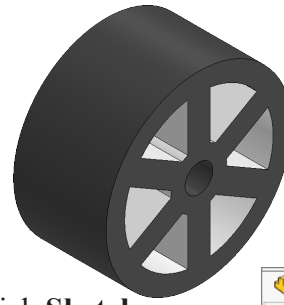




Speedway Wheel



A. Wheel.

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

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

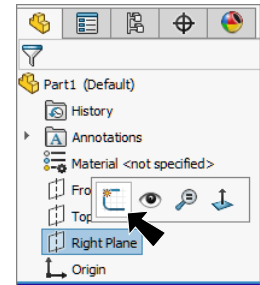



Fig. 1

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

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

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

Step 6. Dimension the circles, **Fig. 2**.

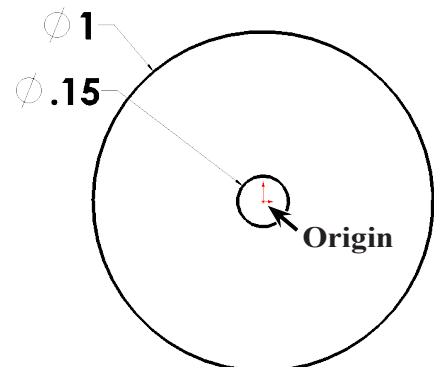



Fig. 2

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

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

Step 9. In the Boss-Extrude Property Manager set:
under Direction 1, **Fig. 3**

Depth  **D1** **.5**
click OK .

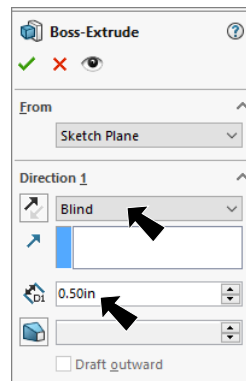


Fig. 3

Step 10. Click Zoom to Fit  (F) on the View toolbar.

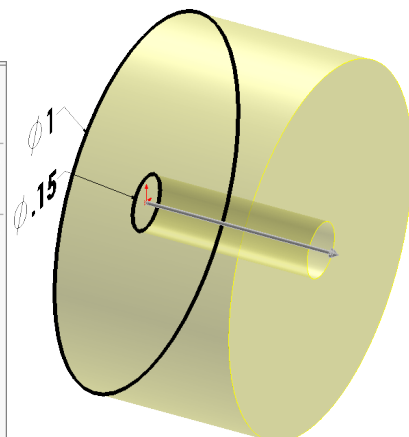



Fig. 4

B. Save as "WHEEL".

Step 1. Click File Menu > Save As.

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

C. Spoke Sketch.

Step 1. Click the **side face** and click **Sketch**  on the context toolbar, **Fig. 5**.

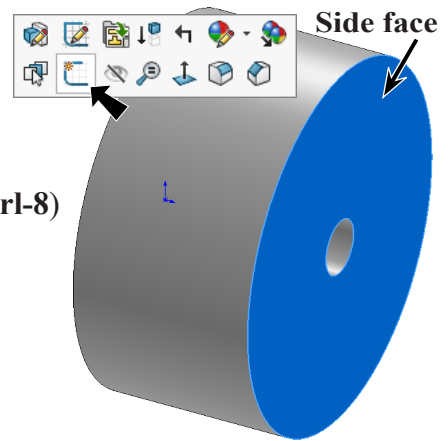




Fig. 5

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

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

Step 4. Sketch **two circles** starting at the Origin , **Fig. 6**.

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

Step 6. Dimension the circles, **Fig. 6**.

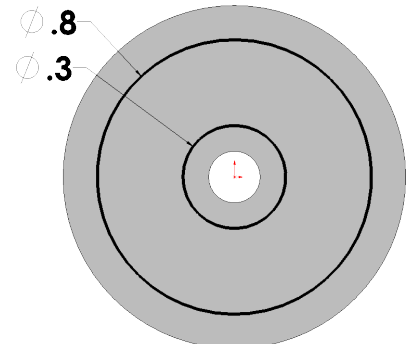



Fig. 6

Step 7. Click **Centerline**  in the **Line flyout**  on the Sketch toolbar.

Step 8. Sketch a vertical centerline from the Origin  **up to edge of Wheel**, **Fig. 7**.

