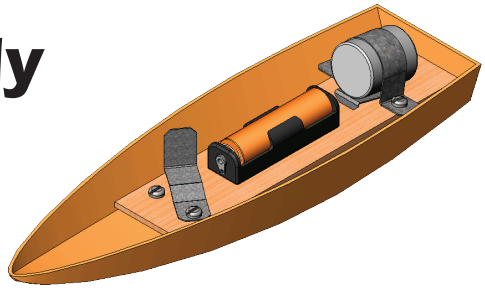
Chapter 12

Boat Assembly



A. Insert Hull and Power Train Assembly.

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 **HULL MID PLANE** file and click Open.

Step 5. Click OK in the Property Manager. This will place Hull origin at the assembly origin and fix the position so Hull cannot move. This fixed component should have a **(f)** before its name in the Feature Manager.

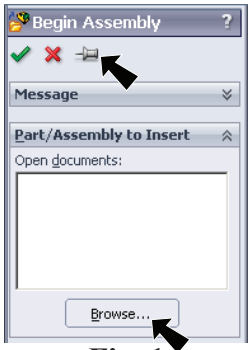


Fig. 1

Step 6. Click **Browse** in the Property Manager.

Step 7. Click **Browse** and in the Open dialog box to view Assembly file, change **Files of type to All Files (*.*)**, **Fig. 2**.

Step 8. Select your **POWER TRAIN ASSEMBLY** file and click Open.

Step 9. Click approximately where Power Train Assembly is positioned in **Fig. 3**. Click OK in the Property Manager when done.

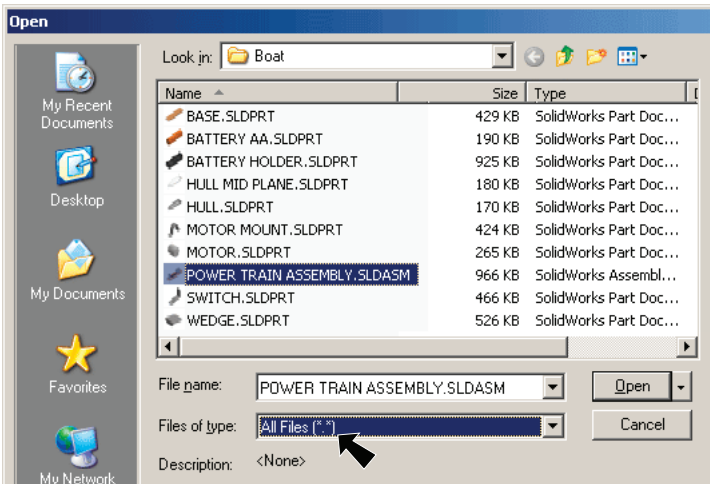


Fig. 2

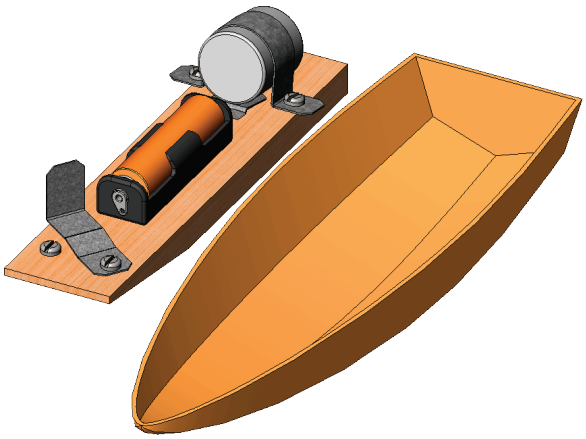


Fig. 3

B. Save as "BOAT ASSEMBLY".

Step 1. Click File Menu > Save As and Yes to Rebuild Now.

Step 2. Key-in **BOAT ASSEMBLY** for the filename and press ENTER.

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C. Mate: Sub Assembly.

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. 4**.

Step 3. Click **Right Plane** , **Fig. 4**.

Step 4. Expand **Power Train Assembly** and click **Right Plane** , **Fig. 4**.

Step 5. Click Add/Finish Mate to add **Coincident** mate.

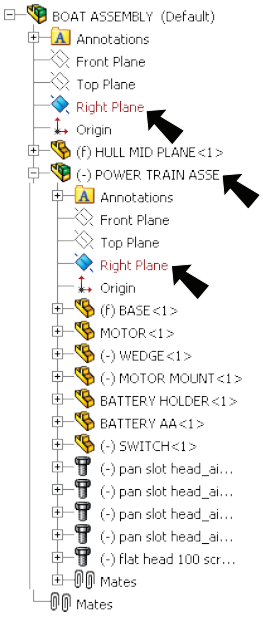

Fig. 4

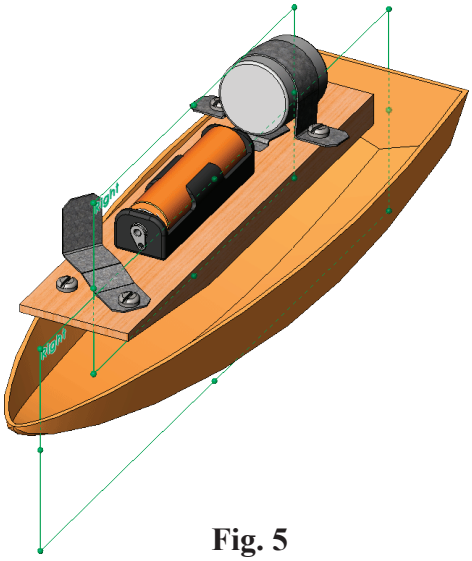
Fig. 5

Step 6. Click **Filter Faces** **(X)** on the **Selection Filter toolbar** at the bottom of the display, **Fig. 6**. If necessary use **F5** key to display the toolbar.

