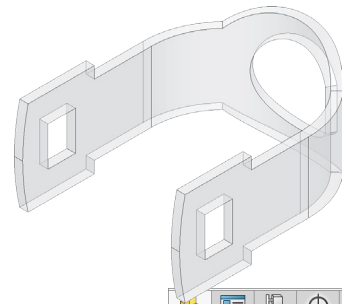






## Tank Motor Strap



### A. Extrude1.

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

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

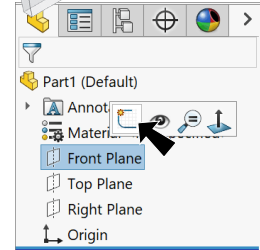


Fig. 1

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

Step 4. Sketch the **3 chained lines and horizontal and vertical thru**

**Origin** , **Fig. 2**.

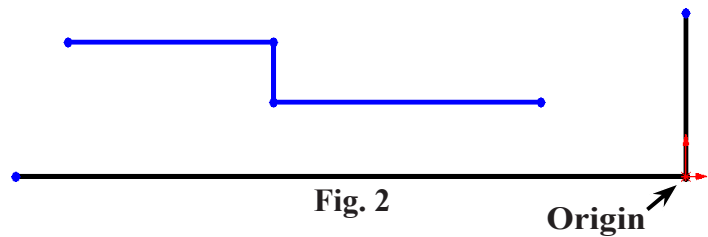



Fig. 2

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

Step 6. **Drag a selection to left across the centerlines and click Construction Geometry**  on the context toolbar, **Fig. 3**.

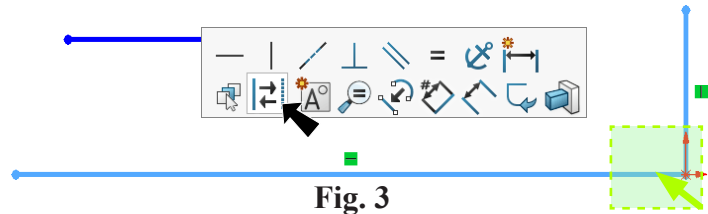


Fig. 3

Step 7. Click **3 Point Arc**  (S) in the **Arc flyout**  on the Sketch toolbar.

Step 8. Sketch the **two arcs**, **Fig. 4**.

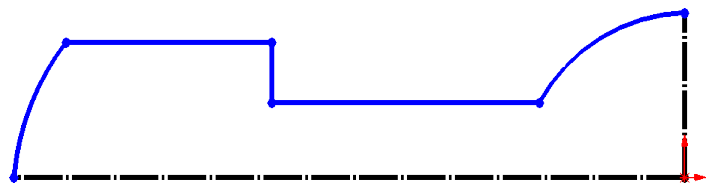



Fig. 4

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

Step 10. Add dimensions, **Fig. 5**.

Dimension arcs to the line on arc endpoints. Such as, the 30, dimension centerline-not its endpoints. Dimension 8.5 using line and not to endpoints.

