 <b>HYUNDAI</b> <b>Technical Service Bulletin</b>	GROUP <b>Engine Mechanical</b>	NUMBER <b>21-EM-007H</b>
	DATE <b>June, 2021</b>	MODEL(S) <b>Sonata Hybrid (LF HEV), Sonata Plug-In Hybrid (LF PHEV)</b>
<b>SUBJECT:</b>	<b>DTC P2600 ENGINE ELECTRIC WATER PUMP DIAGNOSIS AND REPAIR GUIDELINE</b>	

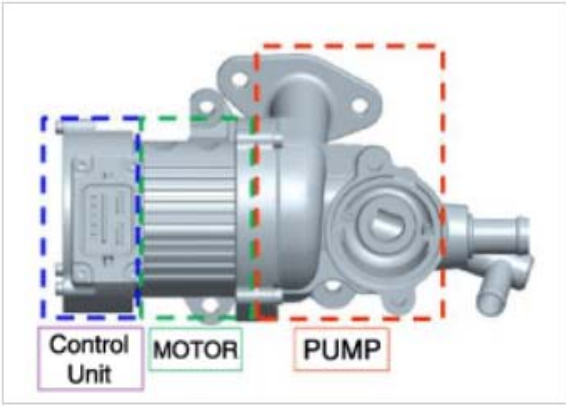
**Description:** This bulletin describes the procedure to diagnose and repair the Engine Electric Water Pump (EEWP) on certain Sonata Hybrid (LF HEV) and Sonata Plug-In Hybrid (LF PHEV) vehicles with DTC P2600, causing an HEV and/or MIL warning lamp illumination.

**Diagnostic Trouble Code Information:**

- P2600 - COOLANT PUMP “A” CONTROL CIRCUIT / OPEN
  - Internal circuit of EEWP (opened/ shorted) or Engine coolant level may be too low.

**Applicable Vehicles:**  
 Certain 2016-2019MY Sonata Hybrid (LF HEV) and Sonata Plug-in Hybrid (LF PHEV) Vehicles

**Parts Information:**

PART NAME	Figure	Part Number	QTY
PUMP ASSY-COOLANT (Engine Electric Water Pump)		25100-2E272	1

**Warranty Information:**

MODEL	OP CODE	OPERATION	OP TIME	CAUSAL PART	NATURE CODE	CAUSE CODE
Sonata Hybrid (LF HEV), Sonata Plug-In Hybrid (LF PHEV)	25100R00	PUMP ASSY-WATER AND/OR GASKET	Refer to WEBLTS for current LTS time	25100-2E272	D32	ZZ3

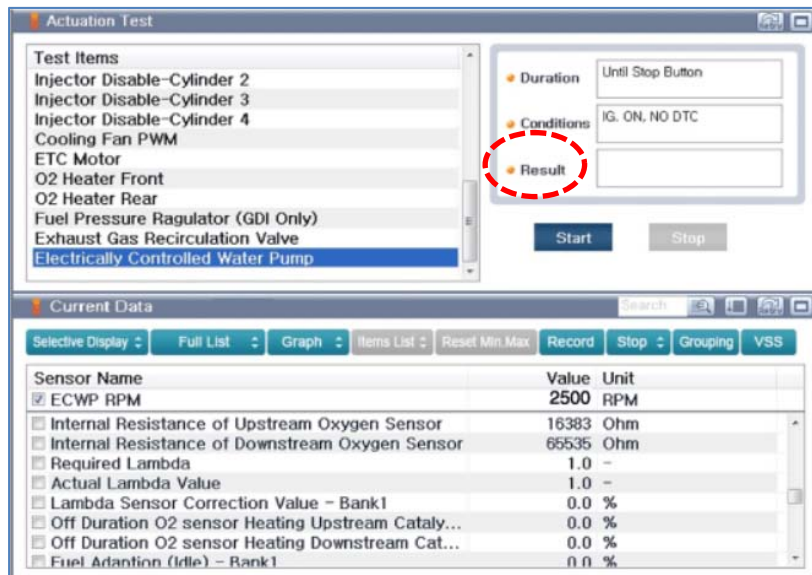
**Note:** Normal Warranty Applies.

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Circulate To: General Manager, Service Manager, Parts Manager, Warranty Manager, Service Advisors, Technicians, Body Shop Manager, Fleet Repair

**Service Procedure:**

1. Confirm that there are sufficient coolant levels in the Engine Coolant Reservoir.
  - If coolant levels are low, check for leaks and repair as needed.
2. Turn on the engine.
3. Connect GDS and clear all related DTC's.
4. Use GDS and force activate the EEWP with an actuation test.

**NOTICE**

GDS-M will display "Operation Command Sent" if the ECU accepted the request to operate the component.

- If EEWP fails to operate when commanded ON with the GDS Actuation Test, check connectors for loose connections.
    - While EEWP is commanded ON, apply a wiggling motion on the connections to confirm wiring connections and pins are not damaged. Repair as needed.
5. Make note of any DTCs that set or failed operation and listen for the EEWP making noise.
    - If EEWP State displays a Fault Code, then replace the EEWP.
    - If EEWP State displays a Protection Code, check voltage on auxiliary battery.
      - An EEWP static pressure related DTC may be generated in case of abnormal auxiliary battery voltage.

