 HYUNDAI Technical Service Bulletin	GROUP AUTOMATIC TRANSMISSION	NUMBER 22-AT-008H
	DATE JUNE, 2022	MODEL SONATA HYBRID (DN8 HEV) SANTA FE HYBRID (TM HEV/PHEV) TUCSON HYBRID (NX4 HEV/PHEV)
SUBJECT: AUTOMATIC TRANSAXLE SOLENOID DTC P074800, P075300, P075800, P076300, P076800, P077300, P177800 & P270900		

DESCRIPTION: If you are servicing an applicable vehicle with a “Check Engine” light on and one or more of the DTC listed below, follow the Service Procedure and replace the related solenoid and harness.

APPLICABLE VEHICLES:

- 2020~ Sonata Hybrid (DN8 HEV)
- 2021~ Santa Fe Hybrid (TM HEV)
- 2022~ Santa Fe Plug-in Hybrid (TM PHEV)
- 2022~ Tucson Hybrid (NX4 HEV)
- 2022~ Tucson Plug-in Hybrid (NX4 PHEV)

DTC AND PARTS INFORMATION:

Refer to the PNC in the parts catalog to order the correct part number.

Model	DTC	Description	PNC	Part Number
2020~ Sonata Hybrid (DN8 HEV) 2021~ Santa Fe Hybrid (TM HEV) 2022~ Santa Fe Plug-in Hybrid (TM PHEV) 2022~ Tucson Hybrid (NX4 HEV) 2022~ Tucson Plug-in Hybrid (NX4 PHEV)	P074800	Pressure control solenoid	46313A	46313-3D8**
	P075300	Shift control solenoid A (UD)	46313C	46313-2F4**
	P075800	Shift control solenoid B (26)	46313B	46313-2F3**
	P076300	Shift control solenoid C (35R)	46313B	46313-2F3**
	P076800	Shift control solenoid D (OD)	46313C	46313-2F4**
	P077300	Shift control solenoid E (SSA)	46313D	46313-3B0**
	P177800	Engine clutch solenoid D (OD)	46313E	46313-3D8**
	P270900	Shift control solenoid F (SSB)	46313D	46313-3B0**
	ALL	Harness with oil temperature	46307	46307-3D***
	ALL	Valve body gasket	45282E	45283-3D1**

WARRANTY INFORMATION:

Model	Op Code	Operation	Op Time	Causal Part	Nature Code	Cause Code
2020~ Sonata Hybrid (DN8 HEV) 2021~ Santa Fe Hybrid (TM HEV) 2022~ Tucson Hybrid (NX4 HEV)	45775R00	Solenoid replacement	Refer to WEBLTS for current LTS time	Refer to Parts Information table on Page 1	I3A	ZZ3
2022~ Santa Fe Plug-in Hybrid (TM PHEV) 2022~ Tucson Plug-in Hybrid (NX4 PHEV)	45775R6P	Solenoid replacement				
All	45775RH1	Hybrid				
2021~ Santa Fe Hybrid (TM HEV) 2022~ Santa Fe Plug-in Hybrid (PHEV) 2022~ Tucson Hybrid (NX4 HEV) 2022~ Tucson Plug-in Hybrid (NX4 PHEV)	45775RF1	4WD				
All	45775RQ0	GDS				

Note 1: Normal Warranty Applies

Note 2: Please note that Op Codes 45775R00 and 45775R6P are primary Op Codes. Op codes 45775RH1 and 45775RF1 are additional to the primary Op Codes and must be used for the hybrid vehicles listed above. Op Code 45775RQ0 must be used for diagnosis using the GDS.

SAFETY PRECAUTION:

Refer to the related shop manual, **Hybrid Motor System, General Safety Information** and **Caution** warnings.

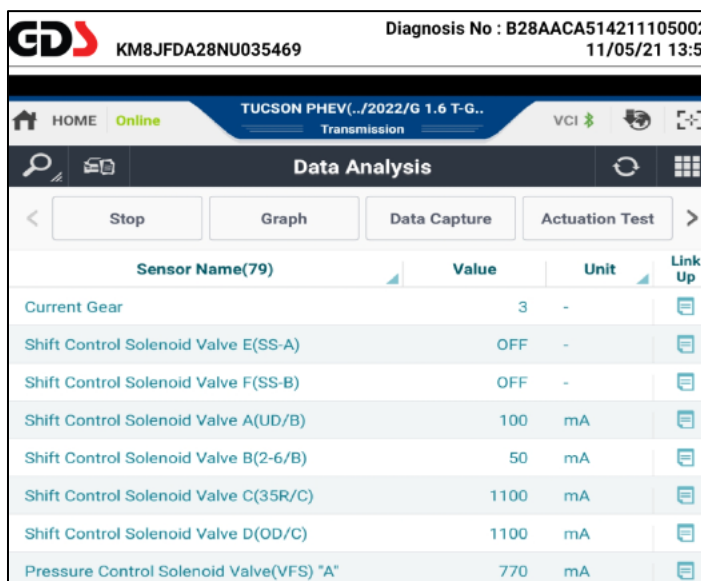
NOTE: Use only Rubber Insulating Gloves that meet or exceed ASTM D120 standards. (1000 volts AC/1500 volts DC).

