Technical Service Bulletin

GROUP NUMBER

Campaign 19-01-036H

DATE November, 2019

MODEL(S) Ioniq (AE) HEV/PHEV/EV, Kona (OS) EV

SUBJECT ELECTRIC WATER PUMP (EWP) CAN CASE REPLACEMENT - (CAMPAIGN T4G)

** *** Dealer Stock and Retail Vehicles ***

Dealers must perform this Service Campaign on all affected vehicles prior to customer retail delivery and whenever an affected vehicle is in the shop for any maintenance or repair.

When a vehicle arrives at the Service Department, access Hyundai Motor America's "Warranty Vehicle Information" screen via WEBDCS to identify open Campaigns.

Description:

Certain vehicles may incur dash warning light(s) On with DTC(s) stored including either of the following DTC:

- U1116 - Lost Communication With Motor Electronics Coolant Pump (C-CAN)
- U1118 - Lost Communication With Hybrid/EV Battery Electronic Coolant Pump (P-CAN)

The vehicle may operate in limp home at a reduced power.

The above DTC(s) may occur due to coolant leaking into the Electric Water Pump (EWP) Can Case and may have an intermittent electrical connection.

This bulletin provides instructions to inspect the vehicle’s EWP assembly. The Can Case of the EWP or the full EWP Assembly will be replaced depending on the EWP inspection result. The EWP’s connector may also need to be replaced with a wiring harness kit if contamination is confirmed.

Perform the inspection procedure as outlined on page-7.

- 1 qty. EWP will be inspected in Ioniq HEV/PHEV/EV vehicles.
- 2 qty. EWP will be inspected in the Kona Electric (Electrical devices EWP and Battery EWP).

** Applicable Vehicles:

- 2019 Ioniq Hybrid (AE HEV)
- 2019 Ioniq Plug In Hybrid (AE PHEV)
- 2019 Ioniq Electric Vehicle (AE EV)
- 2019 Kona Electric Vehicle (OS EV)
### Parts Information:

*Actual quantity of each part depends on section-C (page-7) EWP inspection result.*

### Can Case Parts:
(Applicable when no coolant contamination is found by the section-C EWP inspection)

<table>
<thead>
<tr>
<th>MODEL</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QUANTITY</th>
<th>PICTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ioniq (AE)</td>
<td>36900-2B109QQH</td>
<td>CAN CASE KIT</td>
<td>1 per vehicle*</td>
<td></td>
</tr>
<tr>
<td>Hybrid/Plug-In</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Ioniq (AE)</td>
<td>36910-0E509QQH</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kona (OS)</td>
<td>36910-0E659QQH</td>
<td>CAN CASE KIT</td>
<td>OS EV up to 2 per vehicle*</td>
<td></td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### EWP Assembly Parts:
(Applicable when coolant contamination is confirmed by the section-C EWP inspection).

<table>
<thead>
<tr>
<th>MODEL</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QUANTITY</th>
<th>PICTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ioniq (AE)</td>
<td>36900-2B100QQH</td>
<td>EWP ASSY</td>
<td>1 per vehicle*</td>
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</tr>
<tr>
<td>Hybrid/Plug-In</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ioniq (AE)</td>
<td>36910-0E500QQH</td>
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<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kona (OS)</td>
<td>36910-0E650QQH</td>
<td>Electrical Devices EWP:</td>
<td>1 of each type per vehicle*</td>
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</tr>
<tr>
<td>Electric</td>
<td></td>
<td>Battery EWP:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>375W5-K4000QQH</td>
<td>375W5-K4000QQH</td>
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</tr>
</tbody>
</table>

### EWP Wiring Harness Part:
(Applicable when coolant contamination is confirmed inside the EWP connection).

<table>
<thead>
<tr>
<th>MODEL</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QUANTITY</th>
<th>PICTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Models</td>
<td>36910-G2912QQH</td>
<td>WIRING HARNESS -EWP</td>
<td>Ioniq (AE) 1 per vehicle*</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Kona (OS) Electric up to 2 per vehicle*</td>
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</tr>
</tbody>
</table>