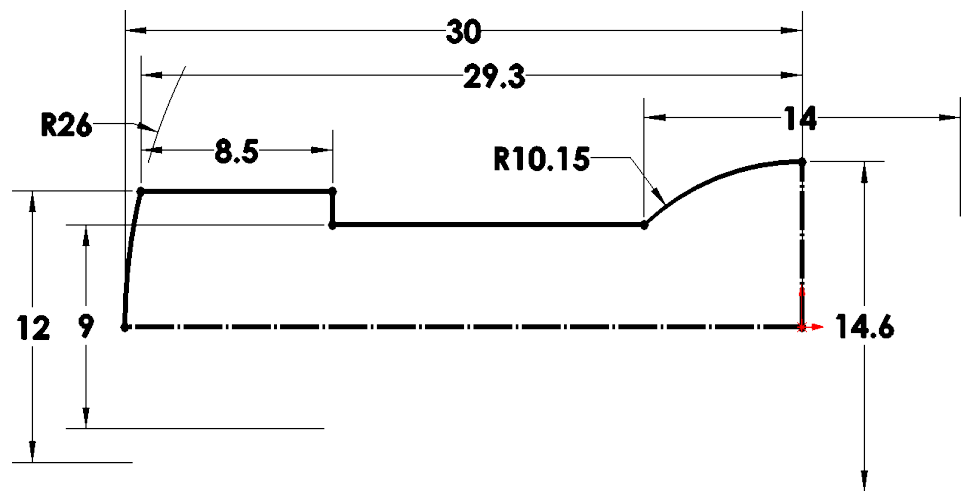
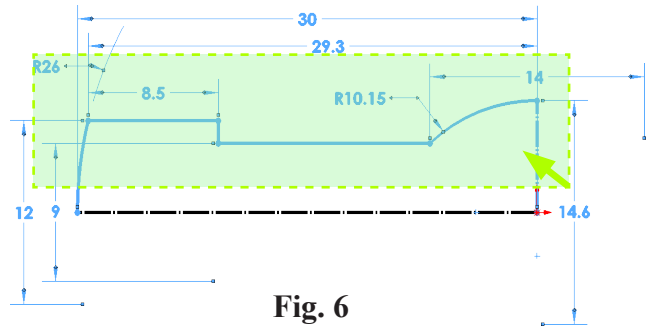
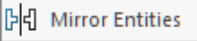


Fig. 5

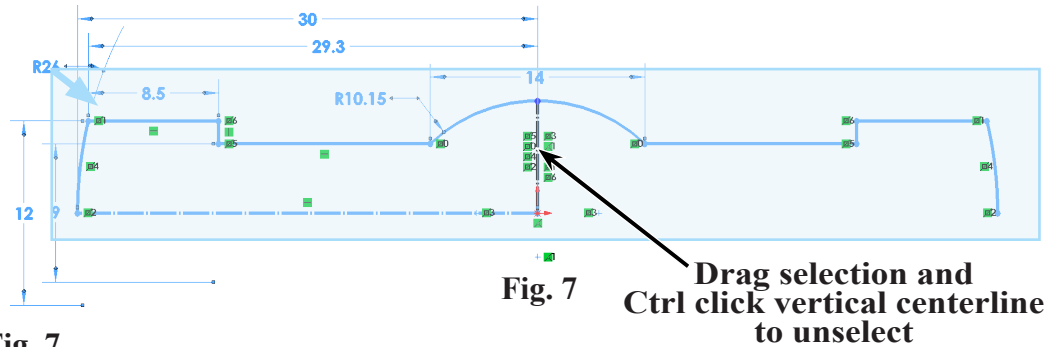
Step 11. **Right click graphics area and click Select** from menu to unselect Smart Dimension.



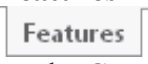
Step 12. Drag a selection to **left to select all geometry except horizontal centerline**, Fig. 6.

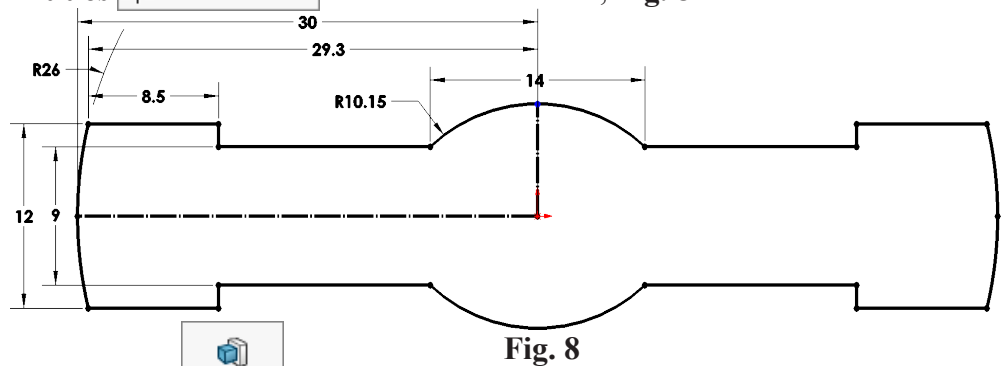
Step 13. Click **Mirror Entities**  on the Sketch toolbar.

