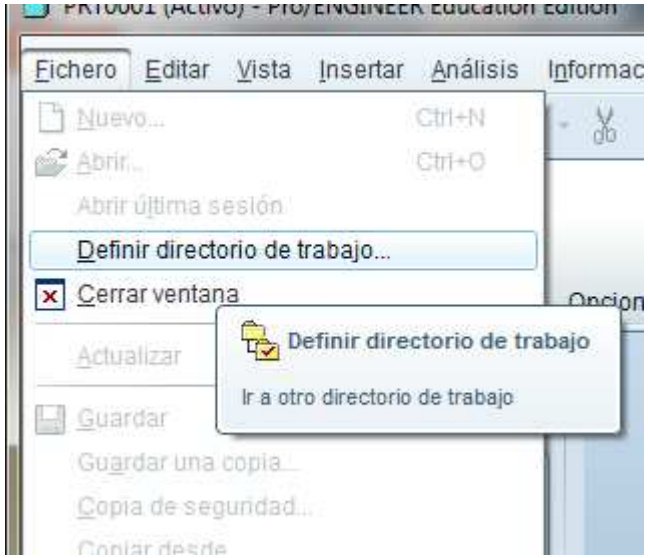


Objective



Early steps

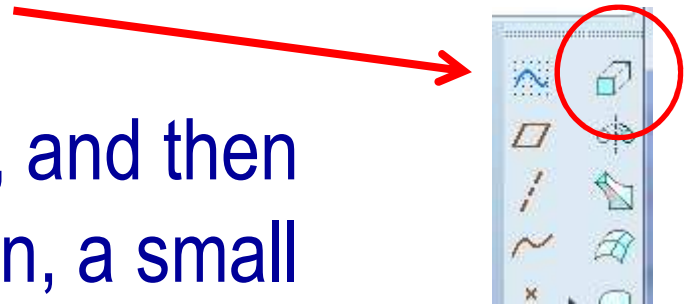
- Before start working: Define working directory!!
- Go to <Fichero-Definir directorio de trabajo…>
- Introduce the most convenient path directory

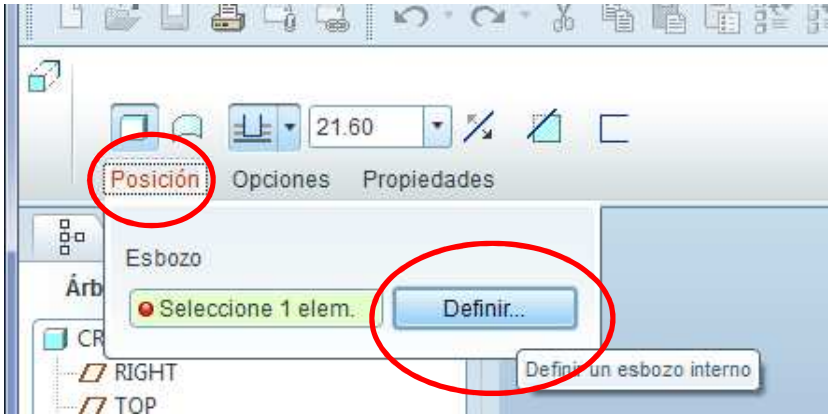


Universidad Carlos III de Madrid

Create an extrusion

- Press the extrusion button
- Go the "position" tab (Posición), and then press the "define" (definir) button, a small screen will pop-up.