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### Warranty Information:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>OP CODE</th>
<th>OPERATION</th>
<th>OP TIME</th>
<th>CAUSAL P/N</th>
<th>NATURE CODE</th>
<th>CAUSE CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ioniq (AE) Hybrid/Plug-In/Electric</td>
<td>90C030R0</td>
<td>EWP INSPECTION AND EWP REPLACEMENT</td>
<td>1.4</td>
<td>36900-2B100QGH</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>90C030R1</td>
<td>EWP INSPECTION AND CAN CASE REPLACEMENT</td>
<td>1.0</td>
<td>36900-2B109QGH</td>
<td></td>
<td></td>
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<tr>
<td>Kona (OS) Electric</td>
<td>90C030R2</td>
<td>EWP INSPECTION, ELECTRICAL EWP + BATTERY CAN CASE REPLACEMENT</td>
<td>1.8</td>
<td>36910-0E650QGH</td>
<td>I3A</td>
<td>ZZ7</td>
</tr>
<tr>
<td></td>
<td>90C030R3</td>
<td>EWP INSPECTION, BATTERY EWP + ELECTRICAL CAN CASE REPLACEMENT</td>
<td>1.8</td>
<td>375W5-K4000QGH</td>
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<tr>
<td></td>
<td>90C030R4</td>
<td>EWP INSPECTION, ELECTRICAL &amp; BATTERY EWP REPLACEMENT</td>
<td>2.0</td>
<td>36910-0E650QGH</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>90C030R5</td>
<td>EWP INSPECTION, ELECTRICAL &amp; BATTERY CAN CASE REPLACEMENT</td>
<td>1.5</td>
<td>36910-0E650QGH</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE 1:** Submit claim on Campaign Claim Entry Screen.

**NOTE 2:** Coolant will be reimbursed under sublet for all op codes.

**NOTE 3:** If a part is found in need of replacement while performing this Service Campaign and the affected part is still under warranty, submit a separate claim using the same Repair Order Number and the same Causal Part Number as the Campaign Claim. If the affected part is out of warranty, submit a Prior Approval Request for goodwill consideration prior to performing the work.

### Cross Reference Chart of Op Codes versus Parts Replaced:

**NOTE:** Op Codes and Parts Replaced depend on section C (page-7) inspection results.

<table>
<thead>
<tr>
<th>MODEL</th>
<th>OP CODE</th>
<th>CAN CASE KIT</th>
<th>EWP ASSY</th>
<th>*WIRING HARNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ioniq (AE) Hybrid/Plug-In/Electric</td>
<td>90C030R0</td>
<td>none</td>
<td>36900-2B100QGH</td>
<td>*36910-G2912QGH</td>
</tr>
<tr>
<td></td>
<td>90C030R1</td>
<td>36900-2B109QGH</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Kona (OS) Electric</td>
<td>90C030R2</td>
<td>36910-0E659QGH (Can Case replaced in the Battery EWP)</td>
<td>36910-0E650QGH (Electrical Devices EWP Assy)</td>
<td>*36910-G2912QGH</td>
</tr>
<tr>
<td></td>
<td>90C030R3</td>
<td>36910-0E659QGH (Can Case replaced in the Electrical Devices EWP)</td>
<td>375W5-K4000QGH (Battery EWP Assy)</td>
<td>*36910-G2912QGH</td>
</tr>
<tr>
<td></td>
<td>90C030R4</td>
<td>none</td>
<td>36910-0E650QGH (Electrical Devices EWP Assy) + 375W5-K4000QGH (Battery EWP Assy)</td>
<td>*Up to 2 qty. 36910-G2912QGH</td>
</tr>
<tr>
<td></td>
<td>90C030R5</td>
<td>2 qty. 36910-0E659QGH</td>
<td>none</td>
<td>none</td>
</tr>
</tbody>
</table>

*Wiring harness is only replaced when coolant contamination is confirmed in the EWP connection.
Service Procedure:

### DANGER

Review and follow the sections listed below from the applicable vehicle shop manual prior to performing any work with the high voltage system:

- General Safety Information and Caution
- High Voltage Shut-Off Procedures

Failure to follow safety instructions may result in serious electrical injury.

### Summary of the Repair Procedure:

#### WHEN BOTH OF THESE CONDITIONS EXIST:

- No vehicle cluster warning light on. (section-A)
- EWP inspection did not find any coolant contamination inside the EWP and connector. (section-C)

#### WHEN ANY OF THESE CONDITIONS EXIST:

- Cluster warning light ON with DTC U1116 or U1118 found stored. (section-A)
- Coolant contamination was found inside the EWP connector when it was disconnected. (section-B)
- EWP Inspection found coolant contamination inside the EWP. (section-C)

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SUBJECT: ELECTRIC WATER PUMP (EWP) CAN CASE REPLACEMENT – (CAMPAIGN T4G)

(A) Initial Vehicle Inspection:

1. Note if any cluster warning lights are ON when vehicle is operating in Ready mode.

2. If warning light is confirmed perform all Fault search by GDS to check for any stored DTC.

(B) EWP Removal and Disassemble:

1. Carefully remove each EWP from the vehicle according to the applicable shop manual instructions.

   NOTICE

   • OS EV has 2 EWP to be removed (Electrical Devices & Battery EWP).
   • Clamp the coolant hoses from the High Voltage Battery to reduce coolant fill and GDS bleeding time that will be needed in section-G.

