 <b>HYUNDAI</b> <b>Technical Service Bulletin</b>	<b>GROUP</b> <b>AUTOMATIC TRANSMISSION</b>	<b>NUMBER</b> <b>20-AT-011H</b>
	<b>DATE</b> <b>MARCH, 2020</b>	<b>MODEL</b> Accent (RB), Azera (TG/HG), Elantra (UD/MD/GD/JK), Santa Fe (CM/AN/NC), Sonata (YF/YF HEV, LF/LF HEV/PHEV), Tucson (LM/TL), Veloster Turbo (FS)
<b>SUBJECT:</b> AUTOMATIC TRANSAXLE INPUT/OUTPUT SPEED SENSOR DTC P0717, P0721 & P0722		

***This TSB supersedes bulletin 16-AT-003 to add additional models.***

**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 repair procedure and replace the related solenoid and oil pressure harness.

**NOTE:** The 6-speed vehicles listed below are equipped with a Generation1 valve body with 8 solenoids. Newer 6-speed transmissions have a Generation2 valve body with 7 solenoids (Refer to TSB 20-AT-012H).

**Applicable Vehicles:**

2012~17	Accent (RB)
2011	Azera (TG)
2012~17	Azera (HG)
2011~16	Elantra (MD/UD)
2013~17	Elantra GT (GD)
2013~14	Elantra Coupe (JK)
2010~12	Santa Fe (CM)
2013~18	Santa Fe Sport (AN) 2.0L
2013~16	Santa Fe Sport (AN) 2.4L
2013~19	Santa Fe (NC)
2011~14	Sonata (YF)
2015~19	Sonata (LF) (2.0L/2.4L)
2011~15	Sonata Hybrid (YF HEV)
2016~19	Sonata Hybrid (LF HEV)/Plug-in Hybrid (LF PHEV)
2010~15	Tucson (LM) 2.4L
2011~15	Tucson (LM) 2.0L
2016~	Tucson (TL) 2.0L
2013~15	Veloster (FS) 1.6T

**DTC LIST:**

DTC	DESCRIPTION	SENSOR PNC	HARNESS PNC
P0717	Input/Turbine Speed Sensor 'A' Circuit No Signal	46210A	46307
P0721	Output Speed Sensor Circuit Range/Performance		
P0722	Output Speed Sensor Circuit No Signal		

Circulate To: Service Manager, Warranty Manager, Service Advisors, Technicians, Fleet Repair