Step 14. Drag a selection to **right to select all geometry** and **Ctrl click vertical centerline to unselect**, Fig. 7.





Step 15. Click **Mirror Entities**  on the Sketch toolbar, Fig. 8.

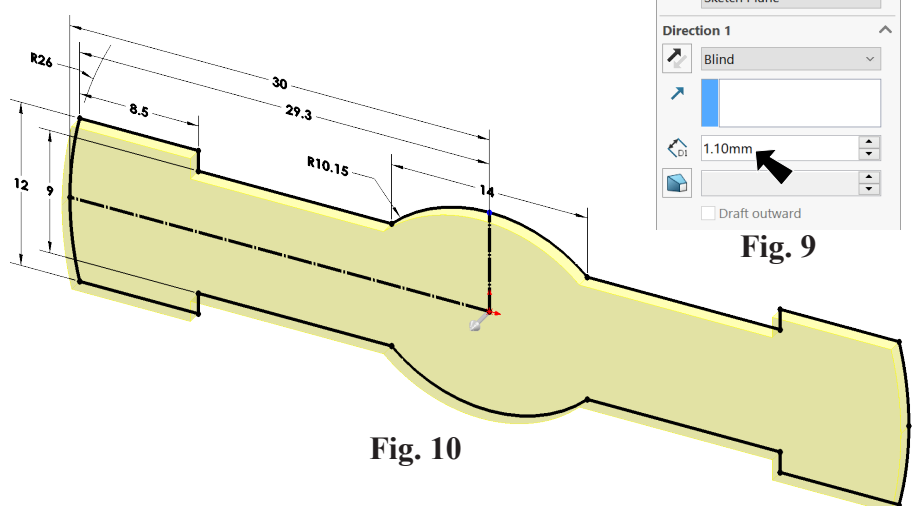
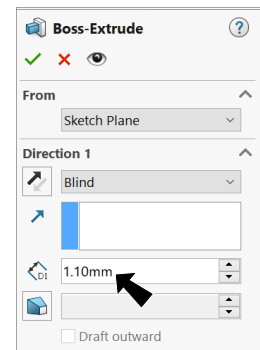
Step 16. Click **Features**  on the Command Manager toolbar.



Step 17. Click **Extruded Boss/Base**  on the Features toolbar.

Step 18. In the Boss-Extrude Property Manager set: **Depth**  **1.1** click OK .

**Depth**  **1.1**  
click OK .





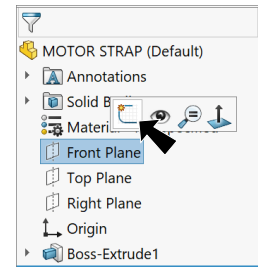
## B. Save as "MOTOR STRAP".

Step 1. Click File Menu > Save As.


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

## C. Cut-Extrude1.

Step 1. Click **Front Plane**  in the Feature Manager and click **Sketch**  on the context toolbar, **Fig. 11**.





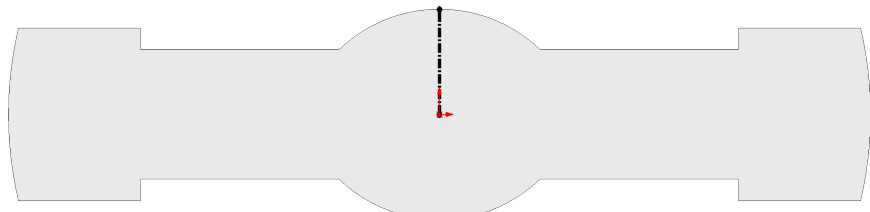
**Fig. 11**

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

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


Step 4. Sketch vertical centerline from **Origin** , **Fig. 12**.

