

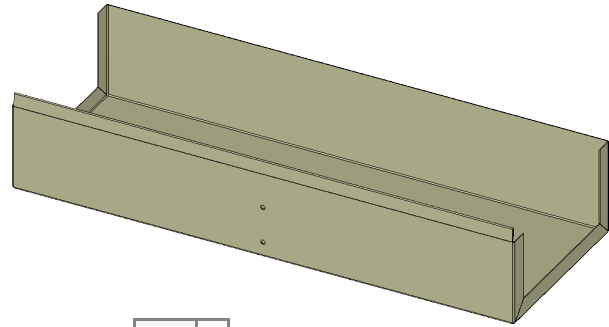
# Chapter 1

## Sheet Metal Toolbox Toolbox Bottom

### A. Sketch.

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

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



Step 3. Click **Center Rectangle**  in the **Rectangle** flyout  on the Sketch toolbar.

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

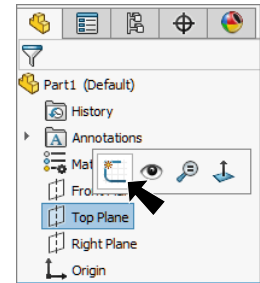



Fig. 1

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

Step 6. Dimension **5** by **14**, **Fig. 3**.

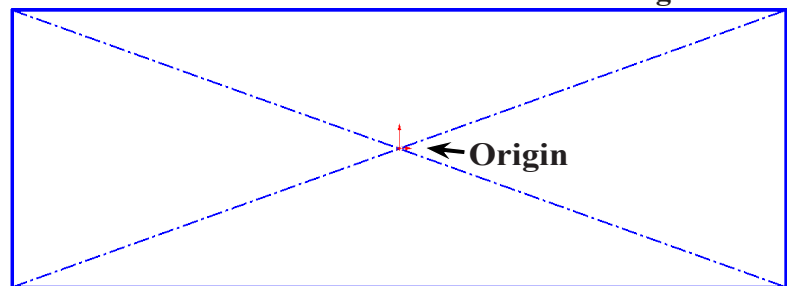


Fig. 2

### B. Save as "BOTTOM".

Step 1. Click File Menu > Save As.

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

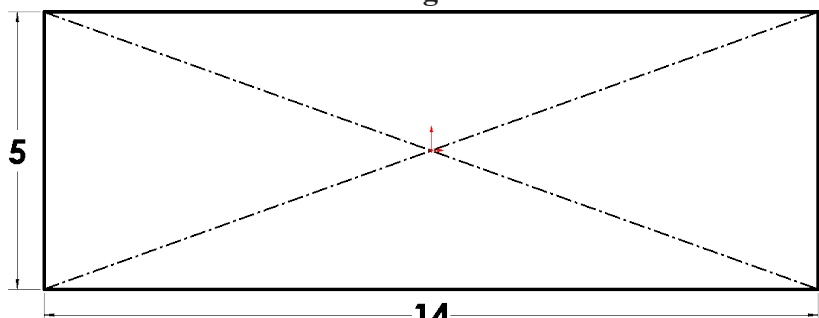



Fig. 3

### C. Sheet Metal Toolbar.

Step 1. **Right click Sketch**  on the Command Manager toolbar and select **Sheet Metal**, **Fig. 4**.

Step 2. Click **Sheet Metal**  on the Command Manager toolbar.

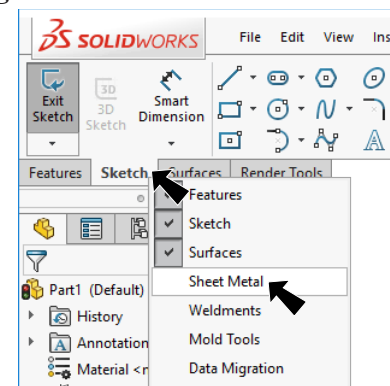



Fig. 4

## D. Base Flange.

Step 1. Click **Base Flange/Tab**  on the Sheet Metal toolbar.

Step 2. In the Property Manager set:  
 under Sheet Metal Gauges, **Fig. 5**  
 check **Use gauge table**  
 select **Sample Table - Aluminum**  
 under Sheet Metal Parameters  
 select **Gauge 24**  
 click OK .

