



Technical Service Bulletin

GROUP RECALL	NUMBER 24-01-098H
DATE DECEMBER 2024	MODEL(S) NEXO (FE)

SUBJECT: HYDROGEN TANK TPRD REPLACEMENT (RECALL 269)

★ IMPORTANT

Vehicle repairs related to safety recalls are critically important and must be performed properly in accordance with TSB procedures. Review this bulletin in its entirety prior to beginning any repair work.

As required by federal law, retailers must not deliver new vehicles for sale or for lease to customers until all open recalls have been performed. Dealers must also perform all open recalls on used vehicles, demo, and rental vehicles prior to placing them into customer use and whenever an affected vehicle is in the shop for any maintenance or repair.

Access the "Vehicle Information" screen via WebDCS to identify open recalls.

Description: Certain Nexo (FE) vehicles are equipped with a Thermally-activated Pressure Relief Device (TPRD) that vents hydrogen gas to the atmosphere to prevent over-pressurization of the hydrogen fuel tank in the event of overheating in the local area around the hydrogen fuel tanks. The TPRD is designed to vent gas through a glass bulb-type release mechanism that fractures when a specific operating temperature is reached. The glass bulb-type mechanism in the subject vehicles could prematurely fracture due to microcracks in the glass, which could lead to inadvertent discharge of hydrogen gas during normal vehicle operation. Hydrogen gas leaking in confined areas with the presence of an ignition source may increase the risk of a vehicle fire while parked.

This bulletin outlines the procedure to replace the existing TPRD on all 3 tanks with updated metal molten-type TPRD.

Applicable Vehicles (Certain):

- 2019-2024MY Nexo (FE) produced from 08/10/2018 - 08/25/2023

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 (SVC HFCEVTRAIN222_1097).
- Refer to OSHA standard 1910.137 Electrical Protective Equipment for PPE inspection and testing requirements and the Nexo shop manual for PPE usage.





SUBJECT:

HYDROGEN TANK TPRD REPLACEMENT (RECALL 269)





Parts Information:

Model	Part Name / Part Number	Figure	Remarks
Nexo (FE)	TPRD - KIT 35942-M5020QQH		1 TPRD Kit includes the following: (QTY 1) Middle Pressure Tube Cap (QTY 1) Suction Nozzle (QTY 3) TPRD (QTY 3) TPRD Cap

SST Information:

Tool Name	Figure	Remarks
Torque Wrench & Adapter		- (2 sets supplied to each dealer) - Use the 1/4" drive torque wrench with the included 3/8" drive adapter to close/open the manual valve. (Max torque 4.9 Nm/3.6 lb. ft.)
6 mm Hex Bit Driver		- (Commercially available tool) - Use with above supplied torque wrench and adapter to close/open the manual valve.
23 mm Deep Socket		- (2 supplied to each dealer) - Use with 1/2" torque wrench to install the new TPRD. (Torque to 76.5 Nm/56.4 lb. ft.)
Anti-Static Gloves		(3 sets of 10-pack supplied to each dealer) - Use during handling of High Voltage safety plug and TPRD removal and installation.

Required Equipment/Supplies:

Description	Supply #	Figure	Remarks
Threebond 1211 (Sealant)	21451-33T02QQH		- For sealing TPRD externally after final leak check. (1 tube can be used for about 30 vehicles)
Leakage Test Fluid	Snoop RC		- For visual detection of gas leak.
Hydrogen Gas Detector	SP Secure		- For electronic detection of gas leak - Part of Dealer Nexo SST Kit
Suction Tool & Hose Adapter	09356-M5100 09356-M5101		- Previously supplied for Campaign T9B. - Can be substituted with equivalent commercially available tool.

Warranty Information:

Model	Op. Code	Operation	Op. Time	Sublet	Causal Part	Nature Code	Cause Code
Nexo (FE)	41D244R0	TPRD Replacement	3.8 M/H	\$401.10	35942-M5020QQH	B33	ZZ1

NOTE 1: Submit claim on Claim Entry Screen as “Campaign” type.

NOTE 2: If a part is found in need of replacement while performing this recall 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.

NOTE 3: This TSB includes Repair validation photos. Op times include VIN, Mileage, and Repair validation photos as outlined in the Digital Documentation Policy.

