 HYUNDAI Technical Service Bulletin	GROUP AUTOMATIC TRANSMISSION	NUMBER 23-AT-003H-1
	DATE AUGUST 2023	MODEL SONATA (LFa) SANTA FE (TMa) PALISADE (LX2) SANTA CRUZ (NXT) SONATA (DN8a) TUCSON (NX4/NX4a)
SUBJECT: AUTOMATIC TRANSAXLE SOLENOID DTC P074100, P074300, P074800, P075300, P075800, P076300, P076800, P077300 & P270900		

This TSB supersedes TSB 23-AT-003H to add Tucson (NX4) and revise the Parts Information.

DESCRIPTION: If you are servicing an 8-speed vehicle with a “Check Engine” light on and one or more of the DTC listed, follow the service procedure and replace the related solenoid and harness.

APPLICABLE VEHICLES:

2018~19	Sonata (LFa) 2.0T	VINs beginning with 5NP
2020~22	Sonata (DN8a) 1.6T/2.5L	VINs beginning with 5NP
2019~20	Santa Fe (TMa) 2.0T/2.4L	VINs beginning with 5NM
2021~	Santa Fe (TMa) 2.5L	VINs beginning with 5NM
2020~	Palisade (LX2) 3.8L	VINs beginning with KM8
2022~	Santa Cruz (NXT) 2.5L	VINs beginning with 5NT
2022~	Tucson (NX4) 2.5L	VINs beginning with KM8
2022~	Tucson (NX4a) 2.5L	VINs beginning with 5NM

PARTS INFORMATION:

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

MODEL	DTC	PART	PNC	PART NUMBER
2018~19 Sonata (LFa) 2.0T	P074100	Torque converter clutch system	46202A	46313-3B***
	P074300	Torque converter clutch circuit	46202A	46313-3B***
2020~22 Sonata (DN8a) 1.6T/2.5L	P074800	Pressure control solenoid (PC)	46313A	46313-3B***
2019~ Santa Fe (TMa) 2.0T/2.4L/2.5L	P075300	Shift solenoid (UD)	46313C	46313-4G***
	P075800	Shift solenoid (46)	46313B	46313-4G***
2020~ Palisade (LX2) 3.8L	P076300	Shift solenoid (37R)	46313B	46313-4G***
	P076800	Shift solenoid (OD&LR)	46313C	46313-4G***
2022~ Santa Cruz (NXT) 2.5L	P077300	Shift solenoid (28)	46313B	46313-4G***
2022~ Tucson (NX4a) 2.5L	P270900	Shift control solenoid valve (SSA)	46313D	46313-3B***
		Valve body internal harness	46307	46307-4G***
ALL		Oil pan gasket	45282E	45283-4G***

WARRANTY INFORMATION:

MODEL	OP CODE	OPERATION	OP TIME	CAUSAL PART	NATURE CODE	CAUSE CODE
2018~19 Sonata (LFa) 2.0T	45775R00	Solenoid replacement	Refer to WEBLTS for current LTS time	Refer to Parts Information table on Page 1	I3A	ZZ3
2020~22 Sonata (DN8a) 1.6T/2.5L 2022~ Santa Cruz (NXT) 2.5L 2022~ Tucson (NX4/NX4a) 2.5L 2021~ Santa Fe (TMa) 2.5L	45775R8M					
2019~20 Santa Fe (TMa) 2.0T/2.4L 2020~ Palisade (LX2) 3.8L	45775R8L					
ALL	45775RQ0	GDS				

NOTE 1: Normal warranty applies.

NOTE 2: Submit claim on Claim Entry Screen as “Warranty” type.

NOTE 3: Refer to the latest Digital Documentation Policy for repair validation requirements.

NOTE 4: The incident parts are subject to callback through the normal Warranty Technical Center (WTC) parts return process. Claim is subject to debit if the part is not returned.

NOTE 5: If a part is found in need of replacement while performing this TSB and the affected part is still under warranty, submit a separate claim using the same repair order. If the affected part is out of warranty, submit a Prior Approval request for goodwill consideration prior to performing the work.

