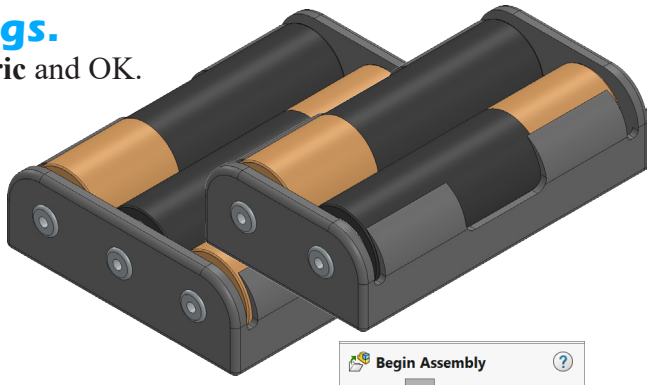
Battery Holder 2x3x AA Assembly



A. Insert Battery Holder and Springs.

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

Step 2. Select your **BATTERY HOLDER 2X3X AA** file and click Open from the Open dialog box.

Step 3. In the Begin Assembly Property Manager:

click **Keep Visible**, **Fig. 1**.

Click OK in the Property Manager, **Fig. 1**. This will place Battery Holder origin at the assembly origin and fix the position so Battery Holder cannot move. This fixed component should have a **(f)** before its name in the Feature Manager (f) BATTERY HOLDER 2X3X AA<1

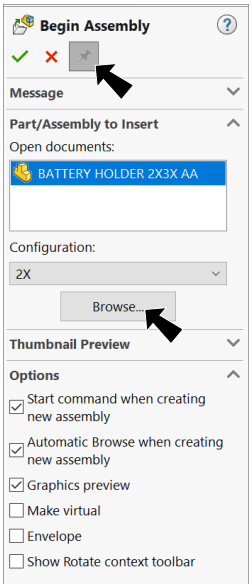


Fig. 1

Step 4. Click **Browse** in the Property Manager, **Fig. 1**.

Step 5. **Ctrl click SPRING and RIVET** files and click Open from the Open dialog box.

Step 6. Highlight the component under Open documents to place, **Fig. 2**. Place **two Springs** and a **Rivet**, **Fig. 3**.

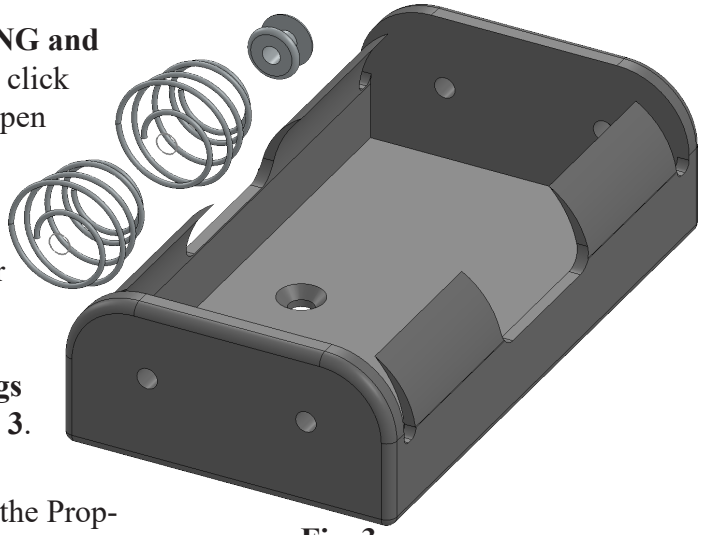


Fig. 3

Step 7. Click OK in the Property Manager when done.

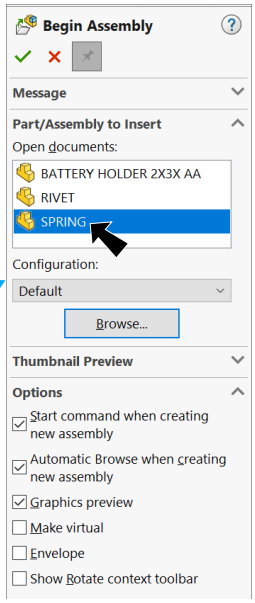


Fig. 2

B. Save as "BATTERY HOLDER 2X3X AA ASSEMBLY"

Step 1. Click File Menu > Save As.

Step 2. Key-in **BATTERY HOLDER 2X3X AA ASSEMBLY** for the filename and press ENTER.

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C. Mate: Springs.

Step 1. Click **Mate**

on the Assembly toolbar.

Step 2. Click **cylindrical edge of left rear Rivet hole on Battery Holder** and **circle sketch on Spring**, **Fig. 4**.

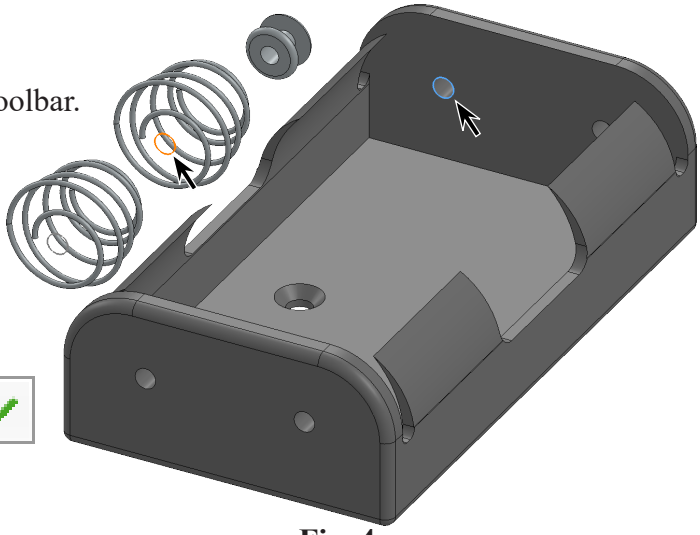


Fig. 4

Step 3. Click **Flip Alignment** in the Mate pop-up and Add/Finish Mate to add **Coincident** mate, **Fig. 5**.

Fig. 5

Step 4. Click Add/Finish Mate to add **Coincident** mate.

Step 5. **Hide front face of Holder**, **click rear cylindrical edge of right Rivet hole on Holder** and **circle sketch on Spring**, **Fig. 6**. To hide face, hover cursor over face and press **Alt key**.

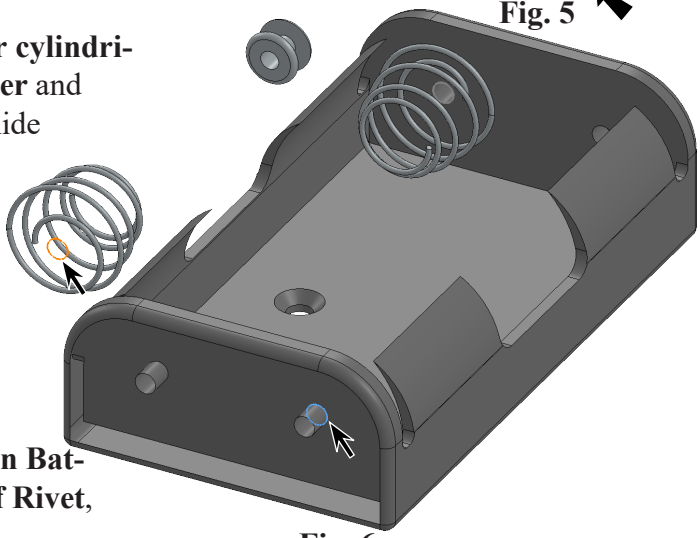


Fig. 6

Step 6. Click Add/Finish Mate to add **Coincident** mate.

