







A. Sketch Construction Lines.

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

Step 2. Click **Front**  (plane) in the Feature Manager and click **Sketch**  from the Content toolbar, **Fig. 1**.

Step 3. Click **Centerline**  (S) in the **Line flyout**  on the Sketch toolbar.

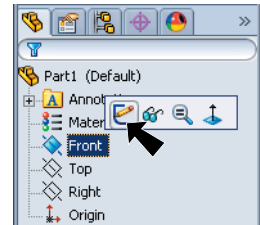


Fig. 1


Step 4. Starting at the Origin , draw a vertical centerline up from the Origin and construction lines as shown in **Fig. 3**. **Right click drawing and click End chain** from menu to restart construction line. Don't forget the horizontal construction line out from the Origin. Use the inferencing line, the dotted line that appears when you draw.



Fig. 2

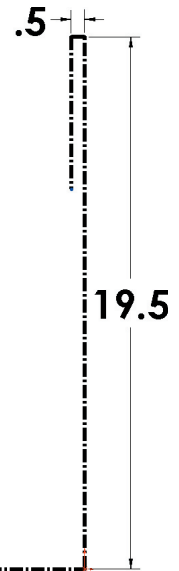


Fig. 3

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

Step 6. Add the dimensions, **Fig. 4**.

Step 7. Click **Zoom to Fit**  (F) on the View toolbar.

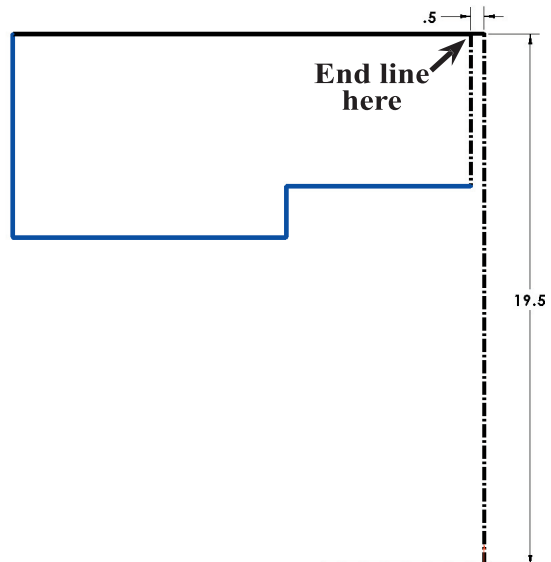


Fig. 4

B. Save as "REAR TIRE".

Step 1. Click File Menu > Save As.

Step 2. Key-in **REAR TIRE** for the filename and press ENTER.

C. Sketch Lines.

Step 1. Click **Line**  (L) on the Sketch toolbar.

Step 2. Draw the lines as shown in **Fig. 4**. Use the inferencing line, the dotted line that appears when you draw to keep lines vertical or horizontal.

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

Step 4. Add dimensions as shown in **Fig. 5**.


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

D. 3 Point Arc.

Step 1. Click **3 Point Arc**  (S) in the Arc flyout  on the Sketch toolbar.

Step 2. Draw an arc between the Position 1, Position 2 and Position 3 in **Fig. 6**. To draw the arc, first click Position 1, then Position 2. Swing the arc out to Position 3 and click. Position 1 is the inside construction line endpoint.

Step 3. **Right click drawing and click Select** from menu to unselect Arc Tool.

Step 4. **Ctrl click arc and outside construction line** to select both, **Fig. 7**. To Ctrl click, click arc, then hold down the Ctrl key and click **top construction line**. **Release Ctrl key** and click **Make Tangent**  on the Content menu, **Fig. 7** and **Fig. 8**.

