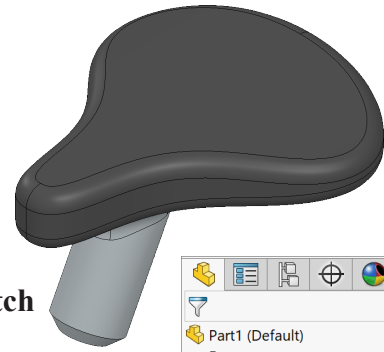




# Bike and Trailer SADDLE



## A. Extrude.

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

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

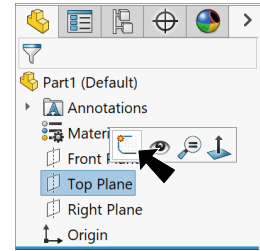




Fig. 1

Step 3. Click **Centerline**  in the **Line flyout**  on the Sketch toolbar.

Step 4. Sketch a vertical centerline up from the **Origin** , **Fig. 2**.

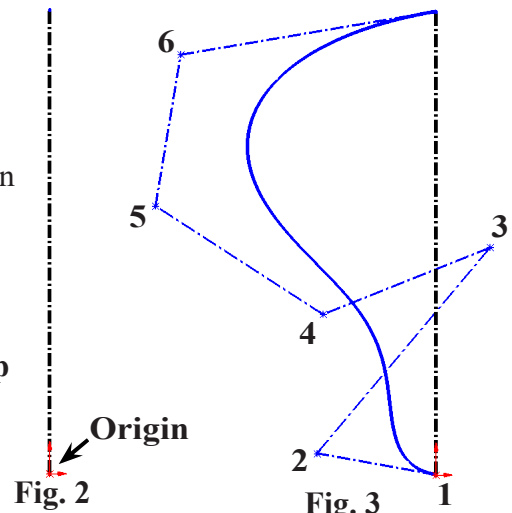





Fig. 2

Fig. 3

Step 5. Click **Style Spline**  in the **Spline flyout**  on the Sketch toolbar.

Step 6. Sketch a **7 control vertex point Spline** between **bottom endpoint of centerline line (Origin)**  and **top endpoint of centerline**, **Fig. 3**. Press Escape to end spline.

Step 7. Click **top control polygon segment** and click **Make Horizontal**  on the context toolbar, **Fig. 4**.

Step 8. Click **bottom control polygon segment** and click **Make Horizontal**  on the context toolbar, **Fig. 5**.

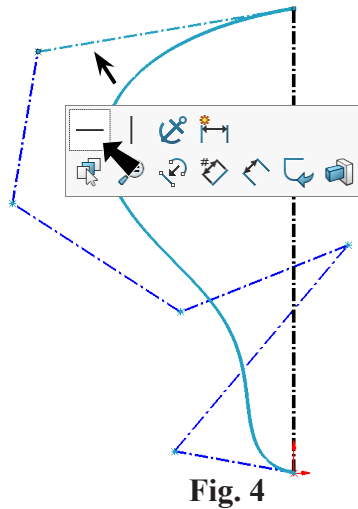


Fig. 4

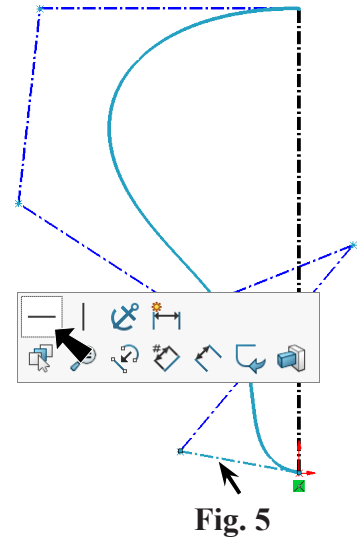


Fig. 5

Step 9. Click **Smart Dimension** (S) on the Sketch toolbar.

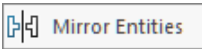


Step 10. Add dimensions, **Fig. 6**.

Step 11. **Unselect Smart Dimension**. To unselect, **right click graphics area and click Select** from menu.

Step 12. Drag a selection to select all geometry, **Fig. 7**.

