HYUNDAI **Technical Service Bulletin**	GROUP **CAMPAIGN**	NUMBER **22-01-086H**
	DATE **NOVEMBER 2022**	MODEL(S) **NEXO (FE)**

SUBJECT: HYDROGEN STACK PRESSURE SENSOR INSPECT AND REPLACE (CAMPAIGN T9C)

★ IMPORTANT

Dealers must perform this service campaign on all affected vehicles prior to customer retail delivery and whenever an affected vehicle is in the shop for any maintenance or repair.

Access the “Vehicle Information” screen (VIS) via WEBDCS to identify open campaigns.

Description: In certain 2019-2021MY NEXO (FE) vehicles the hydrogen stack pressure sensors may have deformation of the thin plate part due to insufficient oil filling during the manufacturing process, resulting in excessive deviation of the sensor output values and consequent illumination of the MIL (Malfunction Indicator Light). This bulletin outlines the procedures to inspect and if needed, replace the hydrogen stack pressure sensors.

Applicable Vehicles: Certain 2019-2021MY NEXO (FE) vehicles.

STUI

This TSB includes STUI pictures as a requirement. Where indicated, please include the last six digits of the VIN and date of repair on a piece of paper next to the installed sensors. Ensure the VIN and date of repair are clearly visible. Finally, please ensure all captured pictures are completed according to the steps in this TSB and uploaded to STUI. All claims submitted that have illegible, incomplete, missing, or incorrect picture(s) are subject to debit.

NOTICE

- The TSB repair procedure MUST be performed at an authorized Hyundai NEXO fuel cell vehicle dealer and by a Hyundai Expert (or above level) technician who has successfully completed the Fuel Cell Electric Vehicle Training Instructor Led Training course (SVCHFCEVTRAIN222_1097).
- Refer to OSHA standard 1910.137 - Electrical Protective Equipment for PPE inspection and testing requirements and the NEXO shop manual for PPE usage.

Circulate To: General Manager, Service Manager, Parts Manager, Warranty Manager, Service Advisors, Technicians, Body Shop Manager, Fleet Repair

Parts Information:

PART NAME	FIGURE	PART NUMBER	REMARKS
Hydrogen Pressure Sensor		35872-M5100QQH	Two parts per package

Warranty Information:

MODEL	OP CODE	OPERATION	OP TIME	CAUSAL PART	NATURE CODE	CAUSE CODE
NEXO (FE)	20D049R1	HYDROGEN PRESSURE SENSOR INSPECTION	0.3 M/H	35872-M5100QQH	I11	ZZ3
	20D049R0	HYDROGEN PRESSURE SENSOR INSPECTION AND REPLACEMENT	0.7 M/H			

NOTE 1: Submit claim on Campaign Claim Entry Screen

NOTE 2: If a part that is not covered by this campaign needs replacement while performing this campaign, and the affected part is still under warranty, submit a separate claim using the same repair order. If the part is out of warranty, submit a Prior Approval request for goodwill consideration prior to the work.

NOTE 3: 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 requested and not returned.**

NOTE 4: Claim must include STUI pictures that are clearly visible along with a piece of paper displaying the last 6 digits of the VIN and date of the repair. **Claims submitted with illegible, incomplete, missing or incorrect pictures are subject to debit.**

Information

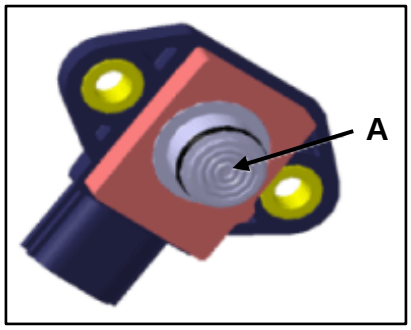
- Confirm your GDS-M has the most recent software version. If not, connect the GDS-M Mobile to an Internet port, open the GDS-M home page and select “Internet Update.” Refer to www.hyundaitechinfo.com if necessary.
- If you encounter GDS-M related problems, call the GIT Helpline at 888-437-0308.