D. Mate: Rivet.

Step 1. Click **cylindrical face of Rivet hole in Battery Holder** and a **cylindrical face of Rivet**, **Fig. 7**.

Step 2. Check **Lock Rotation** and Add/Finish Mate in Mate pop-up toolbar to add a **Concentric** mate, **Fig. 8**.

Fig. 8

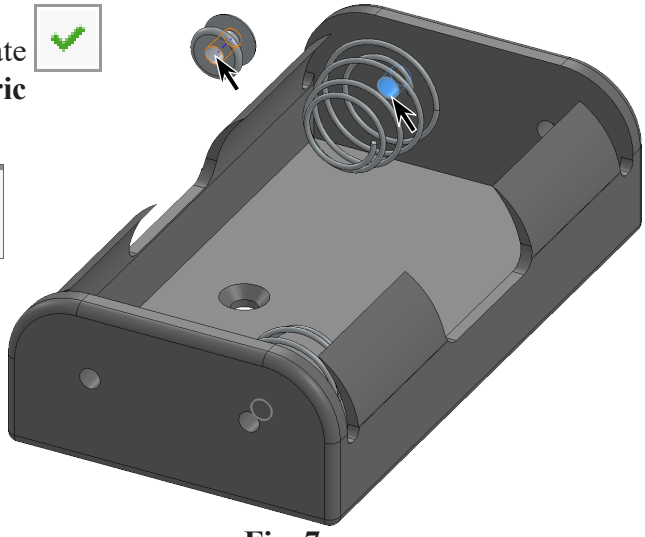


Fig. 7

Step 3. Click **inside rear face of Holder**, **hide fillet face of Rivet** and **click rear face of Rivet**, **Fig. 9**. To hide face, hover cursor over face and press **Alt key**.

Step 4. Click Add/Finish Mate to add a **Coincident** mate.

Step 5. Click OK in the Property Manager.

Step 6. Save (**Ctrl-S**).

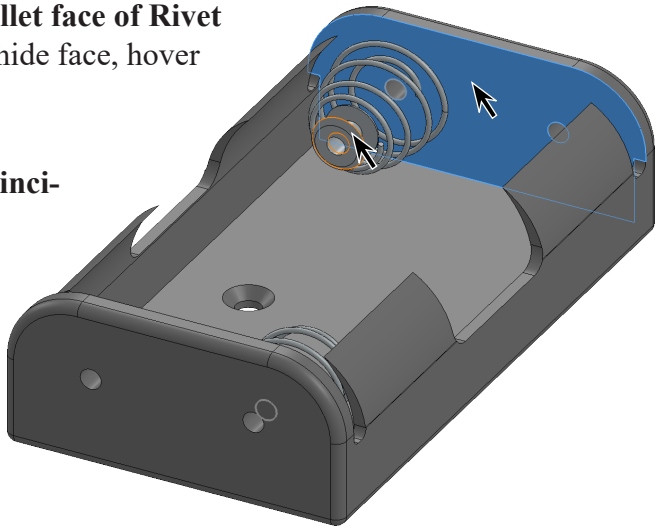
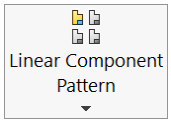


Fig. 9

E. Mirror1 Rivet Front Plane.

Step 1. **Ctrl click Front Plane** and **Rivet** in the Feature Manager to select plane and component, **Fig. 10**.

Step 2. Click **Mirror Components** in the **Linear Component Pattern flyout**  on the Assembly toolbar.

Step 3. In the Mirror Components Property Manager click OK .

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

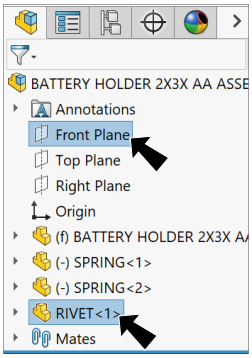


Fig. 10

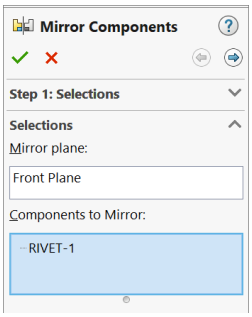


Fig. 11

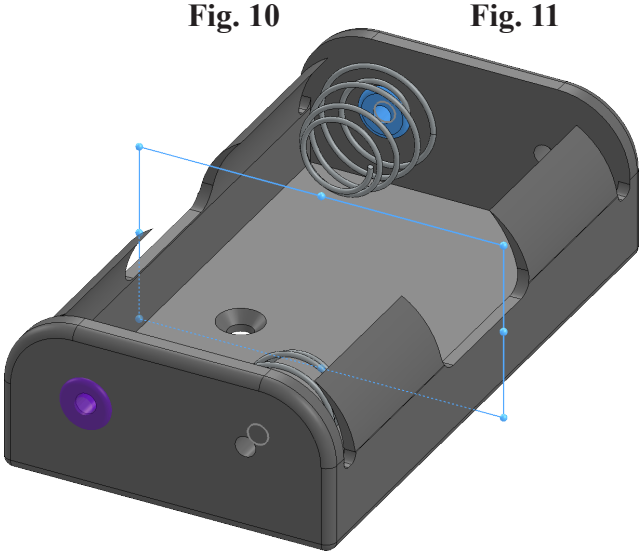
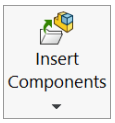


Fig. 12

F. Insert Battery AA.

Step 1. Click **Insert Components** 

on the Assembly toolbar.

Step 2. Select **BATTERY AA** file and click Open.

Step 3. Place Battery along side Holder, **Fig. 13**.

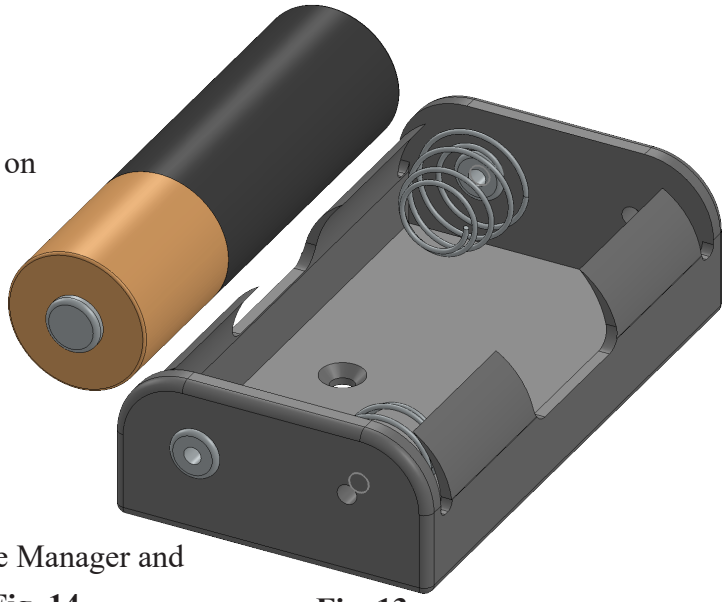


Fig. 13

G. Mate: Battery.

Step 1. Click **Front Plane** in the Feature Manager and **Mate** on the context toolbar, **Fig. 14**.

