



A. Axle.

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

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

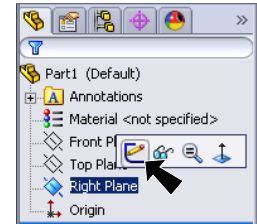


Fig. 1

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

Step 4. Draw a circle starting at the Origin , **Fig. 2**.

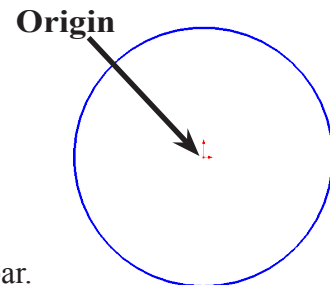


Fig. 2

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

Step 6. Dimension circle **diameter .15**, **Fig. 3**.

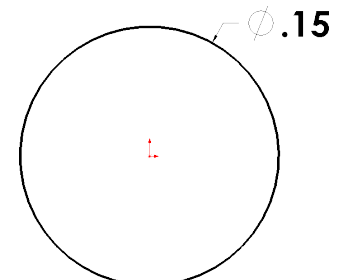
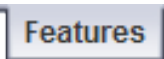
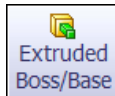




Fig. 3

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

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

Step 9. In the Property Manager set:
 under **Direction 1**
 End Condition **Mid Plane**
Depth  **2.3**
 click OK , **Fig. 4**
 and **Fig. 5**.

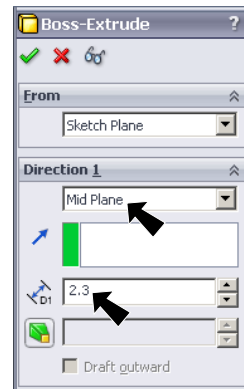


Fig. 4

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

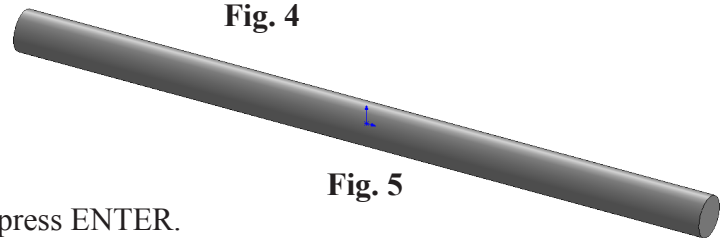



Fig. 5

B. Save as "AXLE".

Step 1. Click File Menu > Save As.

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

C. Mate References.

Step 1. Click **Right Plane**  in the Feature Manager to select Plane, **Fig. 6**.

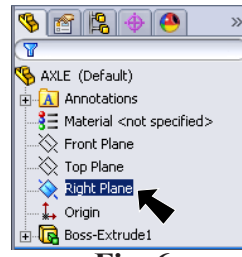


Fig. 6

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

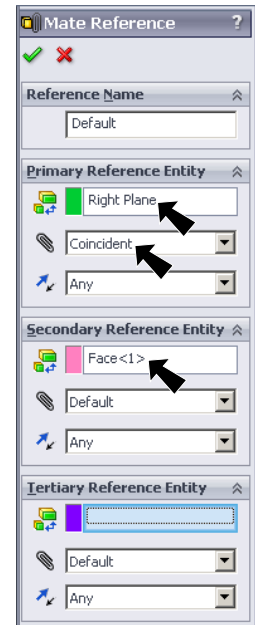



Fig. 7

Step 3. In the Mate Reference Manager:
 under **Primary Reference Entity**, **Fig. 7**
 set **Mate Reference Type**  **Coincident**

under **Secondary Reference Entity**

click in Entity box 
 and click **cylindrical face of axle**, **Fig. 8**

click OK .

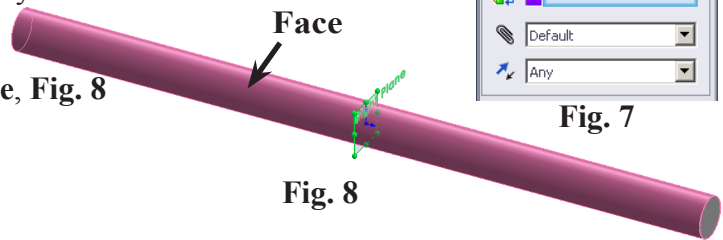




Fig. 8

D. Material Alloy Steel.

Step 1. **Right click Material**  in the Feature Manager and click **Edit Material** , **Fig. 9**.

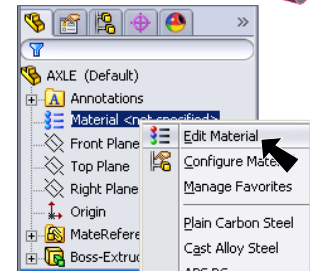


Fig. 9

Step 2. **Expand Steel** in the material tree and click **Alloy Steel**, **Fig. 10**.
 Click **Apply** and **Close**.

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

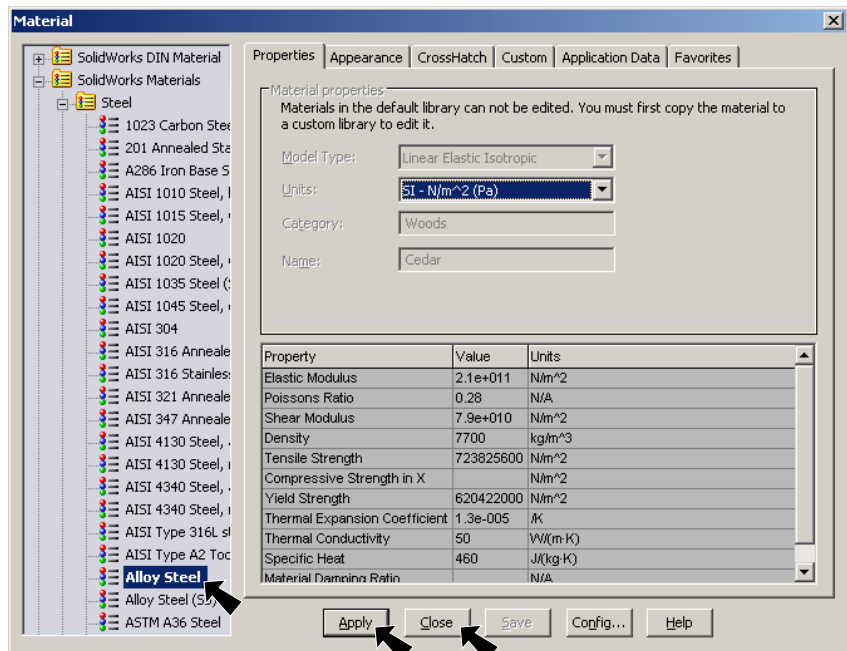


Fig. 10

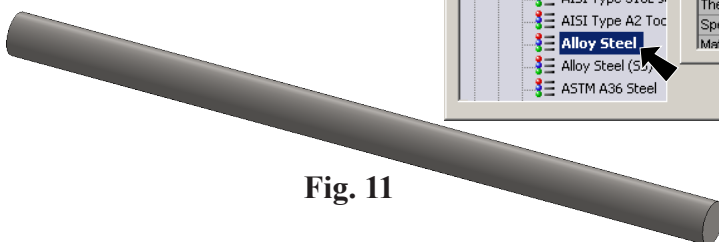


Fig. 11