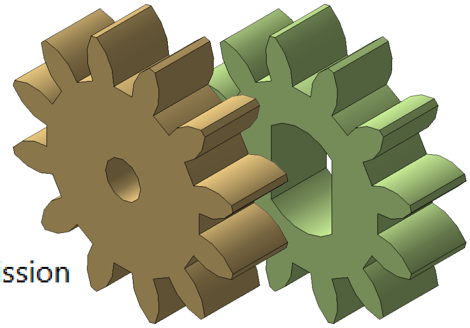
Chapter 8 Cluster Wheel Vehicle

Sprockets 12T 1M Front and Rear



A. Toolbox New Part Spur Gear 12T.

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

Step 2. Expand the **Toolbox** Toolbox
Expand **ANSI Metric** folder ANSI Metric
Expand **Power Transmission** folder Power Transmission
Click **Gears** folder Gears

Step 3. In the lower pane, **right click Spur Gear** and click **Create Part** from menu, **Fig. 1**.

Step 4. In the Component Property Manager set:
under Properties, **Fig. 2**
Module: 1
Number of Teeth: 12
Pressure Angle: 20
Face Width: 3.4
Hub Style: One Side
Hub Diameter: 5
Overall Length: 5
Nominal Shaft Diameter: 2
Keyway: None
click OK .

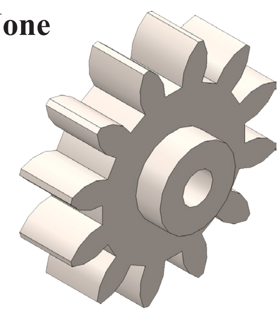


Fig. 3

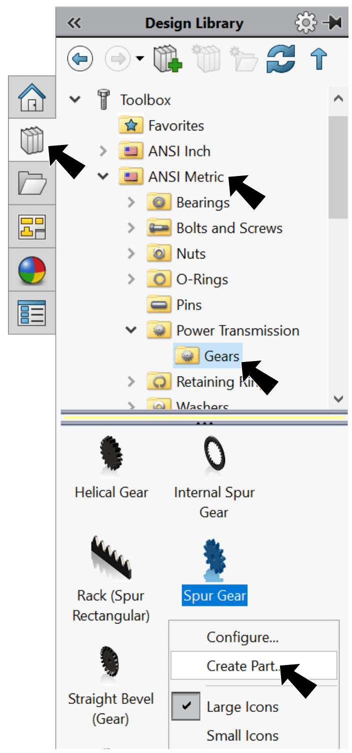


Fig. 1

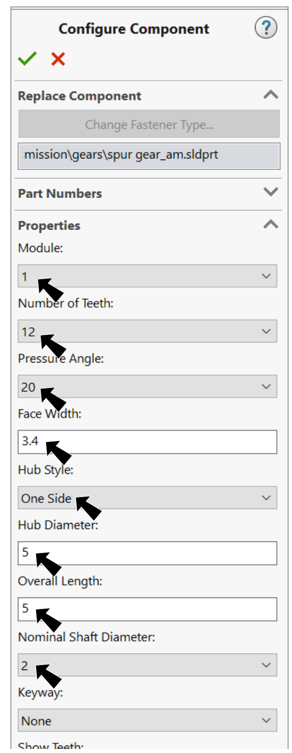


Fig. 2

B. Save as "FRONT SPROCKET 12T".

Step 1. Click File Menu > Save As.

Step 2. In the Save As dialog box:
key in **FRONT SPROCKET 12T** for file name.

Navigate to your **My Documents/ Tech Ed 24-25/CWV** folder
click **Save**, **Fig. 4**.