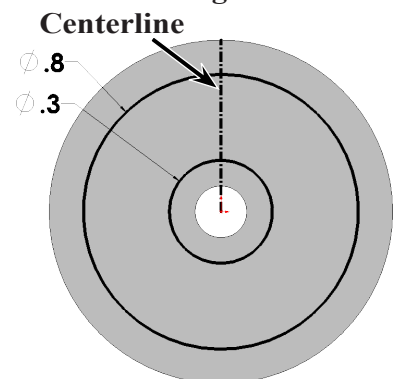


Fig. 7

Step 9. Click **Offset Entities**  on the Sketch toolbar.

Step 10. In the Offset Entities Property Manager set:
under Parameters, **Fig. 8**

Distance  **.06**

check **Bi-directional**

click the **centerline**, **Fig. 9**

The yellow offset should be on both side of centerline, **Fig. 9**.

Click **OK**  when done.

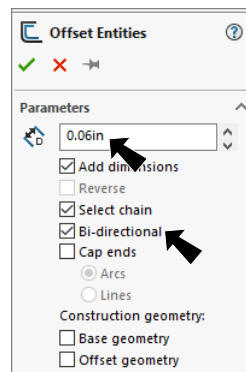


Fig. 8

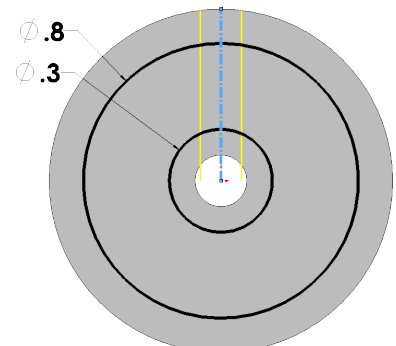


Fig. 9

D. Trim.

Step 1. Click **Trim Entities**  (S) on the Sketch toolbar.

Step 2. In the Trim Property Manger:

select **Trim to closest** , Fig. 10

Trim away lines outside big circle and inside small circle, Fig. 11. Click line you want to trim away. Results shown in Fig. 12.

Click OK  when done.

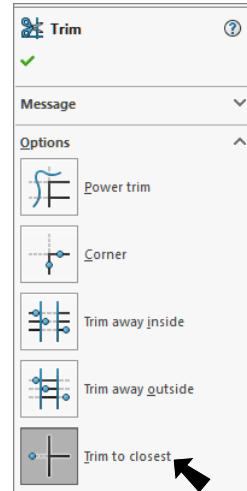


Fig. 10

Before Trim

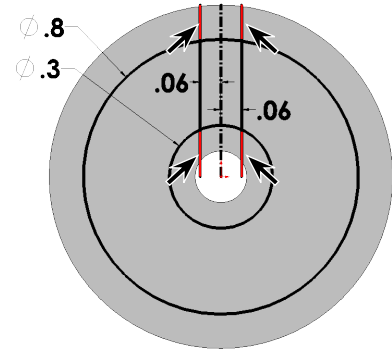


Fig. 11

After Trim

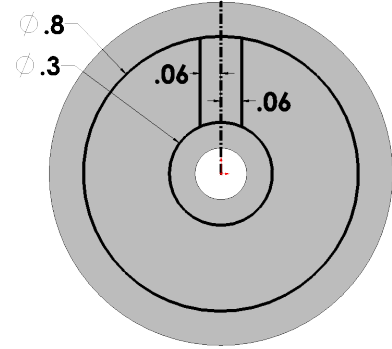



Fig. 12

E. Circular Sketch Pattern.

Step 1. Click **Circular Pattern**

 in the **Linear Pattern**

flyout  on the Sketch toolbar.

Step 2. In the Circular Sketch Pattern Property Manager set:

under Parameters, Fig. 13

click in the **Pattern Axis** box

click the **Origin**  in sketch, Fig. 14

check **Equal spacing**

Number of Instances  6

under Entities to Pattern

click **both offset lines** in sketch

click OK .