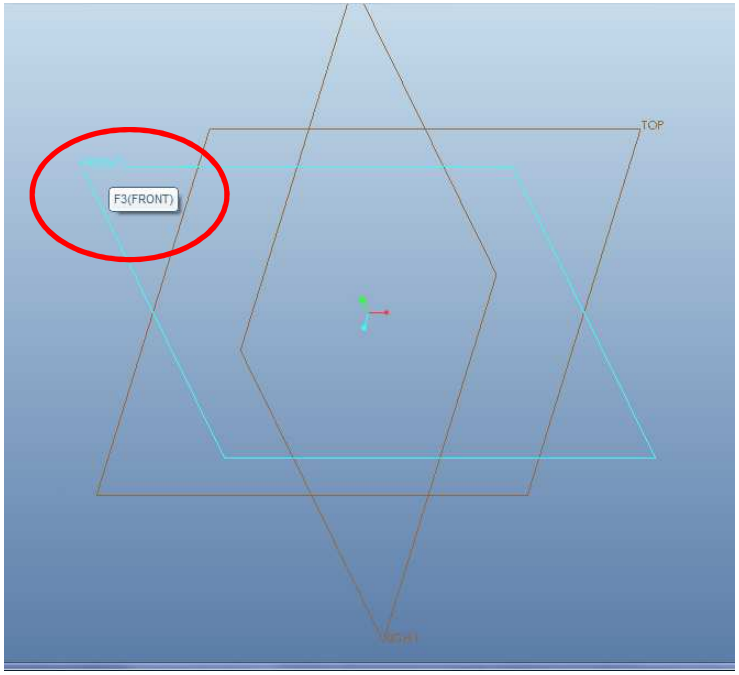


The small screen

Universidad Carlos III de Madrid

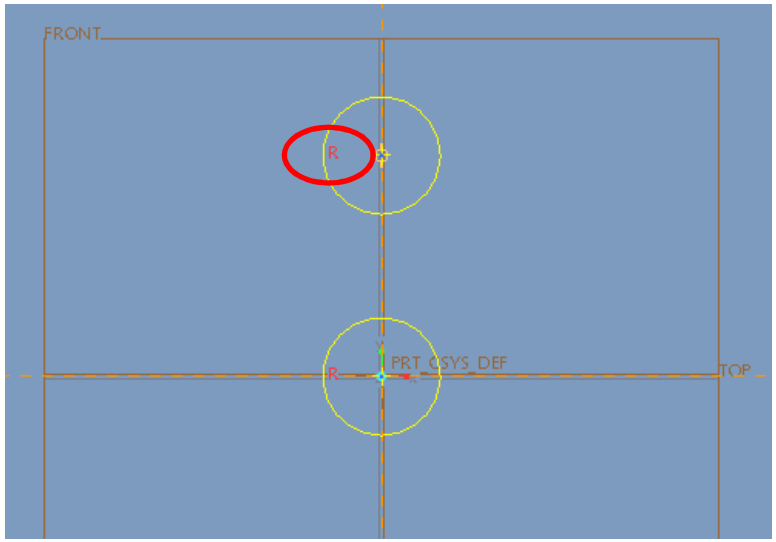
Create a extrusion

- Select the plane marked as "FRONT" and press "sketch"(Esbozo) button on the small screen. This will be the sketch plane (Plano de esbozo)



Make the sketch

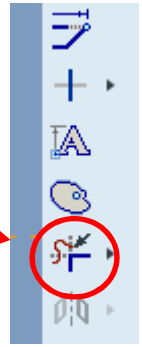
- Draw a circle on the intersection of the planes (the cursor will automatically snap to it)
- Draw a second circle over the previous one, and adjust the size until a red R appears, this means that both circles have the same size.



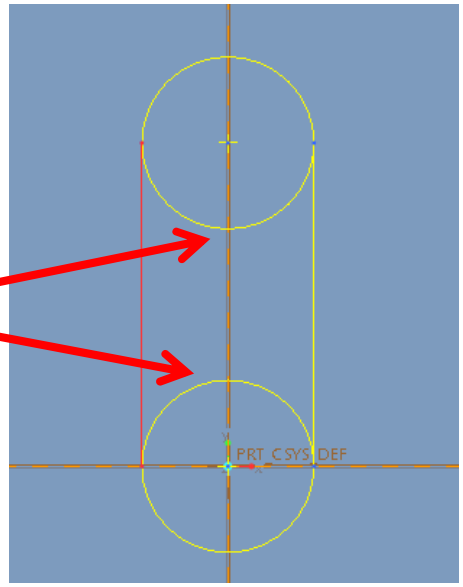
Universidad Carlos III de Madrid

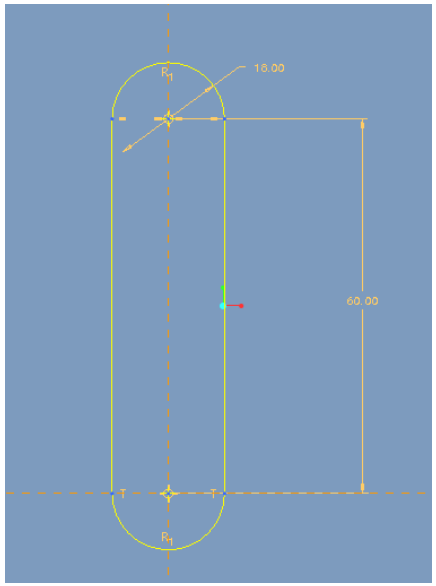
Make the sketch

- Connect the two circles with lines
- Use the trim tool to remove internal line segments, and apply the dimensions until the sketch looks like in the figure.
- Press ✓ to finish.



