

Rocket 1 Assembly



A. Insert Parts.

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

Step 2. Click **Keep Visible**  in the Property Manager, **Fig. 1**.


Step 3. Click **Browse** in the Property Manager, **Fig. 1**.

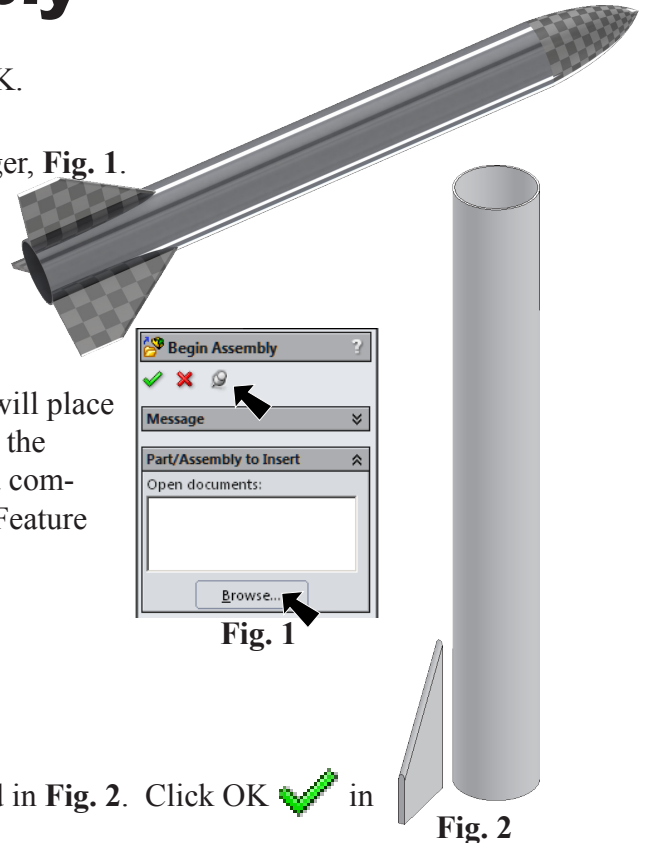
Step 4. Select your **BODY TUBE** file and click Open.

Step 5. Click OK  in the Property Manager. 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>**.

Step 6. 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.




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 Design Tree (click +) in the top left corner of the drawing area, **Fig. 3**.

Step 3. Click **Right Plane**, **Fig. 3**.

Step 4. Expand **FIN** and click **Right Plane**, **Fig. 3**.

Step 5. Click OK  to add a **Coincident** mate.

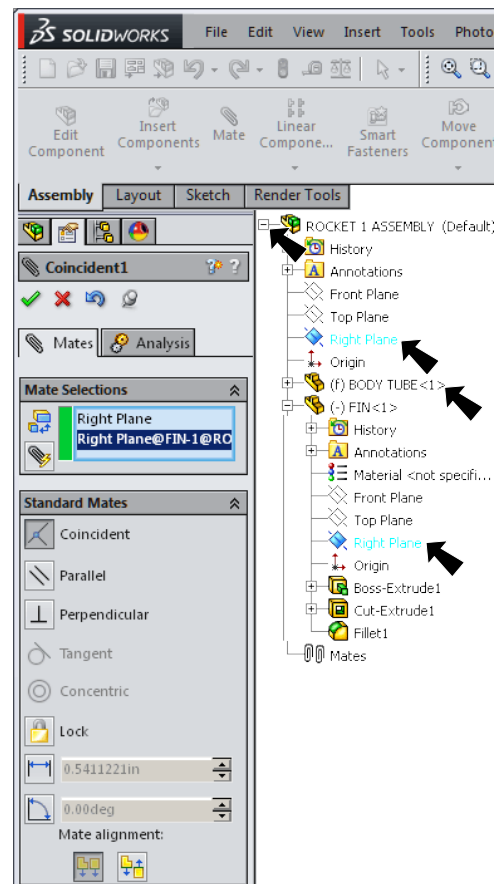


Fig. 3

Step 6. Click **cylindrical face of Body Tube**, **Fig. 4**.