2. Inspect the inside of both connectors of the EWP connection for coolant contamination:

   ➢ No contamination is found:
     Continue to next step 3.

   ➢ Contamination is found:
     Skip to (section-E) (page-9) to replace the EWP assembly and (section-F) (page-10) vehicle harness EWP connector.

3. Remove the EWP Pump Cover mounting bolts.

   NOTICE

   If any of these DTC are found stored:
   • U1116
   • U1118
   Skip to (section-E-F) (page-9) to replace the EWP assembly and replace connector.
4. Remove the Pump Cover and O-ring.

5. Remove the Can Case from the housing.

6. Remove the Stator O-ring.
(C) EWP Inspection for Coolant Contamination:

Inspect for evidence of any coolant leak or contamination stains found on the inside of any of the following EWP components:

- **Can Case** (on the side facing the stator):

- **Stator**:

- **Connector**:

  **NOTICE**

  The vehicle harness connector must be replaced (section-F) (page-10) if contamination is found inside connector.

**NOTE**: If no contamination was found in any of the above 3 components proceed to the next page-8 to replace the Can Case only.
(D) Can Case Replacement:  
(No Coolant contamination was found inside the EWP)

1. Replace the CAN Case using the new part specified in the Parts Information table when both conditions of a-b were found:
   a. No cluster warning light.
   b. No coolant contamination was found during the EWP inspection.

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NOTICE

The Stator O-Ring is identified by the white marking.
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CAUTION

Prevent any interference between the O-ring and the pump cover as shown.
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2. Reinstall EWP disassembled parts in reverse order of removal.
3. Reinstall the EWP back on the vehicle.
4. Go to section (G) (page-11) – Fill and Bleed the Hybrid/Plug-In/EV system coolant.
SUBJECT: ELECTRIC WATER PUMP (EWP) CAN CASE REPLACEMENT – (CAMPAIGN T4G)

(E) EWP Assembly Replacement:
(Coolant contamination was found inside the EWP)

1. Replace the EWP Assembly with the new part from the Parts Information table.

2. Locate the EWP wiring connector on the vehicle harness.

NOTE: As needed, separate the connector mounting clip before replacing the EWP connector.
1. Carefully remove the vehicle harness wiring tape back from the EWP connector using the cutter tool.

2. Cut all wires before the harness EWP connector to remove the old connector. Discard the old connector.

3. Strip back the insulation ½ inch from the end of each of the 4 harness wires to expose the wire.

4. Obtain the EWP replacement connector kit as listed in the Parts Information table.

5. Place a heat shrink tube loosely over each wire against the connector prior to joining each wire.

6. Join together and solder evenly each matching colored pair of wires between the vehicle harness and the replacement EWP connector.

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**CAUTION**

Keep the connector kit’s red and green signal wire pair twisted together as this prevents electrical noise on the vehicle CAN system that can cause other issues!
### SUBJECT: ELECTRIC WATER PUMP (EWP) CAN CASE REPLACEMENT – (CAMPAIGN T4G)

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>7.</td>
<td>Move each heat shrink tube to fully cover each wire joint with the joint centered in the tube.</td>
</tr>
<tr>
<td>8.</td>
<td>Apply heat to each heat shrink tube to contract it to create a good water tight seal.</td>
</tr>
<tr>
<td>9.</td>
<td>Wrap the repaired harness fully using the harness tape provided in the EWP connector kit.</td>
</tr>
</tbody>
</table>

### (G) Coolant Fill and Bleed:

1. Perform the Hybrid/Plug-In/EV system coolant fill and bleed procedure following the guidelines in the shop manual.

   **NOTICE**
   
   If available connect a battery charger to the 12V battery to maintain battery state of charge while the EWP is running, as it takes at least 20-30 minutes continuously to bleed the coolant.

2. Scan and Clear any incidental DTCs with the GDS.
3. Confirm proper vehicle operation.
4. Rescan for DTCs to ensure that none have returned.

*Service procedure is complete.*