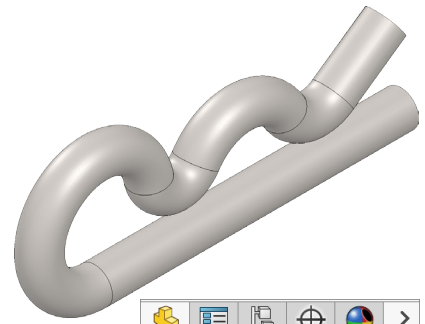





CO2 Shell Car Hair Pin Clip



A. Sketch Lines.

- Step 1. Click File Menu > New, click **Part Metric** and OK.
- Step 2. Click **Right Plane**  in the Feature Manager and click **Sketch**  on the context toolbar, **Fig. 1**.
- Step 3. Click **Line**  (L) on the Sketch toolbar.
- Step 4. Sketch a horizontal line out to left from Origin

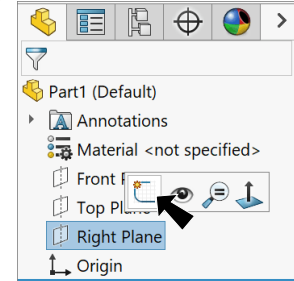

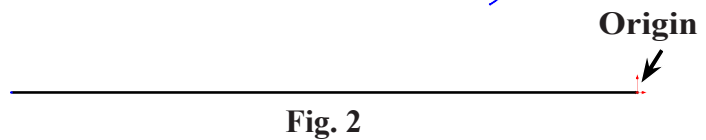



Fig. 1

 and a line above at angle, **Fig. 2**.
Double click to terminate chain of lines.

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



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



- Step 7. Click Zoom to Fit  (F) on the View toolbar.



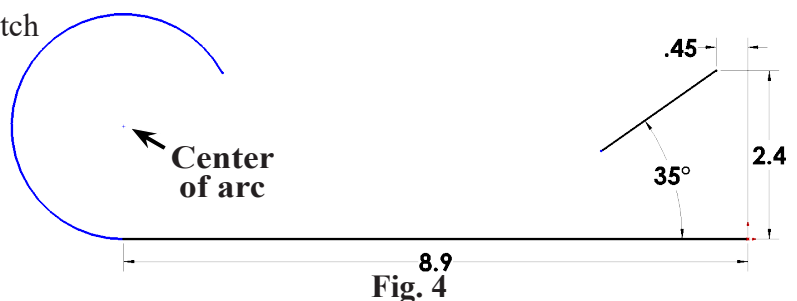
B. Save as "HAIR PIN CLIP".

- Step 1. Click File Menu > Save As.
- Step 2. Key-in **HAIR PIN CLIP** for the filename and press ENTER.

C. Centerpoint Arc.


- Step 1. Click **Centerpoint Arc**  (S) in the Arc flyout  on the Sketch toolbar.

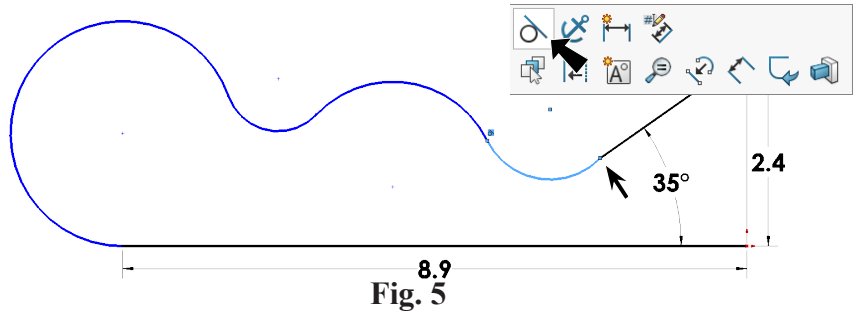
- Step 2. Sketch arc above left endpoint of horizontal line, **Fig. 4**. To Sketch arc, click directly above left endpoint of horizontal line to place the center of arc. Click left endpoint of line to start arc, swing around and click to place the second endpoint.