Information

- Perform this procedure outdoors at a designated Hydrogen venting location.

NOTICE

- Damage to the sensor may occur if the metal foil membrane (A) contacts other objects. Do not touch or allow sensor membrane to contact other objects.
- Use extreme care when handling and installing the sensor. Keep protective cap installed until the sensor is ready to install.

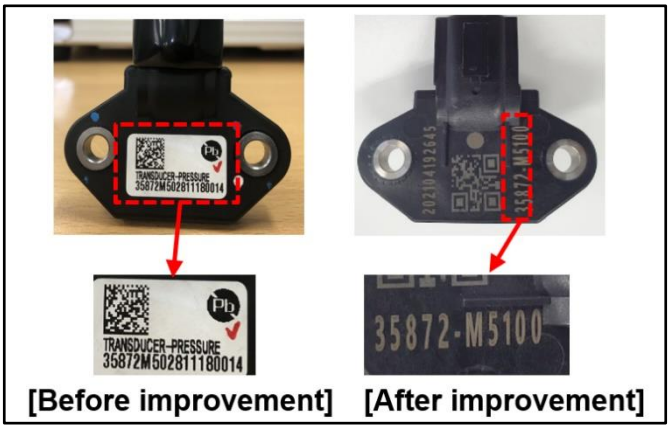


Inspection Procedure

1. Visually inspect the hydrogen pressure sensor.

   If the sensors are labeled same as the **“After Improvement”** image to the right, then submit STUI photo of the sensors; the procedure is complete.

   If the sensors have a white label the same as the **“Before Improvement”** image to the right, then submit STUI photo of sensors and proceed to “Service Procedure” and replace both sensors with the new parts (35872-M5100QQH).



2. Using a letter size sheet of paper, fold it four (4) times lengthwise. Place the VIN and inspection date on the end of the paper.
Insert the folded paper next to the stack pressure sensors with the VIN and date visible when taking the STUI photo.

3. If the sensor is labeled same as the “After Improvement” image (no white label), then submit STUI photo of the sensors and note, the procedure is complete.

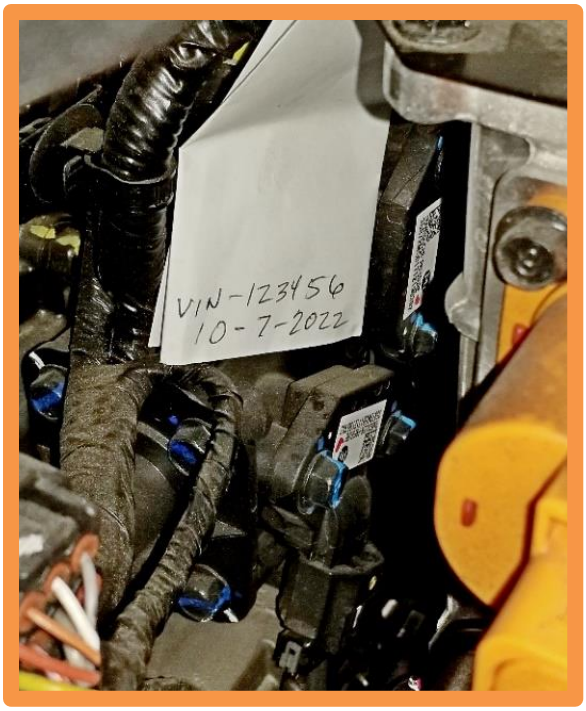
STUI

Using STUI, photograph the stack pressure sensors with the current labels. Include in the photos a piece of paper containing the last 6 digits of the VIN and the date of the repair. Ensure the photo is in focus and captures the stack pressure sensor labels and the note. Upload the photo to STUI.

4. If the sensors have a white label the same as the “Before Improvement” image, then submit a STUI photo of the sensors with note and proceed to “Service Procedure” and replace both sensors with the new parts (35872-M5100QQH).