Fig. 6

Step 7. Click **top face of hull** and the **top face of the base**, **Fig. 7**.

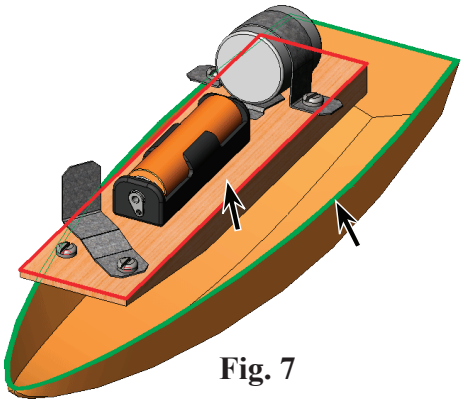
Fig. 7

Step 8. Click **Distance** in Mate pop-up, **Fig. 8**. Set **distance to .45** and press ENTER. The base should **extent down into the hull .45**, **Fig. 8**. If positioned in opposite direction, click **Flip Dimension** in the Mate pop-up, **Fig. 8**. Click Add/Finish Mate to add Distance mate.

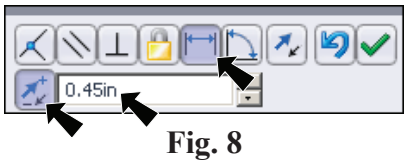

Fig. 8

Step 9. Turn **off** Filter Faces. Click **Filter Faces** **(X)** on the **Selection Filter toolbar** at the bottom of the display, **Fig. 6**.

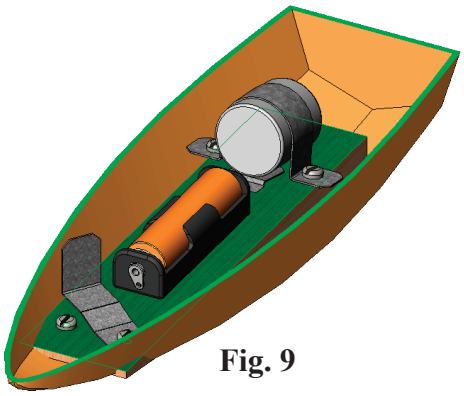
Fig. 9

Step 10. Click the **back inside face of hull**, **Fig. 10**.

Step 11. Rotate view to view **back of base** as shown in **Fig. 11**. To rotate, hold down middle mouse button (wheel) and drag.

Step 12. Click **back face of the base**, **Fig. 11**.

Step 13. Click Add/Finish Mate to add **Coincident** mate.

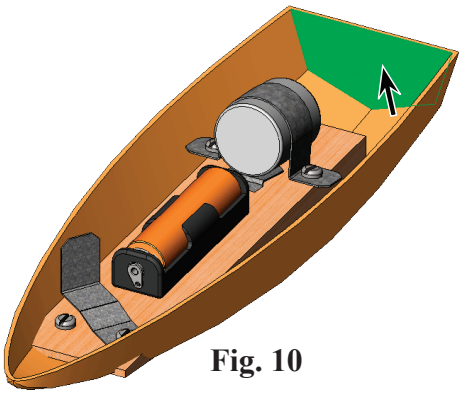

Fig. 10

Step 14. Click OK in the Property Manager when done.

Step 15. Save. Use **Ctrl-S**.

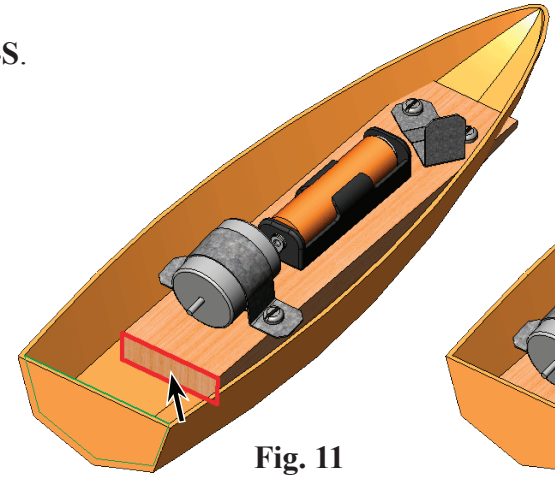

Fig. 11

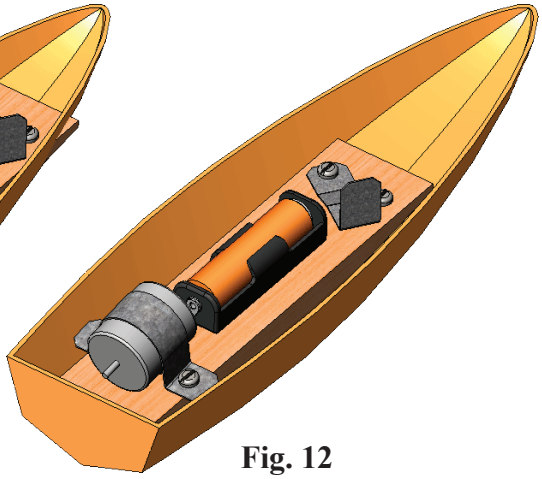

Fig. 12