



# Technical Service Bulletin

<b>SUBJECT:</b>  <b>MAIN DRIVE LITHIUM-ION BATTERY PROCEDURE CHANGE – SERVICE MANUAL REVISION</b>			No: <b>TSB-23-54-008</b>
			DATE: <b>October 2023</b>
			MODEL: See below
<b>CIRCULATE TO:</b>	<input type="checkbox"/> GENERAL MANAGER	<input checked="" type="checkbox"/> PARTS MANAGER	<input checked="" type="checkbox"/> TECHNICIAN
<input checked="" type="checkbox"/> SERVICE ADVISOR	<input checked="" type="checkbox"/> SERVICE MANAGER	<input checked="" type="checkbox"/> WARRANTY PROCESSOR	<input type="checkbox"/> SALES MANAGER

## PURPOSE

This TSB provides revisions to the procedure for disassembly and reassembly procedure of the Main Drive Lithium-Ion Battery section in the applicable Service Manual.

## AFFECTED VEHICLES

2021 Outlander Plug-in Hybrid

## AFFECTED SERVICE MANUAL

- 2021 Outlander Plug-in Hybrid Service Manual

## PROCEDURE

Please use the chart below to replace the pages found in the affected Service Manual:

2021 Outlander Plug-in Hybrid: Group 54, Battery Management Unit (BMU) and Main Drive Lithium-Ion Battery Main Drive Lithium-Ion Battery Disassembly/Assembly

Applicable Manual	Pub. No.	Applicable Title	Contents
2021 OUTLANDER PHEV Service Manual	MSCD-027B-2021	Battery tray cover and plug hole cover removal and installation	Attached sheet 5, 6
		Air leak check	Attached sheet 7, 8



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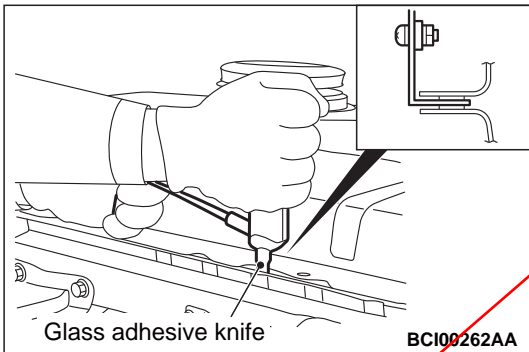
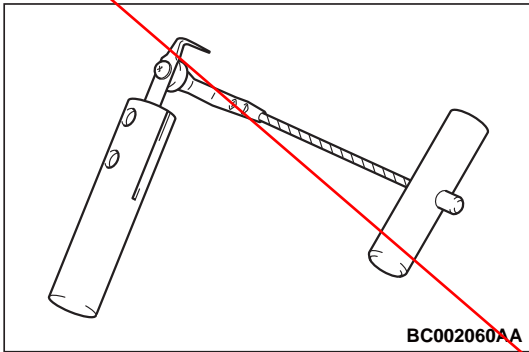
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&lt;Old&gt;

**Battery tray cover removal**

1. Remove the bolts.
2. Using glass adhesive knife. [Blade length: 48 mm (1.89 inches)]

NOTE: Prepare the blade spare due to the possibility that the blade of the glass adhesive knife will break during work.



3. While holding the glass adhesive knife and the end of battery tray cover at right angle, pull the blade of the glass adhesive knife parallel to the end of the battery tray cover to detach the adhesive and remove the battery tray cover.

**CAUTION**

- Do not scrape away the remaining adhesive more than necessary to prevent adhesion failure.
  - Smoothly form the surface of the adhesive left on the flange. If there is a step on the surface of the adhesive, there is a possibility of leakage from the step after reapplying the adhesive.
  - When battery tray cover and battery tray assembly are damage with a knife etc, apply repair paint to the damaged part.
4. Scrape away the remaining adhesive on the flange of the battery tray cover and battery tray assembly with a sharp knife etc. around the whole circumference so that the thickness is about 1 mm (0.039 inch).
  5. Remove the chip of adhesive cleanly.
  6. Remove the cover pads.
  7. Remove the breather caps.

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Attached sheet 6

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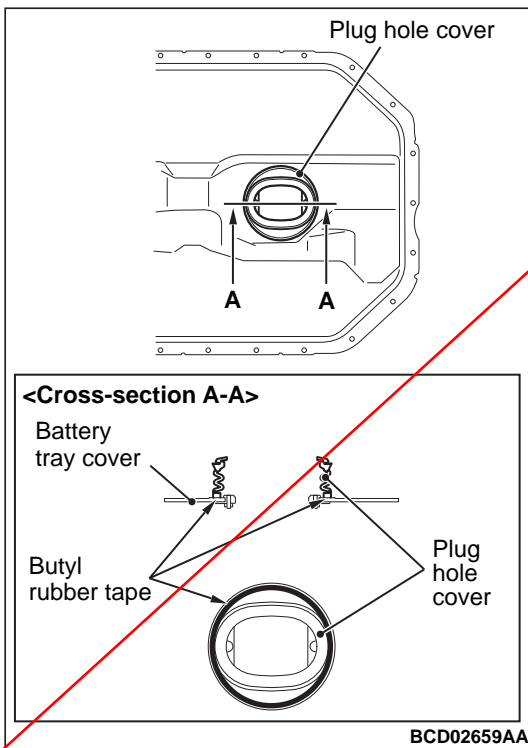
### Plug hole cover removal

1. Remove the battery tray cover.
2. Remove the plug hole plate.
3. Remove the upper plug hole plate.
4. Remove the plug hole cover.

### Plug hole cover installation

**⚠ CAUTION**

- Butyl rubber tape 3M ATD Part No.8625 or equivalent:  
Application surface should be free of oil, grease or foreign materials.
  - First, tighten all the bolts by hand until they are seated. Then after final tightening, check that all the bolts are tightened to the specified torque.
1. Apply the butyl rubber tape 3M ATD Part No.8625 or equivalent to the plug hole cover as shown. Then install it to the battery tray cover.
  2. Install the upper plug hole plate.
  3. Install the plug hole plate.
  4. Install the battery tray cover.



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Attached sheet 6

# 54Dc-346

## BATTERY MANAGEMENT UNIT (BMU) AND MAIN DRIVE LITHIUM-ION BATTERY MAIN DRIVE LITHIUM-ION BATTERY DISASSEMBLY AND ASSEMBLY

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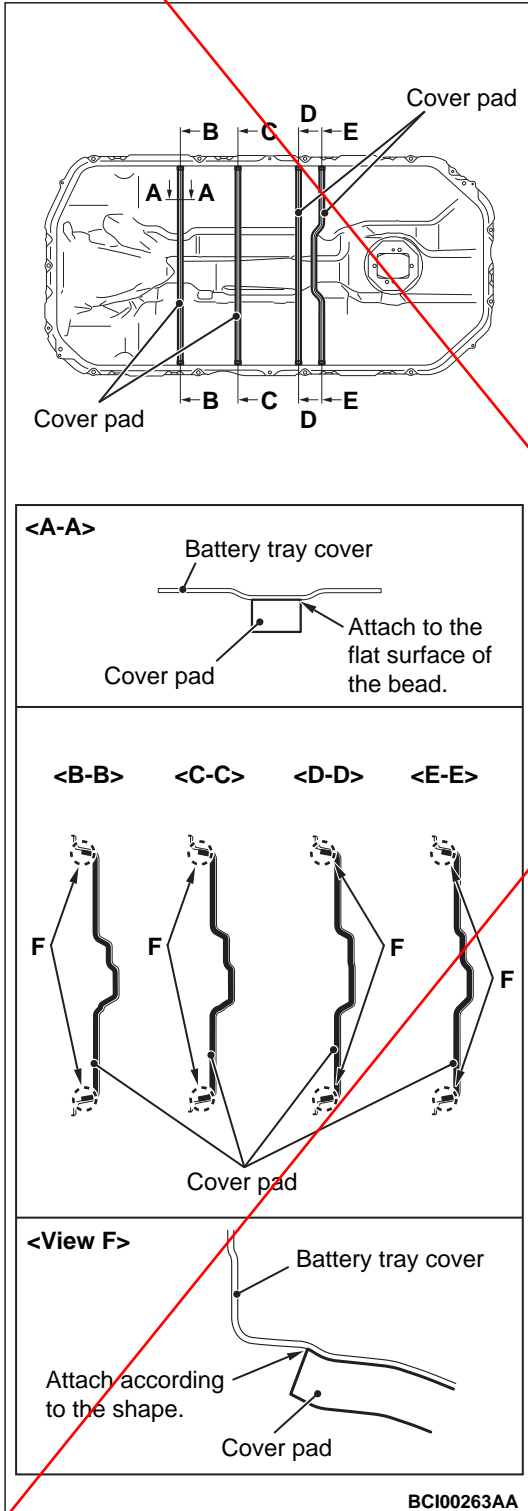
### Battery tray cover installation

1. Install the breather cap.

**CAUTION**

Application surface should be free of oil, grease or foreign materials.