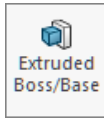
Step 13. Click **Mirror Entities** on the Sketch toolbar.



Step 14. Click **Features** on the Command Manager toolbar.



Step 15. Click **Extruded Boss/Base** on the Features toolbar.

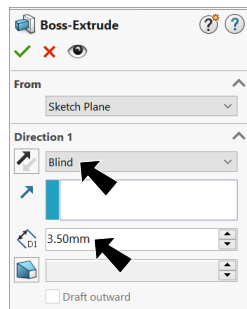


Step 16. In the Boss-Extrude Property Manager set:

under Direction 1, **Fig. 8**  
End Condition **Blind**

**Depth** 3.5

click **OK**.



## B. Save as "SADDLE".

Step 1. Click File Menu > Save As.

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

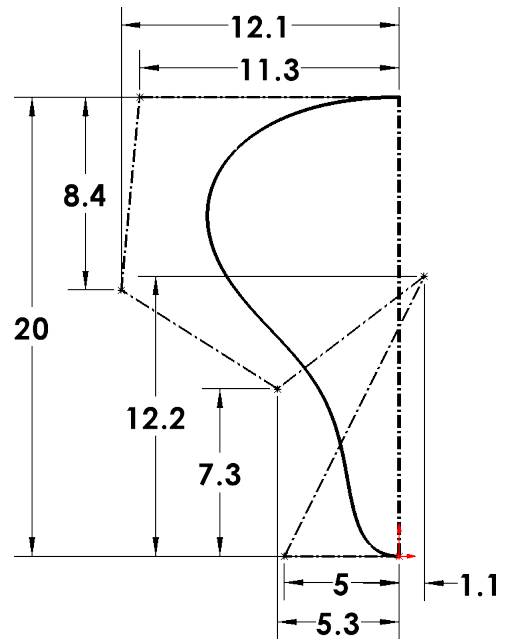


Fig. 6

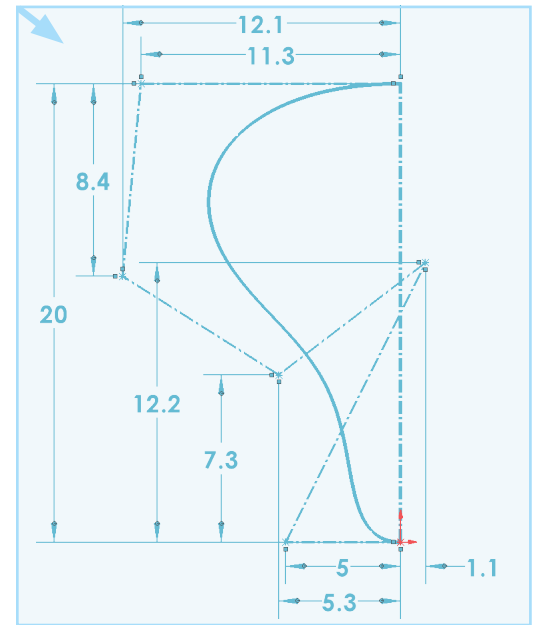


Fig. 7

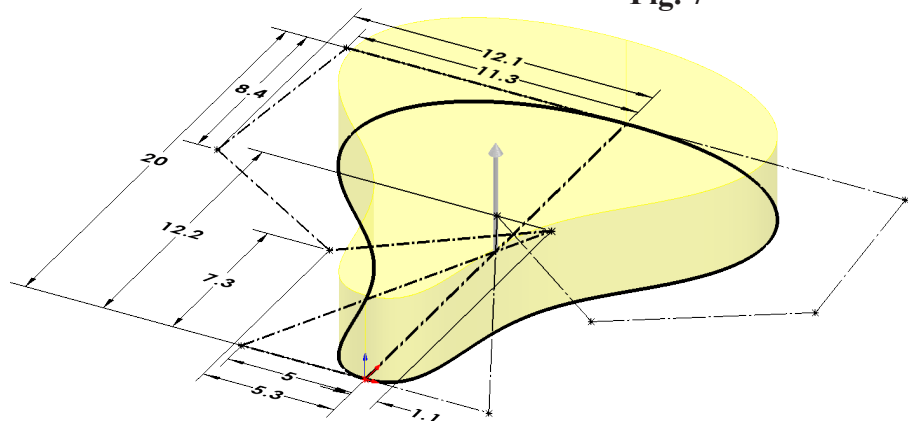


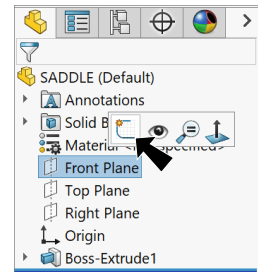



Fig. 9



## C. Cut.

Step 1. Click **Front Plane**  in the Feature Manager and click **Sketch**  on the context toolbar, **Fig. 10**.

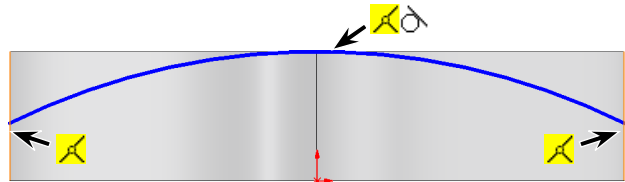


**Fig. 10**


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

Step 3. Click **3 Point Arc**  (S) in the **Arc flyout**  on the Sketch toolbar.


Step 4. Sketch arc with start and endpoints coincident a side edges and radius at Origin, **Fig. 11**.

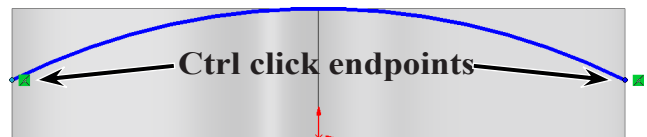


