Chapter 14

Skateboard Deck Hardware

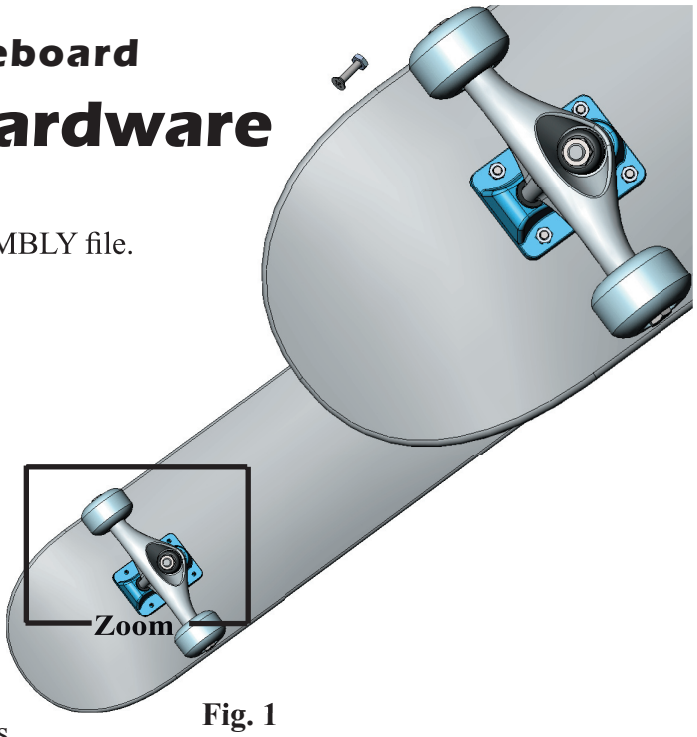


Fig. 1

A. Open Board Assembly.

Step 1. If necessary, Open your BOARD ASSEMBLY file.

Step 2. Rotate view to view **underside of deck and the four bolt holes a base-plate** as shown in **Fig. 1**. Hold down middle mouse button (wheel) and drag.

Step 3. Use the **Zoom to Area**  in the View toolbar to drag a zoom window around a **truck assembly**, **Fig. 1**.

B. Enable Toolbox Browser.

Step 1. If necessary, click Tools Menu > Add-Ins.

Step 2. Check **SolidWorks Toolbox Browser** to place a check in the check box, then click OK, **Fig. 2**.

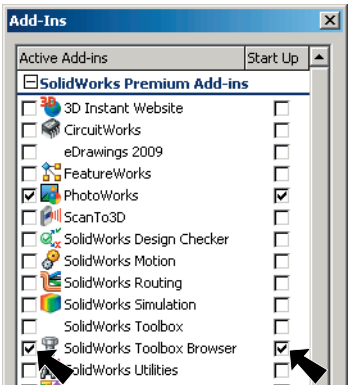


Fig. 2

C. Toolbox Machine Screw Countersunk.

Step 1. Click the **Design Library** tab  in the Task Pane (right side of drawing area), **Fig. 3**.

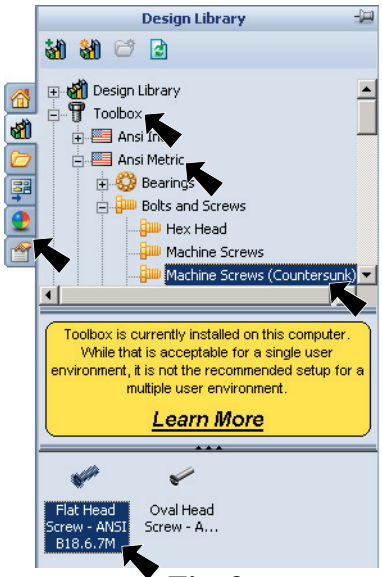
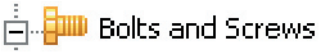
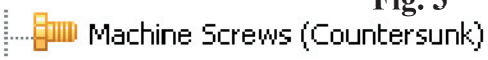


Fig. 3

Step 2. Expand the **Toolbox** 

Expand **Ansi Metric** folder 

Expand **Bolts and Screws** folder 

Click **Machine Screw (Countersunk)** folder 

Step 3. In the lower pane, click **Flat Head Screw**, **Fig. 3** and drag screw into drawing along side the deck as shown in **Fig. 4**.

Step 4. In **Size popup dialog**, set **Size** to **M4, Fig. 4** and click OK  .

Step 5. Click Cancel  when done.

