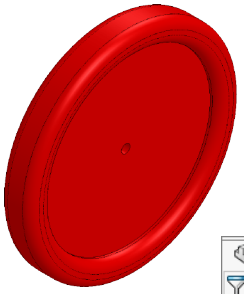
Chapter 6

Airplane Wheel



A. Sketch.

Step 1. Click File Menu > New, click **Part** and OK.

Step 2. Click **Front Plane** in the Feature Manager and click **Sketch** on the context toolbar, **Fig. 1**.

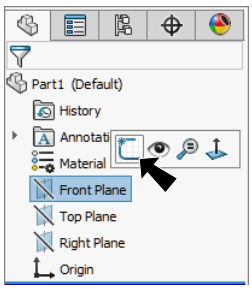


Fig. 1

Step 3. Click **Line** **(L)** on the Sketch toolbar.

Step 4. Sketch the 6 lines and sketch the **vertical centerline down to Origin last**, **Fig. 2**. Before moving cursor ways from line click **Construction Geometry** on context toolbar.

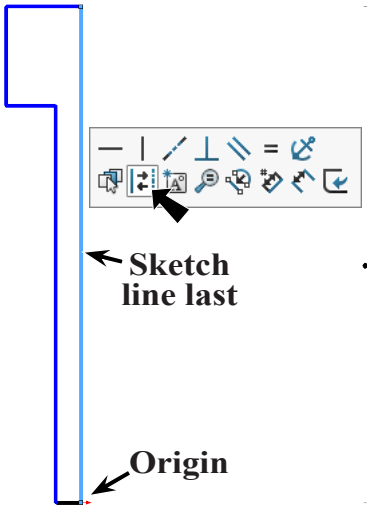


Fig. 2

Step 5. Click **Smart Dimension** **(S)** on the Sketch toolbar.

Step 6. Add dimensions, **Fig. 3**. Dimension **double distance** .05 and .15. To double distance dimension, click centerline and then vertical line, move the cursor below centerline (Origin) and click. Key-in .05 in the Modify box and press ENTER. Double distance .15 dimension.

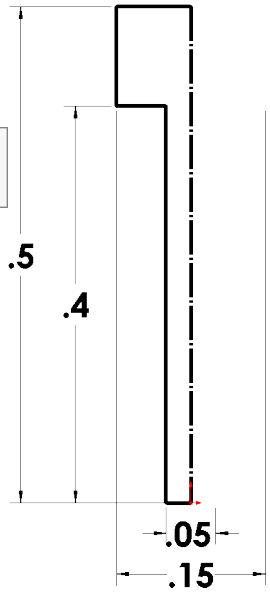


Fig. 3

Step 7. Click **Sketch Fillet** on the Sketch toolbar.

Step 8. In the Sketch Fillet Property Manager set:
under Fillet Parameters, **Fig. 4**
Radius **.04**
click the **2 corners**, **Fig. 5**
click OK **twice**.

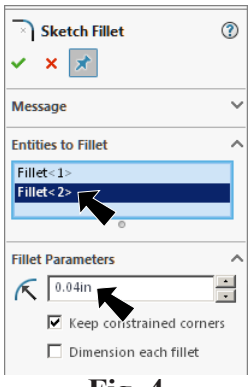


Fig. 4

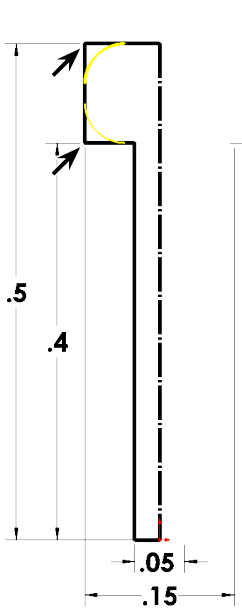


Fig. 5

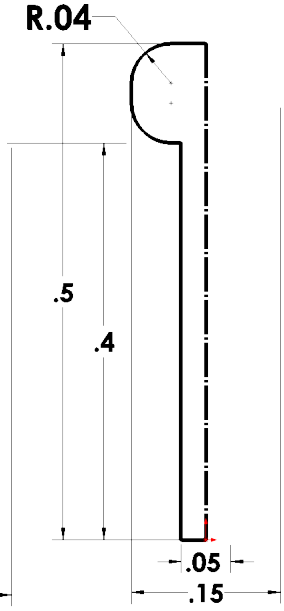


Fig. 6

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Step 9. **Drag selection around the sketch** to select all lines, **Fig. 7**. To drag selection, click above and to left of sketch and drag down and to right to drag around all.

