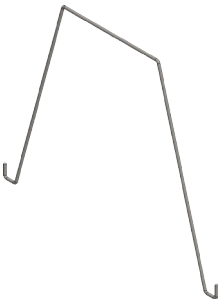
Chapter 7

Airplane Wheel Wire



A. Sketch Sweep Path.

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**.

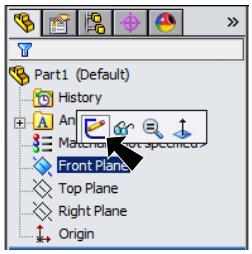


Fig. 1

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

Step 4. Draw the wire sweep path starting at the Origin , **Fig. 2**.

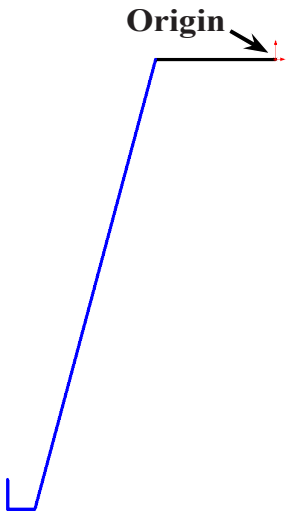


Fig. 2

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

Step 6. Add dimensions, **Fig. 3**.

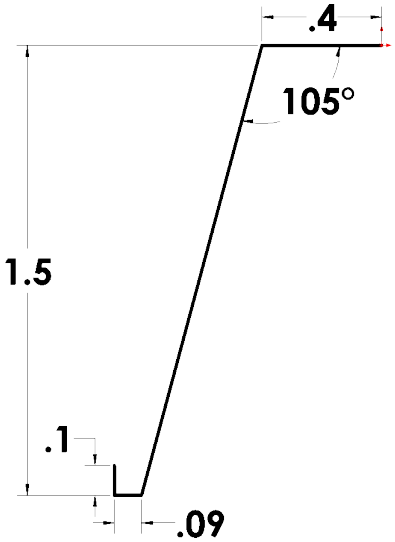


Fig. 3

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

Step 8. In the Property Manager set:
under Fillet Params, **Fig. 4**
Radius **.02**

click each bend in wire, the **corners**, **Fig. 5**

click OK **twice**.

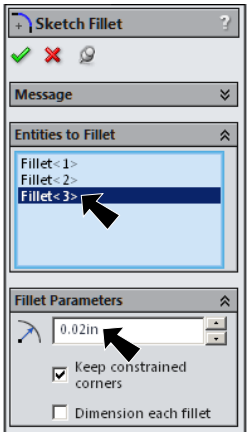


Fig. 4

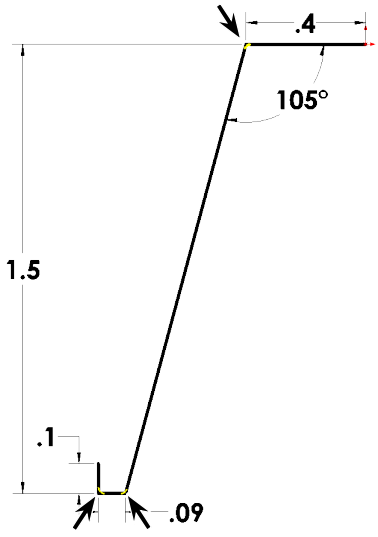


Fig. 5

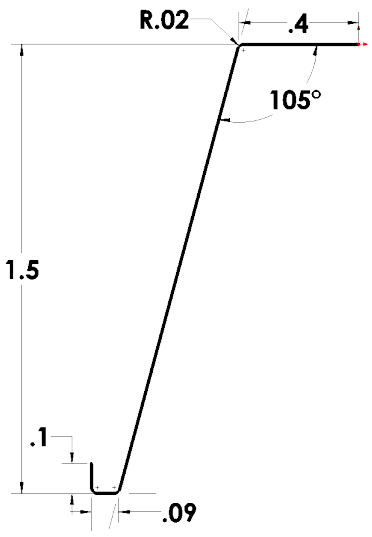


Fig. 6

B. Save as "WHEEL WIRE".

Step 1. Click File Menu > Save As.

