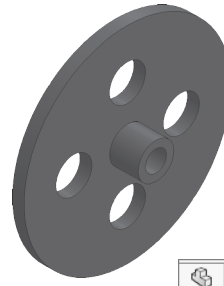


CO2 Shell Car Wheel GT-F



A. Sketch.

- Step 1. Click File Menu > New, click **Part Metric** and OK.
- Step 2. Click **Front Plane** in the Feature Manager and click **Sketch** on the context toolbar, **Fig. 1**.
- Step 3. Click **Line** (L) on the Sketch toolbar.
- Step 4. Sketch the 6 lines and sketch the **vertical centerline up from the Origin** last, **Fig. 2**. Before moving cursor ways from line click **Construction Geometry** on context toolbar.

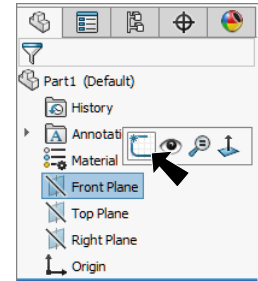


Fig. 1
Drag selection

- Step 5. **Drag selection around the sketch** to select all lines, **Fig. 3**. To drag selection, click above and to left of sketch and drag down and to right to drag around all.

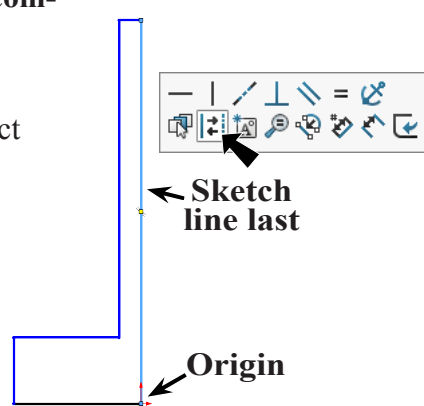


Fig. 2



Fig. 3

- Step 6. Click **Mirror Entities** on the Sketch toolbar, **Fig. 4**.



- Step 7. Click **Smart Dimension** (S) on the Sketch toolbar.

- Step 8. Add dimensions, **Fig. 5**.

B. Save as "WHEEL GT-F".

- Step 1. Click File Menu > Save As.
- Step 2. Key-in **WHEEL GT-F** for the filename and press ENTER.

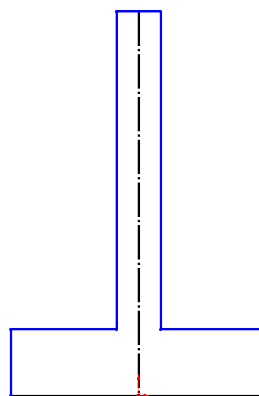


Fig. 4

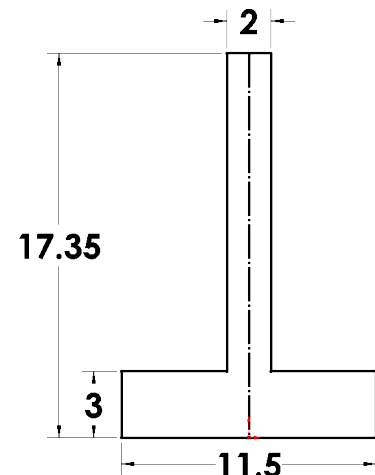




Fig. 5

C. Revolve.

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 Axis of Revolution ,
 click **bottom line of sketch**, **Fig. 7**
 click OK .

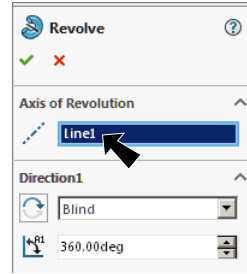


Fig. 6

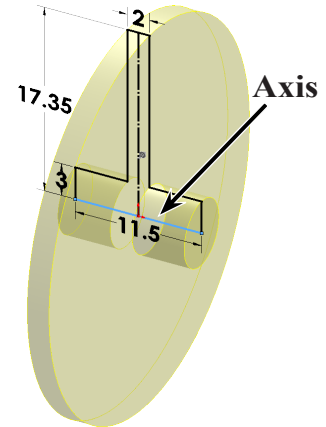





Fig. 7

D. Hole for Axle.

Step 1. Click the **side face of hub** and click **Sketch**  on the context toolbar, **Fig. 8**.

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

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

Step 4. Sketch a circle for the hole at Origin , **Fig. 9**.


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

Step 6. Dimension axle hole **diameter 3.5**, **Fig. 9**.

 3.5

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

Step 8. Click **Extruded Cut**  on the Features toolbar.

Step 9. In the Cut-Extrude Property Manager set:
 under Direction 1, **Fig. 10**
 End Condition **Through All**
 click OK .

