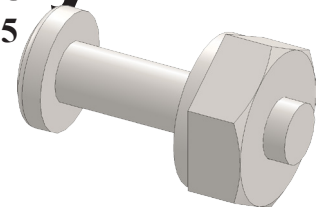


# Machine Screw Assembly

Nut #5-40 Washer #6 Machine Screw #5-40 x .5




## A. Nut #5-40.

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

Step 2. In the **Toolbox**  **Toolbox**  
 Expand **ANSI Inch** folder  **ANSI Inch**  
 Expand **Nuts** folder  **Nuts**  
 Click **Machine Screws** folder  **Machine Screws**

Step 3. In the lower pane, **right click Machine Screw Nut Hex** and click **Create Part**, **Fig. 1**.

Step 4. In the Property Manager set:  
 under Properties, **Fig. 2**  
**Size #5-40**  
 click **OK** .

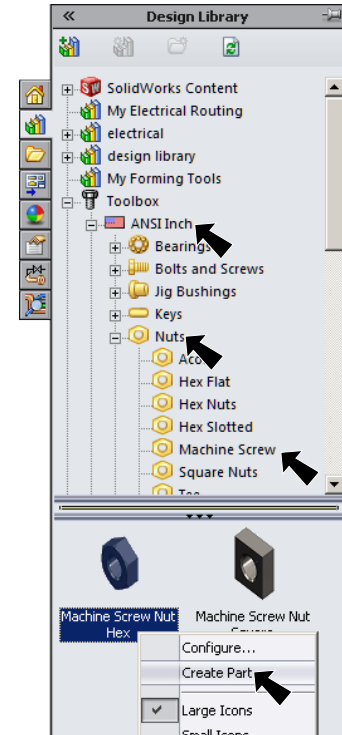


Fig. 1

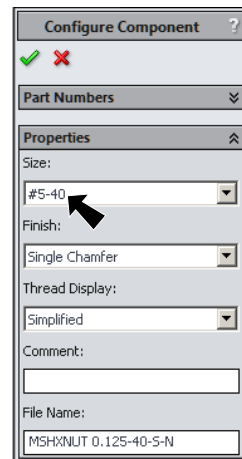


Fig. 2

## B. Material Plain Carbon Steel.

Step 1. **Right click Material**  in the Feature Manager and click **Edit Material**, **Fig. 4**.

Step 2. **Expand Steel** in the material tree and select **Plain Carbon Steel**. Click **Apply** and **Close**.

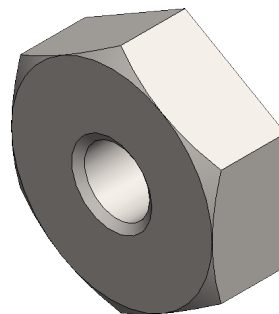


Fig. 3

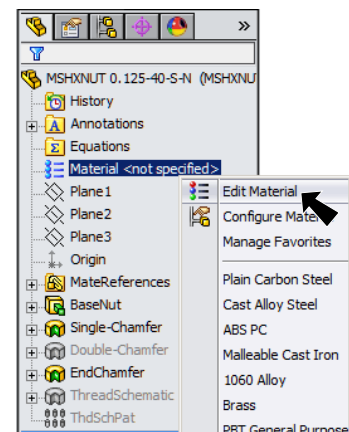


Fig. 4

## C. Save as.

Step 1. Click File Menu > Save As.

Step 2. Redirect file path to your **JSS folder** in your Tech Ed 14-15 folder and click Save.

## D. Washer #6.

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

Step 2. In the **Toolbox**  **Toolbox**

Expand **ANSI Inch** folder  **ANSI Inch**

Expand **Washers** folder  **Washers**

Click **Plain Washer (Type B)** folder  **Plain Washers (Type B)**

Step 3. In the lower pane, **right click Narrow Flat Washer Type B** and click **Create Part**, **Fig. 5**.

Step 4. In the Property Manager set:  
under Properties, **Fig. 6**

**Size #6**

click OK .