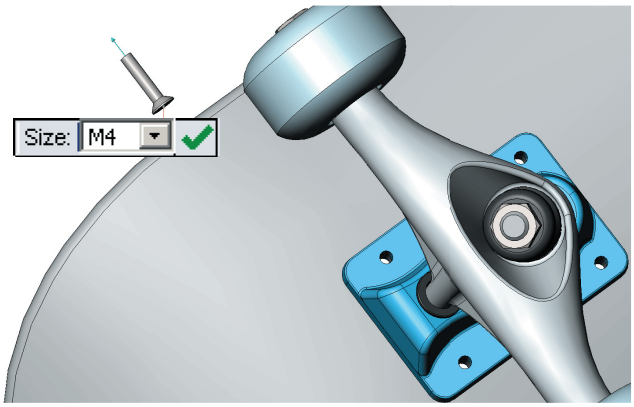


Fig. 4

D. Toolbox Nut.

Step 1. Click the **Design Library** tab in the Task Pane, **Fig. 5**.

Step 2. In the **Toolbox** Toolbox

Expand **Ansi Metric** folder Ansi Metric

Expand **Nuts** folder Nuts

Click **Hex Nuts** folder Hex Nuts

Step 3. In the lower pane, click **Hex Jam Nut B18.2.3.5M**, **Fig. 5** and drag to shank of screw. While dragging, position tip your cursor on shank of screw, **Fig. 6**. When nut snaps into place on the screw and pointer (cursor) changes to Concentric mate, release the nut.

Step 4. In **Size popup dialog**, set **Size** to **M5** and click OK.

Step 5. Click Cancel when done.

Step 6. Save. Use **Ctrl-S**.

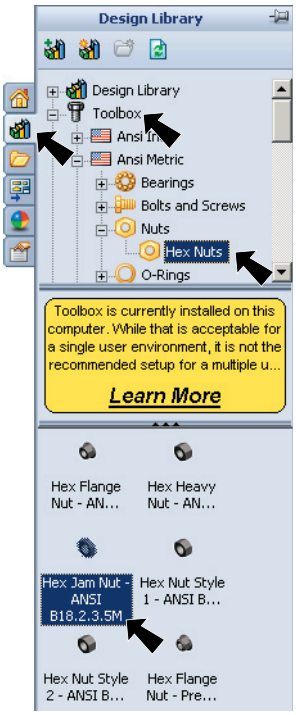


Fig. 5

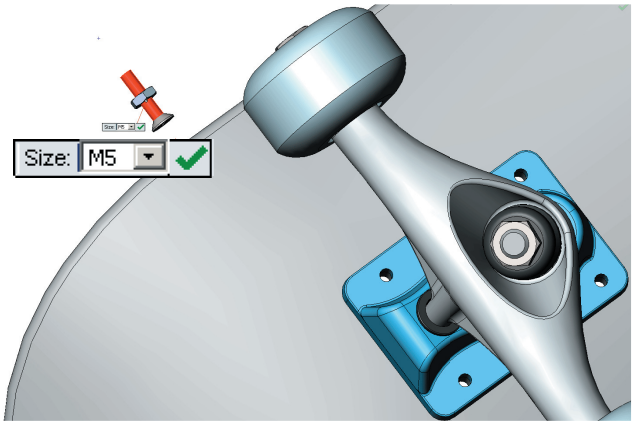


Fig. 6

E. Distance Mates.

Step 1. If necessary, slide the nut onto the screw as shown in **Fig. 7**.

Step 2. Click **Rotate Component** Rotate Component on the Assembly toolbar. **Rotate Component** is in the **Move Component** Move Component flyout. Or Tools Menu > Component > Rotate.

Step 3. Rotate screw slightly to view **flat top face of screw head**, **Fig. 7**.

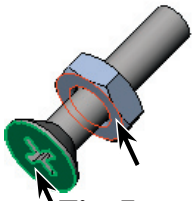


Fig. 7

Step 4. Click **Mate** Mate on the Assembly toolbar.

Step 5. Click **flat top face of screw head** and **flat top face of nut**, **Fig. 7**.

Fig. 8

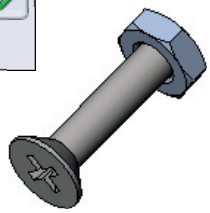


Fig. 9

Step 6. Click **Distance** in Mate pop-up, **Fig. 8**. Set **distance to 16.5** and press ENTER. Click Add/Finish Mate to add Distance mate. Click OK in the Property Manager when done, **Fig. 9**. Save, use **Ctrl-S**.

