



HYUNDAI

Technical Service Bulletin

GROUP AUTOMATIC TRANSMISSION	NUMBER 17-HC-003-1
DATE OCTOBER, 2017	MODEL SONATA HYBRID (YF HEV/LF HEV)

SUBJECT:	AUTOMATIC TRANSAXLE INHIBITOR SWITCH
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This TSB supersedes TSB 17-HC-003 to add hybrid cautionary steps.

Description: If you are servicing a Sonata Hybrid with any of the warning messages or comments listed below, follow the Service Procedure to diagnose the condition.

- Hybrid Warning Message was illuminated
- Dash displayed a message: “Check Hybrid System, Turn off engine”
- Diagnostic Trouble Code P0705 – Transmission range sensor circuit

Applicable Vehicles:

2011~15	Sonata Hybrid (YF HEV)
2016~	Sonata Hybrid (LF HEV)

PARTS INFORMATION:

MODEL	PART NAME	PNC CODE	PART NUMBER
2011~15 Sonata HEV (YF HEV)	Inhibitor switch	42700E	42700-3B***
2016~ Sonata Hybrid (LF HEV)			

WARRANTY INFORMATION:

MODEL	OP CODE	OPERATION	OP TIME	CAUSAL PART	NATURE CODE	CAUSE CODE
2011~15 Sonata Hybrid (YF HEV)	42700R00	Replace inhibitor switch	Refer to WEBLTS for current LTS time	See Parts Catalog	I3A	ZZ3
2016~ Sonata Hybrid (LF HEV)						
All	42700RQ0	GDS				

SERVICE PROCEDURE:

1. Turn the ignition key to the ON position or push the Start/Stop Button two times without depressing the brake pedal.
2. Attach a GDS and check for DTC in the “Automatic Transaxle” menu. **Record the DTC and description.** Delete the DTC.

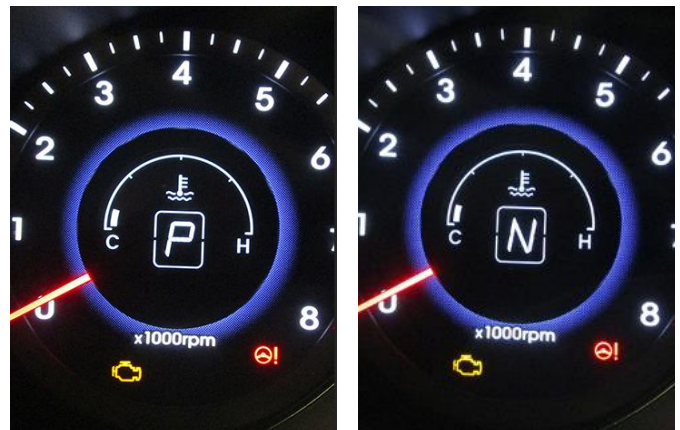
3. Move the shift lever through all gears (P, R, N and D) and monitor the **Shift Lever Switch**.
 - **Data Analysis, A/T menu and Shift Lever Switch.**

The screenshot shows the GDS Data Analysis interface. At the top, the vehicle ID is 5XYZWDLA8FG232947 and the date/time is 06/09/17 15:06. The interface is titled 'Data Analysis' and includes navigation buttons: Stop, Graph, Selective Display, and Actuation Test. A table displays sensor data:

Sensor Name(27)	Value	Unit	Link Up
Shift Lever Switch	R	-	
Input Speed(PG-A)	0	RPM	
Output Speed(PG-B)	0	RPM	
Current Gear	R	-	
Next Gear Position	0	-	

A red arrow points to the 'Shift Lever Switch' row in the table.