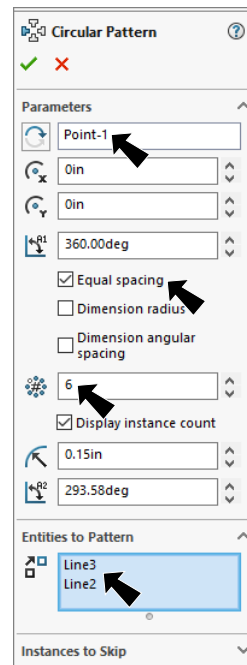


Fig. 13

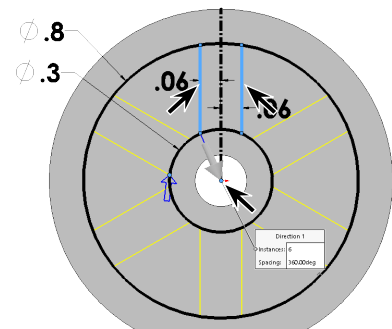


Fig. 14

F. Extruded Cut Spokes.

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

Step 2. Click **Extruded Cut**  on the Features toolbar.

Step 3. In the Cut-Extrude Property Manager set:
under Direction 1, **Fig. 15**
End Condition **Through All**

under Selected Contours
click **each wedge shaped contour**
between spokes, Fig. 16

click OK .

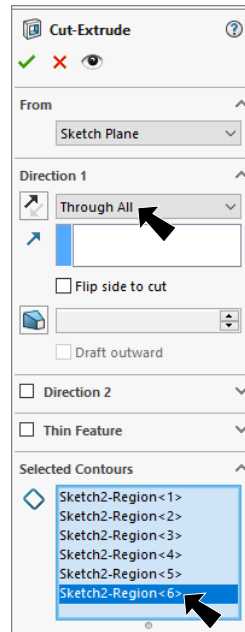


Fig. 15

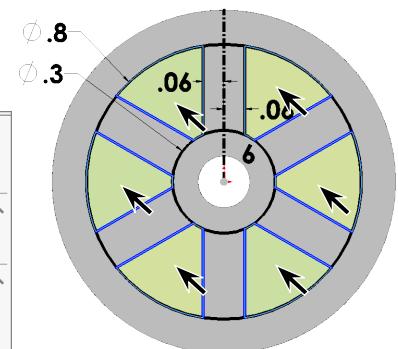


Fig. 16

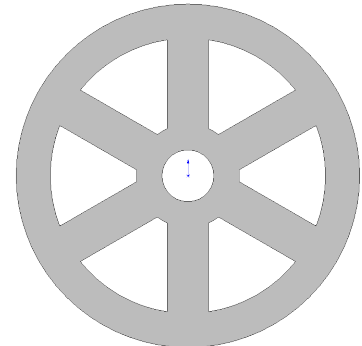
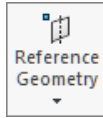


Fig. 17

G. Mate Reference.

Step 1. Click **Trimetric**  on the Standard Views toolbar.

Step 2. Click the **inside cylindrical face of axle hole** to select it, Fig. 18.

Step 3. Click **Reference Geometry**  on the Features toolbar and **Mate Reference** from the menu.

Step 4. In the Mate Reference Property Manager click OK , Fig. 19.

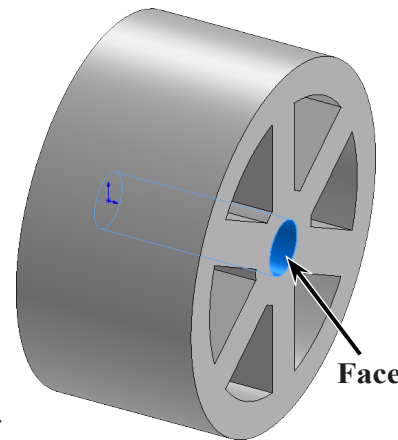


Fig. 18

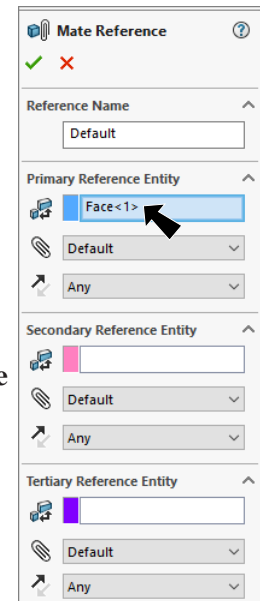



Fig. 19

H. Material POM Acetal Copolymer.

Step 1. **Right click** **Material**  in the Feature Manager and click **Edit Material**, Fig. 20.

