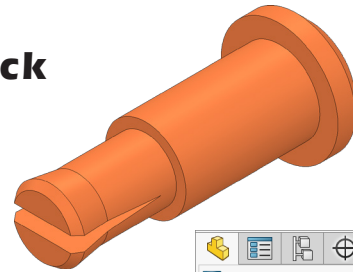






# Chapter 4

## Stake Bed Pickup Truck Axle



### A. Revolve.

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**.

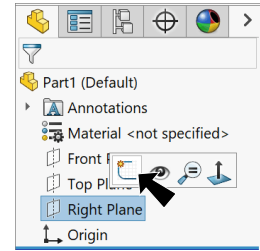





Fig. 1

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

Step 4. Sketch **9 lines starting with a vertical line up from the Origin** , continue sketch the chain of lines and after sketching the **bottom horizontal line last endpoint** - click **Construction Geometry**  on the context toolbar, **Fig. 2**.

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

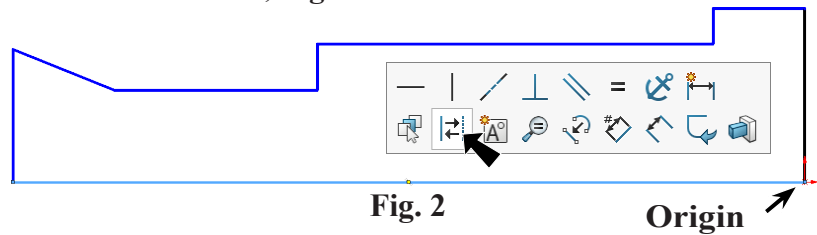


Fig. 2

Step 6. Add dimensions, **Fig. 3. Double distance the diameters.** To double distance dimension, click centerline and then top horizontal line, move the cursor below centerline (Origin) and click. Key-in the diameter in the Modify box and press ENTER.

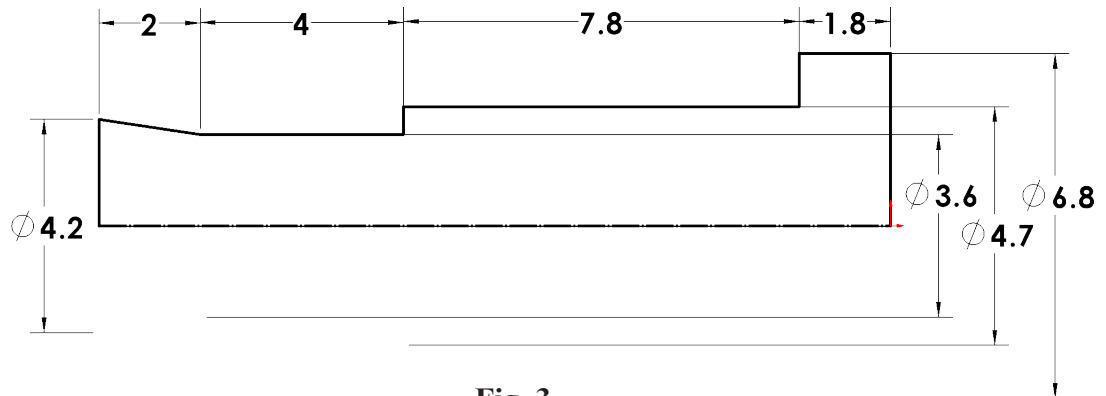





Fig. 3

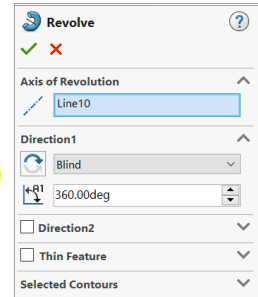
Step 7. Click **Features**  on the Command Manager toolbar.

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

Step 9. Click **Yes** to close sketch. SOLIDWORKS adds a line on top of the construction line, so the centerline is still there underneath.

Step 10. In the Revolve Property Manger set:

under Axis of Revolution , **Fig. 4**  
 construction line auto-selected  
 click OK .