Step 2. Expand the flyout Feature Manager design tree, expand **BATTERY AA** and click **Front Plane**, **Fig. 15**.

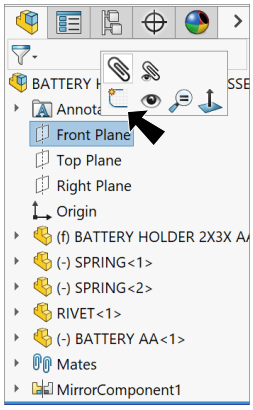


Fig. 14

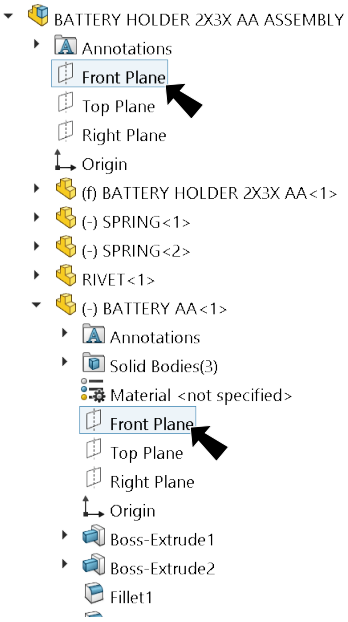


Fig. 15

Step 3. Click Add/Finish Mate to add a **Co-incident** mate.

Step 4. Click a **cylindrical face of Rivet** and a **cylindrical face of Battery**, **Fig. 17**.

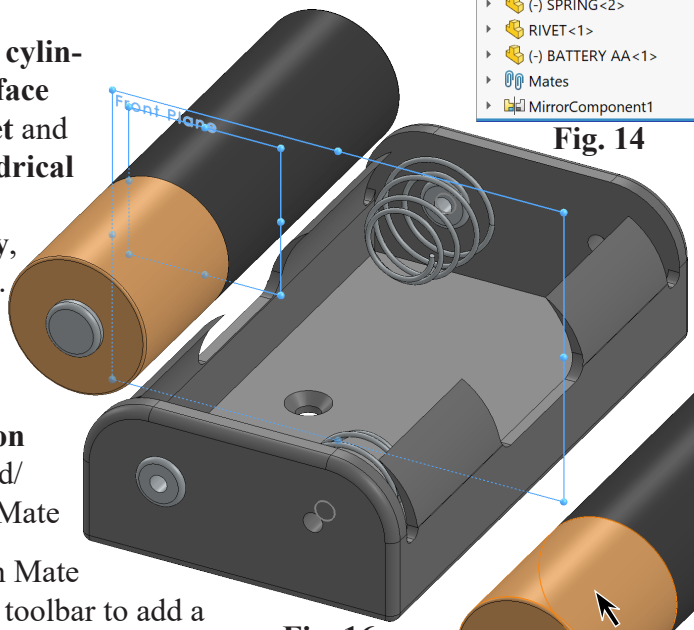


Fig. 16

Step 5. Check **Lock Rotation** and Add/ Finish Mate in Mate pop-up toolbar to add a **Concentric** mate, **Fig. 18**.

Step 6. Click OK in the Property Manager.

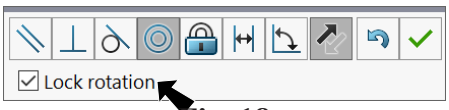


Fig. 18

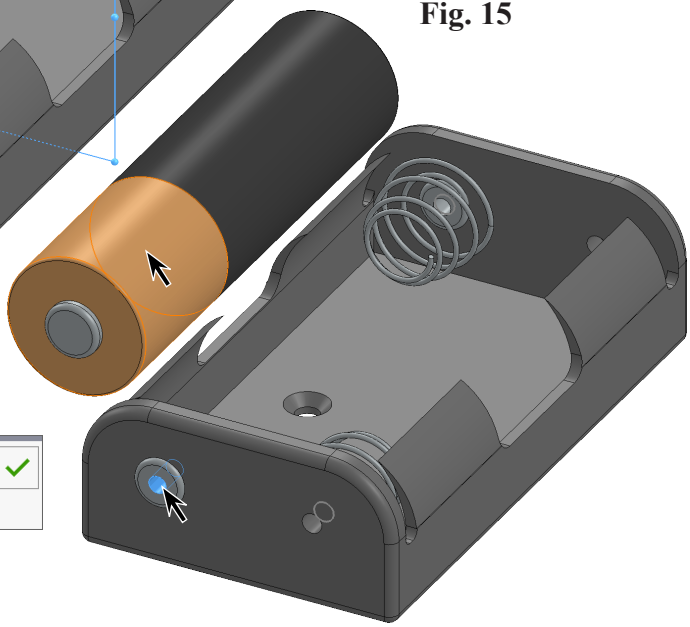


Fig. 17

H. Mirror2 Both Rivets and Battery on Right Plane.

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

Step 2. **Ctrl click Right Plane** **both Rivets and Battery** in the Feature Manager to select plane and components, **Fig. 19**.

Step 3. Click **Mirror Components** in the **Linear Component Pattern flyout** Linear Component Pattern on the Assembly toolbar.

Step 4. In the Mirror Property Manager:
Step 1: Selections
all were preselected
click **Next** , **Fig. 20**.

Step 5. Still in Mirror Property Manager:
Step 2: Set Orientation
under Mirror Type, **Fig. 21**
select **Component origin**
under Orient Components
click **BATTERY AA-1**
select **x mirrored y mirrored**
click OK .

Step 6. Save (**Ctrl-S**).

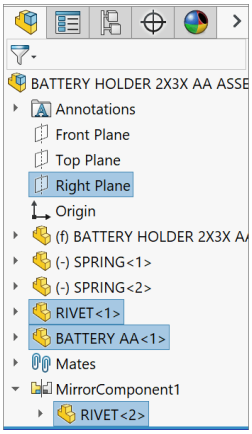


Fig. 19

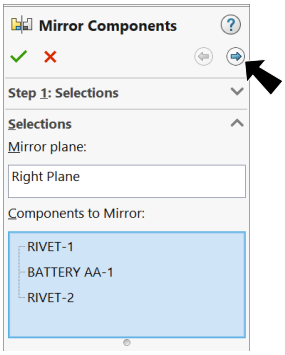


Fig. 20

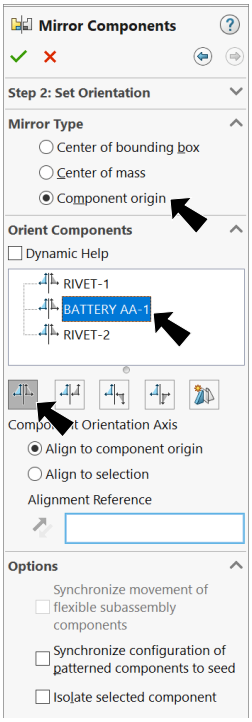


Fig. 21

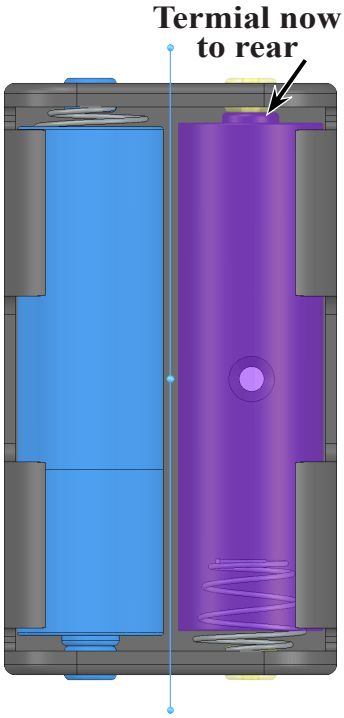


Fig. 22

I. Add Configuration 3X and Activate.

Step 1. Click **Configurations Manger** tab in the Feature Manager, **Fig. 23**.