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: Operation code includes allowance of \$250 for transporting the vehicle via flatbed tow truck to/from the fueling station, \$150 fuel to refuel vehicle, and \$1.10 for Threebond Sealant per vehicle.

NOTE 6: Operation code includes straight labor time of 2.0 M/H to supervise the transport of the vehicle to the refueling station, refuel the vehicle, and to supervise the transport of the vehicle back to the dealership to resume final steps.

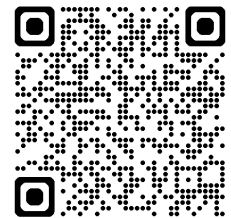
Service Procedure:**STUI**

This TSB includes Repair validation photos. Refer to the latest Warranty Digital Documentation Policy for requirements.

i Information

Refer to the QR code or link below for guided video information:

<https://vimeo.com/1035314080>

**NOTICE**

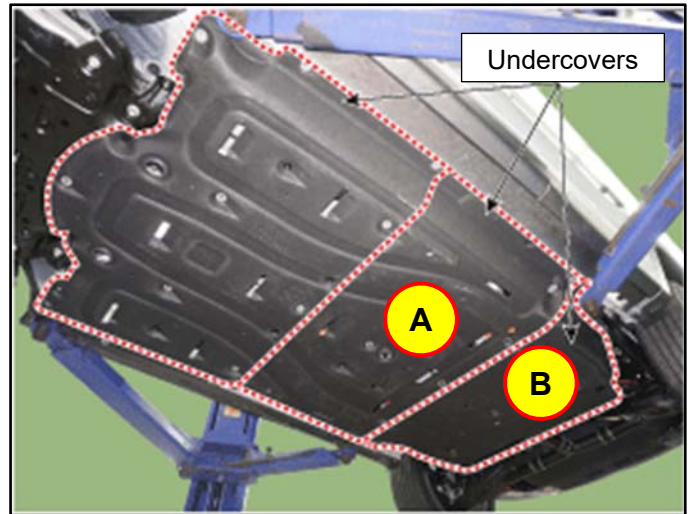
- All 3 hydrogen tanks will require time to be fully vented during the service procedure and this time is dependent on tank level.
- Advise the customer to **NOT** refuel the vehicle more than necessary prior to visiting the dealership.
- Whenever possible, begin the work with the tank capacity at **less than 50%** to minimize the time to fully vent the tanks.



1. Raise vehicle on a hoist and remove the floor rear undercover (A), hydrogen tank front undercover (B), and rear hydrogen tank undercover (C).

Tightening Torque (Undercovers A & B):

lb-ft	5.3
lb-in	64
N.m	7.3



Tightening Torque (Undercover C):

lb-ft	6.4
lb-in	77
N.m	8.7



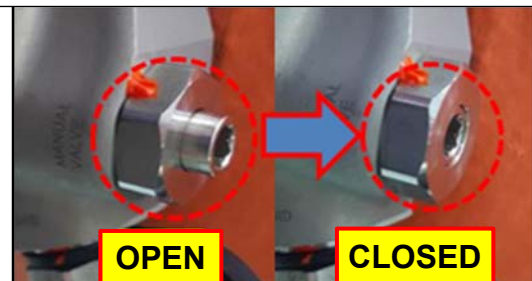
2. Close the manual valves on all 3 hydrogen tanks.
 - Using the torque wrench with the 6 mm hex/allen head socket, turn the manual valve **clockwise** until it stops at the set torque.



TIP: Turn manual valve until flush at set torque to close.

Tightening Torque (Manual Valve):

lb-ft	3.6
lb-in	43
N.m	4.9



NOTICE

Exceeding tightening torque specification when closing may damage the manual valve. **Do NOT over-torque.**

