



Rocket 1 Fin

A. Sketch.

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

Step 2. Click **Right Plane**  in the Feature Manager and click **Sketch**  from the Content toolbar, **Fig. 1**.

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

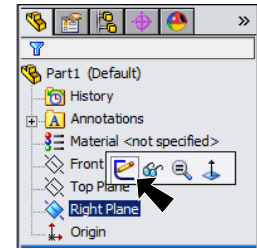



Fig. 1

Step 4. Starting at the Origin  draw lines in **Fig. 2**. Use the inferencing line, the dotted line that appears when you draw the lines to **keep bottom line horizontal and right side line vertical**. Do not add any extra lines.

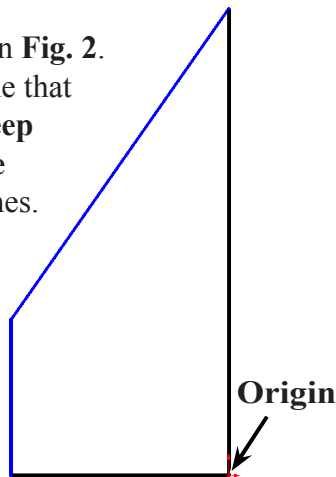


Fig. 2

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

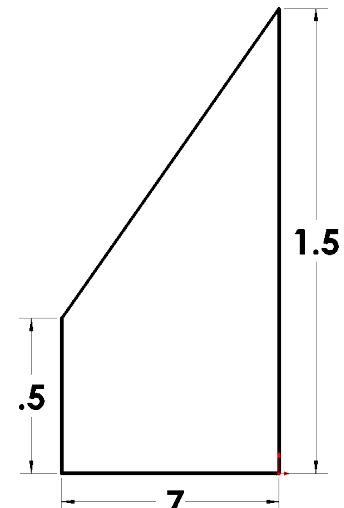
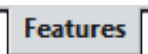




Fig. 3

Step 6. Add dimensions as shown in **Fig. 3**.

B. Extrude.

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

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

Step 3. In the Property Manager set:
 under Direction 1, **Fig. 4**
 End Condition **Mid Plane**
Depth  **.06**
 click OK .

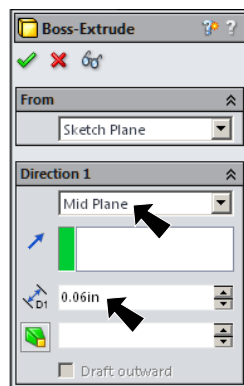


Fig. 4

C. Save as "FIN".

Step 1. Click File Menu > Save As.

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

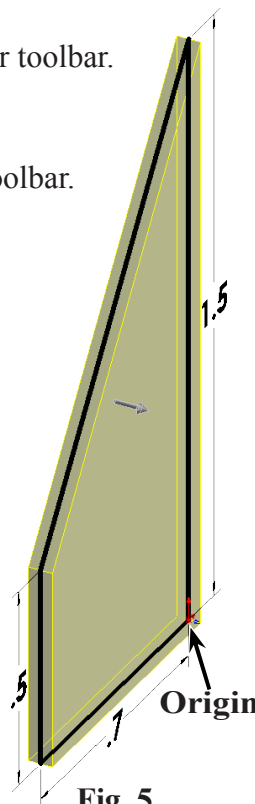


Fig. 5

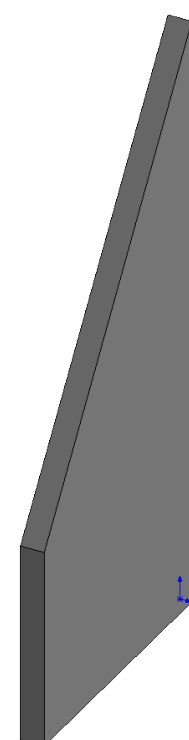




Fig. 6

D. Cut.

Step 1. Click **Bottom**  on the Standard Views toolbar. (Ctrl-6).



Step 2. Click **bottom face of fin** and click **Sketch**  from the Context toolbar, Fig. 7.


Step 3. Click **Circle**  (S) on the Sketch toolbar.


Step 4. Draw small **circle** below the fin, Fig. 8.

Step 5. **Right click drawing and click Select** from menu to unselect Circle tool.

Step 6. **Ctrl click center of circle and**

Origin  to select both, Fig. 9. Release Ctrl key and click **Make Vertical**  on the Context toolbar.