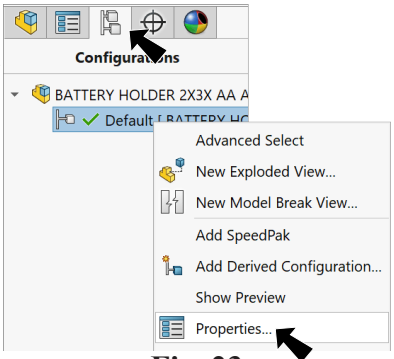


Fig. 23

Step 2. **Right click Default** configuration and click **Properties** from menu, **Fig. 23**.

Step 3. In the Configuration Properties Manager set:
under Configuration Name, **Fig. 24**
key-in **2X**
under Advanced Options
check **Suppress new components**
click OK ✔ .

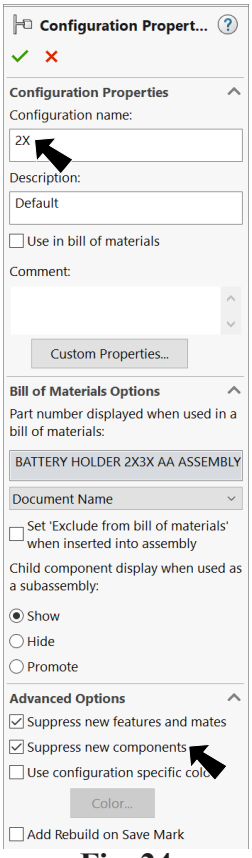


Fig. 24

Step 4. **Right click BATTERY HOLDER 2X3X AA ASSEMBLY** Configuration(s) assembly name and click **Add Configuration**, **Fig. 25**.

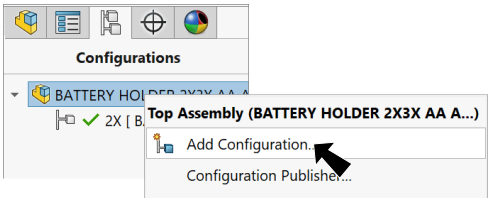


Fig. 25

Step 5. In the Configuration Properties Manager set:
under Configuration Name **Fig. 26**
key-in **3X**
under Advanced Options
uncheck **Suppress new components**
click OK ✔ .

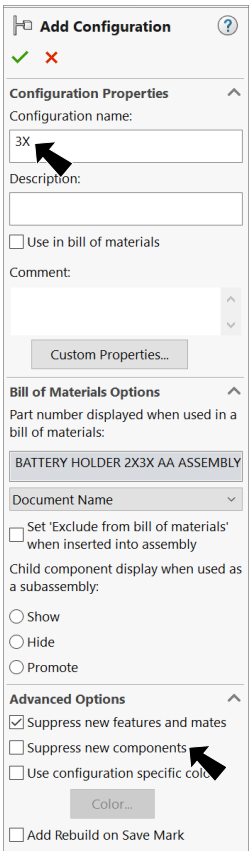


Fig. 26

Step 6. Click **Feature Manager Design Tree** tab at the top of the Configuration Manager to display Feature Manager, **Fig. 27**.

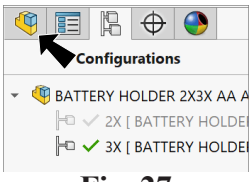


Fig. 27

J. Activate Holder Part 3X Configuration.

Step 1. **Activate Holder part** **3X configuration**. To activate, click the Holder in graphics area, then set **configurations drop down to 3X** and click OK , **Fig. 28**.

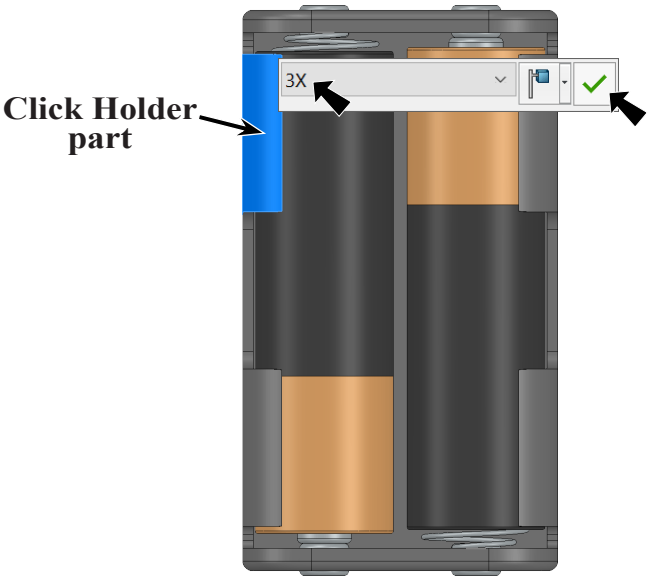


Fig. 28

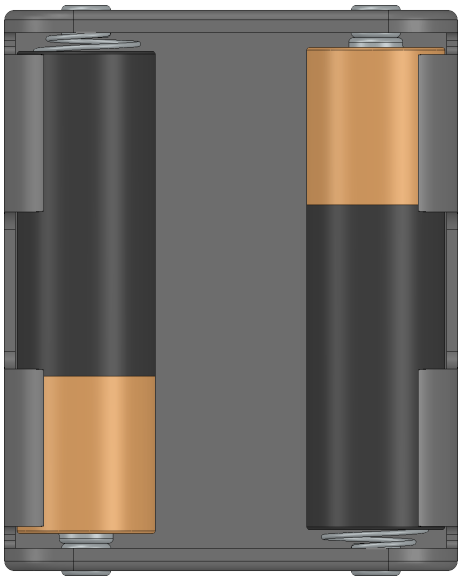


Fig. 29

K. Suppress Spring1 and MirrorComponent1.

Step 1. **Suppress Spring1 and MirrorComponent2**. To Suppress, **Ctrl click Spring1 and MirrorComponent2** in the Feature Manager and **Suppress** on the context toolbar, **Fig. 30** and **Fig. 31**.

