



SIM 61 02 19

2019-11-04

**SERVICE ACTION: F60 PHEV WIRING HARNESS EME**

Please perform the procedure outlined in this Service Information on all affected vehicles before customer delivery. In the event the customer has already taken delivery of the vehicle, please perform the procedure the next time the vehicle is in the shop.

This Service Information bulletin (Revision 2) replaces SI M61 02 19 **dated July 2019**.

**What's New** (Specific text highlighted):

- Parts
- Warranty Information section updated

**MODEL**

| E-Series | Model Description              | Production Date                               | Affected Option Code |
|----------|--------------------------------|-----------------------------------------------|----------------------|
| F60 PHEV | MINI Cooper SE Countryman ALL4 | November 24, 2017<br>to September 26,<br>2018 |                      |

**AFFECTED VEHICLES**

A Service Action was issued (effective June 6, 2019) on certain Model Year 2018-2019 MINI Cooper S E Countryman ALL4 vehicles that were produced from November 24, 2017 through September 26, 2018.

Vehicles which require this Service Action to be completed will show it as "Open" when checked either in AIR, the "Service Menu" of DCSnet (Dealer Communication System) or with the Key Reader.

**SITUATION**

The main wiring harness near the Electrical Machine Electronics (EME) connector may chafe on the power electronics or E-machine/ connector under certain circumstances.

Affected vehicles show the campaign as "Open" when checked either in Warranty Vehicle Inquiry, AIR or ISPA Next and identified with the description: M610219 Service Action: F60 PHEV Wiring Harness EME.

**CAUSE**

Under certain circumstances, the wiring harness for the EME 12 Volt connector may rub and chafe on the E-machine case (or any other component) due to improper routing/installation arrangement of the harness and hold down clips locations. The insulation of the harness may wear through, and in some cases may result in damage to the 12 Volt wiring.

**CORRECTION**

The correction of these issues depend on the wiring harness arrangement on the particular vehicle, explained in the individual attachment for each case scenario.

Follow the steps below to inspect the wiring harness to assess which scenario you have as it will determine which attachment you should follow to complete the repair.

**Individual (Case1 through Case 4) scenarios:****Individual (Case1 through Case 4) scenarios.**

**Case 1 - Correct installation** - The EME 12 Volt wiring harness must be installed in such a way that it does **not** touch the E-machine or any other component.

**Case 2 - Incorrect installation:**

If the wiring harness insulation is **not damaged**: Correct the wiring harness (routing) installation arrangement.

**Case 3 - Incorrect installation:**

If the wiring harness insulation is **slightly damaged** (strands are **not visible**)-

- Correct the wiring harness (routing) installation arrangement and repair the damaged insulation as necessary

**Case 4 - Incorrect installation:**

If the wiring harness insulation is **damaged** (strands are **visible**)-

- Correct the wiring harness (routing) installation arrangement, repair damaged wire and insulation

**Risk of damage!** The wiring harness (1) must not be contacting the E-machine (2) or any other component!



**Note:** Depending on the vehicle, follow the correct repair procedure illustrated in the attachments (Case 1 through Case 4) of the **SI M12 02 19!**

## PROCEDURE

**Case 1 - Correct installation:**

If the harness is **properly routed** and there are **no visible signs** of chafing damage-

- Follow the procedure explained in the attachment below to inspect the area and verify that no further work is required

### Attachment 1 - Procedure to inspect and verify the wiring harness in CASE 1

**Case 2 - Incorrect installation:**

If the wiring harness is not routed properly but the insulation is **not damaged**-

- Follow the procedure explained in the attachment below to correct the wiring harness (routing) installation arrangement

### Attachment 2 - Procedure to inspect and correct the wiring harness in CASE 2

**Case 3 - Incorrect installation:**

If the wiring harness insulation is **slightly damaged** (wire strands are **not visible**)-

- Follow the procedure explained in the attachment below to correct the wiring harness (routing) installation arrangement and repair the damaged insulation as necessary

### Attachment 3 - Procedure to inspect and repair the wiring harness in CASE 3

**Case 4 - Incorrect installation:**

If the wiring harness insulation is **damaged** (wire strands are **visible**)-

- Follow the procedure explained in the attachment below to correct the wiring harness (routing) installation arrangement, **repair damaged wiring and insulation**

### Attachment 4 - Procedure to inspect and repair the wiring harness in CASE 4

## PARTS INFORMATION

Obtain and confirm the part numbers for your specific vehicle by entering the chassis number in either ETK or AIR which takes into account specific equipment and/or options.

| Part Number     | Description                       | Quantity            |
|-----------------|-----------------------------------|---------------------|
| 61 13 8 383 722 | Cable tie (L=200 mm/W=4.6 mm)     | As required (max.5) |
| 61 13 6 943 977 | Cable holder                      | As required (max.4) |
| 61 13 6 943 978 | Cable holder edge                 | As required (max.2) |
| 61 13 7 560 191 | Cable strap with bracket (160 mm) | As required (max.1) |

| Part Number     | Description                                     | Quantity                                     |
|-----------------|-------------------------------------------------|----------------------------------------------|
| 61 13 9 225 752 | Clip                                            | As required (max.4)                          |
| 61 13 8 375 988 | Cable strap with bracket (D=7.9 mm/L=150 mm)    | As required (max.3)                          |
| 61 13 9 219 792 | Cable holder                                    | As required (max.2)                          |
| 61 13 6 925 452 | Fabric tape abrasion resistant (L= 25m/W=19 mm) | Sublet as required (approx. 50 cm/20 inches) |

## WARRANTY INFORMATION

Reimbursement for this Service Action will be via normal claim entry utilizing the following information:

|                    |                   |                                                                                                             |
|--------------------|-------------------|-------------------------------------------------------------------------------------------------------------|
| <b>Defect Code</b> | <b>0061110500</b> | <b>F60 check PHEV [Plug-in Hybrid Electric Vehicle] installation wiring harness and rework if necessary</b> |
|--------------------|-------------------|-------------------------------------------------------------------------------------------------------------|

**Completion before the first vehicle delivery to a customer or the vehicle is already in the workshop.**

| Work Pkg | Labor Operation | Description (Main work)                                                                         | Labor Allowance |
|----------|-----------------|-------------------------------------------------------------------------------------------------|-----------------|
| # 1      | 00 67 510       | <b>Checking the wiring harness installation arrangement</b> (No repair is necessary)            | Refer to AIR    |
| Or:      |                 |                                                                                                 |                 |
| # 2      | 00 67 511       | <b>Check and correct wiring harness installation arrangement</b>                                | Refer to AIR    |
| Or:      |                 |                                                                                                 |                 |
| # 3      | 00 67 521       | <b>Check and correct wiring harness installation arrangement with insulation repair</b>         | Refer to AIR    |
| Or:      |                 |                                                                                                 |                 |
| # 4      | 00 67 522       | <b>Checking and correction of the wiring harness installation arrangement with cable repair</b> | Refer to AIR    |

Or:

**The vehicle arrives at your dealer and this Campaign shows open (No other Main work will be performed/claimed during this workshop visit)**

| Work Pkg | Labor Operation | Description (Main work)                                                                         | Labor Allowance |
|----------|-----------------|-------------------------------------------------------------------------------------------------|-----------------|
| # 5      | 00 67 003       | <b>Checking the wiring harness installation arrangement</b> (No repair is necessary)            | Refer to AIR    |
| Or:      |                 |                                                                                                 |                 |
| # 6      | 00 67 004       | <b>Check and correct wiring harness installation arrangement</b>                                | Refer to AIR    |
| Or:      |                 |                                                                                                 |                 |
| # 7      | 00 67 012       | <b>Check and correct wiring harness installation arrangement with insulation repair</b>         | Refer to AIR    |
| Or:      |                 |                                                                                                 |                 |
| # 8      | 00 67 013       | <b>Checking and correction of the wiring harness installation arrangement with cable repair</b> | Refer to AIR    |

## Claim Repair Comments

Only reference the SIM number and the work package (Pkg) number performed in the RO technician notes and in the claim comments (For example: M61 02 19 WP 1).

And, as needed:

**Sublet – Bulk Materials (RO and Claim Comments Required)**

|               |              |                                                                                                           |
|---------------|--------------|-----------------------------------------------------------------------------------------------------------|
| Sublet Code 4 | Up to \$1.00 | Reimbursement for the repair-related bulk material (Do not use the MINI part number for claim submission) |
|---------------|--------------|-----------------------------------------------------------------------------------------------------------|

Sublet reimbursement for claiming repair-related bulk material (MINI part number).

Enter this material cost in sublet and itemize the amount on the repair order and in claim comment section.  
Supporting Materials

[picture\\_as\\_pdf M610219 Attachment 3 - Procedure to inspect and repair the wiring harness. CASE 3.pdf](#)

[picture\\_as\\_pdf M610219 Attachment 2 - Procedure to inspect and correct the wiring harness. CASE 2.pdf](#)

[picture\\_as\\_pdf M610219 Attachment 1 - Procedure to inspect and verify the wiring harness in CASE 1.pdf](#)

[picture\\_as\\_pdf M610219 Attachment 4 - Procedure to inspect and repair the wiring harness. CASE 4.pdf](#)

**Procedure for checking the wiring harness and reworking if necessary 0061110500****Case 1- Correct installation****Important warning for working on the high-voltage systems on the F60 PHEV:**

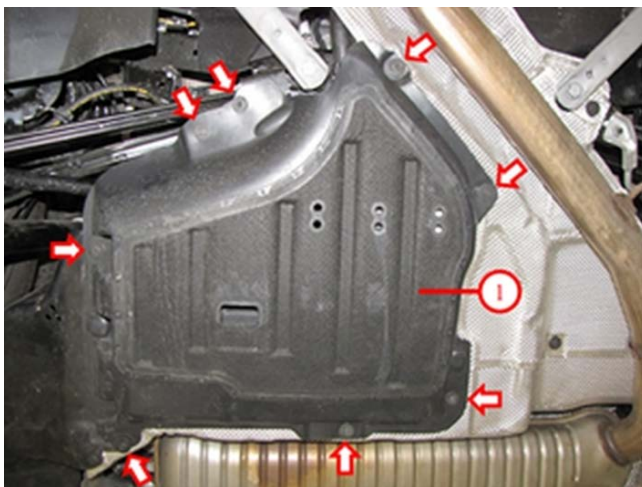
Only properly trained personnel, who have passed all applicable technical training courses, should perform any maintenance or repairs on any Hybrid or Electric Vehicle. Work performed by unqualified persons may result in severe injury or damage to the vehicle. Additional information is found in Repair Instruction 61 00... Observe safety instructions when handling electric vehicles.

Preliminary work required:

1. De-energize high-voltage system from power. Refer to repair instructions **REP 61 25 900**.
2. Disconnect the 12V battery ground lead. Refer to repair instructions **REP 61 20 900**.
3. Position the vehicle on a lift.
4. Remove the plastic underbody cover (1 in the illustration below) by removing the attachment bolts (arrows). Refer to **Step 6** of repair instructions **REP 12 35 000**.
5. Visually inspect the wiring harness branches at the luggage compartment pass through grommet area for proper routing and chafe marks throughout entire visible area.



If there are chafe marks on the wiring harness (red arrow) per the examples below, the harness must be repositioned and repaired.