SERVICE PROCEDURE:

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Refer to the latest Warranty Digital Documentation Policy for requirements.

1. Attach a GDS and select **DTC Analysis** and **A/T** menu. Record the DTC and description. Delete the DTC.

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2. From the GDS home screen, select **Data Analysis** and **A/T** menu and the solenoid parameters shown below. If the solenoids 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.

Sensor Name(30)	Value	Unit	Link Up
Shift Control Solenoid Valve (UD/C)	920	mA	
Shift Control Solenoid Valve (46/C)	15	mA	
Shift Control Solenoid Valve (OD&LR)	55	mA	
Shift Control Solenoid Valve (28/B)	50	mA	
Shift Control Solenoid Valve (37R/C)	10	mA	
Pressure Control Solenoid Valve (LP)	665	mA	
ON/OFF Solenoid A (SS-A)	ON	-	
Torque Converter Clutch Solenoid Valve	40	mA	

3. Visually check the wiring harness between the PCM 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 ECM control harness and drive the vehicle to confirm the repair.
 - If no damage or open/short circuit is found, go to Step 4.

NOTE: All listed vehicles have a PCM (integrated ECU/TCU) except Sonata (DN8a) 1.6T and Palisade (LX2) with separate ECU and TCU.

4. Refer to the DTC recorded in Step 1 and follow the repair procedure shown below:

DTC		PNC	REPAIR PROCEDURE
P074100	Torque converter clutch system	46202A	For 2019~20MY Santa Fe (TMa) 2.4L: Follow TSB 23-AT-005H and update the TCU. If P0741 returns, Go to Step 5 and replace the related solenoid and valve body harness. Go to Step 5 and replace the related solenoid and valve body harness
P074300	Torque converter (T/C)	46202A	
P074800	Pressure control solenoid (PC)	46313A	
P075300	Shift solenoid (UD)	46313C	
P075800	Shift solenoid (46)	46313B	
P076300	Shift solenoid (37R)	46313B	
P076800	Shift solenoid (OD&LR)	46313C	
P077300	Shift solenoid (28)	46313B	
P270900	Shift solenoid (SSA)	46313D	

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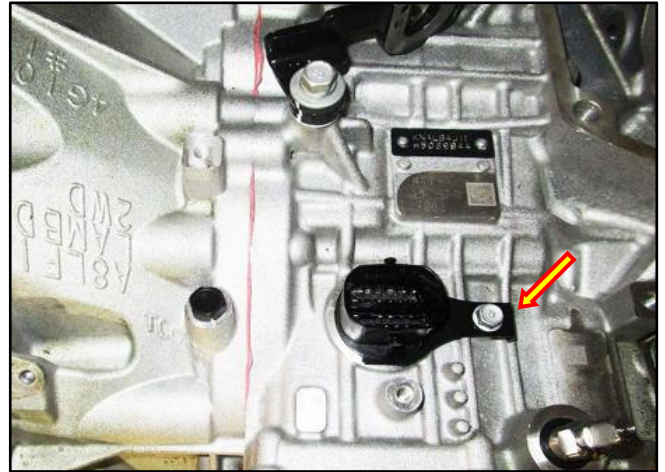
5. Record the preset radio stations.
Remove the battery and battery tray.
6. Remove the undercover below the transmission. Lift the vehicle on a hoist.
7. If necessary to access the solenoids, drain the radiator and remove the lower radiator hose from the radiator.

Drain the ATF.

8. Disconnect the harness from the transmission.

Remove the bolt that secures the tab and push the harness connector into the transmission.

Disconnect the vent hose on the top of the oil pan.