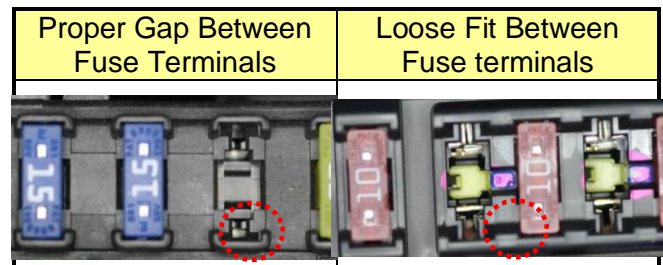
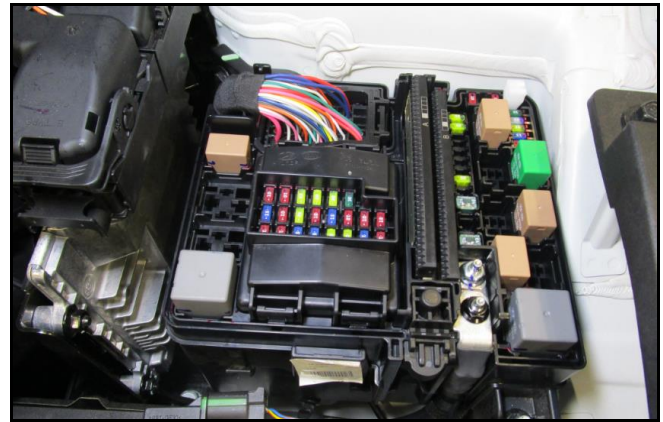
4. If the Shift Lever Switch shows:
 - The correct shift lever position, the wiring **currently** has no open/short circuits. Go to Step 6.
 - Does not show the correct shift lever position, go to Step 5.
5. Visually check the wiring harness between the PCM and inhibitor switch for a damaged wire or open circuit/short circuit to ground. Check for a damaged pin or pin not fully inserted into the connector.
 - If damage is found, repair or replace the control wiring and drive the vehicle to confirm the repair.
 - If no damage or open/short circuit is found, go to Step 6.
6. Turn the ignition switch to the ON position and place the shift lever in P and N. Confirm the indicator lights in the dash cluster show the correct gear in P and N.
 - If P and N are displayed, go to Step 7.
 - If P or N are not displayed, go to Step 20 and check the alignment of the inhibitor switch. If P and N are not displayed after adjustment, go to Step 7.



7. Check the TCU and TCU2 fuse in the junction box in the engine compartment:
- Check the fuse for an open circuit.
 - Check the fuse for correct capacity.
 - Check the fuse holder for a tight fit.
 - Check for loose or damaged wires.

If damage or intermittent open circuit is found, repair or replace the junction box and front harness.

If no damage or intermittent open circuit is found, go to Step 8.



8. Check the rear combination lamp ground for tightness.

Turn the ignition and headlights on. Use a DVOM to check the voltage drop between the combination lamp wiring terminal and ground.

Specification: Less than 0.2 V.

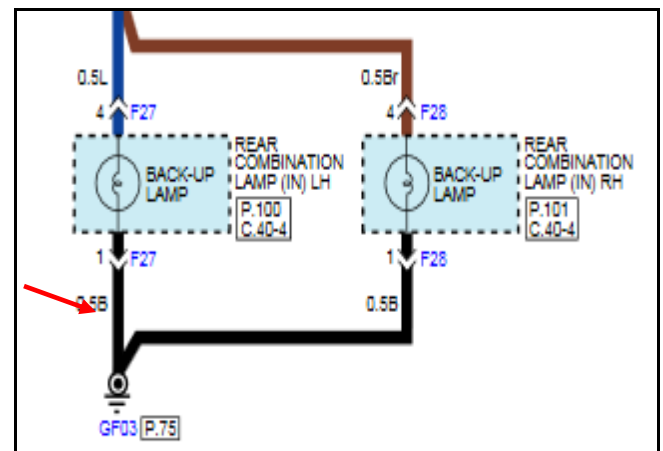
If more than 0.2V, clean the terminal and bolt threads and tighten the bolt.

If less than 0.2V, go to Step 9.

Torque: 7~9 lb-ft (1.0~1.2kgf.m)

9. Apply the parking brake. Move the shift lever to the "N" position.

Turn the ignition switch to the OFF position.



10. Remove the plastic tabs and remove the air duct.

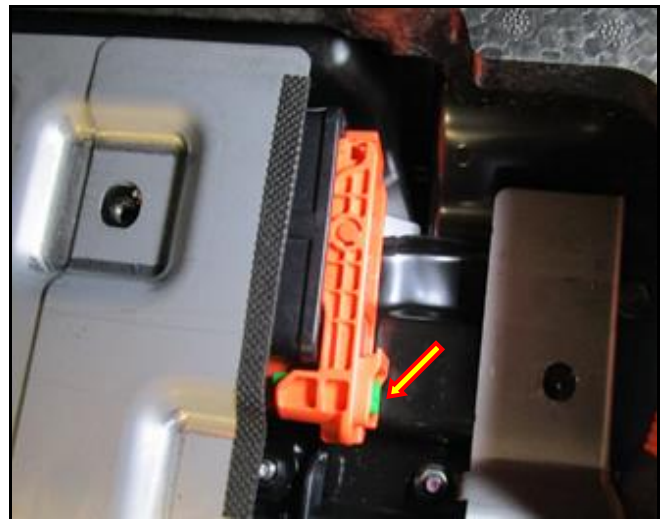


11. Put on insulation gloves.

Open the trunk. Remove the carpet and access the safety plug.