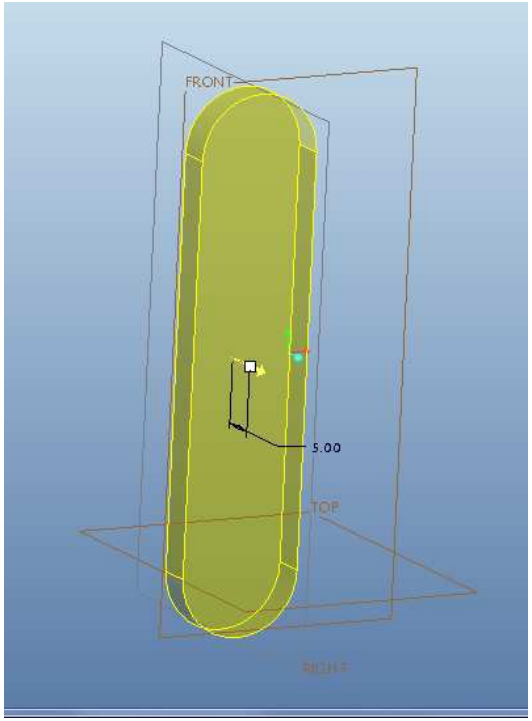
Remove these segments by clicking with the trim tool

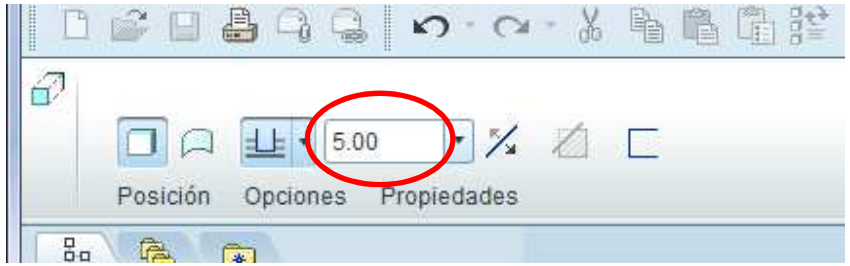




Finish the extrusion

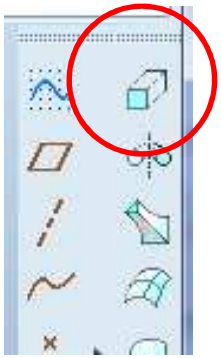
- On the text box introduce "5" to define the depth of the extrusion, and press ✔ to finish.

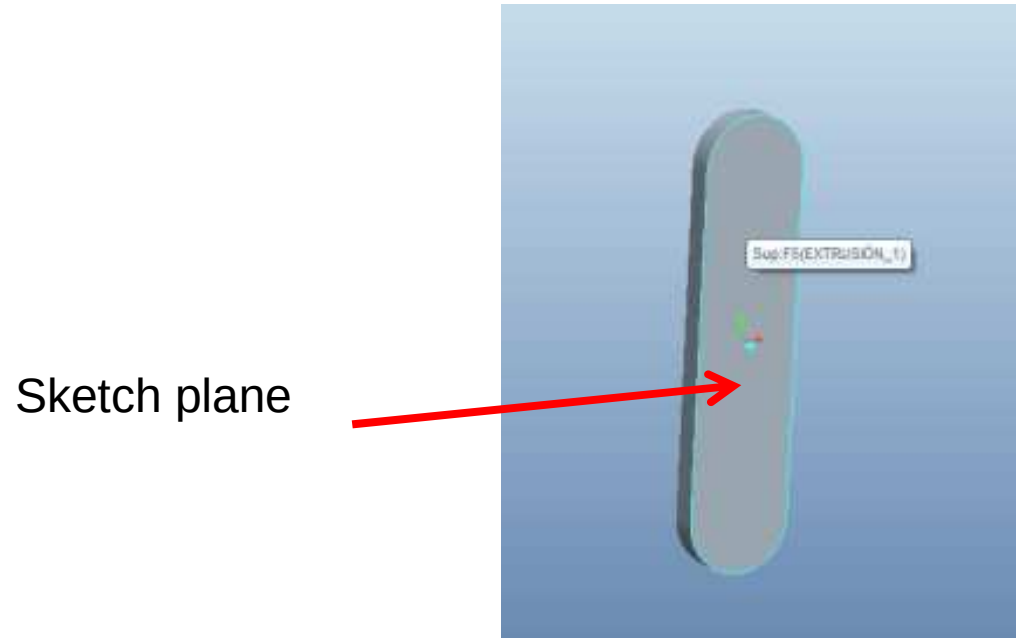




Make another extrusion

- Press the extrusion button, and select the front surface of the previous extrusion as the sketch plane.