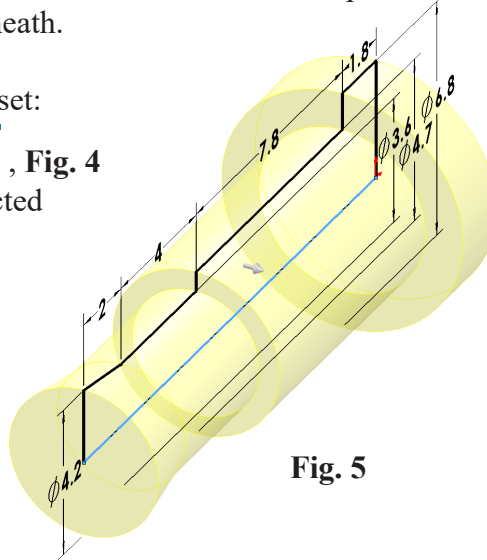


**Fig. 4**

### B. Save as "AXLE".



Step 1. Click File Menu > Save As.

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



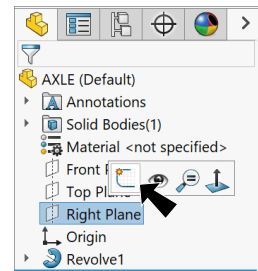
**Fig. 5**

### C. Cut Extrude.

Step 1. Click **Right Plane**  in the Feature Manager and click **Sketch**  on the context toolbar, **Fig. 6**.


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


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

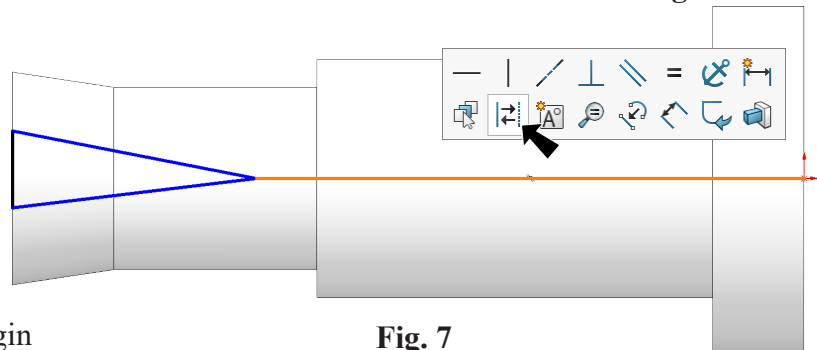


**Fig. 6**


Step 4. Use the Inferencing line, the dotted line that appear as you sketch, to start a line

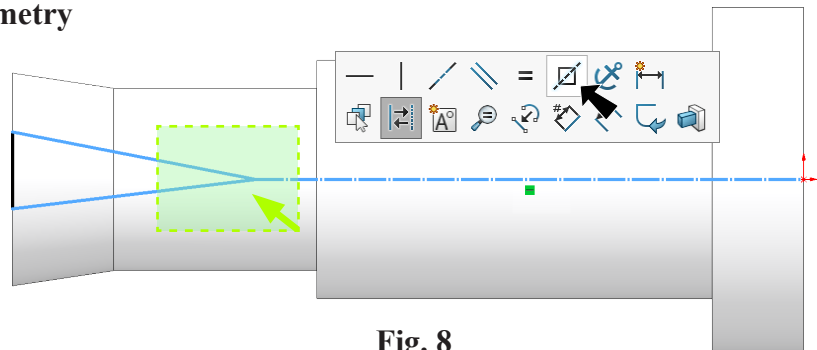
out to left of **Origin**  and sketch the 4 lines ending up back at Origin. **Right click** just after last endpoint at Origin and click **Construction Geometry**

 on the context toolbar, **Fig. 7**.



**Fig. 7**

Step 5. Drag a selection to **left to cross angled lines and centerline**. Click **Make Symmetric**  on the context toolbar, **Fig. 8**.



**Fig. 8**

Step 6. Click **Smart Dimension**



(S) on the Sketch toolbar.