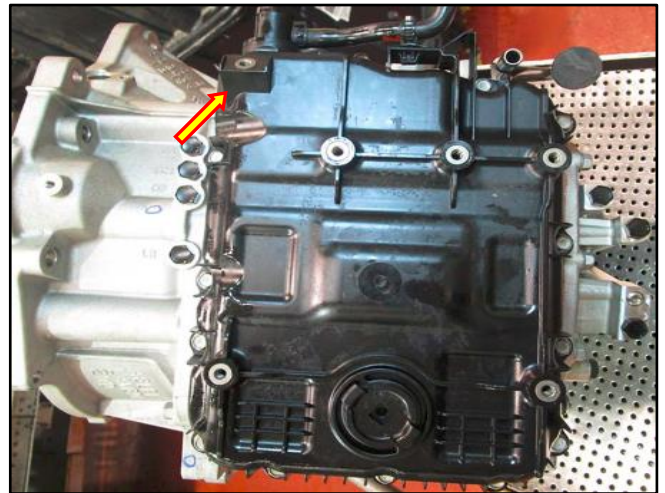


9. Remove 14 oil pan bolts and remove the pan.



CAUTION

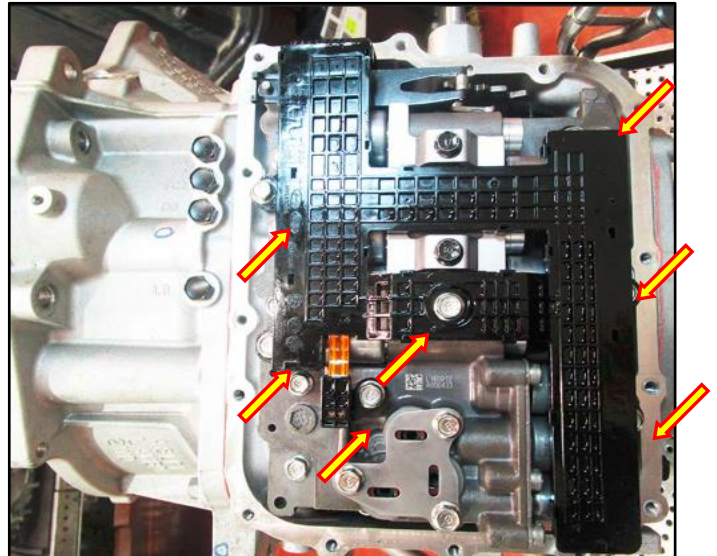
Use a rubber hammer to tap the oil pan cover on a corner until the cover is loose.



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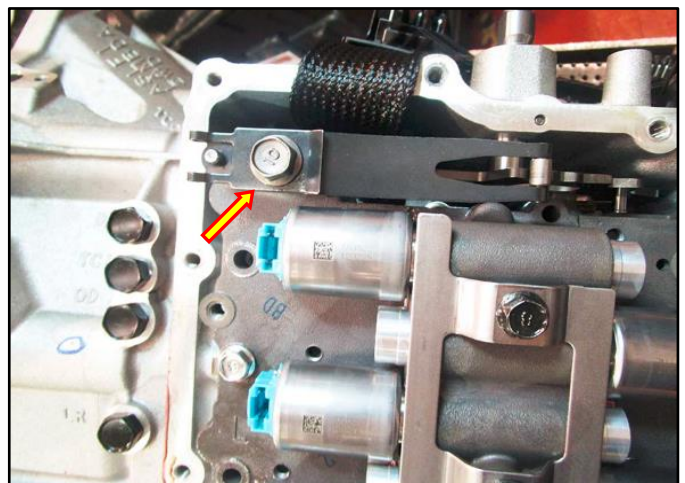
10. Remove 6 bolts to the harness and 1 bolt to the oil temperature sensor.

Pull the harness outward and move the harness out of position.



11. Remove the bolt that secures the detent spring and remove the spring.

Torque: 8~11 lb.ft (1.2~1.5 kgf.m/10~13 N.m)

