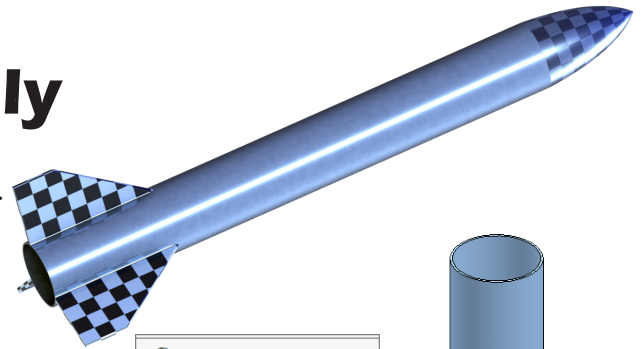





# Rocket 1 Assembly



## A. Insert Parts.

- Step 1. Click File Menu > New, click **Assembly** and OK.
- Step 2. Select your **BODY TUBE** file and click Open from the Open dialog box.

- Step 3. In the Begin Assembly Property Manager set:
  - click **Keep Visible** , **Fig. 1**
  - Click OK . This will place Body Tube origin at the assembly origin and fix the position so Body Tube cannot move. This fixed component should have a (f) before its name in the Feature Manager  (f) BODY TUBE<1>

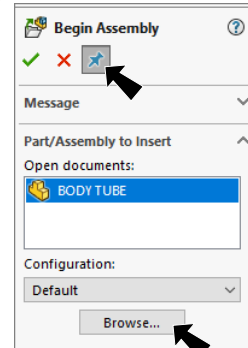



Fig. 1

- Step 4. Click **Browse** in the Property Manager, **Fig. 1**.
- Step 7. Select your **FIN** file and click Open.

- Step 8. Click approximately where the Fin is positioned in **Fig. 2**. Click OK  in the Property Manager when done.

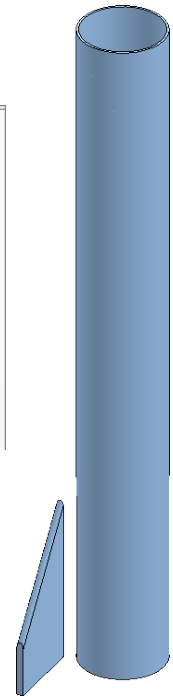
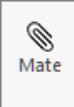






Fig. 2

## B. Save as "ROCKET 1 ASSEMBLY".

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

## C. Mate: Body Tube and Fin.

- Step 1. Click **Mate**  on the Assembly toolbar.
- Step 2. Expand the flyout Feature Manager design tree (click ) in the top left corner of the graphics area and click **Right Plane** , **Fig. 3**.
- Step 4. Expand **FIN** and click **Right Plane** , **Fig. 3**.
- Step 5. Click OK  to add a **Coincident** mate.

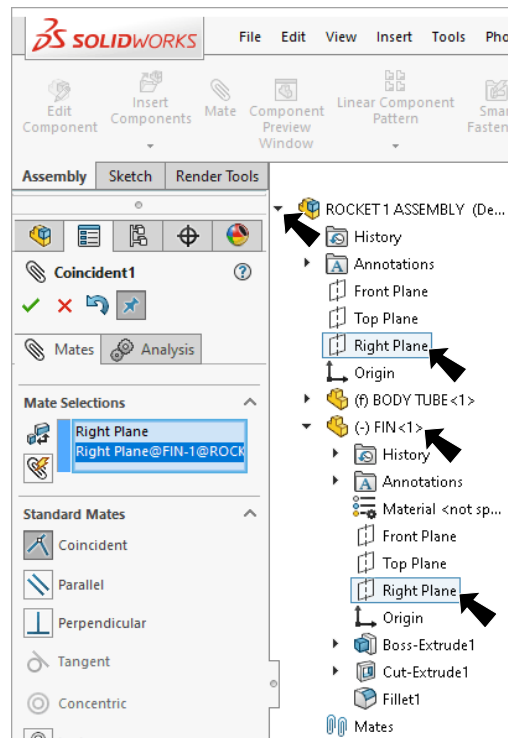


Fig. 3

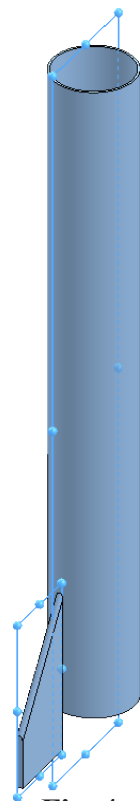


Fig. 4

Step 6. Click **cylindrical face of Body Tube**, **Fig. 5**.