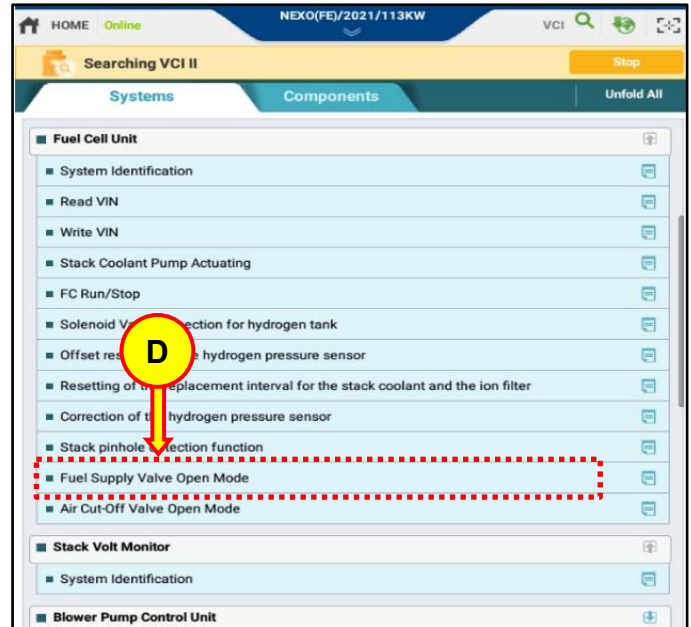


3. Refer to **TSB 23-FL-005H**, section **F. Releasing Residual Fuel Supply Pressure (GDS Procedure)**.

- Connect the GDS to Data Link Connector (DLC) with IGN ON (without pressing the brake pedal).
- Select the following: **Vehicle, Model Year, Engine, System > Vehicle S/W Management > Fuel Cell Unit > Fuel Supply Valve Open Mode (D)**.
- Perform the operation as directed by the GDS to release the residual fuel supply pressure.

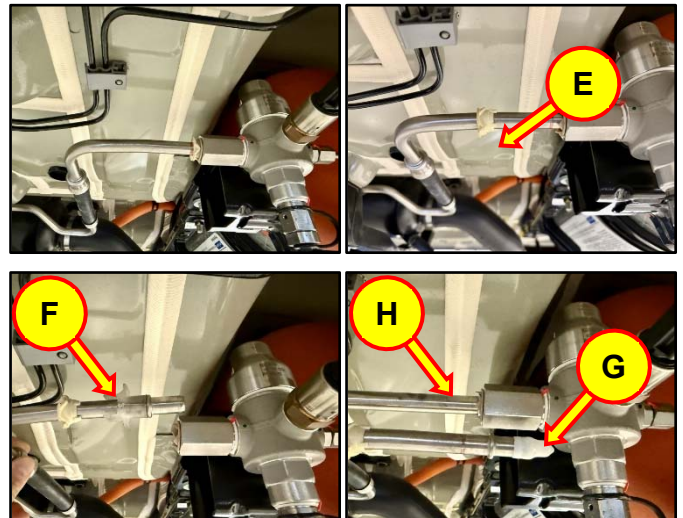
NOTICE

If the **Fuel Supply Valve Open Mode** GDS procedure **CANNOT** be performed, then follow **TSB 23-FL-005H**, section **G. Releasing Residual Fuel Supply Pressure (Manual Procedure)** to release the residual pressure in the fuel supply line after relocating the vehicle **OUTSIDE** the shop in open air.