D. Three Tangent Arcs.

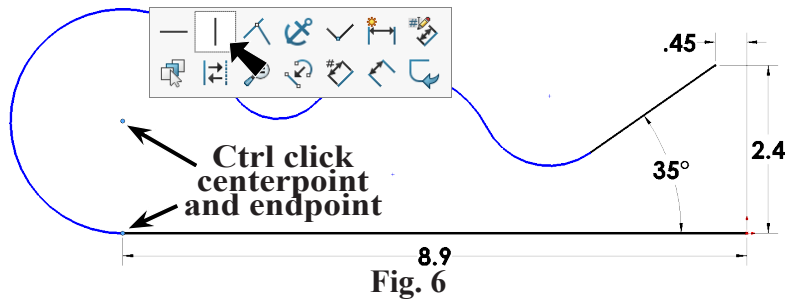
Step 1. Click **Tangent Arc**  in the **Arc flyout**  on the Sketch toolbar.


Step 2. Sketch **three chained arcs from endpoint of center-point arc**. After clicking endpoint on line, click **Make Tangent**  on the context toolbar, **Fig. 5**.



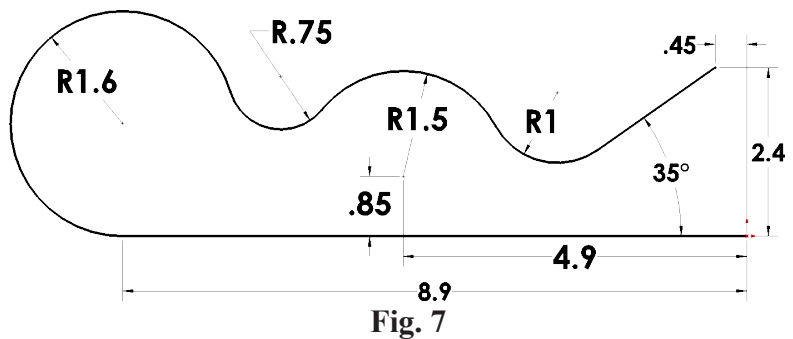
Step 3. **Unselect Arc tool**. To unselect, **right click graphics area and click Select**  from menu.

Step 4. **Ctrl click the centerpoint of centerpoint arc and left endpoint of horizontal line** to select both. Release Ctrl key and click **Make Vertical**  on the context toolbar, **Fig. 6**.


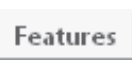
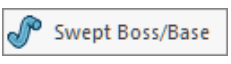





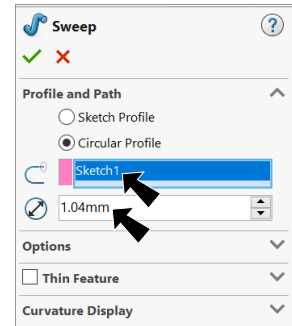
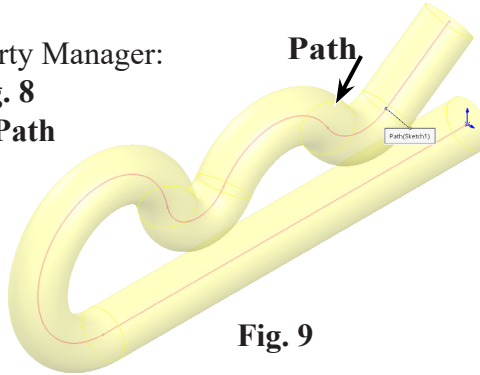
Step 5. Click **Smart Dimension**  (S) on the Sketch toolbar.

Step 6. Add dimensions, **Fig. 7**.




E. Sweep.

- Step 1. Click **Isometric**  on the Standard Views toolbar. (**Ctrl-7**)
- Step 2. Click **Features**  on the Command Manager toolbar.
- Step 3. Click **Swept Boss/Base**  on the Features toolbar.
- Step 4. In the Swept Boss/Base Property Manager:
under Profile and Path, **Fig. 8**
select **Circular Profile Path**
Diameter  **1.04**
click any geometry for
path , **Fig. 9**
click OK .



F. 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**.