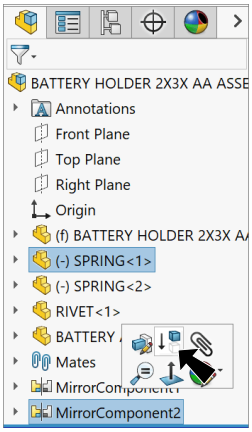


Fig. 30

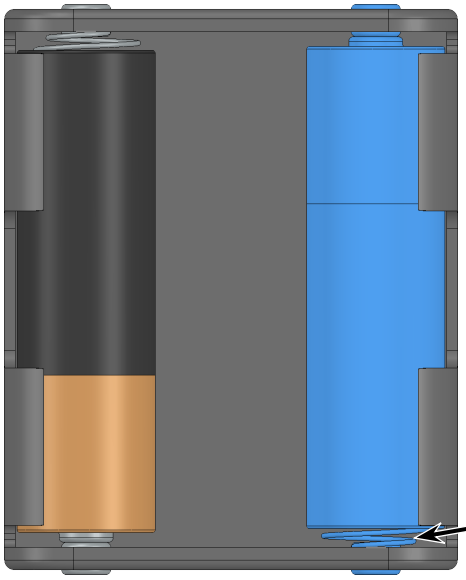


Fig. 31

L. Mirror3 Both Rivets, Spring and Battery on Right Plane.

Step 1. **Ctrl click Right Plane**, **both Rivets, Spring and Battery** in the Feature Manager to select plane and components, **Fig. 32**.

Step 2. Click **Mirror Components** Mirror Components in the **Linear Component Pattern flyout** Linear Component Pattern on the Assembly toolbar.

Step 3. In the Mirror Property Manager:

Step 1: Selections

you can click **Next** to see preview. **Fig. 33**.

Step 2: Set Orientation

click OK .

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

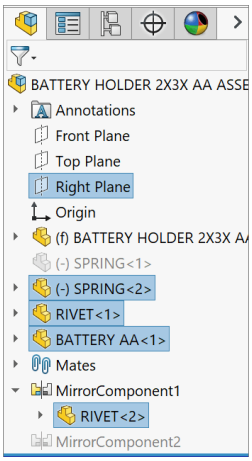


Fig. 32

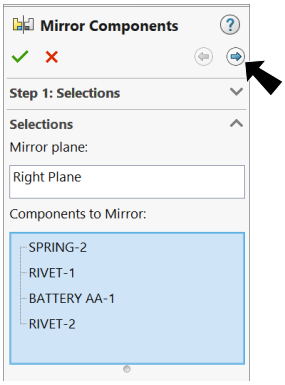


Fig. 33

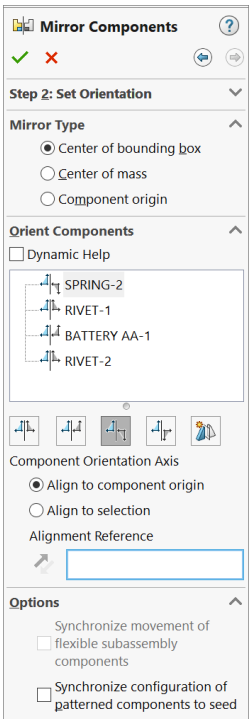


Fig. 34

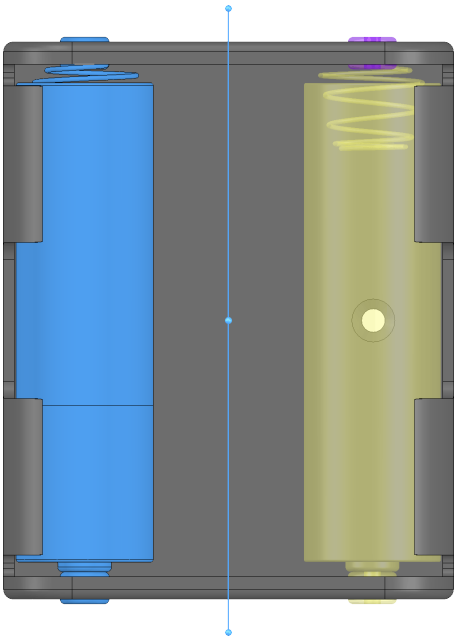
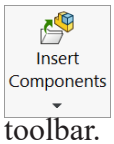


Fig. 35

M. Insert Spring.

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

Step 2. Click **Insert Components** 

on the Assembly toolbar.

Step 3. Select **SPRING** file and click Open from the Open dialog box.

Step 4. Place Spring, **Fig. 36**.

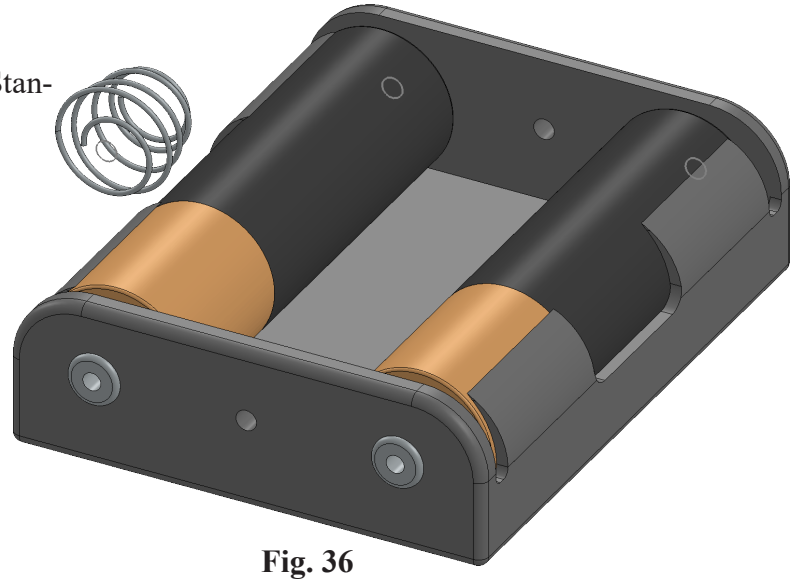


Fig. 36

N. Mate: Spring.

Step 1. Click **Mate**

on the Assembly toolbar.

Step 2. **Hide front face of Holder** and **rear cylindrical edge of center Rivet hole** and **circle sketch on Spring**, **Fig. 37**.

Step 3. Click Add/Finish Mate to add **Coincident** mate.

Step 4. Click OK in the Property Manager.

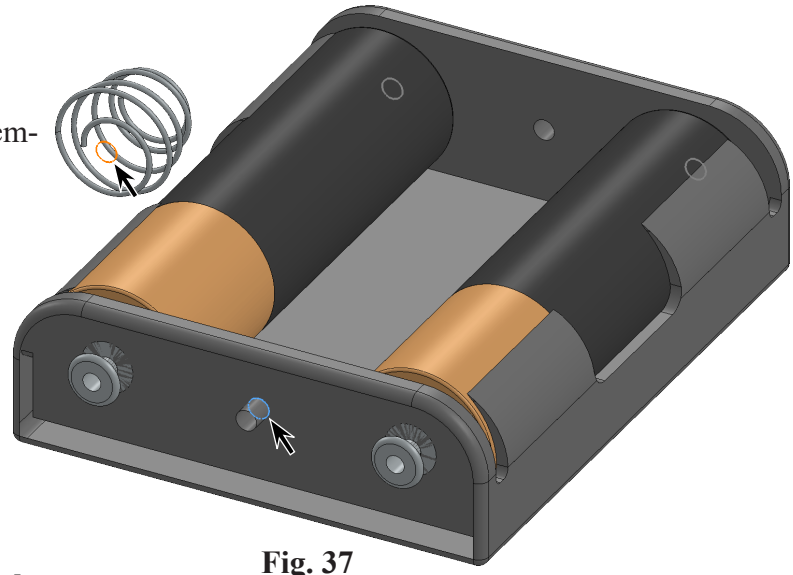


Fig. 37

Step 5. **Hide Sketch2 circle** in Spring. To hide, click **Sketch2 circle** in graphics area and **Hide** on the context toolbar, **Fig. 38**.