**PARTS INFORMATION:**

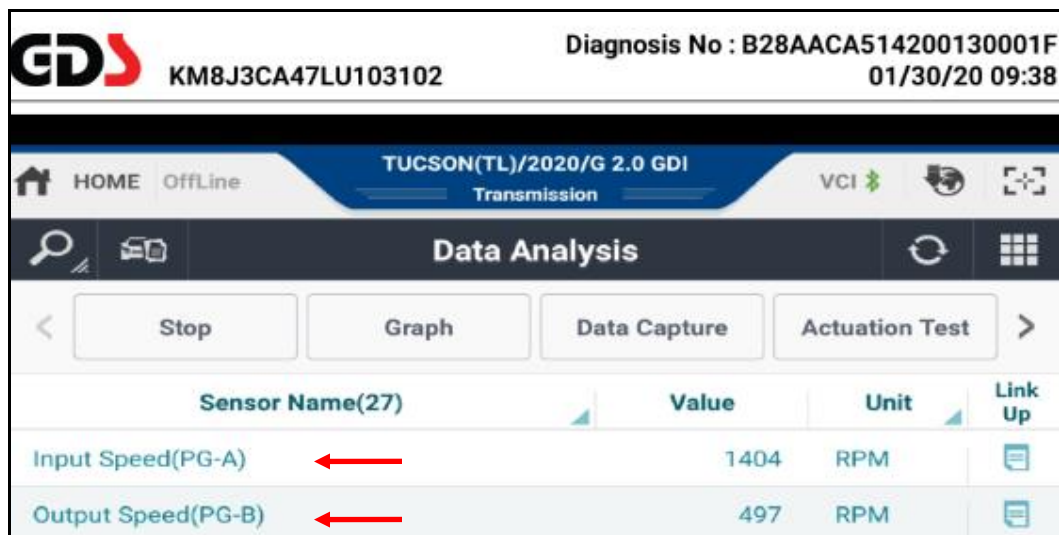
	MODEL	ENGINE	INPUT & OUTPUT SENSOR	HARNESS	OIL PAN GASKET
2012~17	Accent (RB)	1.6L	42620-26***	46307-3B***	45282-26***
2011	Azera (TG)	3.3L/3.8L	42620-3B***	46307-3B***	45283-3B***
2012~17	Azera (HG)	3.3L	42620-3B***	46307-3B***	45283-3B***
2011~16	Elantra (MD/UD)	1.8L	42620-26***	46307-3B***	45282-26***
2013	Elantra Coupe (JK)	1.8L	42620-26***	46307-3B***	45282-26***
2014	Elantra Coupe (JK)	2.0L			
2013	Elantra GT (GD)	1.8L	42620-26***	46307-3B***	45282-26***
2014~17	Elantra GT (GD)	2.0L			
2010~12	Santa Fe (CM)	2.4L	42620-3B6**	46307-3B***	45282-3B***
2010~12	Santa Fe (CM)	3.5L	42620-3B***	46307-3B***	45283-3B***
2013~18	Santa Fe Sport (AN)	2.0L	42620-3B**	46307-3B***	45283-3B***
2013~16	Santa Fe Sport (AN)	2.4L	42620-3B***	46307-3B***	45283-3B***
2013~19	Santa Fe (NC)	3.3L	42620-3B***	46307-3B***	45283-3B***
2011~14	Sonata Turbo (YF)	2.0L	42620-3B***	46307-3B***	45283-3B***
2011~14	Sonata (YF)	2.4L	42620-3B6**	46307-3B***	45283-3B***
2011~15	Sonata Hybrid (YF HEV)	2.4L	42620-3B***	46307-3B***	45283-3D***
2015~19	Sonata Turbo (LF)	2.0L	42620-3B***	46307-3B***	45283-3B***
2015~19	Sonata (LF)	2.4L	42620-3B***	46307-3B***	45283-3B***
2016~19	Sonata Hybrid (LF HEV)	2.0L	42620-3B***	46307-3B***	45283-3D***
2016~19	Sonata Plug-in (LF PHEV)	2.0L	42620-3B***	46307-3B***	45283-3D***
2011~15	Tucson (LM)	2.0L	42620-3B6**	46307-3B***	45283-3B***
2010~15	Tucson (LM)	2.4L	42620-3B6**	46307-3B***	45283-3B***
2016~	Tucson (TL) 2WD	2.0L	42620-26***	46307-3B***	45282-26***
2016~	Tucson (TL) 4WD	2.0L	42620-3B***	46307-3B***	45283-3B***
2013~15	Veloster Turbo (FS)	1.6L	42620-3B***	46307-3B***	45283-3B***

**WARRANTY INFORMATION:**

Model		OP Code	Operat-ion	OP Time	Causal Part	Nature Code	Cause Code
2012~17	Accent (RB)	45644R00	Replace input & output speed sensor	Refer to WEBLTS for current LTS time	Refer to Parts Information table on Page 2	I3A	ZZ3
2011	Azera (TG)						
2012~17	Azera (HG)						
2011~16	Elantra (MD/UD)						
2013~17	Elantra GT (GD)						
2013~14	Elantra Coupe (JK)						
2010~12	Santa Fe (CM)						
2013~18	Santa Fe Sport (AN) 2.0L						
2013~16	Santa Fe Sport (AN) 2.4L						
2013~19	Santa Fe (NC)						
2011~14	Sonata (YF)						
2015~19	Sonata (LF)						
2011~15	Sonata Hybrid (YF HEV)						
2016~19	Sonata Hybrid (LF HEV)						
2016~19	Sonata Plug-in (LF PHEV)						
2011~15	Tucson (LM) 2.0L						
2010~15	Tucson (LM) 2.4L						
2016~	Tucson (TL) 2.0L						
2013~15	Veloster (FS) 1.6T						
All							