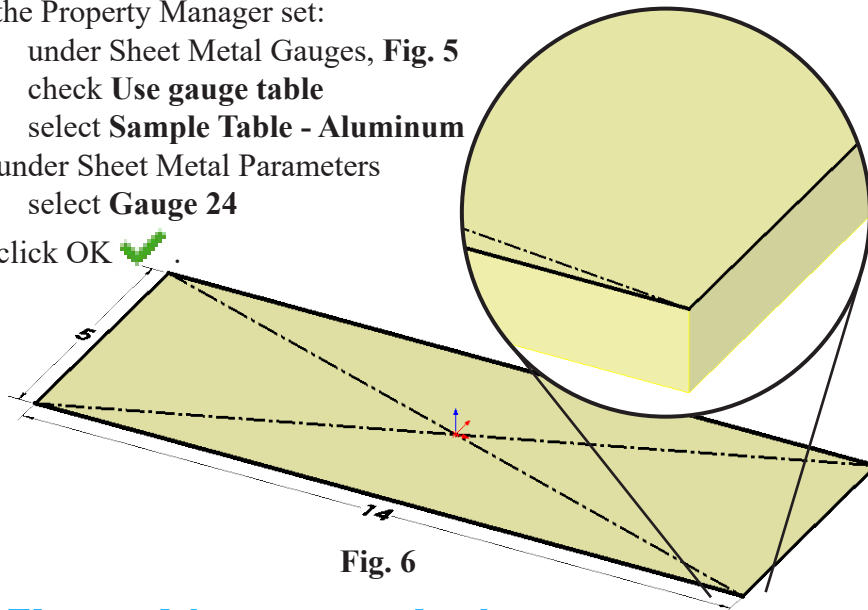


Fig. 6

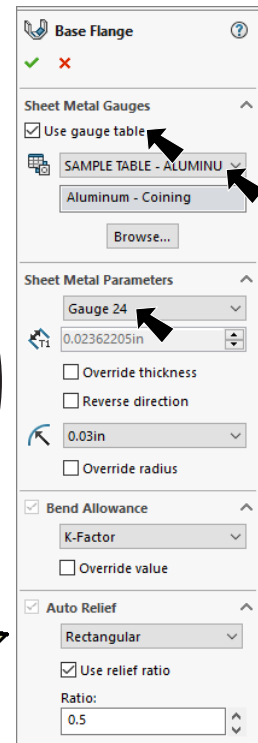
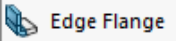


Fig. 5

## E. Edge Flange 1 (top rear edge).

Step 1. Click **Edge Flange**  on the Sheet Metal toolbar.

Step 2. In the Edge-Flange1 Property Manager set:  
 under Flange parameters, **Fig. 7**  
 click **top rear edge** of base flange, slide flange up and click, **Fig. 8**

**Angle**  **90°**

under Flange Length

**Length**  **2.625**

select **Outer Virtual Sharp**   
 under Flange Position

select **Material Outside** 

click OK .