Order from Hyundai.service-solutions.com, "EV Tools"
P/N J-48755-10H, J-48755-11H, J-48755-12H



SERVICE PROCEDURE:

1. Attach a GDS and select **DTC Analysis** and **A/T** menu. Record the DTC and description. Delete the DTC.
2. From the GDS home screen, select **Data Analysis** and **A/T** menu and the parameters shown below. If the parameters show:
 - Continuous and changing output while driving, the wiring **currently** has no open/short circuits. Go to Step 4.
 - No continuous and changing output, go to Step 3.



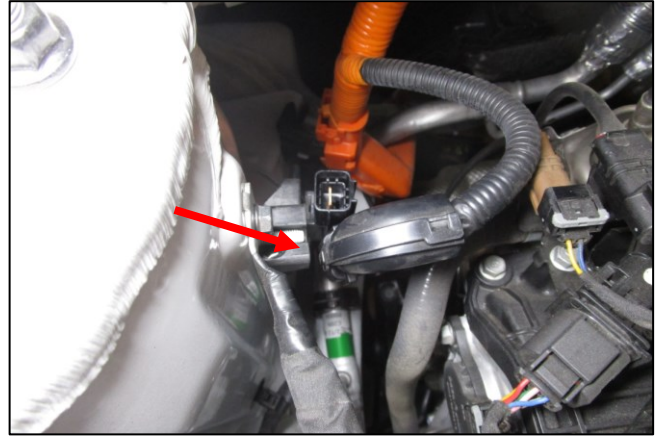
3. Visually check the wiring harness between the ECU or TCU and transmission for a damaged wire or open/short circuit. Check for a damaged pin or pin not fully inserted into the connector.
 - If damage exists, repair or replace the harness between the ECU or TCU and transmission.
 - If no damage or open/short circuit, go to Step 4.

ECU and TCU information:

Models	Control Unit
Santa Fe Hybrid/Plug-in Hybrid (TM HEV/PHEV)	Separate ECU and TCU
Sonata Hybrid (DN8 HEV)	Combined ECU/TCU (PCM)
Tucson Hybrid/Plug-in Hybrid (NX4 HEV/PHEV)	Separate ECU and TCU

4. Record the preset radio stations.

5. Disconnect the service 12V interlock connector located on the passenger side of the engine bay.



6. Disconnect the service high-voltage interlock connector located on the driver side of the engine bay.

Wait **3 minutes** for the capacitor in the high-voltage system to be fully discharged.

Refer to the **Automatic Transaxle System, High Voltage Shut-off Procedure**.



7. Remove the bolt and disconnect the high voltage power cable.

Torque: 7~8 lb-ft (1.0~1.2 kgf.m, 10~12 N.m)



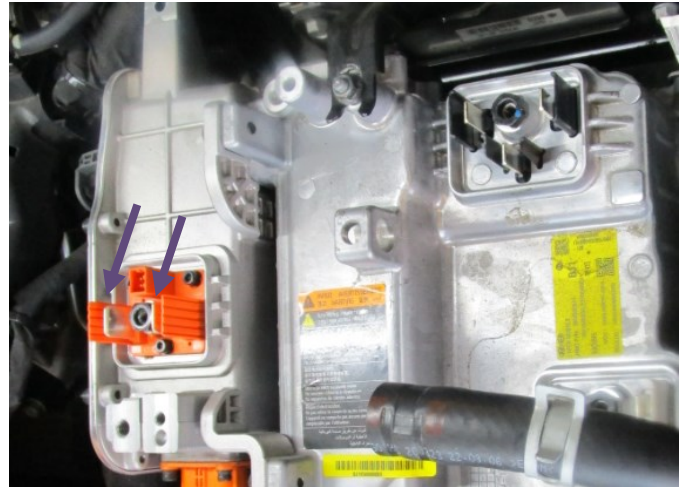
8. Wait more than **3 minutes** so the capacitor in the high voltage system can be discharged.

Measure the voltage between the **inverter (+ terminal)** and **(-) terminal**.

If the voltage is below **30V**, the high voltage circuit has been disconnected.

⚠ WARNING

If more than **30V**, there is a fault on the high voltage circuit and the vehicle is not safe to work on.



9. Measure the voltage between the power cable **(+) terminal)** and **(-) terminal**.

If the voltage is below 30V, the high voltage circuit has been disconnected.



10. Measure the voltage between the power cable **(+) terminal)** and **chassis ground**.

If the voltage is below 30V, the high voltage circuit has been disconnected.



11. Measure the voltage between the power cable **(-) terminal)** and **chassis ground**.

If the voltage is below 30V, the high voltage circuit has been disconnected.