**SERVICE PROCEDURE:**

1. Attach a GDS, check for DTC in the “Automatic Transaxle” menu. **Record the DTC and description.** Delete the DTC.
2. From the GDS, select **A/T** menu and **Data Analysis** and the following parameters. Drive the vehicle and monitor the sensors.
  - **Input speed**
  - **Output speed (PG-B)**

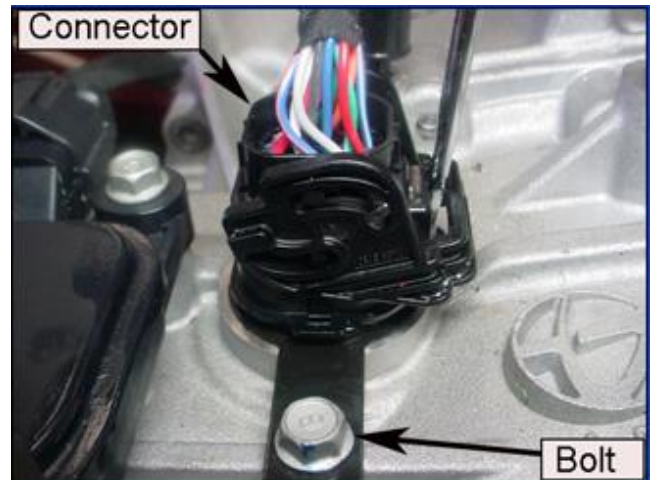


3. If the sensors show:
  - Continuous and changing output with changes in vehicle speed, the wiring **currently** has no open/short circuits. Go to Step 5.
  - No continuous and changing output, go to Step 4.
4. Visually check the wiring harness between the PCM and transmission for a damaged wire or short circuit to ground. 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, go to Step 5.
5. Refer to the DTC recorded in Step 1 and follow the repair procedure shown below:

DTC	REPAIR PROCEDURE
P0717-Input/Turbine Speed Sensor 'A' Circuit	Go to Step 6 and replace the input/output speed sensor <u>and</u> valve body harness.
P0721-Output Speed Sensor Circuit Range/Performance	
P0722-Output Speed Sensor Circuit No Signal	

6. Record the preset radio stations.  
Remove the battery and battery tray.
7. Remove the undercover below the transmission.
8. Drain the radiator and remove the lower radiator hose from the radiator.  
Drain the ATF.
9. Use a screwdriver to release the tab and remove the solenoid connector on top of the case.

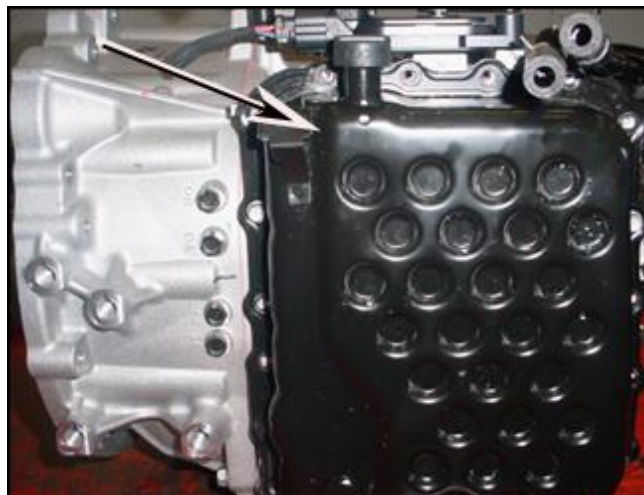
Remove the bolt that secures the connector and push the connector into the transmission.