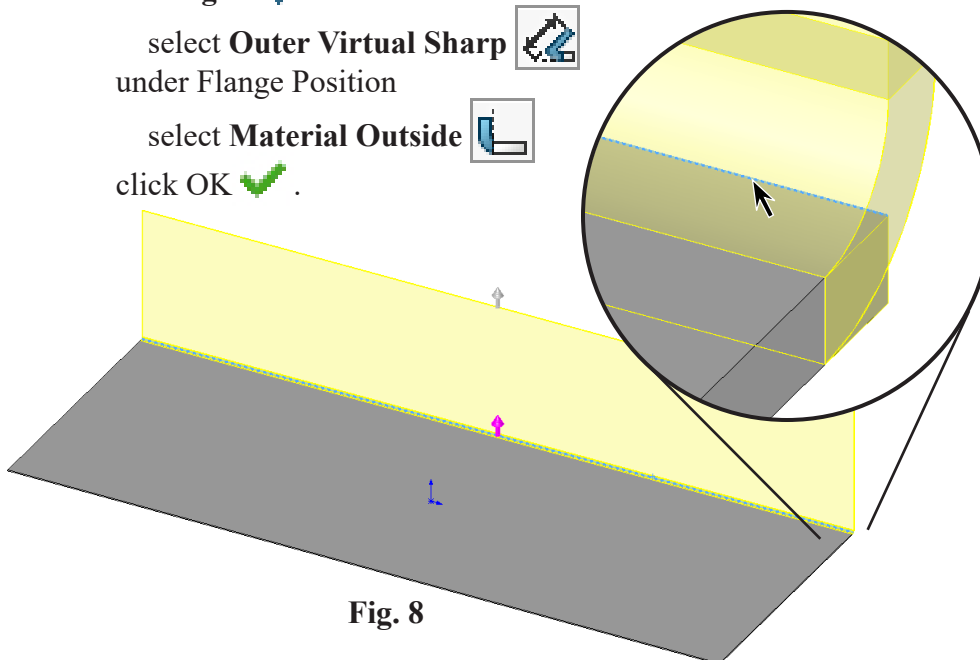


Fig. 8

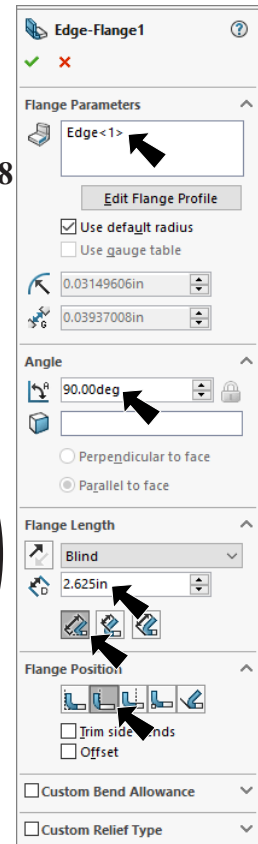
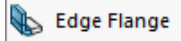


Fig. 7

## F. Edge Flange2 (top front edge).

Step 1. Click **Edge Flange**  on the Sheet Metal toolbar.

Step 2. In the Edge-Flange2 Property Manager set:

under Flange parameters, **Fig. 9**

click **top front edge**, slide flange up and click, **Fig. 10**

**Angle**  **90°**

under Flange Length

**Length**  **2.375**

select **Outer Virtual Sharp**   
under Flange Position

select **Material Outside** 

click **OK**  .

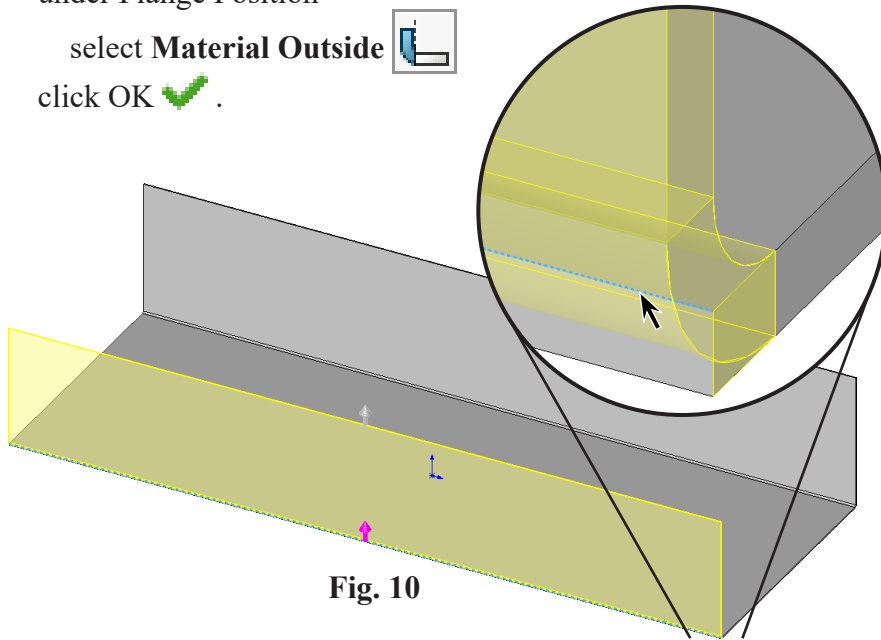


Fig. 10

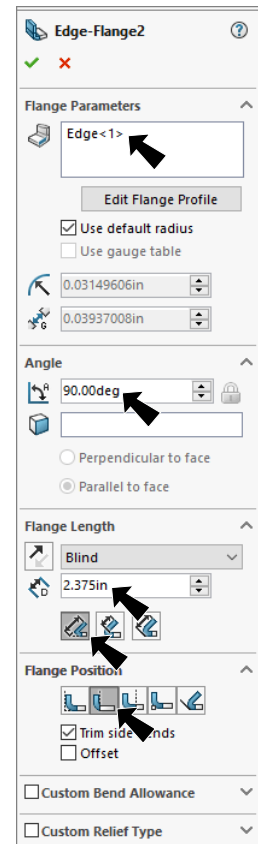
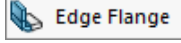


Fig. 9

## G. Edge Flange3 (6 inside end edges).

Step 1. Click **Edge Flange**  on the Sheet Metal toolbar.

