CO2 Rail Car Form
Front Wheel

A. New Metric Document.

Step 1. Confirm new document and **units are mm**, **Fig. 1**.

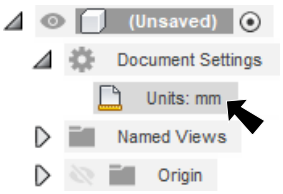

Fig. 1

B. Revolve.

Step 1. On the Solid tab SOLID click **Create Sketch** in the Sketch area of toolbar and click **Front plane** in canvas.

Step 2. Click **Line** (**L**) on the toolbar.

Step 3. Sketch **5 lines** starting from the **Origin**, **Fig. 2**.

Step 4. Click **Mirror** on the toolbar.

Step 5. In the Mirror panel set, **Fig. 3**
Objects click **4 lines (not vertical line at Origin)**, **Fig. 4**
Mirror Line click **Mirror Line button**, **Fig. 5**
click **centerline** (vertical line at Origin), **Fig. 6**
click OK.

Fig. 2

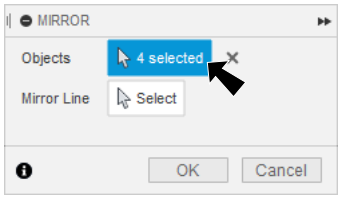

Fig. 3

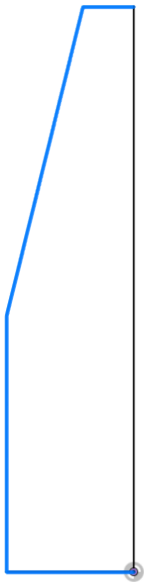
Fig. 4

Step 6. Click **Dimension** (**D**) in the sketch area of toolbar.

Step 7. Add dimensions, **Fig. 7**. Dimension 179° first, then 5, 15 and 2 last.

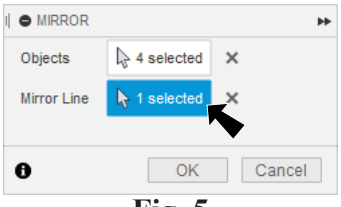

Fig. 5

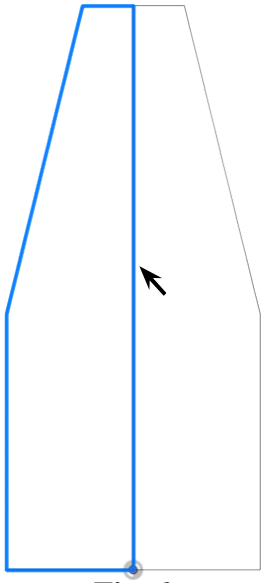
Fig. 6

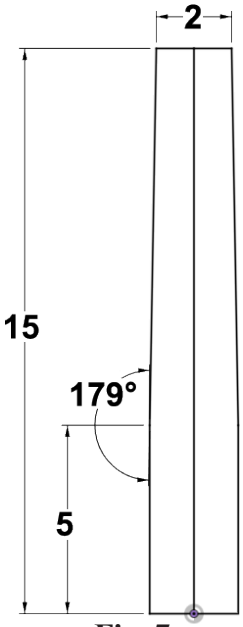

Fig. 7

1/10/20

Step 8. Click **Home** (Isometric) on View Cube .

Step 9. On the Solid tab SOLID click **Revolve** .

Step 10. In the Revolve panel set, **Fig. 8**
Profile click **both Profiles**, **Fig. 9**
Axis click a **bottom horizontal line**
click OK.

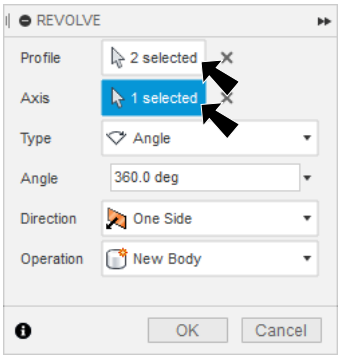

Fig. 8

C. Save as "FRONT WHEEL".

Step 1. Click File Menu > Save.