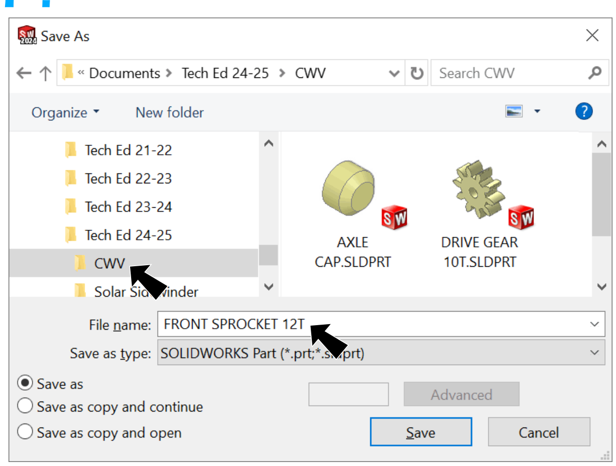


Fig. 4

C. Change Bore Diameter.

Step 1. Click **Bore** in the Feature Manager and click **Edit Sketch** on the context toolbar, **Fig. 5**.

Step 2. Change **diameter to 2.17**, **Fig. 6**.

Step 3. Click **Exit Sketch** on the Sketch toolbar.

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

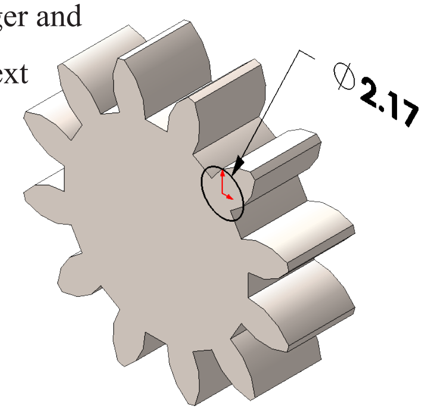


Fig. 6

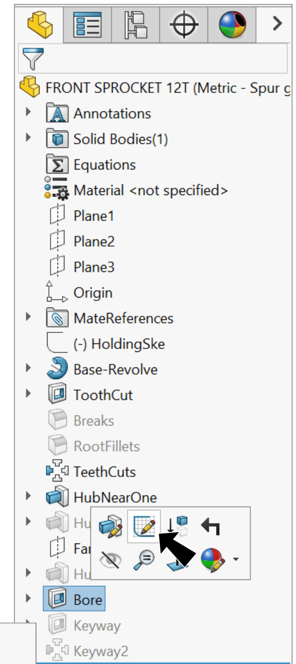


Fig. 5

D. Appearance: Brown Plastic.

Step 1. Click part, click **Appearance Callout** on the context toolbar and click **FRONT SPROCKET 12T**, **Fig. 7**.

Step 2. In the Appearances Task pane, expand **Plastic**, click **Medium Gloss** and in the lower pane select **green medium high gloss plastic**, **Fig. 8**.

Step 3. In the Appearances Property Manager:
under Color, **Fig. 9**
set **RGB values**
R 174
G 149
B 95
click OK .