## E. Material Plain Carbon Steel.

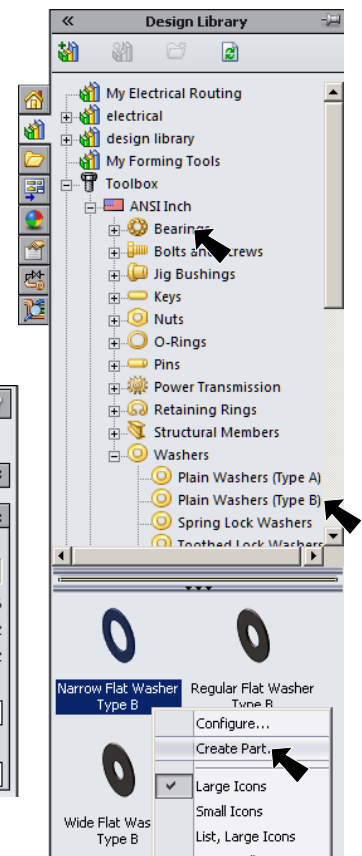
Step 1. **Right click Material**  in the Feature Manager and click **Edit Material**, **Fig. 8**.

Step 2. **Expand Steel** in the material tree and select **Plain Carbon Steel**. Click **Apply** and **Close**.

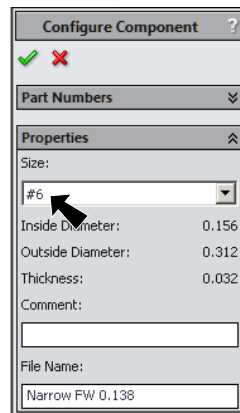
## F. Save as.

Step 1. Click File Menu > Save As.

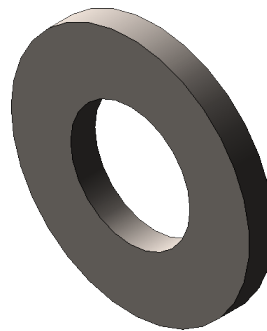
Step 2. Redirect file path to your **JSS folder** in your Tech Ed 14-15 folder and click Save.



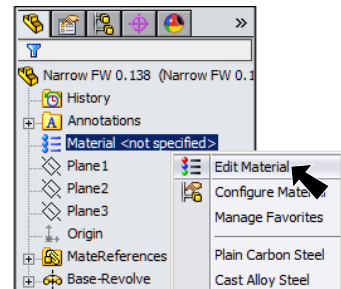
**Fig. 5**



**Fig. 6**



**Fig. 7**



**Fig. 8**

## G. Machine Screw #5-40 x .5.

Step 1. Click the **Design Library** tab  in the Task Pane, **Fig. 9**.

Step 2. Expand the **Toolbox**  **Toolbox**

Expand **ANSI Inch** folder  **ANSI Inch**

Expand **Bolts and Screws** folder  **Bolts and Screws**

Click **Machine Screws** folder  **Machine Screw**

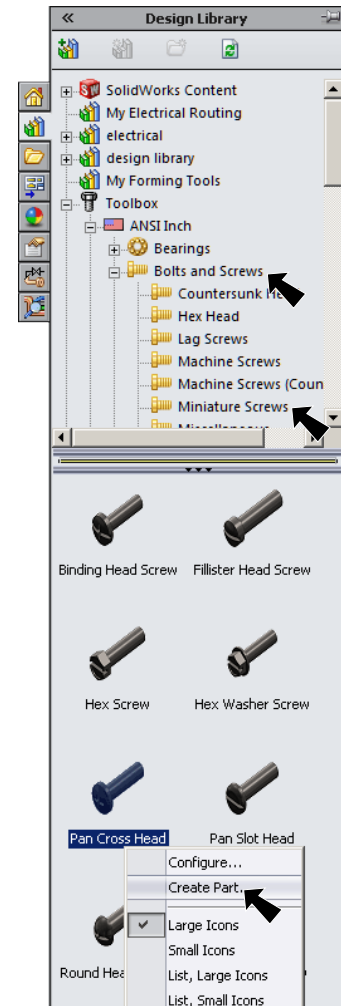
Step 3. In the lower pane, **right click Pan Cross Head** and click **Create Part**, **Fig. 9**.

Step 4. In the Property Manager set:

**Size #5-40**, **Fig. 10**

**Length .5**

click **OK** .

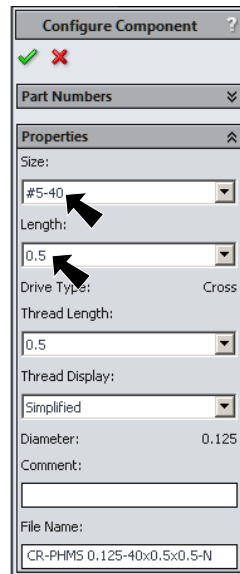


**Fig. 9**

## H. Material Plain Carbon Steel.

Step 1. **Right click Material**  in the Feature Manager and click **Edit Material**, **Fig. 12**.