Step 7. Rotate view to view **root face of Fin (inside face)**, **Fig. 6**. To rotate, hold down middle mouse button (wheel) and drag.

Step 8. Zoom in on **root (inside) face of Fin**, **Fig. 6**. To zoom, place the cursor over the root of Fin and spin the wheel on mouse back. While spinning the wheel keep cursor on the root area.

Step 9. Click **root face of Fin**, **Fig. 7**. Be sure to select the face. If necessary zoom in more.


Step 10. Click Add/Finish Mate  in Mate pop-up toolbar to add a **Coincident** mate.

Step 11. Rotate view to view **bottom face of Fin**, **Fig. 8**. To rotate, hold down middle mouse button (wheel) and drag.

Step 12. Zoom in on **bottom face of Fin**, **Fig. 8**. To zoom, place the cursor over the bottom face of Fin and spin the wheel on mouse back. While spinning the wheel keep cursor on the bottom face.

Step 13. Click **bottom face of Fin and bottom face of Body Tube**, **Fig. 8**.

Step 14. Click Add/Finish Mate  to add a **Coincident** mate, **Fig. 9**.

Step 15. Click OK  in the Property Manager when done.

Step 16. Save.  
Use **Ctrl-S**.

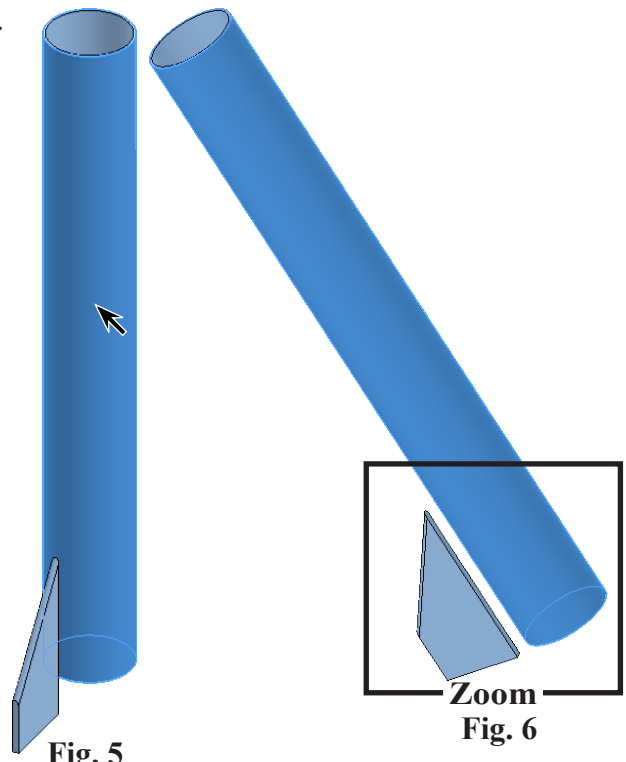


Fig. 5

Zoom  
Fig. 6