YF HEV: Open the access cover. Pull the latch outward and remove the safety plug.

LF HEV: Remove the access cover. Pull the green tab outward and pull out the safety plug.



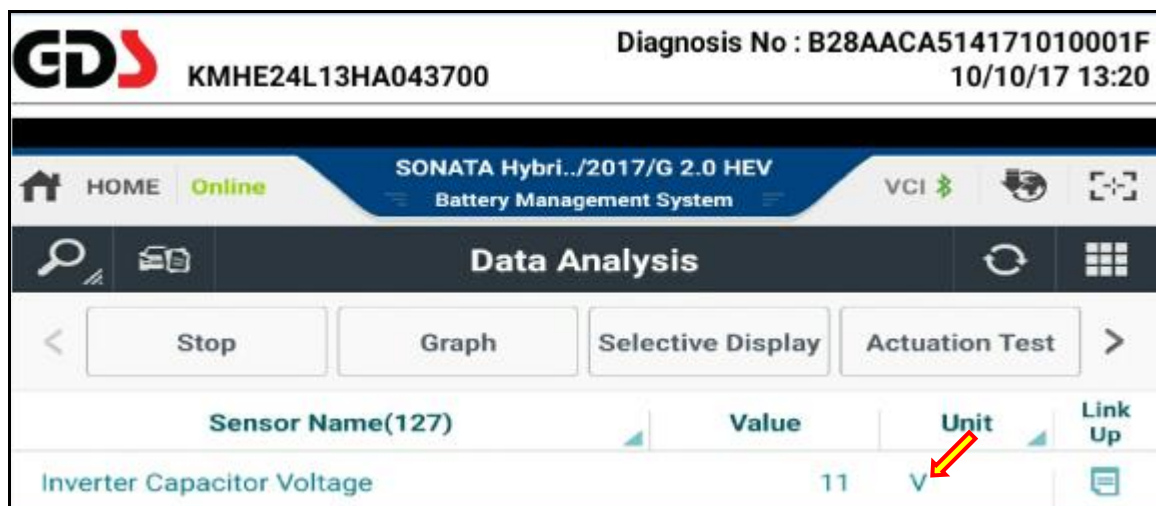
12.

 **CAUTION**

Without depressing the brake pedal, push the Start-Stop button 2 times to power the cluster.

Attach a GDS and select **Data Analysis, BMS** menu and **Inverter Capacitor Voltage**. Confirm the **Inverter Capacitor Voltage** is less than 30V.

- If less than 30V, the system voltage is safe for the technician. Go to Step 13.
- If more than 30V, wait until the voltage is below 30V. Go to Step 13.



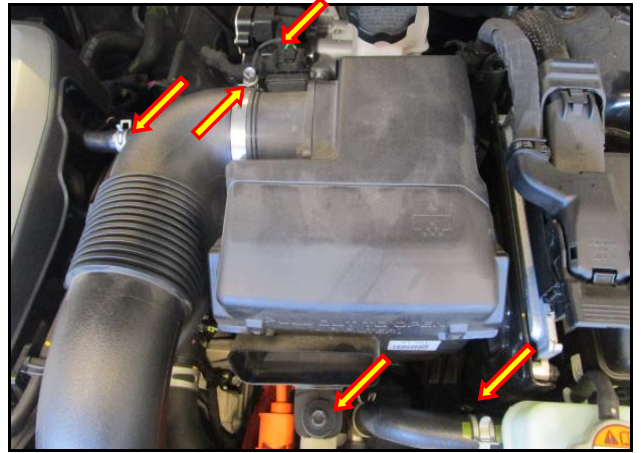
13. Record the preset radio stations and reset after repairs are completed.

Open the trunk and disconnect the negative battery cable.