Step 2. **Expand Steel** in the material tree and select **Plain Carbon Steel**. Click **Apply** and **Close**.

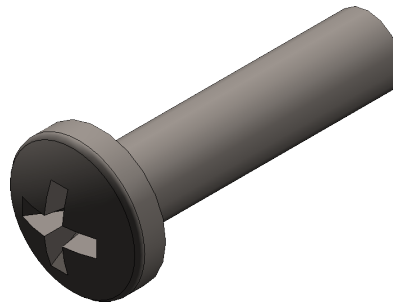


**Fig. 10**

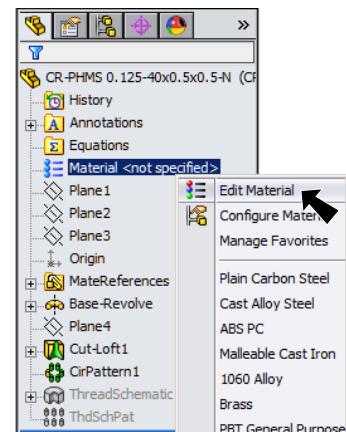
## I. Save as.

Step 1. Click File Menu > Save As.

Step 2. Redirect file path to your **JSS folder** in your Tech Ed 14-15 folder and click Save.



**Fig. 11**




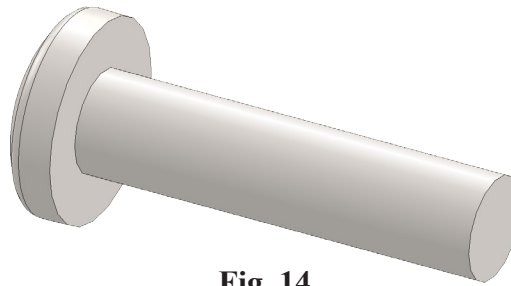
**Fig. 12**

## J. Assembly.

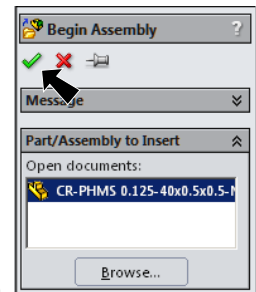
Step 1. Click File Menu > **Make Assembly from Part.**

Step 2. Click **Assembly Metric** in the New SOLIDWORKS Documents dialog box and OK.

Step 3. Click OK  in Begin Assembly Property Manager, **Fig. 13** and **Fig. 14**.



**Fig. 14**



**Fig. 13**

## K. Save as "MACHINE SCREW ASSEMBLY".

Step 1. Click File Menu > Save As.

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


## L. Insert Nut and Washer.

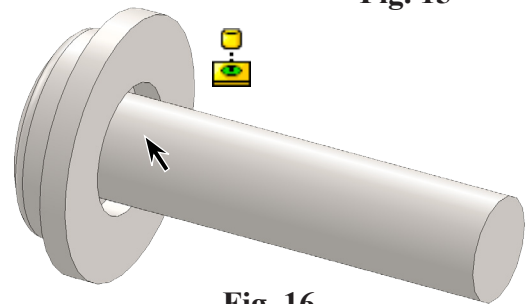
Step 1. Click **Insert Components**  on the Assembly toolbar.

Step 2. Click **Keep Visible**  in the Property Manager, **Fig. 15**.

Step 3. Click **Browse** in the Property Manager.

Step 4. Select your **Washer, Narrow FW 0.138** file and click Open.


Step 5. Position cursor **near shaft of machine screw at underside of head**, **Fig. 16**. When Washer snaps into screw shaft, against underside of head and cursor changes to indicate a Concentric and Coincident mate , click to release Washer.

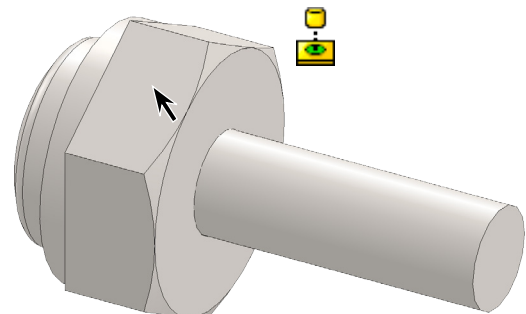


**Fig. 16**

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

Step 7. Select your **Nut MSHXNUT** file and click Open.

