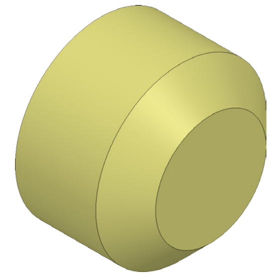
Chapter 2

Cluster Wheel Vehicle
Axle Cap



A. Extrude1.

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

Step 2. Click **Right Plane** in the Feature Manager and click **Sketch** on the context toolbar, **Fig. 1**.

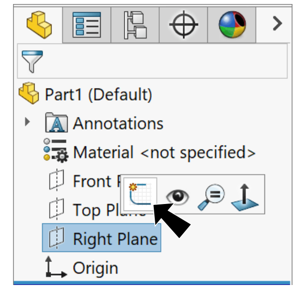


Fig. 1

Step 3. Click **Circle** (**S**) on the Sketch toolbar.

Step 4. Sketch **two circles at Origin**, **Fig. 2**.

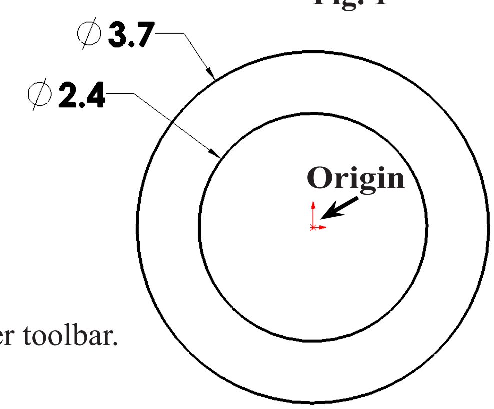


Fig. 2

Step 5. Click **Smart Dimension** Smart Dimension (**S**) on the Sketch toolbar.

Step 6. Dimension **diameters 3.7 and 2.4**, **Fig. 2**.

Step 7. Click **Features** Features on the Command Manager toolbar.

Step 8. Click **Extruded Boss/Base** Extruded Boss/Base on the Features toolbar.

Step 9. In the Boss-Extrude Property Manager set:
under Direction 1, **Fig. 3**
End Condition **Blind**
Depth 2.4
under Selected Contours
click **both contours**, **Fig. 4**
click OK .

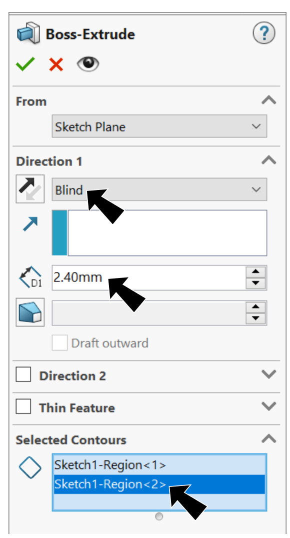


Fig. 3

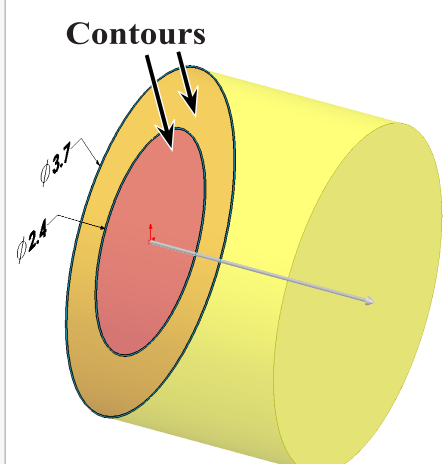


Fig. 4

B. Save as "AXLE CAP".

Step 1. Click File Menu > Save As.

Step 2. Key-in **AXLE CAP** for the file-name and press ENTER.

C. Cut Extrude with Draft.

Step 1. Rotate view to back side, click **Isometric** on the Standard Views toolbar (**Ctrl-7**), then **Ctrl-Shift click the Y axis of the Reference Triad** (bottom left corner of graphics area).

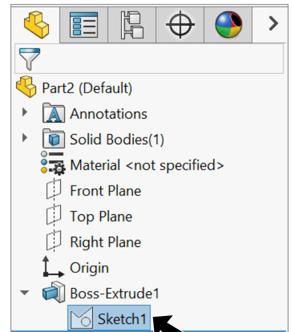


Fig. 5

Step 2. Expand **Boss-Extrude1** in the Feature Manager and **Sketch1** to select sketch, **Fig. 5**.

Step 3. Click **Features** Features on the Command Manager toolbar.

Step 4. Click **Extruded Cut** Extruded Cut on the Features toolbar.

Step 5. In the Cut-Extrude Property Manager set:
under Direction 1, **Fig. 6**
End Condition **Blind**
Depth **2.1**
Reverse Direction
click **Draft** **4°**
under Selected Contours
delete Sketch1 contour
click **small circle in Sketch**, **Fig. 7**
click OK .