F. Insert New Sub-Assembly.

Step 1. **Right click BOARD ASSEMBLY** at the top of Feature Manager and click **Insert New Sub-assembly** from menu, **Fig. 10**.

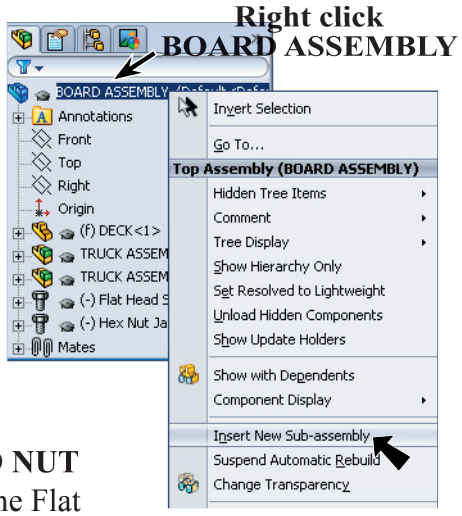


Fig. 10

Step 2. **Rename new Assem1** in the Feature Manager, **Fig. 11**. To rename, click **Assem1** name in Feature Manager and press **F2** on keyboard. Key-in **SCREW AND NUT ASSEMBLY**.
Rename: **Assem1** to **SCREW AND NUT ASSEMBLY**

Step 3. Drag the **Flat Head Screw** down into new **SCREW AND NUT ASSEMBLY**, **Fig. 13**. To drag part into assembly, grab the Flat Head Screw in the Feature Manager and drag over the Screw and Nut Assembly, when your cursor changes to  release the screw.

Step 4. **Repeat and drag** the **Hex Nut** into new **SCREW AND NUT ASSEMBLY**, **Fig. 14**.

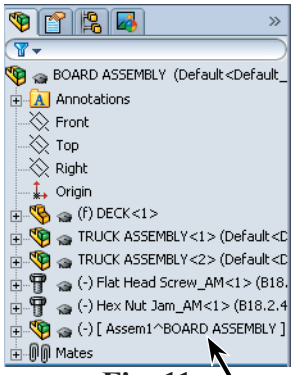


Fig. 11

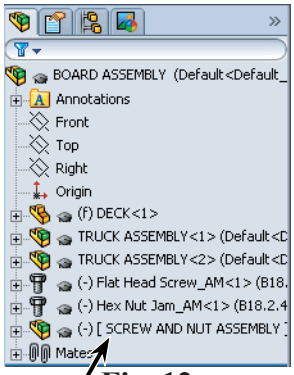


Fig. 12

Rename
SCREW AND NUT ASSEMBLY

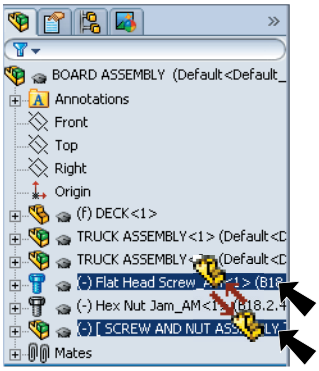


Fig. 13

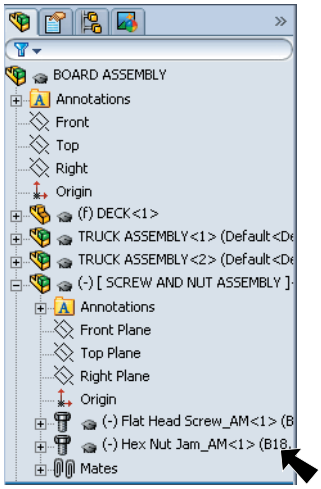


Fig. 14

G. Add Sub-Assembly with Mates.

Step 1. **Ctrl drag** new **SCREW AND NUT ASSEMBLY** out of the Feature Manager and place in drawing area next to original, **Fig. 15**. To Ctrl drag, **hold down Ctrl key and drag SCREW AND NUT ASSEMBLY** from Feature Manager.