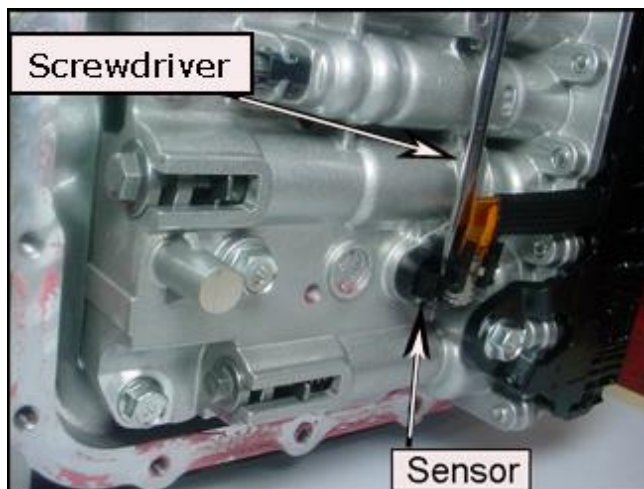
10. Remove the oil pan bolts and remove the pan.

**CAUTION**

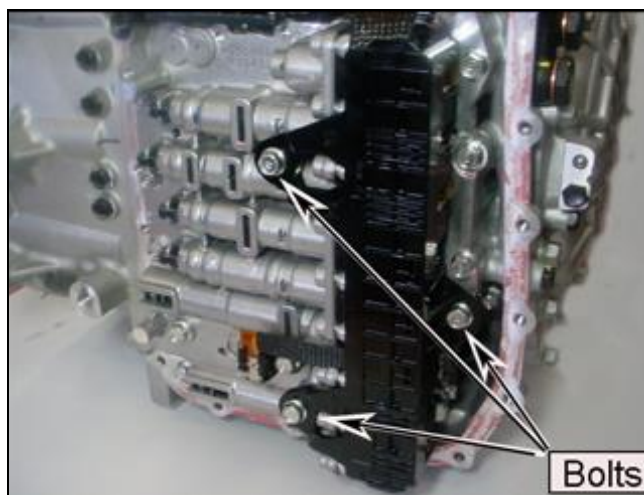
Use a rubber hammer to tap the oil pan cover on a corner until the cover is loose.



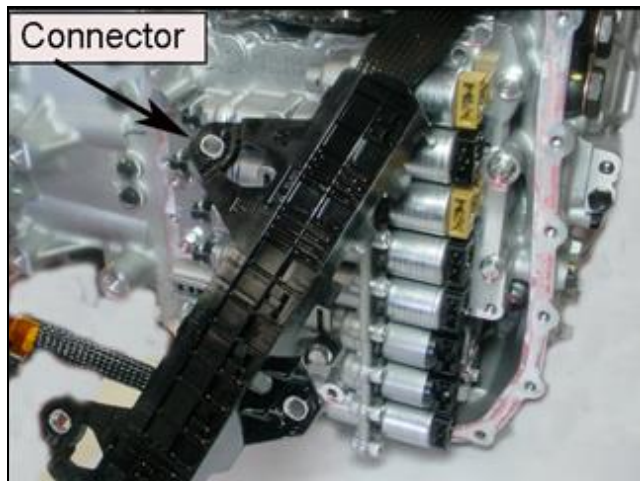
11. Use a small screwdriver to pry the connector from the oil temperature sensor (except for vehicles with integrated temperature sensor and harness).



