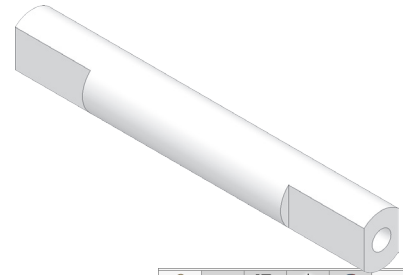






Tank Gearbox Shaft




A. Extrude1.

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

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

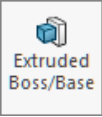
Step 3. Click **Circle**  (S) on the Sketch toolbar.

Step 4. Sketch circle at Origin , **Fig. 2**.

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

Step 6. Dimension diameter **5.4**, **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**
End Condition **Mid Plane**

Depth  **37**
click OK .

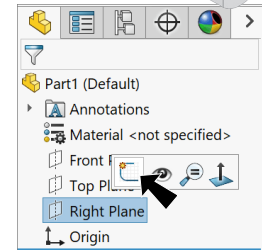


Fig. 1

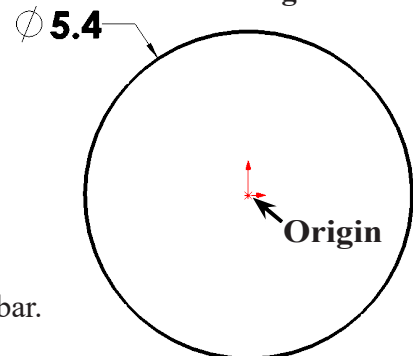


Fig. 2

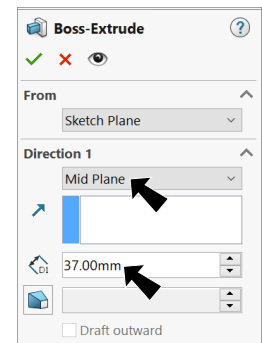
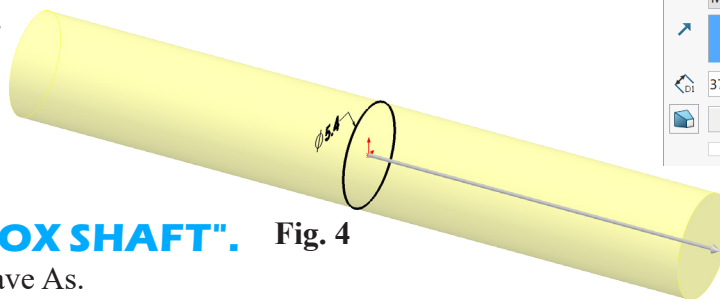


Fig. 3



B. Save as "GEARBOX SHAFT". **Fig. 4**

Step 1. Click File Menu > Save As.

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

C. Cut Extrude1.

Step 1. Click **side face** and click **Sketch**



on the context toolbar, **Fig. 5**.

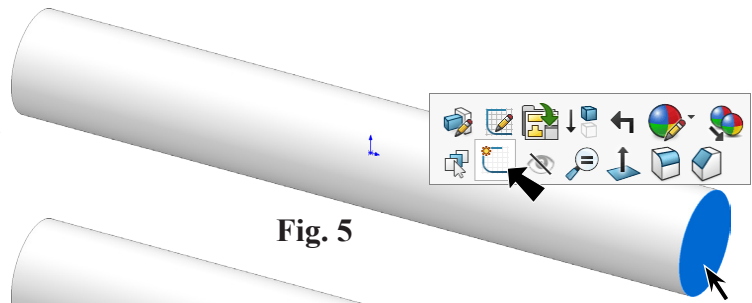


Fig. 5

Step 2. With the face still selected, click



Convert Entities on the Sketch toolbar, **Fig. 6**.