2. Position the cover pads as shown.

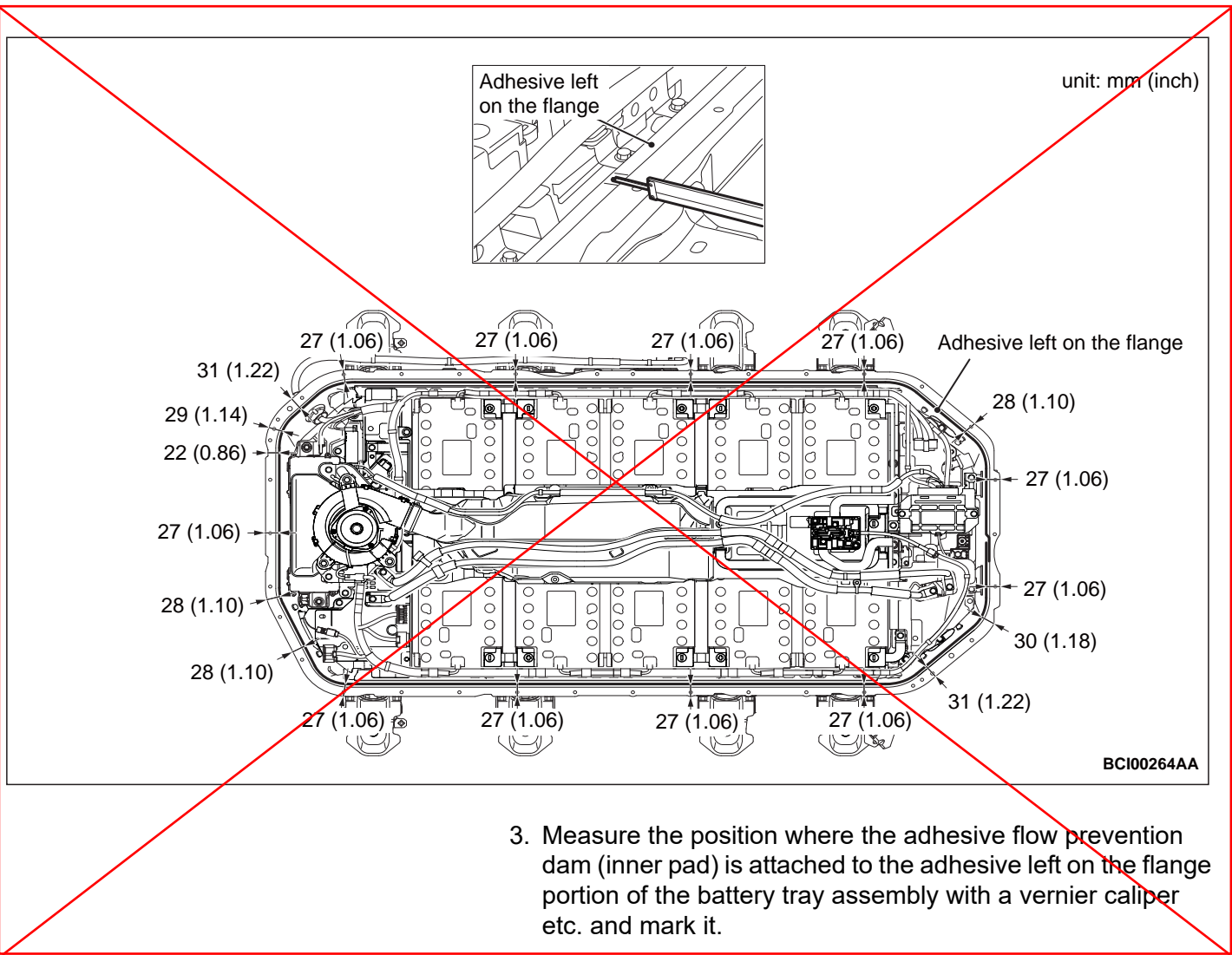


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Attached sheet 6

BATTERY MANAGEMENT UNIT (BMU) AND MAIN DRIVE LITHIUM-ION BATTERY 54Dc-347  
MAIN DRIVE LITHIUM-ION BATTERY DISASSEMBLY AND ASSEMBLY

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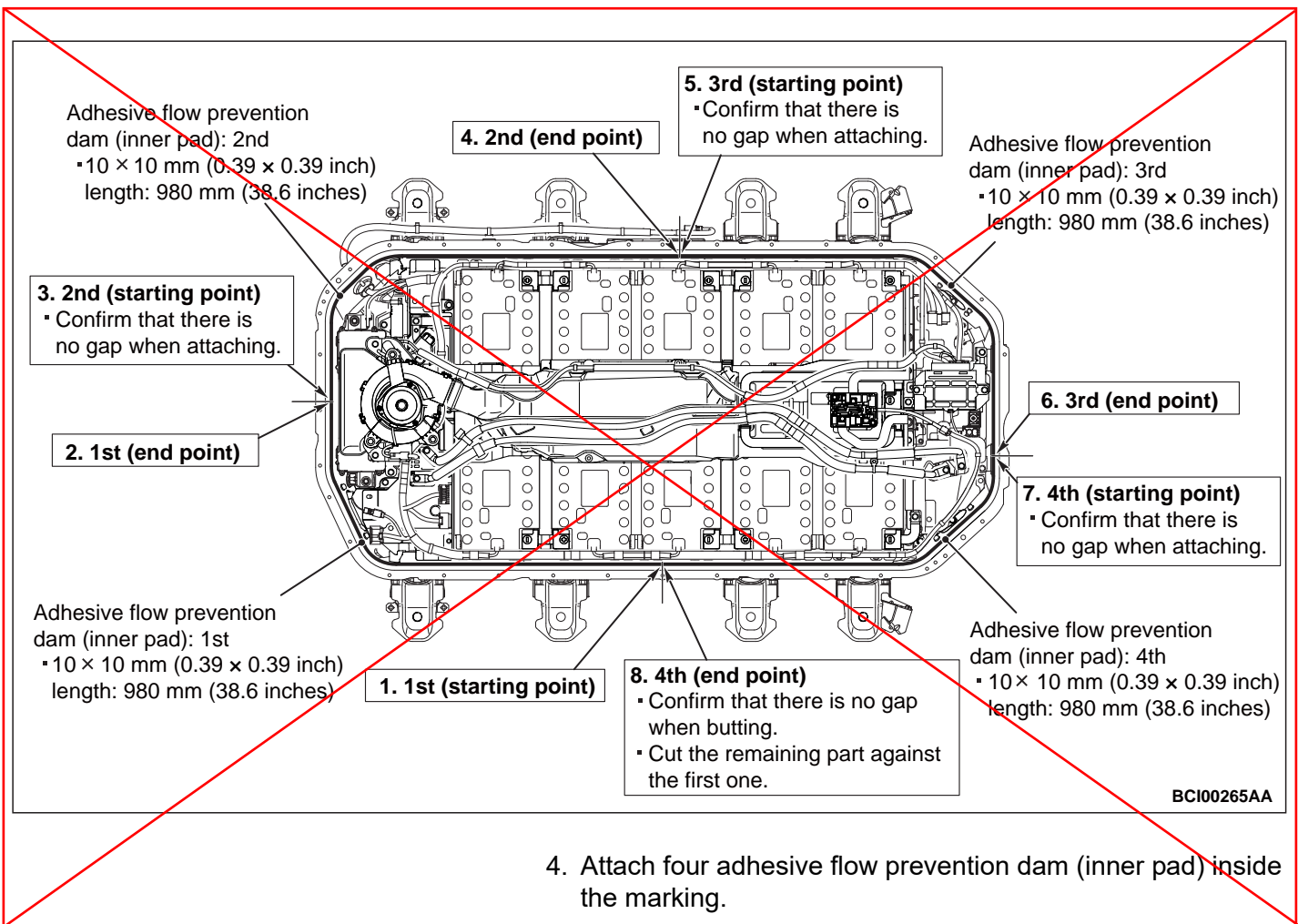
3. Measure the position where the adhesive flow prevention dam (inner pad) is attached to the adhesive left on the flange portion of the battery tray assembly with a vernier caliper etc. and mark it.