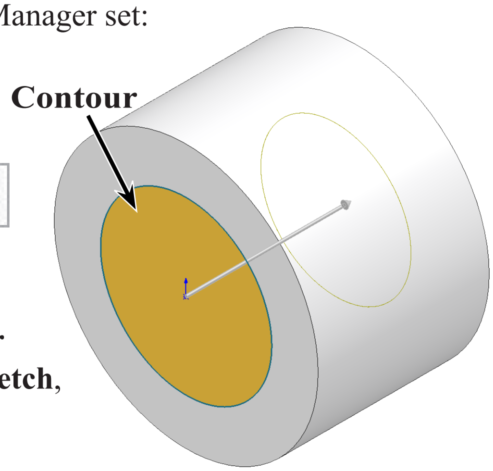


Fig. 7

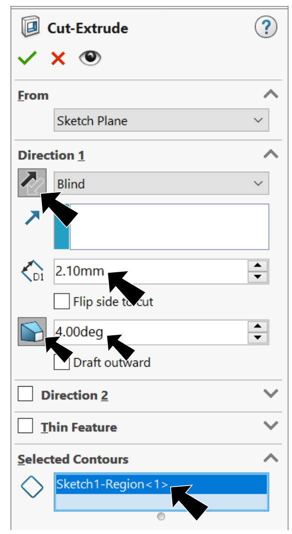


Fig. 6

D. Chamfer.

Step 1. Click **Isometric** on the Standard Views toolbar. (**Ctrl-7**)

Step 2. Click **Chamfer** Chamfer on the Features toolbar.

Step 3. In the Chamfer Property Manager set:
under Chamfer Type, **Fig. 8**
select **Angle Distance**
click **circular edge**, **Fig. 9**
under Chamfer Parameters
Distance **.65**
Angle **45°**
click OK .

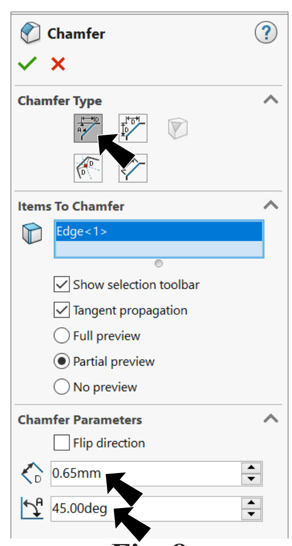


Fig. 8

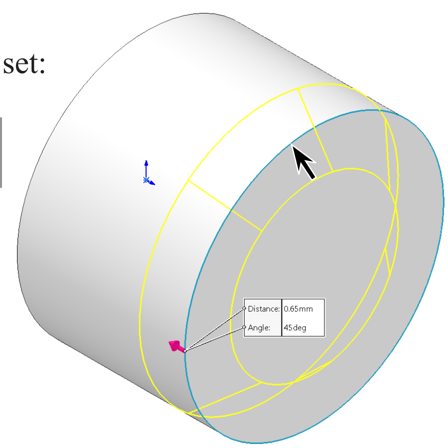
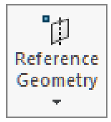


Fig. 9

Step 4. Save (**Ctrl-S**).

E. Mate Reference.

Step 1. Click **Reference Geometry** 

on the Features toolbar and **Mate Reference** from the menu.

Step 2. In the Mate Reference Manager set:
under **Primary** Reference Entity
click a **cylindrical face**, **Fig. 10**
click OK .

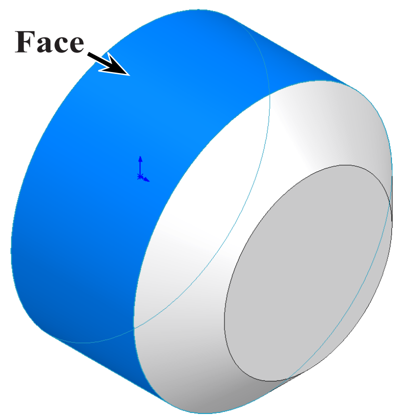


Fig. 11

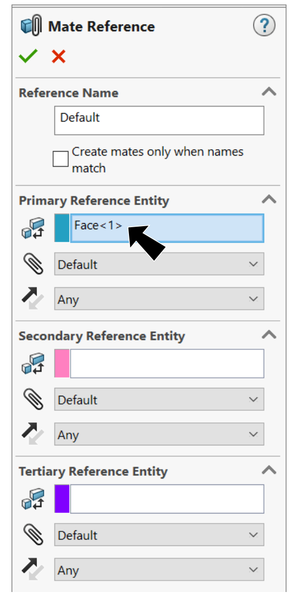


Fig. 10

F. Save Appearance: Green.

Step 1. Click part, click **Appearance Callout** on the context toolbar and click **AXLE CAP**, **Fig. 12**.

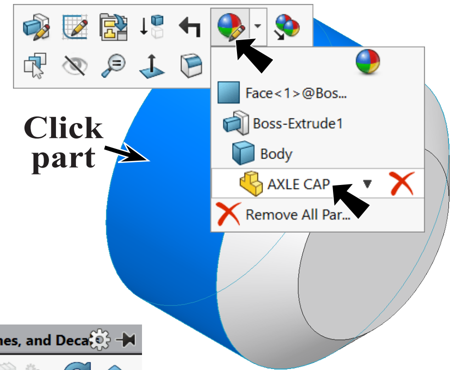


Fig. 12

Step 2. In the Appearances Task pane, expand **Plastic**, click **Medium Gloss** and in the lower pane select **white medium gloss plastic**, **Fig. 13**.