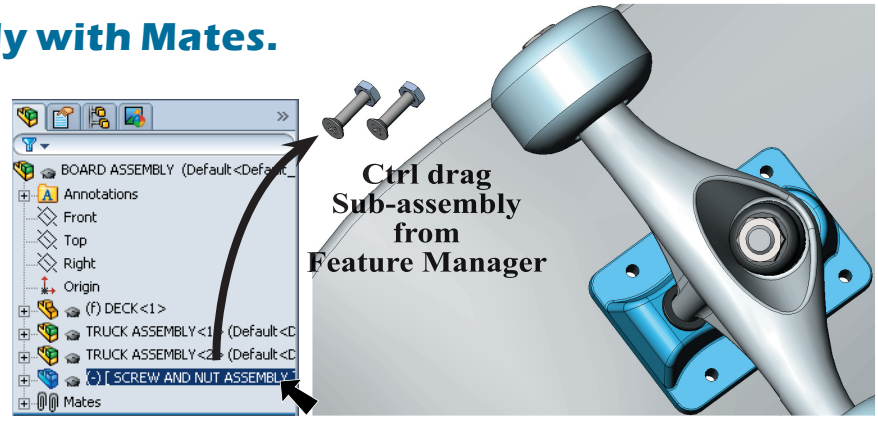


Fig. 15

As you mate each new SCREW AND NUT ASSEMBLY to the baseplate holes, keep the original ASSEMBLY in the drawing area. Always drag the first ASSEMBLY out of the Feature Manager. This will assure each new ASSEMBLY will be orientated in position to grab the nut edge which will be used for mate.

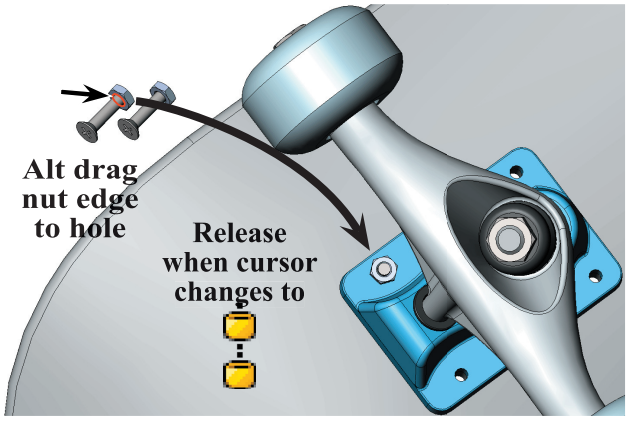


Fig. 16

Step 2. **Alt drag cylindrical edge of underside of nut to edge of bolt hole in baseplate**, **Fig. 16**. When assembly snaps into place and pointer (cursor) changes to Concentric mate  , release assembly. Try slightly spinning assembly in the hole to check correct mate.

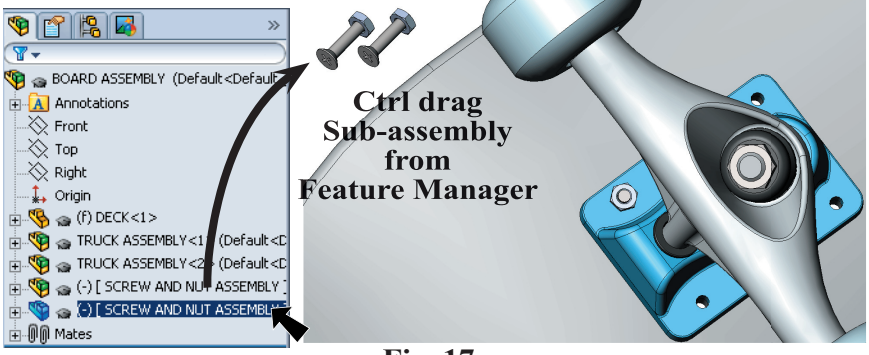


Fig. 17

Step 3. **Repeat Steps 1 and 2 for each hole** in baseplates. Always **Ctrl drag first SCREW AND NUT ASSEMBLY** in Feature Manager and place in drawing area next to original. Keep original ASSEMBLY in the drawing area to assure correct orientation for mate. Then, **Alt drag cylindrical edge of underside of nut to edge of bolt hole in baseplate** for Mate.

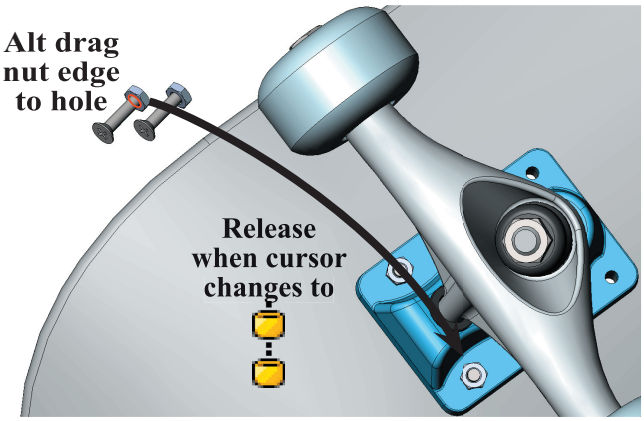


Fig. 18

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