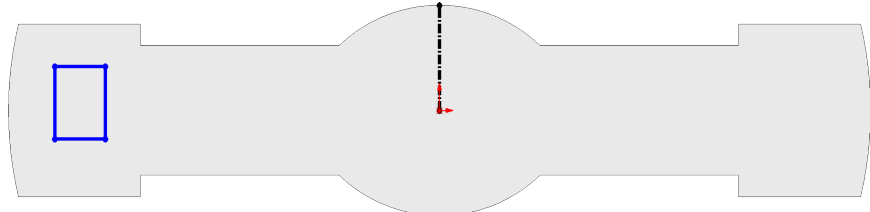
Step 5. Click **Corner Rectangle**  in the **Rectangle flyout**  on the Sketch toolbar.



**Fig. 12**



Step 6. Sketch rectangle, **Fig. 13**.

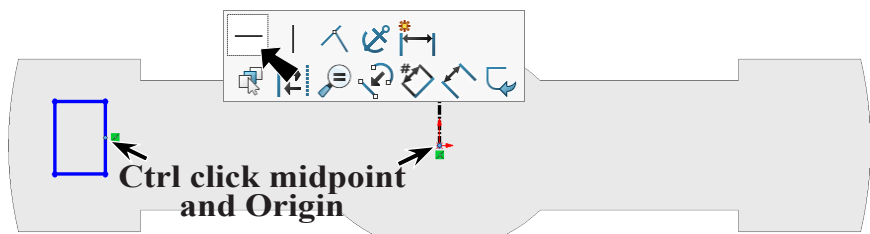
Step 7. **Right click graphics area and click Select**  from menu to unselect Rectangle tool.



**Fig. 13**


Step 8. **Ctrl click midpoint of vertical rectangle line**

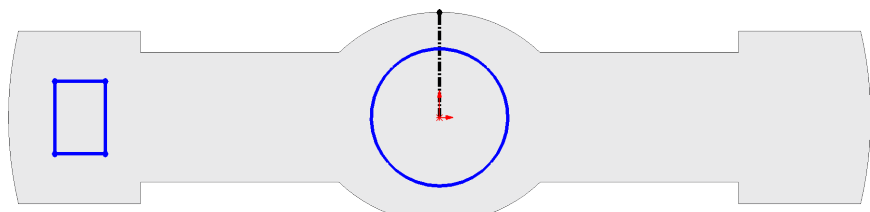
**and Origin**  to select both. Release Ctrl key and click **Make Horizontal**  on the context toolbar, **Fig. 14**.




**Fig. 14**

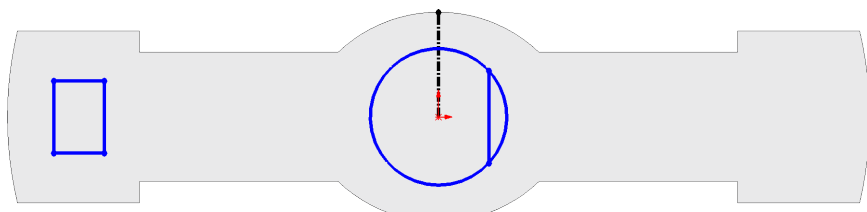
Step 9. Click **Circle**  (S) on the Sketch toolbar.

Step 10. Sketch circle at **Origin** , **Fig. 15**.



**Fig. 15**

Step 11. Click **Line**  (L) on the Sketch toolbar.






Step 12. Sketch **vertical chord**  right of Origin , Fig. 16.

Fig. 16

Step 13. **Right click graphics area** and click **Select**  from menu to un-select Line tool.

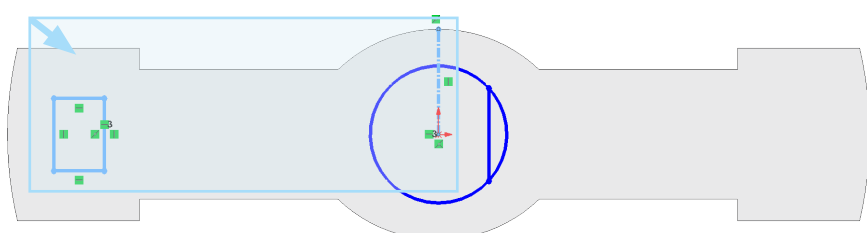


Fig. 17

Step 14. Drag a **selection** to **right** to select all of **rectangle and vertical centerline**, Fig. 17.