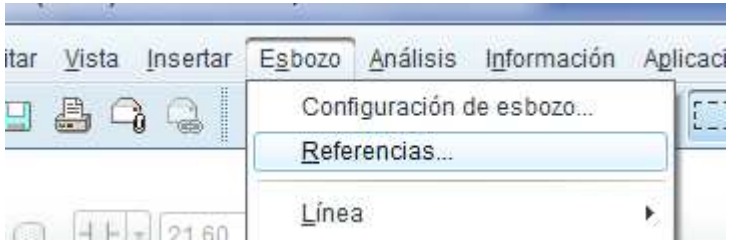




Universidad Carlos III de Madrid

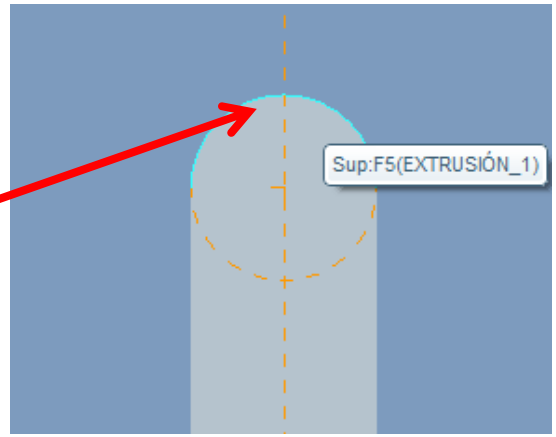
Make another extrusion

- In the menu select <Esbozo-referencias>



- Then click on the top of the part. A circle drawn with dashed lines will appear.

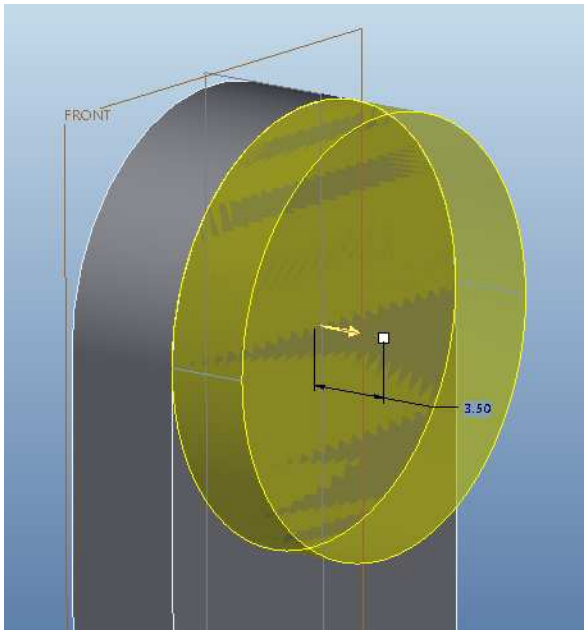
Click here to add this surface as reference



Universidad Carlos III de Madrid

Make another extrusion

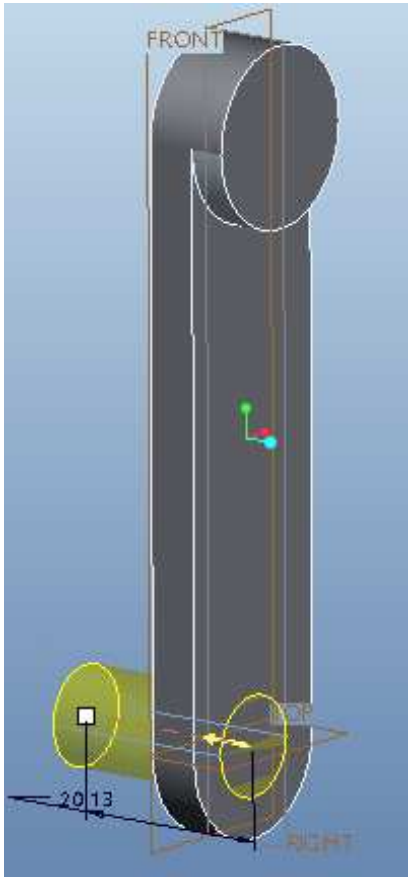
- Draw a circle that matches the one with dashed lines and press ✓ to finish the sketch.
- The depth of the extrusion is 3,5mm.