**Fig. 11**

Step 5. **Unselect Arc tool**. To unselect, **right click graphics area and click Select**  from menu.



Step 6. **Ctrl click both endpoints** to select both. Release Ctrl key and click **Make Horizontal**  on the context toolbar, **Fig. 12**.



**Fig. 12**

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

Step 8. Add dimension **radius 26**, **Fig. 13**.




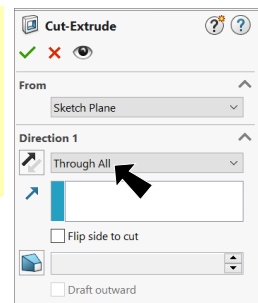
**Fig. 13**

Step 9. Click **Isometric**  on the Standard Views toolbar. (**Ctrl-7**)

Step 10. Click **Features**  on the Command Manager toolbar.

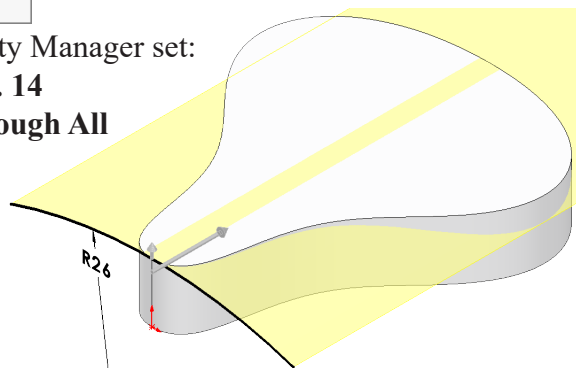
Step 11. Click **Extruded Cut**  on the Features toolbar.

Step 12. In the Cut-Extrude Property Manager set:  
under Direction 1, **Fig. 14**  
End Condition **Through All**  
click OK .



**Fig. 14**

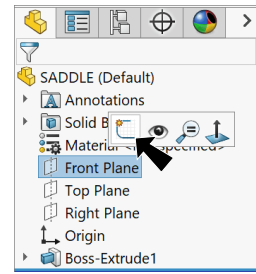
Step 13. Save  (**Ctrl-S**).




**Fig. 15**

## D. Sweep.

Step 1. Click **Right Plane**  in the Feature Manager and click **Sketch**  on the context toolbar, **Fig. 16**.

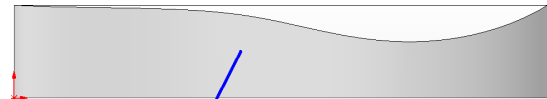


**Fig. 16**

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

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


Step 4. Sketch **line at angle to right of Origin** , **Fig. 17**.