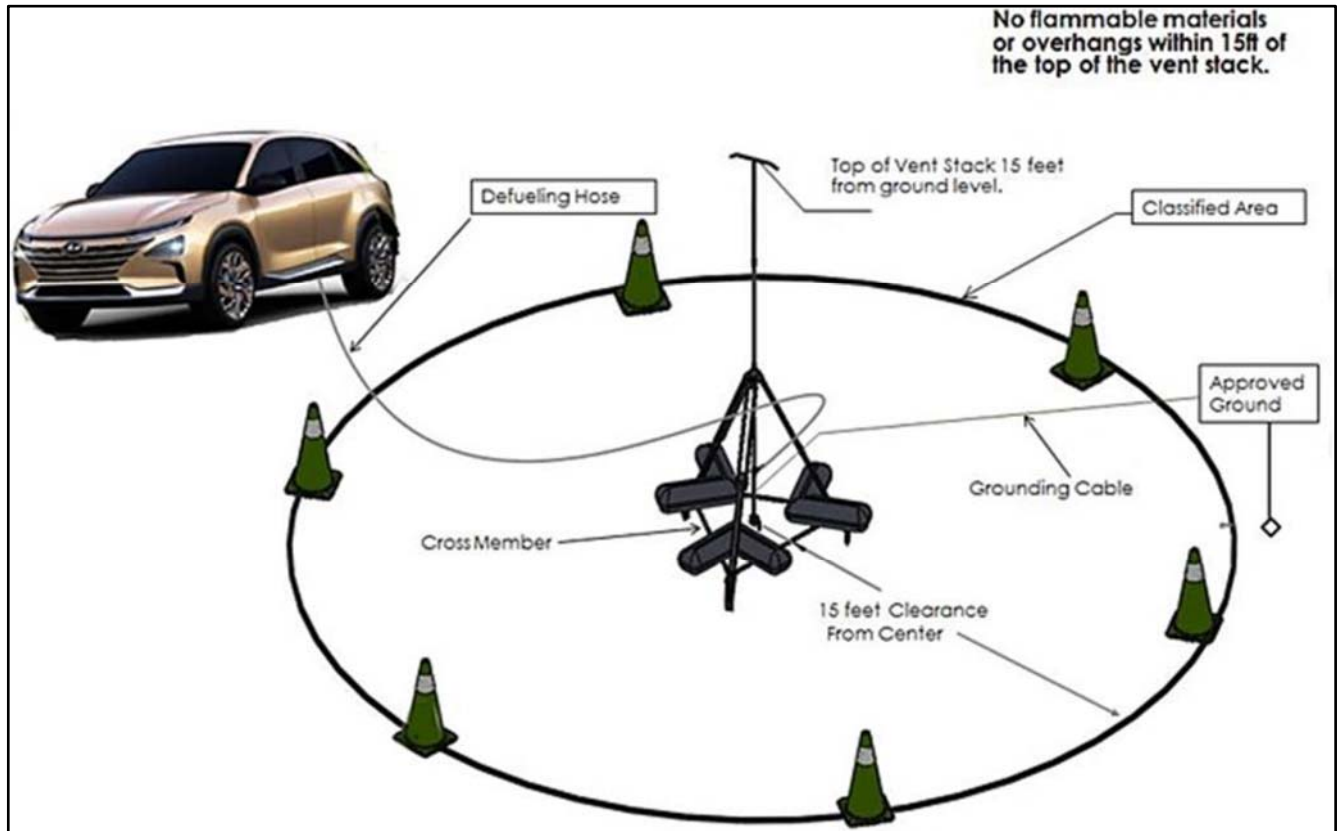


4. Refer to **TSB 23-FL-005H**, section **H. Installing the Vent Manifold Assembly**.

- Disengage the lock mechanism (E).
- Use the remover tool (F) to disconnect the hydrogen supply tube from the HPR (High Pressure Regulator).
- Seal the open end of the hydrogen supply tube with the tube cap (G) and then insert the vent manifold tube (H) to the HPR.



5. Relocate the vehicle **OUTSIDE** the shop to the designated open air venting location.
 - Refer to **TSB 23-FL-005H**, section **C. Vehicle Preparation and Staging**.
 - Turn **OFF** all powered accessories including:
 - Head lights (Auto mode OFF)
 - Heater / air conditioner
 - Fan
 - Audio
 - Heated seats
 - Rear defroster



- 6. Refer to TSB 23-FL-005H, section D. 12 Volt and High Voltage Circuit Disconnection to disconnect the high voltage circuit.

CAUTION

Be sure to wear anti-static PPE gloves

- Remove the cover shield to access the High Voltage Safety Plug (I).

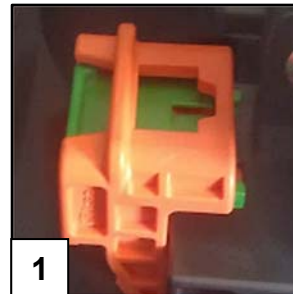


Wear anti-static PPE gloves.



- Remove the HV Safety Plug as shown.

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



1



2

Pull the green safety plug lock tab.



3

Press down on the safety plug lever.



4

Remove the safety plug.

7. Refer to **TSB 23-FL-005H**, section **I. Venting the Hydrogen Tank** to fully vent all 3 hydrogen tanks **OUTSIDE** at the designated open air venting location.

- After connecting the venting SST, open the manual valves on all 3 hydrogen tanks.
- Using the torque wrench with the **6 mm** hex/allen head socket, turn the manual valves **counterclockwise** until it stops at the set torque.