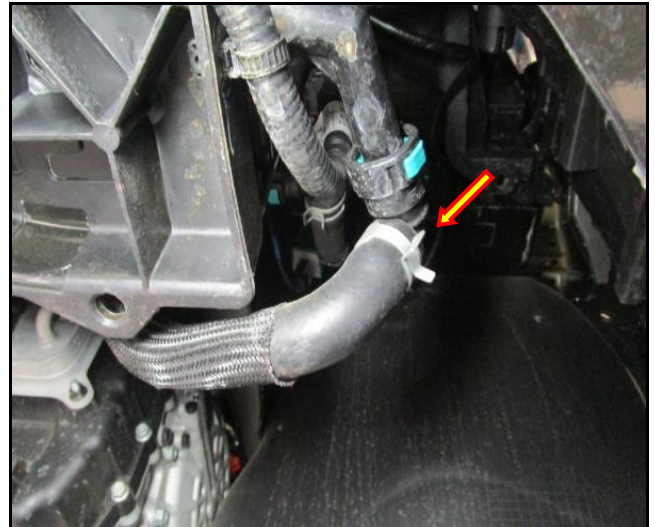
Torque: 7~9 lb-ft (1.0~1



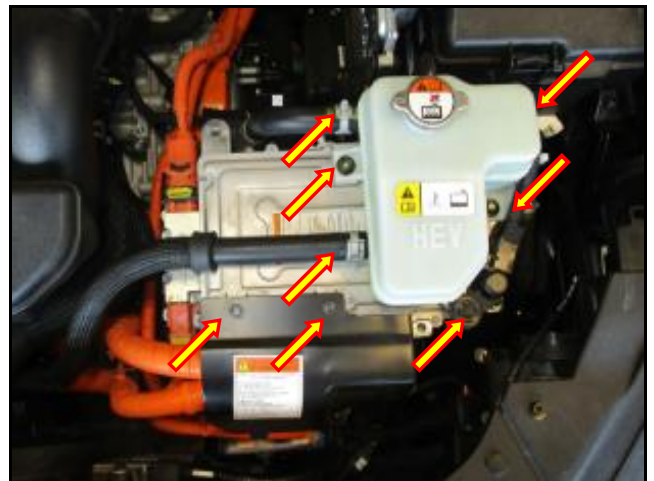
14. Disconnect the breather hose and the air duct.
Disconnect the intake air temperature sensor.
Loosen the clamp on the air duct.
Disconnect two bolts that secure the air cleaner and remove the air cleaner.
Torque: 7~9 lb-ft (1.0~1.2kgf.m, 10~12 N.m)



15. Loosen the cap on the reservoir.
Raise the vehicle on a hoist.
Remove the plastic undercover below the engine and transmission.
Locate the hose under the Hybrid radiator on the driver's side of the vehicle.
Remove the clamp and pull the hose off to drain the coolant from the reservoir.
NOTE: Save the coolant in a clean container.
Reinstall the hose and clamp.
Reinstall the undercover.



16. Remove two bolts to the HPCU protector and remove the cover.
Remove the clamps to the coolant hoses and remove the hoses.
Remove the ground cable.
Remove 2 bolts and 1 nut that secure the reservoir and remove the reservoir.

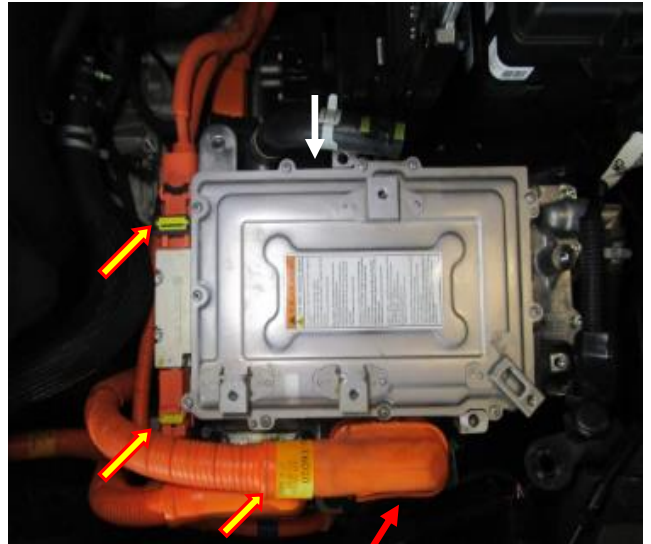


17. Remove the power cables:

- Yellow arrow: Pull out yellow tab, press tab
- Red arrow: Press black tab on latch
- White arrow: Press black tab

Remove 3 bolts and remove the HPCU.

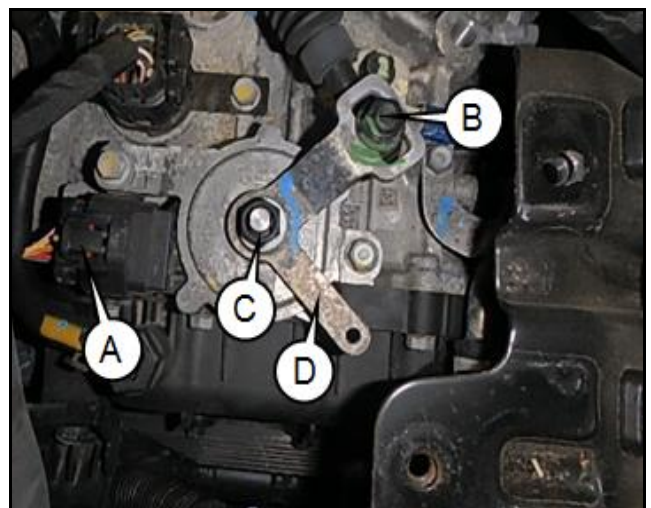
(If necessary, refer to Sonata Hybrid Shop Manual, Hybrid Control System, Hybrid Control System, HPCU, Repair procedure).