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

Click part

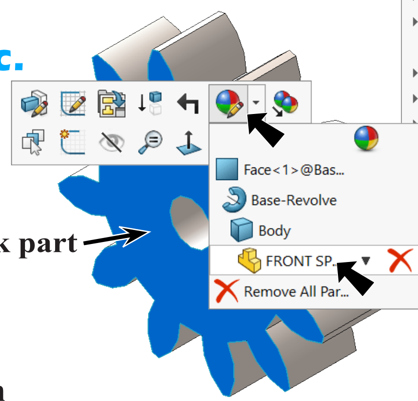


Fig. 7

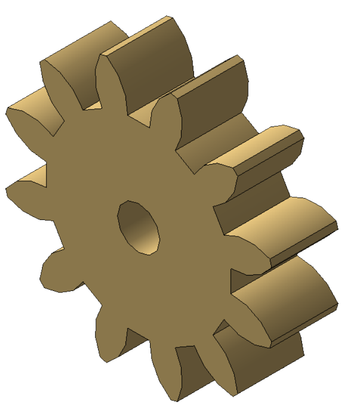


Fig. 10

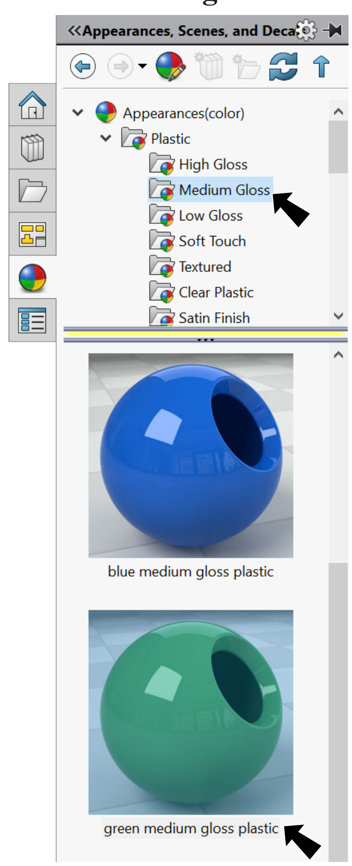


Fig. 8

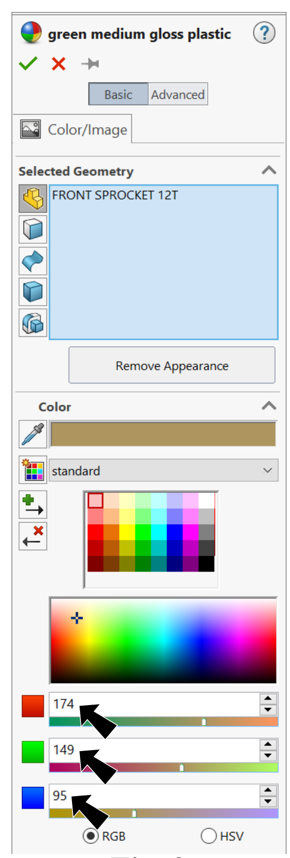


Fig. 9

E. Save as "REAR SPROCKET 12T".

Step 1. Save.
Use **Ctrl-S** to save FRONT SPROCKET 12T. **Very important to save here**.

Step 2. Click File Menu > Save As.

Step 3. Key-in **REAR SPROCKET 12T** for the filename.
You now have two sprocket (gear) files, FRONT and REAR. Next, we **change Bore of** Rear Sprocket.

F. Suppress Hub.

Step 1. Click **HubNearOne** in the Feature Manager and click **Suppress** on the context toolbar, **Fig. 11**.

G. Change Bore.

Step 1. Click **Bore** in the Feature Manager and click **Edit Sketch** on the context toolbar, **Fig. 12**.

Step 2. Click **Normal To** on the Standard Views toolbar. (**Ctrl-8**)

Step 3. Change **diameter dimension to 5.45**, **Fig. 13**.

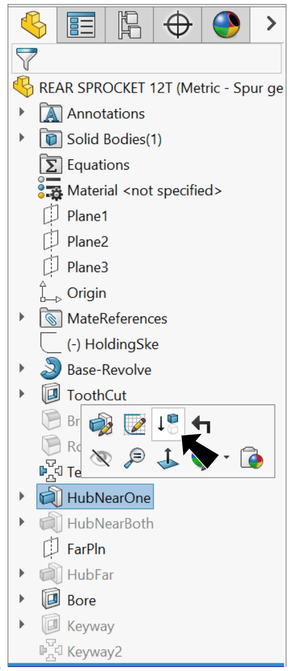


Fig. 11

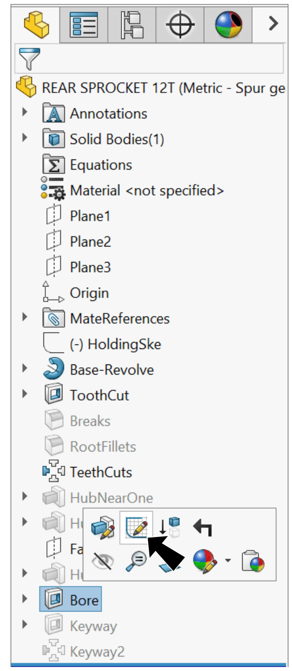


Fig. 12

Step 4. Click **Line** (**L**) on the Sketch toolbar.

Step 5. Sketch a **chord vertically within the circle**. And a **vertical diameter** line. **Right click** the vertical diameter line and click **Construction Geometry** on the context toolbar, **Fig. 14**.