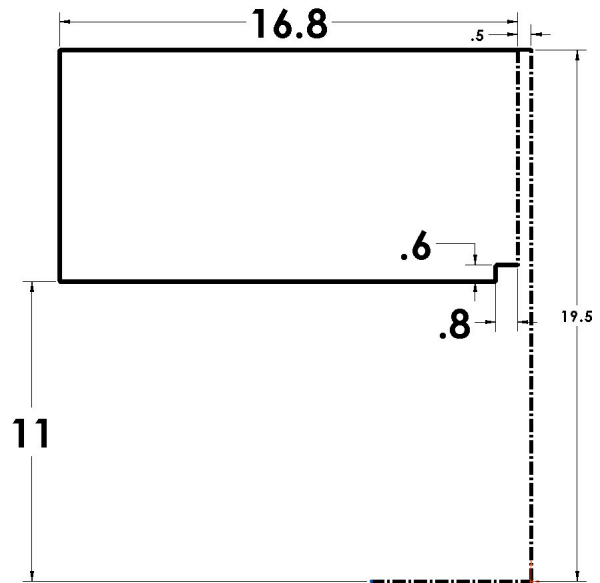


Fig. 5

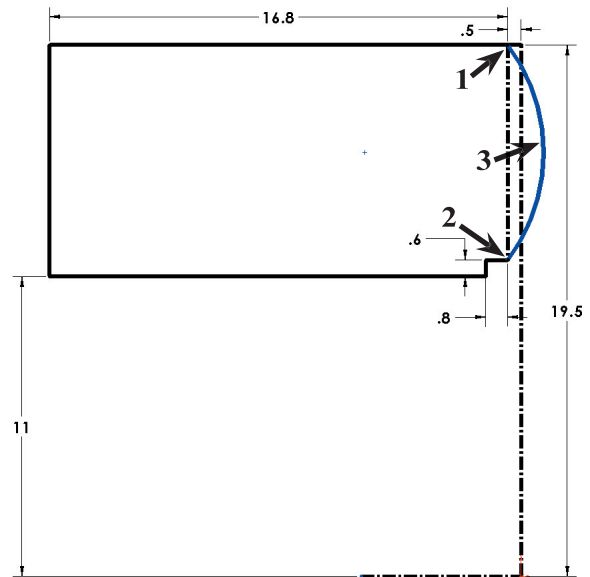


Fig. 6

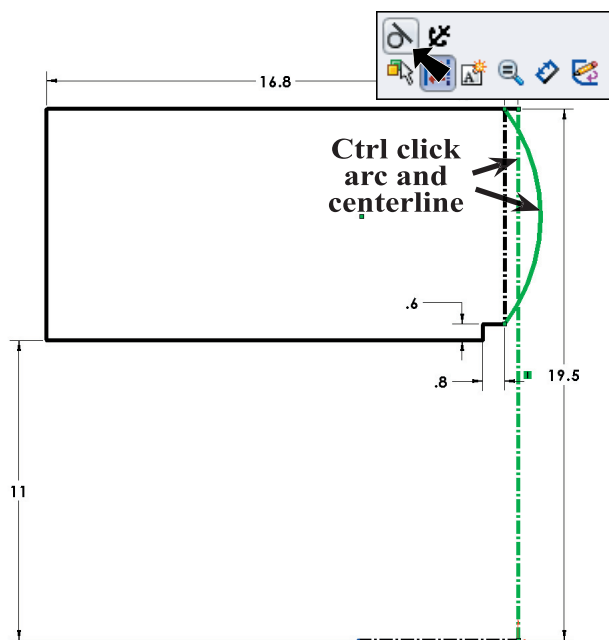


Fig. 7

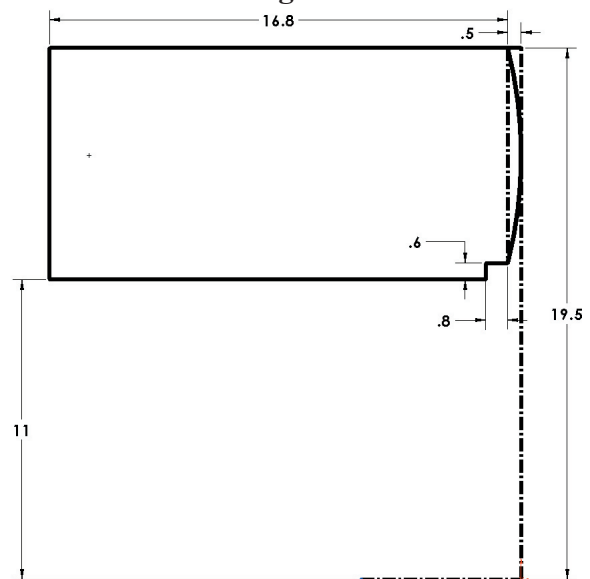
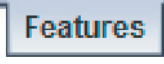




Fig. 8

E. Revolved Boss/Base.

Step 1. Click **Features**  on the Command Manager toolbar.

Step 2. Click **Revolved Boss/Base**  on the Features toolbar.

Step 3. In the Revolve Property Manger for the Axis of Revolution

, click the **bottom construction line of sketch**, **Fig. 9**. Your bottom line of sketch does not have to show in Property Manager as Line4. Click OK .

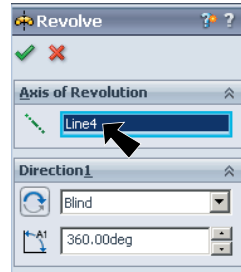



Fig. 9

Step 4. Click Zoom to Fit  (F) on the View toolbar.

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