STUI

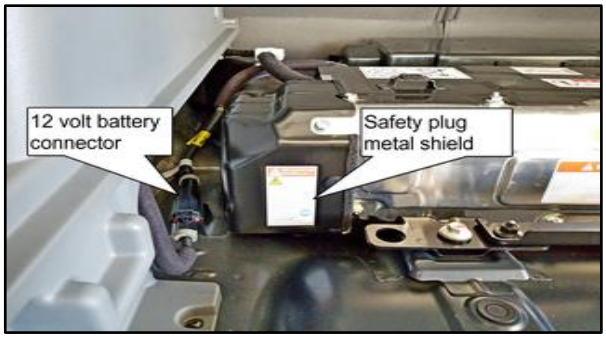
Using STUI, photograph the stack pressure sensors with the white labels. Include in the photos a piece of paper containing the last 6 digits of the VIN and the date of the repair. Ensure the photo is in focus and captures the stack pressure sensor labels and the note. Upload the photo to STUI.



Service Procedure

12-volt and High-Voltage Circuit Disconnection

1. In the rear cargo area, remove the floorboard and cargo tray to access the 12-volt battery connector and high-voltage battery safety plug.



2. Disconnect the 12-volt battery negative (-) connector.

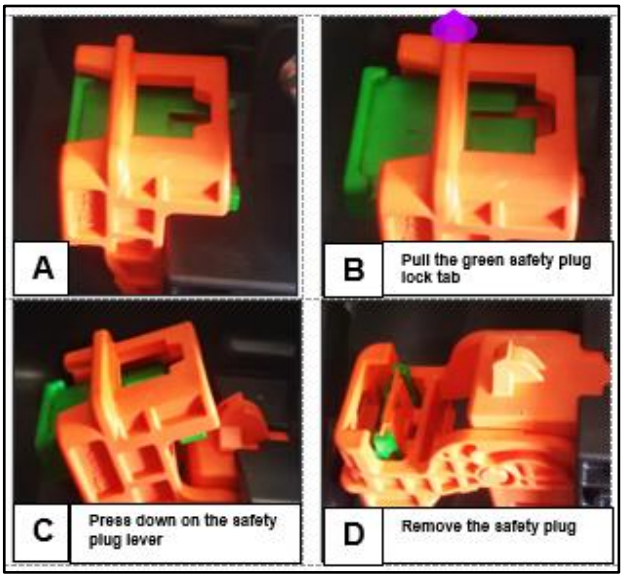
⚠WARNING

- Electrocution hazard - Refer to the shop manual - Battery Control System > High Voltage Battery Handling Guide and follow the High Voltage Shut-off Procedure.
- Before performing the service procedure, ensure proper Personal Protection Equipment (PPE) is worn to prevent injury. Verify PPE is not expired and in proper working condition.

3. Remove the metal shield to access the high voltage safety plug.

4. Follow A-D below to remove the orange high voltage safety plug.

   Store the removed safety plug in a secure location outside and away from the vehicle.



5. Wait 5+ minutes to allow the high voltage system capacitor to discharge.

6. Open the hood. Remove the junction box trim and cover.

   High Voltage Junction Box (HVJB) cover:

   Assembly bolt torque:

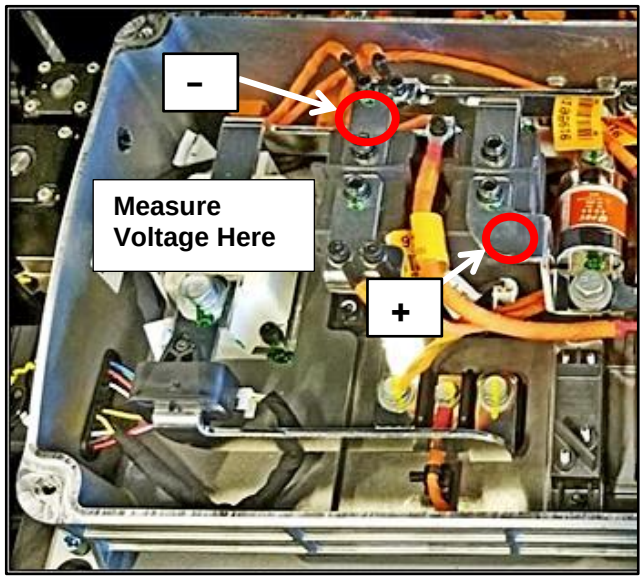
lb-ft	•7.2 - 8.7
kgf.m	•1.0 - 1.2
N.m	•9.8 - 11.8