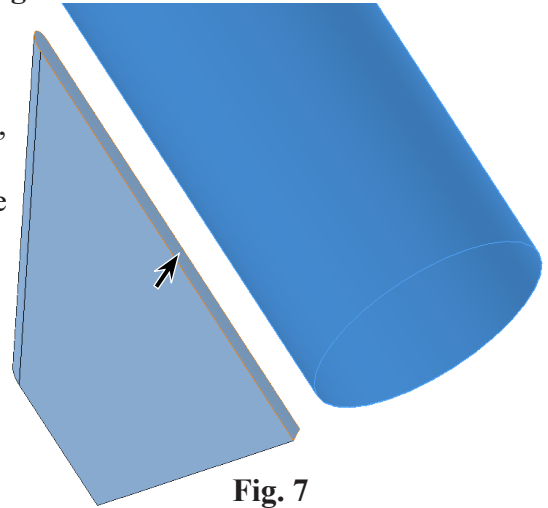


Fig. 7

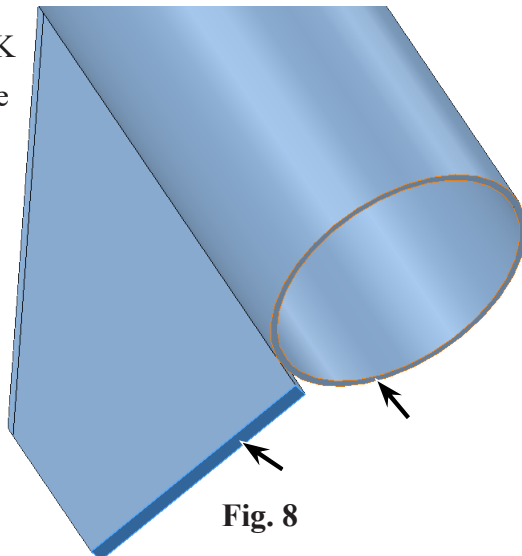


Fig. 8

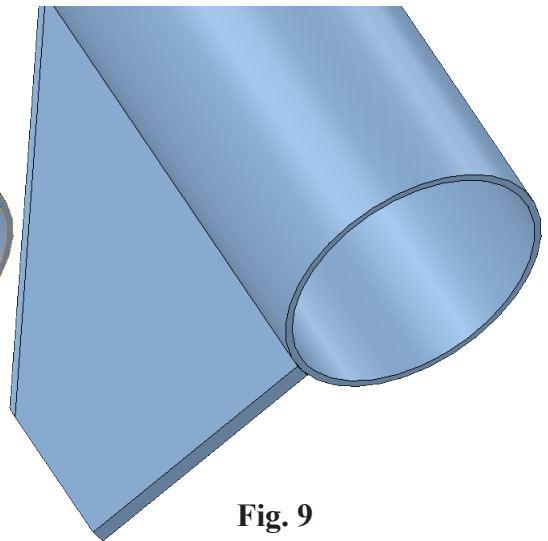


Fig. 9

## D. Fin Circular Pattern.

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

Step 2. Click Insert Menu > Component Pattern > Circular Pattern.

Step 3. In the Circular Pattern Property Manager set:  
under Components to Pattern, **Fig. 10**  
click **Fin**, **Fig. 11**

under Direction 1,  
click in **Pattern Axis** box, **Fig. 10**  
click **Body Tube**, **Fig. 11**

Angle  360

Number of Instances  3

check **Equal spacing**

click OK .

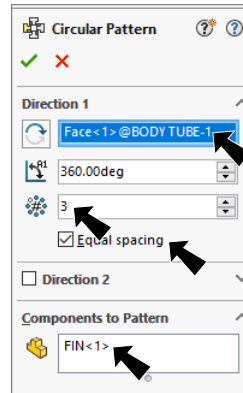
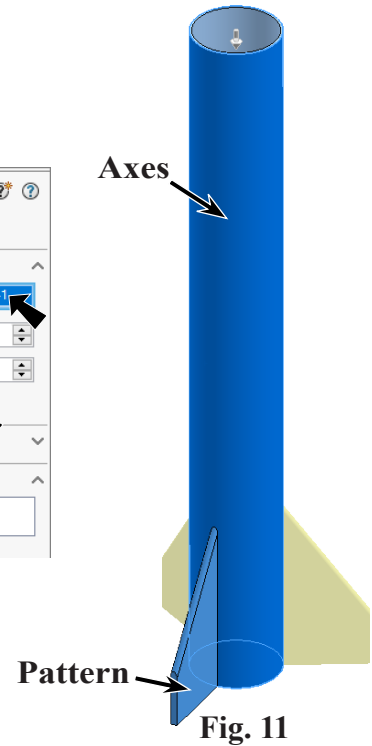


Fig. 10



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

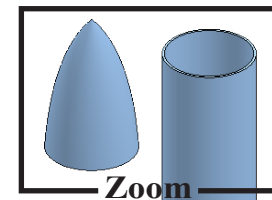
## E. Insert Nose Cone.

Step 1. Click **Insert Components**  on the Assembly toolbar.

Step 2. Select **NOSE CONE** file and click Open.

Step 3. Place Nose Cone as positioned in **Fig. 12**.

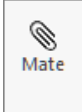


Step 4. Zoom in on Nose Cone and top of Body Tube, **Fig. 12**. To zoom, place the cursor over the Nose Cone and top of Body Tube and spin the wheel on mouse back.