18. Disconnect the inhibitor switch connector (A)

Remove the shift cable mounting nut (B).

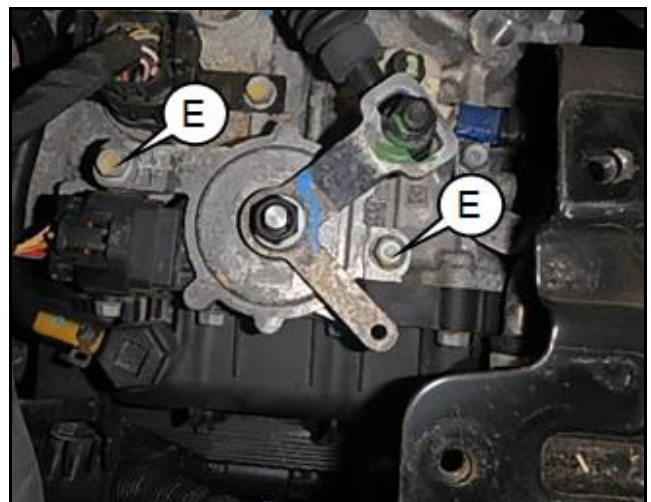
Remove the nut (C) and washer and remove the manual control lever (D).



19. Remove 2 mounting bolts (E) and remove the inhibitor switch assembly.

Install the new inhibitor switch assembly to the transaxle and tighten the mounting bolts.

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

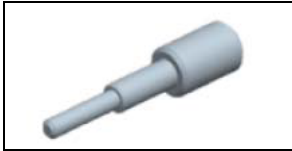


20. Install the manual control lever, washer and nut to the new inhibitor switch and tighten the nut.

Torque: 13~18 lb-ft (1.8~2.5 kgf.m/18~24 N.m)

Insert the **09480-A3800** guide pin or **5mm** bolt in the alignment hole before tightening the nut.

SST 09480-A3800, Inhibitor Switch Guide Pin.

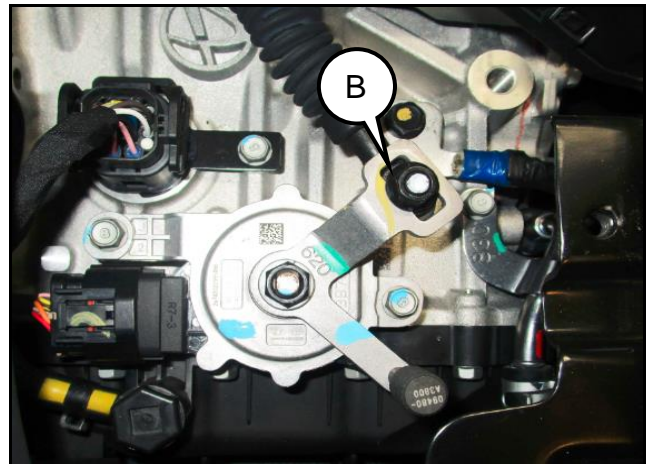


21. Confirm the shift lever is in the **N** position.

Install the shift cable nut and tighten the nut (B) to specification.

Torque: 6~9 lb-ft (0.8 ~ 1.2 kgf.m, 8~12 N.m)

Remove the SST or 5mm bolt from the alignment hole.



22. Install 3 bolts that secure the HPCU.

Torque: 14~22 lb-ft (2~3 kgf.m, 20~29 N.m)

Reconnect the power cables and ground wire.



23. Install 2 bolts and 1 nut that secure the coolant reservoir.

Torque: 3~4 lb-ft (0.4~0.6 kgf.m, 4~6 N.m)

Reinstall the coolant reservoir and hoses.

Refill the coolant and perform air bleeding using GDS. Select **S/W Management, HEV Motor Control System** and **Electric Water Pump Control**.



24. Reinstall all the removed parts in reverse order of removal.
Reset the preset radio stations.
Clear any DTC in all modules.
Clear any DTC in the BlueLink system per instructions of TSB 12-BE-005-2.
25. Move the shift lever through P, R, N and D and confirm the indicator lights on the shift lever and cluster illuminate.
Drive the vehicle to confirm the hybrid system performs correctly.