Step 7. Rotate view to view **root face of Fin (inside face)**, **Fig. 5**. To rotate, hold down middle mouse button (wheel) and drag.

Step 8. Zoom in on **root (inside) face of Fin**, **Fig. 6**. To **zoom**, hold down **Shift** key and drag middle mouse button (wheel). To **pan**, hold down **Ctrl** key and drag middle mouse button (wheel).

Step 9. Click **root face of Fin**, **Fig. 6**. Be sure to select the face. If necessary zoom in.


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. 7**. To rotate, hold down middle mouse button (wheel) and drag.

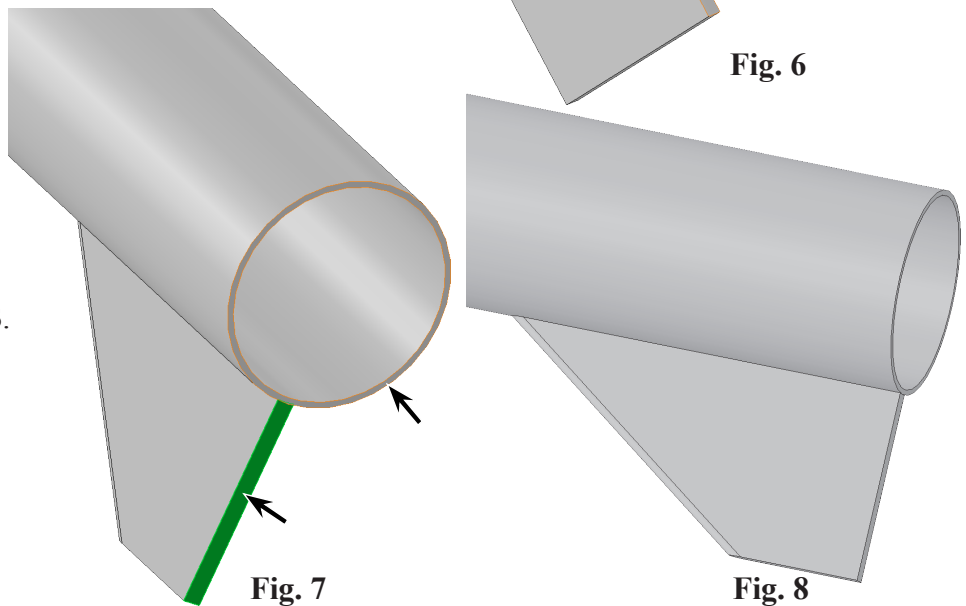
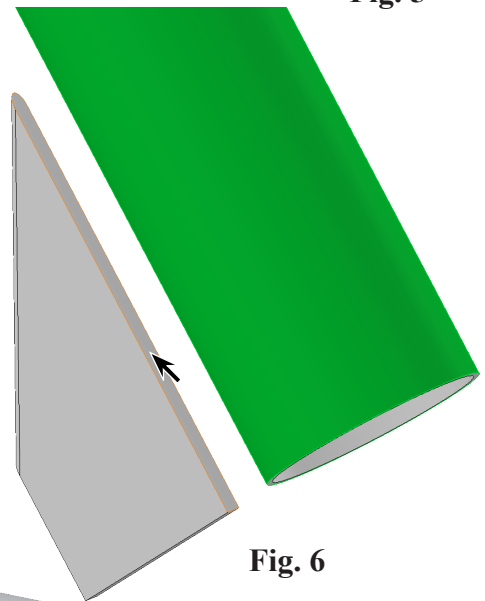
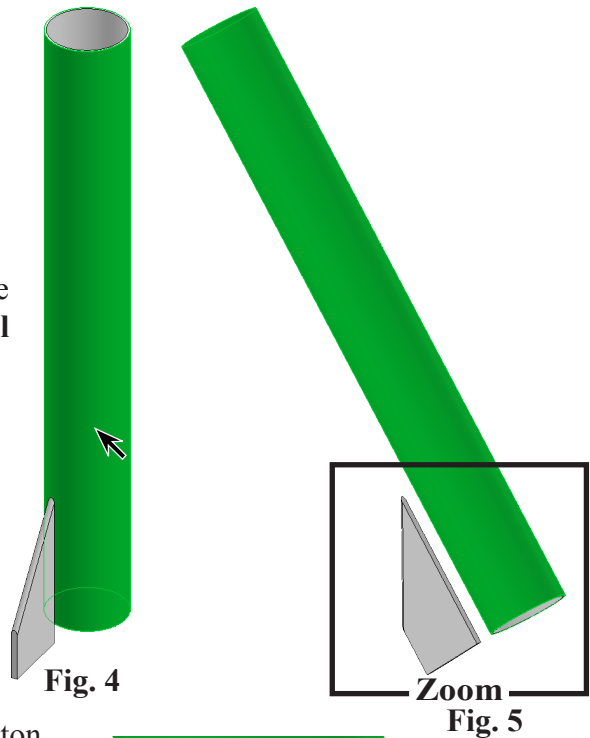
Step 12. Zoom in on **bottom face of Fin**, **Fig. 7**. To **zoom**, hold down **Shift** key and drag middle mouse button (wheel). To **pan**, hold down **Ctrl** key and drag middle mouse button (wheel).