## Checking the wiring harness for damage due to improper installation.



Please note that depending on the vehicle we must follow the correct repair procedure illustrated in the attachments (Case1 through Case 4) of the SI M12 02 19 for the different cases!

|                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div data-bbox="167 470 436 504"><b>Correct installation</b></div> <div data-bbox="496 470 787 504"><b>Incorrect installation</b></div> <div data-bbox="168 537 787 1142"></div>      | <p><b>Check the wiring harness installation (1) - Distinction of cases!</b></p> <p><b>Correct installation</b></p> <p>The wiring harness (1) must be installed in such a way that it <b>does not touch</b> the <b>E-machine (2)</b> or any other component.</p> <p><b>Case 1 - Correct installation:</b></p> <p>If the harness is properly routed and there are no visible signs of chafing damage; Re-install the cover and screws.<br/><b>No further repair work is required.</b></p>                                                                                                                                                                                                                                                                                             |
| <div data-bbox="167 1184 436 1218"><b>Correct installation</b></div> <div data-bbox="487 1184 779 1218"><b>Incorrect installation</b></div> <div data-bbox="168 1251 787 1856"></div> | <p><b>Incorrect installation cases</b></p> <p>The wiring harness (1) is not properly installed and <b>touches on</b> the <b>E-machine (2)</b> or any other component.</p> <p><b>Correcting the wiring harness installation arrangement F60 PHEV depending on the specific case below.</b></p> <p><b>Case 2 - Incorrect installation:</b><br/>If the wiring harness (1) insulation, in the area (3), <b>is not damaged</b>; correct the wiring harness (routing) installation arrangement.</p> <p><b>Case 3 - Incorrect installation:</b><br/>If the wiring harness (1) insulation, in the area (3), <b>is slightly damaged</b>, (strands are <b>not visible</b>), correct the wiring harness (routing) installation arrangement and repair the damaged insulation as necessary.</p> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>Case 4 - Incorrect installation:</b><br/>         If the wiring harness (1) insulation, in the area (3) <b>is damaged</b>, (strands <b>are visible</b>), correct wiring harness (routing) installation arrangement, <b>repair damaged wire and insulation.</b></p> <p><br/>         Refer to the attachment for the specific case.</p> <p> Every vehicle harness routing case may differ from each other or from the example given.</p> |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

6. Reinstall the plastic underbody cover (1 in the illustration below) by removing the attachment bolts. Refer to **Step 70** of repair instructions **REP 12 35 000**.
7. Reconnect the vehicle battery (refer to repair instructions **REP 61 20 900**).
8. Reconnect the high-voltage system (refer to repair instructions **REP 61 25 900**).
9. Clear the fault memory.
10. Briefly drive the vehicle in electric mode to verify that the MIL no longer illuminates.
11. Fully charge the high-voltage battery as a courtesy to the customer.

**Procedure for checking the wiring harness and reworking if necessary 0061110500 –**  
**Case 2 - incorrect installation – Correcting the wiring harness (routing) installation arrangement**



**Important warning for working on the high-voltage systems on the F60 PHEV:**

Only properly trained personnel, who have passed all applicable technical training courses, should perform any maintenance or repairs on any Hybrid or Electric Vehicle. Work performed by unqualified persons may result in severe injury or damage to the vehicle. Additional information is found in Repair Instruction 61 00... Observe safety instructions when handling electric vehicles.

Preliminary work required:

1. De-energize high-voltage system from power. Refer to repair instructions **REP 61 25 900**.
2. Disconnect the 12V battery ground lead. Refer to repair instructions **REP 61 20 900**.
3. Position the vehicle on a lift.
4. Remove the plastic underbody paneling for the drive unit (1 in the illustration below) by removing the attachment bolts (arrows). Refer to **Step 6** of repair instructions **REP 12 35 000**.
5. Visually inspect the wiring harness branches at the luggage compartment pass through grommet area for proper routing and chafe marks throughout entire visible area.



If there are chafe marks on the wiring harness (red arrow) per the examples below; the harness must be repositioned and repaired.



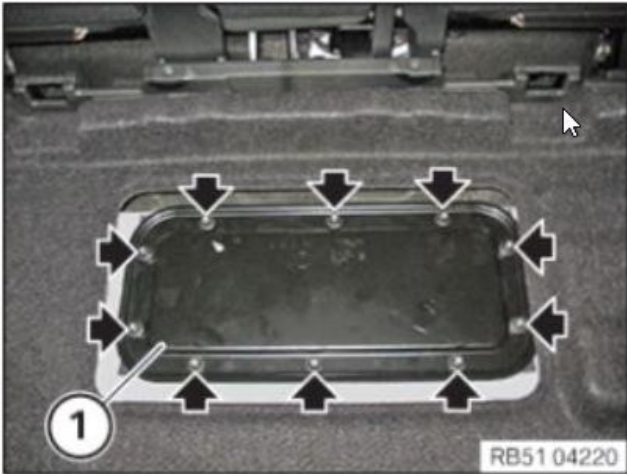


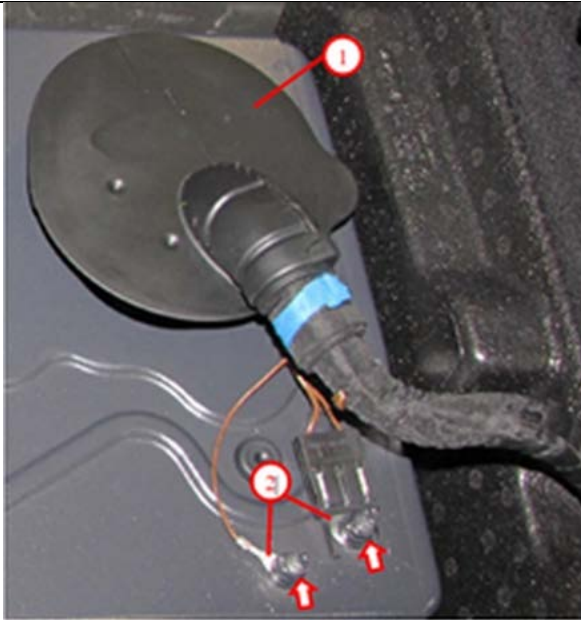
## Checking the wiring harness for damage due to improper installation.



Please note that depending on the vehicle we must follow the correct repair procedure illustrated in the attachments (Case1 through Case 4) of the SI M12 02 19 for the different cases!

|                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><b>Correct installation</b></p> </div> <div style="text-align: center;"> <p><b>Incorrect installation</b></p> </div> </div> | <p><b>Check the wiring harness installation (1) - Distinction of cases!</b></p> <p><b>Correct installation</b></p> <p>The wiring harness (1) must be installed in such a way that it does not touch the <b>E-machine (2) or any other component.</b></p> <p><b>Case 1 - Correct installation:</b></p> <p>If the harness is properly routed and there are no visible signs of chafing damage; Re-install the cover and screws.<br/> <b>No further repair work is required.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                |
| <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><b>Correct installation</b></p> </div> <div style="text-align: center;"> <p><b>Incorrect installation</b></p> </div> </div> | <p><b>Incorrect installation cases</b></p> <p>The wiring harness (1) is not properly installed and touches on the <b>E-machine (2) or any other component.</b></p> <p><b>Correcting the wiring harness installation arrangement on F60 PHEV depending on the specific case below.</b></p> <p><b>Case 2 - Incorrect installation:</b><br/> If the wiring harness (1) insulation, in the area (3) <b>is not damaged</b>; correct the wiring harness installation arrangement.</p> <p><b>Case 3 - Incorrect installation:</b><br/> If the wiring harness (1) insulation, in the area (3), <b>is slightly damaged</b>, (strands are <b>not visible</b>), correct the wiring harness (routing) installation arrangement and repair the damaged insulation as necessary.</p> <p><b>Case 4 - Incorrect installation:</b><br/> If the wiring harness (1) insulation, in the area (3)</p> |

|                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                          | <p>is <b>damaged</b>, (strands are <b>visible</b>), correct wiring harness (routing) installation arrangement, <b>repair damaged wire and insulation</b>.</p> <p></p> <p>Refer to the attachment for the specific case.</p> <p> Every vehicle harness routing case may differ from each other or from the example given.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|  <p>Luggage compartment felt trim panel (1)</p>  <p>Luggage compartment drive unit access cover</p> | <p><u><b>Case 2 - Incorrect installation – Correcting the wiring harness (routing) installation arrangement.</b></u></p> <p><b>Case 2 - Incorrect installation:</b><br/>If the wiring harness (1) insulation, in the area (3) is <b>not damaged</b>; correct the wiring harness (routing) installation arrangement.</p> <ol style="list-style-type: none"> <li>1. Remove the left luggage compartment wheel arch felt trim panel.<br/>Refer to repair instructions <b>REP 51 47 151</b>.</li> <li>2. Remove the right luggage compartment wheel arch felt trim panel.<br/>Refer to repair instructions <b>REP 51 47 161</b>.</li> <li>3. Release the clips (arrows).</li> <li>4. Remove the luggage compartment floor and felt trim panel (1).<br/>Refer to <b>Step 1</b> of repair instructions <b>REP 12 36 018</b>.</li> <li>5. Remove the luggage compartment drive unit access cover.<br/>Refer to <b>Step 2</b> repair instructions <b>REP 12 36 018</b>.</li> </ol> |
|                                                                                                                                                                                                                                                                          | <ol style="list-style-type: none"> <li>6. Gain access to the wiring harness luggage compartment pass through rubber grommet.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



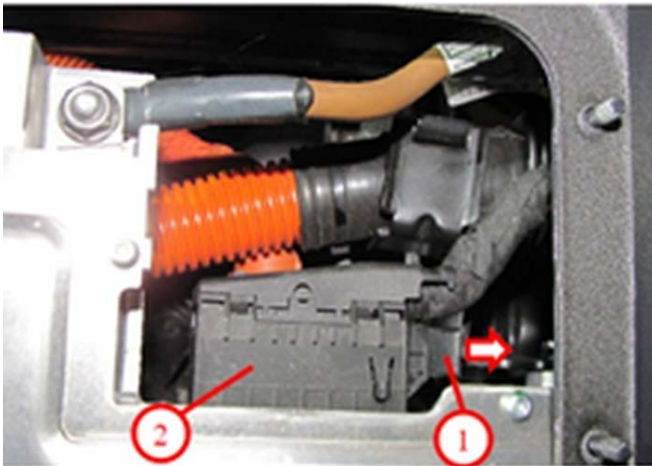
7. Remove the ground connection nuts (arrows).

8. Remove the ground connections (2)

9. Pull upwards to lift the grommet (1)



**Effort is required to remove the luggage compartment pass through rubber grommet (1).**

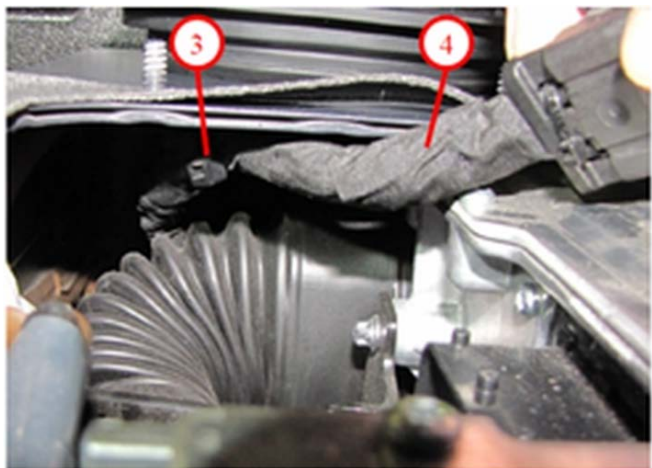


a.