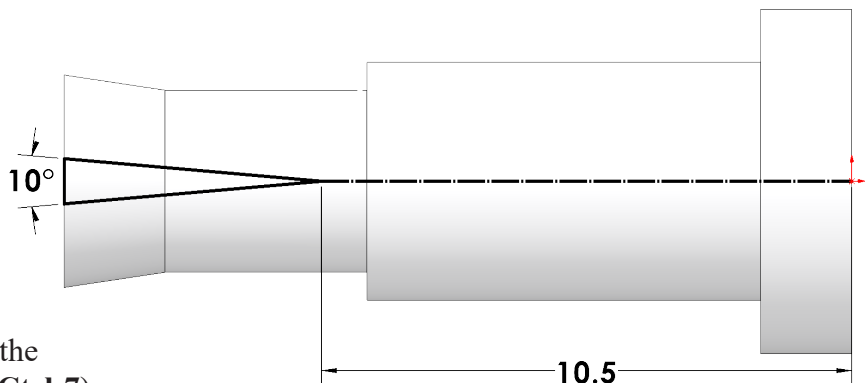



Fig. 9

Step 7. Add dimensions, **Fig. 9**.

Step 8. Click **Isometric**  on the Standard Views toolbar. (Ctrl-7)

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

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

Step 11. In the Cut-Extrude Property Manager set:  
under Direction 1, **Fig. 10**  
End Condition **Through All - Both**  
click OK .

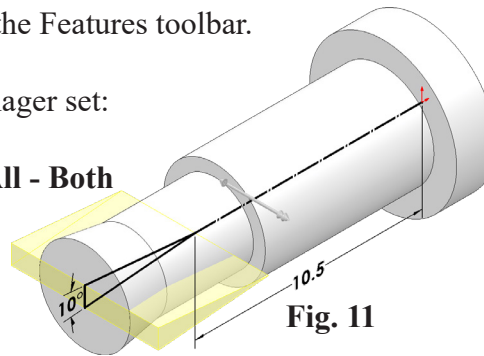


Fig. 11

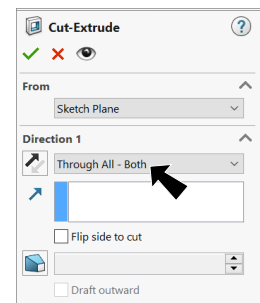


Fig. 10

## D. Chamfer 1.

Step 1. Click **Chamfer**  in the **Fillet flyout**



on the Features toolbar.

Step 2. In the Chamfer Property Manager set:  
under Chamfer Type, **Fig. 1**

select **Angle Distance** 

Distance  .8

Angle  45°

click edge at hub, **Fig. 13**

click OK .

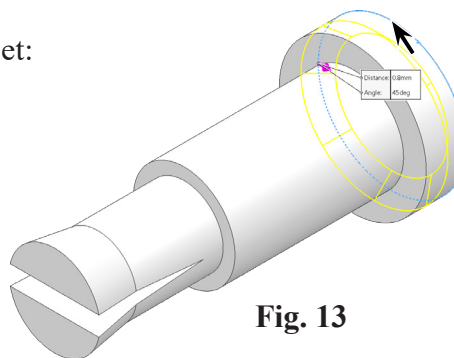


Fig. 13

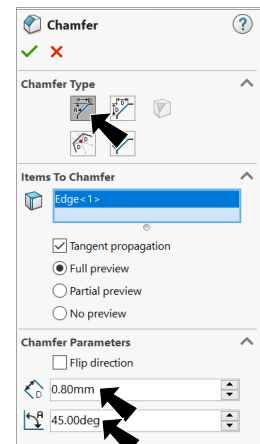


Fig. 12

## E. Chamfer2.

Step 1. Click **Chamfer**  in the **Fillet flyout**  on the Features toolbar.

Step 2. In the Chamfer Property Manager set:

under Chamfer Type, **Fig. 14**

select **Angle Distance** 

under Chamfer Parameters

**Distance**  .45

**Angle**  45°

click edges at end, **Fig. 15**

click OK .