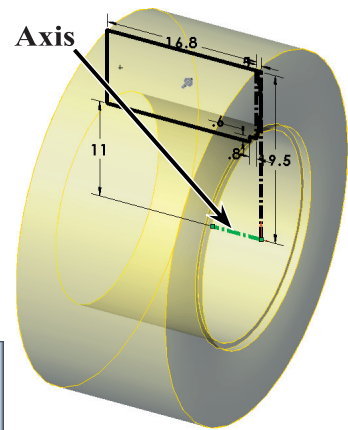





Fig. 10




Fig. 11

F. Sketch Construction Circle.

Step 1. Click **Right**  (plane) in the Feature Manager and click **Sketch**  from the Content toolbar, **Fig. 12**.

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

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

Step 4. Draw a circle starting at the Origin , **Fig. 13**.

Step 5. Click circle and click **Construction Geometry**  on the Content menu, **Fig. 13**.

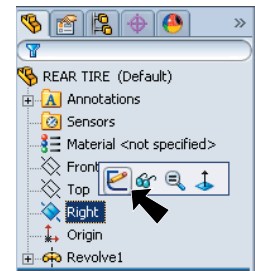


Fig. 12

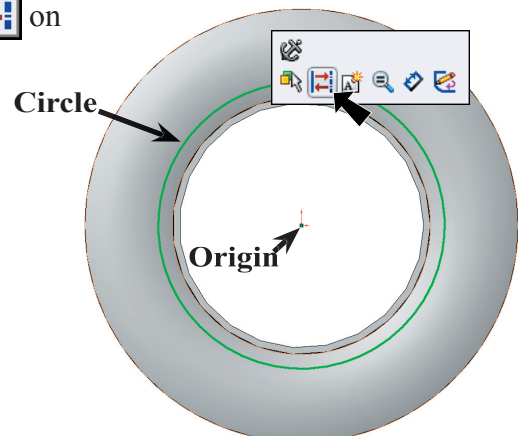


Fig. 13

Step 6. Click **Smart Dimension**  (S) on the Sketch toolbar.

Step 7. Dimension **diameter 25**, **Fig. 14**.

Step 8. Save. Use **Ctrl-S**.