10. Open EME 12V connector clip (1) in the direction of arrow.

11. Release the 12 V EME connector (2).

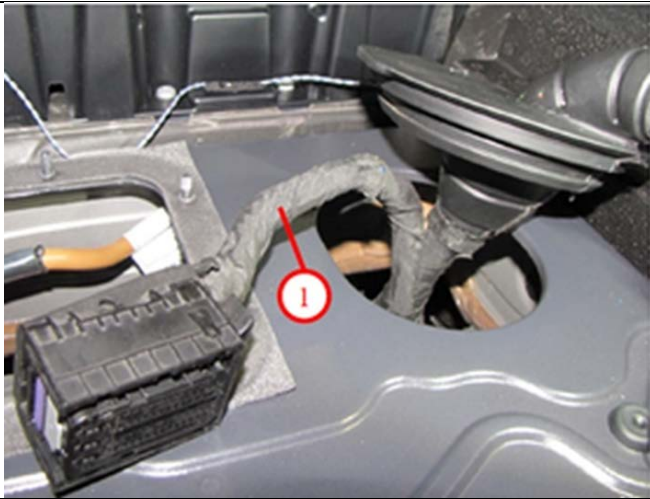
12. Close the clip (1) again.



13. Position the wiring harness (4) as indicated.

14. Carefully disconnect the cable tie (3).





15. Carefully pull the wiring harness (1) out of the wiring harness luggage compartment pass through.



16. **Carefully** cut through the insulating tape (2), on the dotted line as illustrated.

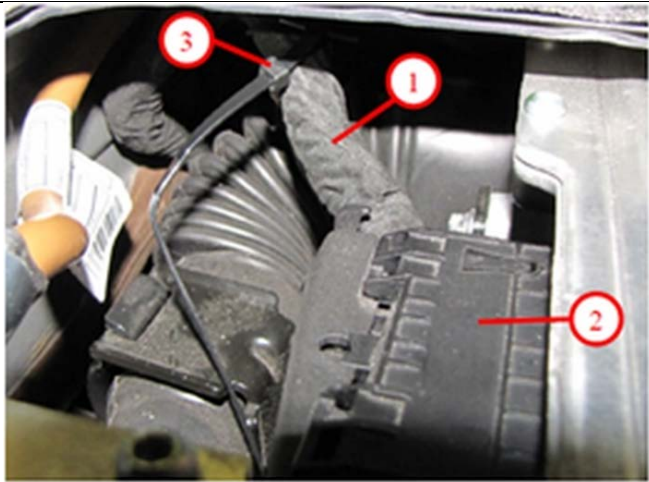


**Do not damage the wiring harness!**

17. Remove the insulating tape (2).



18. Install the wiring harness (1) correctly as indicated



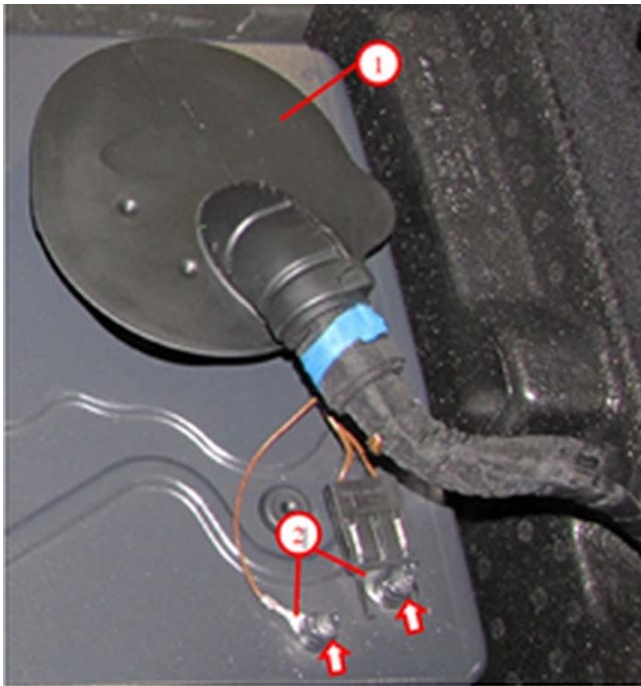
19. Close the wiring connector (2).

20. Mount the wiring harness (1) with the cable tie (3).



**Risk of damage!**  
**Do not apply the cable tie (3) too tightly!**

21. Remove the excess length from the cable tie (3).



22. Position the wiring harness pass through grommet (1) correctly and firmly press on to the luggage compartment floor panel.

23. Verify that the grommet (1) is installed correctly.

24. If necessary, press on the grommet (1) to ensure proper installation.

25. Position the grounding connections (2).

26. Torque the grounding connections point nuts (arrows) to 8 Nm.



27. Elevate the vehicle.

28. Install the wiring harness (1) as indicated in such a way that the wiring harness (1) does not touch against the grommet (2).

29. Mount the wiring harness (1) as indicated with the cable tie (3).



30. Check the wiring harness routing and installation arrangement.



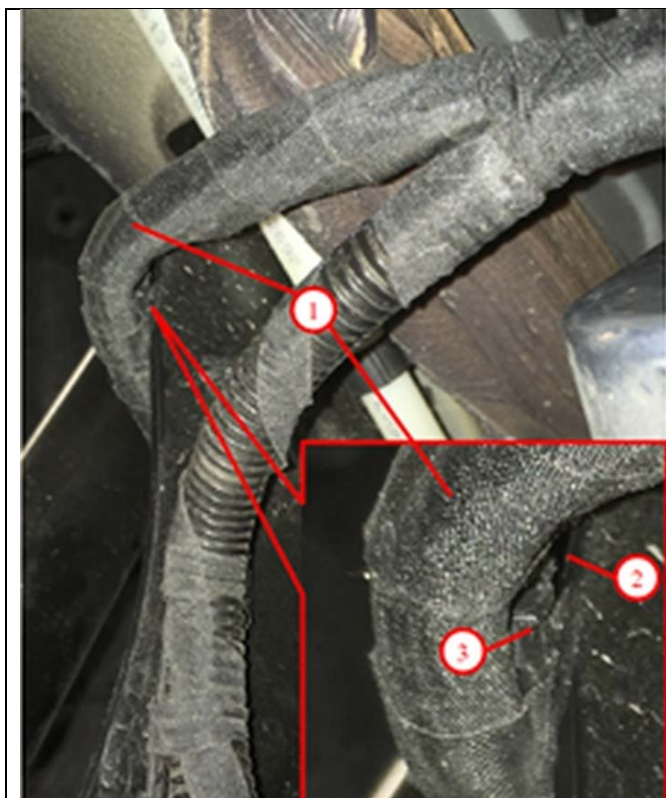
**Risk of damage!!**

**The wiring harness (1) must not be on the E-machine (2) or any other component!**

31. If necessary, correct the installation of the wiring harness (1).

32. Verify the wiring harness installation arrangement.





**Risk of damage!**

**The wiring harness (1) must not be at the edge (2)!**

- 33. Clip (3) must protrude over the edge (2) therefore preventing any contact between the wiring harness (1) and the edge (2).
- 34. If necessary, correct the installation and position of the clip (3) on the wiring harness (1).
- 35. Assemble the vehicle.

- 36. Reinstall the plastic underbody paneling for the drive unit.  
Refer to **Step 70** of repair instructions **REP 12 35 000**.
- 37. Reconnect the vehicle battery (refer to repair instruction **REP 61 20 900**).
- 38. Reconnect the high-voltage system (refer to repair instruction **REP 61 25 900**).
- 39. Clear the fault memory.
- 40. Briefly drive the vehicle in electric mode to verify that the MIL no longer illuminates.
- 41. Fully charge the high-voltage battery as a courtesy to the customer.

**Procedure for checking the wiring harness and reworking if necessary 0061110500 -****Case 3 - Incorrect installation****Correcting the wiring harness (routing) installation arrangement and repairing the damaged insulation.**

Changes to previous version indicated by yellow highlighting.

**Important warning for working on the high-voltage systems on the F60 PHEV:**

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Preliminary work required:

1. De-energize high-voltage system from power. Refer to repair instructions **REP 61 25 900**.
2. Disconnect the 12V battery ground lead. Refer to repair instructions **REP 61 20 900**.
3. Position the vehicle on a lift.
4. Remove the plastic underbody cover for the drive unit (1 in the illustration below) by removing the attachment bolts (arrows). Refer to **Step 6** of repair instructions **REP 12 35 000**.
5. Visually inspect the wiring harness branches at the luggage compartment pass through grommet area for proper routing and chafe marks throughout entire visible area.



If there are chafe marks on the wiring harness (red arrow) per the examples below; the harness must be repositioned and repaired.



## Checking the wiring harness for damage due to improper installation.



Please note that depending on the vehicle we must follow the correct repair procedure illustrated in the attachments (Case 1 through Case 4) of the SI M12 02 19 for the different cases!

|                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Correct installation</b>      <b>Incorrect installation</b></p> | <p><b>Check the wiring harness installation (1) - Distinction of cases!</b></p> <p><b>Correct installation</b></p> <p>The wiring harness (1) must be installed in such a way that it does not touch the E-machine (2) or any other component.</p> <p><b>Case 1 - Correct installation:</b></p> <p>If the harness is properly routed and there are no visible signs of chafing damage; Re-install the underbody cover and screws.<br/> <b>No further repair work is required.</b></p>                                                                                                                                                                                                      |
| <p><b>Correct installation</b>      <b>Incorrect installation</b></p> | <p><b>Incorrect installation cases</b></p> <p>The wiring harness (1) is not properly installed and touches on the E-machine (2) or any other component.</p> <p><b>Correcting the wiring harness installation arrangement on F60 PHEV depending on the specific case below.</b></p> <p><b>Case 2 - Incorrect installation:</b><br/> If the wiring harness (1) insulation, in the area (3) <b>is not damaged</b>; correct the wiring harness installation arrangement.</p> <p><b>Case 3 - Incorrect installation:</b><br/> If the wiring harness (1) insulation, in the area (3), <b>is slightly damaged</b>, (strands are <b>not visible</b>), correct the wiring harness installation</p> |

arrangement and repair the damaged insulation as indicated below.

**Case 4 - Incorrect installation:**

If the wiring harness (1) insulation, in the area (3) **is damaged**, (strands are visible), correct wiring harness (routing) installation arrangement, **repair damaged wire and insulation**.



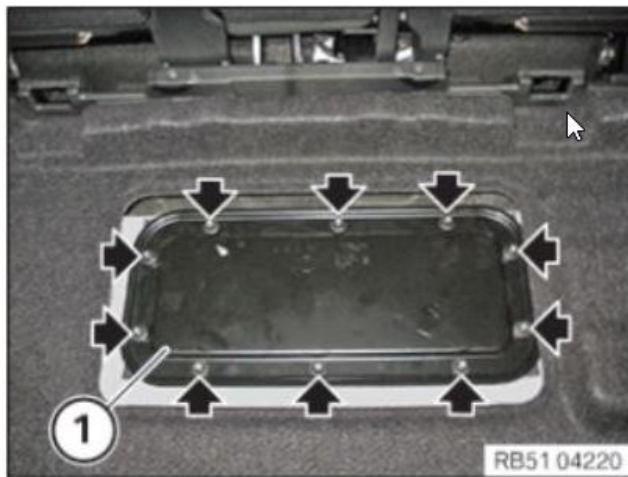
Refer to the attachment for the specific case.