12. Remove three bolts to the solenoid valve connector.

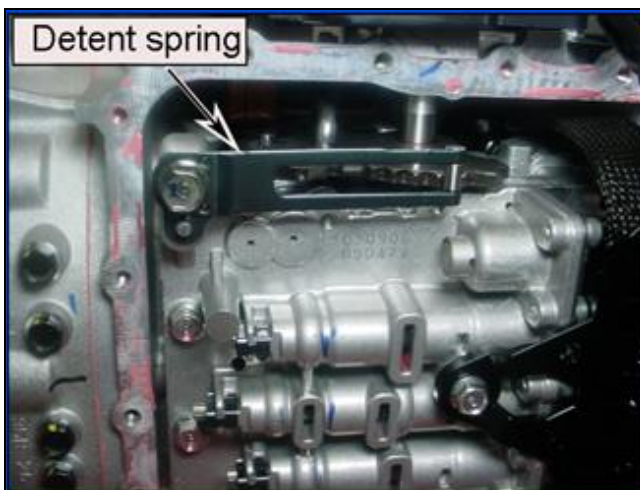


13. Pull the solenoid connector outward and move the connector out of position.

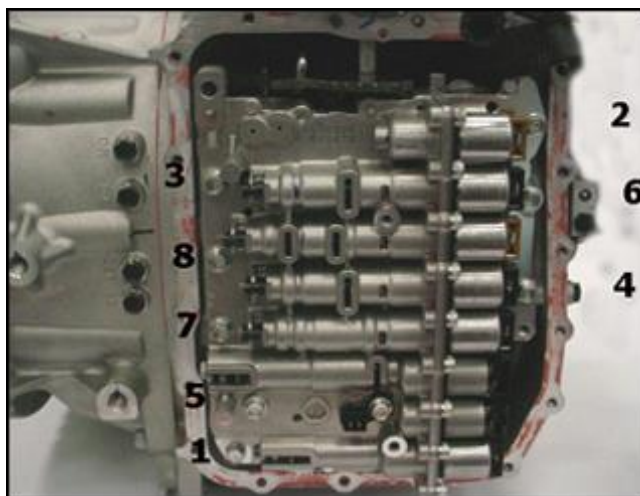


14. Remove the bolt that secures the detent spring and remove the spring.

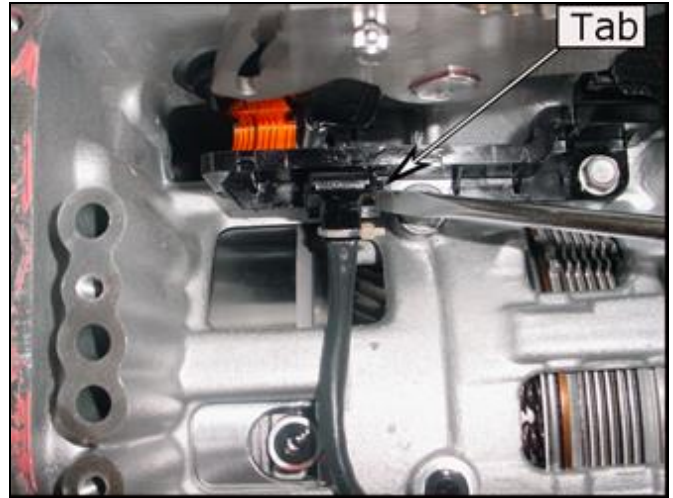
Torque: 8~11 lb.ft (1.2~1.6 kgf.m)



15. Remove 8 bolts in the order shown and remove the valve body.



16. Use a screwdriver to depress the locking tab and pull outward on the connector to the input and output speed sensor.



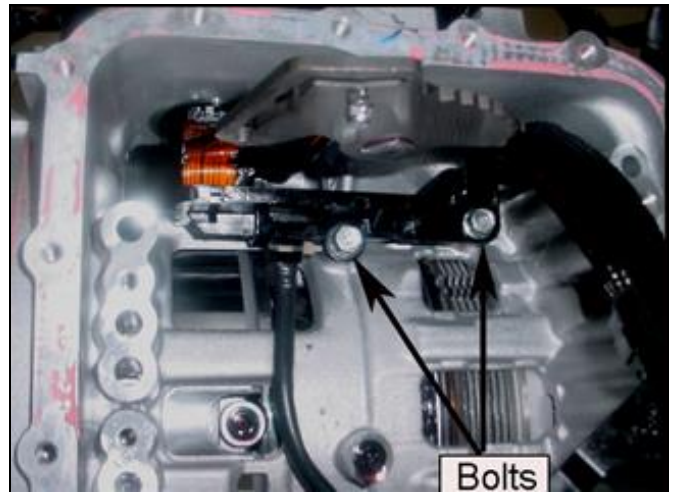
17. Remove two bolts that secure the valve body harness to the case.