Step 2. In the Save dialog box:
Key-in **FRONT WHEEL** for filename
click Save.

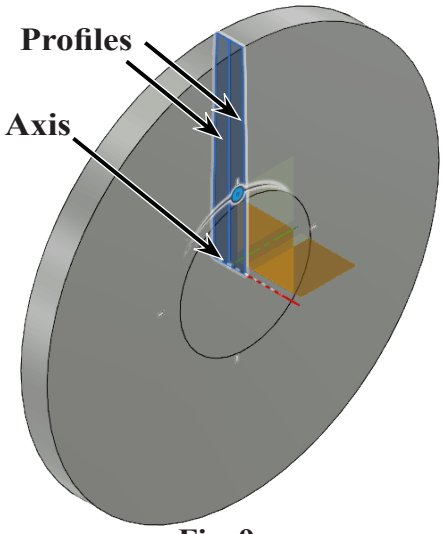

Fig. 9

D. Hole.

Step 1. On the Solid tab SOLID click **Hole** **(H)** in the Create area of toolbar.

Step 2. In the Hole panel set, **Fig. 10**
Face **click side face of hub**, **Fig. 11**
and click **Origin**

Extents **All**
Hole Type select **Counterbore**
Counterbore Dia **10**
Counterbore depth **.5**
Hole Diameter **3**
click OK.

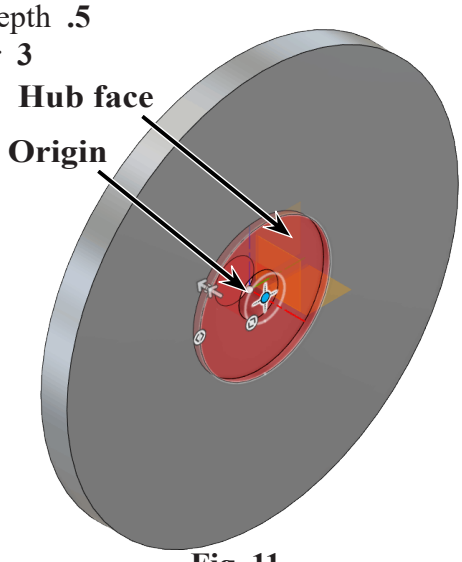

Fig. 11

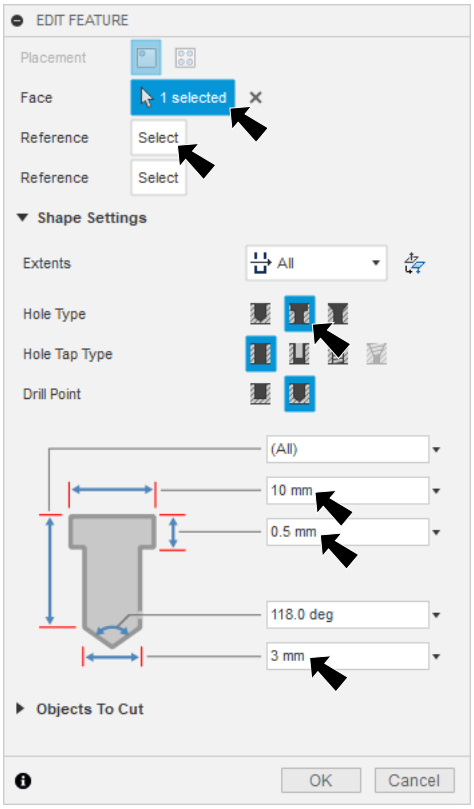

Fig. 10

E. Fillet Edges.

Step 1. On the Solid tab SOLID click **Fillet** (**F**) in the Modify area of toolbar.

Step 2. In the Fillet panel set, **Fig. 12**
click **cylindrical axle face**, **Fig. 13**
Radius .4
click OK.