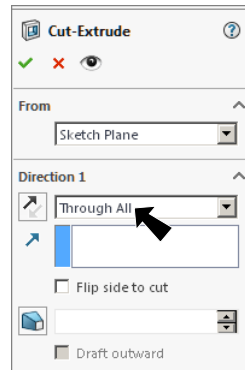


Fig. 10

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

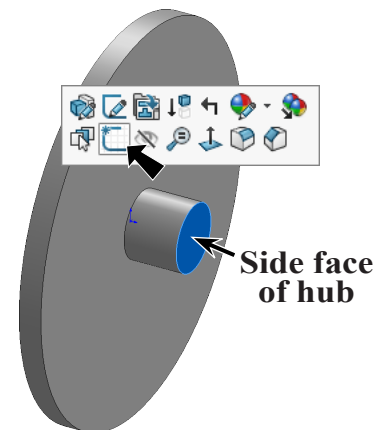


Fig. 8

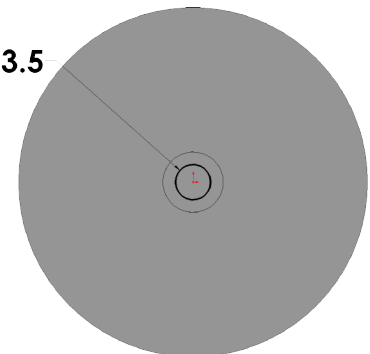


Fig. 9

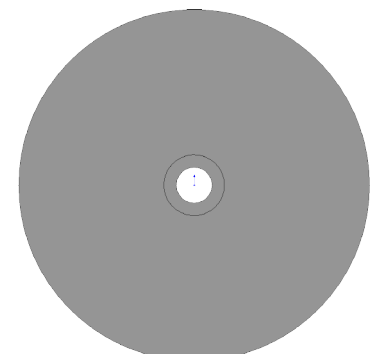



Fig. 11

E. Hole in Rim.

Step 1. Click the **side face of wheel** and click **Sketch**  on the context toolbar, **Fig. 12**.

Step 2. Click **Circle**  (S) on the Sketch toolbar.

Side face of wheel

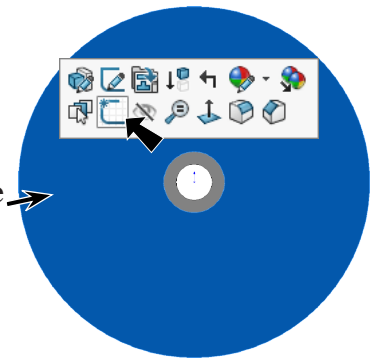




Fig. 12

Step 3. Sketch a circle for the hole above the Origin , **Fig. 13**.

Step 4. **Right click graphics area and click Select** from menu to unselect Circle tool.

Step 5. **Ctrl click centerpoint of circle and Origin**  to select both. Release Ctrl key and click **Make Vertical**  on the context toolbar, **Fig. 14**.

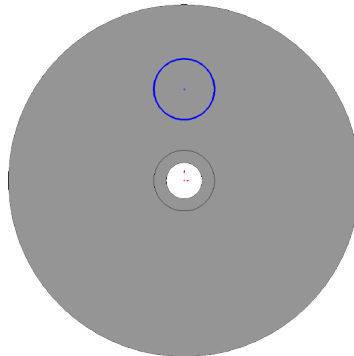


Fig. 13

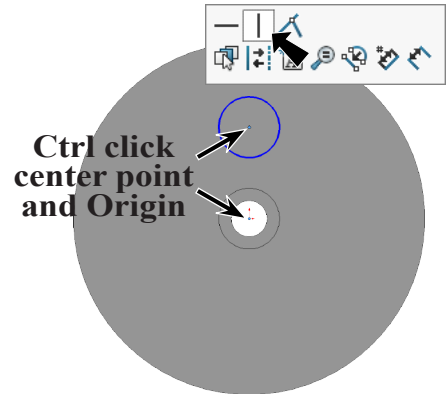




Fig. 14

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

Step 7. Add dimensions, **Fig. 15**.

Step 8. Click **Features**  on the Command Manager toolbar.

Step 9. Click **Extruded Cut**  on the Features toolbar.

Step 10. In the Cut-Extrude Property Manager set: under Direction 1, **Fig. 16**
End Condition **Through All**
click OK .