<New> Attached sheet 6

## 54Dc-348

BATTERY MANAGEMENT UNIT (BMU) AND MAIN DRIVE LITHIUM-ION BATTERY  
MAIN DRIVE LITHIUM-ION BATTERY DISASSEMBLY AND ASSEMBLY

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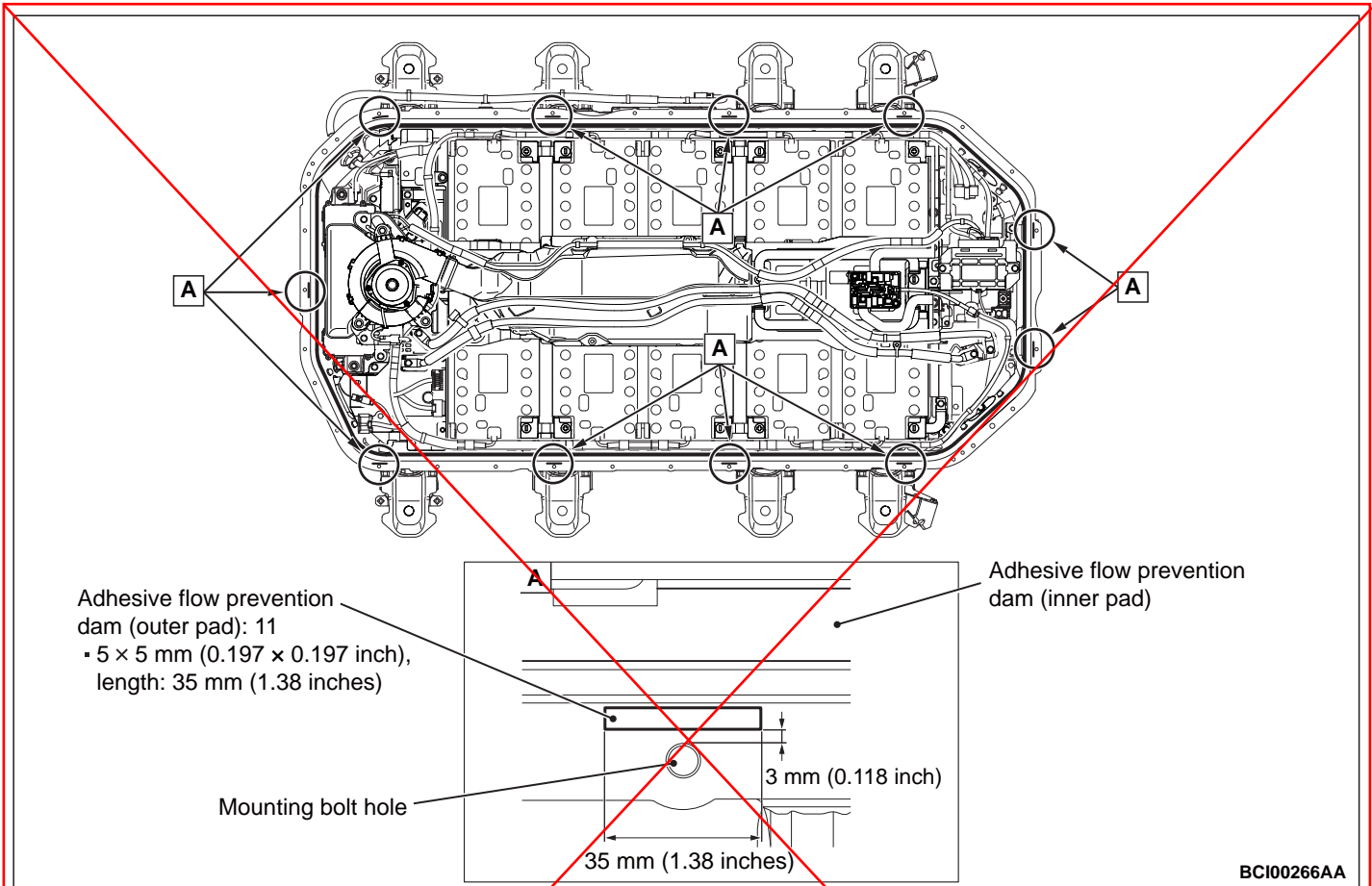
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BATTERY MANAGEMENT UNIT (BMU) AND MAIN DRIVE LITHIUM-ION BATTERY  
 MAIN DRIVE LITHIUM-ION BATTERY DISASSEMBLY AND ASSEMBLY

54Dc-349

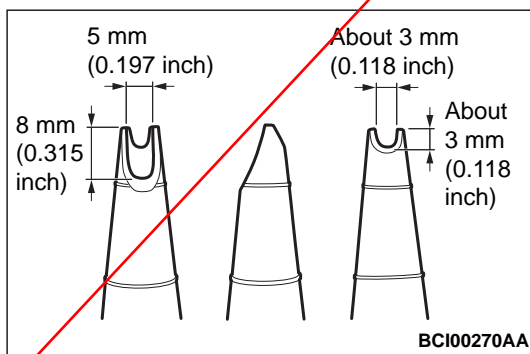
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5. Attach 11 adhesive flow prevention dams (outer pads) to the inside of the bolt hole.

6. Cut the nozzle tip of the sealant gun in the following procedure.

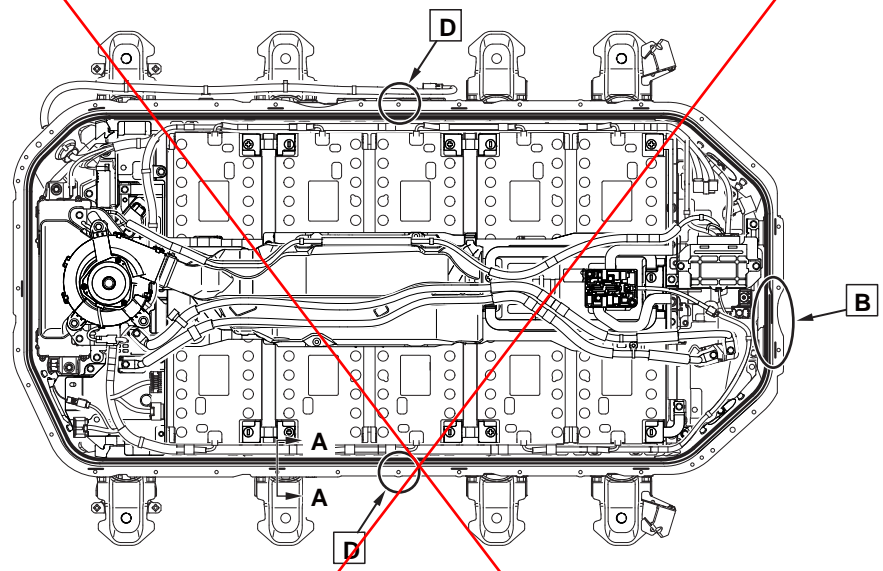
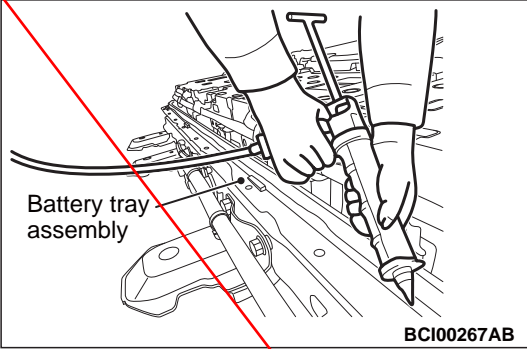
- (1) Cut so that the inner diameter of the nozzle tip becomes 5 mm (0.197 inch).
- (2) Cut it obliquely so that the nozzle tip height is 8 mm (0.315 inch).
- (3) In order to make it easier to apply the adhesive, cut the opposite side that cut to 8 mm (0.315 inch) so that the inside diameter is about 3 mm (0.118 inch) and the height is about 3 mm (0.118 inch).
- (4) Whether the adhesive can be applied with the standard dimension [5 × 8 mm (0.197 × 0.315 inch)] is trial applied, and if it is less than standard, perform the cutting operation again.