Universidad Carlos III de Madrid

Add a hole

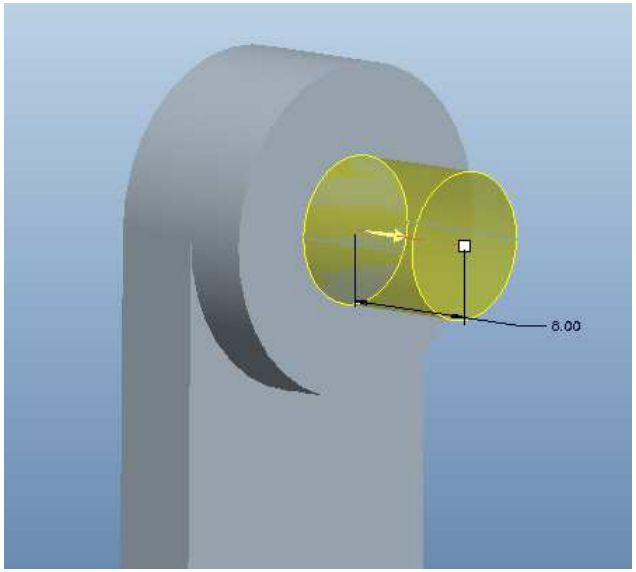
- Use the extrusion tool, and select the same sketch plane of the last operation.
- Press to specify that material should be removed from this operation.
- Change the direction of the extrusion with .
- Finally, press to make a pass-thru hole, and then press to finish.



Universidad Carlos III de Madrid

Add the pin

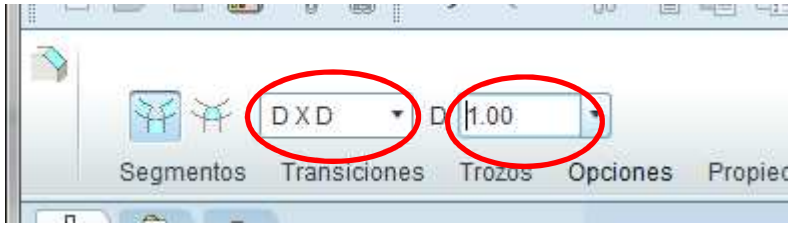
- Using the previous steps make an extrusion with 10mm diameter and 8mm depth. This will be the pin of our mechanism.

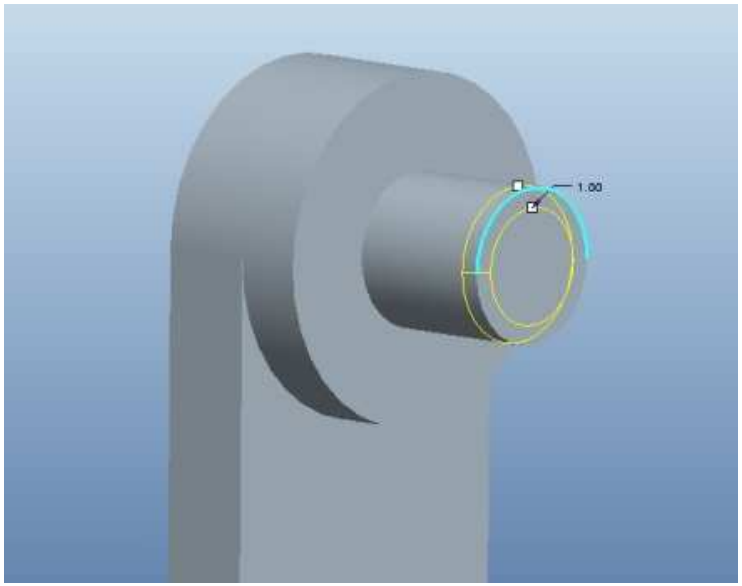


Universidad Carlos III de Madrid

Add a chamfer

- Click on the chamfer tool and select the edge of the pin done in the previous step.
- Select the DxD option, and put 1 as D parameter.