7. Using a Digital Volt Ohm Meter (DVOM), measure the voltage across the inverter positive and negative bus bar terminals to inspect for capacitor discharge.

   If the measured voltage is below 30V, the High Voltage Circuit is properly shut down.

⚠ DANGER

- Electrocution hazard - The High Voltage Junction Box (HVJB) may be electrically energized up to 450 volts.

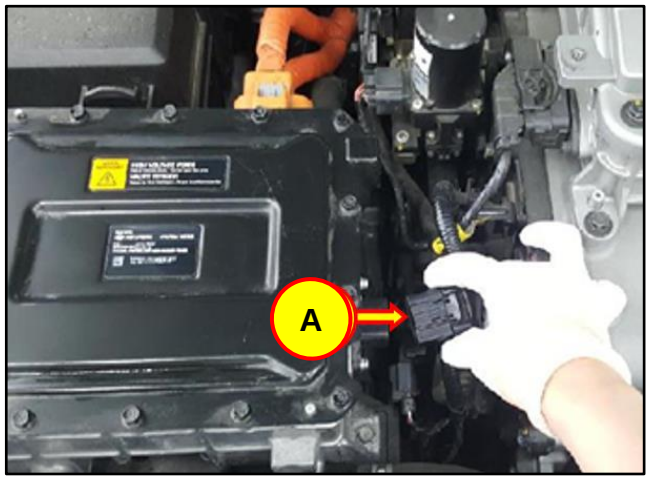


8. Reinstall the HVJB cover.

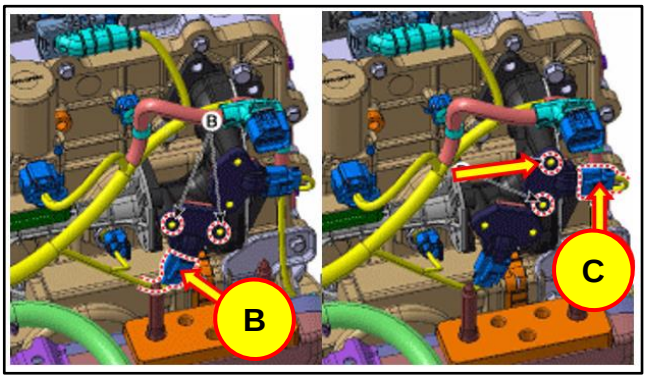
Stack Pressure Sensors Replacement Procedure

1. Use compressed air to blow off any dirt and foreign material around the hydrogen pressure sensors.

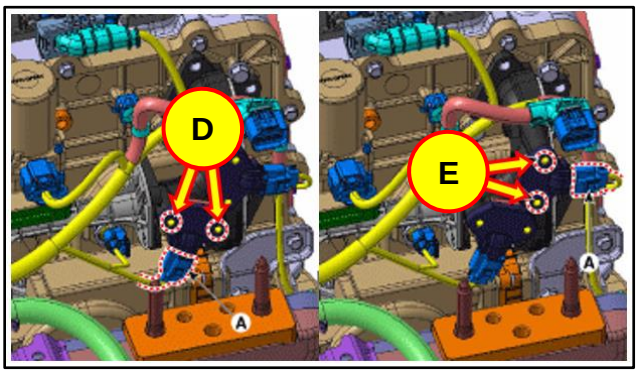
2. Remove the Blower Power Control Unit (BPCU) connector (A).