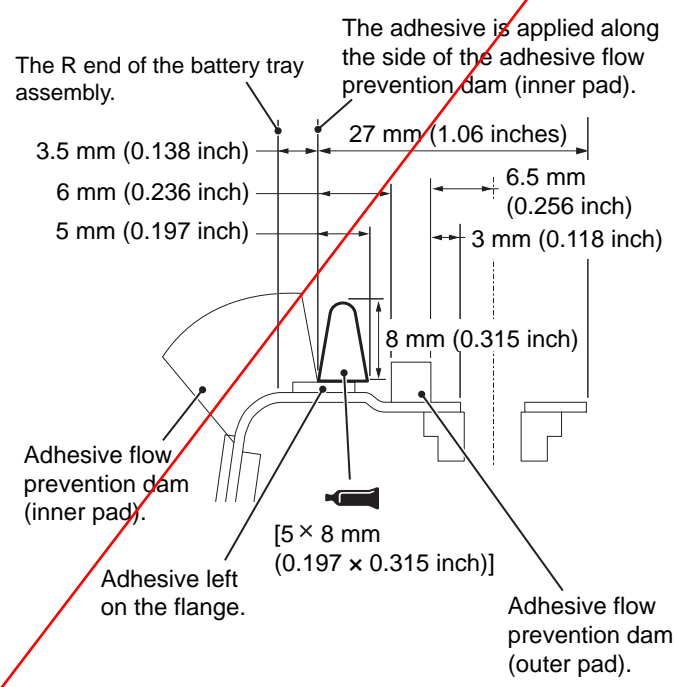
<New> Attached sheet 6

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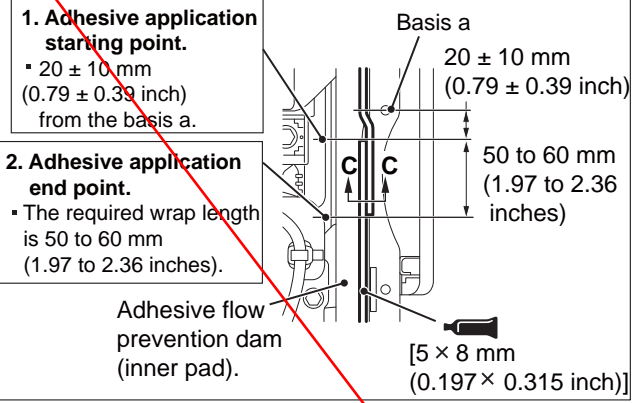
7. Using the sealant gun.



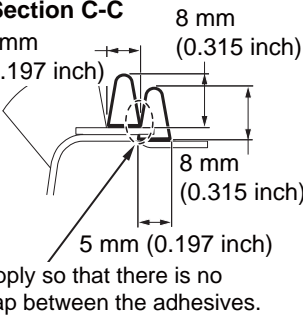
**Section A-A**



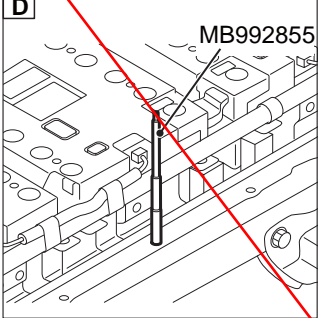
**B**



**Section C-C**



**D**





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**⚠ CAUTION**

After applying adhesive, make sure that the adhesive flow prevention dam has not fallen down toward the adhesive side.

8. Apply adhesive YOKOHAMA RUBBER HAMATITE WS-272 or equivalent to the battery tray assembly.
9. Install the special tool MB992855 to the battery tray assembly.

**⚠ CAUTION**

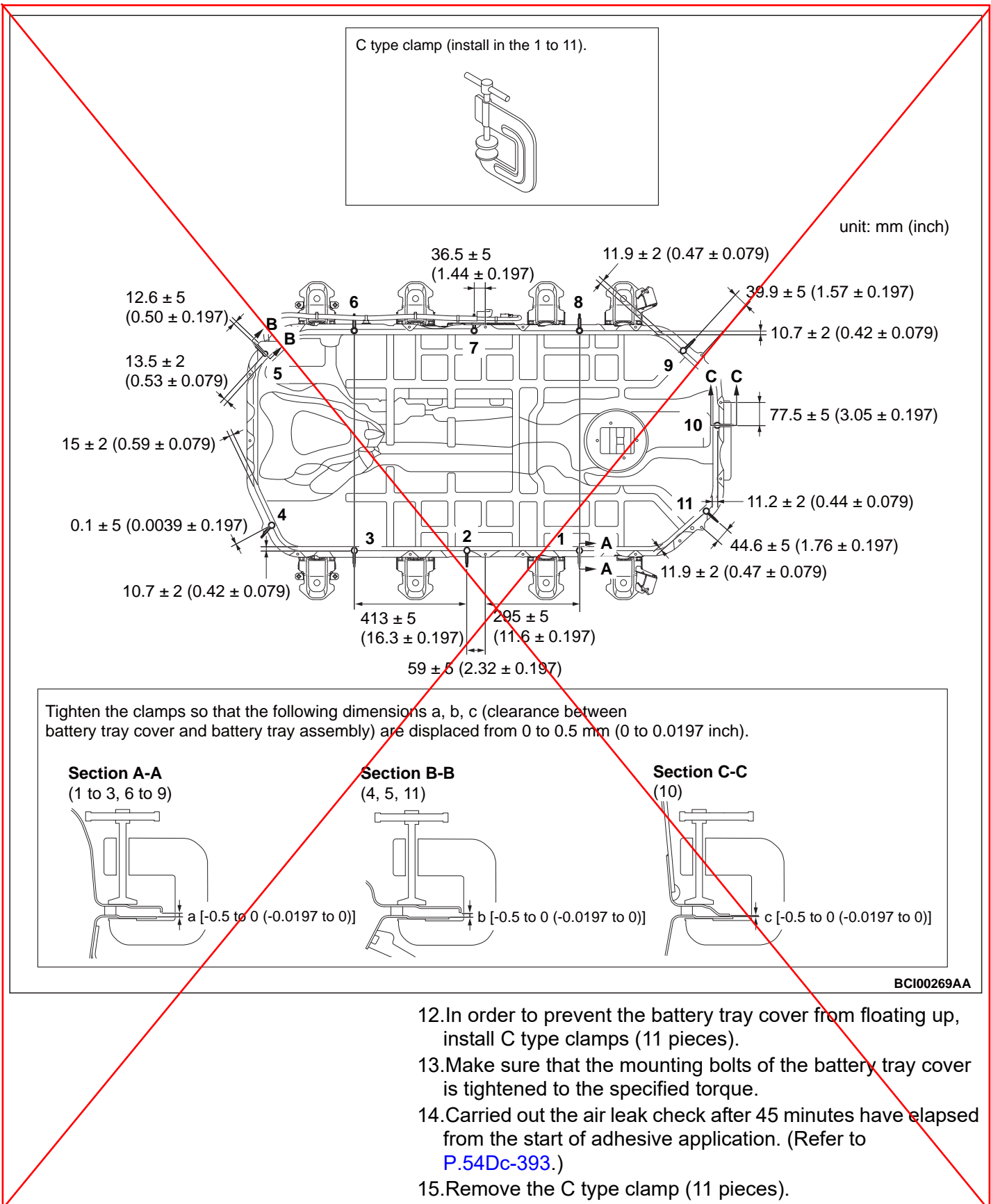
Installation of the battery tray cover should be done by two or more persons.

10. Install the battery tray cover while checking the hole positions of both the guide pin and the battery tray cover mounted on the battery tray assembly.
11. Tighten the mounting bolts of the battery tray cover in the order of 1 to 11 with specified torque and remove the special tool MB992855.



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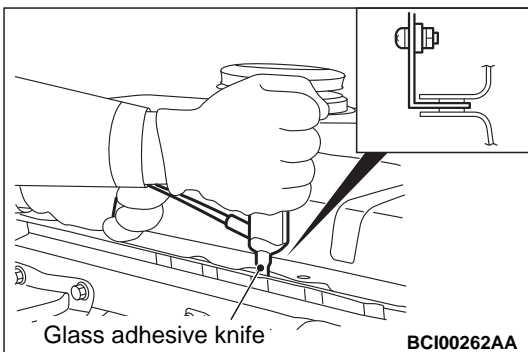
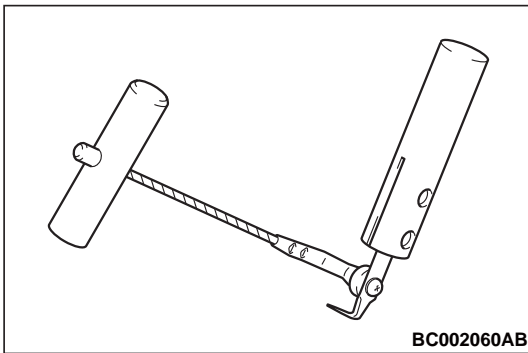


&lt;New&gt; Attached sheet 6

## Battery tray cover removal

1. Remove the bolts.
2. Using glass adhesive knife. [Blade length: 48 mm (1.89 inches)]

NOTE: Prepare the blade spare due to the possibility that the blade of the glass adhesive knife will break during work.



