





Sheet Metal Toolbox Hinge A and B

A. Sketch.

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

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

Step 3. Click **Corner Rectangle**  in the **Rectangle flyout**  on the Sketch toolbar.


Step 4. Sketch rectangle **below** the Origin , **Fig. 2**.

Step 5. **Right click graphics area** and click **Select** from menu to unselect Rectangle tool.

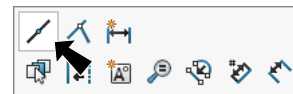


Fig. 2

Step 6. **Ctrl click top line of rectangle and Origin**

 to select both. Release Ctrl key and click **Make**

Midpoint  on the context toolbar, **Fig. 3**.



Ctrl click Origin and line



Fig. 3

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

Step 8. Dimension **.6173** by **13.9**, **Fig. 4**.

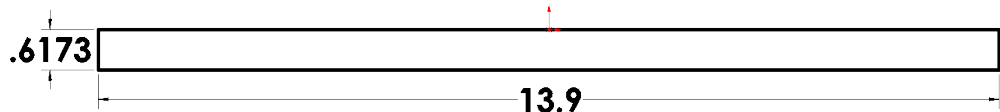


Fig. 4

B. Save as "HINGE A".



Step 1. Click File Menu > Save As.

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

C. Base Flange.

Step 1. Click **Sheet Metal**  on the Command Manager toolbar.

Step 2. Click **Base Flange/Tab**  on the Sheet Metal toolbar.

Step 3. In the Property Manager set:
 under Sheet Metal Gauges, **Fig. 5**
 check **Use gauge table**
 select **Sample Table - Aluminum**
 under Sheet Metal Parameters
 select **Gauge 20**
 check **Override thickness**
Thickness  **.04**
 click OK .

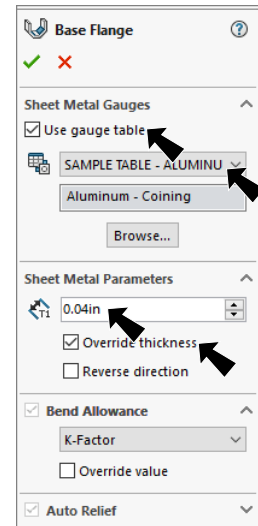


Fig. 5

D. Hem.

Step 1. Click **Hem**  on the Sheet Metal toolbar.






Step 2. In the Hem Property Manager set:
 under Edges, **Fig. 7**
 click **top rear edge**, **Fig. 8**
Material Inside 
 under Type and Size
 select **Rolled** 
Angle  **295°**
Radius  **.046**
 click OK .