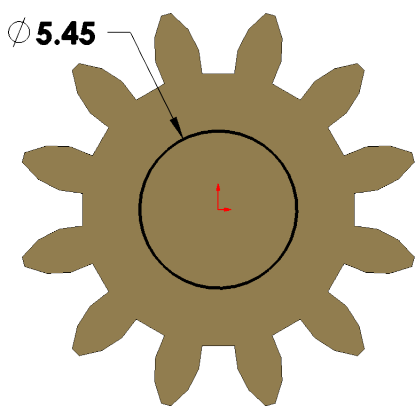


Fig. 13

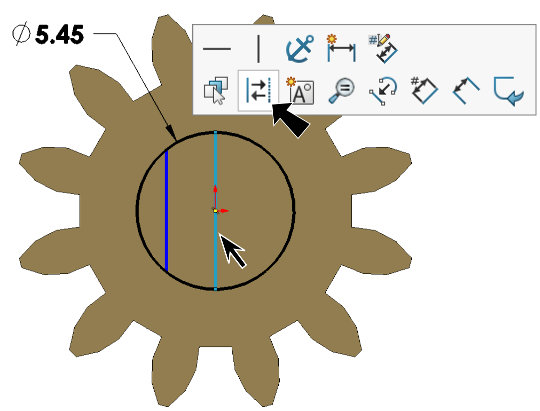


Fig. 14

Step 6. **Ctrl drag** a selection to **left** to **select both lines**, **Fig. 15**.

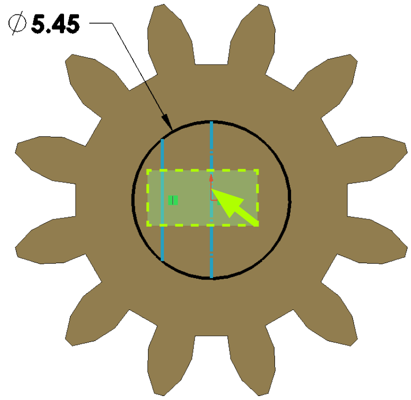


Fig. 15

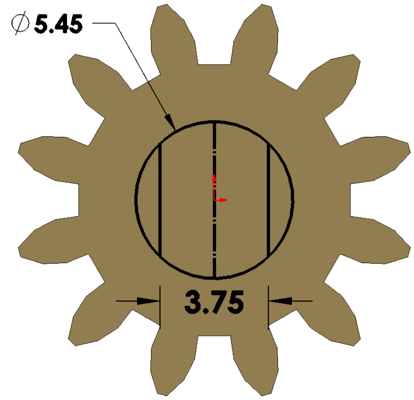
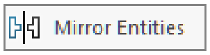
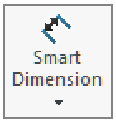


Fig. 16

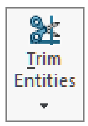
Step 7. Click **Mirror Entities** 

on the Sketch toolbar.

Step 8. Click **Smart Dimension** 

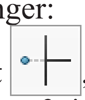
(**S**) on the Sketch toolbar.

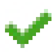
Step 9. Add **3.75** dimension, **Fig. 16**.

Step 10. Click **Trim Entities** 

(**S**) on the Sketch toolbar.

Step 11. In the Trim Property Manger:

select **Trim to closest** , **Fig. 17**
Trim the two segments of circle outside the lines, **Fig. 18**.
Click segments to trim.
Results shown in **Fig. 19**.

Click OK  when done.

