

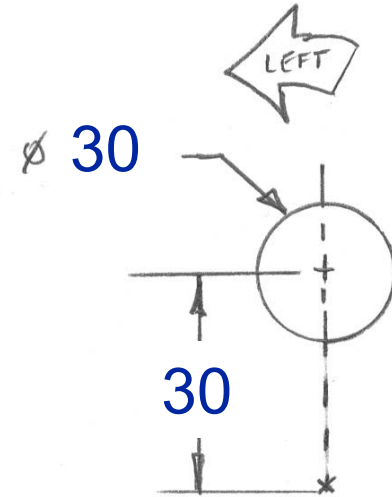


Solidworks Exercise

Modeling the bearing block (40 minutes)

Open a new part file
Save it as 'Bearing Block'
Create the Main Base
Arch

- Click on **Front Plane** (or **plane 1**) then open a sketch
- Draw a construction line vertically through the origin
- Draw a **circle** on the construction line
Dimension it as a **30mm** diameter
- Dimension the circle **30mm** from the origin



Solidworks Exercise

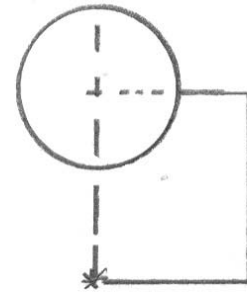
Modeling the bearing block (40 minutes)



Create the Main Base

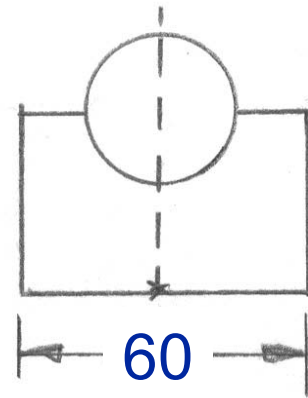
Rectangle

- Draw a line snapped from the right quadrant of the circle to the right.
- Connect another line from the end point and down, snapped even with the origin
- Connect a third line from this endpoint to the origin (after the third line, click the right mouse → select **end chain**).



Solidworks Exercise

Modeling the bearing block (40 minutes)



Create the Main Base

Mirror

- Holding down Ctrl, highlight the construction line and the three lines you just drew.
- Hit the **Mirror** tool, or **Tools, Sketch Tools, Mirror**.
- Dimension the overall width to **60mm**.

Solidworks Exercise

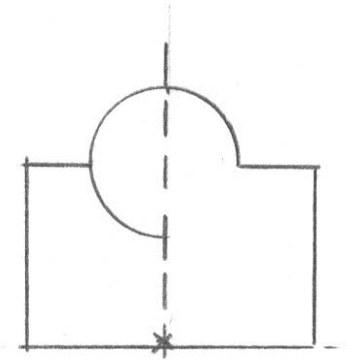
Modeling the bearing block (40 minutes)



Create the main base

Trim

- Click **Trim**
(or tools → sketch tools → trim)
and select the bottom half of the circle.
Click to delete a quarter of the circle.
- Repeat process to remove the other quarter of the circle



Solidworks Exercise

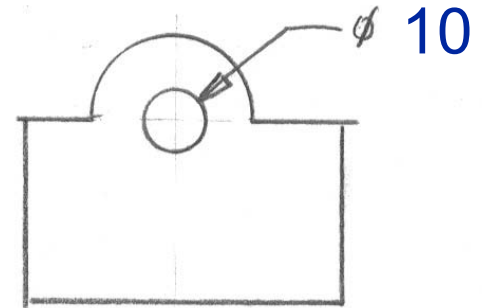
Modeling the bearing block (40 minutes)



Make the main base

Hole

- Draw a circle anywhere and dimension it to **10mm**
- Using **Add Relations**, make it **concentric** with the top arch



Solidworks Exercise

Modeling the bearing block (40 minutes)



Make the main base

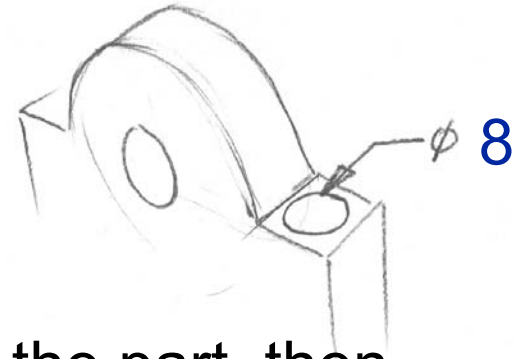
- Hit the **Extrusion** key
- Make End Condition **Blind**;
and type in 15mm for distance
- ^a Click **OK** and label this *Main base*.