Step 7. **Ctrl click corner vertex of fin and circle** to select both, Fig. 10. Release Ctrl key and click **Make Coincident**  on the Context toolbar.

Step 8. Click **Smart Dimension**  (S) on the Sketch toolbar.

Step 9. Dimension **circle diameter .76**, Fig. 11.

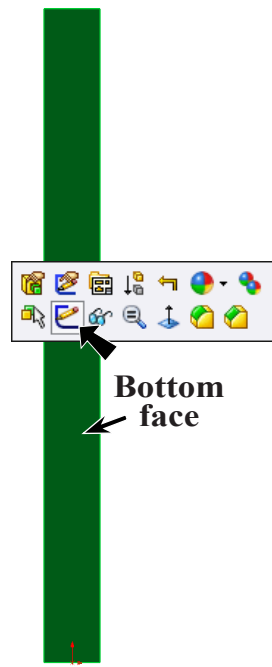


Fig. 7



Fig. 8

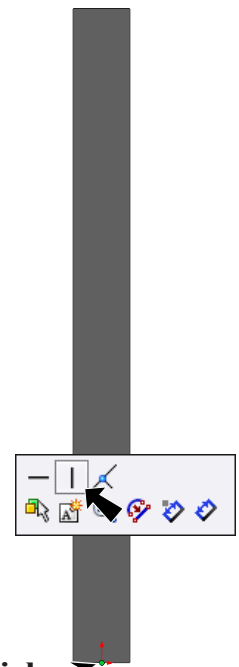


Fig. 9



Fig. 10

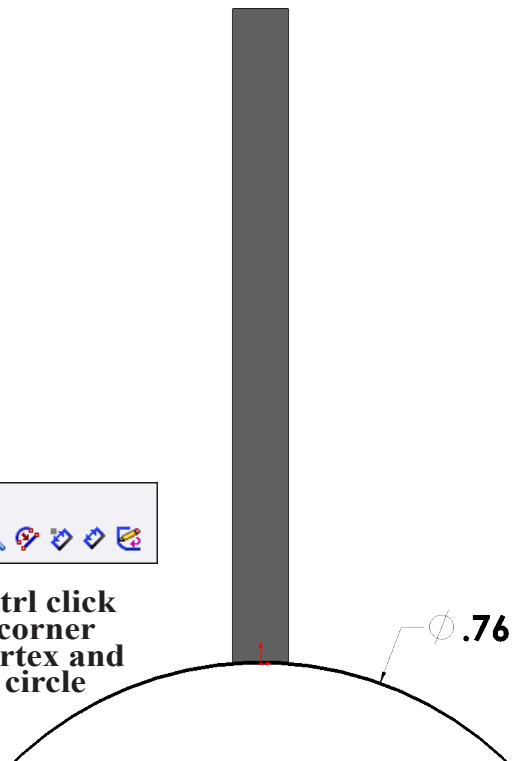


Fig. 11

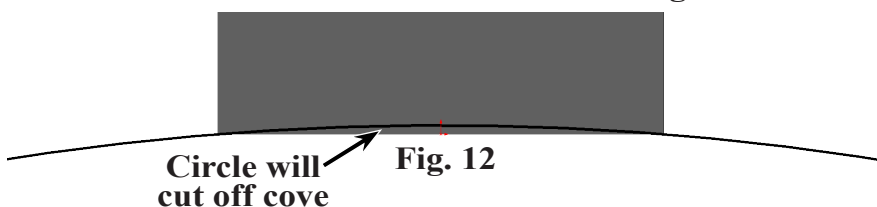



Fig. 12

Step 10. Click **Trimetric**  on the Standard Views toolbar.

Step 11. Click **Features**  on the Command Manager toolbar.


Step 12. Click **Extruded Cut**  on the Features toolbar.

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

Step 14. Save. Use **Ctrl-S**.

E. Image Quality.

Step 1. Tip: You can crank up the image quality resolution setting resulting in more accurate curves but slower model rebuilding.

Click **Options**  on the Standard toolbar. Select **Document Properties** tab and **Image Quality**. Then, drag out slider, **Fig. 16**.