Step 8. Position cursor **near shaft of machine screw at Washer**, **Fig. 17**. When Nut snaps into screw shaft, against Washer (not against screw head) and cursor changes to indicate a Concentric and Coincident mate , click to release Nut.



**Fig. 17**

Step 9. Click OK  in the Property Manager.

Step 10. Save. Use **Ctrl-S**.

## M. Edit Mate to Distance.

Step 1. Click the **Washer** in graphics area and click **View Mates**  on the Context toolbar, **Fig. 18**.

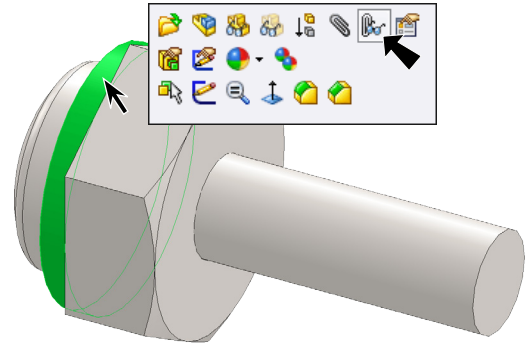




Fig. 18

Step 2. Click the **first Coincident Mate** in the View Mates window and click **Edit Feature**  in the Context toolbar, **Fig. 19**.

Step 3. In the Mate Property Manager, **Fig. 20**

click **Distance**   
set **distance** to **7.8** and press ENTER.  
The Washer should slide down screw,  
**Fig. 21**.

Click OK twice .

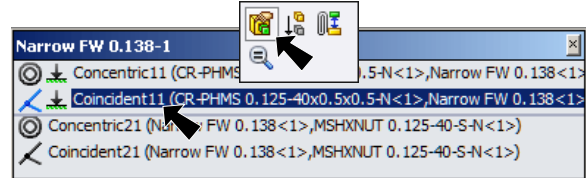



Fig. 19

Step 4. Click **Close**  in the View Mates window, **Fig. 22**.

Step 5. Save. Use **Ctrl-S**.

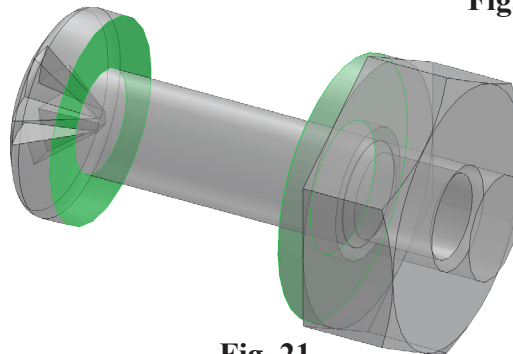


Fig. 21

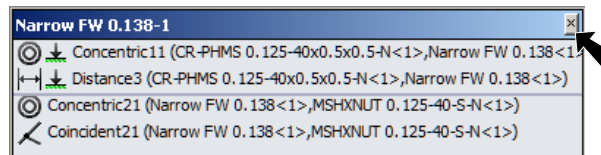


Fig. 22

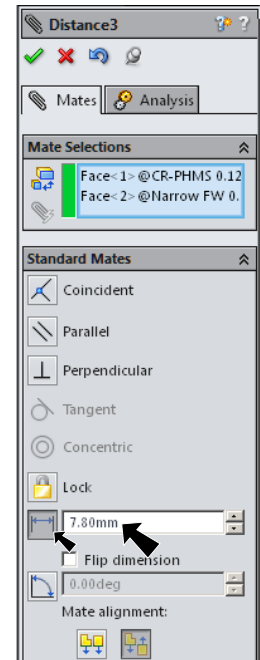


Fig. 20

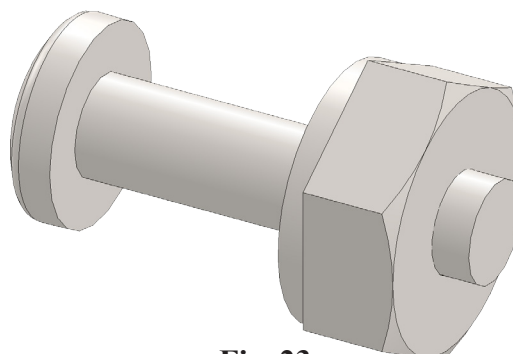


Fig. 23