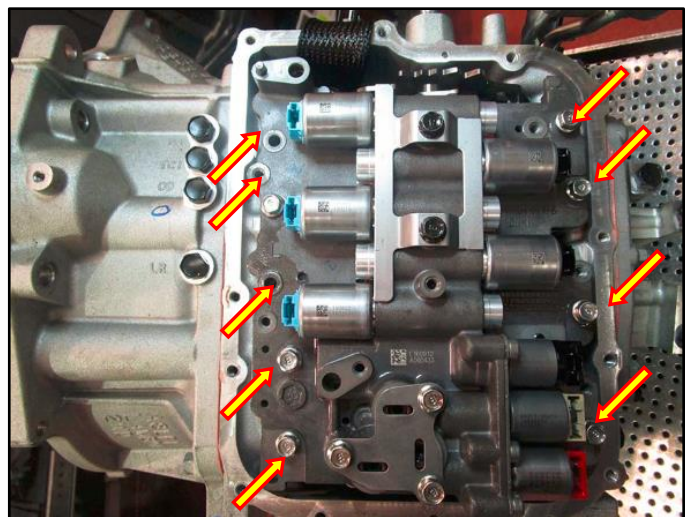


12. Remove 9 valve body bolts in order from the outermost bolts to the innermost bolts.

Remove the valve body.

**CAUTION**

Place the valve body on a clean paper towel. Placing the valve body on a rag may cause lint to enter the valve body.



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13. Pull the gray tab up and then press the tab to disconnect the harness from the input speed sensor.

Remove the harness and install a new harness.

Reconnect the new harness to the input speed sensor.



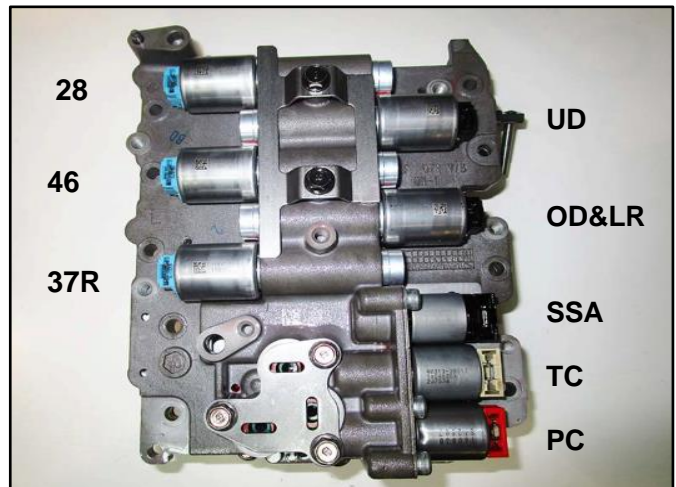
14. Record the 8-digit code on the solenoid.

NOTE: If the 8-digit code on the solenoid does not contain letters A~F and 0~9, do not enter any pressure data. Follow TSB 16-AT-001-2 and reset the ATM adaptive values.



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

DTC	SOLENOID	
P074100	TC	TC clutch
P074300	TC	TC solenoid
P074800	PC	Pressure control
P075300	UD	Shift solenoid (UD)
P075800	46	Shift solenoid (46)
P076300	37R	Shift solenoid (37R)
P076800	OD&LR	Shift solenoid (OD&LR)
P077300	28	Shift solenoid (28)
P270900	SSA	Shift solenoid (SSA)

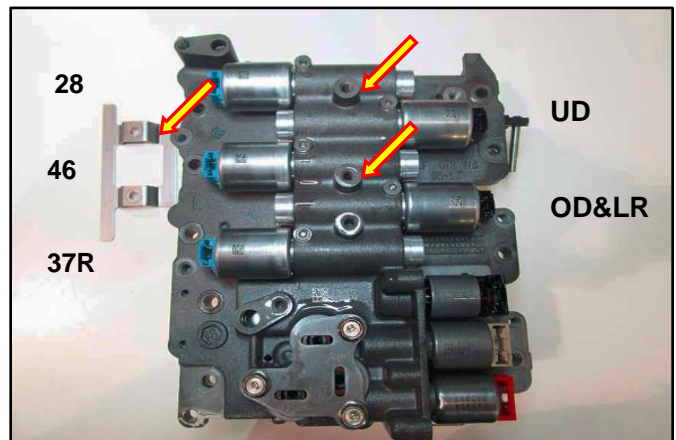


16. **For 28, 46, 37R, UD, OD&LR solenoids:**

Remove two bolts to the upper solenoid support. Remove the support.