Zoom

Fig. 12

## F. Mate: Nose Cone.

- Step 1. Click **Mate**  on the Assembly toolbar.
- Step 2. Click **bottom outer cylindrical edge of Nose Cone and top outer cylindrical edge of Body Tube**, Fig. 13.
- Step 3. Click Add/Finish Mate  in Mate pop-up toolbar to add a **Coincident** mate.
- Step 4. Click OK  in the Property Manager.
- Step 5. Save. Use **Ctrl-S**.

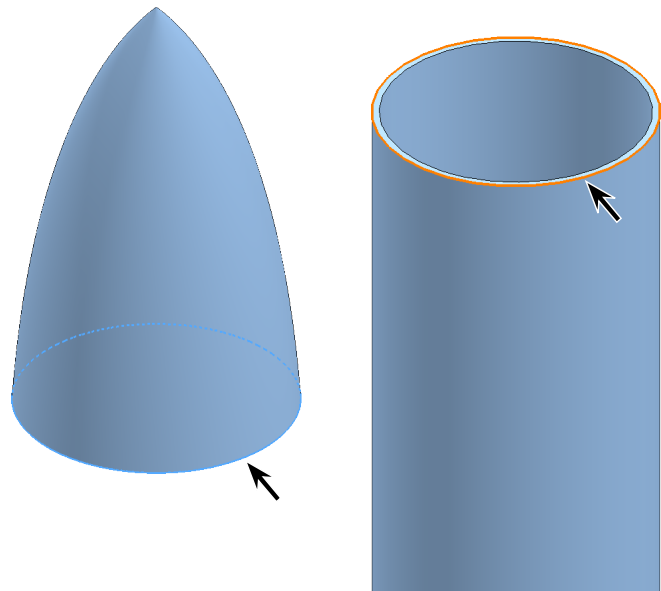

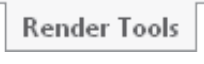

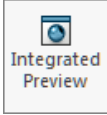
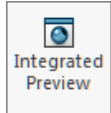
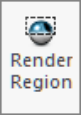


Fig. 13

## G. Render Region.

- Step 1. Click Zoom to Fit  (F) on the View toolbar.
- Step 2. Click **Render Tools**  on the Command Manager toolbar.
- Step 3. Click **Render Region**  on the Render Tools toolbar.
- Step 4. Adjust the render region to fit around all, Fig. 14.
- Step 5. Click **Integrated Preview**  on the Render Tools toolbar.
- Step 6. Turn off **Integrated Preview** , then **Render Region**  when done.
- Step 7. Save. Use **Ctrl-S**.

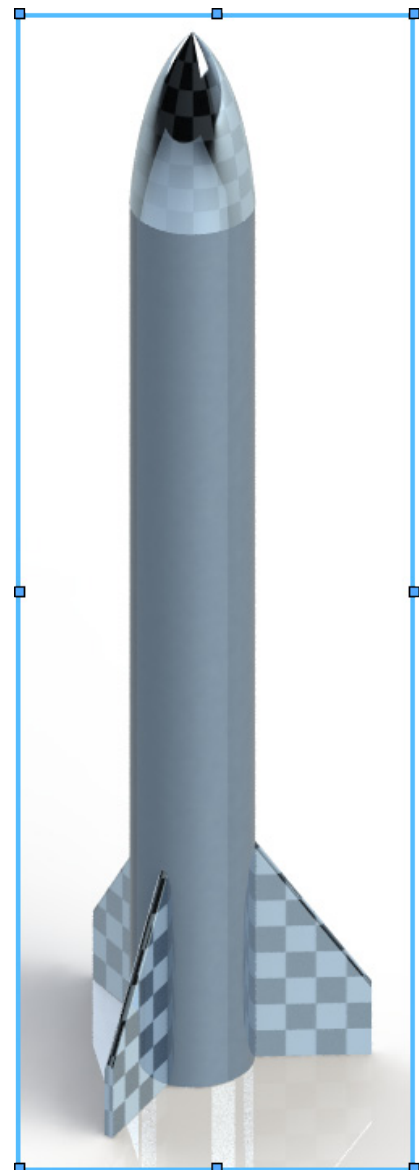


Fig. 14