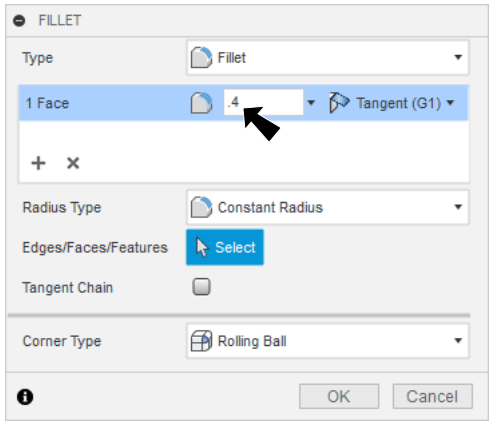

Fig. 12

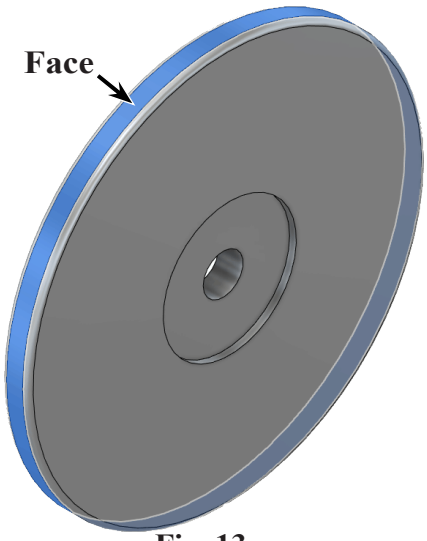

Fig. 13

F. Material Plastic Acetal.

Step 1. On the Solid tab SOLID click Modify Menu > Physical Material.

Step 2. In the Physical Material Panel:
under Library, **Fig. 14**.
Expand **Plastics**
drag **Acetal white** onto the body, **Fig. 15**.
Close.

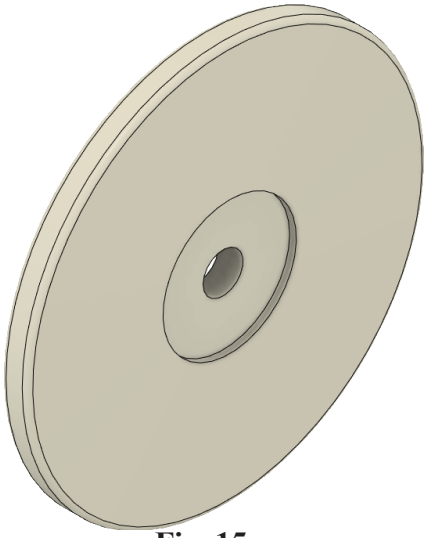

Fig. 15

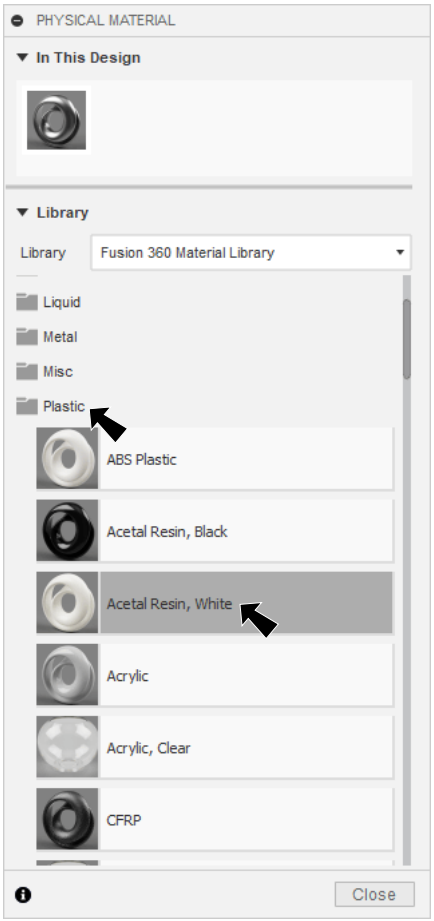

Fig. 14

G. Appearance.

Step 1. Display the Appearance panel, use **A** key.