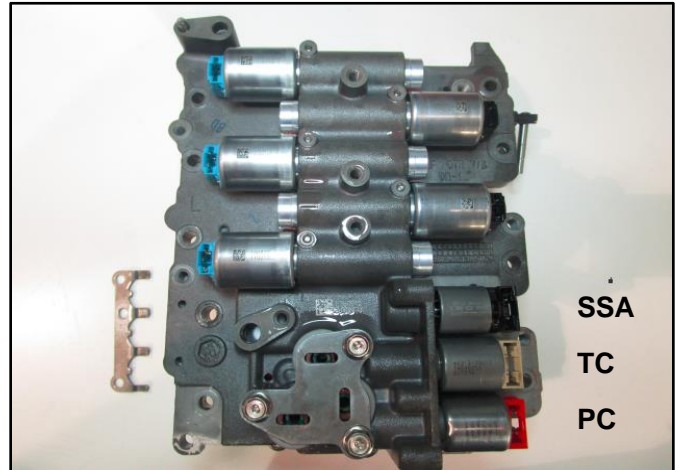
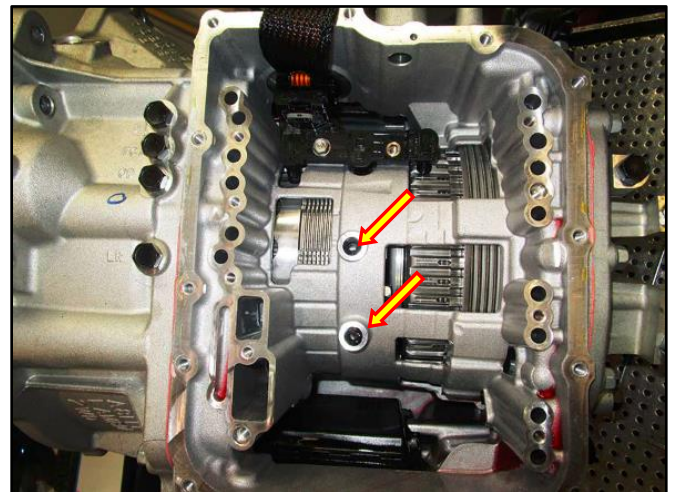
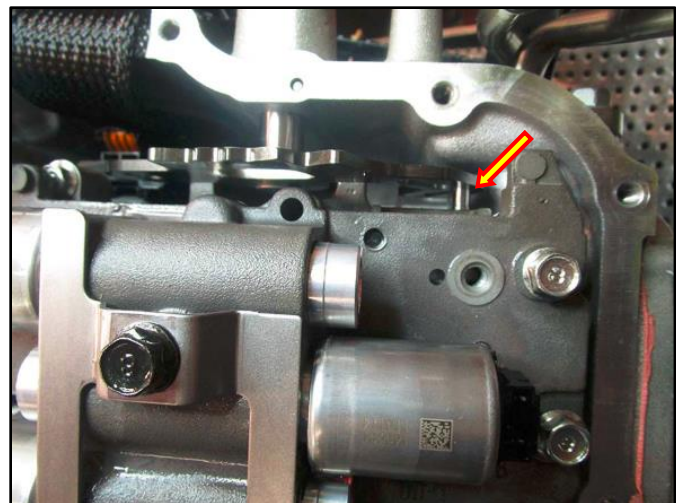
- Use a magnet to remove the pin for the solenoid to be replaced.
- Remove the solenoid and install a new solenoid.
- Reinstall the pin.
- Reinstall the support and tighten to specification.