⚠ WARNING

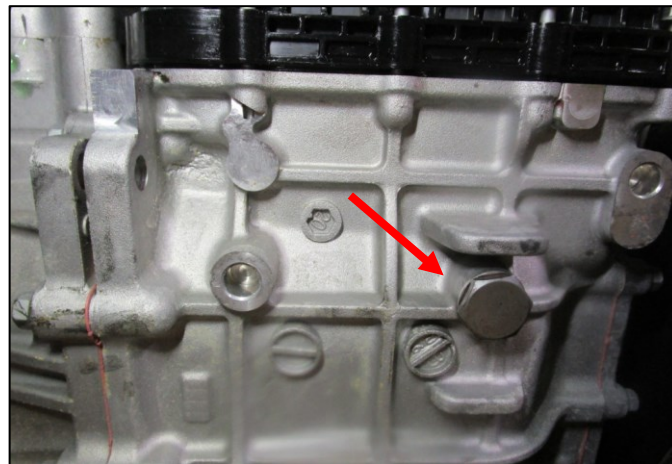
If more than **30V**, there is a fault on the high voltage circuit and the vehicle is not safe to work on.



12. Drain the engine coolant at the radiator.

Refer to **Engine Mechanical System, Cooling System, Coolant, Repair Procedures**.

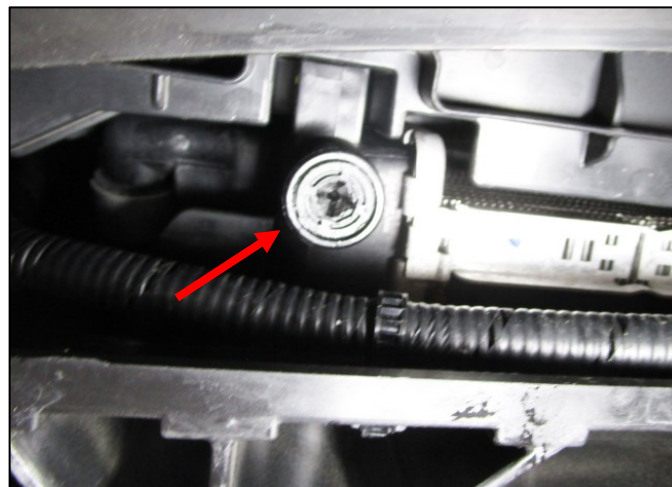
13. Remove the plastic under cover.
Remove the drain plug and drain the ATF.
Reinstall the drain plug.
Torque: 25~31 lb-ft (3~4 kg.m, 33~43 N.m)



14. Remove the hybrid cooling system drain plug and drain the coolant.
Refer to **Hybrid Motor System, Hybrid Motor Cooling System, Coolant, Repair Procedures**.

Reinstall the hybrid cooling system drain plug.

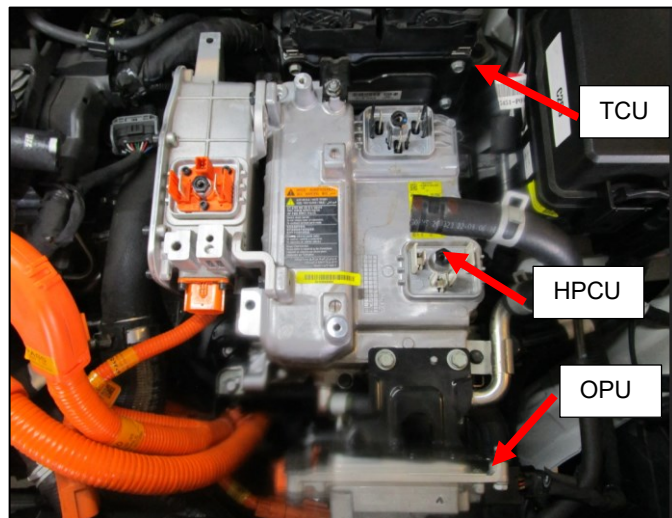
Optional procedure: Disconnect the lower hose from the hybrid radiator.



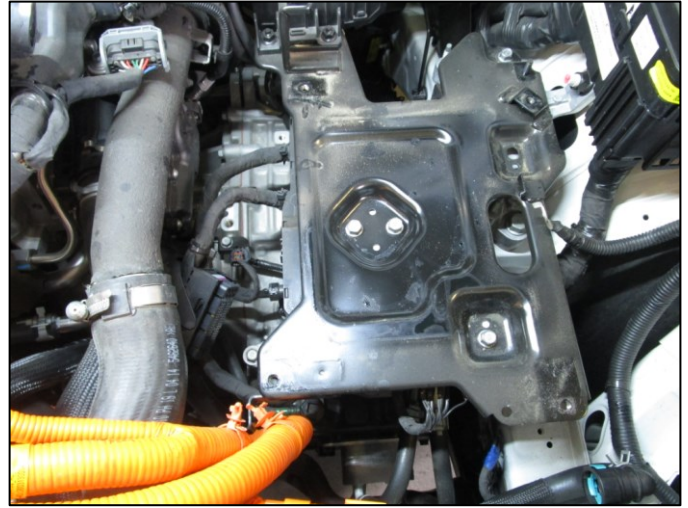
15. Disconnect the TCU connector and remove the TCU.