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

C. Centerline for Mirror.

Step 1. Click **Centerline**  in the **Line flyout**  on the Sketch toolbar.

Step 2. Draw **vertical centerline** down from the Origin  , **Fig. 7**.

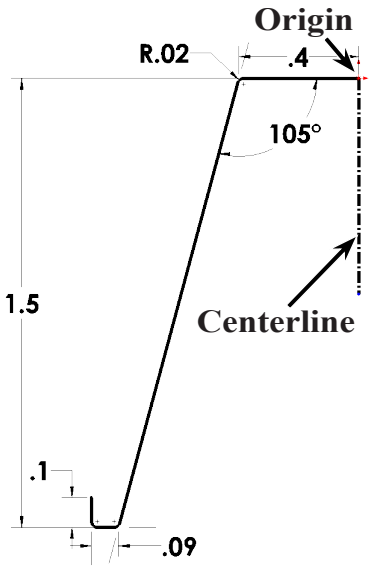
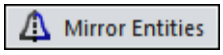


Fig. 7

D. Mirror Sketch.

Step 1. **Right click drawing and click Select** from menu to unselect Centerline tool.

Step 2. **Drag selection around the sketch** to select all entities, **Fig. 8**. To drag selection, click above and to left of sketch and drag down and to right to drag around all.

Step 3. Click **Mirror Entities**  on the Sketch toolbar.

Step 4. Click **Exit Sketch**  on the Sketch toolbar.

Step 5. Save. Use **Ctrl-S**.

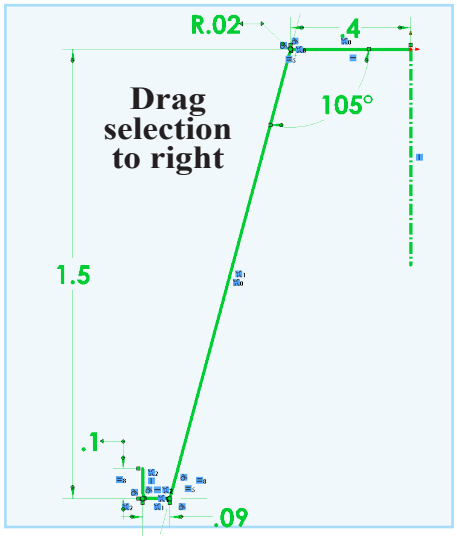


Fig. 8

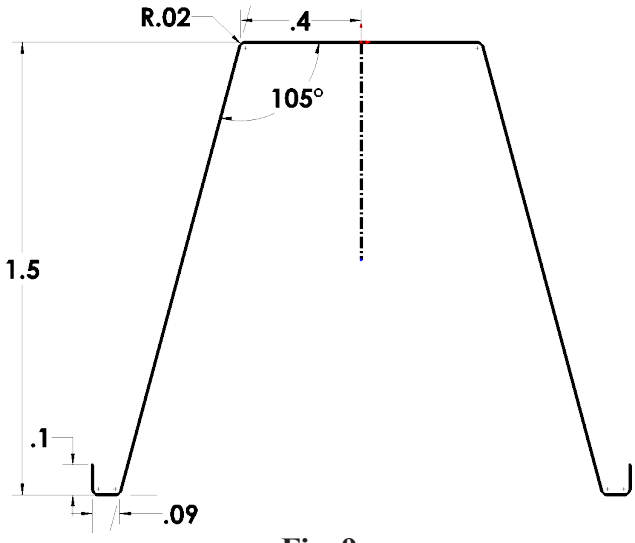


Fig. 9

E. 3D Sketch Sweep Profile.

Step 1. Click **Isometric** on the Standard Views toolbar. (**Ctrl-7**)

Step 2. Click **Sketch** on the Command Manager toolbar.

Step 3. Click **3D Sketch** in the **Sketch flyout** on the Sketch toolbar.