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

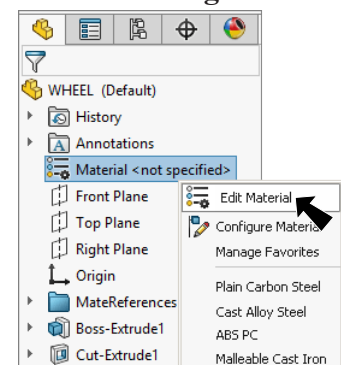


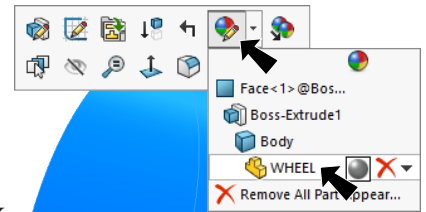


Fig. 20


I. Appearance.

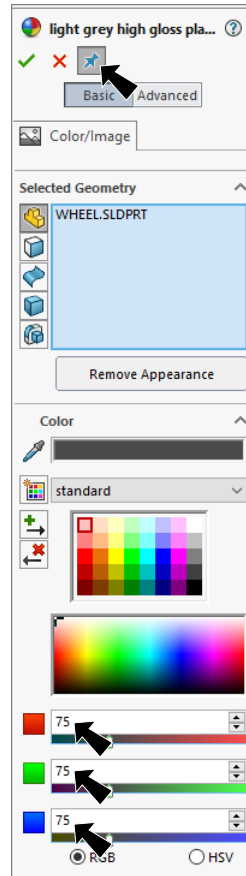
Step 1. Click the part to select the part, click **Appearance Callout**  on the context toolbar and click **WHEEL** , Fig. 21.



Step 2. In the Appearances Property Manager under Color, Fig. 22 set **RGB values to:**
R 75
G 75
B 75


click **Keep Visible**  and **OK** .

The Push Pin  on allows selection of another appearance.



Click part

Fig. 21

Step 3. In the Appearances Property Manager, under Selected Geometry click **Select Features** , Fig. 24

click **one Extruded cut between spokes**, Fig. 25

under Color: click the **white swatch**, Fig. 26

click **OK**  and click **Cancel** .

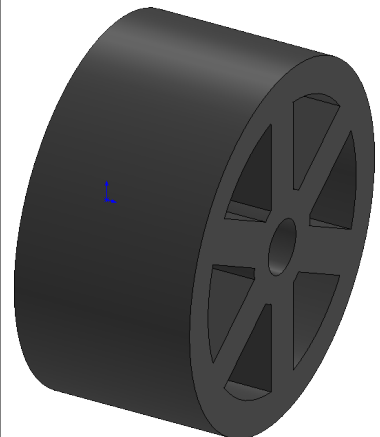


Fig. 23

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

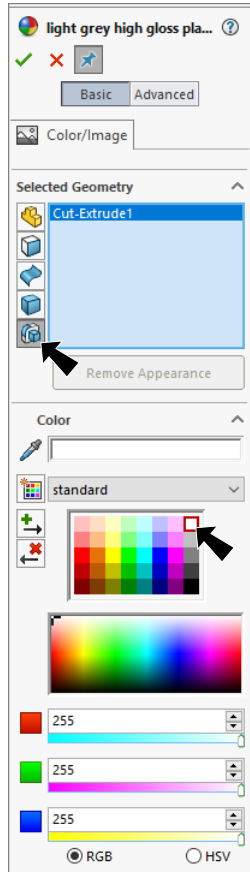


Fig. 24

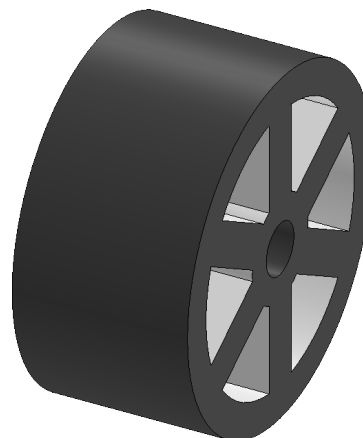


Fig. 25