



Technical Service Bulletin

GROUP Campaign	NUMBER 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:

*NOTE: *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)*

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

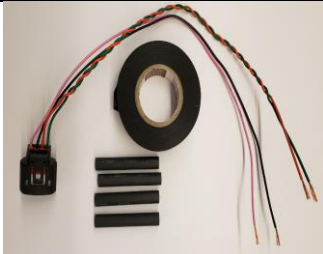
EWP Assembly Parts:

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

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

EWP Wiring Harness Part:

(Applicable when coolant contamination is confirmed inside the EWP connection).

MODEL	PART NUMBER	DESCRIPTION	QUANTITY	PICTURE
All Models	36910-G2912QQH	WIRING HARNESS -EWP	Ioniq (AE) 1 per vehicle*	
			Kona (OS) Electric up to 2 per vehicle*	

Warranty Information:

MODEL	OP CODE	OPERATION	OP TIME	CAUSAL P/N	NATURE CODE	CAUSE CODE
Ioniq (AE) Hybrid/ Plug-In/ Electric	90C030R0	EWP INSPECTION AND EWP REPLACEMENT	1.4	36900-2B100QQH	I3A	ZZ7
	90C030R1	EWP INSPECTION AND CAN CASE REPLACEMENT	1.0	36900-2B109QQH		
Kona (OS) Electric	90C030R2	EWP INSPECTION, ELECTRICAL EWP + BATTERY CAN CASE REPLACEMENT	1.8	36910-0E650QQH		
	90C030R3	EWP INSPECTION, BATTERY EWP + ELECTRICAL CAN CASE REPLACEMENT	1.8	375W5-K4000QQH		
	90C030R4	EWP INSPECTION, ELECTRICAL & BATTERY EWP REPLACEMENT	2.0	36910-0E650QQH		
	90C030R5	EWP INSPECTION, ELECTRICAL & BATTERY CAN CASE REPLACEMENT	1.5	36910-0E650QQH		

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.

MODEL	OP CODE	CAN CASE KIT	EWP ASSY	*WIRING HARNESS
Ioniq (AE) Hybrid/ Plug-In/ Electric	90C030R0	none	36900-2B100QQH	*36910-G2912QQH
	90C030R1	36900-2B109QQH	none	none
Kona (OS) Electric	90C030R2	36910-0E659QQH (Can Case replaced in the Battery EWP)	36910-0E650QQH (Electrical Devices EWP Assy)	*36910-G2912QQH
	90C030R3	36910-0E659QQH (Can Case replaced in the Electrical Devices EWP)	375W5-K4000QQH (Battery EWP Assy)	*36910-G2912QQH
	90C030R4	none	36910-0E650QQH (Electrical Devices EWP Assy) + 375W5-K4000QQH (Battery EWP Assy)	*Up to 2 qty. 36910-G2912QQH
	90C030R5	2 qty. 36910-0E659QQH	none	none

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

Service Procedure:



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)

Replace **Can Case** (section-D)

Fill and Bleed Coolant (section-G)

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)

Replace **EWP Assembly** (section-E)

Replace Harness Connector (section-F if connector is contaminated)

Fill and Bleed Coolant (section-G)

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(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.

NOTICE

If any of these DTC are found stored:

- U1116
- U1118

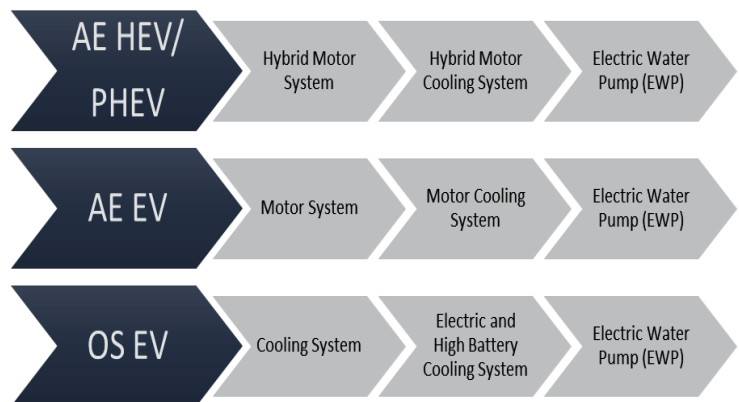
Skip to (section-**E-F**) (page-9) to replace the EWP assembly and replace connector.

(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.