Remove the hybrid power control unit (HPCU).
Refer to **Hybrid Control System, Hybrid Control System, HPCU, Repair Procedures**.

Disconnect the OPU connector and remove the OPU.

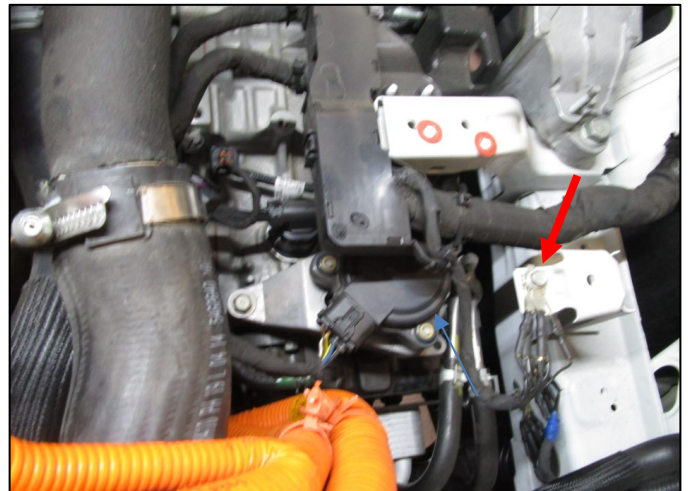


16. Remove the HPCU tray.

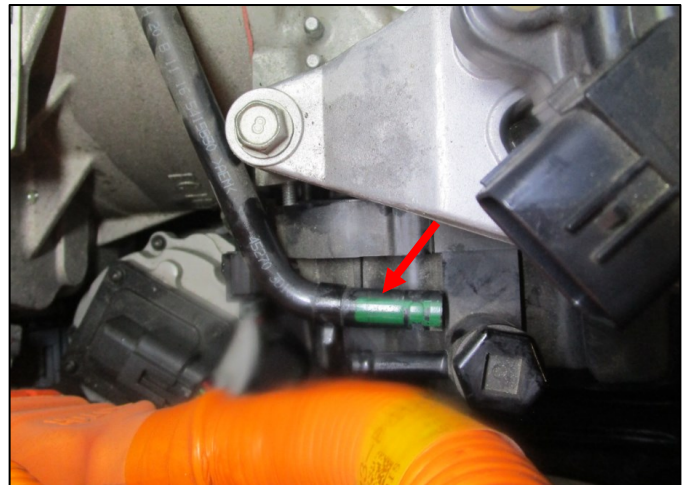


17. Remove the ground bolt.

Move the harness aside for access to the transmission.

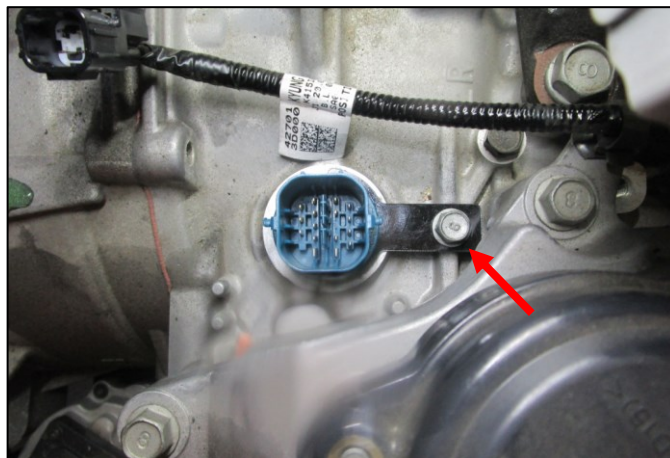


18. Disconnect the air bleeder hose.



19. Disconnect the harness from the connector.

Remove the bolt and clip. Push the connector into the transmission case.



20. Remove the ATF warmer, located on the valve body cover.



21. **For Tucson Plug-in Hybrid (NX4 PHEV):** Refer to the shop manual, **Automatic Transaxle System, Automatic Transaxle System, Automatic Transaxle, Repair Procedures** and remove the transmission. Go to Step 22.

For all other HEV/PHEV: Continue with Step 22.

22. Remove the bolts and remove the valve body cover.

**CAUTION**

Use a rubber hammer to tap the cover on a corner until the cover is loose.

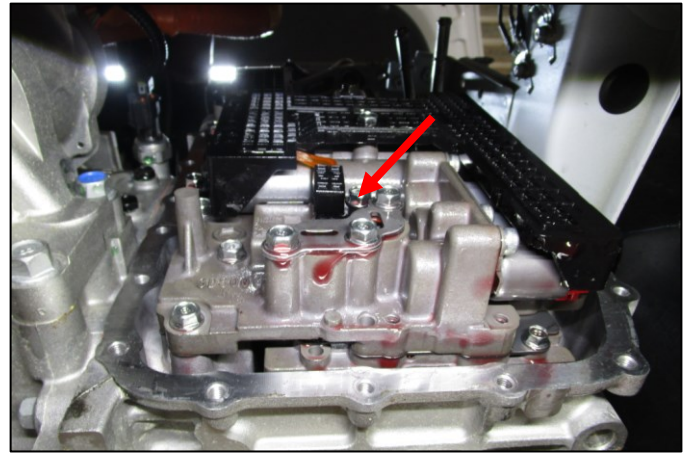


23. Remove the bolts for the main harness and temperature sensor.

Move the main harness up and out of the way so the valve body can be removed.