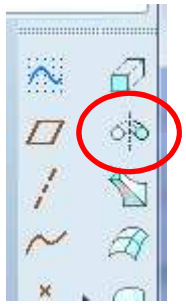


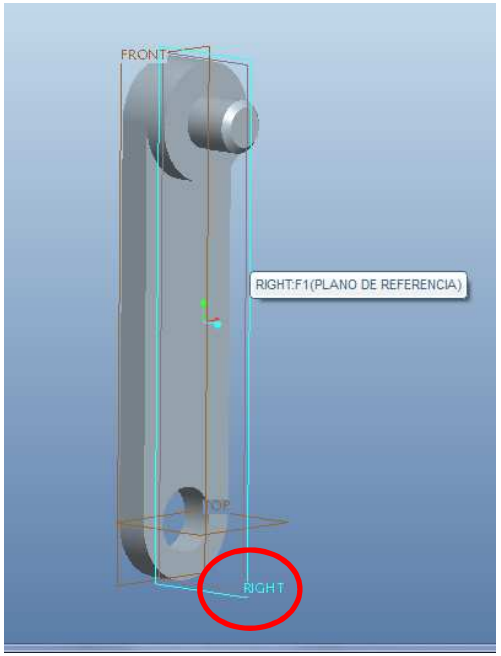


Universidad Carlos III de Madrid

Add the circlip groove

- Select the revolve tool, and press the Position(posición) tab and then the "define"(definir) buttom. Select the planes marked as “right” to sketch on.



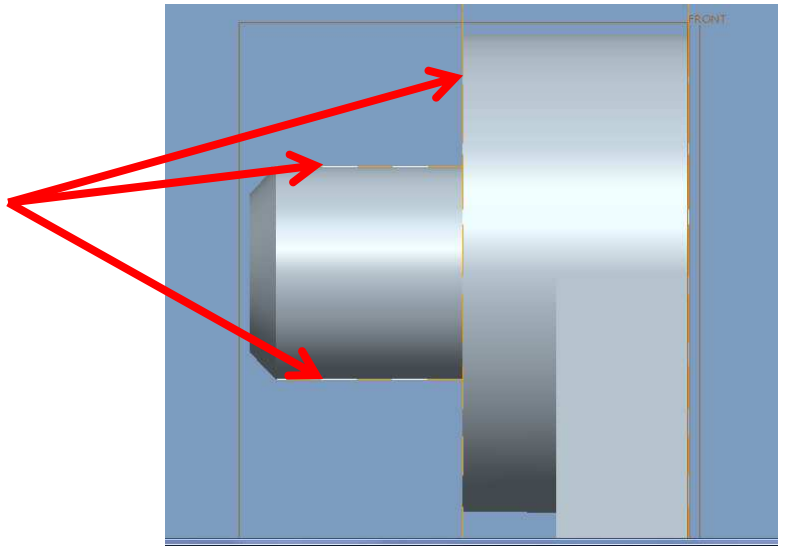


Universidad Carlos III de Madrid

Add the circlip groove

- Click on the sketch button, but before start to draw go to <esbozo-referencias> to add the following references:

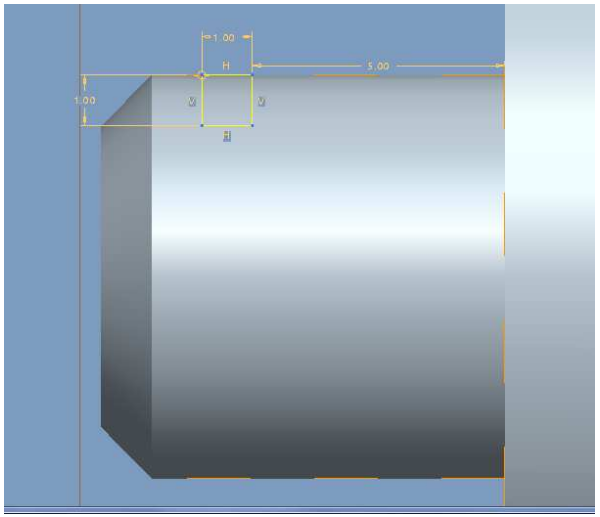
Click here to add these surface as references