3. While holding the glass adhesive knife and the end of battery tray cover at right angle, pull the blade of the glass adhesive knife parallel to the end of the battery tray cover to detach the adhesive and remove the battery tray cover.

### ⚠ CAUTION

- Do not scrape away the remaining adhesive more than necessary to prevent adhesion failure.
  - Smoothly form the surface of the adhesive left on the flange. If there is a step on the surface of the adhesive, there is a possibility of leakage from the step after reapplying the adhesive.
  - When battery tray cover and battery tray assembly are damage with a knife etc, apply repair paint to the damaged part.
4. Scrape away the remaining adhesive on the flange of the battery tray cover and battery tray assembly with a sharp knife etc. around the whole circumference so that the thickness is about 1 mm (0.039 inch).
  5. Remove the chip of adhesive cleanly.
  6. Remove the cover pads.
  7. Remove the breather caps.

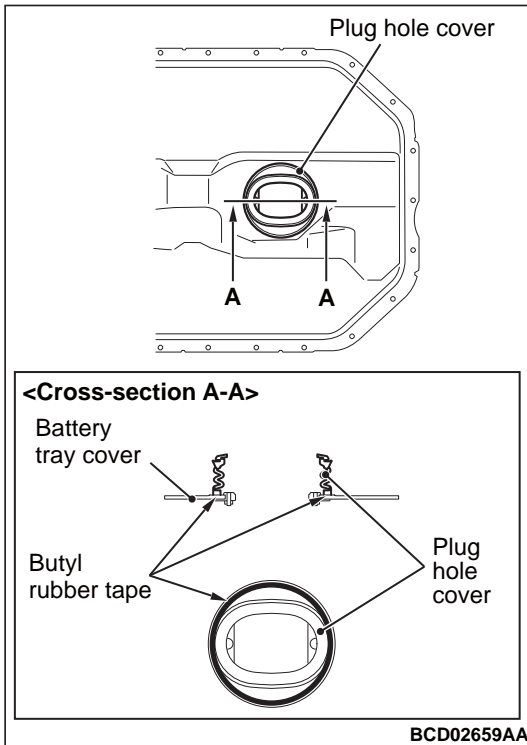
## Plug hole cover removal

1. Remove the battery tray cover.
2. Remove the plug hole plate.
3. Remove the upper plug hole plate.
4. Remove the plug hole cover.

## Plug hole cover installation

### ⚠ CAUTION

- Butyl rubber tape 3M ATD Part No.8625 or equivalent: Application surface should be free of oil, grease or foreign materials.
  - First, tighten all the bolts by hand until they are seated. Then after final tightening, check that all the bolts are tightened to the specified torque.
1. Apply the butyl rubber tape 3M ATD Part No.8625 or equivalent to the plug hole cover as shown. Then install it to the battery tray cover.
  2. Install the upper plug hole plate.
  3. Install the plug hole plate.
  4. Install the battery tray cover.



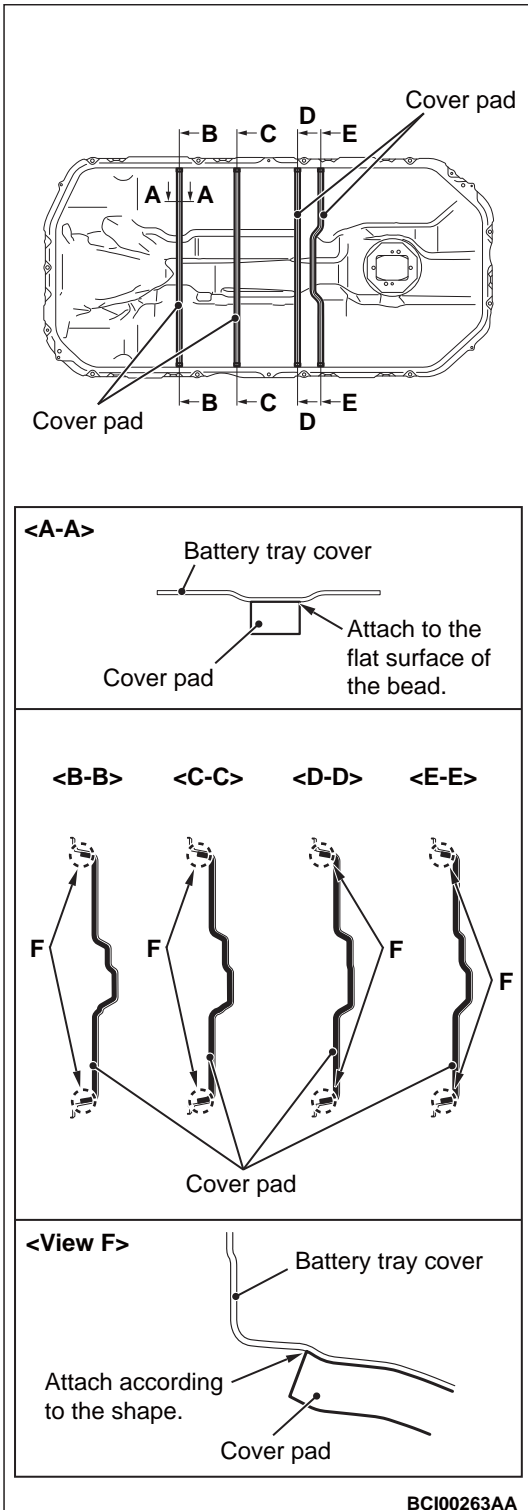
## Battery tray cover installation

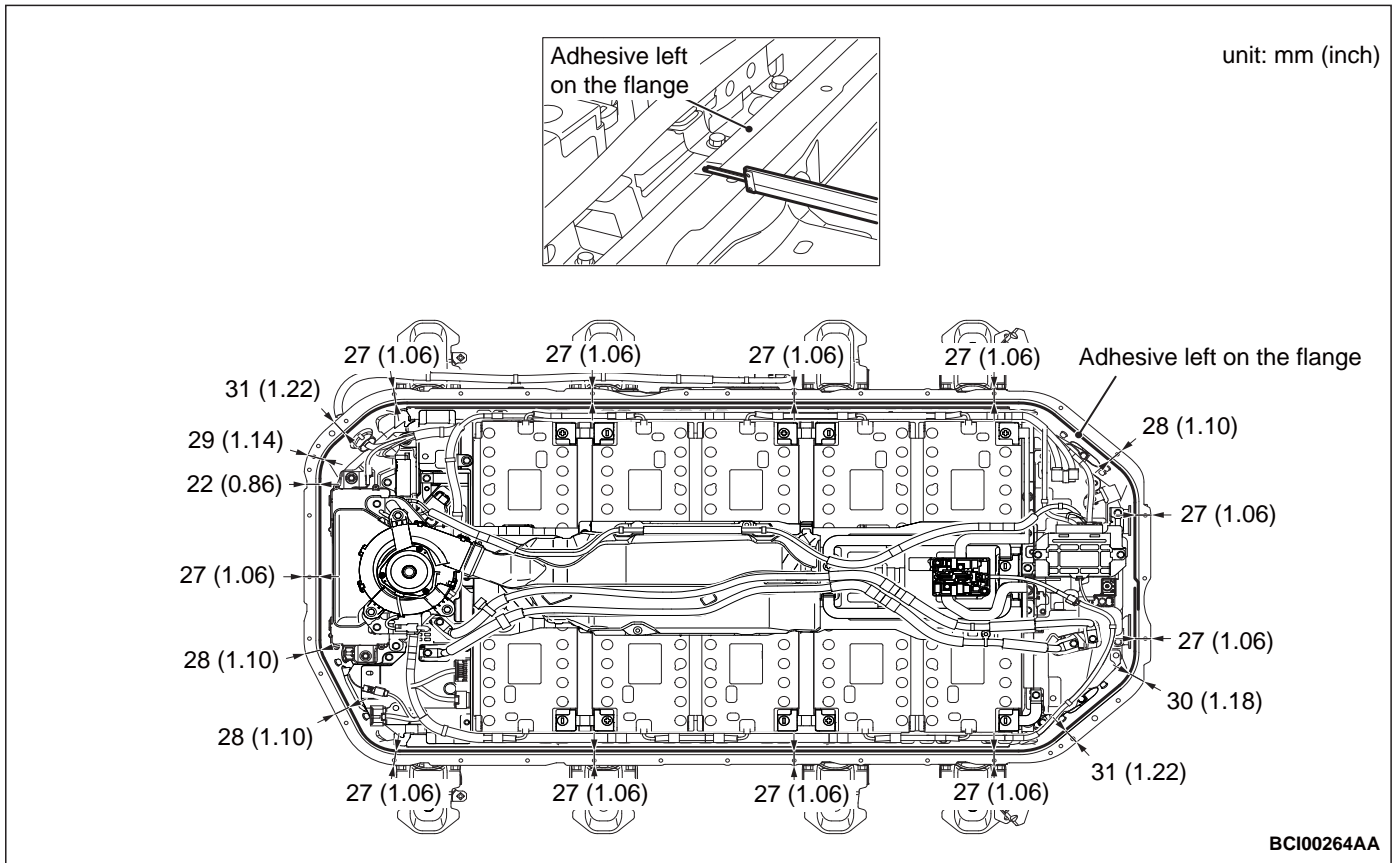
1. Install the breather cap.