**Every vehicle harness routing case may differ from each other or from the example given.**



Luggage compartment trim panel (1)



Luggage compartment drive unit access cover

**Case 3 - Incorrect installation**

**Correcting the wiring harness (routing) installation arrangement and repairing the damaged insulation.**

**Case 3: Incorrect installation:**

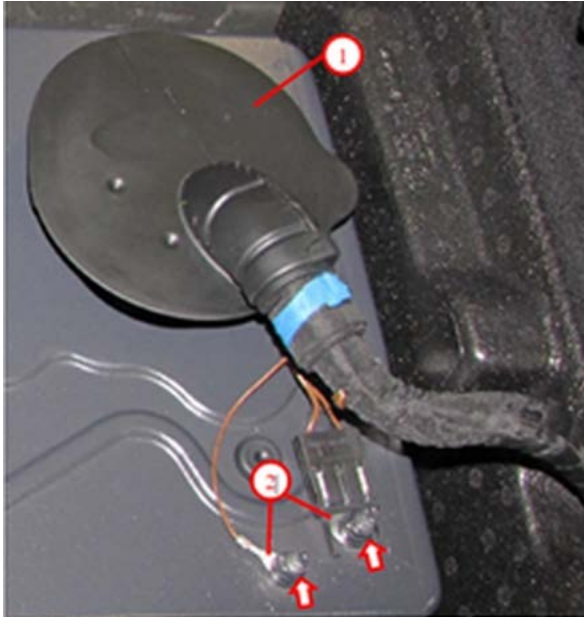
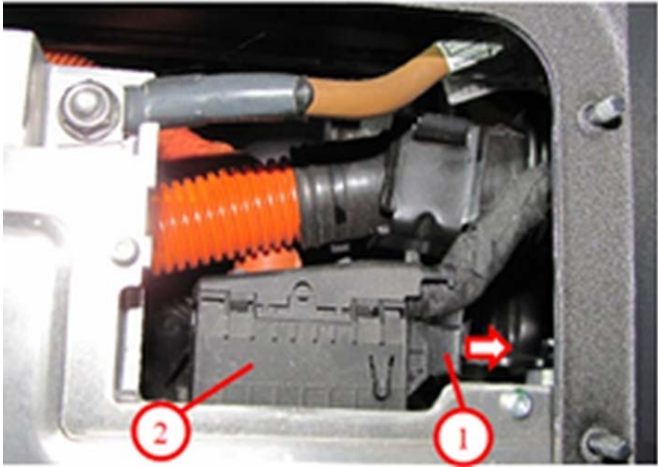
If the wiring harness (1) insulation in the area (3) above, is slightly damaged, (**but strands are not visible**), correct the wiring harness (routing) installation arrangement and repair the damaged insulation as indicated below.

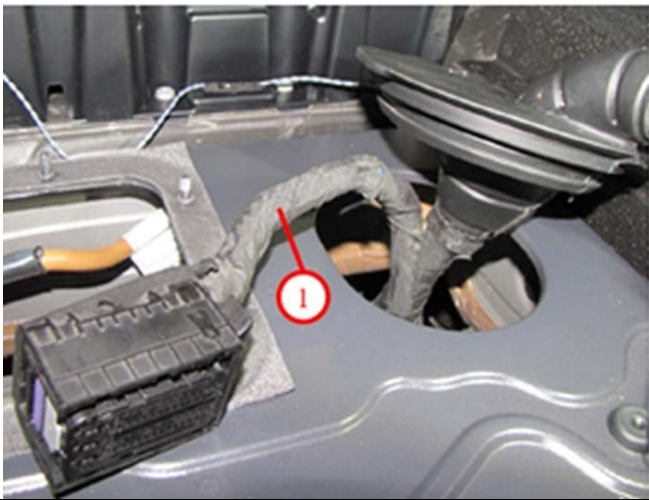
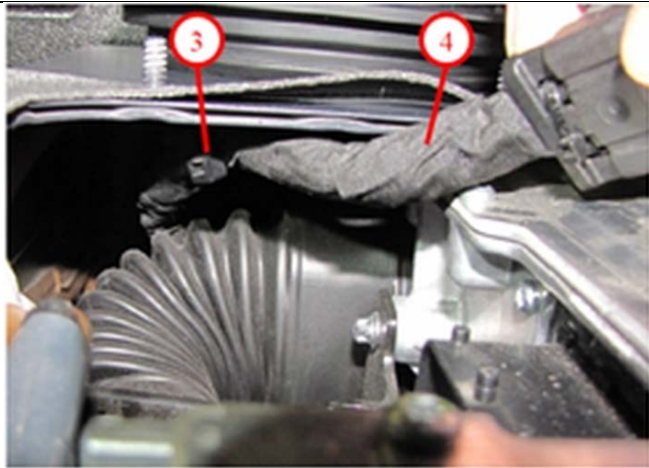


**For Case 3 - Follow the procedure to repair the damaged cable insulation as described in Attachment - 2 for Case 2, with the addition of Case 3 specific step illustrated here.**

1. Remove the left luggage compartment wheel arch trim panel.  
Refer to repair instructions **REP 51 47 151**.
2. Remove the right luggage compartment wheel arch trim panel.  
Refer to repair instructions **REP 51 47 161**.
3. Release the clips (arrows).
4. Remove the luggage compartment floor and felt trim panel **(1)**.  
Refer to **Step 1** of repair instructions



|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                     | <p><b>REP 12 36 018.</b></p> <p>5. Remove the luggage compartment drive unit access cover.<br/>Refer to <b>Step 2</b> repair instructions <b>REP 12 36 018.</b></p>                                                                                                                                                                                                                                          |
|   | <p>6. Gain access to the wiring harness luggage compartment pass through rubber grommet.</p> <p>7. Remove the ground connection nuts (arrows)</p> <p>8. Remove the ground connections (2)</p> <p>9. Pull upwards to lift the grommet (1)</p> <div data-bbox="836 856 933 951" data-label="Image"> </div> <p><b>Effort is required to remove the luggage compartment pass through rubber grommet (1).</b></p> |
|  | <p>10. Open EME 12V connector clip (1) in the direction of arrow.</p> <p>11. Release the 12 V EME connector (2).</p> <p>12. Close the clip (1) again.</p>                                                                                                                                                                                                                                                    |
|                                                                                     | <p>13. Position the wiring harness (4) as indicated.</p> <p>14. Carefully disconnect the cable tie (3).</p>                                                                                                                                                                                                                                                                                                  |



15. Carefully pull the wiring harness (1) out of the wiring harness luggage compartment pass through.



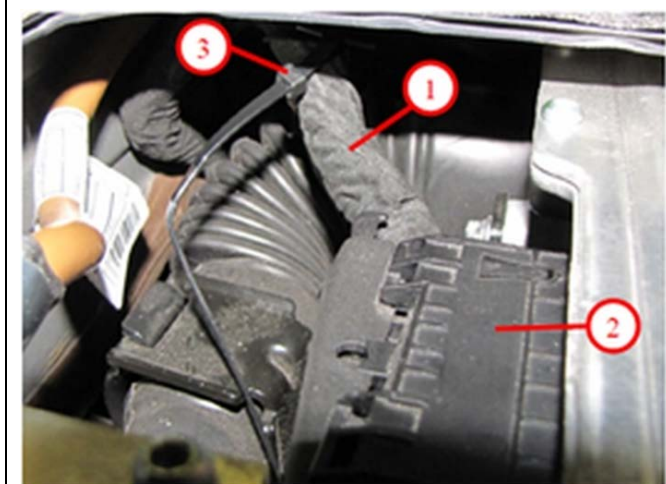
16. **Carefully** cut through the insulating tape (2), on the dotted line as illustrated.



**Do not damage the wiring harness!**

17. Remove the insulating tape (2).

18. Install the wiring harness (1) correctly, as indicated.



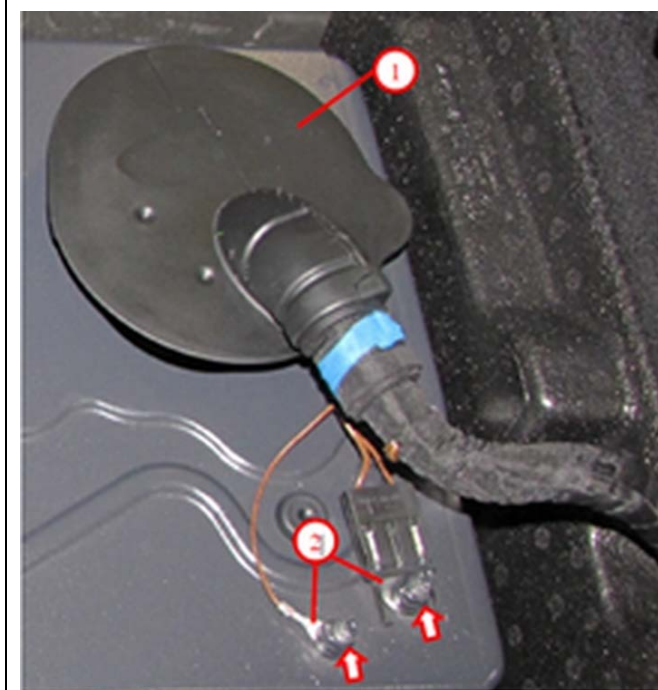
19. Close the wiring connector (2).

20. Mount the wiring harness (1) with the cable tie (3).



**Risk of damage!**  
**Do not apply the cable tie (3) too tightly!**

21. Remove the excess length from the cable tie (3).



22. Position the wiring harness pass through grommet (1) correctly and firmly press on to the luggage compartment floor panel.

23. Verify that the grommet (1) is installed correctly.

24. If necessary, press on the grommet (1) to ensure proper installation.

25. Position the grounding connections (2).

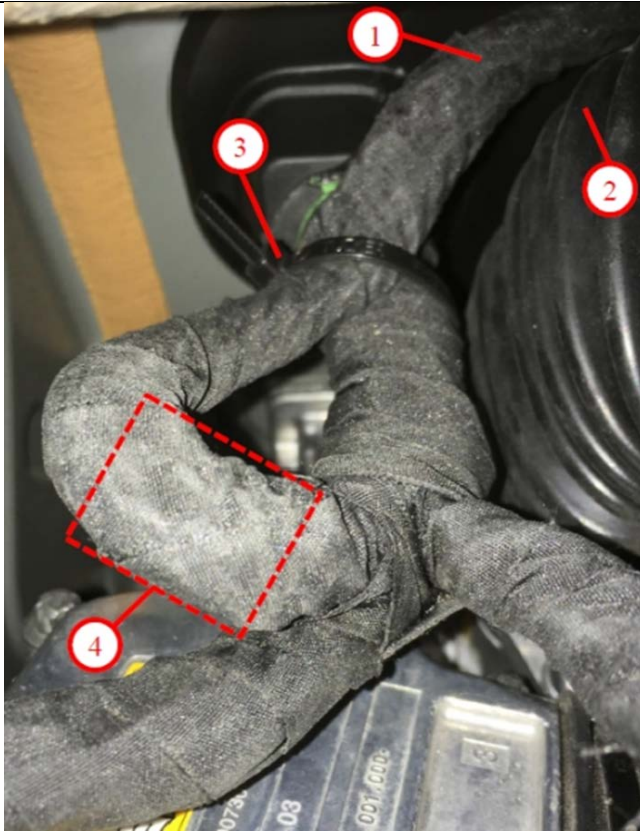
26. Torque the grounding connections point nuts (arrows) to **8 Nm**.