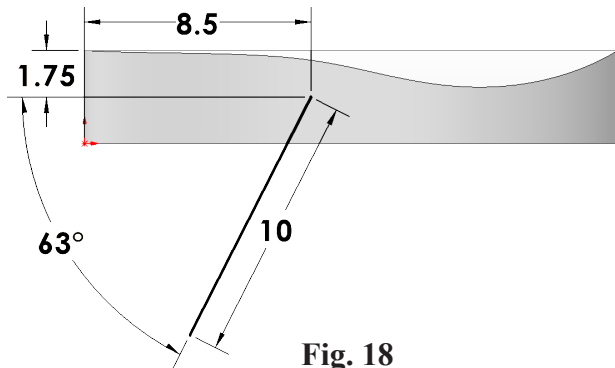


Origin

**Fig. 17**


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

Step 6. Add dimensions, **Fig. 18**. To dimension angle to imaginary line, click line and click top endpoint, then click the **left horizontal crosshair**  and place dimension.



**Fig. 18**

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

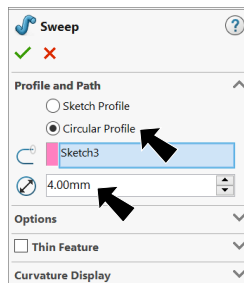
Step 8. Click **Swept Boss/Base**  **Swept Boss/Base** on the Features toolbar.

Step 9. In the Swept Boss/Base Property Manager: under Profile and Path, **Fig. 19**

select **Circular Profile**

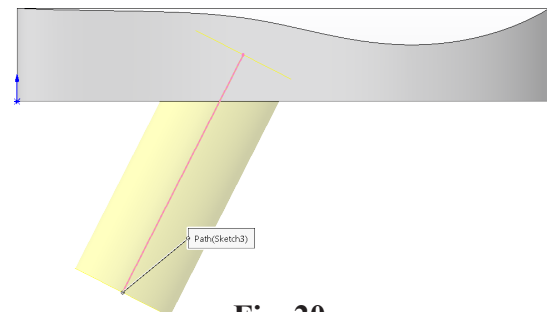
**Diameter**  **4**

click OK .




**Fig. 19**

Step 10. Save  (**Ctrl-S**).



**Fig. 20**

## E. Chamfer.

Step 1. Click **Isometric**  on the Standard Views toolbar. (Ctrl-7)

Step 2. Click **Chamfer**  in the **Fillet flyout**  on the Features toolbar.

Step 3. In the Chamfer Property Manager set:

under Chamfer Type, **Fig. 21**

select **Angle Distance** 

under Chamfer Parameters

**Distance**  .7

**Angle**  45°

click **bottom circular edge of Sweep**, **Fig. 22**

click OK .

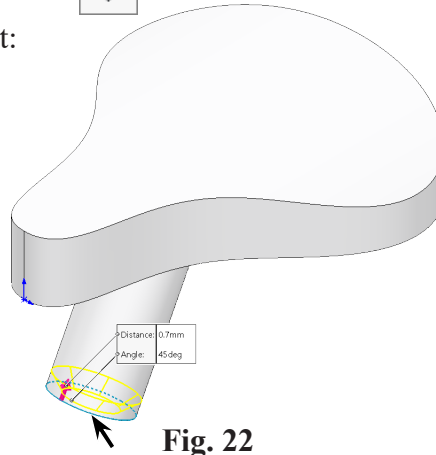


Fig. 22

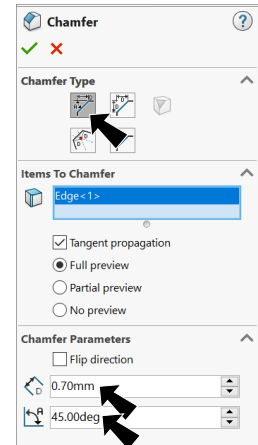


Fig. 21

## F. Fillet Edges.

Step 1. Click **Fillet**  on the Features toolbar.

