
 HYUNDAI Technical Service Bulletin	GROUP AUTOMATIC TRANSMISSION	NUMBER 21-AT-009H
	DATE JULY, 2021	MODEL PALISADE (LX2) SANTA FE (TMA) SANTA FE HYBRID (TM HEV) SONATA (DN8/DN8A) SONATA HYBRID (DN8 HEV) TUCSON (NX4/NX4A) TUCSON HYBRID (NX4 HEV)
SUBJECT: AUTOMATIC TRANSAXLE PUSH-BUTTON SHIFTER DIAGNOSIS		

DESCRIPTION: This TSB provides a procedure to diagnose the push button shifter operation.

APPLICABLE MODELS:

2020~ Palisade (LX2) 2021~ Santa Fe (TMA) 2.5L 2020~ Santa Fe Hybrid (TM HEV) 1.6T 2020~ Sonata (DN8/DN8A) 1.6T/2.5L 2020~ Sonata Hybrid (DN8 HEV) 2.0L 2022~ Tucson (NX4/NX4A) 2.5L 2022~ Tucson Hybrid (NX4 HEV) 1.6T	
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PARTS INFORMATION:

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

MODEL	DESCRIPTION	PNC	PART NUMBER
2020~ Palisade (LX2)	SBW Lever	46700	467W0-****
2021~ Santa Fe (TMA) 2.5L	SBW Control Unit (SCU)	42950	42950-****
2021~ Santa Fe Hybrid (TM HEV) 1.6T		or	or
2020~ Sonata (DN8/DN8A) 1.6T/2.5L		42951	42951-****
2020~ Sonata Hybrid (DN8 HEV) 2.0L	SBW Actuator	42910	42910-****
2022~ Tucson (NX4/NX4A) 2.5L	Position sensor	42700	42700-****
2022~ Tucson Hybrid (NX4 HEV) 1.6T			

NOTE: Refer to TSB 21-AT-007H to replace the position sensor or SBW actuator.

WARRANTY INFORMATION:

Model	Op Code	Operation	Op Time	Causal	Nature Code	Cause Code
2020~ Palisade (LX2) 2021~ Santa Fe (TMA) 2.5L 2021~ Santa Fe Hybrid (TM HEV) 1.6T 2020~ Sonata (DN8/DN8A) 1.6T/2.5L 2020~ Sonata Hybrid (DN8 HEV) 2.0L 2022~ Tucson (NX4/NX4A) 2.5L 2022~ Tucson Hybrid (NX4 HEV) 1.6T	42700R00	Position sensor	Refer to WEBLTS for current LTS time	See Parts Information table on Page 1	I3A	ZZ3
	46700R00	SBW lever				
	42910R00	SBW Actuator				
	42950R00	SBW Control Unit				
	39110R00	Engine control unit				
	95440R00	Transmission control unit				
	2021~ Santa Fe Hybrid (TM HEV) 2020~ Sonata Hybrid (DN8 HEV) 2022~ Tucson Hybrid (NX4 HEV)	42700RH1 Additional				
All	42700RQ0	GDS				

NOTE: Normal Warranty Applies

SERVICE PROCEDURE:

1. Attach a GDS and select **Fault Code searching, All** and **OK**. Record the DTC and description. Delete the DTC.
2. If DTC are found:
 - For all models: Refer to the related shop manual, **E-Shifter** or **SBW Control Unit** section for repair guidance.
 - For Palisade (LX2): If the DTC listed below are found, refer to the TSB and update the SCU.

Model	DTC	Description	TSB
Palisade (LX2)	P106D00	Actuator initialization error	21-AT-008H – SCU Update
	P106D71	Actuator motor stuck error	
	U110382	SBW lever alive counter error	

If no DTC are found: Go to Step 3.

3. Start the engine. From the GDS home screen, select **Data Analysis** and **A/T** menu and the parameters shown below. Push the shift buttons to change gears P, R, N and D. If the cluster and the GDS data shows:
 - Correct gear, the TCU received the correct signals from the SBW lever. The SBW lever is currently functioning correctly and the related harness currently does not have an open/short. Go to Step 4.
 - Does not show the correct lever position, the SBW lever or related harness may have a fault. If no damage or loose pins are found with the related harness, replace the SBW lever.

Sensor Name(29)	Value	Unit	Link Up
Current Gear	1	-	
Shift Lever Switch	D	-	

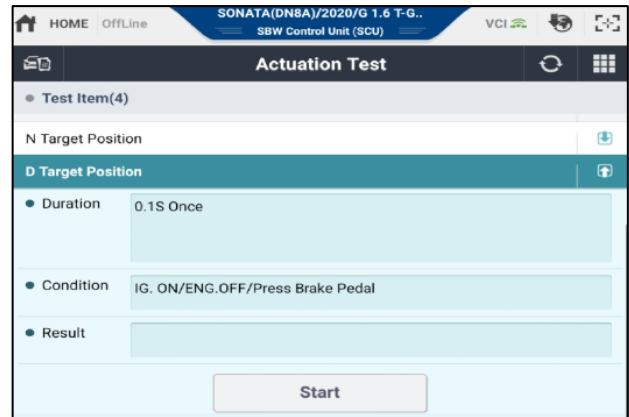
4. Start the engine. From the GDS home screen, select **Data Analysis, SCU** menu and the parameters shown below. Push the shift buttons to change gears. If the GDS data shows:
 - Correct **Target Lever Position** and **Actual Lever Position**: The SCU commanded the SBW actuator to shift to the requested gear. The SBW actuator and position sensors 1 and 2 are functioning correctly and the related harness currently does not have an open/short. Go to Step 5.
 - Does not show the correct **Target Lever Position**: The SCU did not command the SBW actuator to shift to the requested gear. The SCU or related harness may have a fault.
 - Does not show the correct **Actual Lever Position**: The SBW actuator did not select the requested gear. The SBW actuator or related harness may have a fault.

NOTE: The **Motor Feedback Current** should briefly show voltage when a shift button is pressed, indicating the SCU sent 12 volts to the SBW actuator. If no voltage is shown, the SCU or related harness may have a fault.

NOTE: The sum of Position sensor 1 and 2 should be approximately 100%.

Sensor Name(15)	Value	Unit	Link Up
Target Lever Position	D	-	
Actual Lever Position	D	-	
A/T Main Relay Voltage	14.3	V	
Motor Feedback Current	0.0	A	
Non-inhibit sw position sensor 1	80.7	%	
Non-inhibit sw position sensor 2	19.4	%	

5. Turn the engine off and push the SSB 2 times to turn the ignition **ON**. Press the brake pedal. From the GDS home screen, select **Actuation Test** and **SCU** menu. Test the Target position for P, R, N and D. Press the arrow to change the selection. If the GDS and cluster show:
 - Correct **Target Position** for P, R, N and D: The SCU sent 12v to the SBW actuator, the SCU and SBW actuator are currently operating correctly and the related harness currently does not have an open/short circuit. Go to Step 6.
 - Does not show the correct **Target Position** for P, R, N and D: The SCU, SBW actuator or related harness may have a fault.



6. If Steps 3~5 do not show a fault, 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 related harness and drive the vehicle to confirm the repair.
 - If no damage or open/short circuit is found, go to Step 7.
7. If Steps 3~5 did not find any faults and the issue cannot be duplicated, the issue may be intermittent. Contact Techline for advice.

APPENDIX: SBW OPERATION

4 components are required to shift to P, R, N and D.

In addition, the PCM or TCU are required to select the correct transmission solenoids.