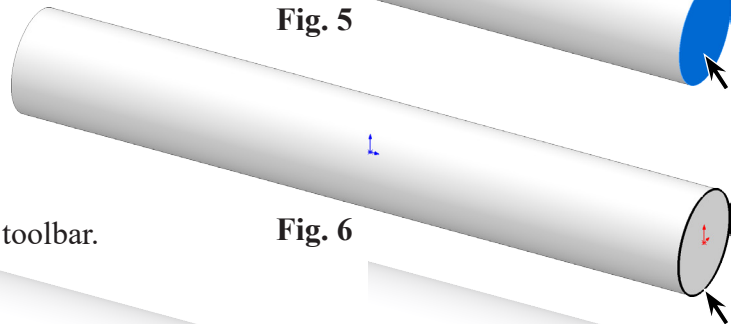


Fig. 6

Step 3. Click **Line** (L) on the Sketch toolbar.



Step 4. Sketch **two vertical lines (chords)** across circle, **Fig. 7**.

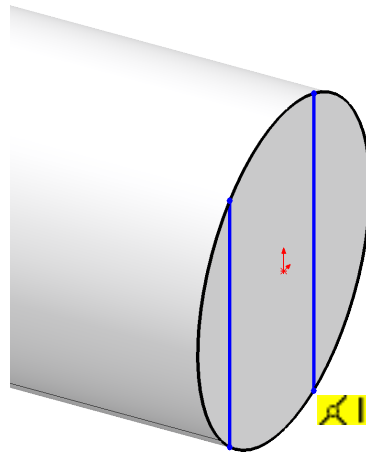


Fig. 7

Step 5. **Right click graphics area and click Select** from menu to unselect Line tool.

Step 6. **Ctrl click both lines** to select both. Release Ctrl key and click **Make Equal** on the context toolbar, **Fig. 8**.

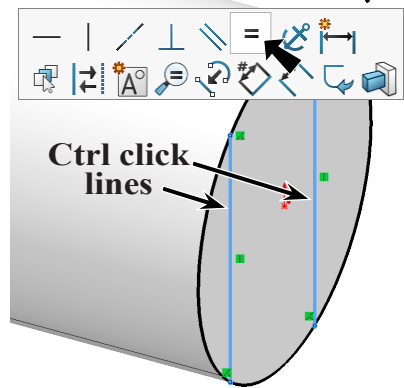
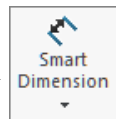


Fig. 8

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



Step 8. Add dimension, **Fig. 9**.

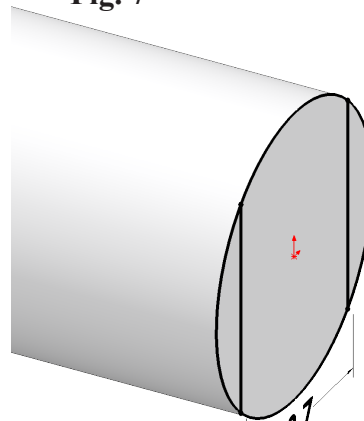


Fig. 9

Step 9. Click **Features** on the Command Manager toolbar.



Step 10. Click **Extruded Cut** on the Features toolbar.

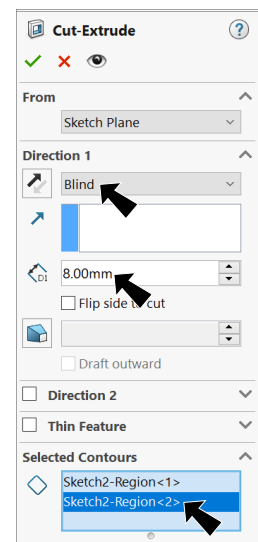
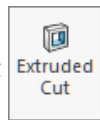


Fig. 10

Step 11. In the Cut-Extrude Property Manager set:

under Direction 1, **Fig. 10**

End Condition **Blind**

Depth 8

under Selected Contours

click **both outside contours**, **Fig. 11**

click OK .