Remove the bolts on the valve body, beginning with the outer bolts and moving to the inner bolts.

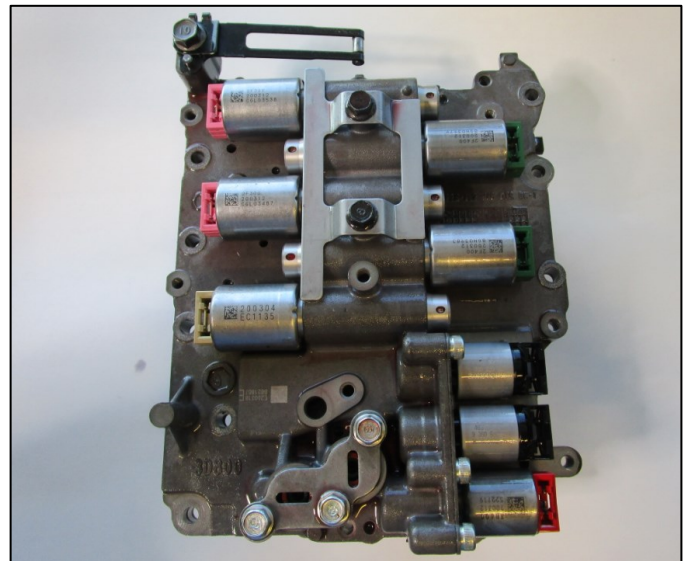
Remove the valve body.



24. Lay the valve body on a clean paper towel.

NOTICE

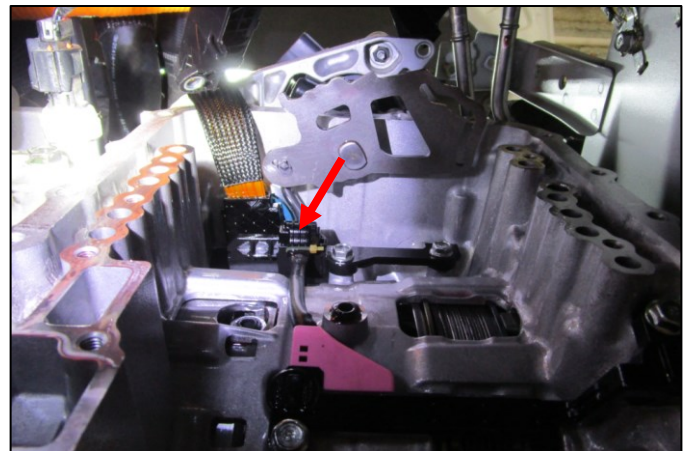
Do not lay the valve body on a rag because a rag may have lint that can contaminate the valve body.



25. Disconnect the harness from the connector.

Remove the harness.

Install a **new** harness and push the connector **firmly** into the transmission case.



26. Record the 8-digit number on the new solenoid.



27. **For 26B 35R, EC, UD and OD solenoids:**

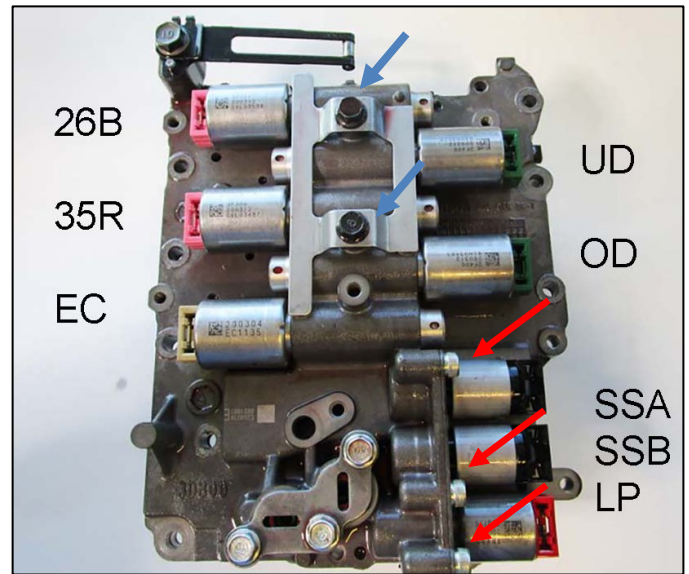
Remove two bolts and remove the support.

Use a magnet to remove the roller pin that secures the solenoid.