### **Case 3 specific step**



**For Case 3 - Follow the procedure to repair the damaged cable insulation as**





described in Attachment - 2 for Case 2, with the addition of Case 3 specific step illustrated here.

27 Elevate the vehicle.

**28 Wrap the wiring harness (1) in the damaged area (4) with several layers of Fabric tape.**

29 Install the wiring harness (1) as indicated in such a way that the wiring harness (1) does not rub against the grommet (2).

30 Mount the wiring harness (1) as indicated, with cable tie (3).



31. Check the wiring harness routing and installation arrangement as illustrated.



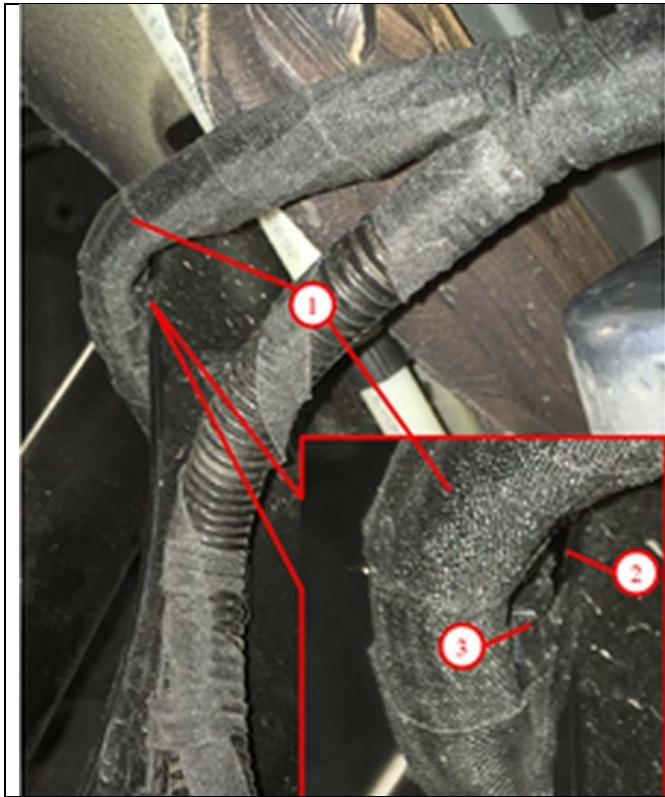
**Risk of damage!!**

**The wiring harness (1) must not be on the E-machine (2) or any other component!**

32. If necessary, correct the installation of the wiring harness (1).

33. Verify the wiring harness (routing) installation arrangement.





**Risk of damage!**

**The wiring harness (1) must not make contact at the edge (2)!**

- 34. Clip (3) must protrude over the edge (2) therefore preventing any contact between the wiring harness (1) and the edge (2).
- 35. If necessary, correct the installation and position of the clip (3) on the wiring harness (1).
- 36. Assemble the vehicle.

- 37. Reinstall the plastic underbody paneling for the drive unit.  
Refer to **Step 70** of repair instructions **REP 12 35 000**.
- 38. Reconnect the vehicle battery (refer to repair instruction **REP 61 20 900**).
- 39. Reconnect the high-voltage system (refer to repair instruction **REP 61 25 900**).
- 40. Clear the fault memory.
- 41. Briefly drive the vehicle in electric mode to verify that the MIL no longer illuminates.
- 42. Fully charge the high-voltage battery as a courtesy to the customer.

**Procedure for checking the wiring harness and reworking if necessary 0061110500 -****Case 4 - Incorrect installation****Correcting the wiring harness (routing) installation arrangement and repairing the damaged wiring.****Important warning for working on the high-voltage systems on the F60 PHEV:**

Only properly trained personnel, who have passed all applicable technical training courses, should perform any maintenance or repairs on any Hybrid or Electric Vehicle. Work performed by unqualified persons may result in severe injury or damage to the vehicle. Additional information is found in Repair Instruction 61 00... Observe safety instructions when handling electric vehicles.

Preliminary work required:

1. De-energize high-voltage system from power. Refer to repair instructions **REP 61 25 900**.
2. Disconnect the 12V battery ground lead. Refer to repair instructions **REP 61 20 900**.
3. Position the vehicle on a lift.
4. Remove the plastic underbody paneling for the drive unit (1 in the illustration below) by removing the attachment bolts (arrows). Refer to **Step 6** of repair instructions **REP 12 35 000**.
5. Visually inspect the wiring harness branches at the luggage compartment pass through grommet area for proper routing and chafe marks throughout entire visible area.



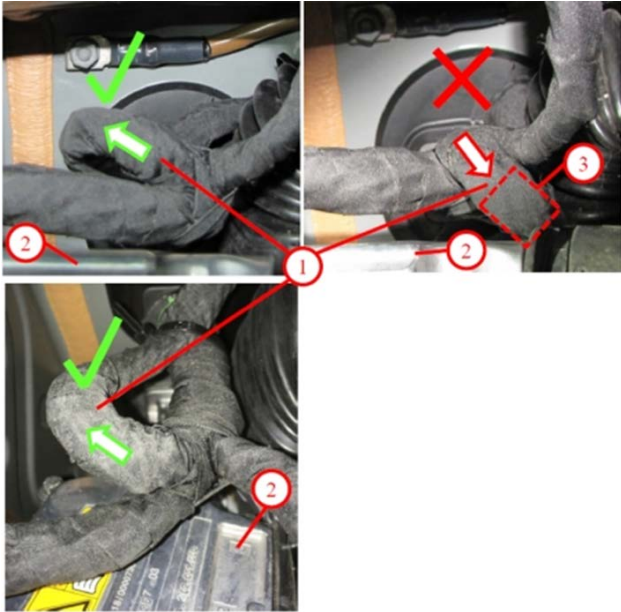
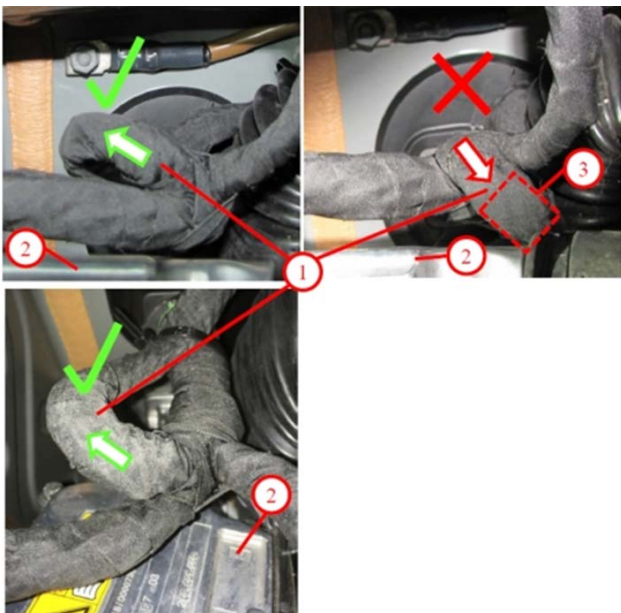
If there are chafe marks on the wiring harness (red arrow) per the examples below, the harness must be repaired.



## Checking the wiring harness for damage due to improper installation.



Please note that depending on the vehicle we must follow the correct repair procedure illustrated in the attachments (Case1 through Case 4) of the SI M12 02 19 for the different cases!

|                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Correct installation</b>      <b>Incorrect installation</b></p>   | <p><b>Check the wiring harness installation (1) - Distinction of cases!</b></p> <p><b>Correct installation</b></p> <p>The wiring harness (1) must be installed in such a way that it does not touch the E-machine (2) or any other component.</p> <p><b>Case 1 - Correct installation:</b></p> <p>If the harness is properly routed and there are no visible signs of chafing damage; Re-install the cover and screws.<br/><b>No further repair work is required.</b></p>                                                                                                                                                                                                                                                                          |
| <p><b>Correct installation</b>      <b>Incorrect installation</b></p>  | <p><b>Incorrect installation</b></p> <p>The wiring harness (1) is not properly installed and touches on the E-machine (2) or any other component.</p> <p><b>Correcting the wiring harness (routing) installation arrangement F60 PHEV depending on the specific case below.</b></p> <p><b>Case 2: Incorrect installation:</b><br/>If the wiring harness (1) insulation, in the area (3) <b>is not damaged</b>; correct the wiring harness installation arrangement.</p> <p><b>Case 3: Incorrect installation:</b><br/>If the wiring harness (1) insulation, in the area (3), <b>is slightly damaged</b>, (strands are <b>not visible</b>), correct the wiring harness installation arrangement and repair the damaged insulation as indicated.</p> |

**Case 4:** Incorrect installation:

If the wiring harness (1) insulation, in the area (3) is **damaged**, (strands are visible), correct wiring harness (routing) installation arrangement, **repair damaged wire and insulation as indicated**.



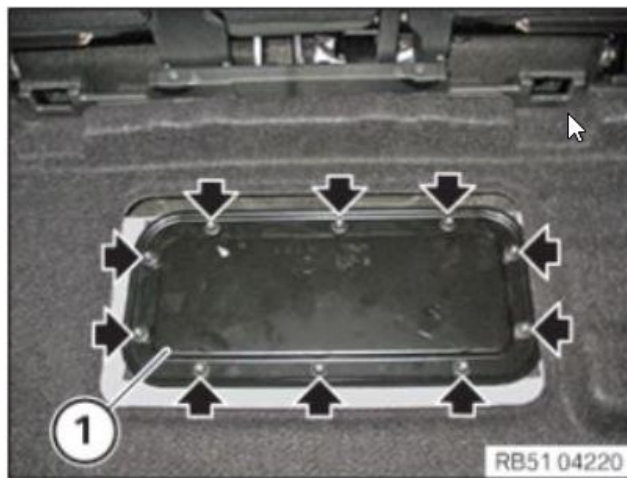
Refer to the attachment for the specific case.



Every vehicle harness routing case may differ from each other or from the example given.