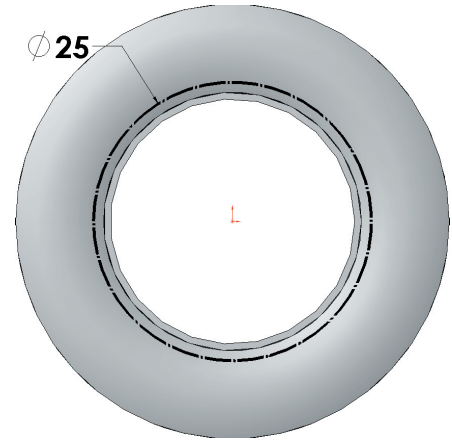


Fig. 14

G. Split Circle into Arcs.

Step 1. Click Tools Menu > Sketch Tools > Split Entities. (**Alt-T** then **T I**)

Step 2. Click **left quadrant point of circle** to split at that point, **Fig. 15**. The point should be directly to the left of the Origin.

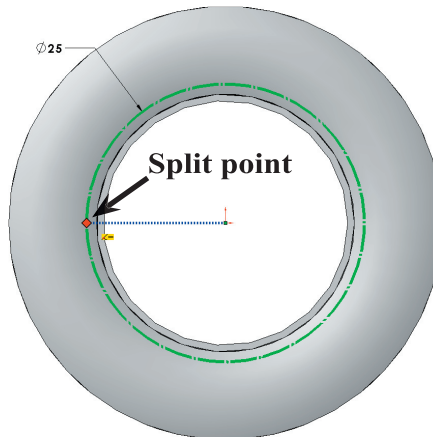


Fig. 15

Step 3. Click **right quadrant point of circle** to split at that point, **Fig. 16**. The point should be directly to the right of the Origin.

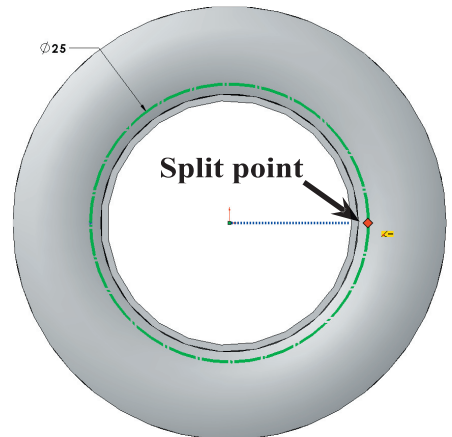



Fig. 16

Step 4. The circle is now split into two arcs. Click **Cancel**  in the Split Entities Property Manager, **Fig. 17**.

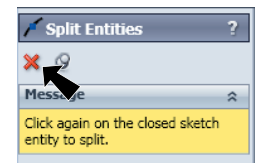


Fig. 17

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

H. Text on Top Arc.

Step 1. Click **Text Tool**  on the Sketch toolbar.

Step 2. In the Sketch Text Property Manager set:
 under Curves, **Fig. 18**
 click the **top arc** in sketch,
Fig. 19
 under Text
 click in the box and lock the
 Caps Lock on keyboard and key-in
CUDACOUNTRY, **Fig. 18**

Center Align , **Fig. 18**

Flip Vertical 

Flip Horizontal 

uncheck Use document font
checkbox, **Fig. 18**

click Font button, **Fig. 18**

Step 3. In the Choose Font dialog box,
Fig. 20 select:
 under Font:
Franklin Gothic Heavy
 under Font Style:
Bold Italic
 under Height:
Points and set points to **8**

click OK button

click OK .