### **CAUTION**

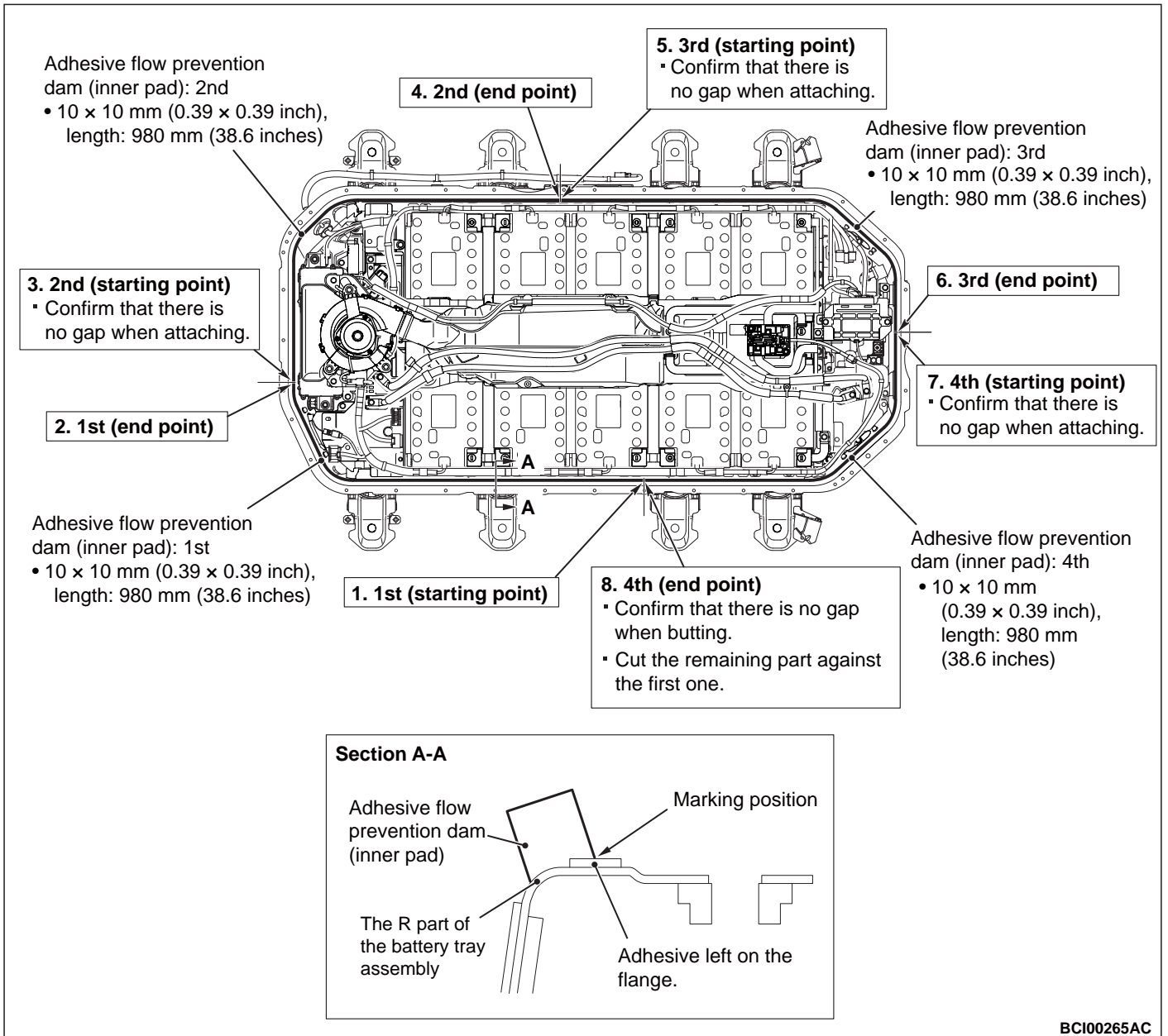
Application surface should be free of oil, grease or foreign materials.

2. Position the cover pads as shown.
3. Use parts cleaner (3M AAD Part number 8906) or equivalent to degrease and clean the surface of the adhesive remaining on the flange of the battery tray assembly and the battery tray cover.