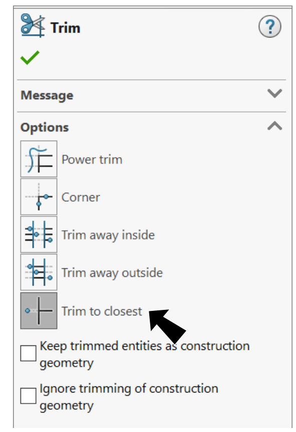


Fig. 17

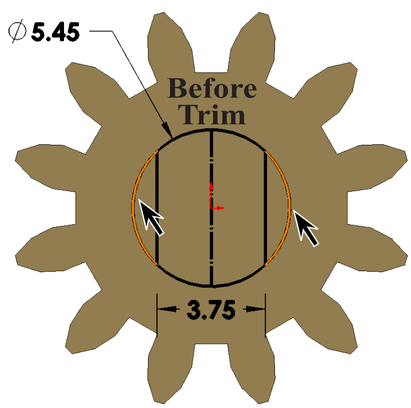


Fig. 18

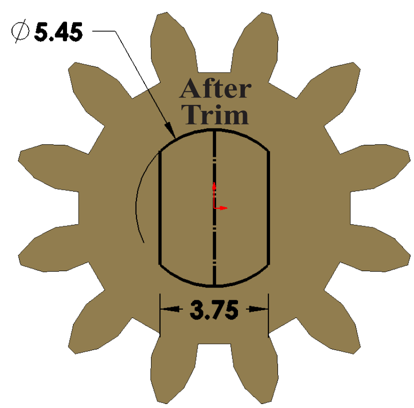


Fig. 19

Step 12. Click **Exit Sketch** 

on the Sketch toolbar, **Fig. 20**.

Step 13. Save  (**Ctrl-S**).

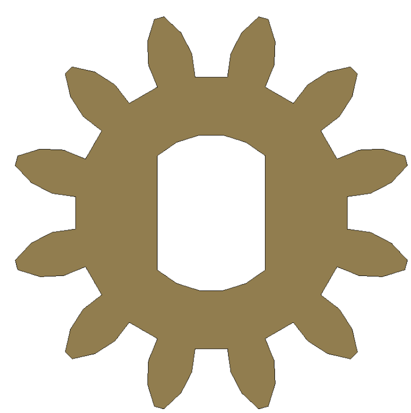


Fig. 20

H. Appearance: Green Plastic.

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

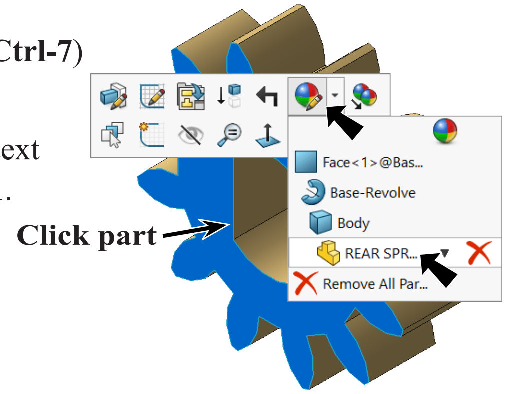


Fig. 21

Step 2. Click part, click **Appearance Callout** on the context toolbar and click **REAR SPROCKET 12T**, **Fig. 21**.

Step 3. In the Appearances Property Manager set:
under Color, **Fig. 22**
set **RGB values**
R 148
G 176
B 111
click OK .

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

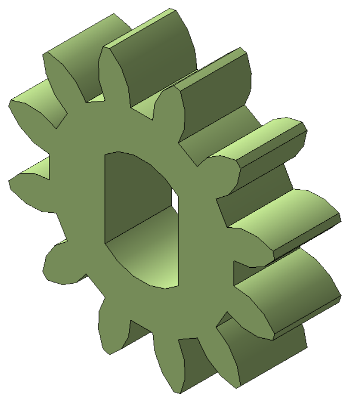


Fig. 23

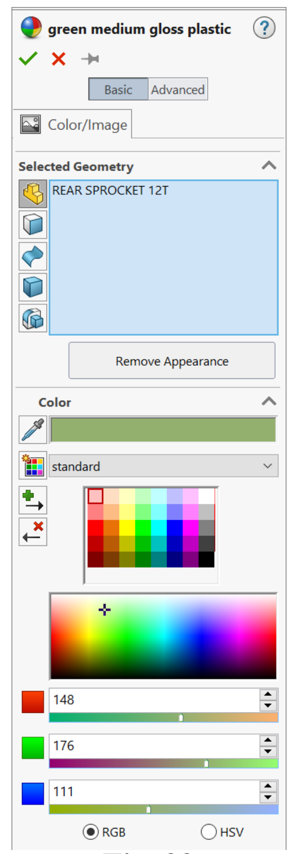


Fig. 22