EWP part side



Wire Harness Connector

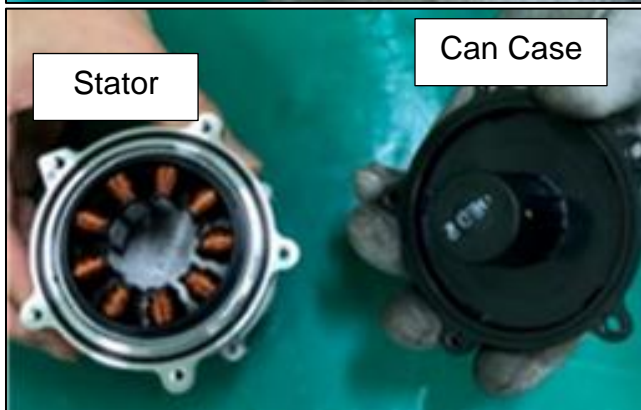
3. Remove the EWP Pump Cover mounting bolts.



4. Remove the Pump Cover and O-ring.



5. Remove the Can Case from the housing.



6. Remove the Stator O-ring.



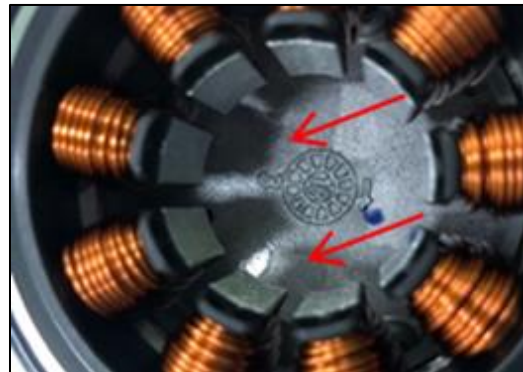
(C) EWP Inspection for Coolant Contamination:

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.

NOTICE

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

CAUTION

Prevent any interference between the O-ring and the pump cover as shown.

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.

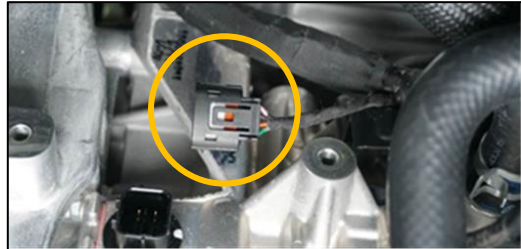


(E) EWP Assembly Replacement:
(Coolant contamination was found inside the EWP)

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.



(F) Harness EWP Connector Replacement:
(Coolant contamination was found inside the EWP connection)

1. Carefully remove the vehicle harness wiring tape back from the EWP connector using the cutter tool.

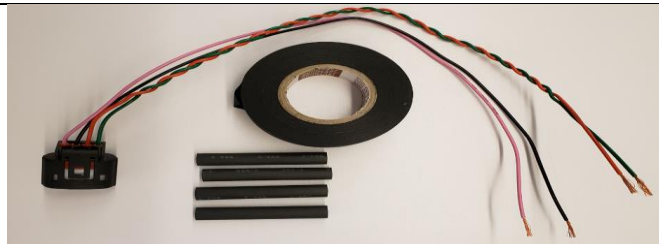


2. Cut all wires before the harness EWP connector to remove the old connector. Discard the old connector.

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

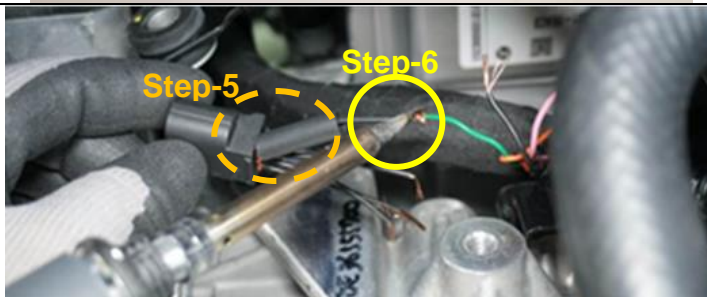


4. Obtain the EWP replacement connector kit as listed in the Parts Information table.



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.



⚠ 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!



7. Move each heat shrink tube to fully cover each wire joint with the joint centered in the tube.

8. Apply heat to each heat shrink tube to contract it to create a good water tight seal.



9. Wrap the repaired harness fully using the harness tape provided in the EWP connector kit.



(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.