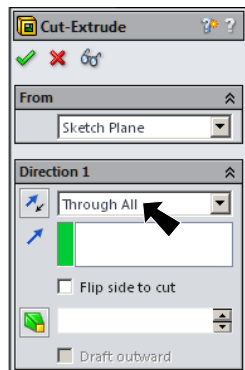


Fig. 13

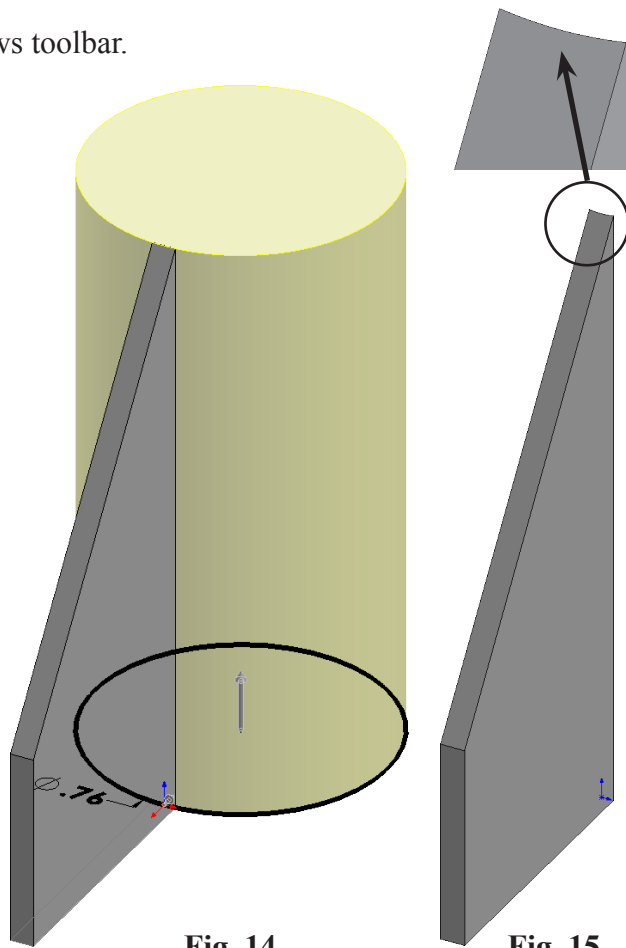


Fig. 14

Fig. 15

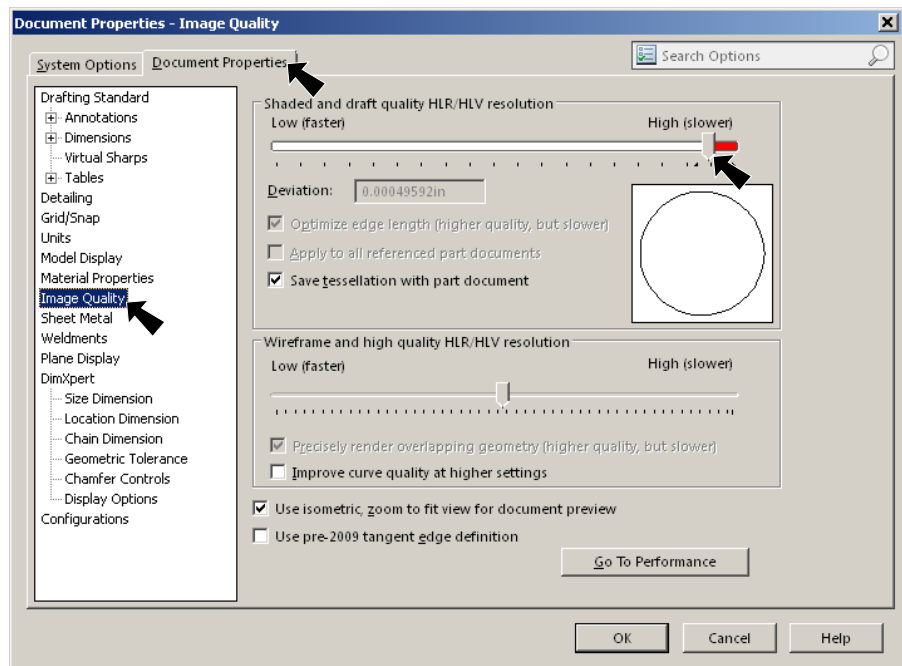





Fig. 16



F. Fillet Leading Edge.

Step 1. Click **Fillet**  on the Features toolbar.