Step 2. In the Appearance Panel:
under In This Design, **Fig. 16**.
double click the **Acetal white**.

Step 3. In the Material Editor:
Rename **Acetal Resin Blue**, **Fig. 17**.
set **RGB values:**
R 65
G 117
B 197
click **Done.**

Step 4. In the Appearance Panel:
click **Close**.

Step 5. Save. Use **Ctrl-S** and press ENTER.

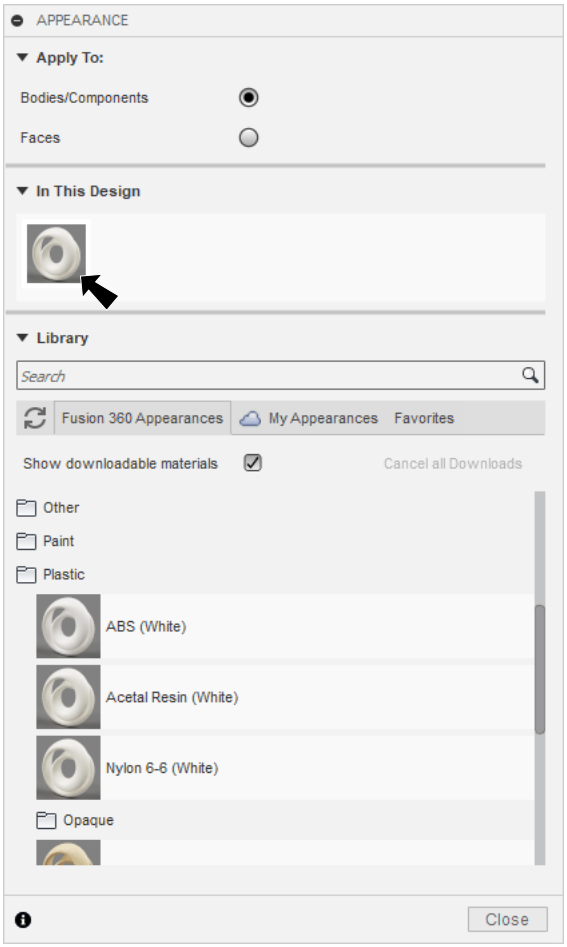

Fig. 16

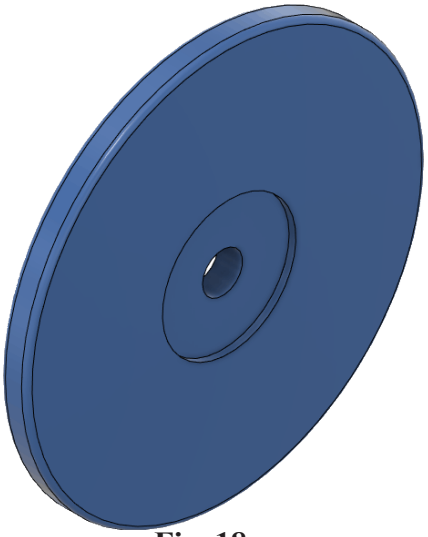

Fig. 18

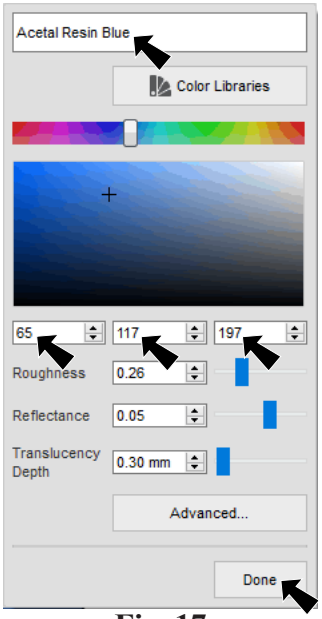

Fig. 17