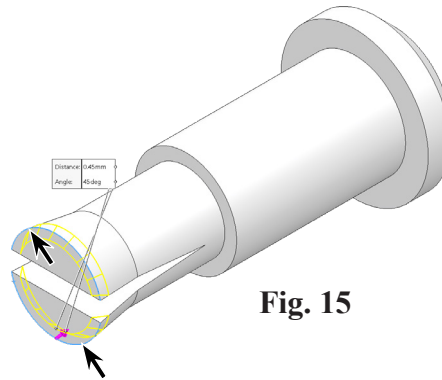


Fig. 15

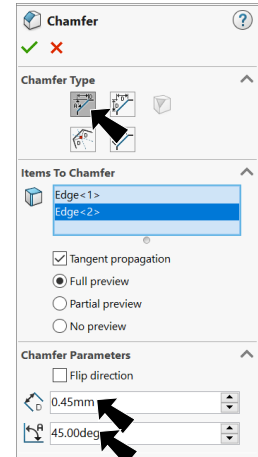




Fig. 14

Step 3. Save  (Ctrl-S).

## F. Appearance: Orange Paint.

Step 1. Click the part to select part, click **Appearances**

**Callout**  on the context toolbar and click **AXLE** , **Fig. 16**.

Step 2. In the Appearances Task pane, expand **Painted**, click **Car** and in the lower pane select **sienna**, **Fig. 17**.

Step 3. In the Appearances Property Manager set:

under Color, **Fig. 18**

set **RGB values**

**R 255**

**G 132**

**B 71**

click OK .

Step 4. Save  (Ctrl-S).

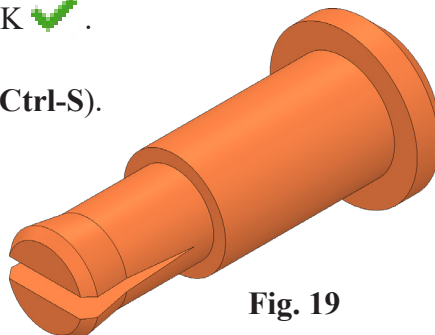


Fig. 19

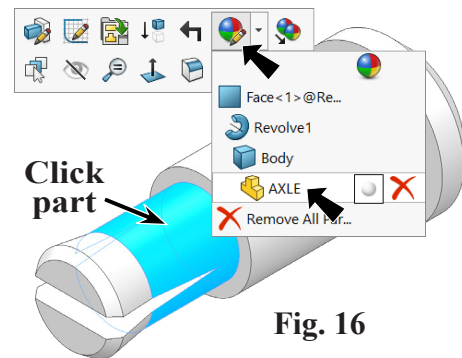


Fig. 16

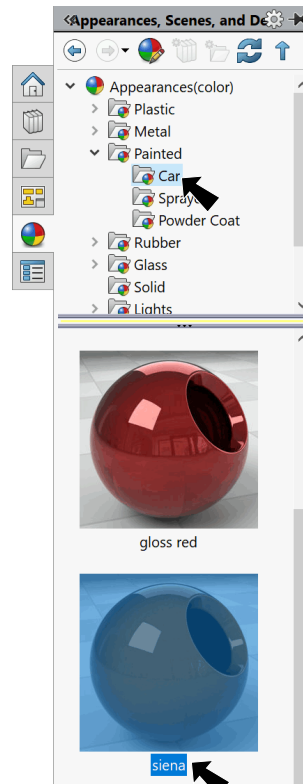


Fig. 17

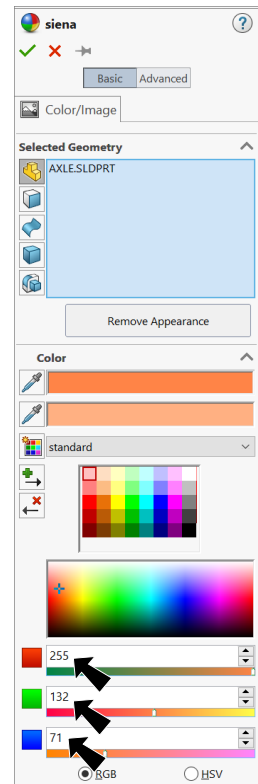


Fig. 18