F60 PHEV - luggage compartment felt trim panel (1)



F60 PHEV - luggage compartment drive unit access cover

**Case 4 incorrect installation-**

**Correcting the wiring harness (routing) installation arrangement and repairing the damaged wiring.**

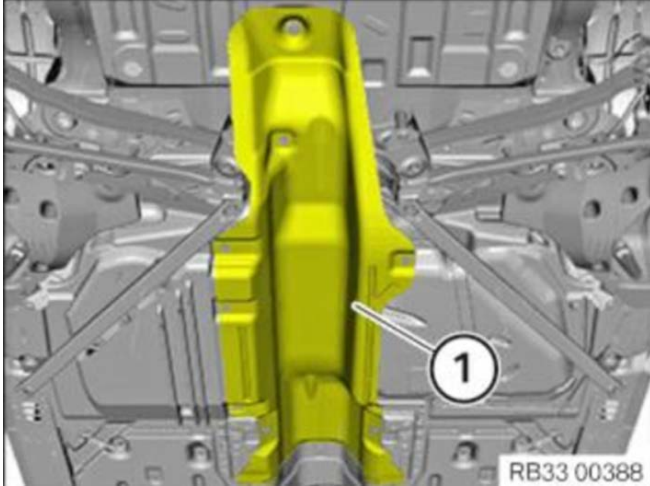
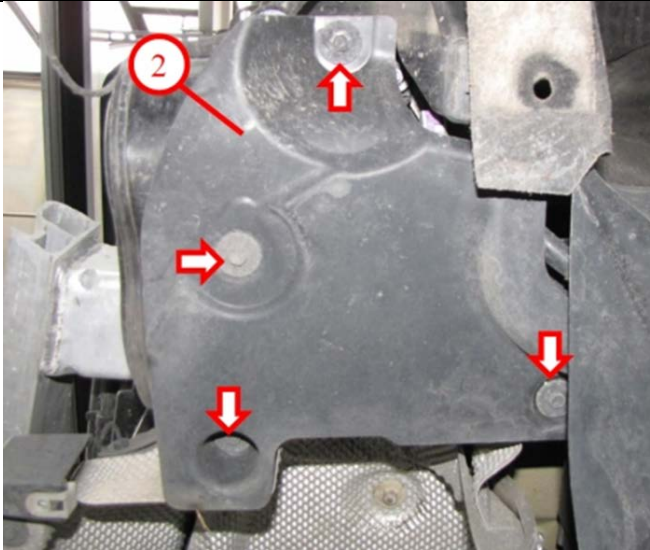
**Case 4 - Incorrect installation:**

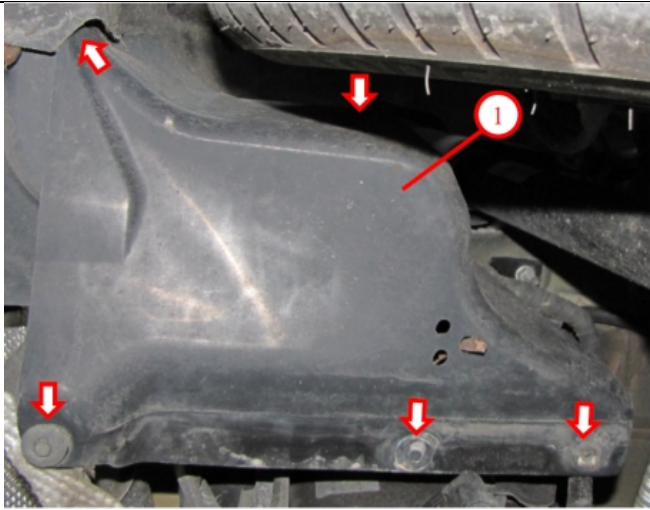
If the wiring harness (1) insulation, in the area (3) is **damaged**, (strands are visible), correct wiring harness installation arrangement, **repair damaged wire and insulation as indicated below**.

Repair the damaged cable insulation as given in repair procedure for Case 2, in addition in Case 3.

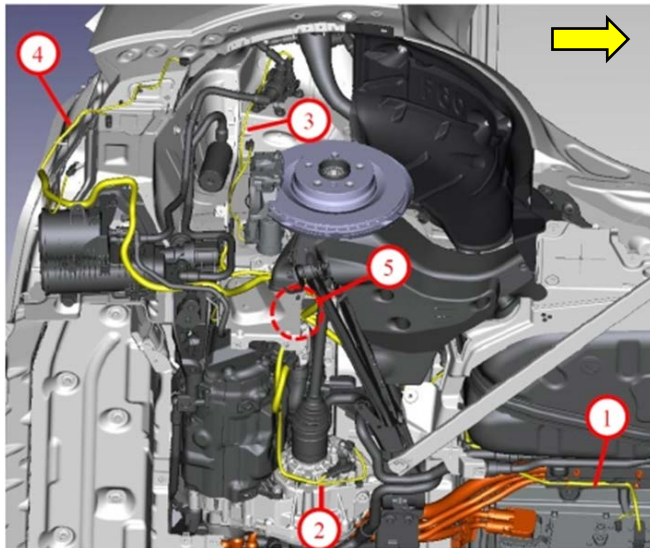
1. Remove the left luggage compartment wheel arch felt trim panel.  
Refer to repair instructions  
**REP 51 47 151.**
2. Remove the right luggage compartment wheel arch felt trim panel.  
Refer to repair instructions  
**REP 51 47 161.**
3. Release the clips (arrows).
4. Remove the luggage compartment floor and felt trim panel (1).  
Refer to **Step 1** of repair instructions  
**REP 12 36 018.**
5. Remove the luggage compartment drive unit access cover.  
Refer to **Step 2** repair instructions



|                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                  | <p><b>REP 12 36 018.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|  <p><b>F60 PHEV - underbody heat shield.</b></p>                                                | <ol style="list-style-type: none"> <li>6. Remove the rear bumper panel<br/>Refer to repair instruction<br/><b>REP 51 12 156.</b></li> <li>7. Remove the exhaust system<br/>Refer to repair instruction<br/><b>REP 18 00 020.</b></li> <li>8. Remove the rear right wheel<br/>Refer to repair instruction<br/><b>REP 36 10 300.</b></li> <li>9. Remove the rear right wheel arch cover<br/>Refer to repair instruction<br/><b>REP 51 71 041.</b></li> <li>10. Remove the heat shield (1).</li> </ol> |
|  <p><b>F60 PHEV - view of the right rear wheel arch area underbody paneling cover (2).</b></p> | <ol style="list-style-type: none"> <li>11. Release the screws (arrows).</li> <li>12. Remove the underbody paneling cover (2) (cover (2) is located behind the rear right wheel arch trim panel).</li> </ol>                                                                                                                                                                                                                                                                                         |
|                                                                                                                                                                                  | <ol style="list-style-type: none"> <li>13. Release the screws (arrows).</li> <li>14. Remove the underbody paneling cover (1) (cover (1) is located below the rear right wheel arch trim panel).</li> </ol>                                                                                                                                                                                                                                                                                          |



F60 PHEV - view of the right rear wheel arch area underbody paneling cover (1).



F60 PHEV- view of drive unit / right rear wheel area underbody (paneling removed) wiring harness routing and attachment points.

**15. Overview of the characteristic of the wiring harnesses to be released (indicated in yellow) from the common source (5):**

- 15.1 - The wiring harness (1);**  
- runs over the rear axle to the high voltage battery.
- 15.2 - The wiring harness (2);**  
- runs to the transmission.
- 15.3 - The wiring harness (3);**  
- runs upwards to the tank ventilation inside the right rear wheel arch.
- 15.4 - The wiring harness (4);**  
- runs over the active carbon filter.



The wiring harnesses are released at the clip fasteners/cable ties, plug connections are disconnected.



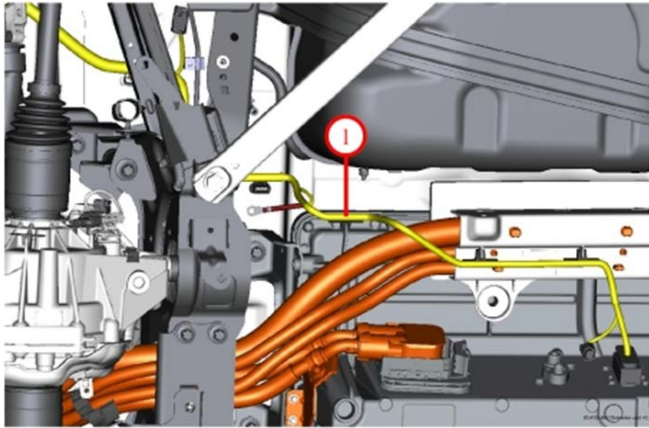
Replace any possibly damaged clip fasteners/cable ties!



The number of clip fasteners/plug connections can vary depending on the vehicle.

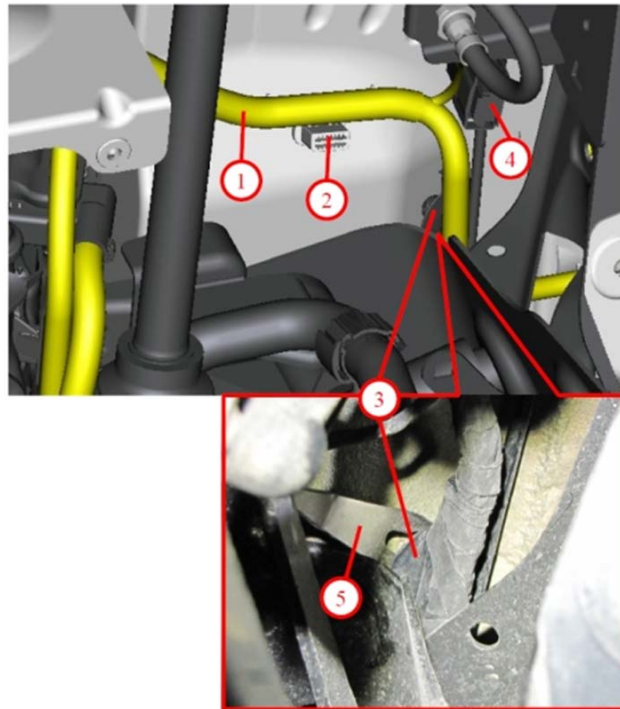


Some vehicle components are hidden in the images for a better overview.



F60 PHEV - underbody view of the wiring harness routing and attachment points near the right rear axle and high voltage battery area.

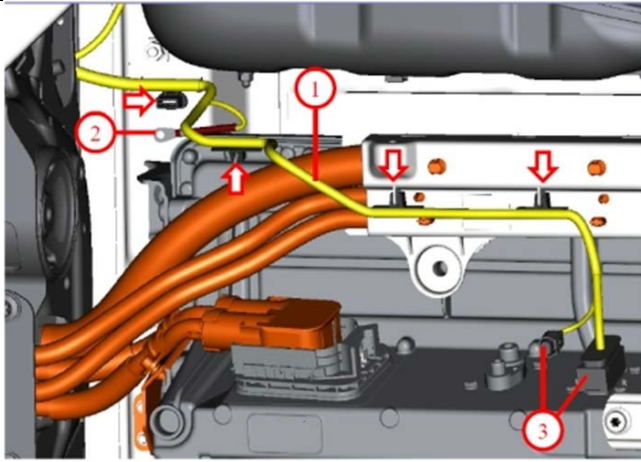
### **Overview of the characteristic of wiring harness (1):**



F60 PHEV - underbody view of the wiring harness (1) routing and attachment points near the high voltage battery area.