Pull the connector downward out of the case.

Install a new harness and insert the connector into the case. Attach the retainer and bolt on top of the case as shown in Step 9.

Install the bolts that secure the harness.

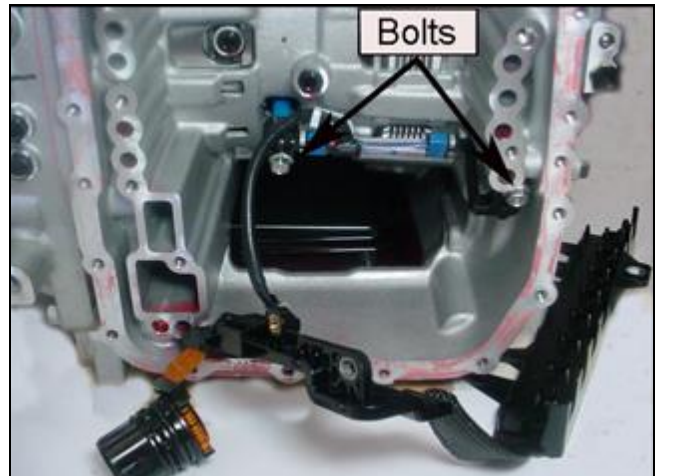
Torque: 6~7 lb.ft (0.9~1.0 kgf.m)



18. Remove two bolts that secure the input and output speed sensor and remove the sensor.

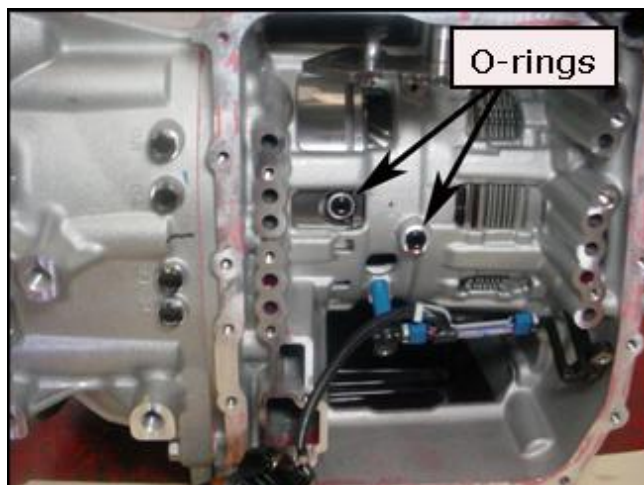
Install a new input/output speed sensor in the reverse order of assembly and tighten the bolts to specification.

Torque: 6~7 lb.ft (0.9~1.0 kgf.m)



19. Confirm the O-rings are installed correctly in the case.

Reconnect the input and output speed sensor connector to the harness.

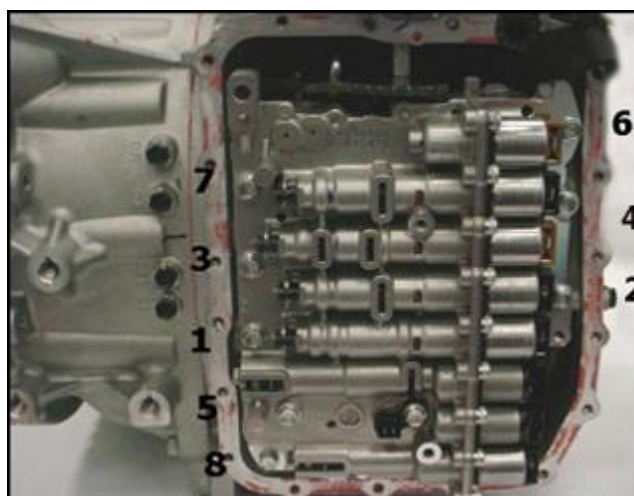


20. Align the manual valve to the shift lever and install the valve body.



21. Install the valve body bolts and torque the bolts to specification in the order shown.

Torque: 6~7 lb.ft (0.9~1.0 kgf.m)