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



17. For SSA, TC and PC solenoids:

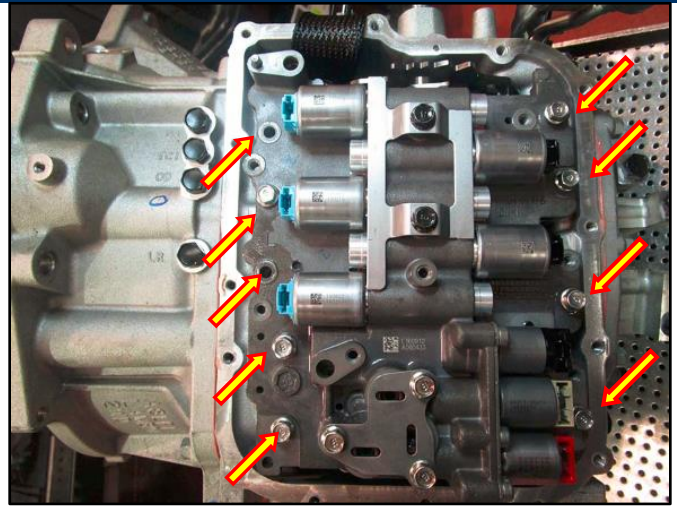
- Use a 5mm hex socket and remove 3 Allen bolts that secure the solenoid support. Remove the support.
- Remove the solenoid and install a new solenoid.
- Reinstall the support and tighten the Allen bolts.

**18. Confirm two O-rings are installed correctly in the case.****19. Align the manual shaft to the shift lever and install the valve body.**

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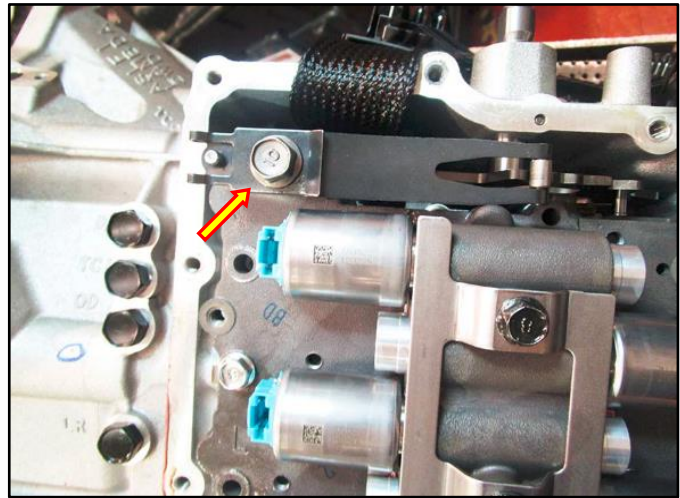
20. Install the valve body bolts and torque the bolts in order from the innermost bolts to the outermost bolts.

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



21. Reinstall the bolt that secures the detent spring and tighten the bolt to specification.

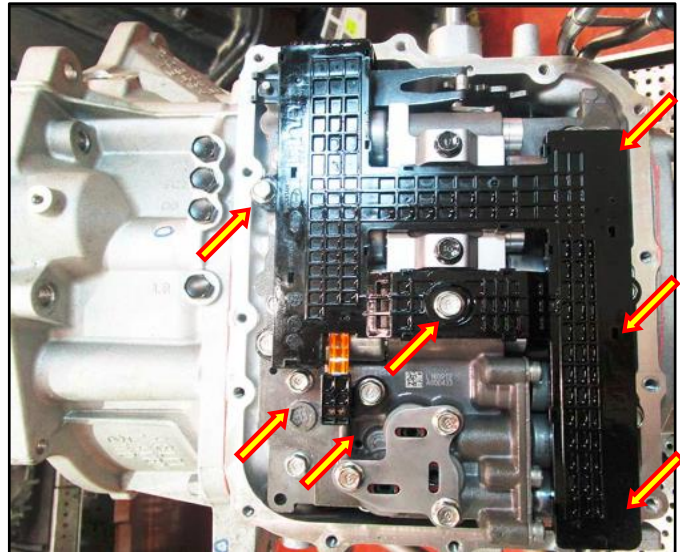
Torque: 8~11 lb.ft (1.2~1.5 kgf.m/10~13 N.m)



22. Reconnect the harness to the solenoids and install the temperature sensor.

Install 6 bolts to the harness and 1 bolt to the oil temperature sensor and torque to specification.

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



23. Install a new gasket, P/N 45283-4G*** to the oil pan and reinstall the pan.

Install 14 bolts to the pan and tighten the bolts to specification.