Step 2. In the Edge-Flange3 Property Manager set:  
 under Flange parameters, **Fig. 11**  
 click **6 inside end edges**, slide flange up inside and click, **Fig. 12**

**Gap distance**  **.01**

under Angle

**Angle**  **90°**

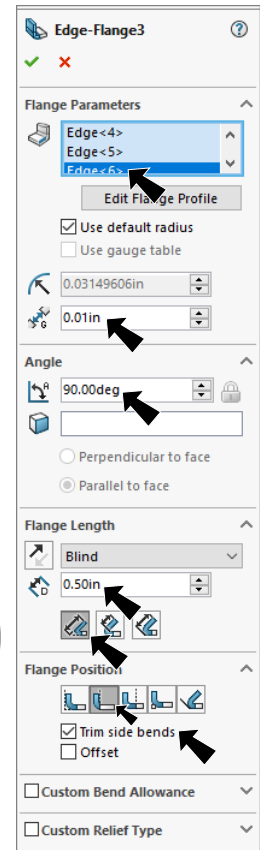
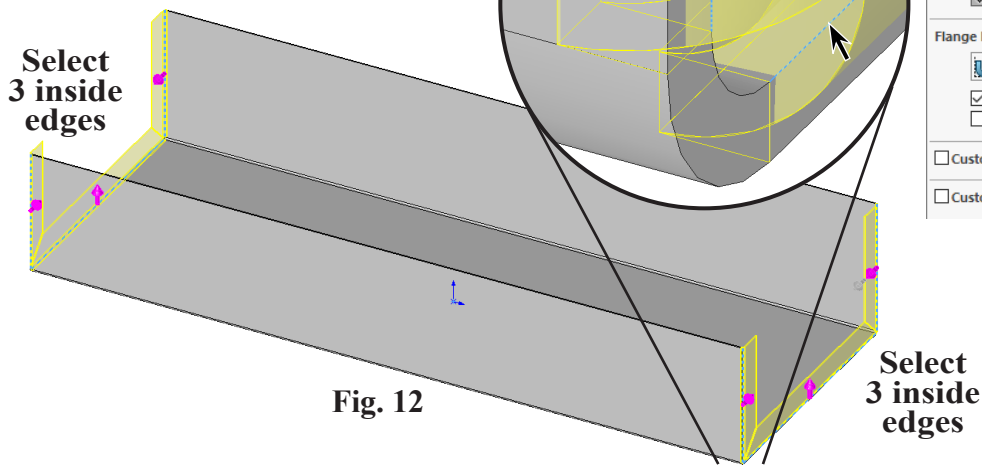
under Flange Length

**Length**  **.5**

select **Outer Virtual Sharp**   
 under Flange Position

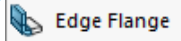
select **Material Outside**   
 check **Trim side bends**

click **OK** .



**Fig. 11**

## H. Edge Flange4 (inside front edge of flange2).

Step 1. Click **Edge Flange**  on the Sheet Metal toolbar.

Step 2. In the Edge-Flange4 Property Manager set:

under Flange parameters, **Fig. 13**

click **inside edge front of Flange2**, slide flange inside the box and click, **Fig. 14**

**Angle**  **5°**

under Flange Length

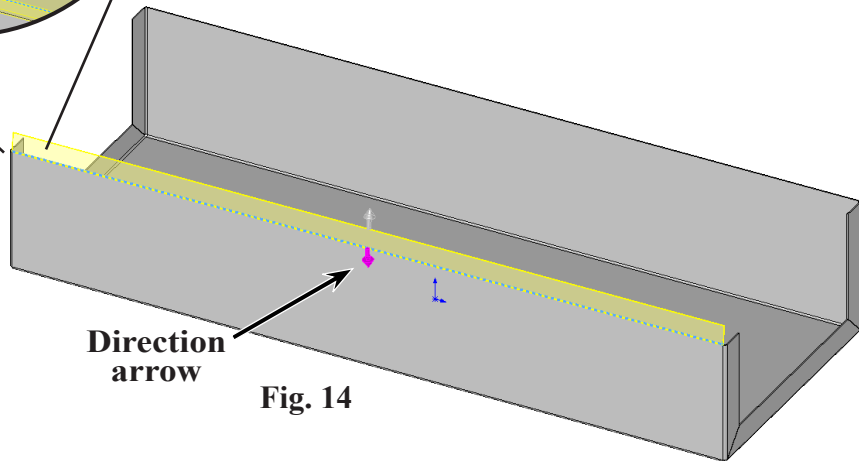
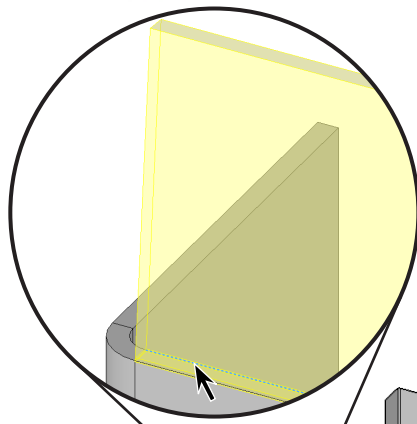
**Length**  **.375**

The Direction arrow should point inside box, **Fig. 14**. If arrow is pointing in wrong direction, click **Reverse direction** .

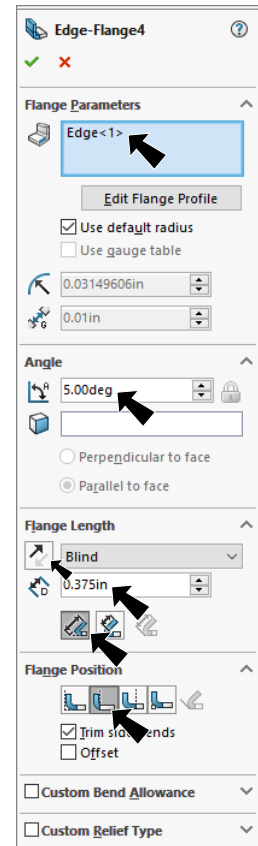
select **Outer Virtual Sharp**   
under Flange Position

select **Material Outside** 

click OK .



**Fig. 14**







**Fig. 13**

## I. Hem 1.

Step 1. Click **Hem**  on the Sheet Metal toolbar.

Step 2. In the Hem Property Manager set:  
under Edges, **Fig. 15**  
click **inside edge Flange4**, **Fig. 16**

**Material Inside**   
under Type and Size  
select **Closed**   
**Length**  **.375**  
click **OK** .

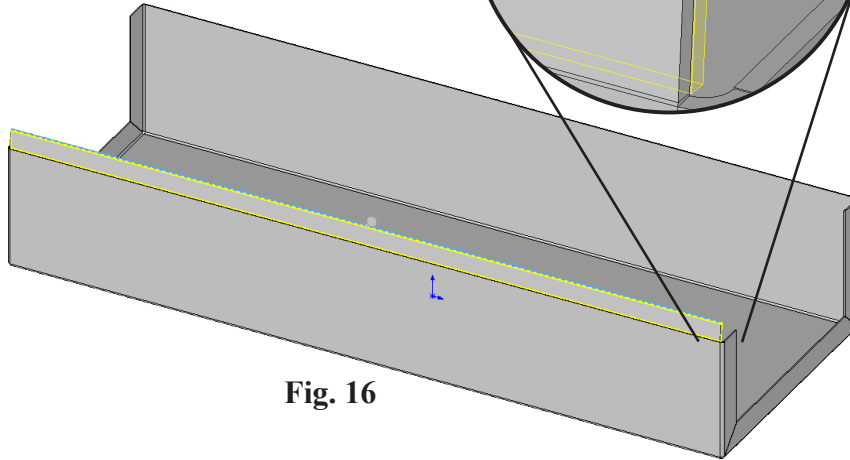
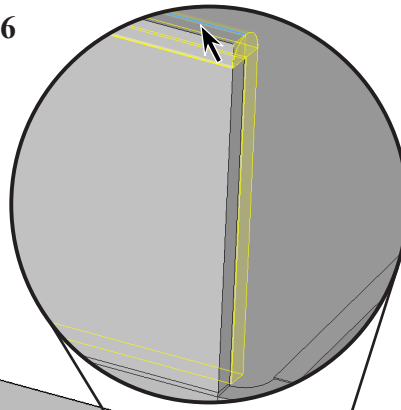


Fig. 16

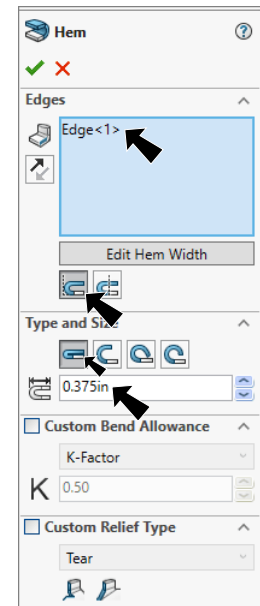
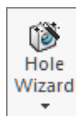


Fig. 15


## J. Hole Wizard 1/8 Hole.

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

Step 2. Click **Features**  on the Command Manager toolbar.

Step 3. Click **Hole Wizard**  on the Features toolbar.

Step 4. In the Property Manager, on the Type tab set:  
under Hole Type, **Fig. 17**

select **Hole**   
under Standard:  
select **ANSI Inch**  
under Type  
select **All Drill sizes**  
under Size:  
select **1/8 (#30)**  
under End Condition  
**Up To Next**

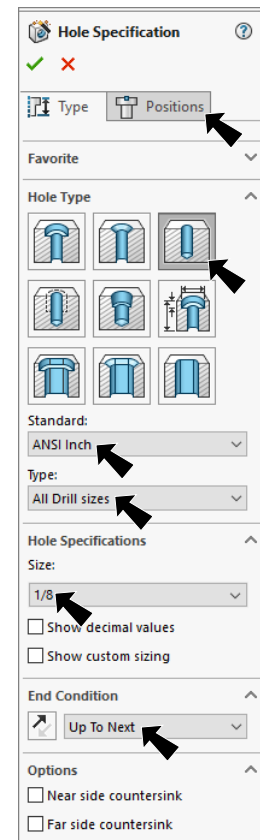
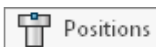
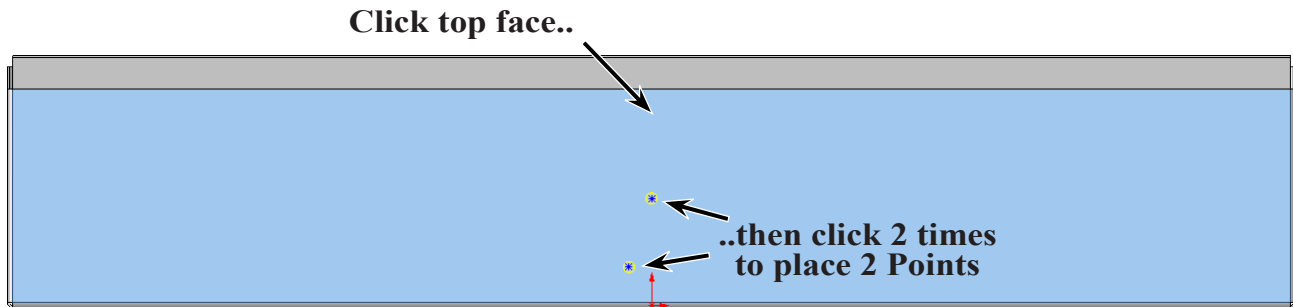


Fig. 17



Step 5. Click **Positions** tab  at top of Property Manager.

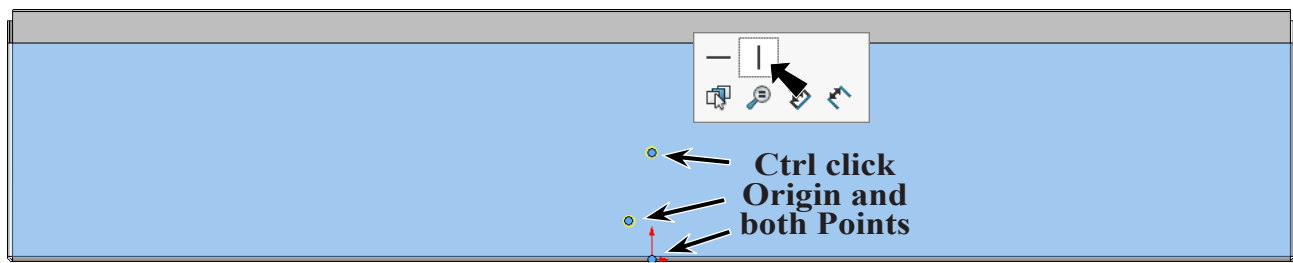
Step 6. Click **front face** one time as face for holes. Then, click **two times** to place 2 holes, **Fig. 18**.



**Fig. 18**

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

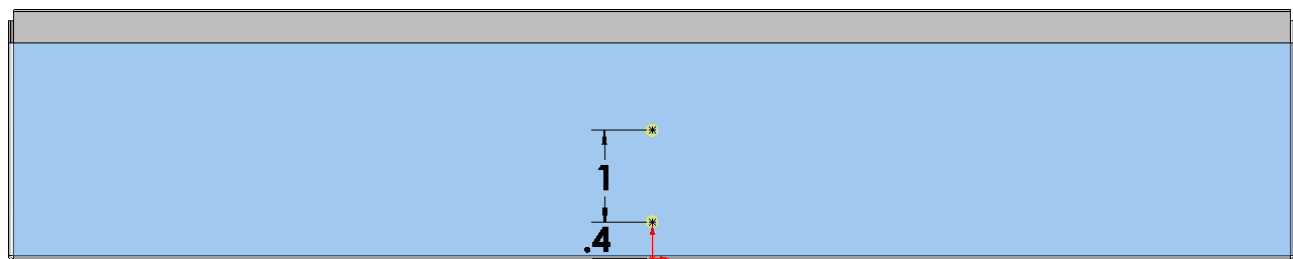
Step 8. **Ctrl click center point of both points and Origin**  to select all three. Release Ctrl key and click **Make Vertical**  on the context toolbar, **Fig. 19**.



**Fig. 19**

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

Step 10. Add dimensions **Fig. 20**.





**Fig. 20**

Step 11. Click OK  in the Dimension Property Manager and OK  in the Hole Wizard Property Manager.

Step 12. Save. Use **Ctrl-S**.

## K. Appearance Color.

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

Step 2. Click the part, click **Appearance Callout**  on the context toolbar and click **BOTTOM** , Fig. 21.

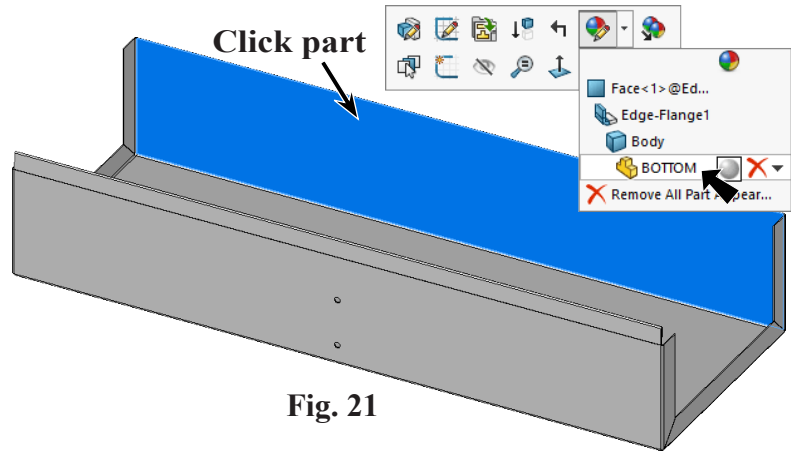



Fig. 21

Step 3. In the Appearances Task pane, expand **Painted** and click **Car**. In the lower pane select **black**, Fig. 22.

Step 4. In the Appearances Property Manager, under Color, Fig. 23 set RGB values  
**R 196**  
**G 196**  
**B 157**  
 click OK .