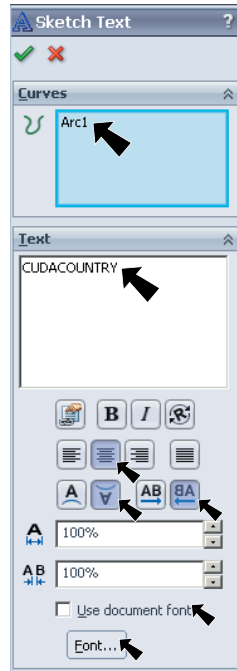


Fig. 18

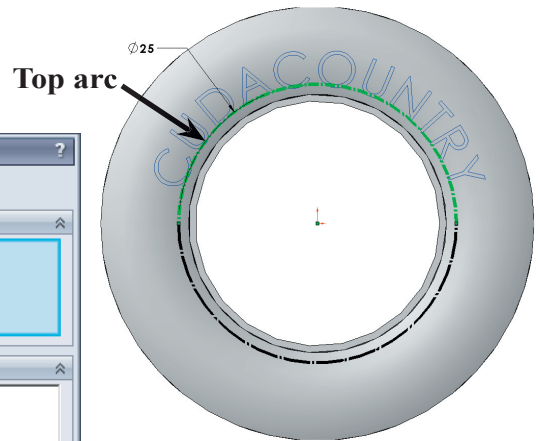


Fig. 19

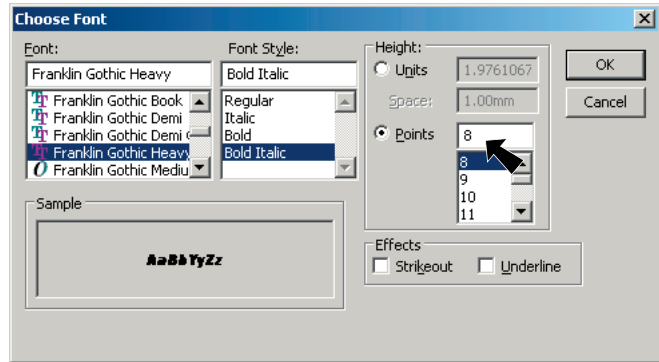


Fig. 20

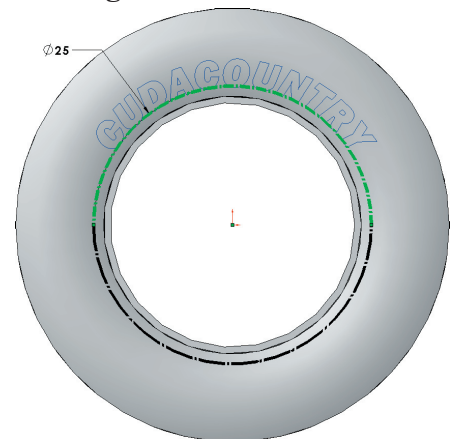
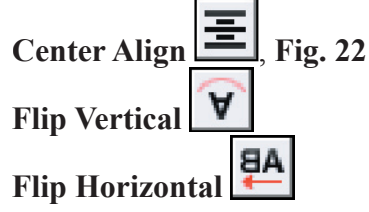


Fig. 21

I. Text on Bottom Arc.

Step 1. Click **Text Tool**  on the Sketch toolbar.

Step 2. In the Sketch Text Property Manager set:
 under Curves, **Fig. 22**
 click the **bottom arc** in sketch, **Fig. 23**
 under Text
 click in the box and lock the Caps Lock on keyboard and key-in **CUDACOUNTRY**, **Fig. 22**



uncheck Use document font checkbox, **Fig. 22**

click Font button

Step 3. In the Choose Font dialog box, **Fig. 24** select:
 under Font:
Franklin Gothic Heavy
 under Font Style:
Bold Italic
 under Height:
Points and set points to **8**