Fig. 6

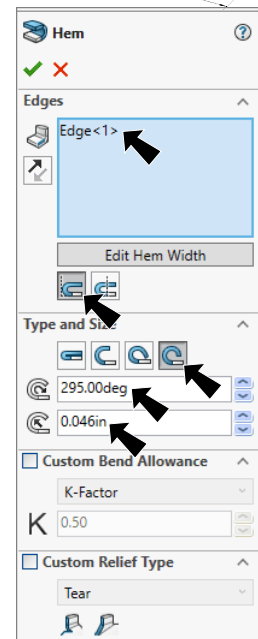


Fig. 7

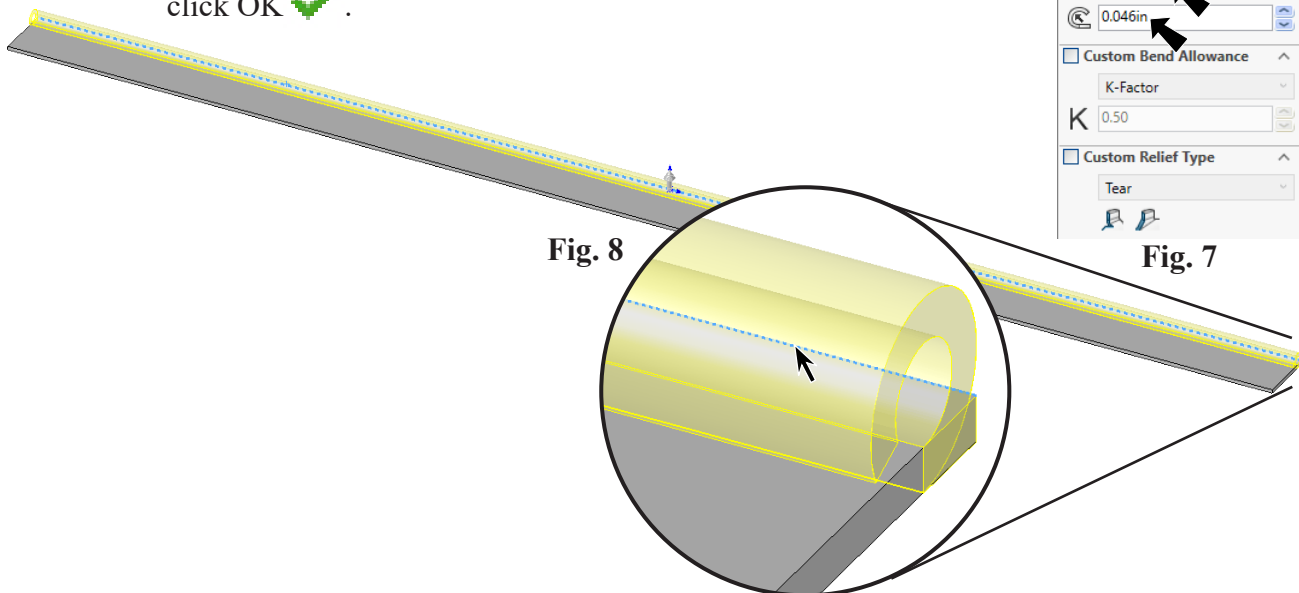


Fig. 8

E. Cut-Extrude.

Step 1. Click **Top Plane**  in the Feature Manager and click **Sketch**  on the context toolbar, **Fig. 9**.

Step 2. Click **Normal To**  on the Standard Views toolbar. (**Ctrl-8**)

Step 3. Zoom in on **left end** of part, **Fig. 10**. To zoom, place the cursor over the left end and spin the wheel on mouse back. While spinning the wheel keep cursor on the area.

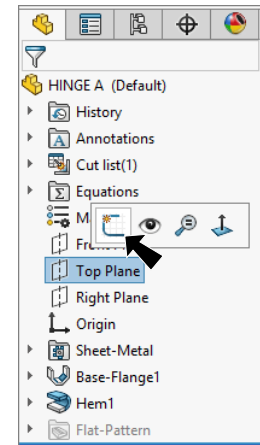
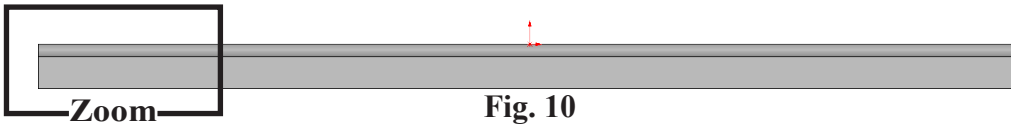




Fig. 9

Step 4. Click **Corner Rectangle**  in the **Rectangle flyout**  on the Sketch toolbar.

Step 5. Sketch a **rectangle coincident**  with **top and bottom silhouette edge of rolled hem**, **Fig. 11**.

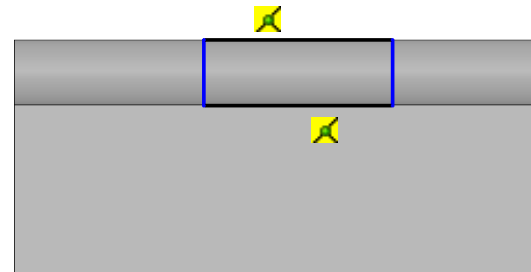


Fig. 11

Step 6. Click **Smart Dimension**  (S) on the Sketch toolbar.

Step 7. Add dimensions, **Fig. 12**.

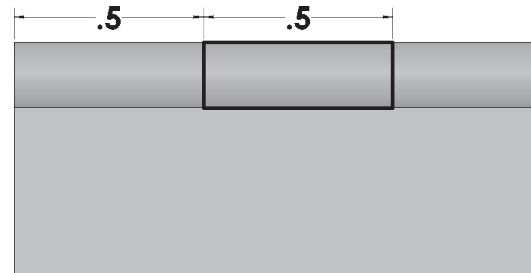
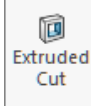



Fig. 12

Step 8. Click **Features**  on the Command Manager toolbar.

Step 9. Click **Extruded Cut**  on the Features toolbar.

Step 10. In the Cut-Extrude Property Manager set:
 under **Direction 1**, **Fig. 13**
 End Condition **Through All - Both**
 click **OK** .