Torque: 7~8 lb-ft (1.0~1.2 kgf-m, 10~12 N.m)

For SSA, SSB and LP solenoids:

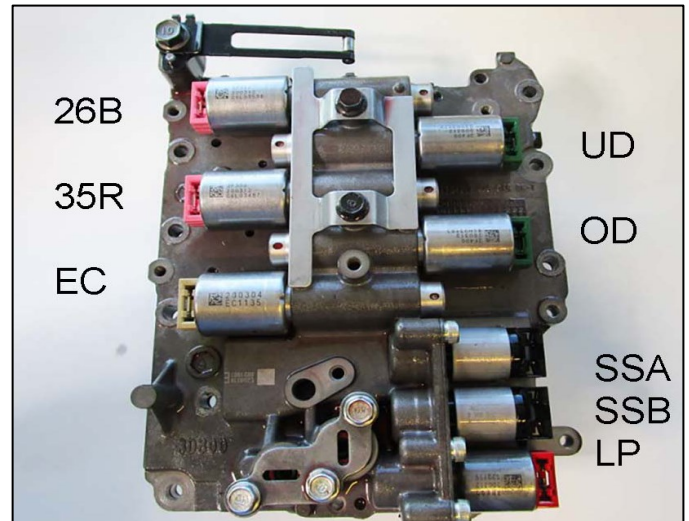
Use an Allen wrench to remove the 3 Allen bolts and remove the support.



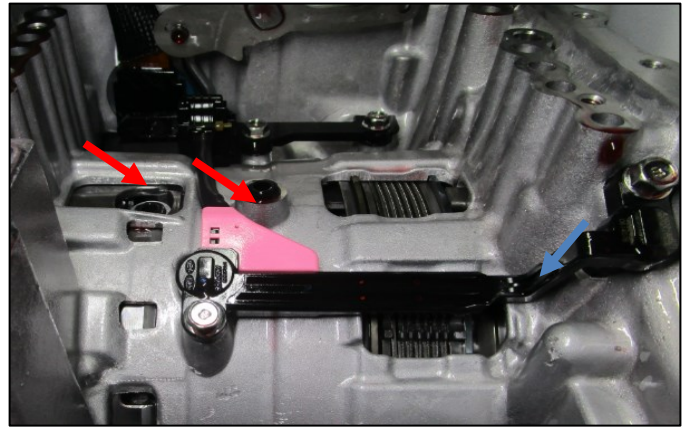
28. Refer to the DTC recorded in Step 1 and replace the related solenoid.

Reinstall the roller pin and/or support.

DTC	SOLENOID	
P075300	UD	Shift solenoid A
P076800	OD	Shift solenoid D
P077300	SSA	Shift control solenoid E
P270900	SSB	Shift control solenoid F
P074800	LP	Pressure control solenoid
P075800	26B	Shift control solenoid B
P076300	35R	Shift solenoid C
P177800	EC	Engine clutch solenoid



29. Confirm 2 O-rings are installed in the transmission case.

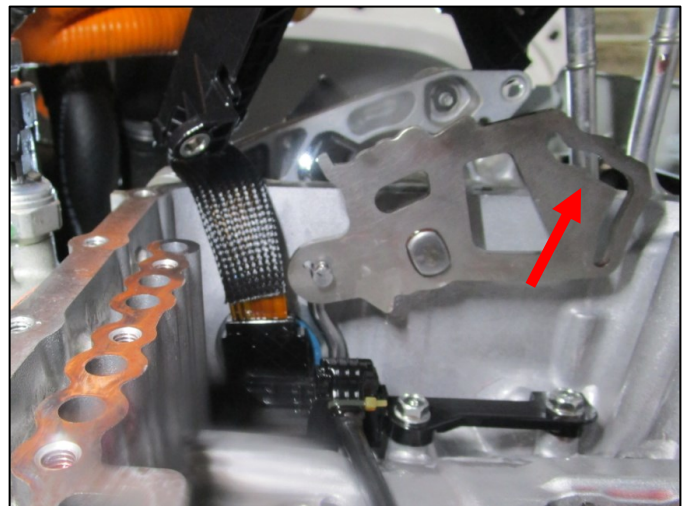
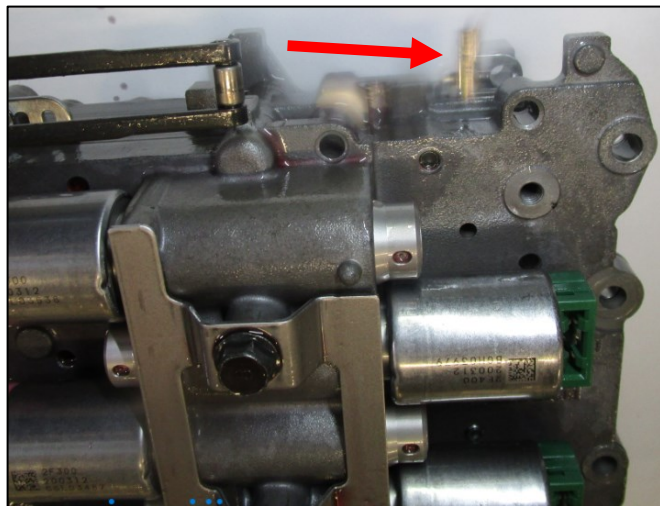