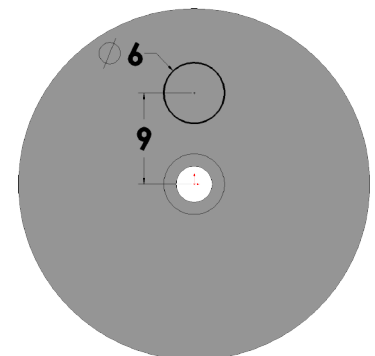


Fig. 15

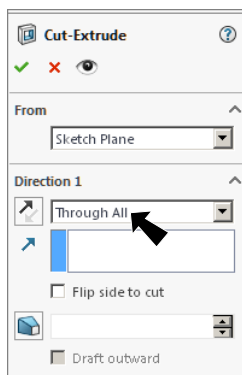


Fig. 16

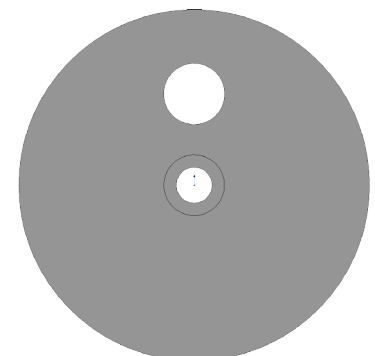

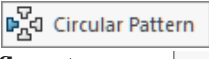




Fig. 17

F. Circular Pattern for Hole.

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

Step 2. Click **Circular Pattern**  in the **Linear Pattern** flyout  on the Features toolbar. Click the **flyout arrow**  to select Circular Pattern.

Step 3. In the Circular Pattern Property Manager set:
under Features and Faces, **Fig. 18**

click **Cut-Extrude2** in graphics area, **Fig. 17** **Cut-Extrude2**

under Parameters

click in **Pattern Axes**  box
click **cylindrical face of hub**, **Fig. 19**

Number of Instances  **4**
check **Equal spacing**

click OK .

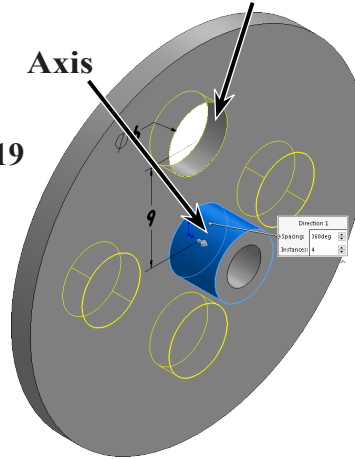


Fig. 19

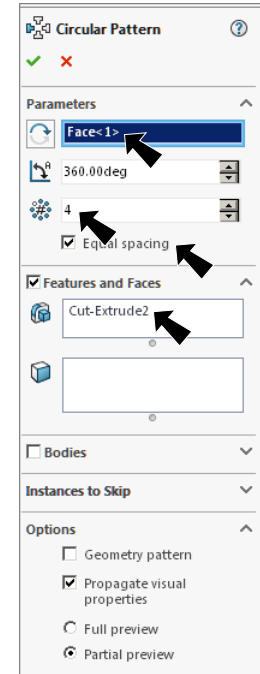
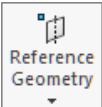


Fig. 18

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

G. Mate Reference.

Step 1. Click the **inside cylindrical face of axle hole** to select it, **Fig. 20**.

Step 2. Click **Reference Geometry**  on the Features toolbar and **Mate Reference** from the menu.

Step 3. In the Mate Reference Property Manager click OK , **Fig. 21**.

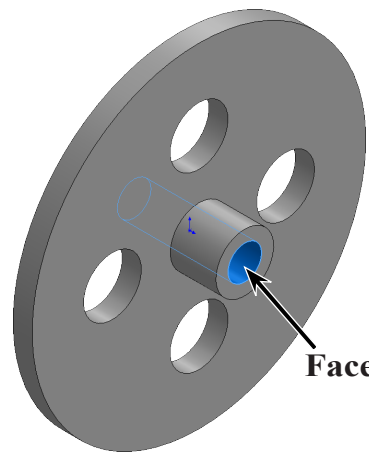


Fig. 20

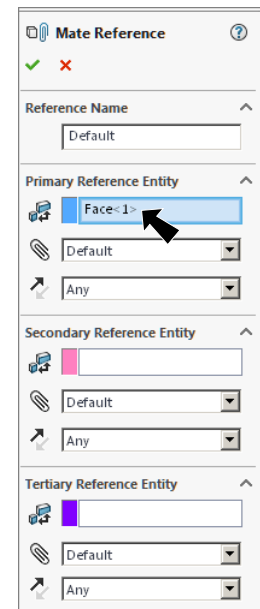



Fig. 21

H. Material POM Acetal Copolymer.

Step 1. Right click Material  in the Feature Manager and click **Edit Material**, Fig. 22.

Step 2. Expand **Plastics** in the material tree and select **POM Acetal Copolymer**, Fig. 23. Click **Apply** and **Close**.