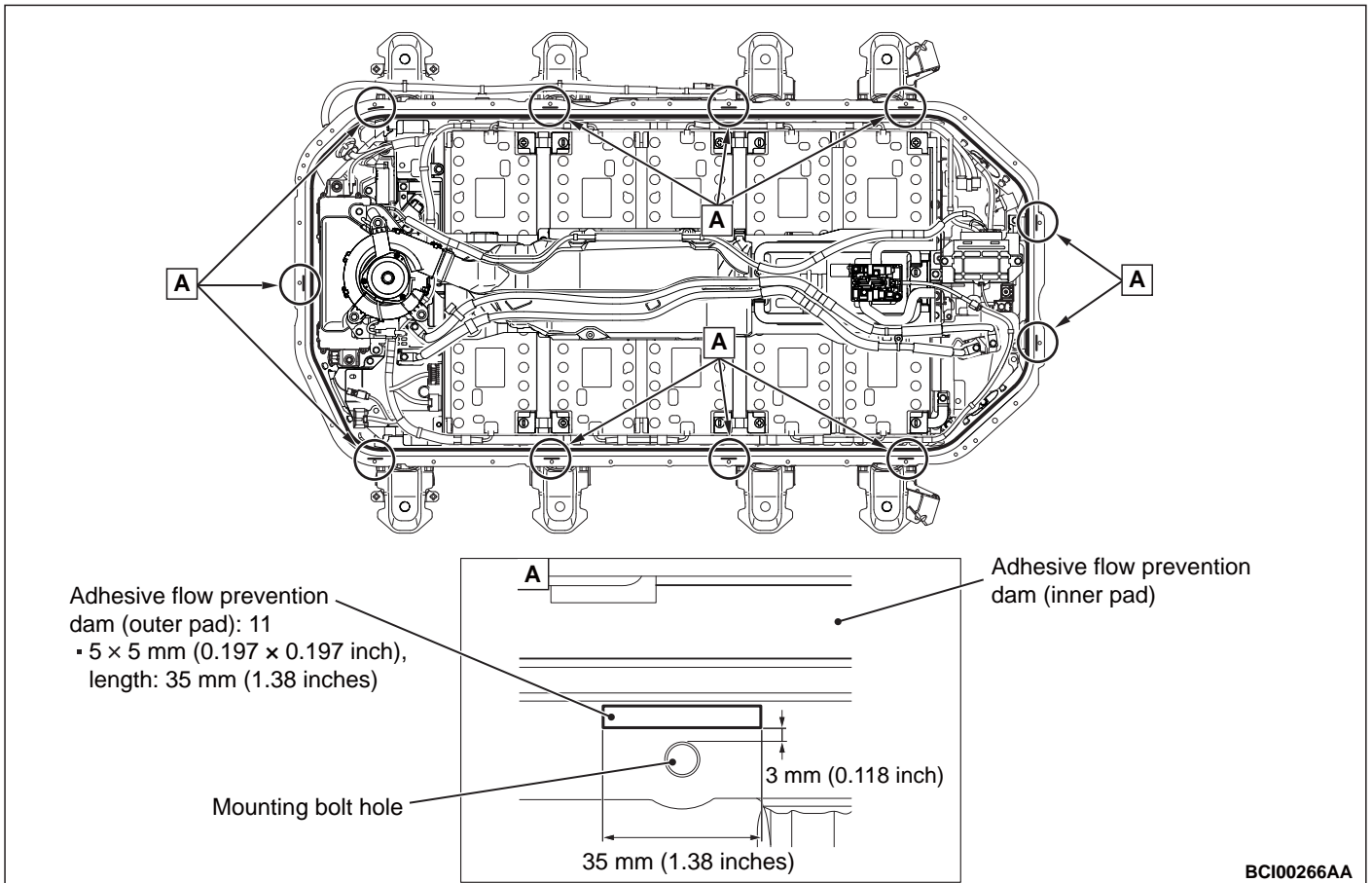




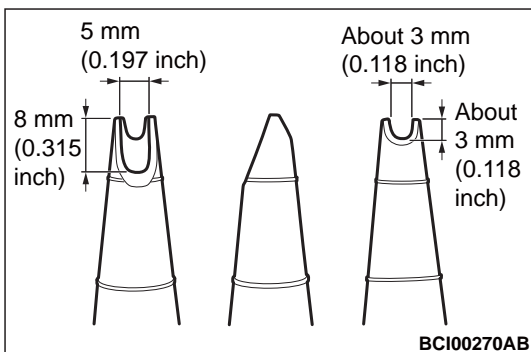
4. Measure the position where the adhesive flow prevention dam (inner pad) is attached to the adhesive left on the flange portion of the battery tray assembly with a vernier caliper etc. and mark it.



5. Attach four adhesive flow prevention dam (inner pad) inside the marking.



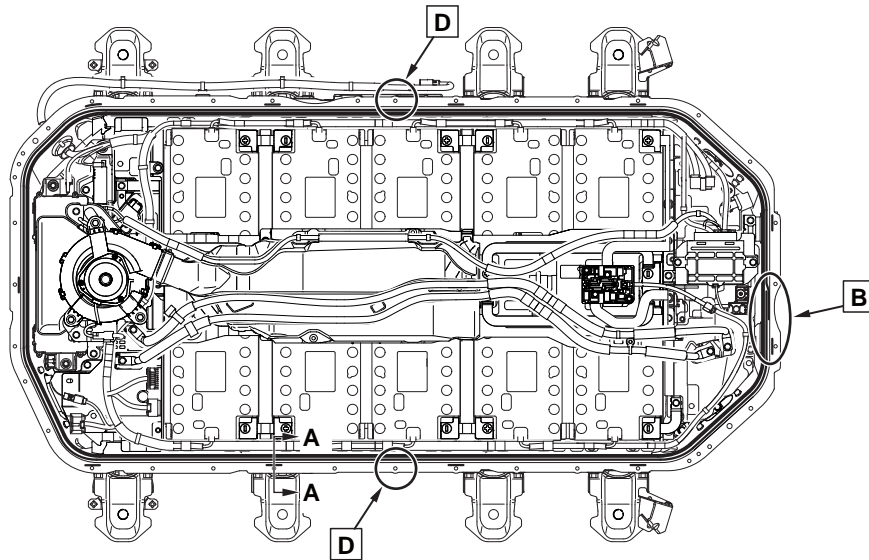
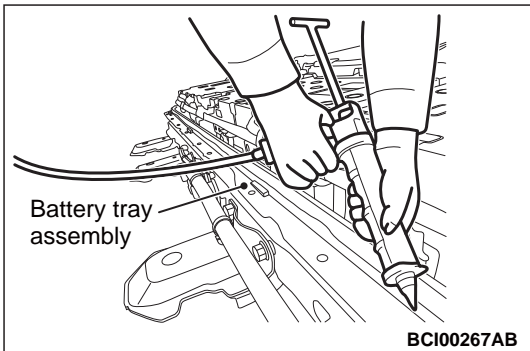
6. Attach 11 adhesive flow prevention dams (outer pads) to the inside of the bolt hole.
7. Cut the nozzle tip of the sealant gun in the following procedure.



- (1) Cut so that the inner diameter of the nozzle tip becomes 5 mm (0.197 inch).
- (2) Cut it obliquely so that the nozzle tip height is 8 mm (0.315 inch).
- (3) In order to make it easier to apply the adhesive, cut the opposite side that cut to 8 mm (0.315 inch) so that the inside diameter is about 3 mm (0.118 inch) and the height is about 3 mm (0.118 inch).
- (4) Whether the adhesive can be applied with the standard dimension [5 × 8 mm (0.197 × 0.315 inch)] is trial applied, and if it is less than standard, perform the cutting operation again.

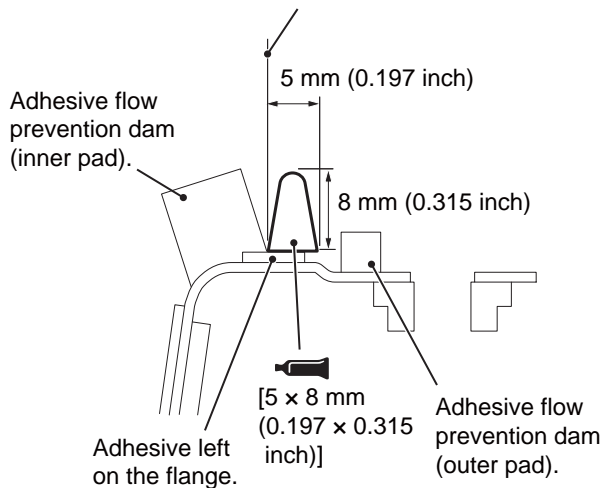


8. Using the sealant gun.



Section A-A

Apply the adhesive along the attachment line of the adhesive flow prevention dam (inner pad).



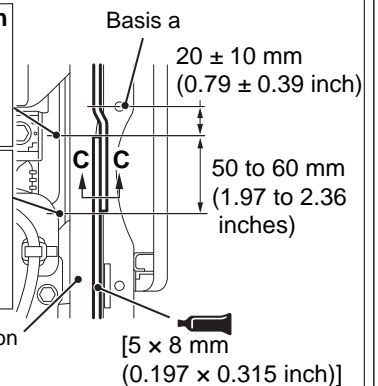
B

1. Adhesive application starting point.

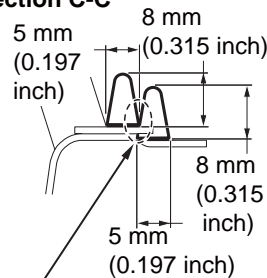
- 20 ± 10 mm (0.79 ± 0.39 inch) from the basis a.

2. Adhesive application end point.

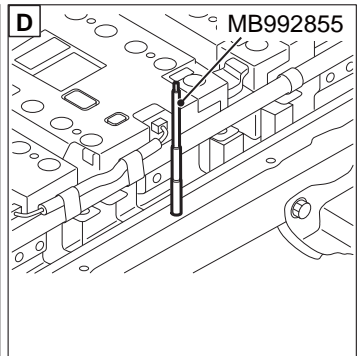
The required wrap length is 50 to 60 mm (1.97 to 2.36 inches).



Section C-C



Apply so that there is no gap between the adhesives.



BCI00268AD

**⚠ CAUTION**

After applying adhesive, make sure that the adhesive flow prevention dam has not fallen down toward the adhesive side.

9. Apply adhesive YOKOHAMA RUBBER HAMATITE WS-262 or equivalent to the battery tray assembly.

NOTE: Application amount of adhesive: About 150 g (5.3 oz)

10. Use a ruler to check that the adhesive is applied according to dimensions shown in the figure. If the application is insufficient, add the adhesive.

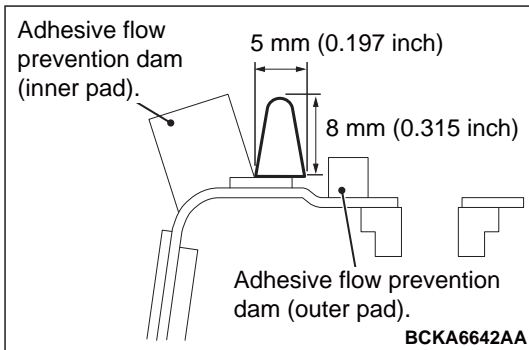
11. Install the special tool MB992855 to the battery tray assembly.