Step 15. Click **Mirror Entities**  on the Sketch toolbar.

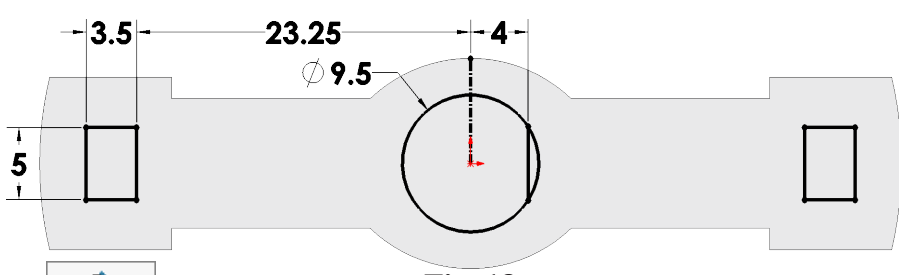



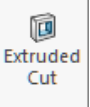
Fig. 18



Step 16. Click **Smart Dimension**  (S) on the Sketch toolbar.

Step 17. Add dimensions, **Fig. 18**.

Step 18. Click **Isometric**  on the Standard Views toolbar. (Ctrl-7)

Step 19. Click **Features**  on the Command Manager toolbar.

Step 20. Click **Extruded Cut**  on the Features toolbar.

Step 21. In the Cut-Extrude Property Manager set:  
 under Direction 1, **Fig. 19**  
 End Condition **Through All**  
**Reverse Direction**   
 under Selected Contours  
 click the **3 contours**, **Fig. 20**  
 click OK .

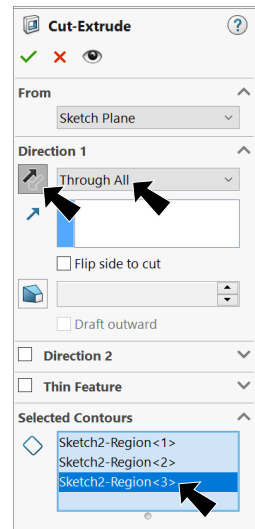


Fig. 19

Step 22. Save  (Ctrl-S).

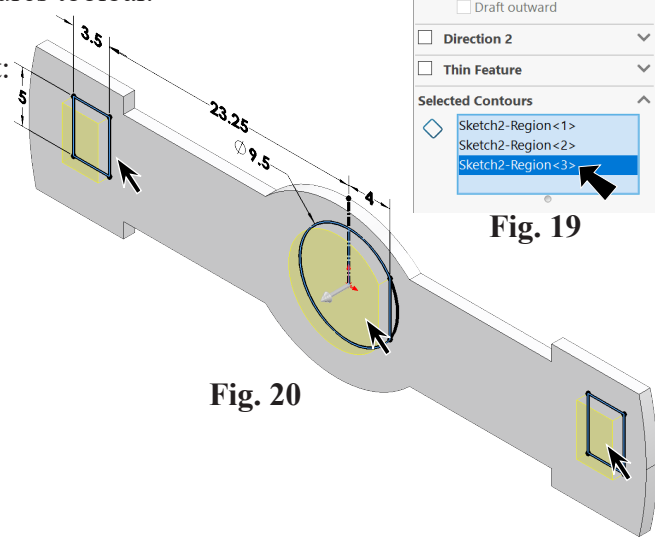









Fig. 20

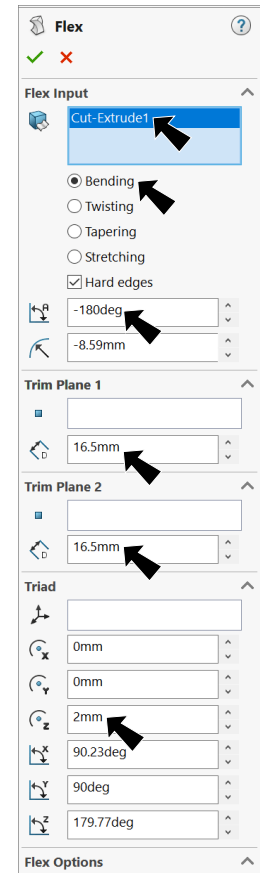
## D. Flex.