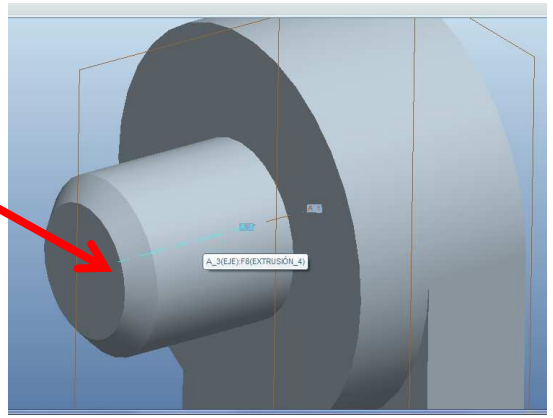


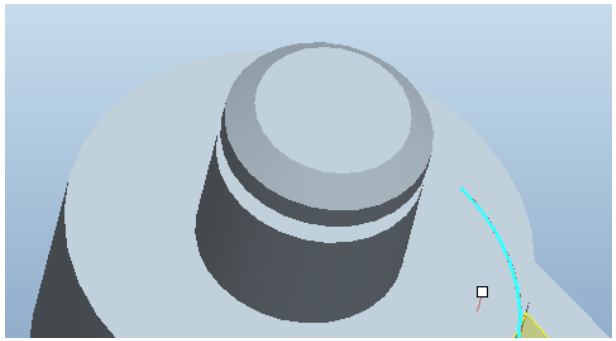
Universidad Carlos III de Madrid

Add the circlip groove

- Draw a sketch as shown and click the button.
- Now click on the axis, and write 360 in the text box. Finally press the button to remove material and press to finish.



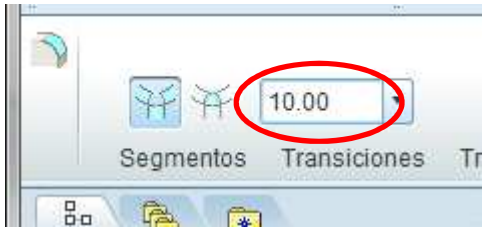




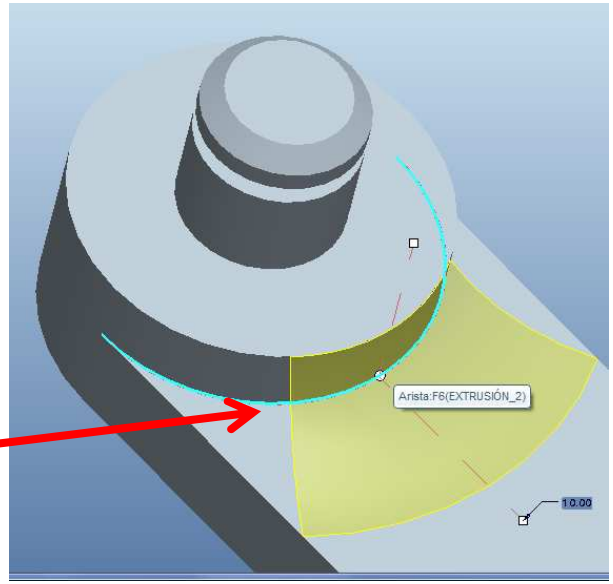
Universidad Carlos III de Madrid

Add a fillet

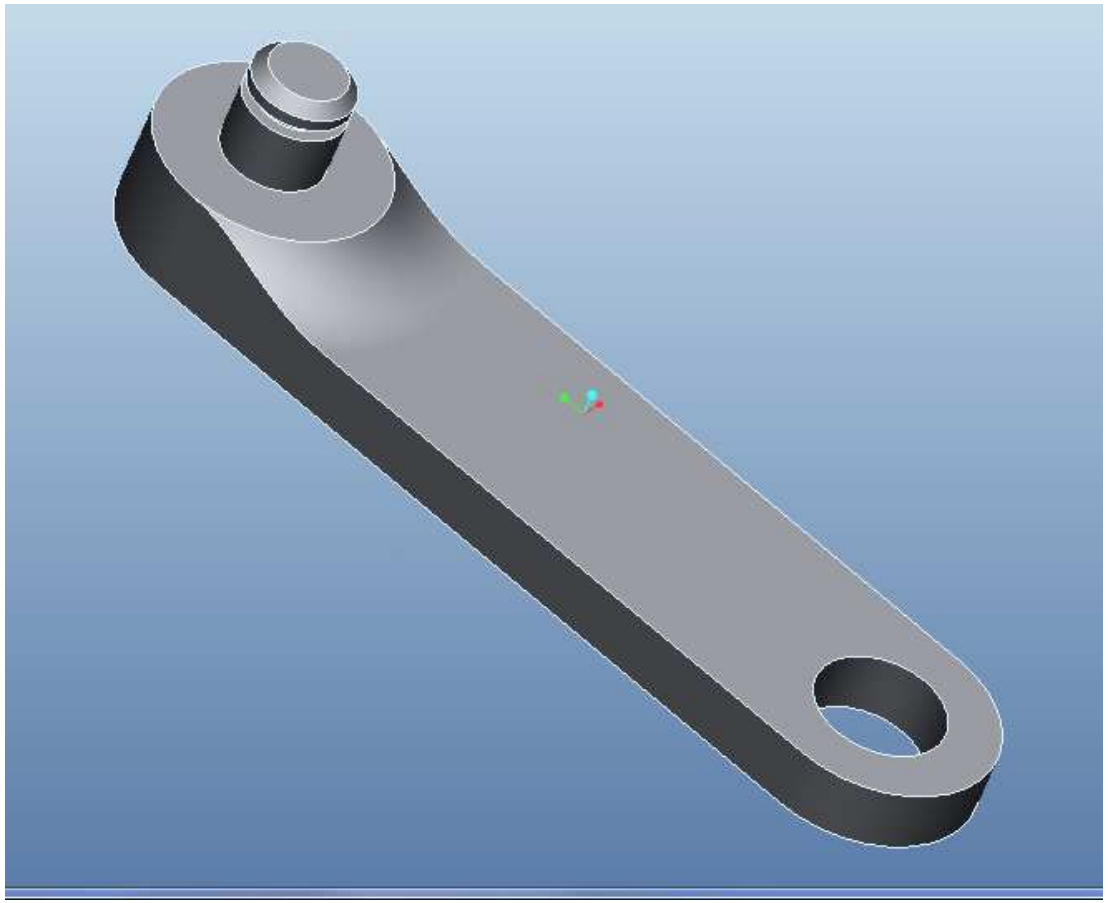
- Select the fillet tool, and select the edge of the figure.
- Type 10 in the text box and press ✔ to finish