3. Remove connector (B) from hydrogen pressure sensor #1 and connector (C) from hydrogen pressure sensor #2.



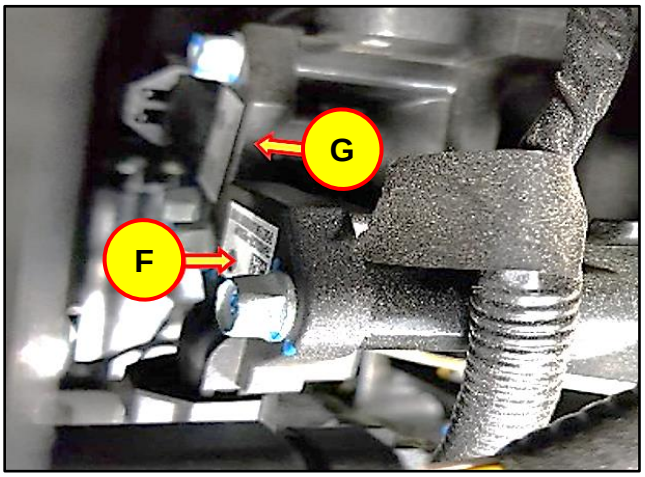
4. Loosen the bolts (D) of hydrogen pressure sensor #1 and bolts (E) of hydrogen pressure sensor #2 using the appropriate wrench or socket.



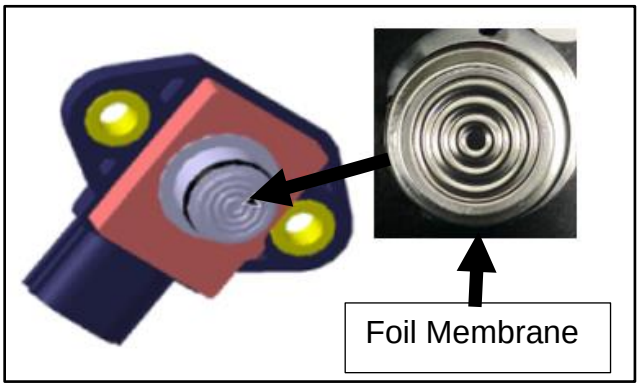
Tightening Torque:

lb-ft	•5.8
kgf.m	•0.8
N.m	•7.8

5. Remove the hydrogen pressure sensor #1 (F) and the hydrogen pressure sensor #2 (G).



6. Visually inspect the foil membrane and O-ring of the new hydrogen pressure sensor. If they are undamaged, then install the sensor.



NOTICE

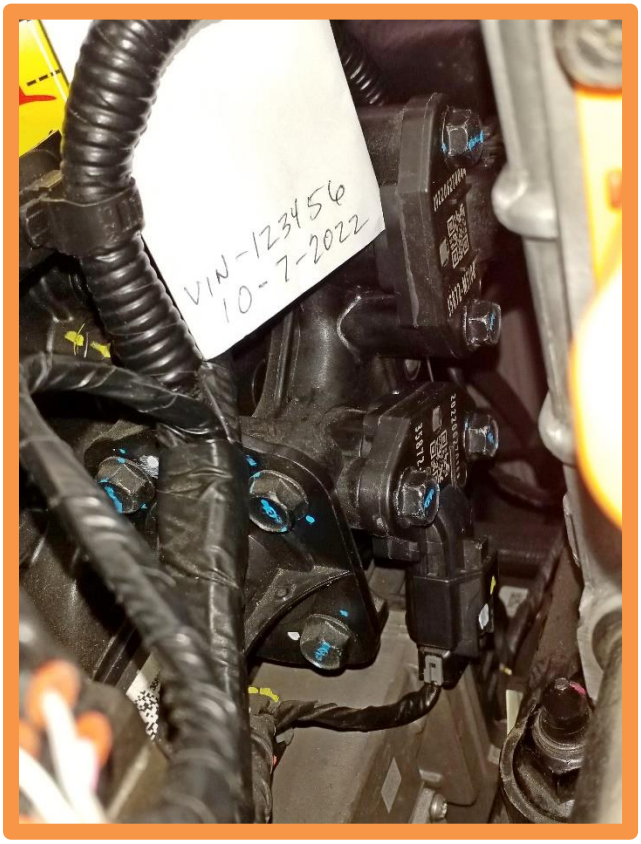
- Damage to the sensor may occur if the metal foil membrane contacts other objects. Do not touch or allow sensor membrane to contact other objects.
- Use extreme care when handling and installing the sensor. Keep protective cap installed until the sensor is ready to install.
- Inspect the hydrogen pressure sensor O-ring. If it is damaged, install another undamaged sensor.