Step 6. Save (**Ctrl-S**).

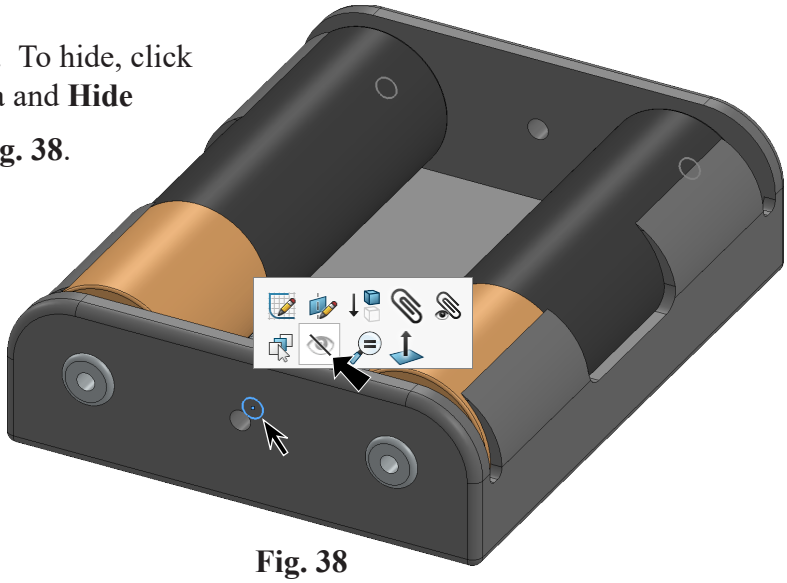
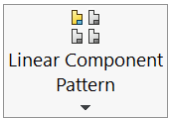


Fig. 38

O. Linear Component Pattern.

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

Step 2. Click **Linear Component Pattern** 

on the Assembly toolbar.

Step 3. In the Linear Pattern Property Manager set:
under Components to Pattern, **Fig. 39**
click **both rivets left side**, **Fig. 40**
under Direction 1
click a **horizontal edge**
Spacing **14.7**
Number of Instances **2**
Reverse Direction
click OK .

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

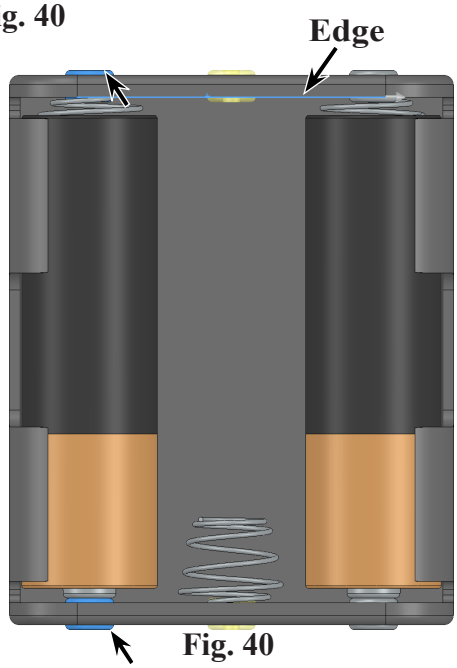


Fig. 40

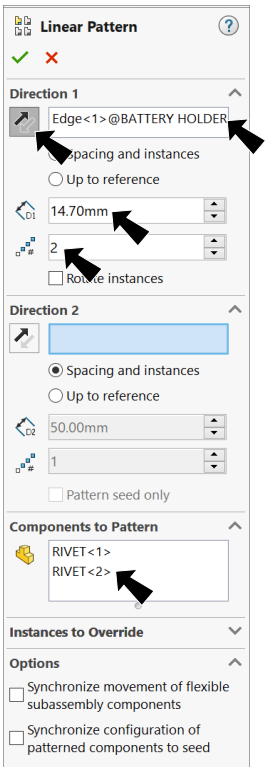


Fig. 39

P. Copy with Mates Battery.

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

Step 2. **Right click Battery AA part** in the Feature Manager and click **Copy with Mates** on menu, **Fig. 41**.

Step 3. In the Copy with Mates Property Manager:
Step 1: Select Component, **Fig. 42**
Preselected
click **Next**

Step 4. Still in Copy with Mates Property Manager:
Step 2: Mates, **Fig. 43**
under Mates
Coincident4 check **Repeat**
Concentric2 click **cylindrical face of center Rivet**, **Fig. 44**
click **Flip Mate Alignment**
click OK and click Cancel.