Step 1. Click **Top**  on the Standard Views toolbar. (Ctrl-5)

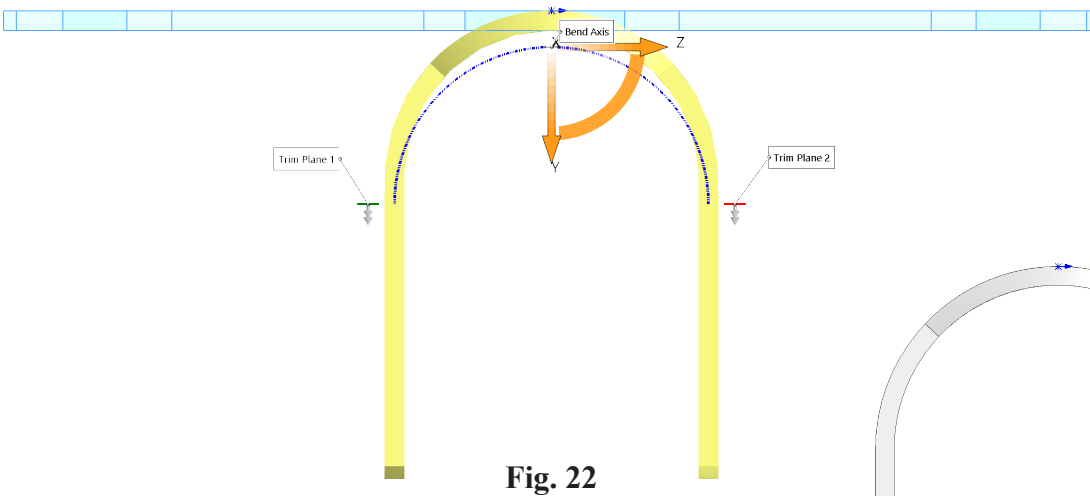
Step 2. Click Insert Menu > Features > Flex.

Step 3. In the Flex Property Manager:  
under Flex Input, **Fig. 21**  
click **body** in graphics area, **Fig. 22**  
select **Bending**  
Angle  **-180°**  
under Trim Plane 1  
Distance  **16.5**  
under Trim Plane 2  
Distance  **16.5**  
under Triad  
X Rotation Origin  **0**  
Y Rotation Origin  **0**  
Z Rotation Origin  **2**  
click OK .

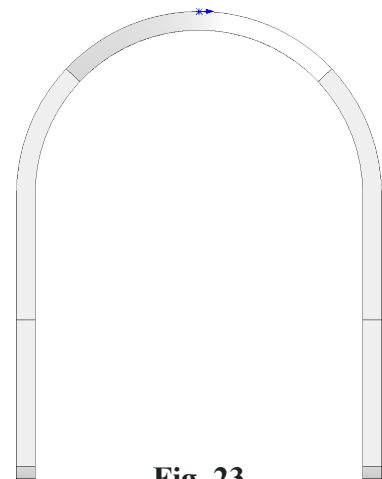
Step 4. Save  (Ctrl-S).



**Fig. 21**



**Fig. 22**





**Fig. 23**

## E. Appearance.

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

Step 2. Click the **Motor Strap** to select part, click **Appearances Callout**  on the context toolbar and click **Motor S..** , Fig. 24.

Step 3. In the Appearances Task pane, expand **Plastic**, click **High Gloss** and in the lower pane select **white high gloss plastic**, Fig. 25.

Step 4. In the Appearances Property Manager, click **Advanced** button at top of Property Manager, Fig. 26 click **Illumination tab**  click **Transparency amount .5** click OK .

Step 5. Save  (Ctrl-S).