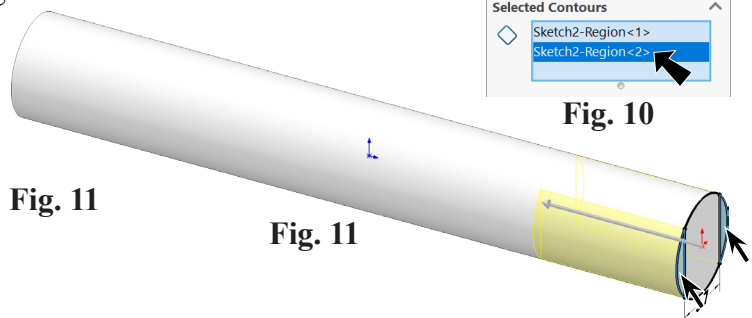


Fig. 11

D. Cut Extrude2.

Step 1. Click **side face** and click **Sketch**

 on the context toolbar, **Fig. 12**.

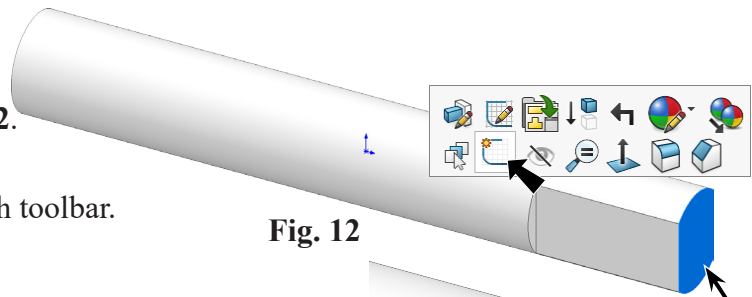



Fig. 12

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

Step 3. Sketch a circle at **Origin** , **Fig. 13**.

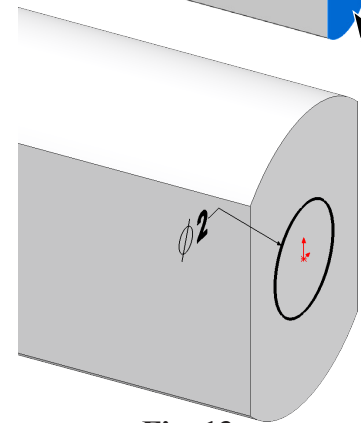


Fig. 13

Step 4. Click **Smart Dimension**  (S) on the Sketch toolbar.

Step 5. Dimension **diameter 2**, **Fig. 13**.

Step 6. Click **Features**  on the Command Manager toolbar.

Step 7. Click **Extruded Cut**  on the Features toolbar.

Step 8. In the Cut-Extrude Property Manager set:
under **Direction 1**, **Fig. 14**

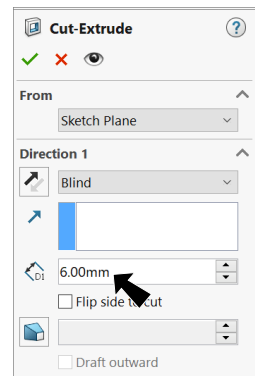


Fig. 14

Depth  **6**
click **OK** .

Step 9. Save  (Ctrl-S).

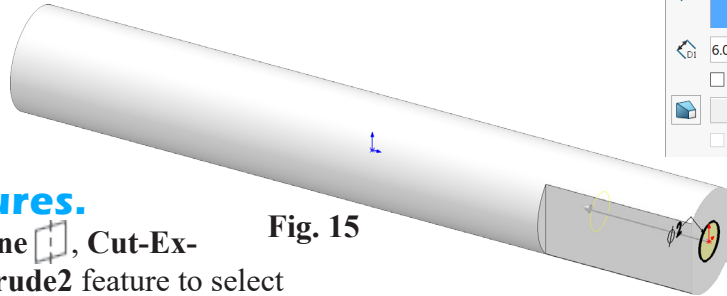


Fig. 15

E. Mirror Cut Features.

Step 1. **Ctrl click Right Plane** , **Cut-Extrude1** and **Cut-Extrude2** feature to select Plane and features, **Fig. 16**.

Step 2. Click **Mirror**  on the Features toolbar.

Step 3. In the Mirror Property Manager click **OK** , **Fig. 17**.

Step 4. Save  (Ctrl-S).