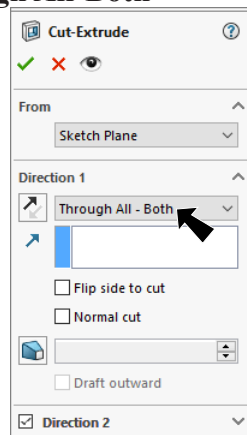


Fig. 13

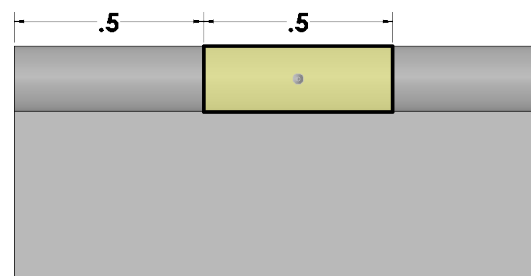


Fig. 14



Fig. 15

F. Linear Pattern.

Step 1. Click **Cut-Extrude1** in the Feature Manager to select feature, **Fig. 16**.

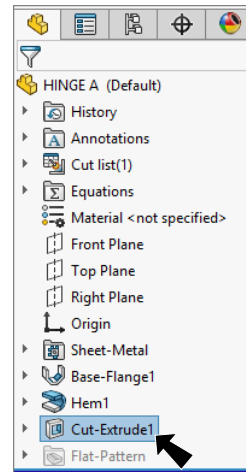


Fig. 16

Step 2. Click **Linear Pattern** on the Features toolbar.



Step 3. In the Linear Sketch Property Manager set: under Direction 1, **Fig. 17**

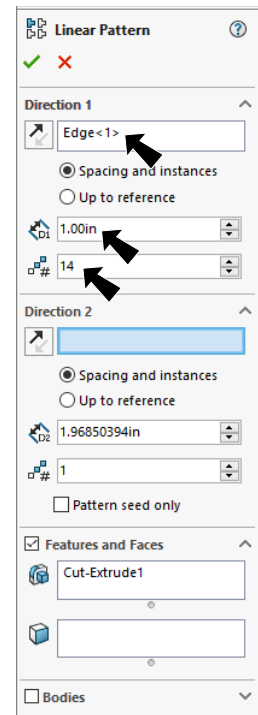


Fig. 17

Pattern Direction

click **bottom horizontal edge**, **Fig. 18**

Spacing \square_{D1} 1

Number of Instances $\square_{\#}$ 14

click OK

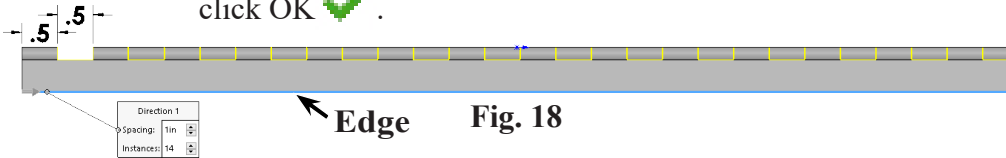


Fig. 18

G. Appearance Chrome.

Step 1. Click **Trimetric** on the Standard Views toolbar.



Step 2. Click part to select, click **Appearance Callout** on the context toolbar and click **HINGE A...**



Step 3. In the Appearances Task pane, expand **Metal**, click **Chrome** and in the lower pane select **chromium plate**.

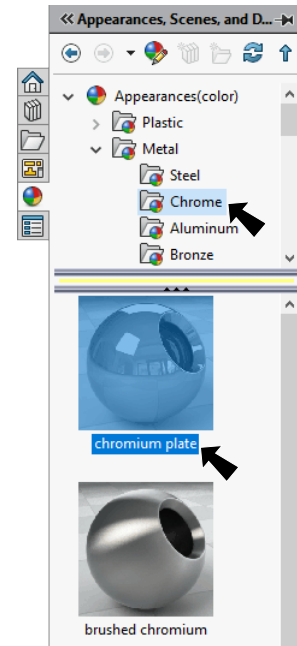


Fig. 20

Step 4. Click OK in the Property Manager.