30. Move the harness up and out of the way so the valve body can be reinstalled.

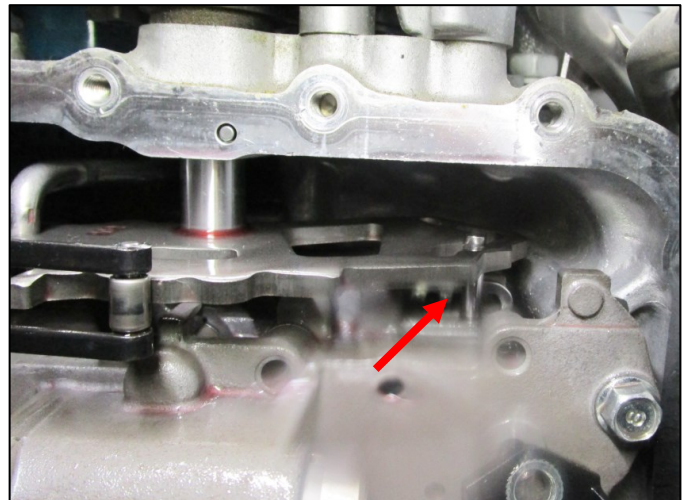
Align the manual shaft on the valve body to the slot in the manual lever and install the valve body.

Reinstall the valve body bolts, beginning with the inner bolts and moving outward. Torque the bolts to specification.

Torque: 7~9 lb.ft (1.0~1.2 kgf.m, 10~12 N.m)



31. Confirm the manual shaft is inserted in the slot in manual lever.



32. Confirm the harness connector is pushed firmly into the case.

Install the new main harness.

Install the bolts and torque to specification.

Torque: 7~9 lb-ft (1.0~1.2 kgf-m, 10~12 N.m)



33. Install a new valve body gasket.
P/N 45283-3D100.

Reinstall the valve body cover and torque the bolts to specification.

Torque: 9~10 lb.ft (1.2~1.4 kgf.m, 12~13 N.m)

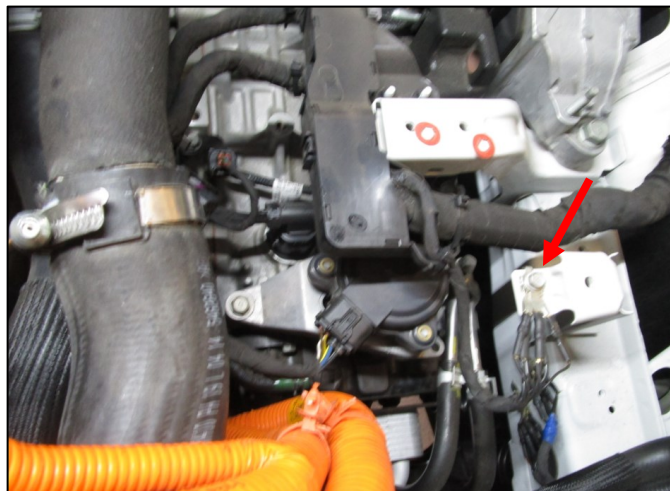
Reconnect the ATF hoses.



34. Reinstall the harness and install the ground bolt.

Reinstall the HPCU tray.

Reinstall the OPU, HPCU and TCU.
Refer to **Hybrid Control System, Hybrid Control System, HPCU**

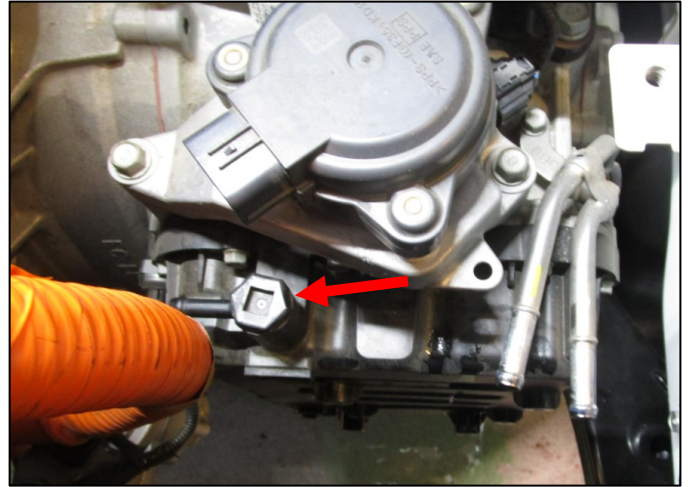


35. Remove the fill plug.

Add approximately 4 quarts of **SP4-M1 ATF**,
P/N 00232-19107 through the fill plug.