**⚠ CAUTION**

- Installation of the battery tray cover should be done by two or more persons.
- Install the battery tray cover immediately after applying the adhesive.

12. Install the battery tray cover while checking the hole positions of both the guide pin and the battery tray cover mounted on the battery tray assembly.

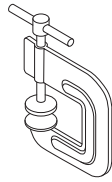
13. Tighten the mounting bolts of the battery tray cover in the order of 1 to 11 with specified torque and remove the special tool MB992855.



**CAUTION**

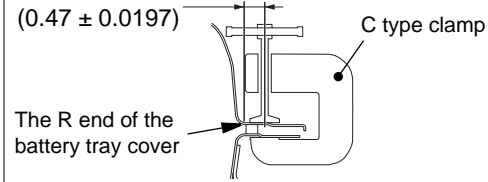
Do not tighten the C type clamp exceeding the specified dimension, otherwise it may cause poor adhesion.

C type clamp (install in the 1 to 11).

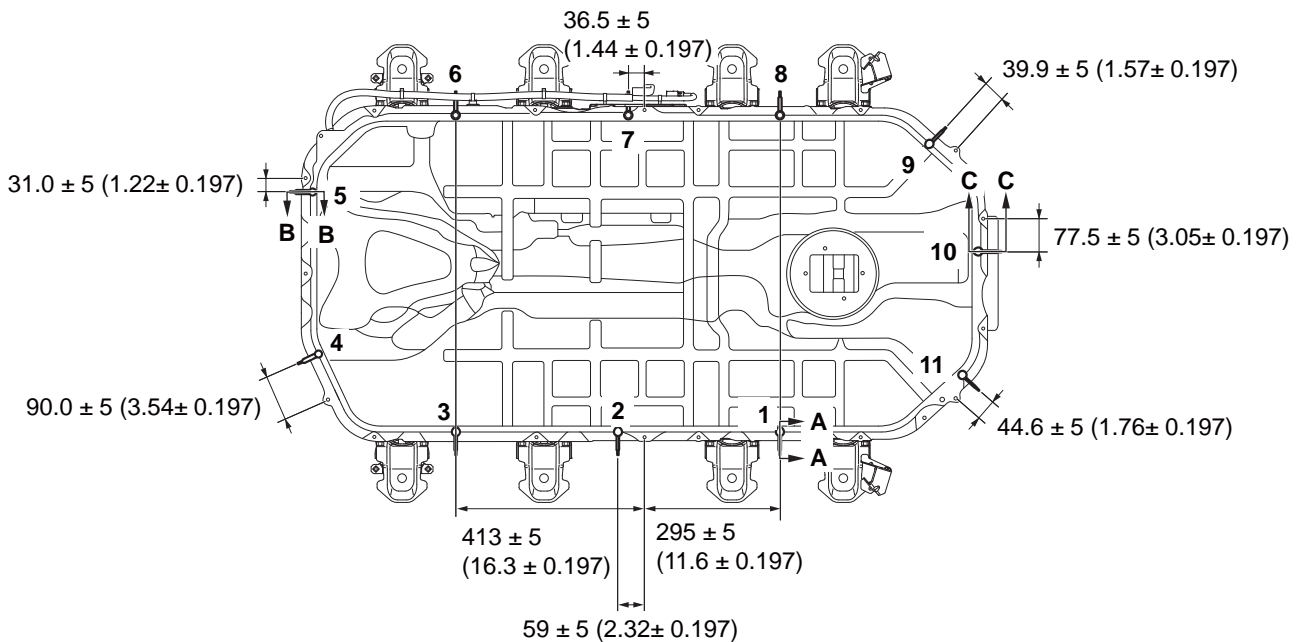


The dimension between the R end of the battery tray cover and the centre of the C type clamp axis

$12.0 \pm 0.5$   
( $0.47 \pm 0.0197$ )

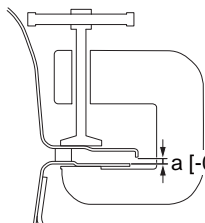


unit: mm (inch)



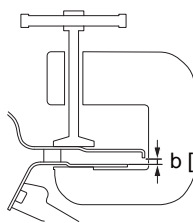
Tighten the clamps so that the following dimensions a, b, c (clearance between battery tray cover and battery tray assembly) are displaced from 0 to 0.5 mm (0 to 0.0197 inch).

**Section A-A**  
(1 to 3, 6 to 9)



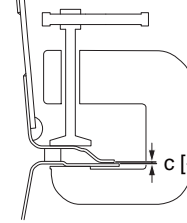
a [-0.5 to 0 (-0.0197 to 0)]

**Section B-B**  
(4, 5, 11)



b [-0.5 to 0 (-0.0197 to 0)]

**Section C-C**  
(10)



c [-0.5 to 0 (-0.0197 to 0)]

BCI00269AC

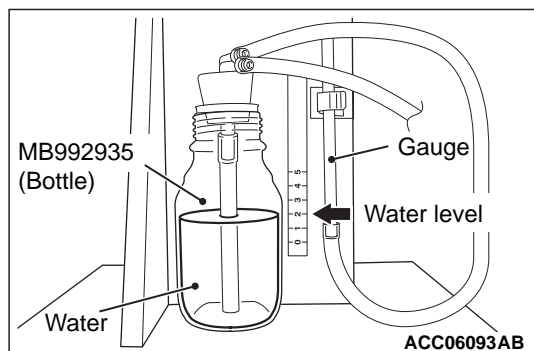
14. In order to prevent the battery tray cover from floating up, install C type clamps (11 pieces).
15. Carried out the air leak check after 45 minutes have elapsed from the start of adhesive application.
16. Remove the C type clamp (11 pieces).

## How to check

**CAUTION**

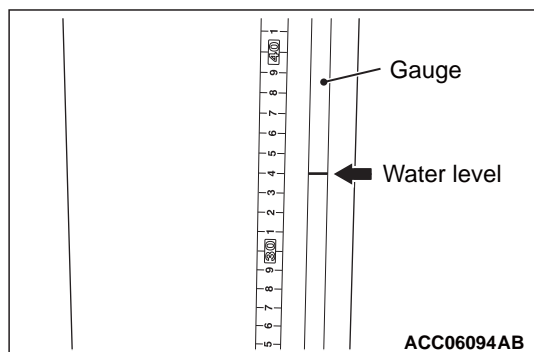
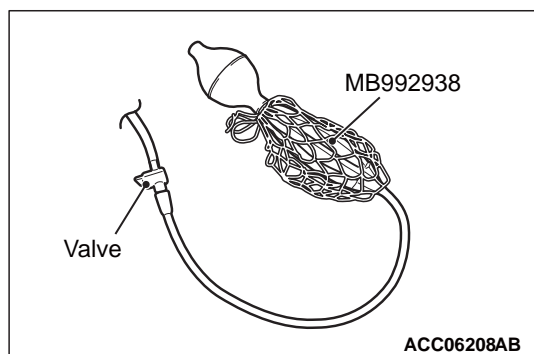
Do not place the special tool MB992935 higher than the main drive lithium-ion battery assembly, or water will intrude into the main drive lithium-ion battery assembly.

1. Pour 0.2 dm<sup>3</sup> (0.21 qt) of water into the bottle of the special tool MB992935.



&lt;Added&gt;

Attached sheet 8



2. Operate the special tool MB992938 to deliver water into the gauge side of the special tool MB992935 so that the water level in the gauge rises 320mm (12.5 inches) above the water level in the bottle.
3. Close the valve of the special tool MB992938 and then wait for five minutes.
4. Operate the special tool MB992938 to deliver water into the gauge side of the special tool MB992935 so that the water level in the gauge rises 320mm (12.5 inches) above the water level in the bottle.
5. Close the valve of the special tool MB992938 and then wait for ten minutes.
6. Then measure the water level inside the gauge.

**OK: The water level inside the gauge should fluctuate within 19 mm (0.75 inch).**

7. If the water level fluctuation exceeds the specified range, locate air leakage by using soapy water to repair it.

**⚠ CAUTION**

Carry out the inspection while making sure that air is not mixed into the hose.

- 1-1. Adjust the water level of the bottle and the water level of the hose to the same level as shown in the figure.