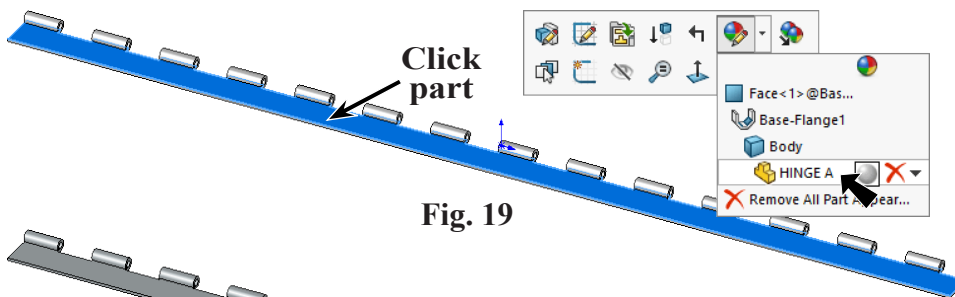


Fig. 19

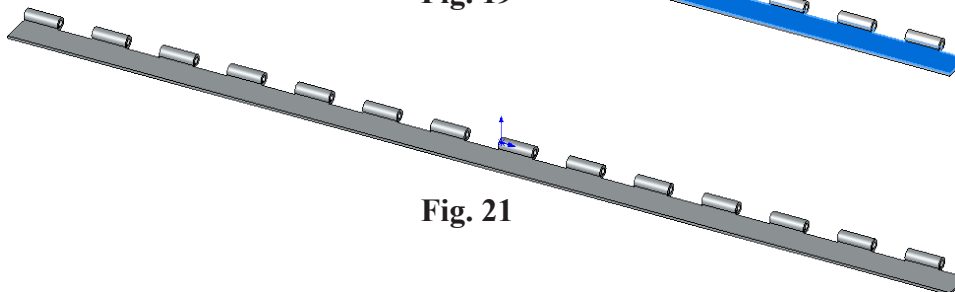


Fig. 21

H. Save as "HINGE B".

Step 1. Save. Important to save now.
Use **Ctrl-S** to save HINGE A.

Step 2. Click File Menu > Save As.

Step 3. Key-in **HINGE B** for the filename.

You now have two hinge files, HINGE A and HINGE B. Next, we change Cut and Linear Pattern of HINGE B.

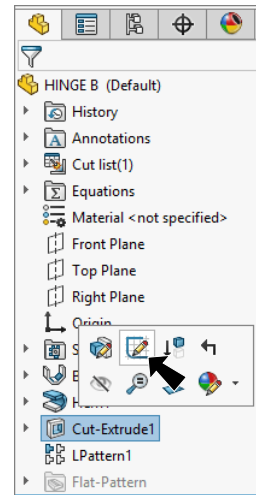


Fig. 22

I. Move Rectangle Sketch to Right Edge.

Step 1. Click **Cut-Extrude1** in the Feature Manager and click **Edit Sketch**



on the context toolbar, Fig. 22.

Step 2. Delete **.5** dimension that dimensions rectangle to left end of part.

To delete, click **.5** dimension and press DELETE key, Fig. 23.

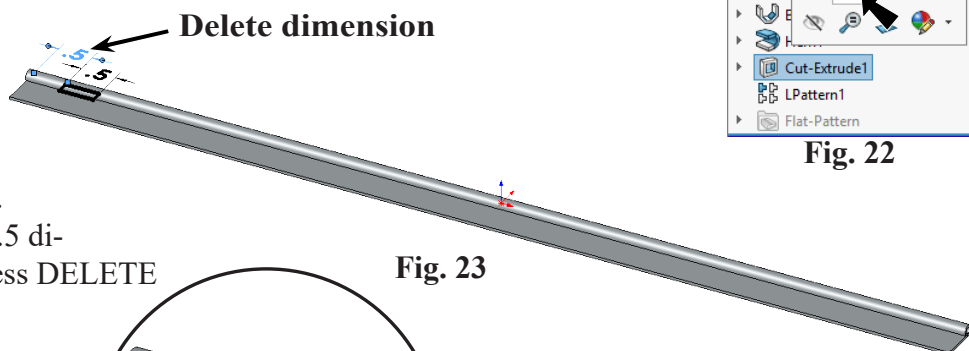


Fig. 23

Step 3. **Ctrl** click an endpoint of right line of rectangle and right edge of part to select both. Release Ctrl key and click **Make Coincident**



on the context toolbar, Fig. 24.