Solidworks Exercise

Modeling the bearing block (40 minutes)



Make bore



- Go to **isometric view** and highlight a flat area on top of the part, then **open a sketch** on the plane shown.
- Draw a **circle** anywhere and dimension it to **8mm**.
- Dimension it **7.5mm** from both edges.
- **Extrude Cut** this sketch to **5mm**
- Label this Cbore

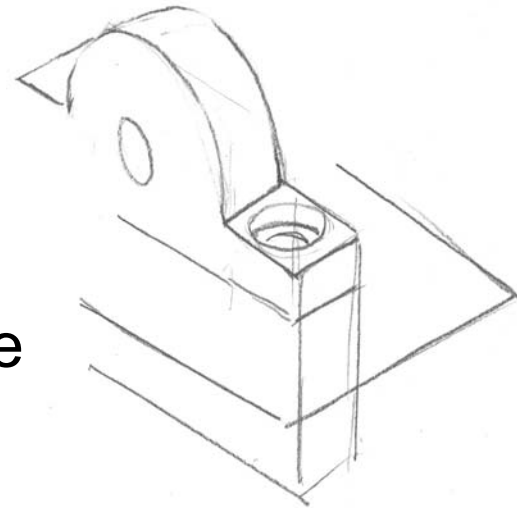
Solidworks Exercise

Modeling the bearing block (40 minutes)



Make the thru hole

- Select the plane at the bottom of the bore and open a sketch
- Draw a circle anywhere and make it **5mm** diameter
- Use **Add Relations** to make this **concentric** to the bore edge.
- **Extrude Cut** a hole through all
- Label this *Hole*



Solidworks Exercise

Modeling the bearing block (40 minutes)



Mirror the hole

- Select **Insert, Pattern/Mirror, Mirror Feature**
- Under **Mirror Plane**, select Right plane (or plane 3) in the feature manager; under **Features to Mirror**, choose *Cbore* and *Hole* in the feature manager
- Leave this called *Mirror1*

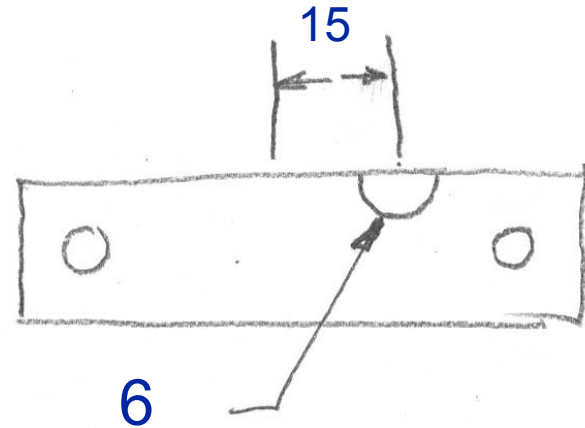
Solidworks Exercise

Modeling the bearing block (40 minutes)



Make a notch

- **Open** a sketch on the Top plane (or plane 2)
- **Draw a circle** centered on the bottom edge of the part
- Dimension the circle at **6mm**. Dimension the circle **15mm** to the right of the origin (select the origin in the feature manager)
- Select the **Extrude Cut** feature, and select a **Blind** cut of **15mm**
- Select OK and label this *Notch*



Solidworks Exercise

Modeling the bearing block (40 minutes)



Cut top of notch

- Rotate the part until you can see the end face of the previous cut
- Select this plane and open a sketch
- Select the entire half-circle face and select **Convert Entities**
- Draw a **construction line** through the straight part of this half circle (parallel to the edge of the bearing block)
- Select **Revolve Cut Feature**, and rotate 90 degrees
- Click OK and name this *Notch Top*