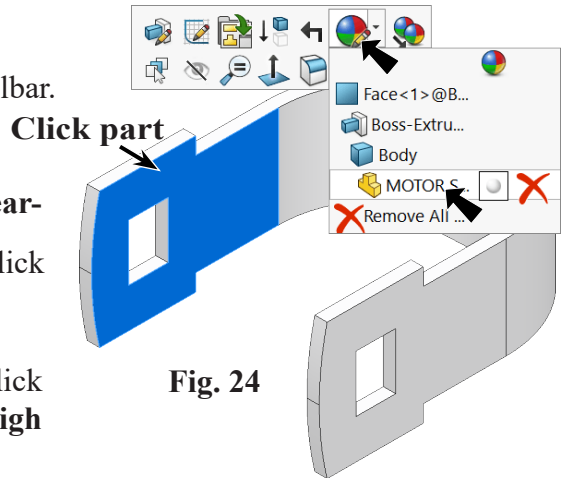


Fig. 24

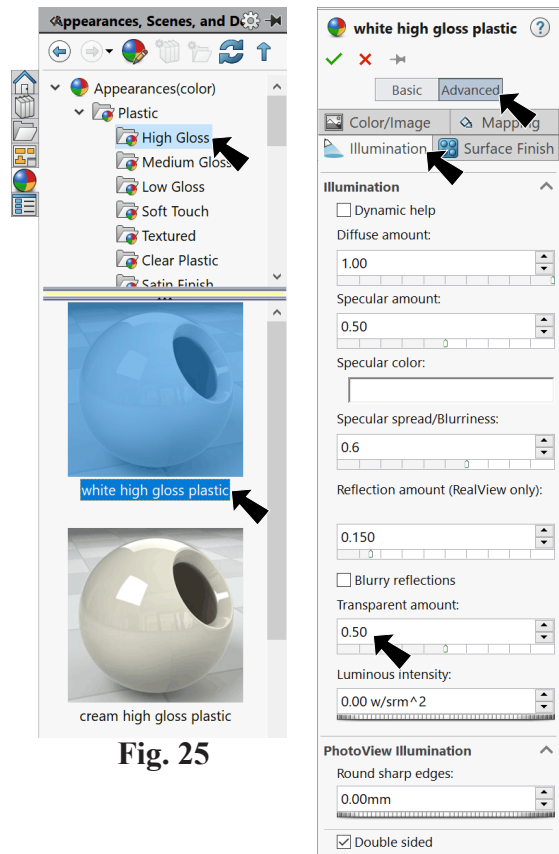


Fig. 25

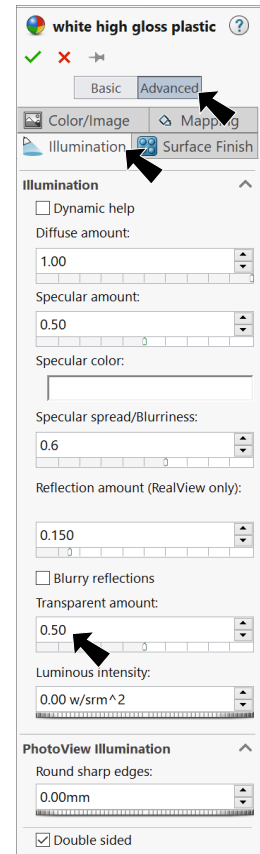


Fig. 26

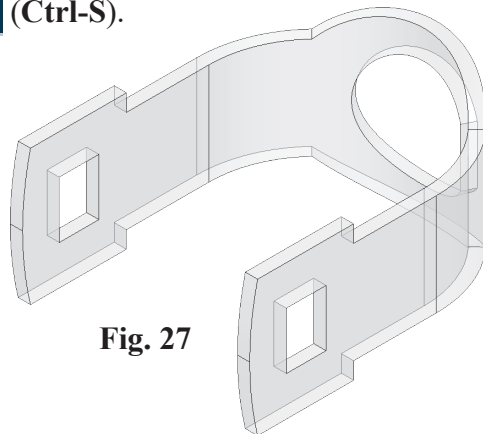


Fig. 27