Step 2. In the Fillet Property Manager set:

select **FilletXpert**, **Fig. 23**

**Radius**  1

click **top and bottom edges of Extrude**, **Fig. 24**

click **Apply**

Rotate view to view **bottom**, **Fig. 25**.

Use **Up Arrow key** 

click **top edge of Sweep at Extrude**, **Fig. 25**

click OK .

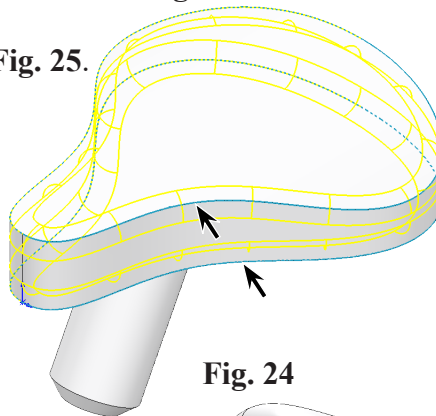


Fig. 24

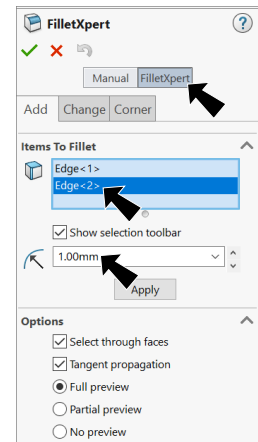


Fig. 23

Step 3. Save  (Ctrl-S).

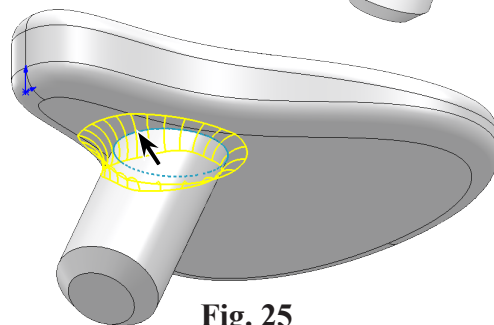


Fig. 25

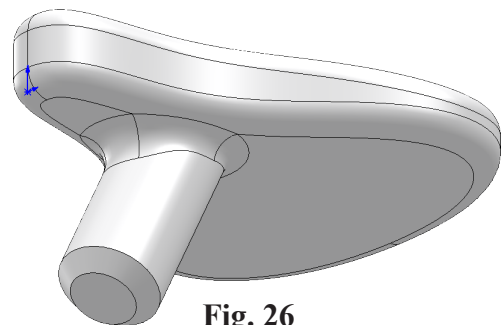




Fig. 26

## G. Appearance: Chrome and Black Plastic.

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

Step 2. Click the part to select part, click **Appearances Callout**  on the context toolbar and click **SADDLE** , **Fig. 27.**

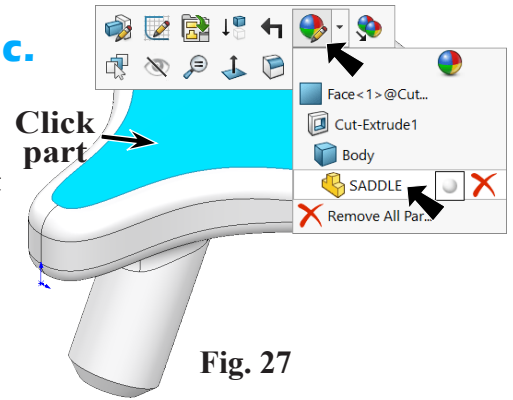





Fig. 27

Step 3. In the Appearances Task pane, expand **Metal** and click **Chrome** and in the lower pane select **chromium plate**, **Fig. 28.**

Step 4. Over in the Appearances Property Manager, click **Keep Visible**  and **OK** , **Fig. 29.** The Push Pin  on allows selection of another appearance.