Step 2. In the Fillet Property Manager:
select **Manual**, Fig. 17
under Fillet Type

select **Full Round Fillet** 
in **Side Face Set 1**  box
click **right side face**, Fig. 18

tip: before moving cursor, right click to
move selection to next selection box

 **Center Face Set**  box, Fig. 17
click **leading face**, Fig. 18
again - before moving cursor, right click to
move selection to next selection box

 **Side Face Set 2**  box
use **right arrow key** to rotate
view to view **right face**, Fig. 19

click **left side face**, Fig. 19
click **OK** .

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

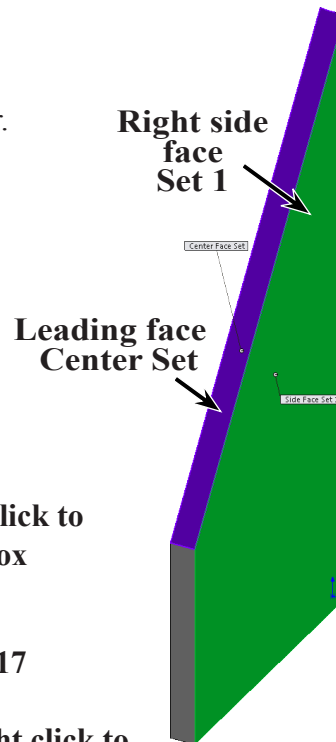


Fig. 18

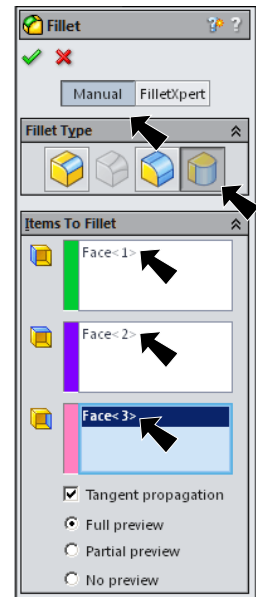


Fig. 17

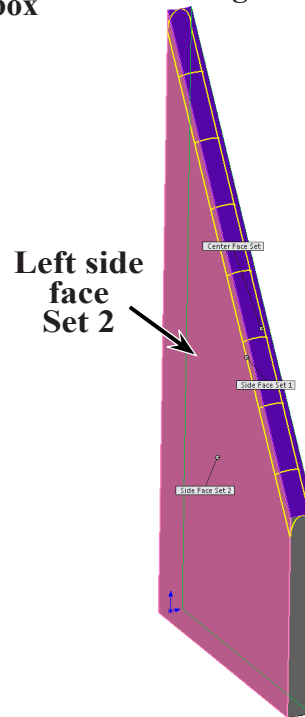


Fig. 19

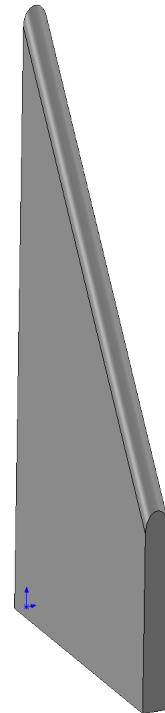




Fig. 20

F. Enable Render Tools Toolbar.

- Step 1. We have 3 options to display the appearance.
1. If your graphics card is RealView compatible, use RealView  on the Standard Views toolbar.
 2. Use Preview Window in Render Tools.
 3. Use Integrated Preview with Render Region. Here we will use Render Region with Integrated Preview.

- Step 2. To turn on, right click **Sketch**  on the Command Manager toolbar and select **Render Tools**, Fig. 21.

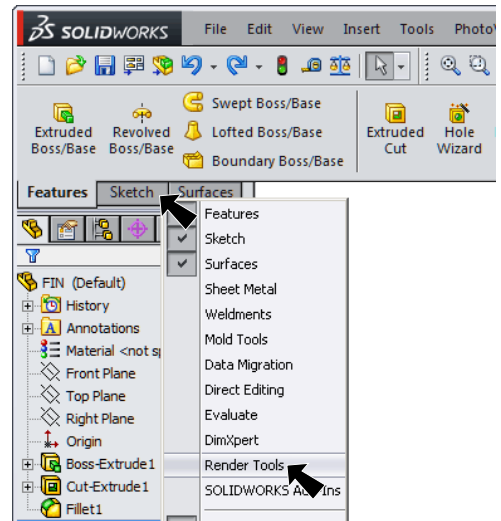
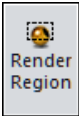


Fig. 21

- Step 3. Click **Render Tools**  on the Command Manager toolbar.