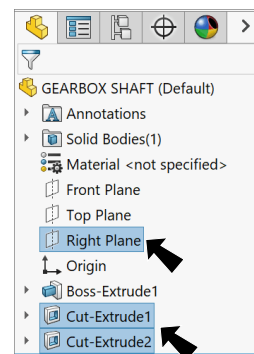


Fig. 16

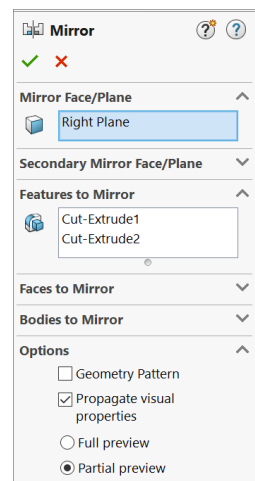


Fig. 17

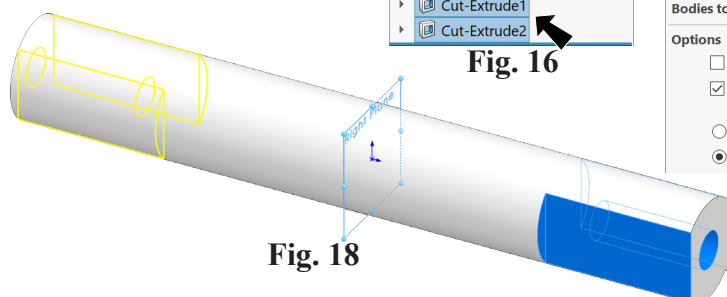


Fig. 18

F. Appearance.

Step 1. Click the Gearbox to select part, click **Appearances Callout** on the context toolbar and click **Gearbo...**, Fig. 19.

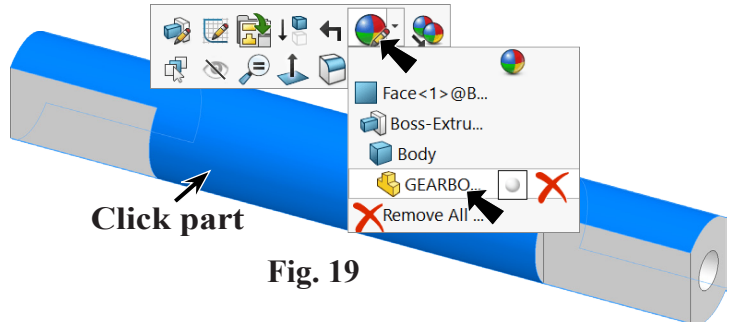


Fig. 19

Step 2. In the Appearances Task pane, expand **Plastic**, click **High Gloss** and in the lower pane select **white high gloss plastic**, Fig. 20.

Step 3. In the Appearances Property Manager click OK ✓.

Step 4. Save (Ctrl-S).

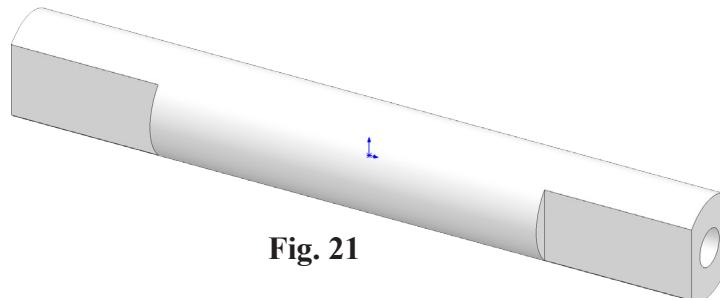


Fig. 21

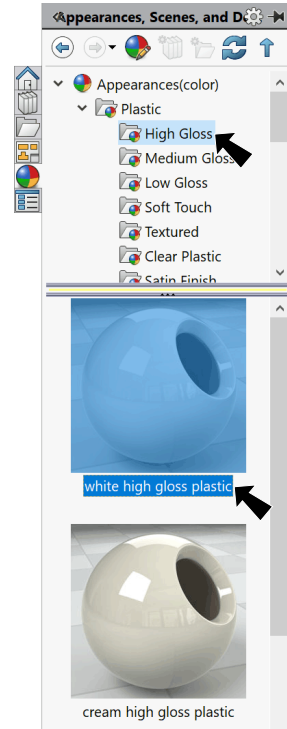


Fig. 20