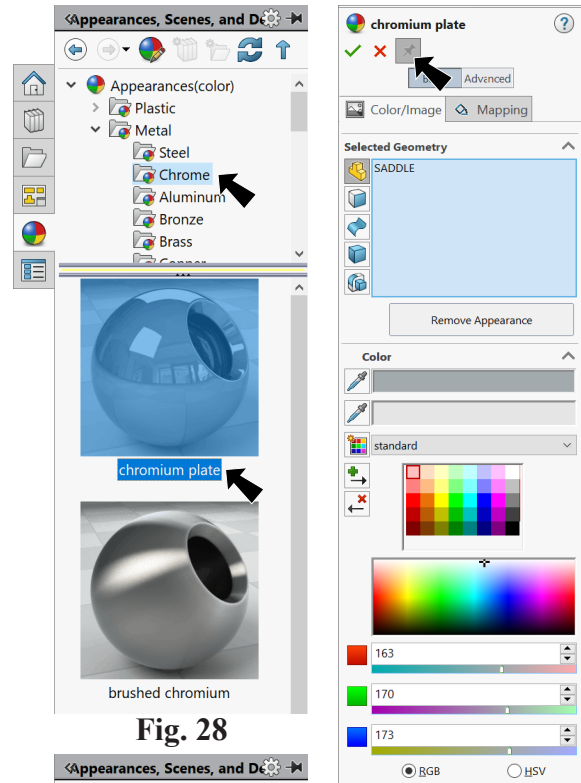


Fig. 28

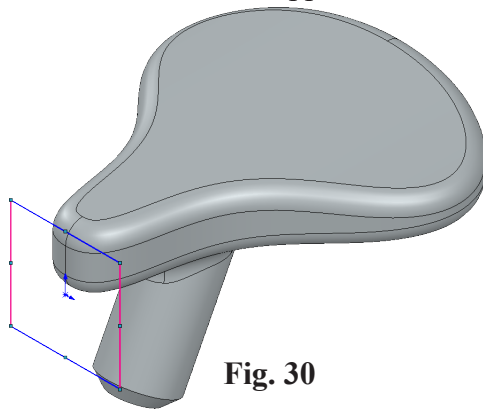





Fig. 30

Step 5. In the Appearances Task pane, expand **Plastic**, click **High Gloss** and in the lower pane select **dark grey high gloss plastic**, **Fig. 31.**

Step 6. Back in the Appearances Property Manager, under Selected Geometry click **Select Features** , **Fig. 32** click **Cut, Fillet1 and Extrude1**, **Fig. 33** click **OK**  and click **Cancel** .

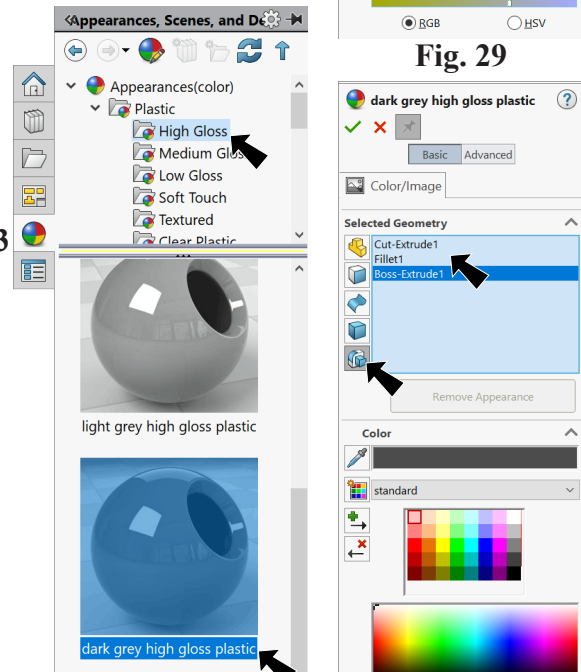


Fig. 29

Fig. 31

Fig. 32

Step 7. Save  (Ctrl-S).

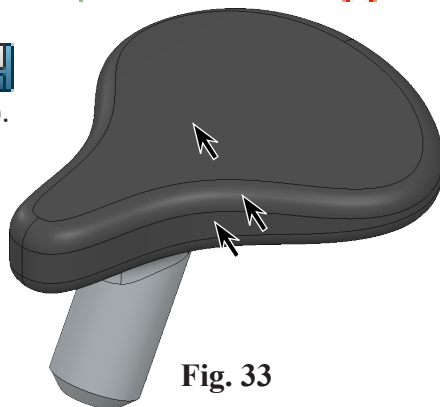


Fig. 33