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

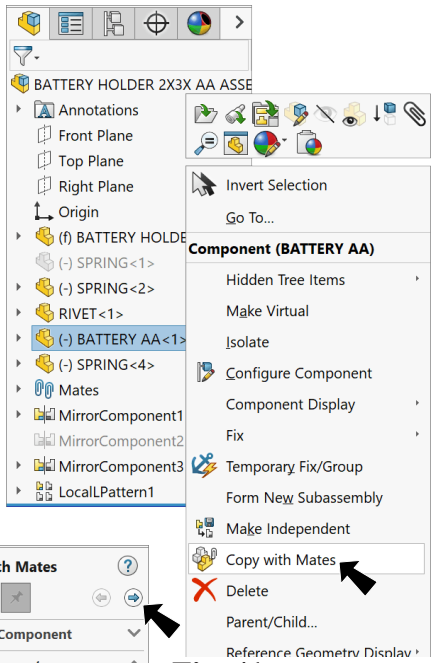


Fig. 41

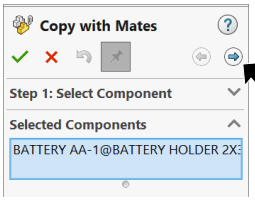


Fig. 42

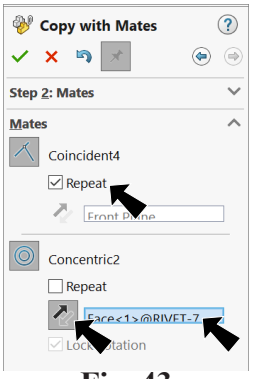


Fig. 43

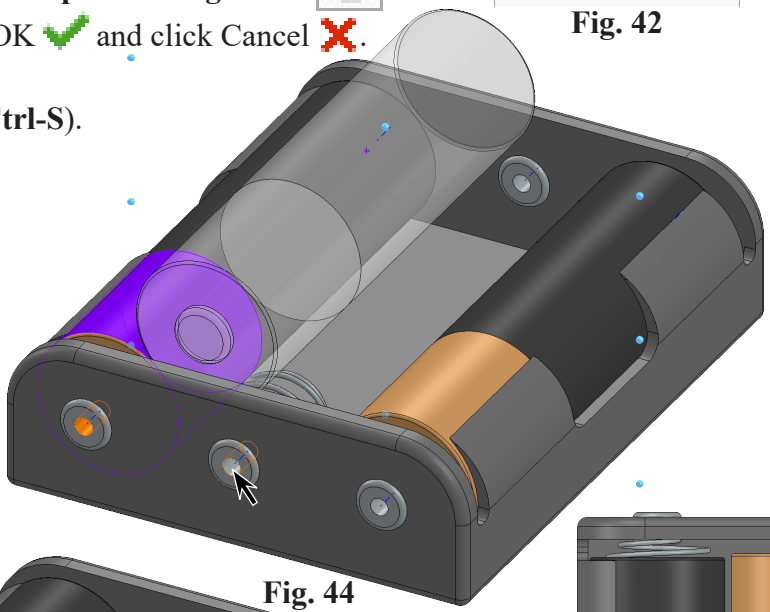


Fig. 44

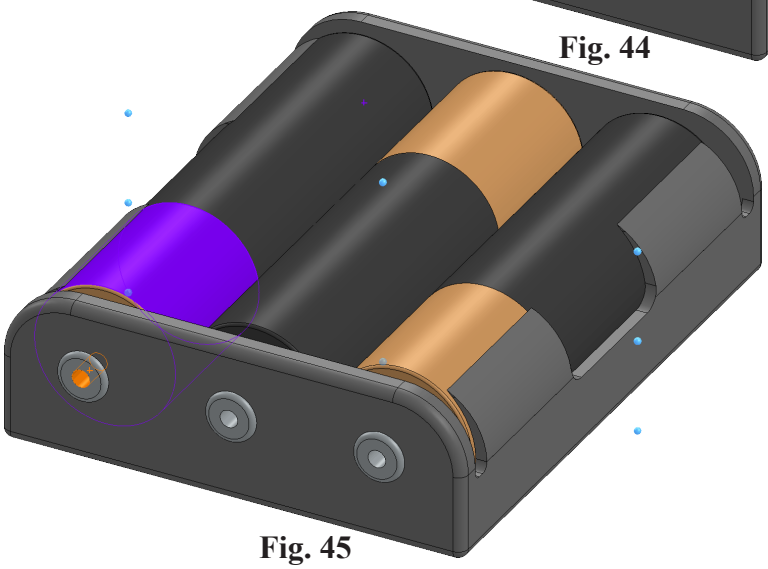


Fig. 45

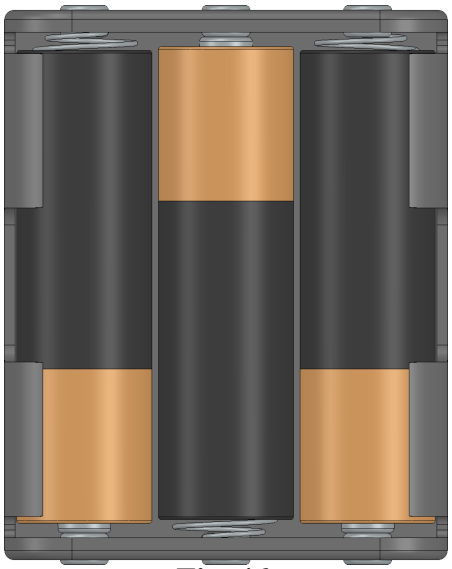
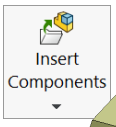


Fig. 46

Q. Open Tank Assembly and Insert Battery Holder Assemlby.

Step 1. Open your **Tank Assembly** file.

Step 2. **Isolate Lower Hull**, **Fig. 47**. To Isolate, **right click Lower Hull** in graphics area and click **Isolate** from the menu.

Step 3. Click **Insert Components** 

on the Assembly toolbar.

Step 4. Select your **Battery Holder Assembly** file and place the file, **Fig. 48**. Confirm 3X configuration.

Step 5. **Hide left (starboard) Battery** part. To hide, move cursor over component in graphics area and press **Tab** key.

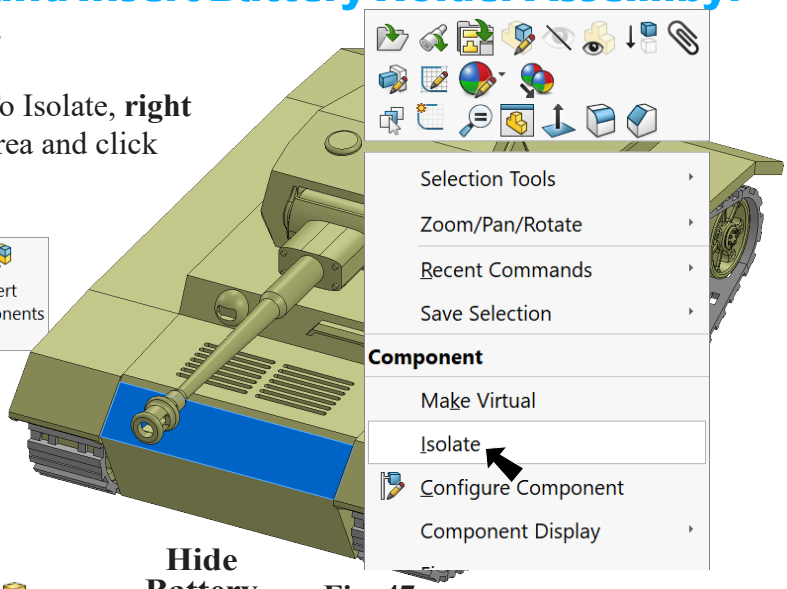
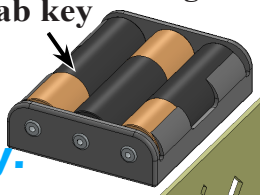


Fig. 47



R. Mate: Battery Holder Assembly.

Step 1. Click **Mate**

on the Assembly toolbar.

Step 2. Click a **cylindrical face of Battery Holder post in Lower Hull** and **cylindrical face of countersink hole in Holder**, **Fig. 49**.

Step 3. Check **Lock Rotation** and Add/Finish Mate in Mate pop-up toolbar, **Fig. 50**.