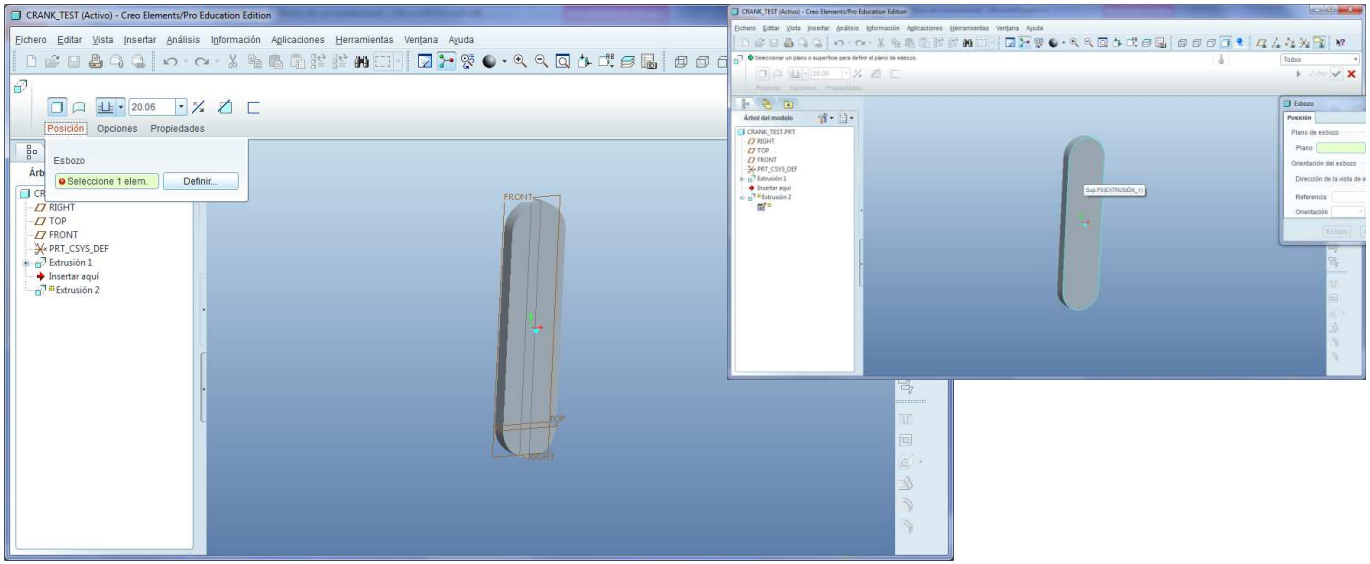


Select this edge



The result




CRANK_TEST (Activo) - Creo Elements/Pro Education Edition
Fichero Editar Vista Insertar Análisis Información Aplicaciones Herramientas Ventana Ayuda
Posición Opciones Propiedades
Esbozo
Seleccione 1 elem.
Definir...
RIGHT
TOP
FRONT
PRT_CSYS_DEF
Extrusión 1
Insertar aquí
Extrusión 2