6. Check EEWP S/W version if auxiliary battery voltage is normal.
  - Perform S/W reprogramming through GDS in case of version error.

**NOTICE**

**16MY Only:** Refer to TSB 16-01-020-1 and verify no circuit pin 3 on C132 (EEWP).

7. If EEWP fails inspection portion of the service procedure or if P2600 resets, then the EEWP must be replaced following the steps below.
8. Shut off the High Voltage circuit.

Refer to the shop manual section for complete service procedure:  
**Engine Mechanical System > High Voltage Shut-off Procedures**

**⚠ WARNING**

The hybrid system uses 270V DC high voltage. Be sure to follow safety instructions. Otherwise, serious injury or death from electrocution may occur.

9. Remove the engine undercover.

Refer to the shop manual section for complete service procedure:  
**Engine Mechanical System > Engine and Transmission Assembly > Engine Room Under Cover**

10. Turn off the ignition switch and disconnect the battery (-) terminal (B).  
NOTE: Tightening torque: 8.8 Nm (78 lb-in)

**NOTICE**

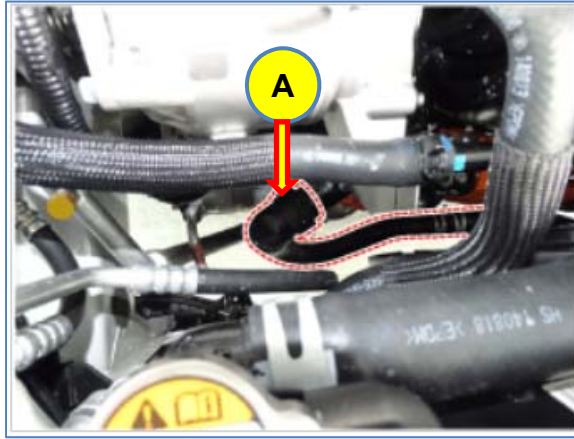
- Be sure to record the radio presets prior to battery disconnection.

11. Loosen the drain plug and drain the engine coolant. Remove the radiator cap to help drain the coolant faster.

Refer to the shop manual section for complete service procedure:  
**Engine Mechanical System > Cooling System > Coolant**

12. Remove the EEWP connector.

13. Disconnect the radiator lower hose (A).



14. Remove the intake manifold.

Refer to the shop manual section for complete service procedure:

**Engine Mechanical System > Intake and Exhaust System > Intake Manifold**

15. Remove the drive belt.

Refer to the shop manual section for complete service procedure:

**Engine Mechanical System > Timing System > Drive Belt**

16. Remove the Hybrid Starter Generator.

Refer to the shop manual section for complete service procedure:

**Hybrid Motor System > Hybrid Motor Assembly > Hybrid Starter Generator (HSG)**

17. Remove the Thermostat housing.

Refer to the shop manual section for complete service procedure:

**Engine Mechanical System > Cooling System > Thermostat**

18. Disconnect the oil cooler hose and heater pipe hose.

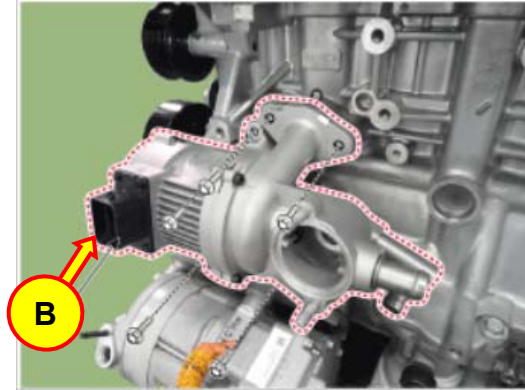
Refer to the shop manual section for complete service procedure:

**Engine Mechanical System > Lubrication System > Oil Cooler**

19. Remove the EEWP (B).

**NOTICE**

**Tightening Torque:**  
15.95 lb-ft (21.55 Nm)



**NOTICE**

- Clean the EEWP mounting bolt hole with an air gun as the tab may be damaged by the sealant residue from the seal bolt.
- Remove and clean the vibration insulation plate before EEWP reinstallation.

20. Reinstall parts in reverse order of removal.

**NOTICE**

- Reprogram the radio presets recorded from Service Procedure Step 10.

21. Fill the Radiator with coolant and check for leaks.

22. Run the engine for at least 15 minutes after refilling the coolant to allow all the trapped air to escape, and check EEWP.

**NOTICE**

- Bleed air from the hybrid motor cooling system prior to the engine cooling system.
- Bleed air from the engine cooling system.
  - Start engine and allow it to warm up until radiator engages 3-4 times
  - Turn off engine. Check coolant level and add if needed.
  - Put radiator cap on tight, then run engine again and check for leaks.
  - Always use new coolant.

**CAUTION**

Rev-up the engine 2 to 3 times to let out air in the coolant. Note that revving the engine to high RPMs may activate the "HEV Warning Lamp", so do NOT apply excessive pressure when engaging the accelerator pedal.

- If "HEV" Warning Lamp" turns ON, turn OFF the engine and start it back up for normal operation.

23. The service procedure is now complete.