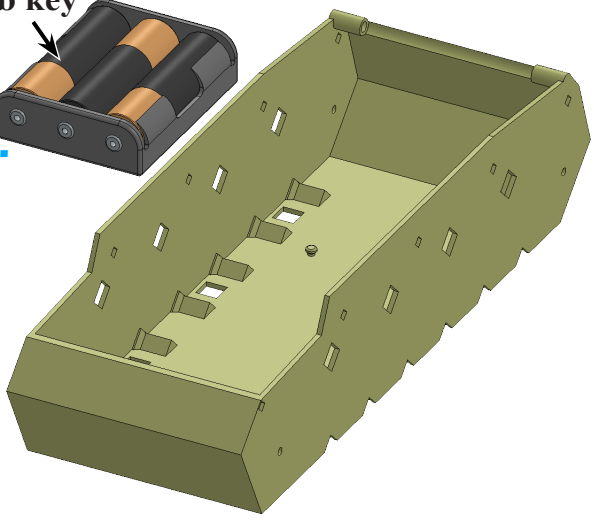


Fig. 48

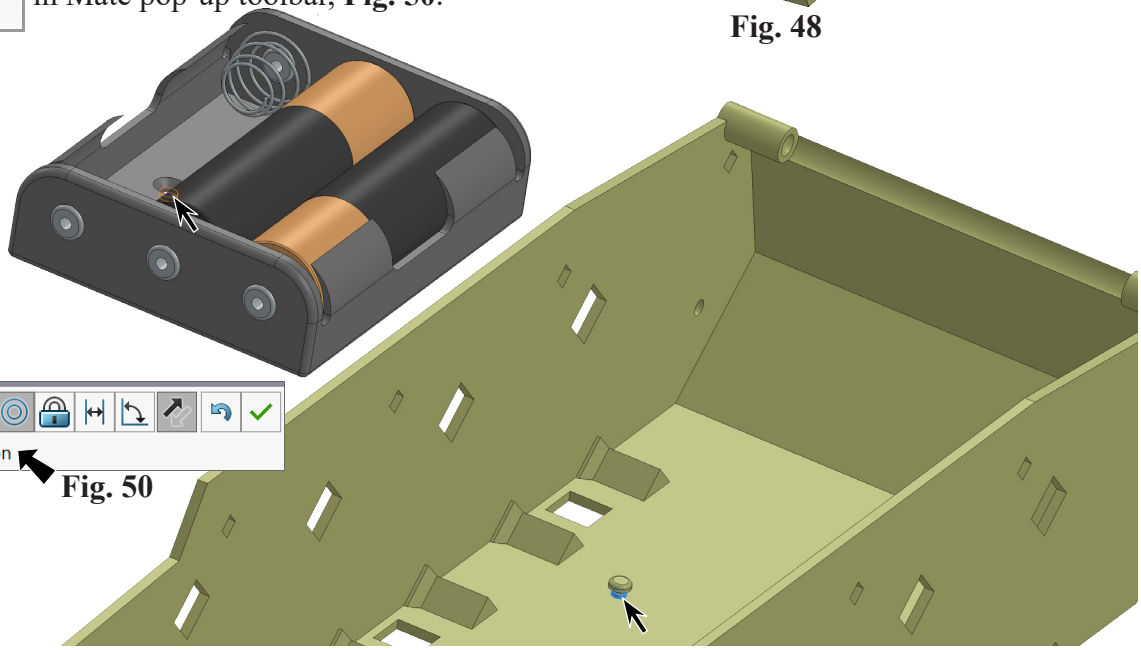


Fig. 49

Fig. 50

Step 4. **Hide top face of Holder**, click **bottom face of Holder** and **top face of bottom of Lower Hull**, **Fig. 51**.

Step 5. Click Add/Finish Mate to add **Coincident** mate.

Step 6. Click OK in the Property Manager.

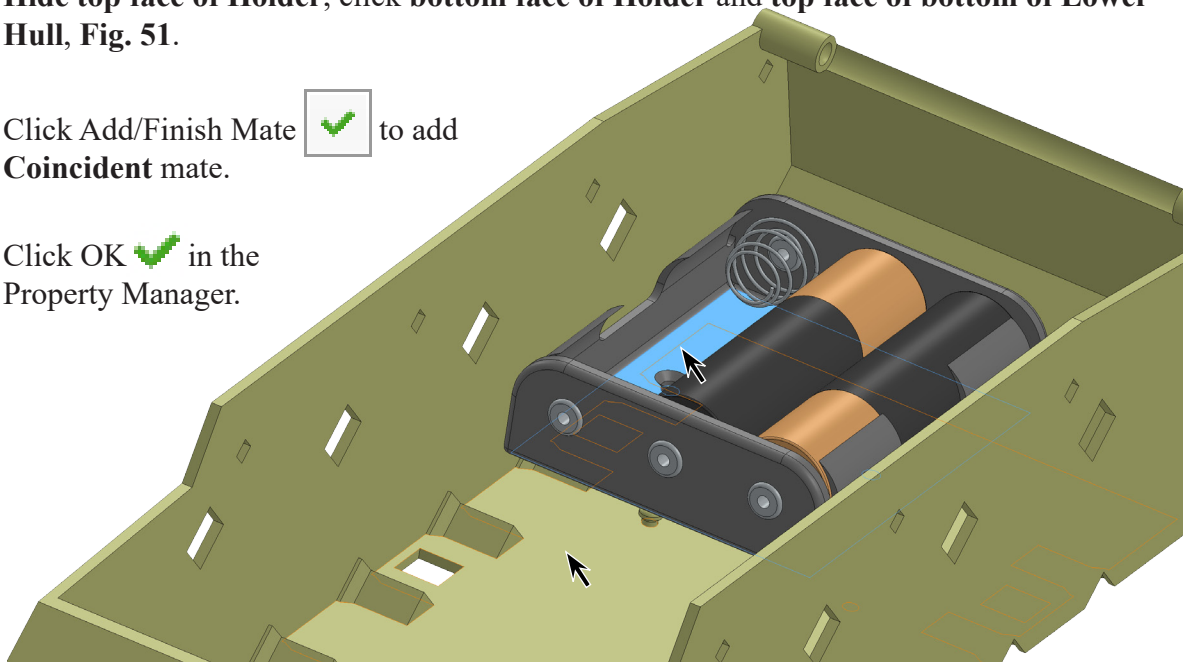


Fig. 51

Step 7. **Show Battery** part. To show, move cursor over the component in graphics area and press **Shift - Tab**.

Step 8. Save (**Ctrl-S**).

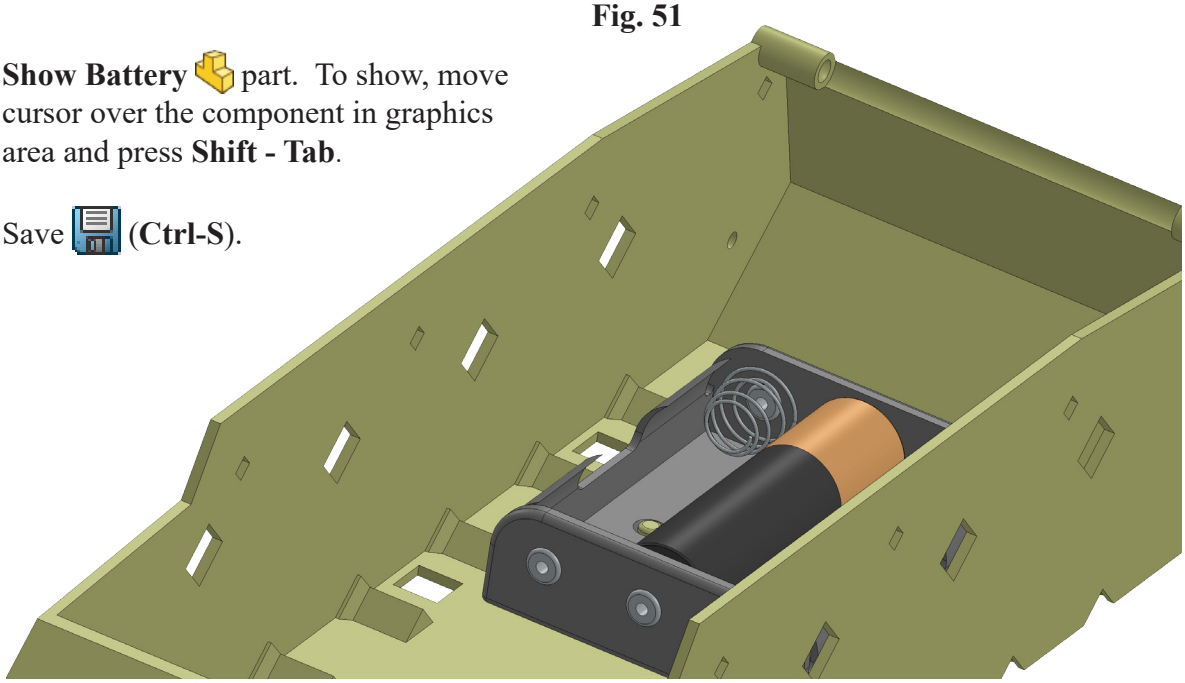


Fig. 52