**15.1. Wiring harness (1)** - runs over the rear axle to the high voltage battery.

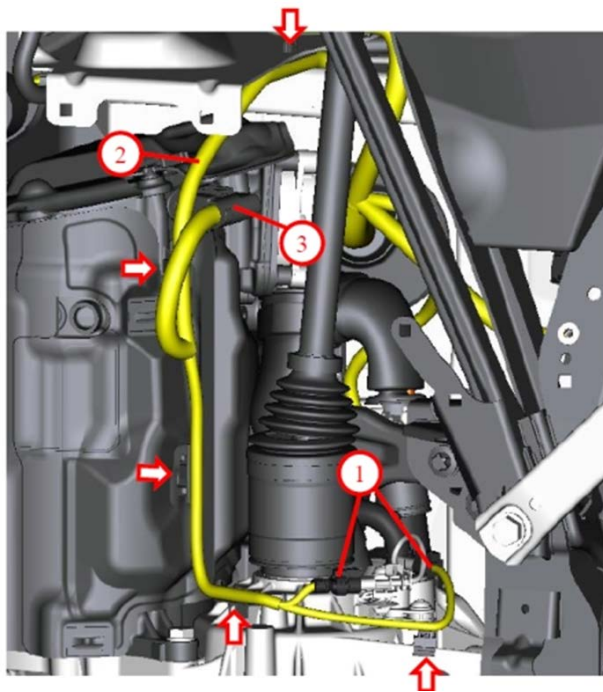
- Release the mounting (2).
- Release the clip (3) (over the rear axle) with the clip lifter tool (5).
- Release the plug connection (4).



F60 PHEV - underbody view of the wiring harness (1) routing and attachment points near the high voltage battery area.

#### Wiring harness (1) continued:

- Undo nut (2).
- Remove the grounding cable.
- Disconnect the plug connections (3).
- Release the mountings (arrows).



F60 PHEV - underbody view of the wiring harness routing and attachment points in the inner right rear axle area.

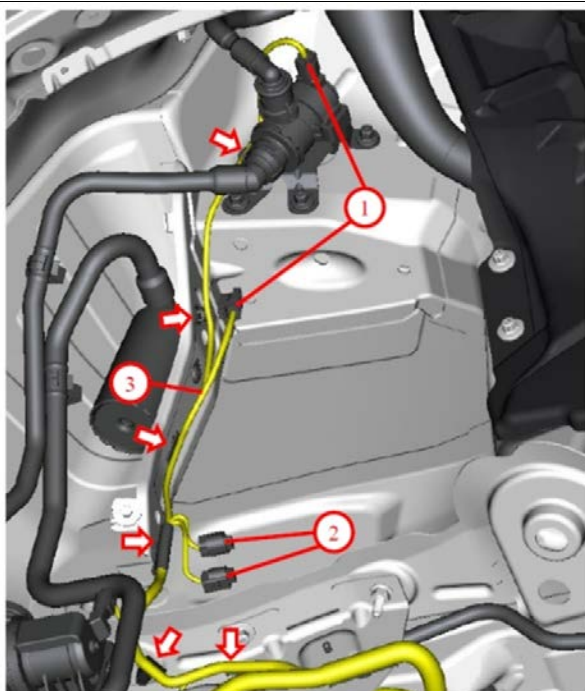
#### 15.2. Wiring harness (2) - runs to the transmission:

- Disconnect the plug connections (1) and (3).
- Release the mountings (arrows).

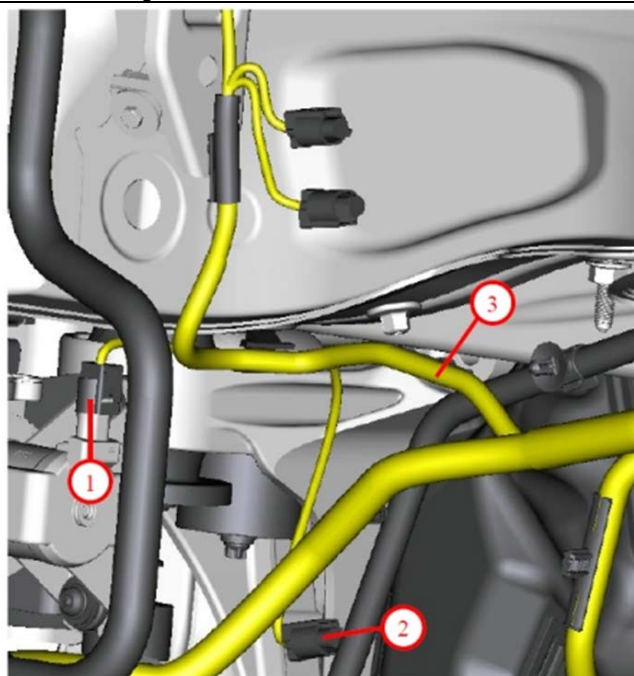
#### 15.3. Wiring harness (3) - runs upwards to the tank ventilation in the right rear wheel arch:

- Disconnect the plug connections (1) and (2).
- Release the mountings (arrows).





F60 PHEV - view of wiring harness routing and attachment points in the right rear wheel arch area.

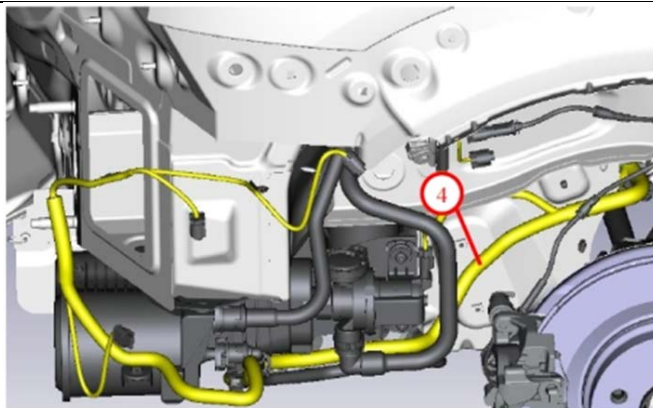


F60 PHEV - view of wiring harness routing and attachment points in the right rear wheel arch area.

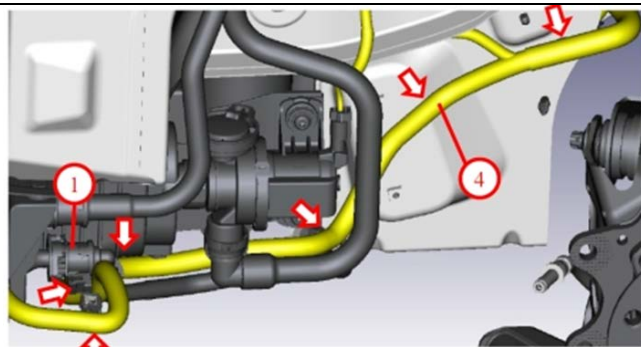
#### Wiring harness (3) continued:

- Disconnect the plug connections (1) and (2).

#### **Overview of the characteristic of wiring harness (4):**



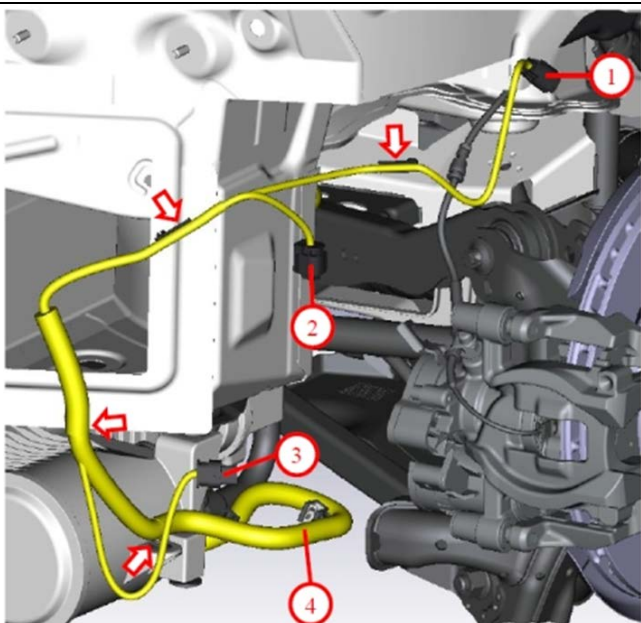
F60 PHEV - view of wiring harness routing and attachment points near the carbon filter, in the right rear wheel arch area.



View of wiring harness routing and attachment points near the carbon filter, in the right rear wheel arch area.

**15.4. Wiring harness (4) -** runs over the active carbon filter:

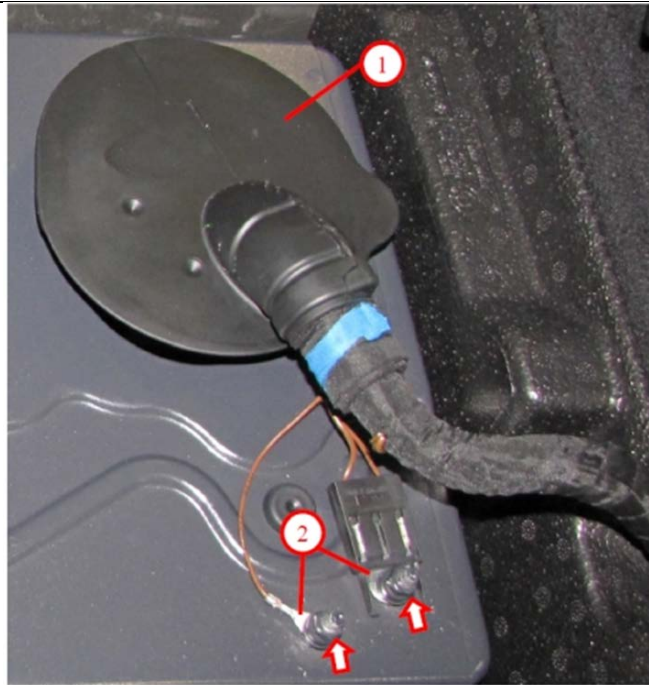
- Release the mountings (arrows).
- Remove the quick-release coupling (1).



View of wiring harness routing and attachment points in the rear area of the right rear wheel arch.

#### Wiring harness (4) continued

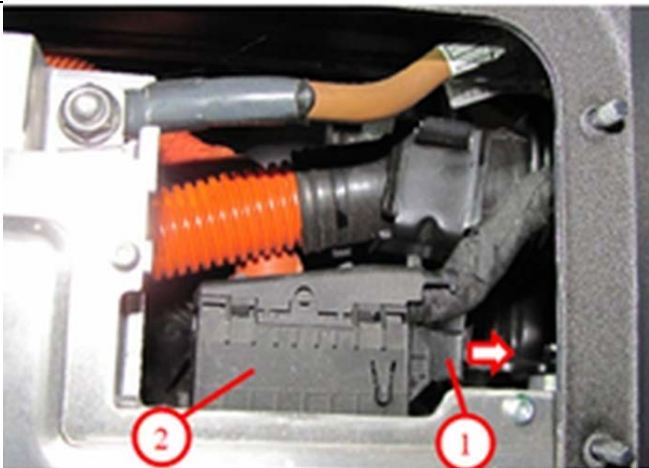
- Disconnect the plug connections (1), (2) and (3).
- Release the mountings (arrows).