Step 10. Click **Mirror Entities** 

on the Sketch toolbar, **Fig. 8**.

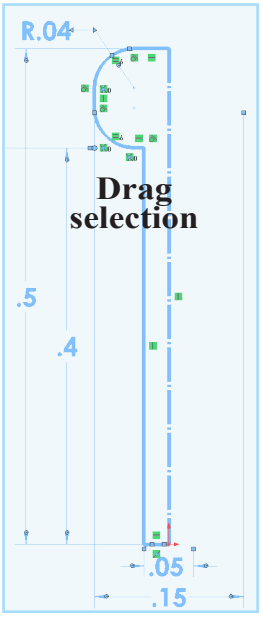

Fig. 7

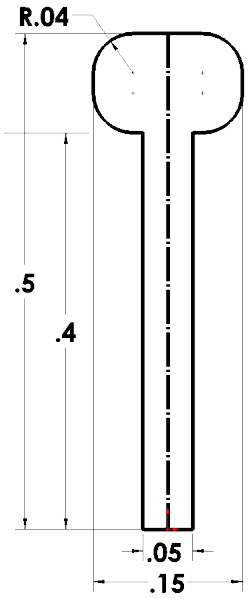

Fig. 8

B. Save as "WHEEL".

Step 1. Click File Menu > Save As.

Step 2. Key-in **WHEEL** for the filename and press ENTER.

C. Revolve.

Step 1. Click **Features** 

on the Command Manager toolbar.

Step 2. Click **Revolved Boss/Base** 

on the Features toolbar.

Step 3. In the Revolve Property Manger set:

under Axis of Revolution 

click **bottom horizontal line**, **Fig. 10**

click OK  .

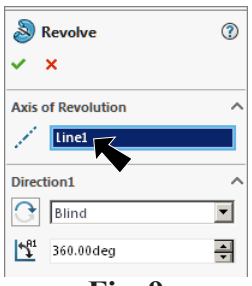

Fig. 9

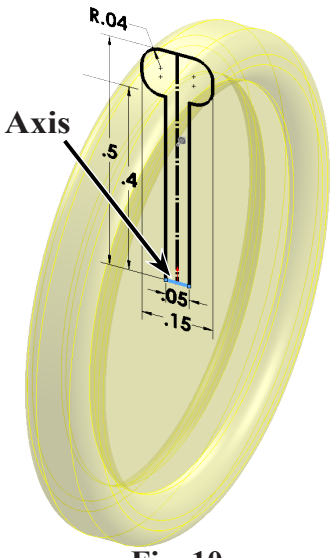

Fig. 10

D. Hole.

Step 1. Click the **side face** and click **Sketch** on the context toolbar, **Fig. 11**.

Step 2. Click **Circle** (**S**) on the Sketch toolbar.

Step 3. Sketch circle for hole at the Origin, **Fig. 12**.

Step 4. Click **Smart Dimension** (**S**) on the Sketch toolbar.

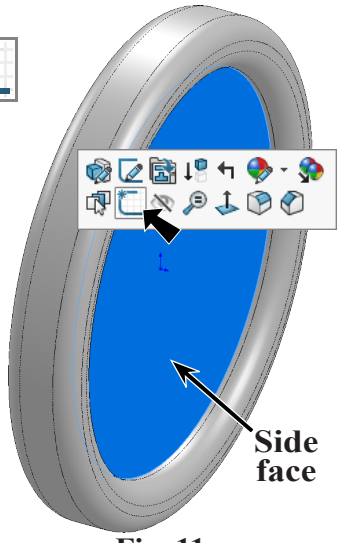

Fig. 11

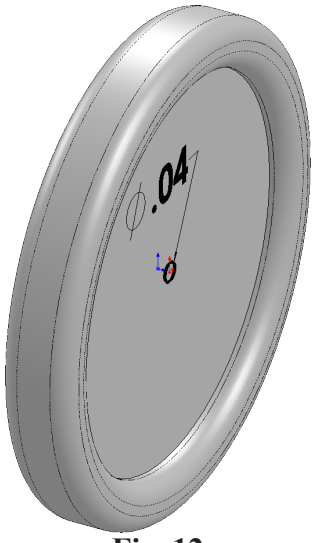

Fig. 12

Step 5. Dimension circle **.04**, **Fig. 12**.