Step 13. Click **bottom face of Fin and bottom face of Body Tube**, **Fig. 7**.

Step 14. Click Add/Finish Mate  to add a **Coincident** mate, **Fig. 7**.

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

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



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. 9**
click in the box and click **Fin, Fig. 10**

under Parameters,
click in **Pattern Axis** box, **Fig. 9**
click **Body Tube**, **Fig. 10**

Angle  360

Number of Instances  3
check **Equal spacing**

click OK .

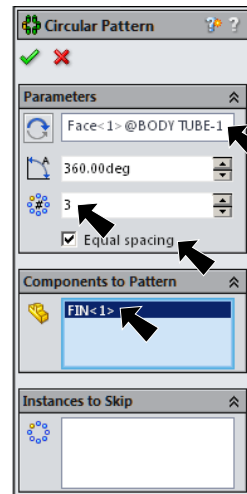


Fig. 9

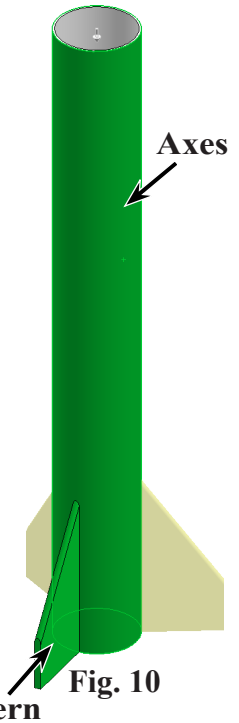


Fig. 10

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

E. Insert Nose Cone.

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

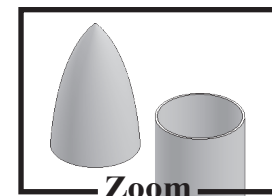
Step 2. Click **Browse** in the Property Manager.

Step 3. Select **NOSE CONE** file and click Open.

Step 4. Place Nose Cone as positioned in **Fig. 11**.

F. Mate: Nose Cone.

Step 1. Zoom in on Nose Cone and top of Body Tube, **Fig. 11**. To **zoom**, hold down **Shift** key and drag middle mouse button (wheel). To **pan**, hold down **Ctrl** key and drag middle mouse button (wheel).