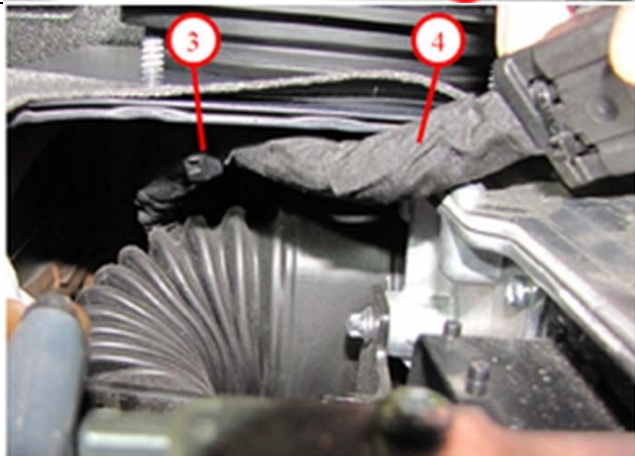
16. Gain access to the wiring harness luggage compartment pass through rubber grommet.
17. Remove the ground connection nuts (arrows)
18. Remove the ground connections (2)
19. Pull upwards to lift the grommet (1)



**Effort is required to remove the luggage compartment pass through rubber grommet (1).**

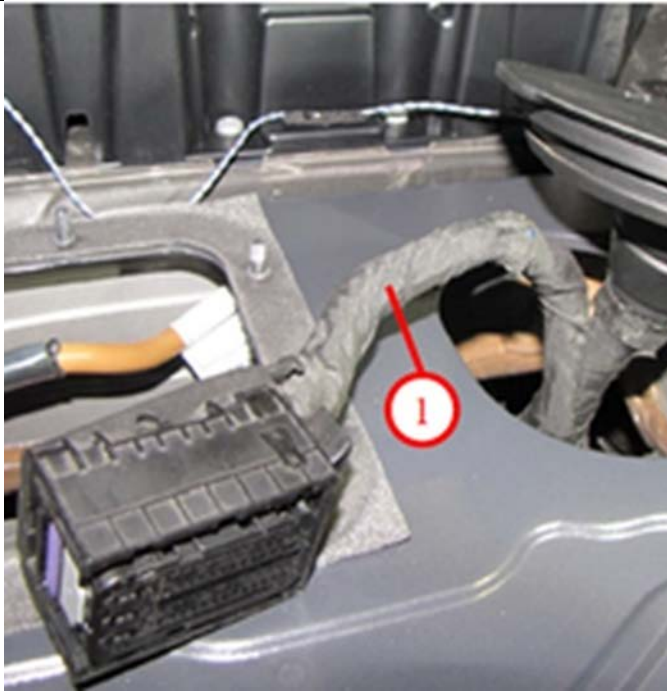


20. Open EME 12V connector clip (1) in the direction of arrow.
21. Release the 12 V EME connector (2).
22. Close the clip (1) again.

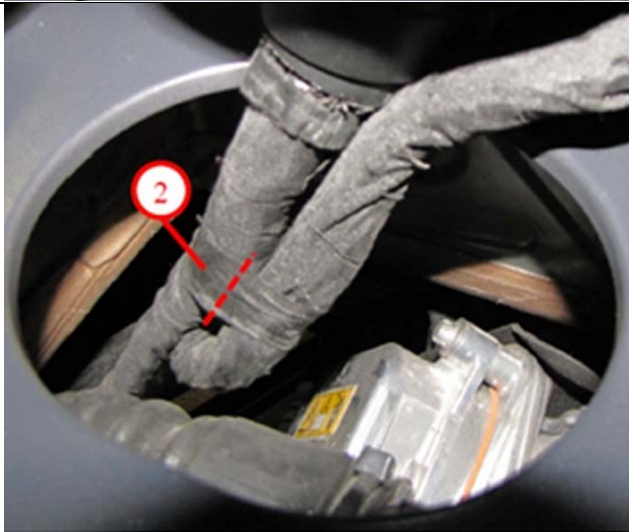


23. Position the wiring harness (4) as indicated.
24. Carefully disconnect the cable tie (3).





25. Carefully pull the wiring harness (1) out of the wiring harness luggage compartment pass through.



26. Carefully cut through the insulating tape (2) on the dotted line as illustrated.



**Do not damage the wiring harness!**

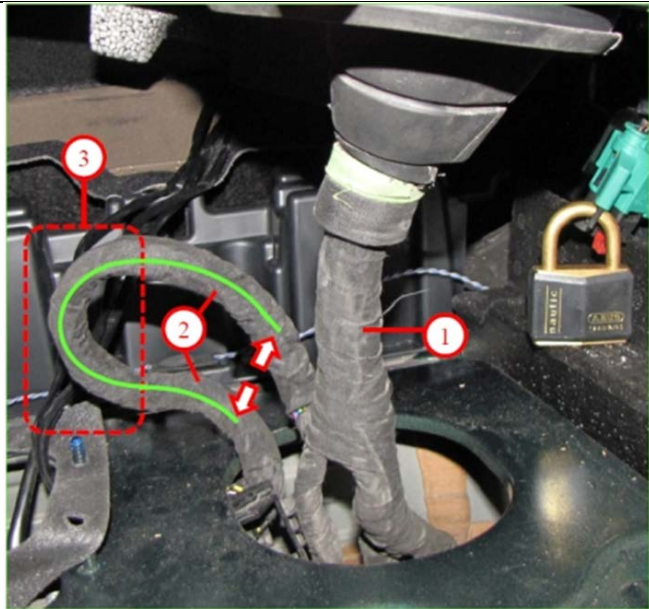
27. Remove the insulating tape (2)

28. Lay the 4 released wiring harnesses open in such a way that the wiring harness (1) can be lifted as far as indicated.

29. Lift the wiring harness (1) upwards as illustrated.

**Repair of the damaged wires:**





If the damaged spot is located in the curved area (3). It is not wise to repair the damaged wires in area (3).

30. Carefully remove the insulation of the wiring harness (2).



**Do not damage the wiring harness (2)!**

- 30.1 Replace the individual damaged wires by inserting a new suitable gauge wire (indicated in green) using the appropriate crimp connectors at the 2 locations shown (red arrows).

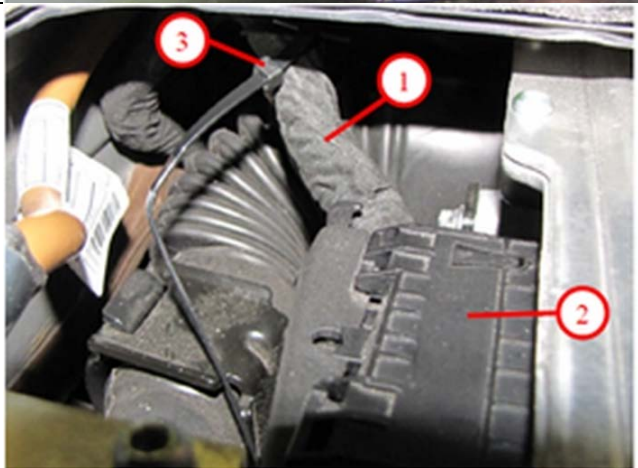
- 30.2 Insulate the crimp connection points with watertight heat-shrink tubing.

- 30.3 Wrap the wiring harness (2) with Fabric tape.



#### **Repair procedure continued**

31. Install the wiring harness (1) correctly as indicated.



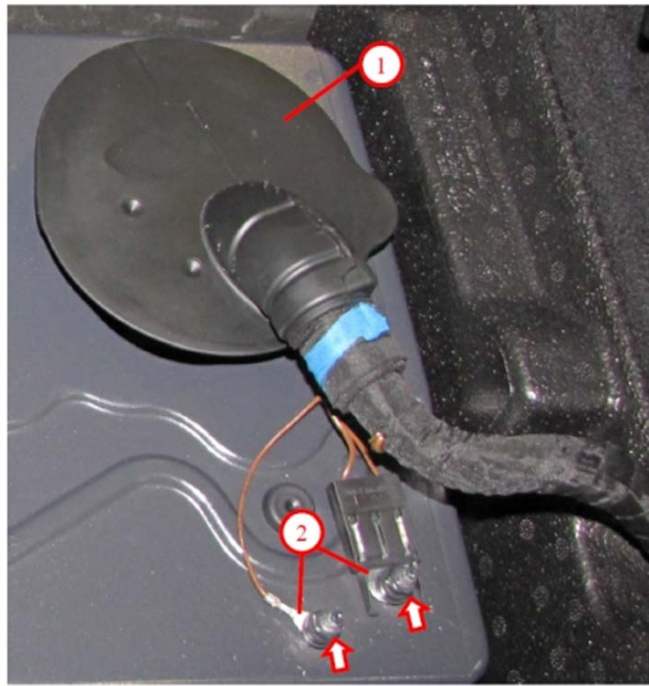
32. Close the plug connection (2).

33. Mount the wiring harness (1) with the cable tie (3).



**Risk of damage.**  
**Do not apply the cable tie (3) very tightly!**

34. Remove excess length from the cable tie (3).



35. Position the wiring harness pass through grommet (1) correctly and firmly press on to the luggage compartment floor panel.
36. Verify that the grommet (1) is installed correctly.
37. If necessary, press on the grommet (1) to ensure proper installation.
38. Position the grounding connections (2).
39. Torque the grounding connections point nuts (arrows) to **8 Nm**.



40. Elevate the vehicle.
41. Install the wiring harness (1) as indicated in such a way that the wiring harness (1) does not rub against the grommet (2).
42. Mount the wiring harness (1) as indicated with the cable tie (3).



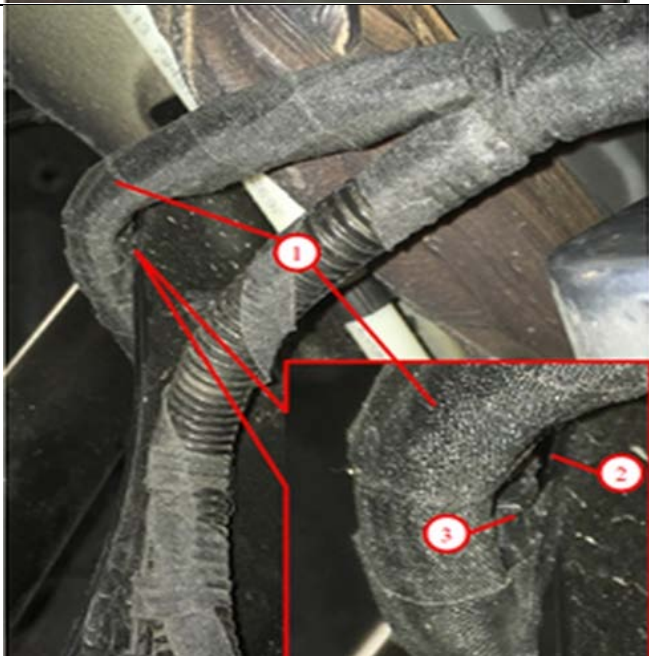
43. Check the wiring harness routing and installation arrangement.



**Risk of damage!!**

**The wiring harness (1) must not be on the E-machine (2) or any other component!**

44. If necessary, correct the installation of the wiring harness (1).



45. Refit any parts removed from the vehicle.

46. Verify the wiring harness installation arrangement.



**Risk of damage!**

**The wiring harness (1) must not be at the edge (2)!**

47. Clip (3) must protrude over the edge (2) therefore preventing any contact between the wiring harness (1) and the edge (2).

48. If necessary, correct the installation and position of the clip (3) on the wiring harness (1).

49. Assemble the vehicle.

50. Reinstall the plastic underbody paneling for the drive unit.  
Refer to **Step 70** of repair instructions **REP 12 35 000**.

51. Reconnect the vehicle battery (refer to repair instruction **REP 61 20 900**).

52. Reconnect the high-voltage system (refer to repair instruction **REP 61 25 900**).
53. Clear the fault memory.
54. Briefly drive the vehicle in electric mode to verify that the MIL no longer illuminates.
55. Fully charge the high-voltage battery as a courtesy to the customer.