Step 6. Click **Features** on the Command Manager toolbar.

Step 7. Click **Extruded Cut** on the Features toolbar.

Step 8. In the Cut-Extrude Property Manager set:
under Direction 1, **Fig. 13**
End Condition **Through All**
click OK.

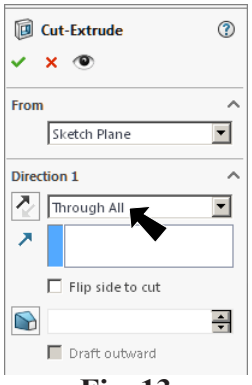

Fig. 13

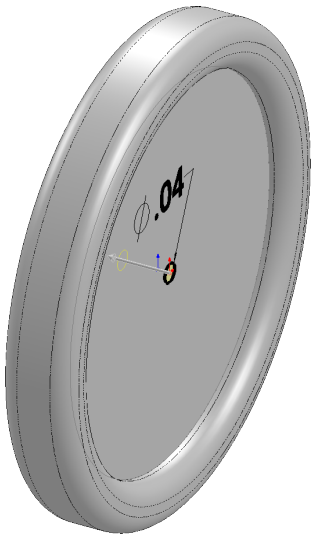

Fig. 14

Step 9. Save. Use **Ctrl-S**.

E. Material ABS Plastic.

Step 1. **Right click Material** in the Feature Manager and click **Edit Material**.

Step 2. Expand **Plastics** in the material tree and select **ABS**. Click **Apply** and **Close**.

F. Appearance Color.

Step 1. Click the part, click **Appearance Callout**  on the context toolbar and click **WHEEL**  , **Fig. 15**.

Step 2. In the Appearances Property Manager, under Color, **Fig. 16**
click **red** swatch
click OK  .

Step 3. Save. Use **Ctrl-S**.

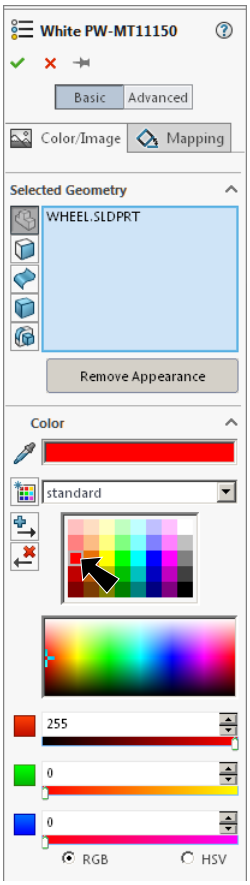

Fig. 16

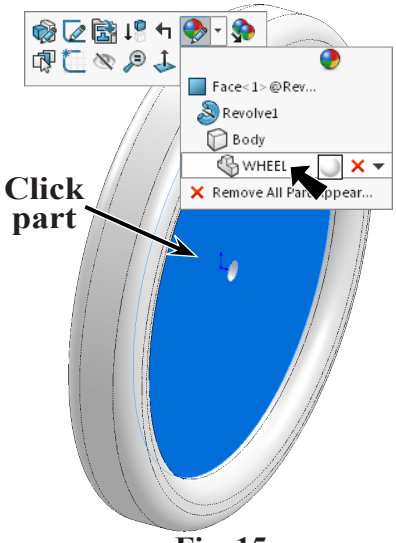

Fig. 15

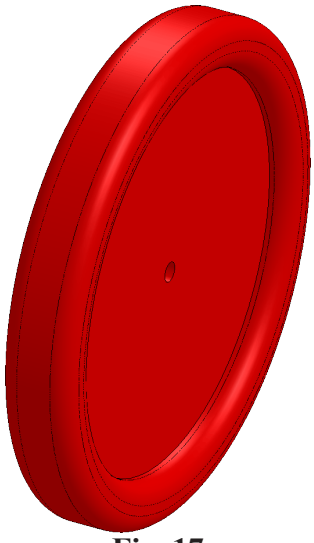

Fig. 17