Zoom

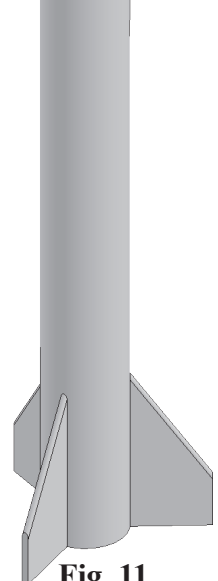





Fig. 11

- Step 2. Click **Mate**  on the Assembly toolbar.
- Step 3. Click **bottom outer edge of Nose Cone and top outer edge of Body Tube**, Fig. 12.
- Step 4. Click Add/Finish Mate  in Mate pop-up toolbar to add a **Coincident** mate.
- Step 5. Click OK  in the Property Manager.
- Step 6. Save. Use **Ctrl-S**.

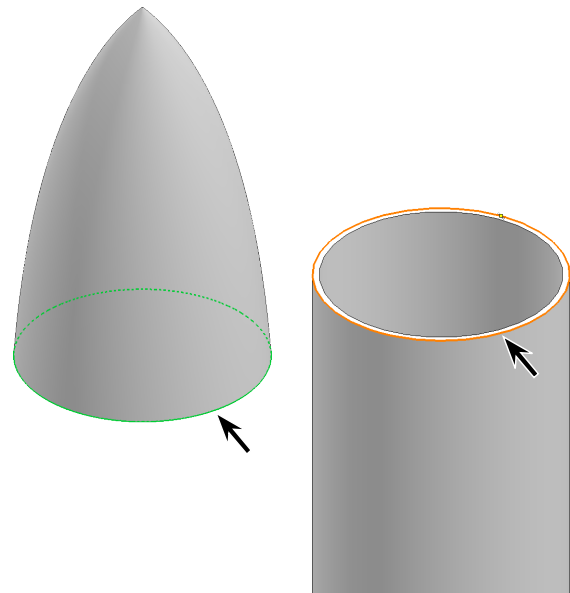
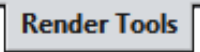

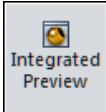
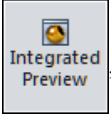



Fig. 12

G. Render Region.

- Step 1. Click **Render Tools**  on the Command Manager toolbar.
- Step 2. Click **Render Region**  on the Render Tools toolbar.
- Step 3. Adjust the render region to fit around all, Fig. 13.
- Step 4. Click **Integrated Preview**  on the Render Tools toolbar.
- Step 5. Turn off **Integrated Preview** , then **Render Region**  when done.
- Step 6. Save. Use **Ctrl-S**.

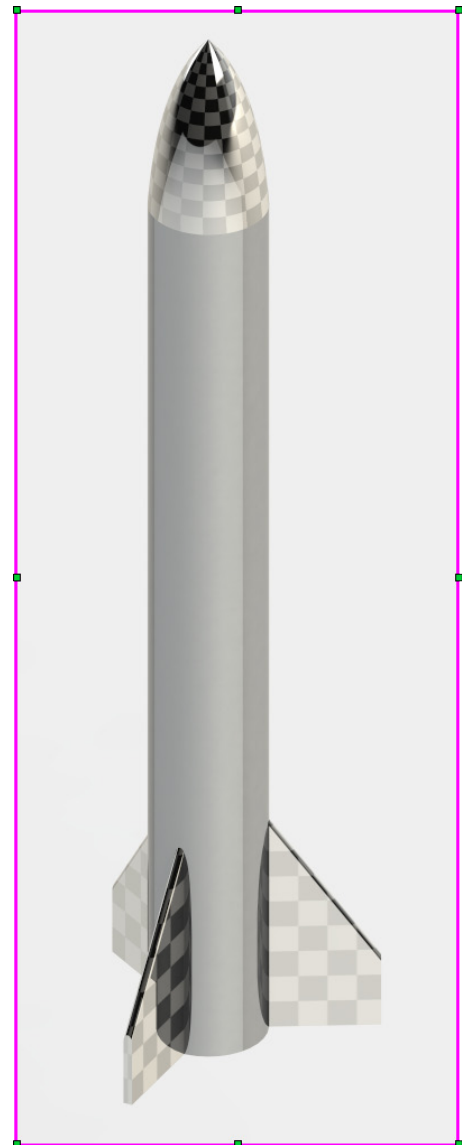


Fig. 13