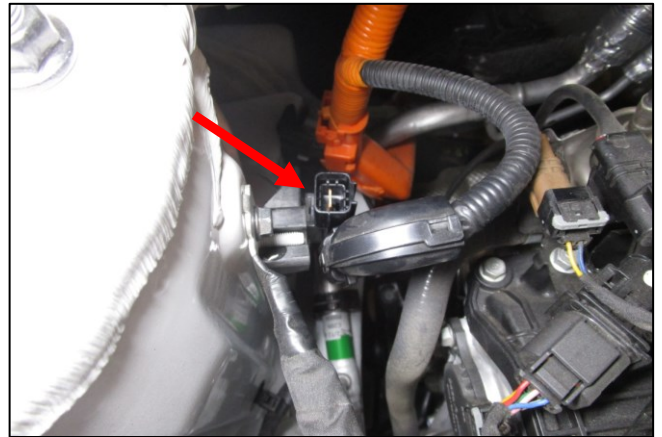
Reinstall the fill plug and torque to
specification.

Torque: 25~31 lb-ft (3~4 kgf.m, 34~43 N.m)



36. Reconnect the 12V safety plug located on the
passenger side of the engine bay.

Reconnect the terminals to the 12V battery,
if previously disconnected.



37. Reconnect the high voltage plug, located on
the driver's side near the radiator.

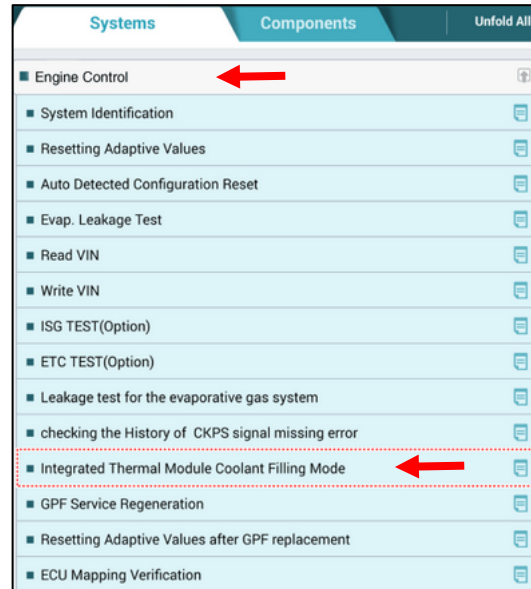


38. Attach the radiator hoses.

Refill the engine coolant.

Refer to the related shop manual, **Engine Mechanical System, Cooling System, Coolant and Repair Procedures**.

Attach a GDS and select **S/W Management, Engine Control and Integrated Thermal Module Coolant Filling Mode**. Follow the GDS prompts.



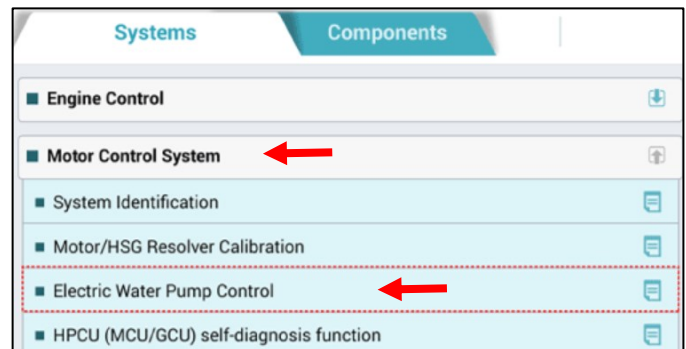
39. Reinstall the Hybrid coolant drain plug.

Add hybrid coolant through the reservoir.

NOTE: Use **00232-19091** Electric Vehicle Battery System Coolant (BSC-1).

Refer to the related shop manual, **Hybrid Motor System, Hybrid Motor Cooling System, Coolant and Repair procedure**.

Attach a GDS and perform the hybrid coolant refill procedure. Select **S/W Management, Motor Control System, Electric Water Pump Control**. Follow the GDS prompts.



40. Attach the GDS and select **Data Analysis, A/T menu and Oil Temperature Sensor**.

Start the engine and shift to R, D and Park.

When the ATF is **122°F~140°F (50~60°C)**, remove the level checking plug. The level is correct when ATF flows out of the level checking plug in a thin steady stream.

If ATF does not flow out of the level checking plug, use a fluid pump to add additional **SP4-M1 ATF, P/N 00232-19107** through the level checking plug.

Collect and dispose of any excess fluid in accordance with local regulations.



41. Input the radio stations recorded in Step 4.

42. Clear the DTC and test drive the vehicle for two key-on/key-off driving cycles, including 1-2-3-4-5-6 upshifts and 6-5-4-3-2-1 downshifts. If the DTC returns, perform the following repairs:

REPAIR PROCEDURE
Replace the wiring harness between the PCM or TCU and transmission. <ul style="list-style-type: none"> • If the solenoid DTC does not return, return the vehicle to the customer. • If the solenoid DTC returns again, replace the PCM or TCU.

ECU and TCU information:

Models	Control Unit
Santa Fe Hybrid/Plug-in Hybrid (TM HEV/PHEV)	Separate ECU and TCU
Sonata Hybrid (DN8 HEV)	Combined ECU/TCU (PCM)
Tucson Hybrid/Plug-in Hybrid (NX4 HEV/PHEV)	Separate ECU and TCU

43. Drive the vehicle to confirm the transmission is operating as designed.