7. Install hydrogen pressure sensor #2, then install hydrogen pressure sensor #1.

8. Take a STUI photo zoomed in on the stack pressure sensors labels with the note. The area is dark. Use additional lighting for photo clarity. Upload photo to STUI.

STUI

Using STUI, photograph the stack pressure sensors with the revised labels. Include in the photos a piece of paper containing the last 6 digits of the VIN and the date of the repair. Ensure the photo is in focus and captures the stack pressure sensor labels and the note. Upload the photo to STUI.



9. Reinstall the HVJB trim and any remaining parts in reverse order of disassembly.

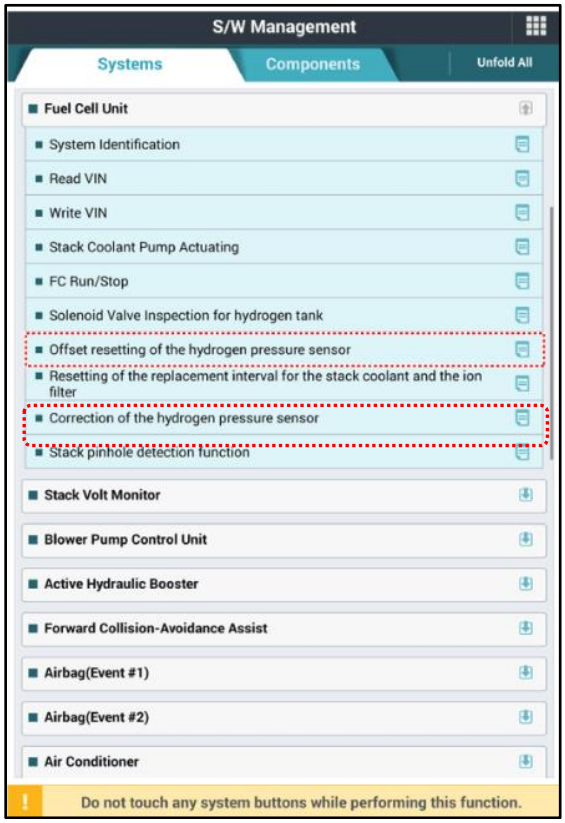
Information

- When installing the connectors, listen for a clicking sound to confirm the connector is properly seated.

10. Using the GDSM, perform the following FCU calibrations for the replaced hydrogen sensors.
    - Offset resetting of the hydrogen pressure sensor.
    - Correction of the hydrogen pressure sensor.

    Refer to the shop manual for the complete procedure.

    FCU recalibration:
    Fuel Cell System > Fuel Processing System > Hydrogen Pressure Sensor1, Hydrogen Pressure Sensor2 > Repair procedures > Offset resetting of the hydrogen pressure sensor > Correction of the hydrogen pressure sensor



11. With the vehicle in READY mode, check for Hydrogen leaks at Hydrogen Pressure Sensor 1 and 2 using a combustible gas detector.
    Refer to the shop manual for the leak check procedure.
    Hydrogen leak test:
    Hydrogen Storage System > Repair procedures > Hydrogen Gas Leak Test

    If a leak(s) is detected, turn off the vehicle and safely repair the leaks.

    If no leaks are detected, then proceed to the next step.

12. Using the Hyundai GDS Mobile scan tool, check all systems for Diagnostic Trouble Codes (DTCs). Record DTCs that are unrelated to this TSB and clear all DTC's.
13. Diagnose and repair any DTCs unrelated to this procedure.
14. The service procedure is complete.