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

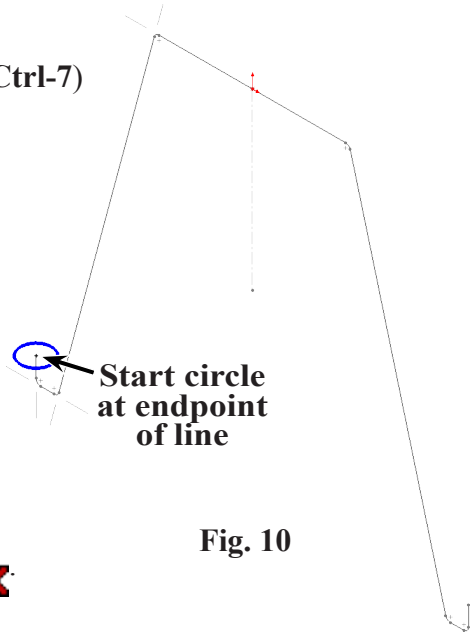


Fig. 10

Step 5. Use the **Tab key** to change the sketch plane to **ZX**.

Step 6. Draw a **circle top endpoint of line**, **Fig. 10**.

Step 7. Click **Smart Dimension** (**S**) on the Sketch toolbar.

Step 8. Dimension **circle diameter .02**, **Fig. 11**.

Step 9. Exit the **3D Sketch.** To Exit, click **Exit 3D Sketch** in top right corner of graphics area.

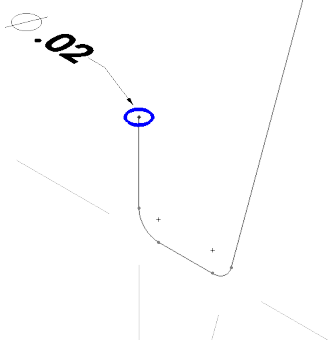


Fig. 11

F. Sweep.

Step 1. Click **Features** on the Command Manager toolbar.

Step 2. Click **Swept Boss/Base** on the Features toolbar.

Step 3. In the Swept Boss/Base Property Manager:
under Profile and Path, **Fig. 12**

Profile click **circle**, **Fig. 13**

Path click any geometry in **Sketch1**

click OK .

Step 4. Save. Use **Ctrl-S**.

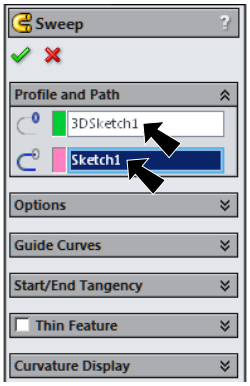


Fig. 12

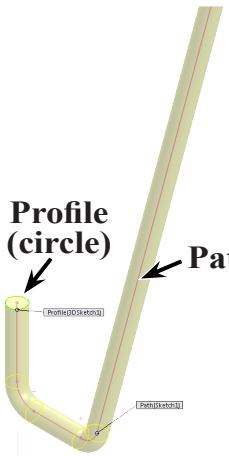


Fig. 13

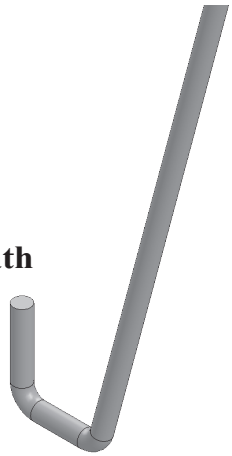


Fig. 14

G. Material Steel 304.

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

Step 2. Expand **Steel** in the material tree and select **Steel AISI 304**. Click **Apply** and **Close**.

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

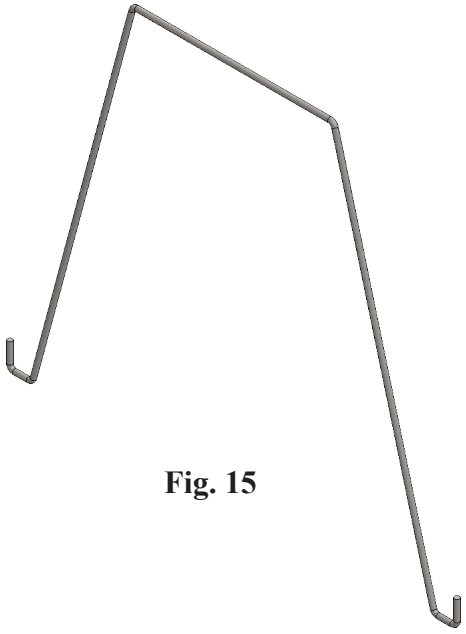


Fig. 15