Torque: 8~10 lb.ft (1.2~1.4 kgf.m/12~13 N.m)



24. Reinstall the lower radiator hose. Add ethylene glycol engine coolant to the radiator and check the level according to the appropriate shop manual, "Engine" Section.

25. Reconnect the battery.

Input the radio stations recorded in Step 5.

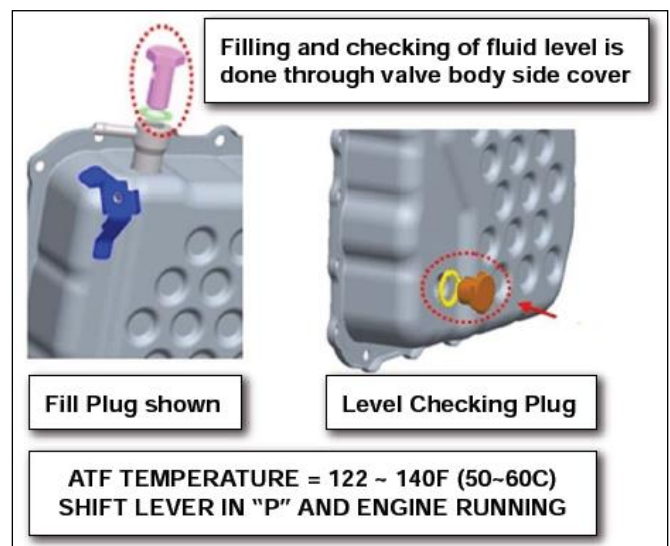
26. Remove the transaxle fill plug.

Use a funnel to add approximately 5~6 quarts of SP4-M ATF through the fill plug opening. Reinstall the fill plug.

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

Start the engine and shift to Park. When the ATF is 122°F~140°F (50~60°C), remove the level checking plug. The level is correct when oil flows out of the level checking plug in a thin steady stream.

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



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27. Clear the DTC and test drive the vehicle for two key-on/key-off driving cycles, including 1-2-3-4-5-6-7-8 upshifts and 8-7-6-5-4-3-2-1 downshifts.

If the DTC returns, perform the following repairs.

DTC	REPAIR PROCEDURE
P074100	Replace the transmission
P074300	Replace the control wiring harness between the PCM or TCU and transmission. • If the solenoid DTC does not return, return the vehicle to the customer. • If the solenoid DTC returns again, replace the PCM or TCU. NOTE: All listed vehicles have a PCM (integrated ECU/TCU) except Palisade (LX2) and Sonata (DN8a 1.6T) with separate ECU and TCU.
P074800	
P075300	
P075800	
P076300	
P076800	
P077300	
P270900	

Solenoid Oil Pressure Data Characteristics Input:

NOTICE

This procedure is necessary only for the following solenoids: UD, 37R, OD&LR, 28 and 46.

28. Select **S/W Management, Automatic Transaxle and Oil Pressure Characteristics Input (Solenoid valve Replacement)**. Select **OK** and follow the prompts.

Select the type of solenoid from the drop-down menu. Select **OK**.

Oil-pressure Characteristics Input (Solenoid Valve Replacement)

[Oil Pressure Characteristics Input (Solenoid Valve Replacement)]

The process for oil pressure characteristics input is proceeded.

After selecting the replaced solenoid valve correctly, please Click [OK] button.

Solenoid valve selection :

28 Brake control solenoid valve

29. Input the 8-digit code recorded in Step 14 in the blank spaces in the GDS. Select **OK**.

Input the 8 digit code again and select **OK**.

The GDS will confirm the procedure was completed.

NOTE: If the 8-digit code on the solenoid does not contain contain letters A~F and 0~9, do not enter any pressure data. Follow TSB 16-AT-001-2 and reset the ATM adaptive values

Oil-pressure Characteristics Input (A/T replacement)

Please enter the serial number and the oil-pressure characteristics of the barcode sticker attached on the new transmission in the order in the space below.

7777 7777
8899 9889 7788 8778
7777 8777 746F FBFF
9766 5FFF 15EE
SDJXAA587677

4G
G1

30. Drive the vehicle for two key cycles to confirm the transmission shifts correctly and no DTC are set.