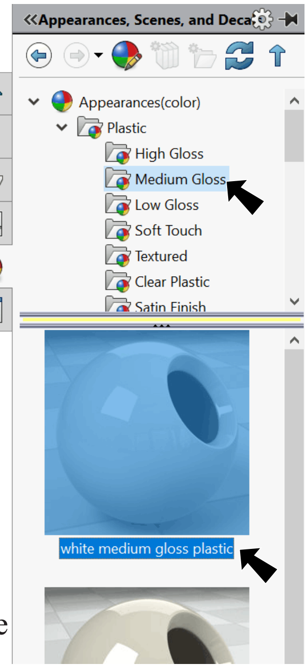


Fig. 13

Step 3. In the Appearances Property Manager set:
click **Advanced** button
under Color, **Fig. 14**
set **RGB values**
R 206
G 203
B 117
under Appearance
click **Save Appearance** button
key-in **army green plastic** for file name
Navigate to **My Documents/ Tech Ed 24-25/CWV** folder
click **Save**, **Fig. 15**.
Click **Yes** in the **make folder visible** message, **Fig. 16**.
Click OK.

Tip: Green appearance appears at bottom of Appearances, **Fig. 17**.

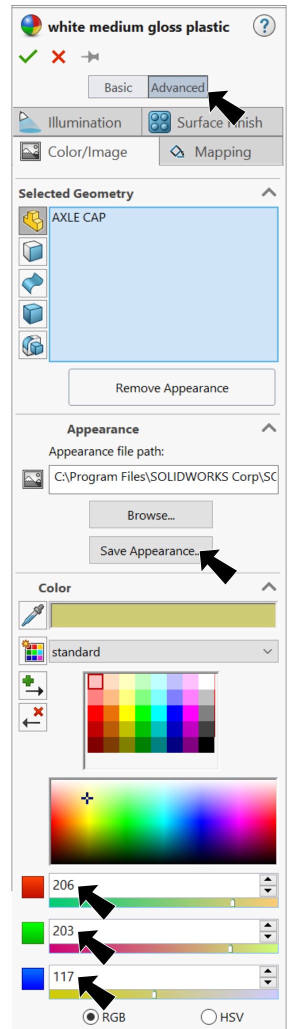


Fig. 14

Step 4. Save (**Ctrl-S**).

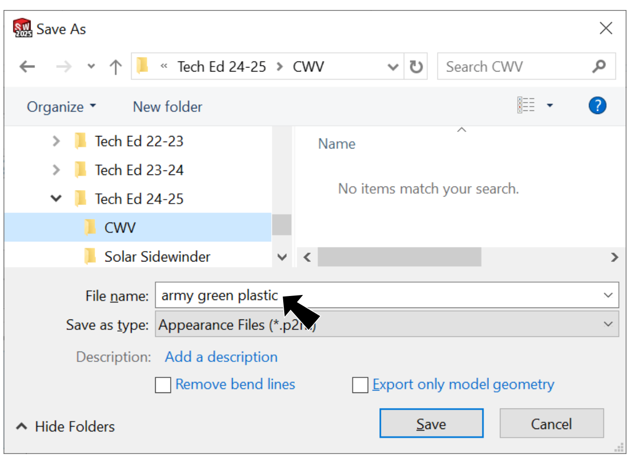


Fig. 15

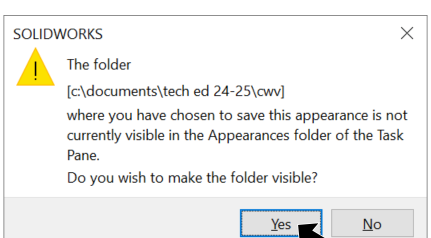


Fig. 16

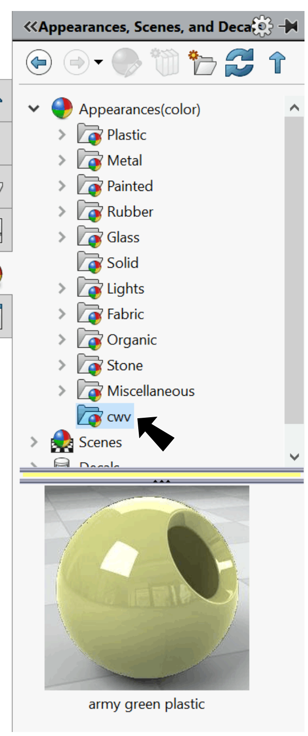


Fig. 17

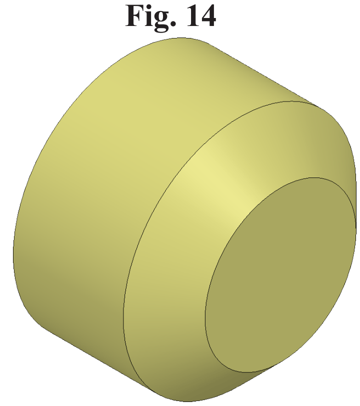


Fig. 18