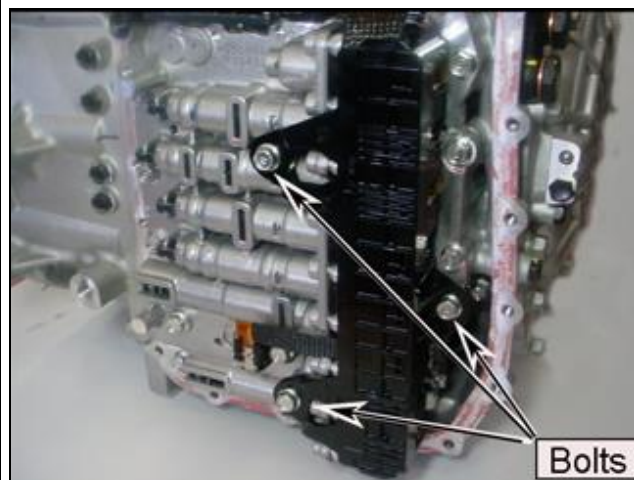




22. Reconnect the solenoid harness to the solenoids and oil temperature sensor.

Install the bolts to the solenoid harness connector and torque to specification.

Torque: 6~7 lb.ft (0.9~1.0 kgf.m)



23. **PLASTIC OIL PAN (If equipped):**  
Install a new gasket to the oil pan, reinstall the pan and tighten the bolts to specification.

Torque: 6~7 lb.ft (0.9~1.0 kgf.m/8~9 N.m)

See part number list on Page 2.



24. **STEEL OIL PAN (If equipped):**  
Use RTV Silicon Gray, P/N 00232-19061 and a small caulking gun, P/N 00232-19064, or equivalent and apply sealant to the oil pan.

Reinstall the pan.

Torque: 9~11 lb.ft (1.3~1.5 kgf.m/12~15 N.m)



25. Add ethylene glycol engine coolant to the radiator and check the level.

26. Reconnect the battery.  
Input the radio stations recorded in Step 6.

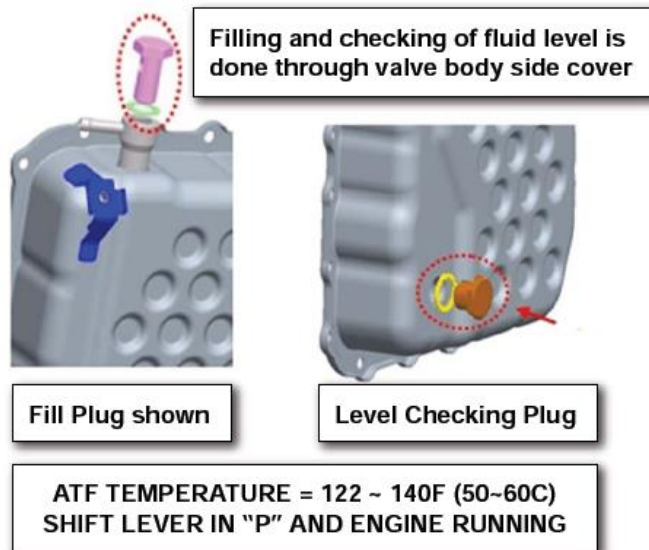
27. Remove the transaxle fill plug.

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 to the DLC and select Vehicle, **A/T** menu, **Data Analysis** 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.



28. Clear the codes and test drive the vehicle for two drive cycles (two key-on to key-off driving cycles). If the DTC returns, perform the following repairs:

DTC	REPAIR PROCEDURE
P0717-Input/Turbine Speed Sensor 'A' Circuit No Signal	1. Repair or replace the control harness between the PCM and the transmission.  2. Test drive the vehicle for two drive cycles. If the DTC returns again, replace the PCM.
P0721-Output Speed Sensor Circuit Range/Performance	
P0722-Output Speed Sensor Circuit No Signal	

29. Clear the DTC in the BlueLink system per instructions of TSB 19-BE-010H if applicable.

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