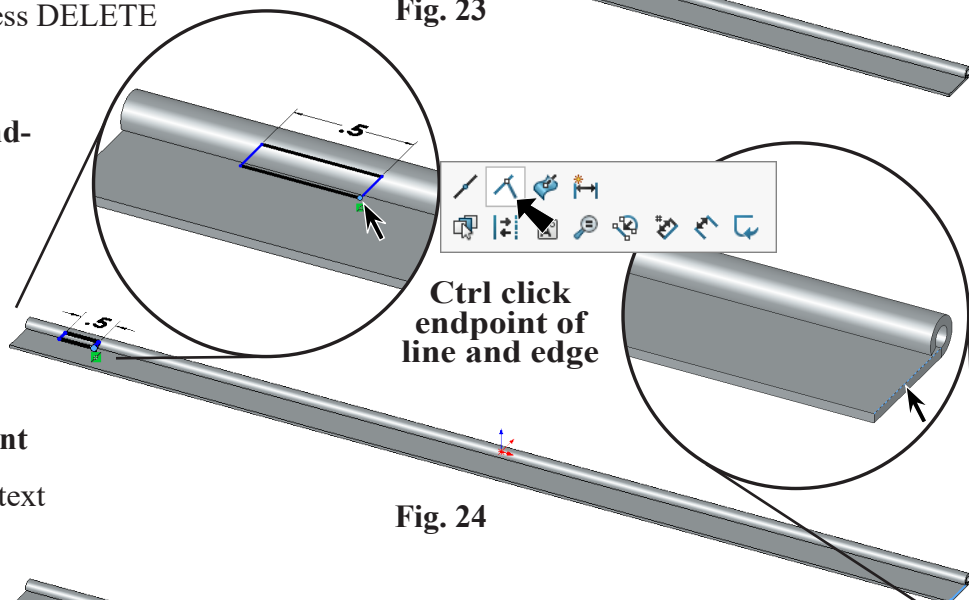


Fig. 24

Step 4. Click Continue Ignore error message.

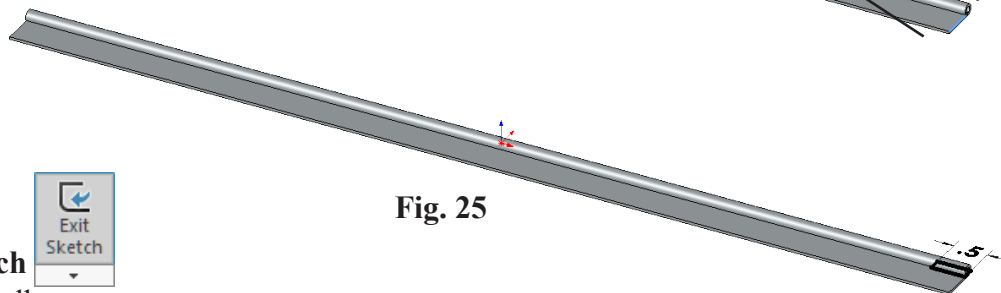



Fig. 25

Step 5. Click **Exit Sketch** on the Sketch toolbar.



J. Change Extrude Distance.

Step 1. Click **LPattern1** in the Feature Manager and click **Edit Feature**  on the context toolbar, **Fig. 26**.

Step 2. In the Linear Sketch Property Manager set: under Direction 1, **Fig. 27**

click **Reverse Direction** 

click **OK** .

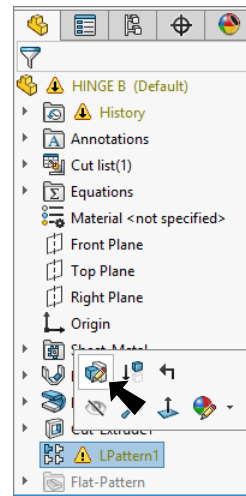
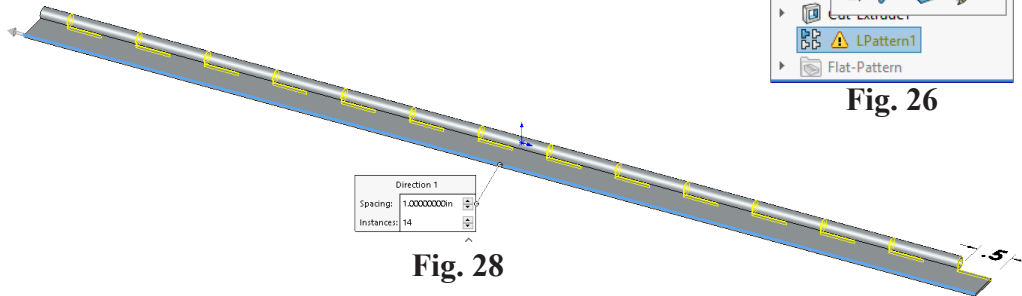


Fig. 26

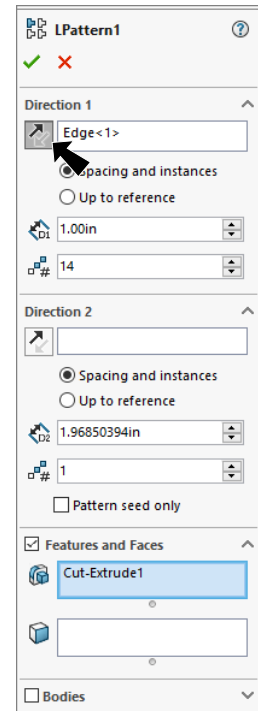


Fig. 27

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

You should have Hinge A and Hinge B:

