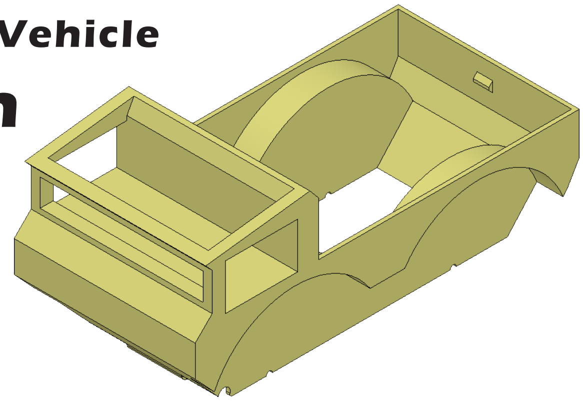
Cluster Wheel Vehicle
Hatch



A. Fillet1 Hinge.

Step 1. Open your **Hatch part** file.

Step 2. Rotate view to view inside front, **Fig. 1**. To rotate, click **Isometric** on the Standard Views toolbar (**Ctrl-7**), then **Shift click the X axis of the Reference Triad** **twice** (bottom left corner of graphics area).

Step 3. Click **Fillet** on the Features toolbar.

Step 4. In the Fillet Property Manager set:
select **FilletXpert**, **Fig. 2**

1. **Radius** **1**
click **inside bottom front edge of Hatch**, **Fig. 1**

click OK .

Step 5. Save (**Ctrl-S**).

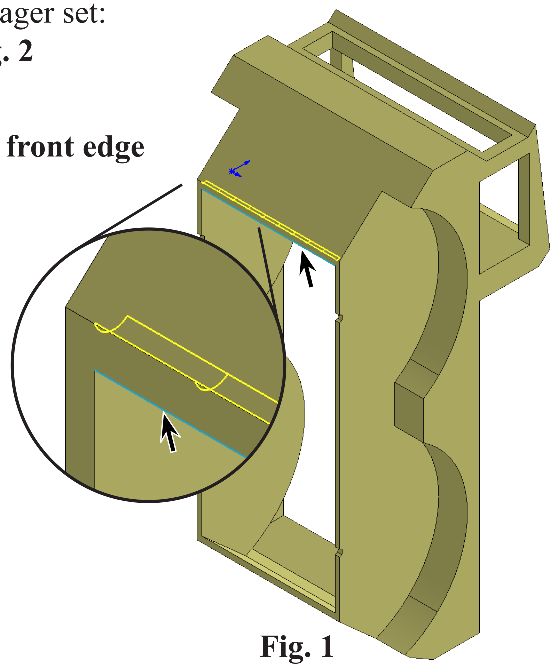


Fig. 1

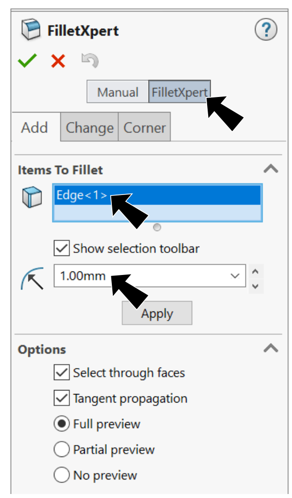


Fig. 2

B. Extrude1 Sketch1 Hinge.

Step 1. Click **Right Plane** in the Feature Manager and click **Sketch** on the context toolbar, **Fig. 3**.

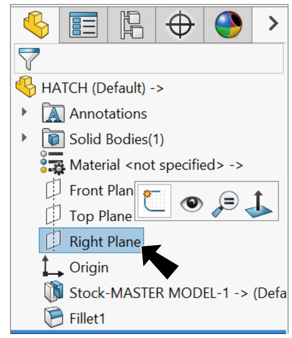


Fig. 3

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

Step 3. Zoom on **front of body**, **Fig. 4**.

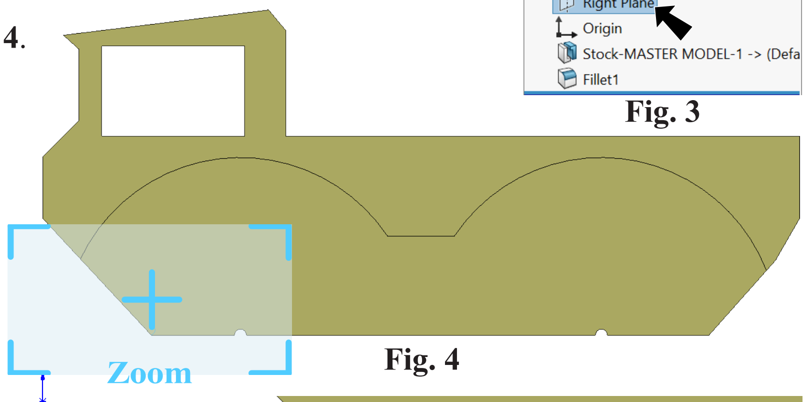


Fig. 4

Step 4. Click **Circle** (**S**) on the Sketch toolbar.

Step 5. Sketch **circle near bottom corner of body**, **Fig. 5**.

Fig. 5

Step 6. Click **Smart Dimension** Smart Dimension (**S**) on the Sketch toolbar.

Step 7. Add dimensions, **Fig. 6**.

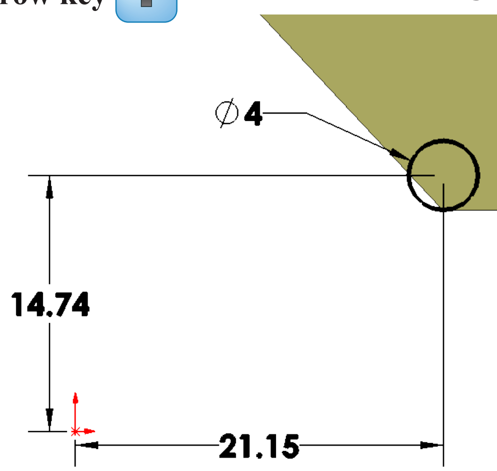


Fig. 6

Step 8. Rotate view to **hinge**, **Fig. 8**. Use **Right Arrow key** **once and** use **Up Arrow key** **once**.

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

Step 10. Click **Extruded Boss/Base** Extruded Boss/Base on the Features toolbar.

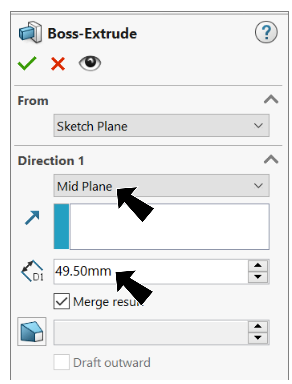


Fig. 7

Step 11. In the Boss-Extrude Property Manager set:
under Direction 1, **Fig. 7**
End Condition **Mid Plane**
Depth 49.5
click OK .

Step 12. Save (**Ctrl-S**).

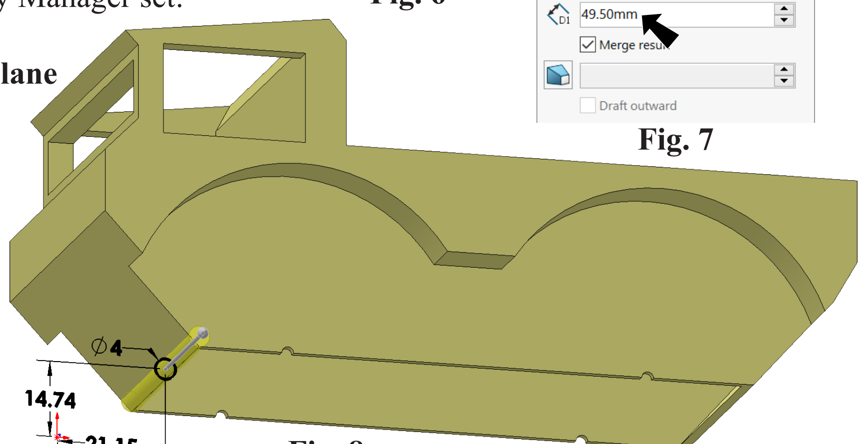


Fig. 8

C. Fillets 2-3.

Step 1. Rotate view to view inside front, **Fig. 10**. To rotate, click **Isometric** on the Standard Views toolbar (**Ctrl-7**), then **Shift click Y axis of the Reference Triad** once.

Step 2. Click **Fillet** on the Features toolbar.

Step 3. In the Fillet Property Manager set:
select **FilletXpert**, **Fig. 9**

② **Radius** 8
click **front edge of hinge at body**, **Fig. 11**
click **Apply**

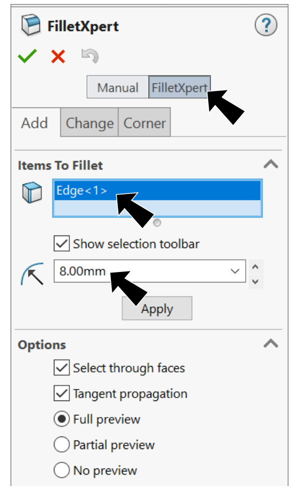


Fig. 9

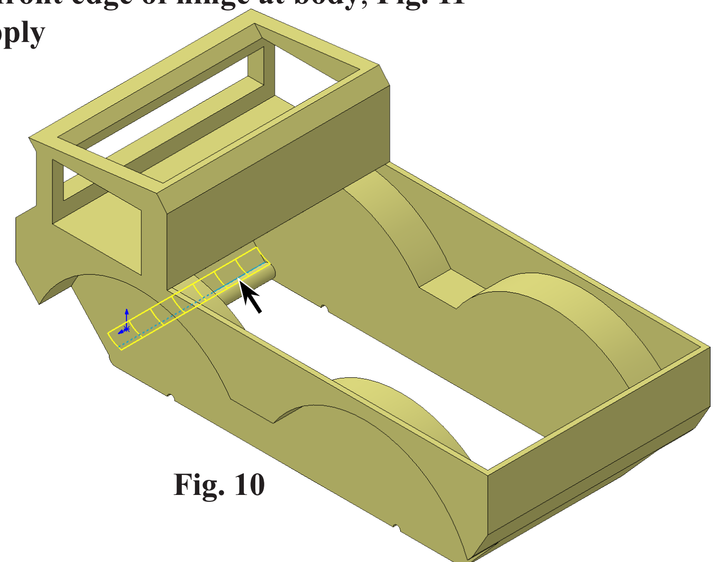


Fig. 10

Use **Previous View** on the Standard Views toolbar. (**Ctrl-Shift-Z**) to return to previous zoomed in view.

③ **Radius** 2, **Fig. 11**
click **edge of hinge Extrude1 at body**, **Fig. 12**
click OK.

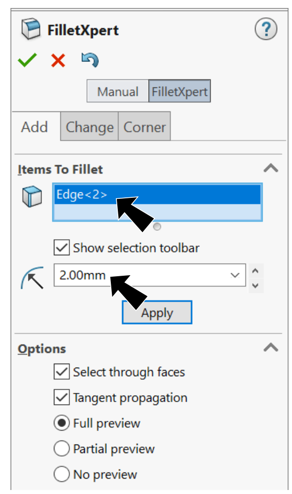


Fig. 11

Step 4. Save (**Ctrl-S**).

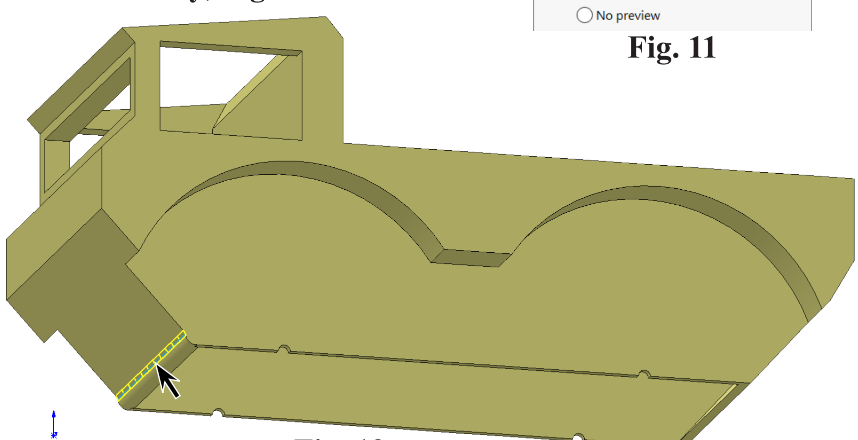


Fig. 12

D. Extruded Cut1 Sketch2 Hinge.

Step 1. Click the **side face of wheel well** and click **Sketch** on the context toolbar, **Fig. 13**.

Step 2. Zoom on **front of body**, **Fig. 13**.

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

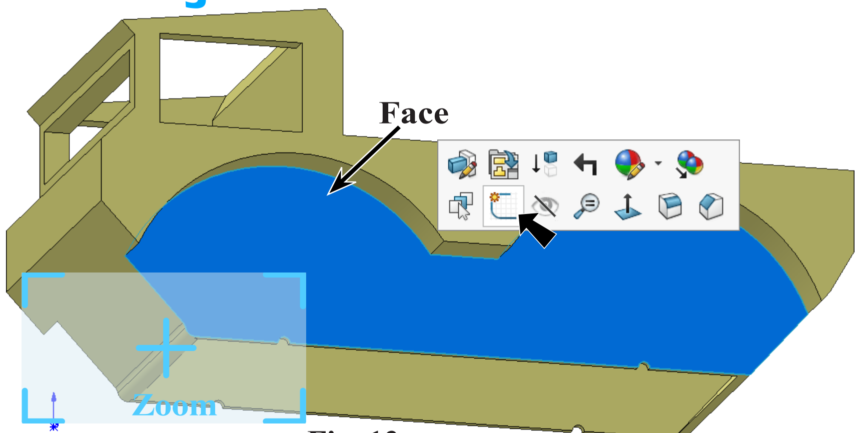


Fig. 13

Step 4. Sketch **circle at center-point of hinge Extrude**, **Fig. 14**. To wake up centerpoint, hover cursor over circular edge.

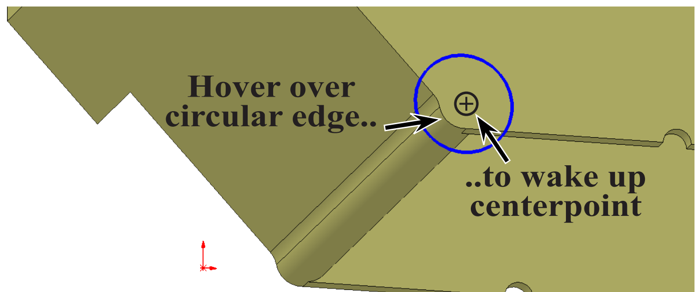


Fig. 14

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

Step 6. Add offset dimension **.3 from circular edge**, **Fig. 15**.

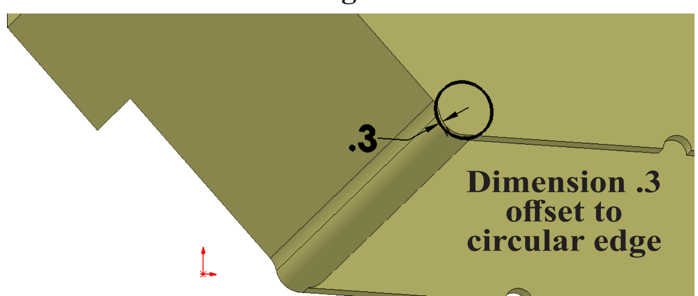


Fig. 15

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

Step 8. Click **Extruded Cut** on the Features toolbar.

Step 9. In the Cut-Extrude Property Manager set:
under Direction 1, **Fig. 16**
End Condition **Blind**
Depth **14.25**
click OK .

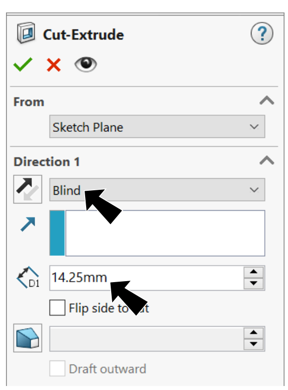


Fig. 16

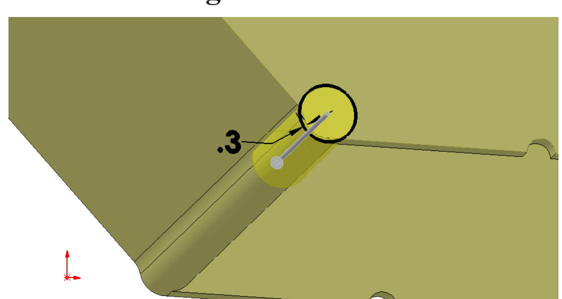


Fig. 17

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

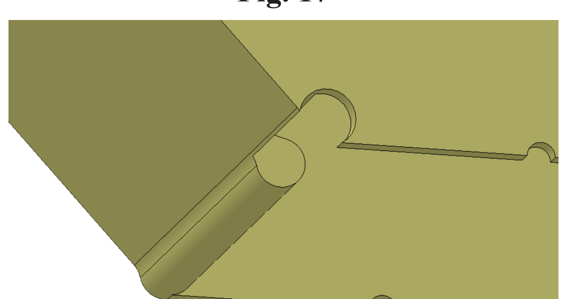
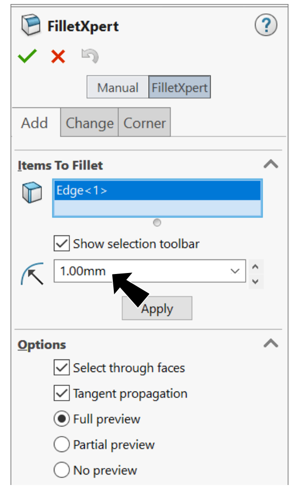


Fig. 18

E. Fillet4 Hinge.

Step 1. Click **Fillet** 

on the Features toolbar.

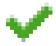


Step 2. In the Fillet Property Manager set:

select **FilletXpert**, **Fig. 19**

4 **Radius**  **1**

click **sharp edge of cut**, **Fig. 20**

click OK  .

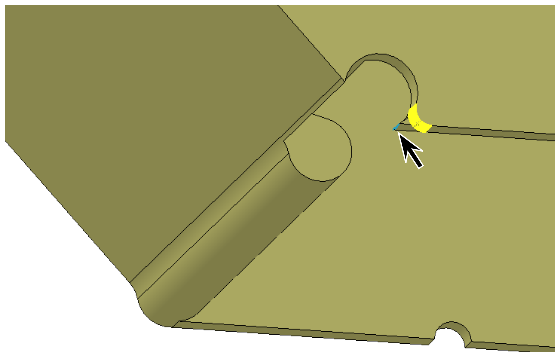


Fig. 20

Fig. 19

Step 3. Save  **(Ctrl-S)**.

F. Split Line and Dome Sketch3 for Hinge.

Step 1. Click the **side face of hinge** and click **Sketch**  on the context toolbar, **Fig. 21**.

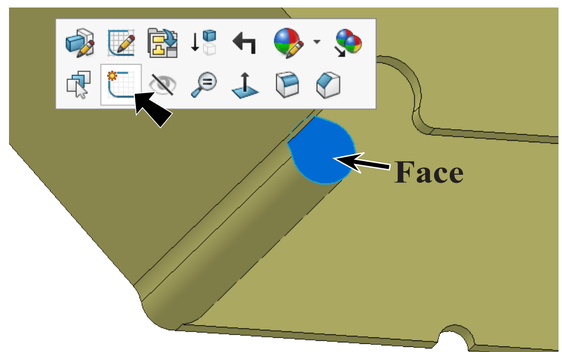
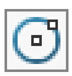


Fig. 21

Step 2. Click **Circle**  **(S)** on the Sketch toolbar.

Step 3. **Sketch circle at centerpoint of cut**, **Fig. 22**. To wake up centerpoint, hover cursor over circular edge of cut.

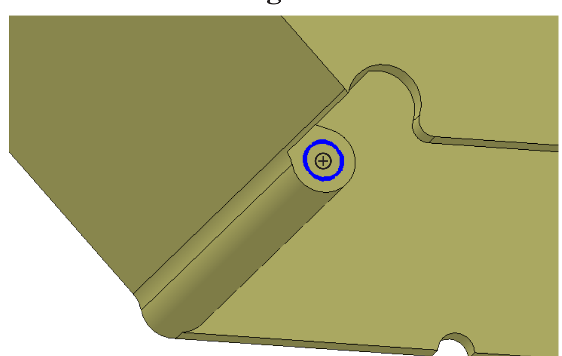
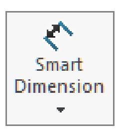


Fig. 22

Step 4. Click **Smart Dimension** 

(S) on the Sketch toolbar.

Step 5. Dimension **diameter 2**, **Fig. 23**.

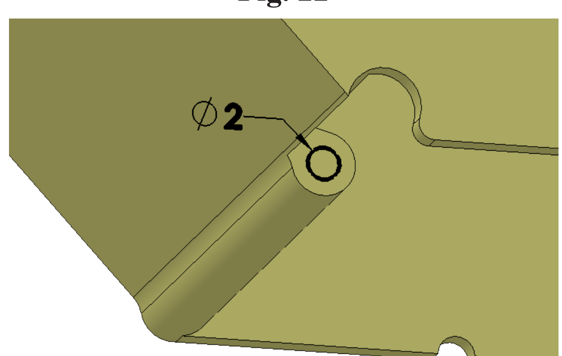


Fig. 23

Step 6. Click Insert Menu > Curve > Split Line.

Step 7. In the Split Line Property Manager set:
under Type of Split, **Fig. 24**
select **Projection**

under Selections
Sketch is selected

in Faces to Split field
click **side face**, **Fig. 25**

click OK .

Step 8. Click **Dome** on the Features toolbar.

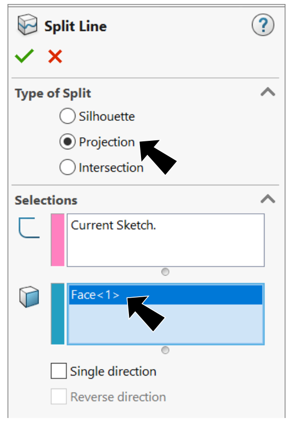


Fig. 24

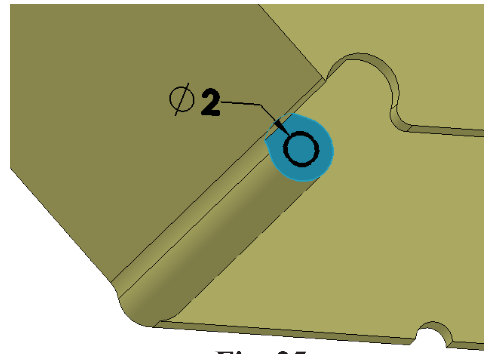


Fig. 25

Step 9. In the Dome Property Manager set:
under Parameters, **Fig. 26**
click **split line face**,
Fig. 27
Distance .7

click OK .

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

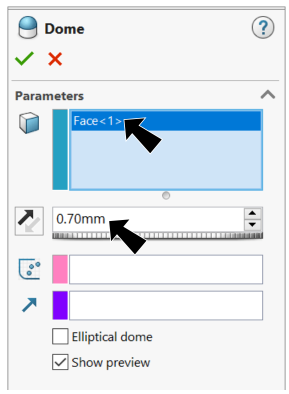


Fig. 26

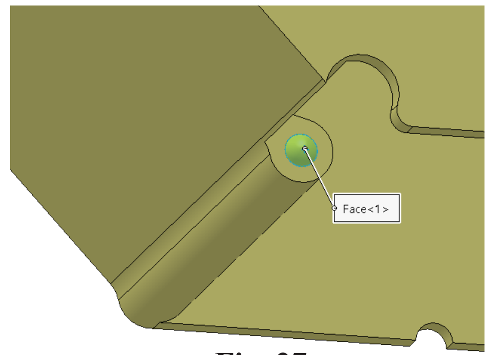


Fig. 27

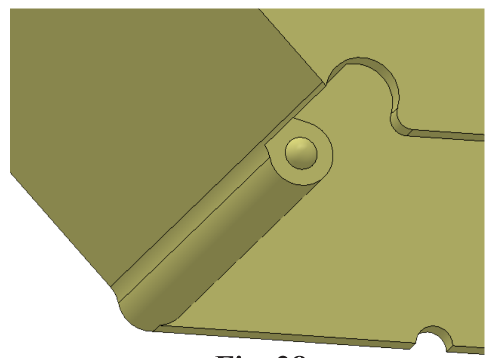


Fig. 28

G. Mirror Hinge.

Step 1. **Ctrl click Right Plane**, **Cut-Extrude1**, **Fillet4, Split Line1** and **Dome1** features to select Plane and features, **Fig. 29**.

Step 2. Click **Mirror** Mirror on the Features toolbar.

Step 3. In the Mirror Property Manager click OK.

Step 4. Save (**Ctrl-S**).

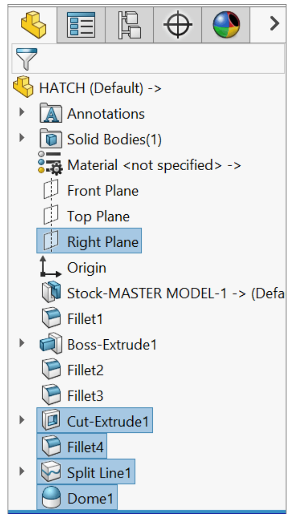


Fig. 29

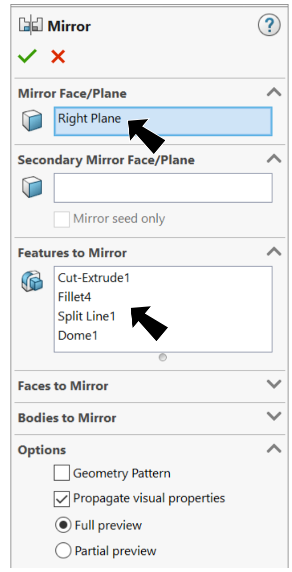


Fig. 30

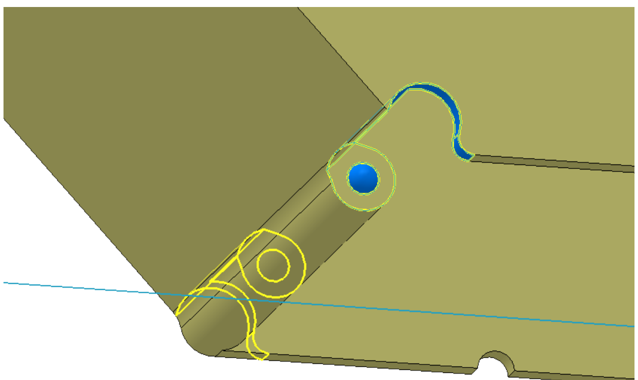


Fig. 31

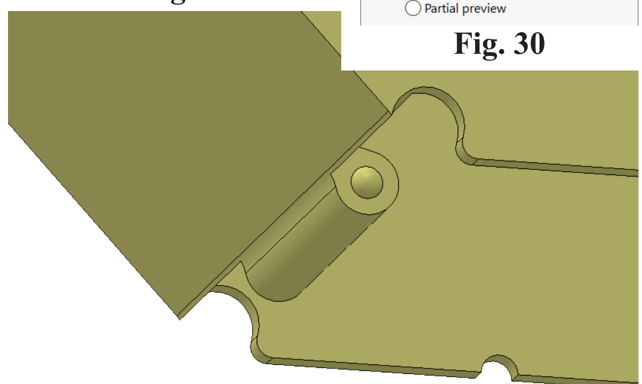


Fig. 32

H. Extrude2 Sketch4 Bed Plate Holder.

Step 1. Click **Right Plane** in the Feature Manager and click **Sketch** on the context toolbar, **Fig. 33**.

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

Step 3. Zoom in on rear of bed, **Fig. 34**.

Step 4. Click **Wireframe** on the View toolbar.

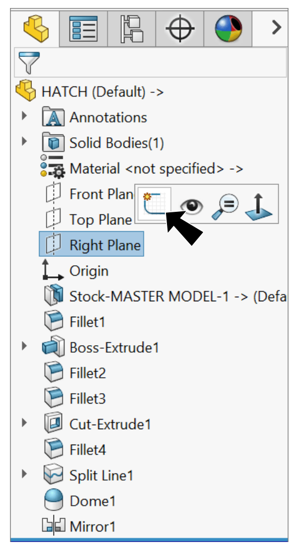


Fig. 33

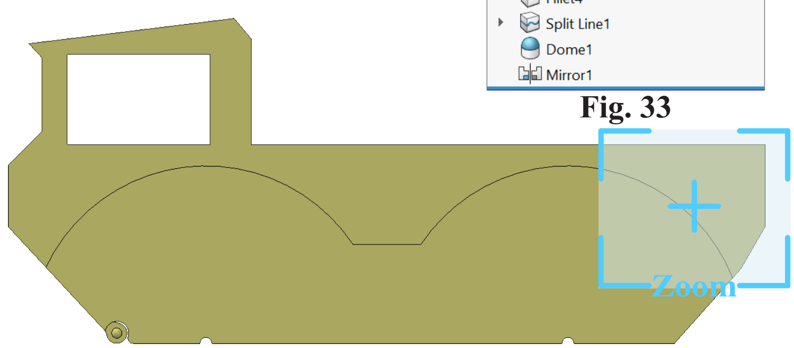


Fig. 34

Step 5. Click **Line** (L) on the Sketch toolbar.

Step 6. Sketch **a trapezoid with base on the inside edge of rear of bed, Fig. 35**.

Step 7. **Unselect Line tool**. To unselect, right click graphics area and click Select from menu.

Step 8. **Ctrl click both legs** to select both. Release Ctrl key and click **Make Equal** on the context toolbar, **Fig. 36**.

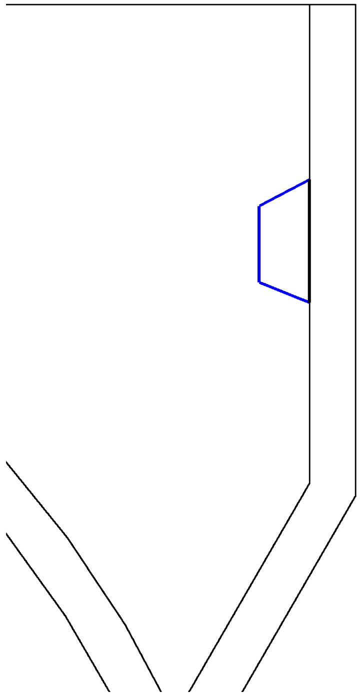


Fig. 35

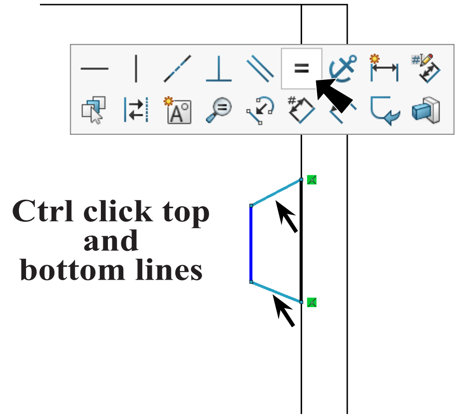


Fig. 36

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

Step 10. Add dimensions, **Fig. 37**.

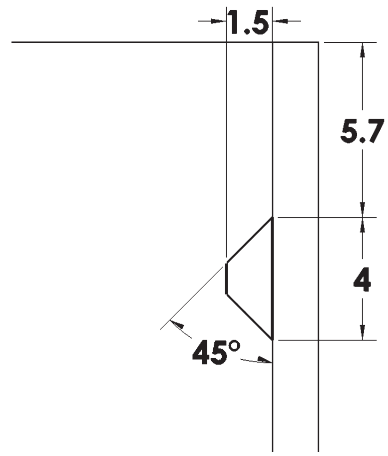


Fig. 37

Step 11. Click **Shaded With Edges** on the View toolbar.

Step 12. Click **Isometric** on the Standard Views toolbar. **(Ctrl-7)**

Step 13. Click **Features** on the Command Manager toolbar.

Step 14. Click **Extruded Boss/Base** on the Features toolbar.

Step 15. In the Boss-Extrude Property Manager set:

under Direction 1, **Fig. 38**

End Condition **Mid Plane**

Depth **6**

click OK .

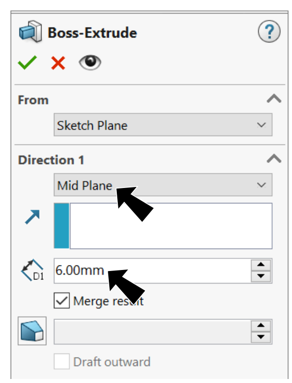


Fig. 38

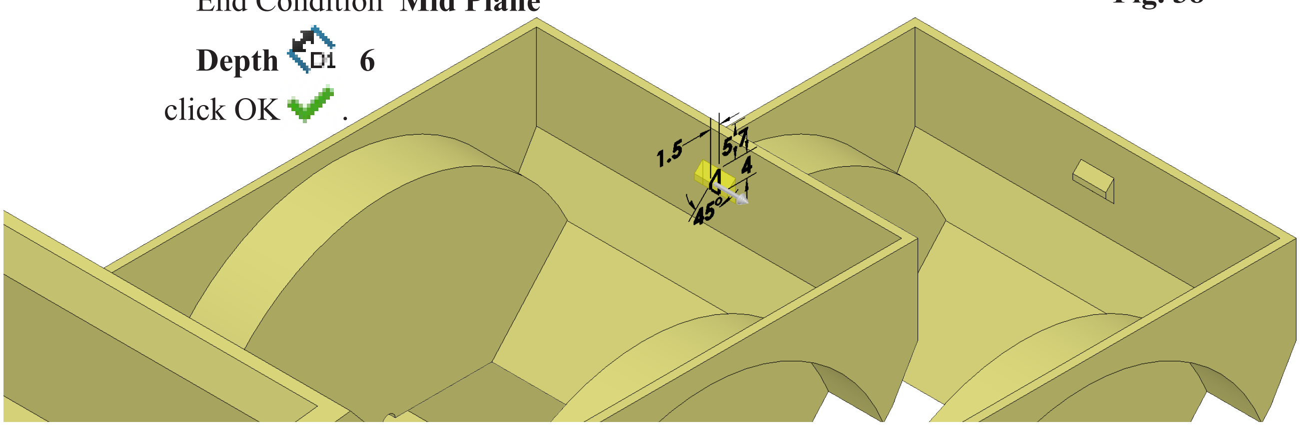


Fig. 39 **Fig. 40**

I. Extruded Cut2 Sketch5 Latch.

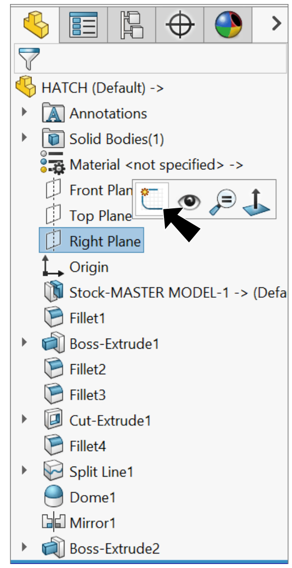


Fig. 41

Step 1. Click **Right Plane** in the Feature Manager and click **Sketch** on the context toolbar, **Fig. 41**.

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

Step 3. Zoom in on rear of bed, **Fig. 42**.

Step 4. Click **Wireframe** on the View toolbar.

Step 5. Click **Centerline** in the **Line flyout** on the Sketch toolbar.

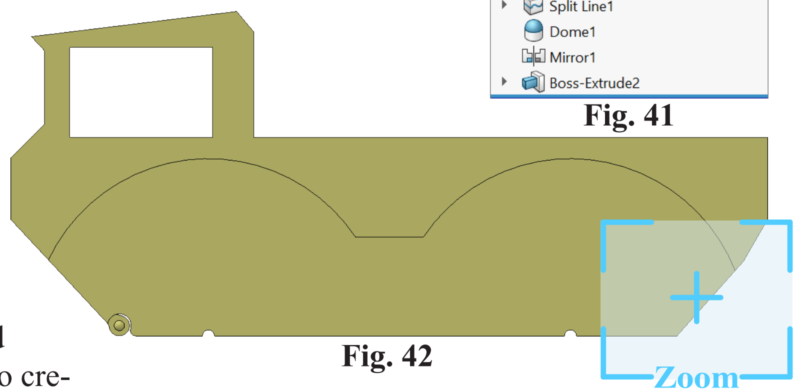


Fig. 42

Step 6. Sketch **construction line along the inside rear edge of body and perpendicular line** ⊥ **out rear of body, Fig. 43**. Use the Inferencing lines, dotted lines that appear as you sketch to create the perpendicular ⊥ relation.

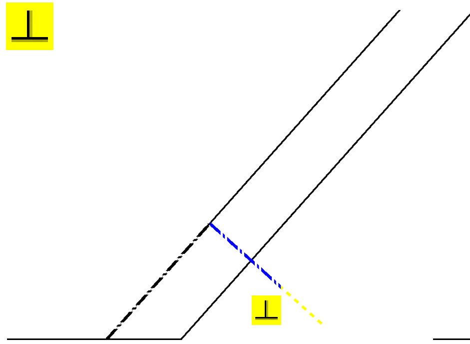


Fig. 43

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

Step 8. Sketch **circle on line2 with radius at endpoint of line2, Fig. 44**.

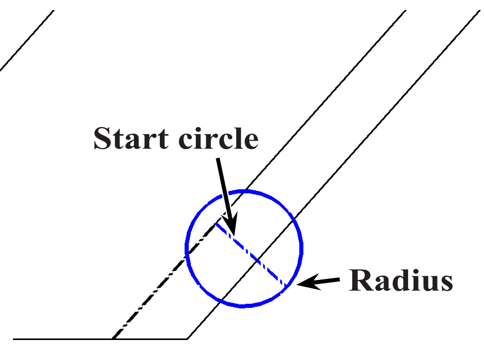


Fig. 44

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

Step 10. Add dimensions, **Fig. 45**.

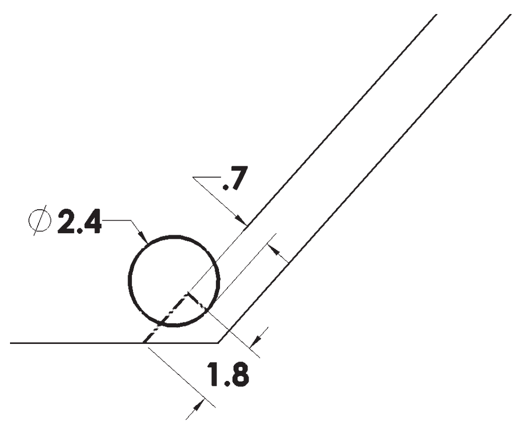


Fig. 45

Step 11. Click **Shaded With Edges** on the View toolbar.

Step 12. Click **Trimetric** on the Standard Views toolbar.

Step 13. Click **Features** Features on the Command Manager toolbar.

Step 14. Click **Extruded Cut** Extruded Cut on the Features toolbar.

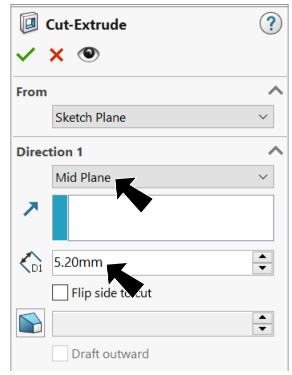


Fig. 46

Step 15. In the Cut-Extrude Property Manager set:
under Direction 1, **Fig. 46**
End Condition **Mid Plane**

Depth 5.2

click OK .

Step 16. Save **(Ctrl-S)**.

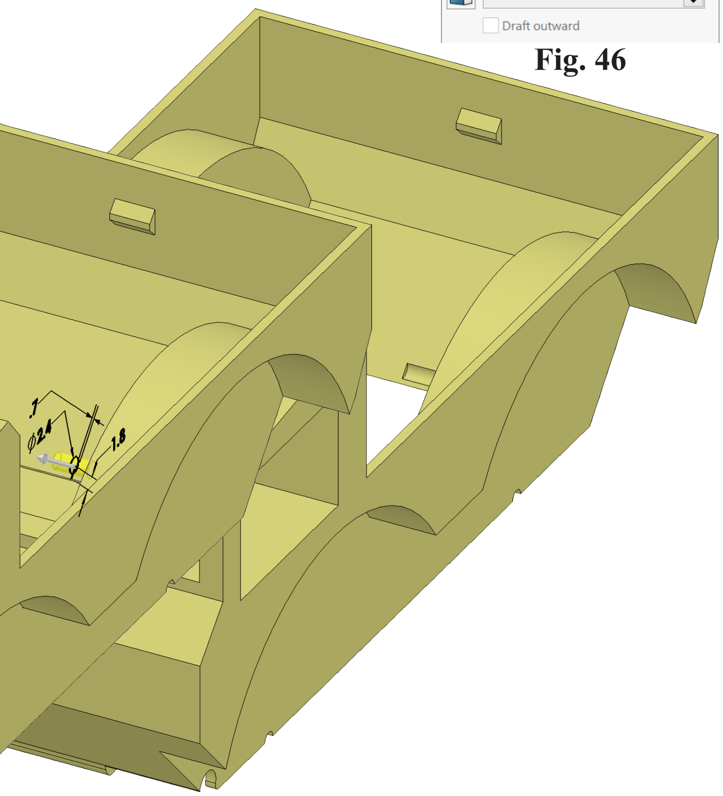


Fig. 48

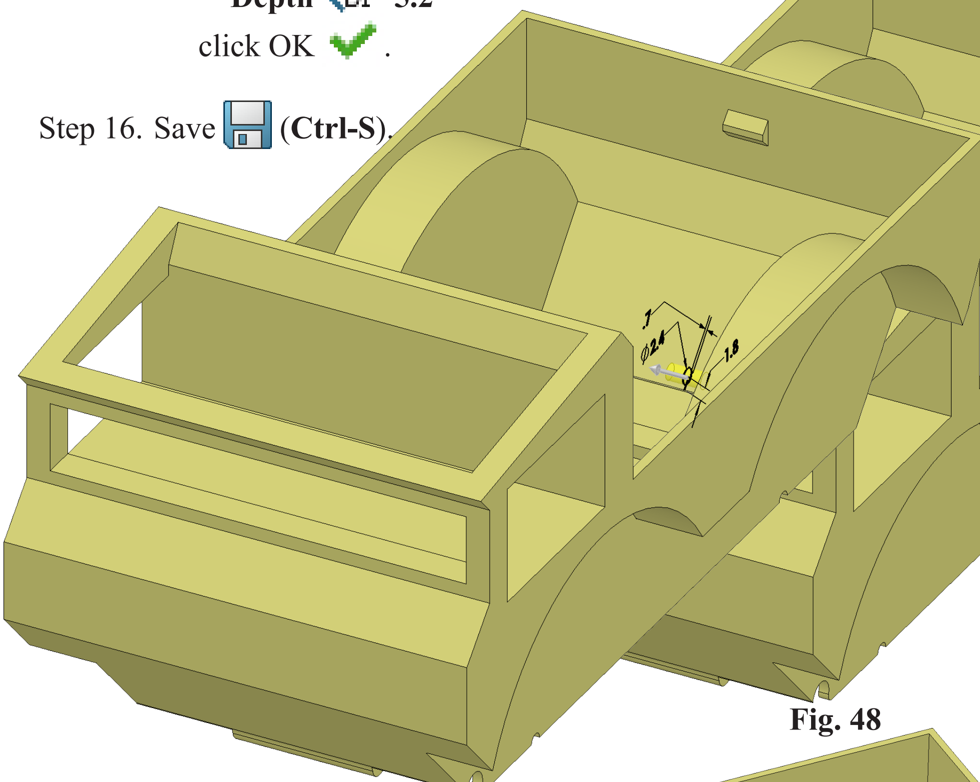


Fig. 47

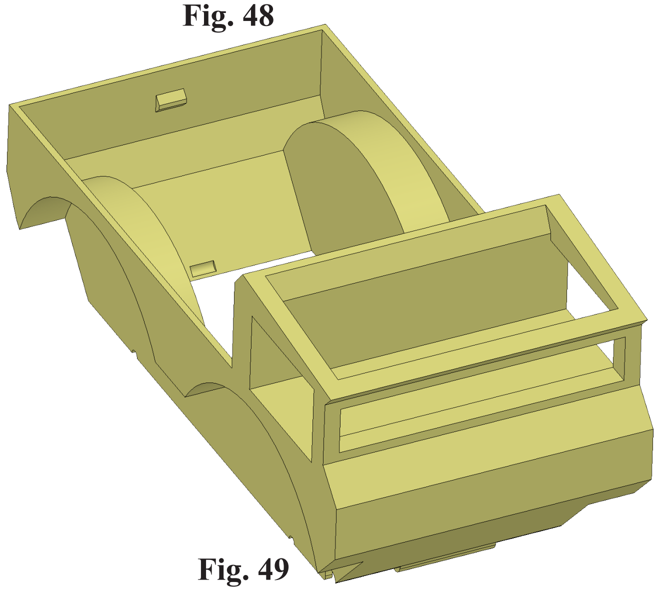


Fig. 49

J. Fillet5 Hinge.

Step 1. Rotate view inside front, **Fig. 51**. To rotate view, **Shift click the Y axis of the Reference Triad** **twice**. And then **Right Arrow key** **once**.

Step 2. Click **Fillet** on the Features toolbar.

Step 3. In the Fillet Property Manager set:
select **FilletXpert**, **Fig. 50**

④ **Radius** **1**
click **edges on inside of hinge cut** (2), **Fig. 51**

click OK .

Step 4. Save **(Ctrl-S)**.

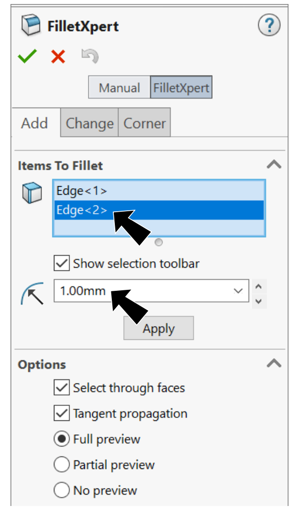


Fig. 50

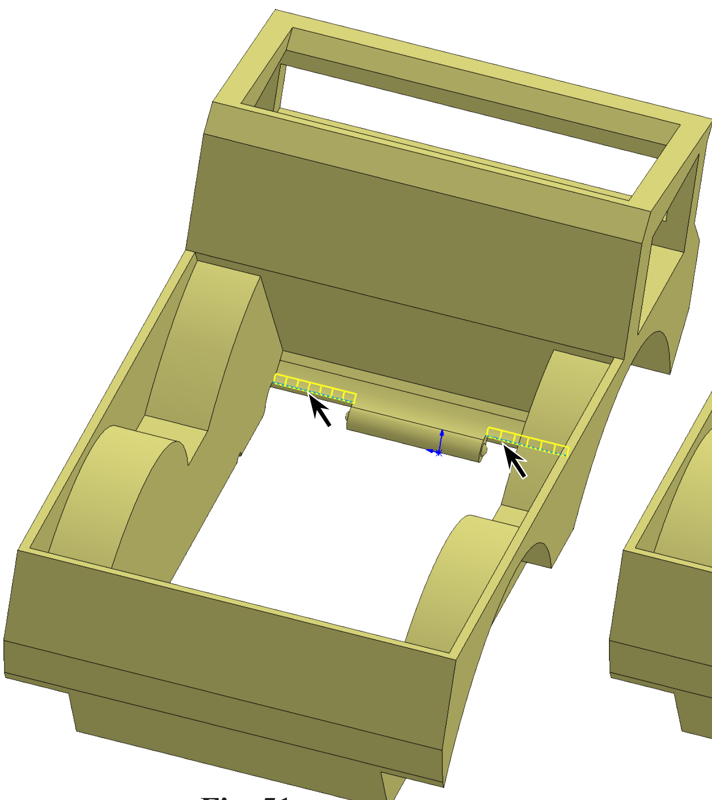


Fig. 51

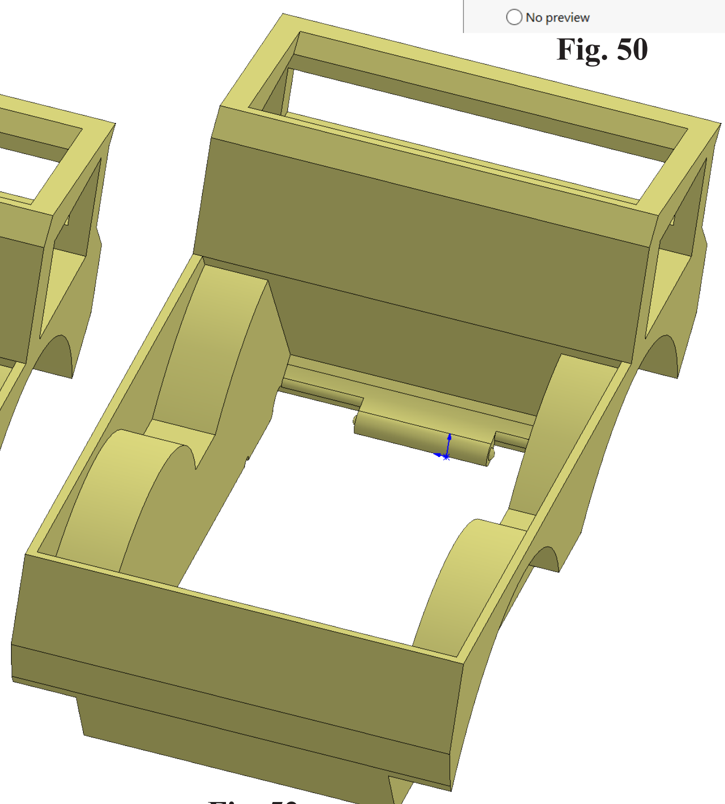


Fig. 52