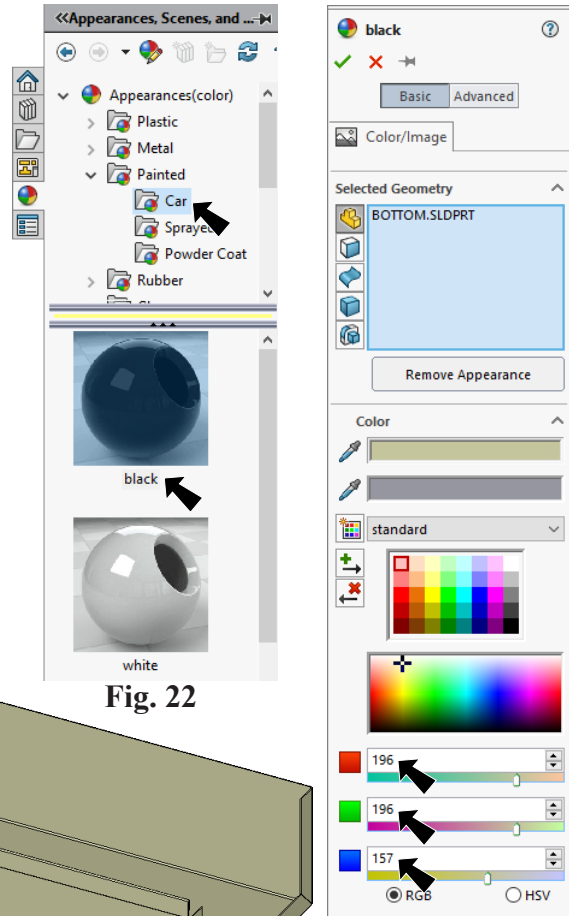




Fig. 22

Fig. 23

Step 5. Save. Use **Ctrl-S**.

## L. Flatten Sheet Metal.

Step 1. Click **Flatten**  on the Sheet Metal toolbar, Fig. 24. Click **Flatten**  again to unflatten.

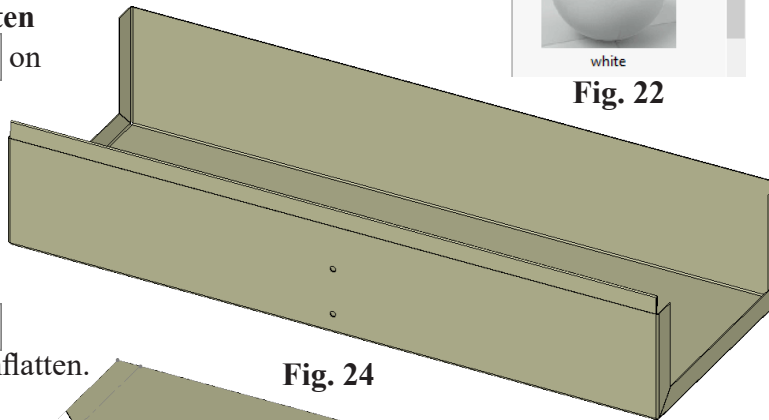


Fig. 24

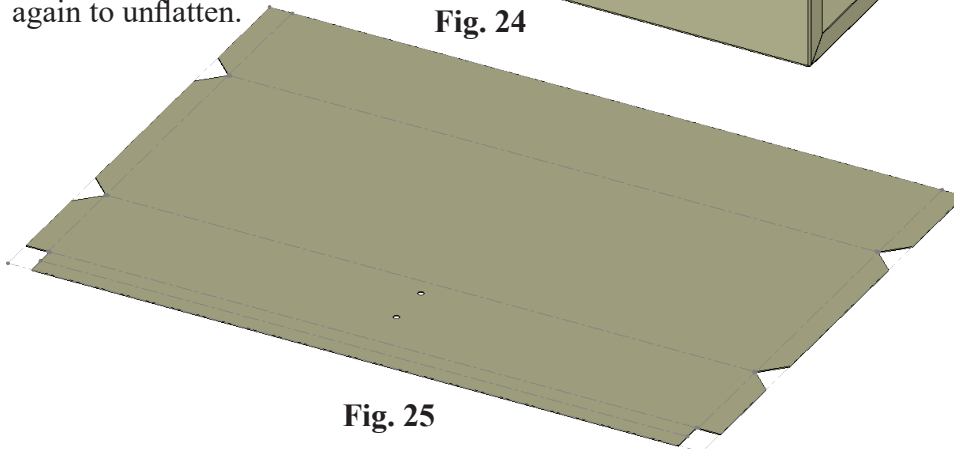


Fig. 25