click OK button
 click OK 

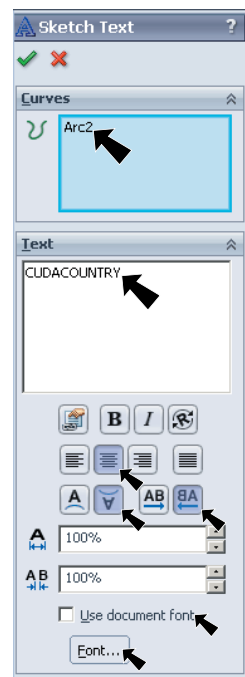


Fig. 22

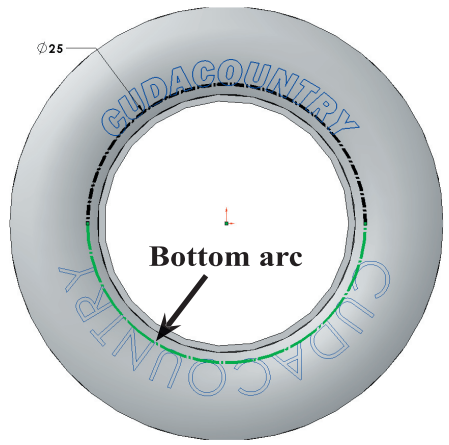


Fig. 23

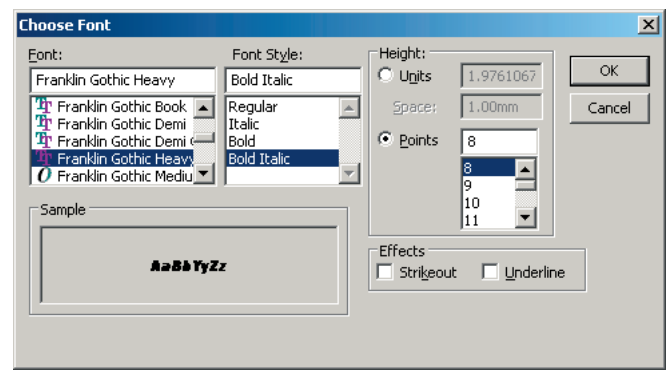


Fig. 24

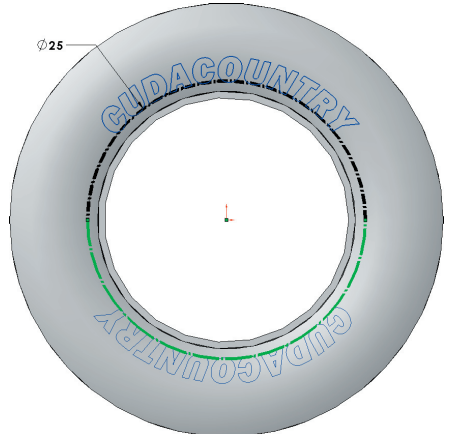
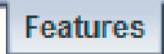


Fig. 25

J. Extrude Letters.

Step 1. Click **Features**  on the Command Manager toolbar.

Step 2. Click **Extruded Boss/Base**  on the Features toolbar.

Step 3. Click **Front**  on the Standard Views toolbar. (**Ctrl-1**)

Step 4. Zoom in around **extruded letters**, **Fig. 26**. To **zoom**, hold down **Shift key** and drag with middle mouse button (wheel). To **pan**, hold down **Ctrl key** and drag with middle mouse button (wheel).

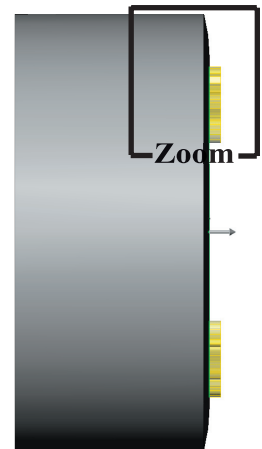


Fig. 26

Step 5. In the Property Manager, **Fig. 27** set:
under **From**

Start Condition to **Offset**

Offset Value to 1

click **Reverse Direction** 

under **Direction 1**

End Condition to **Offset From Surface**

for **Face/Plane** click the **outside face of the tire**, **Fig. 28**

Depth  **D1 to .3**

check **Reverse offset**

click **OK** , **Fig. 29**.