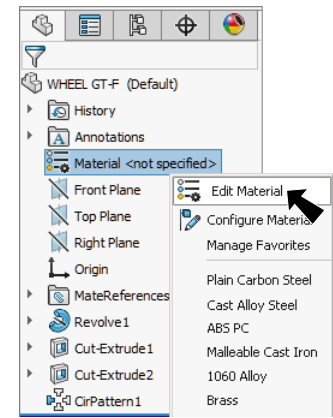


Fig. 22

I. Appearance Dark Gray.

Step 1. Click the part, click **Appearance Callout**  on the context toolbar and click **WHEEL GT-F** , Fig. 24.

Step 2. In the Appearances Task Pane expand **Plastic**, click **High Gloss** and in the lower pane click **dark grey high gloss plastic**, Fig. 26.

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

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

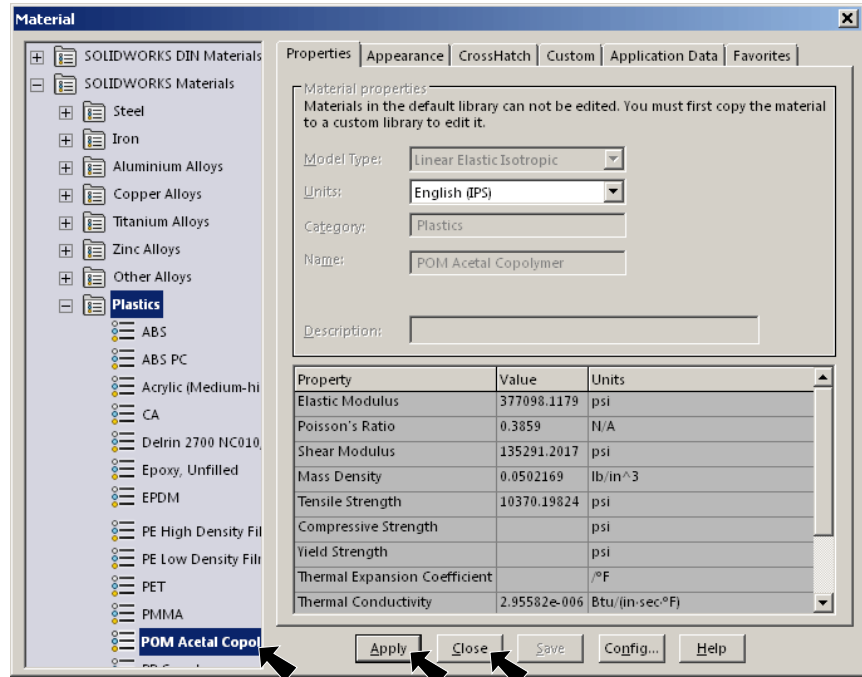


Fig. 23

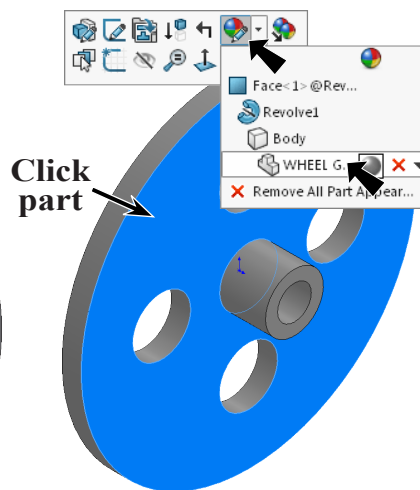


Fig. 24

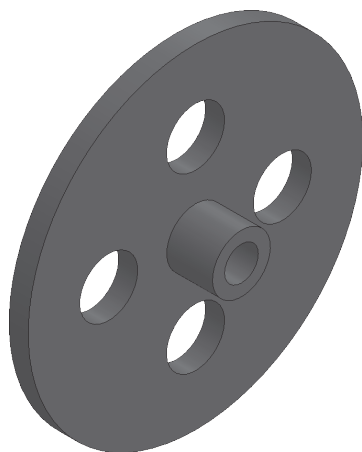


Fig. 26

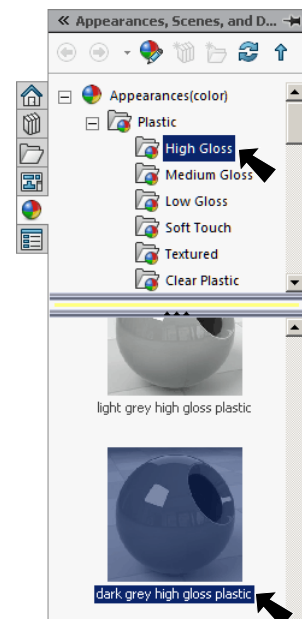


Fig. 25