G. Appearance.

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

- Step 2. Click **Render Region**  on the Render Tools toolbar.

- Step 3. Adjust the render region to fit around Fin, Fig. 22.

- Step 4. Click **Integrated Preview**  on the Render Tools toolbar.

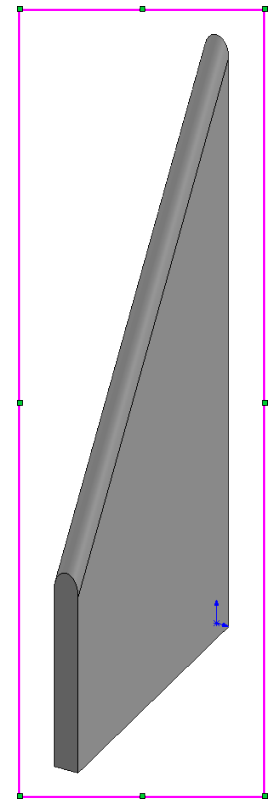
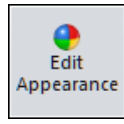
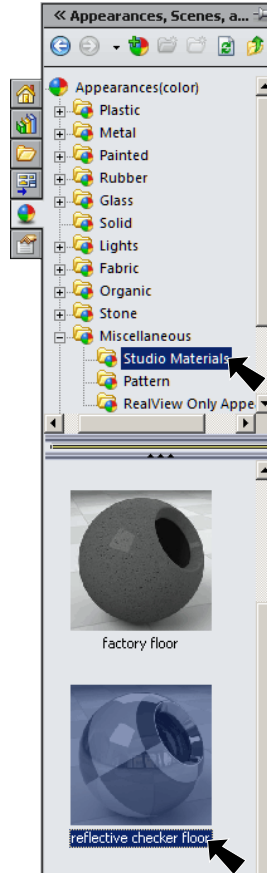


Fig. 22

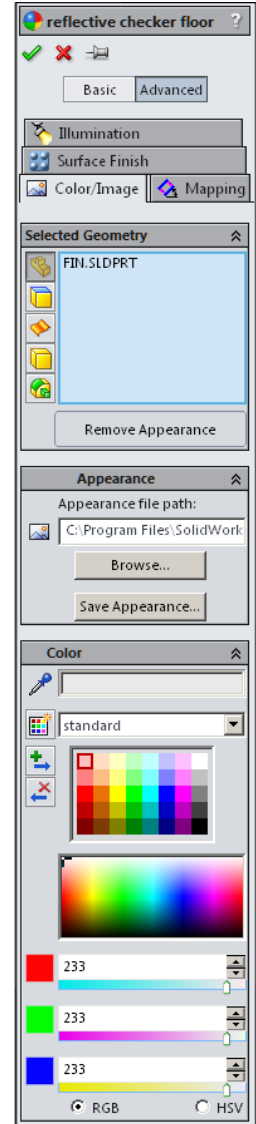
Step 5. Click **Edit Appearance** on the Render Tools toolbar.



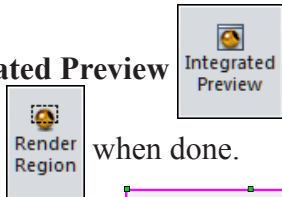
Step 6. In the Appearances Task pane, expand **Miscellaneous**, click **Studio Materials** and in the lower pane select **reflective checker floor**, **Fig. 23**.



Step 7. Back over in the Appearances Property Manager, **Fig. 25** click OK.



Step 8. Turn off **Integrated Preview**, then **Render Region** when done.



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

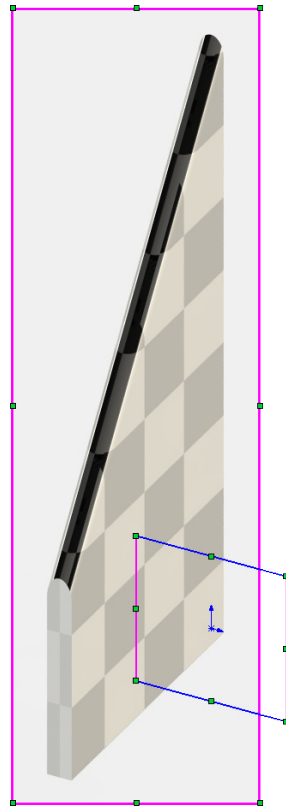


Fig. 24

Fig. 23

Fig. 25