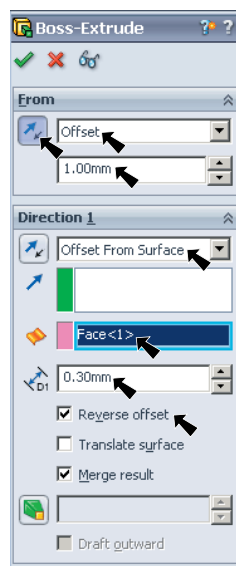


Fig. 27

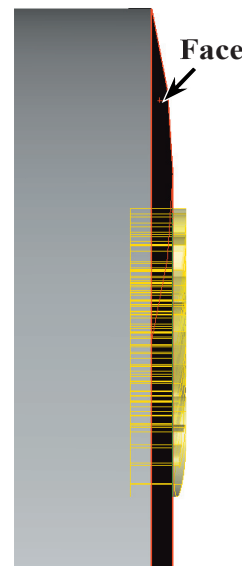


Fig. 28

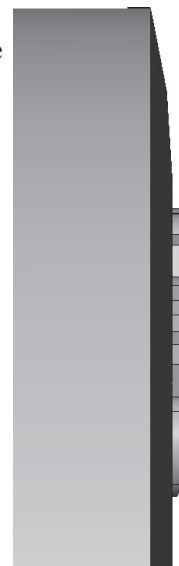


Fig. 29

K. Material Rubber.

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

Step 2. **Right click** **Material**  in the Feature Manager and click **Edit Material**, **Fig. 31**.

Step 3. **Expand Rubber** in the material tree and select **EPDM Durometer**. Click **Apply** and **Close**.

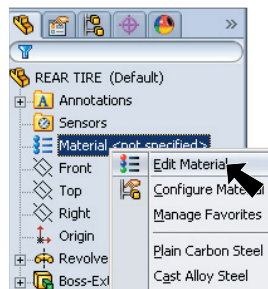


Fig. 31

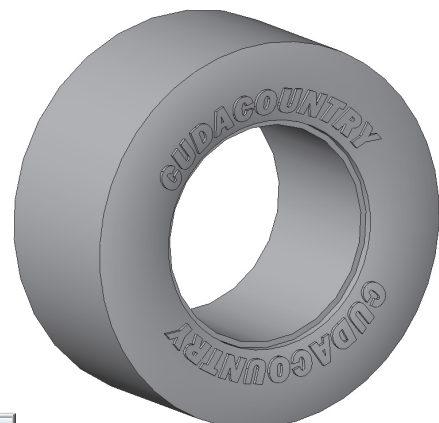




Fig. 30

L. Letters Appearance.

Step 1. Click an extruded letter to select the extrude feature, click **Appearance Callout**  on the Content menu and click **Boss-Extrude1** , **Fig. 32**.

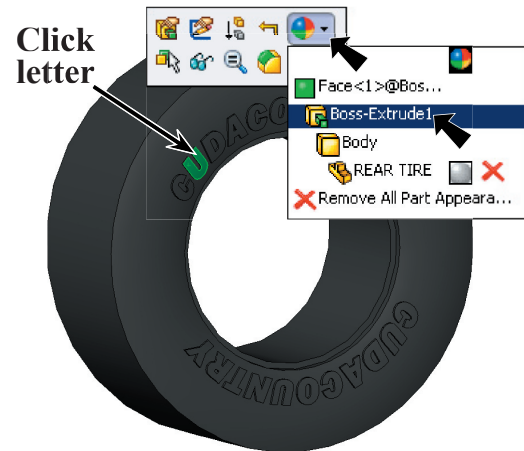



Fig. 32

Step 2. In the Color Property Manager, under Color: click **White** swatch, **Fig. 33** and OK  in the Property Manager, **Fig. 34**.

Step 3. Save. Use **Ctrl-S**.



Fig. 34

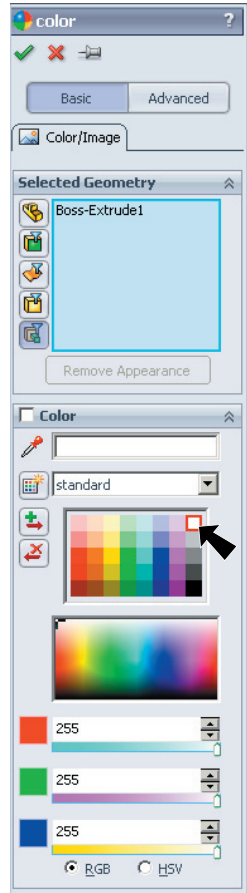


Fig. 33