Opening Torque (Manual Valve):

lb-ft	1.8
lb-in	22
N.m	2.4



Connect venting SST before opening manual valves



Reopen ALL 3 manual valves

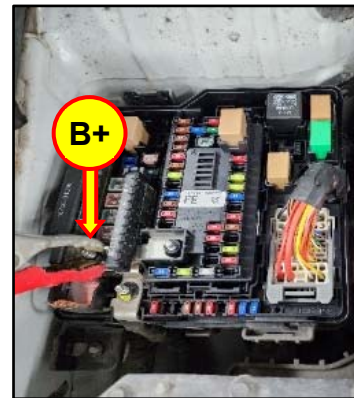
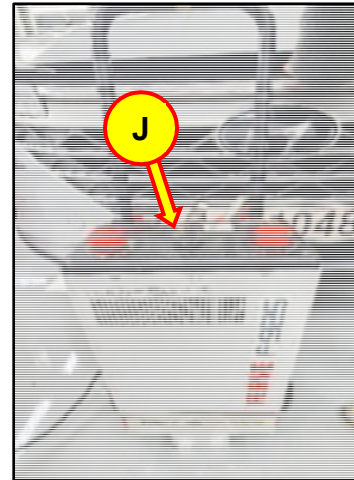


8. Using the GDS connected to the vehicle:
 - IGN ON (without pressing the brake pedal)
 - Select **HMU**
 - Select **Actuation Test**
 - Perform the HMU actuation tests for **All Tank Valve Open**.

Actuation Test - Hydrogen storage system Management Unit			
Test Items (6)	Condition	Duration	Result
All Tank Valve Open	IG. ON, FCEV Not Ready	Until Stop Button	

Gradually open the ball valve on the vent manifold assembly to adjust the venting flow rate so that the manifold pressure gauge indicates between **220 - 240 PSI**.

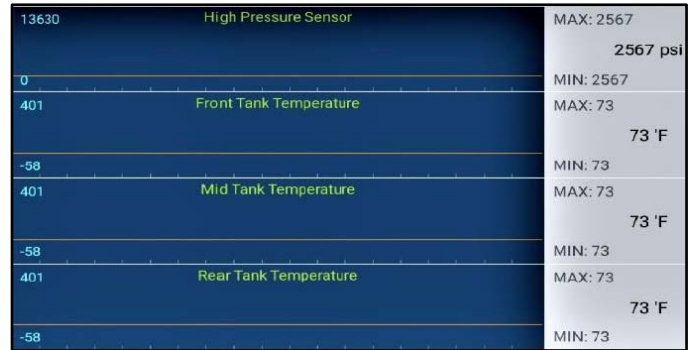
9. To provide stable 12V power during the tank venting process, connect a 12V battery booster or 12V battery charger (J) set to constant power to the front B+ and chassis ground point (K) under the hood.



10. Periodically check the venting progress every 15 minutes to monitor the tank temperature.

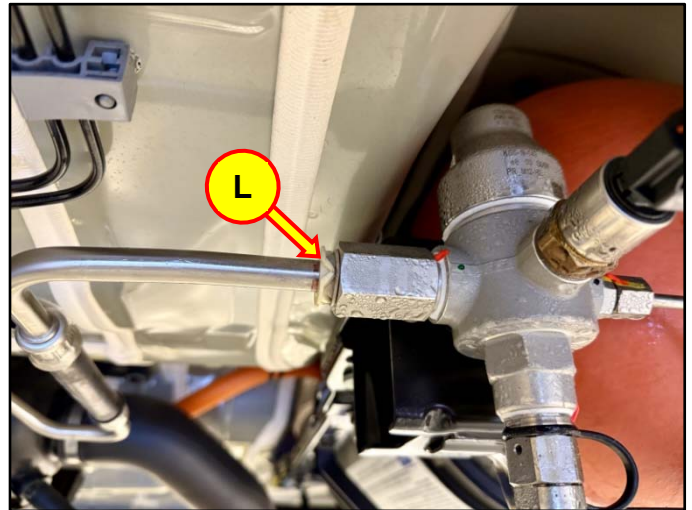
NOTICE

If the tank temperature approaches **-30 °F (-34.4 °C)**, stop venting or reduce the venting rate at the ball valve to maintain tank temperature above **-30 °F**.



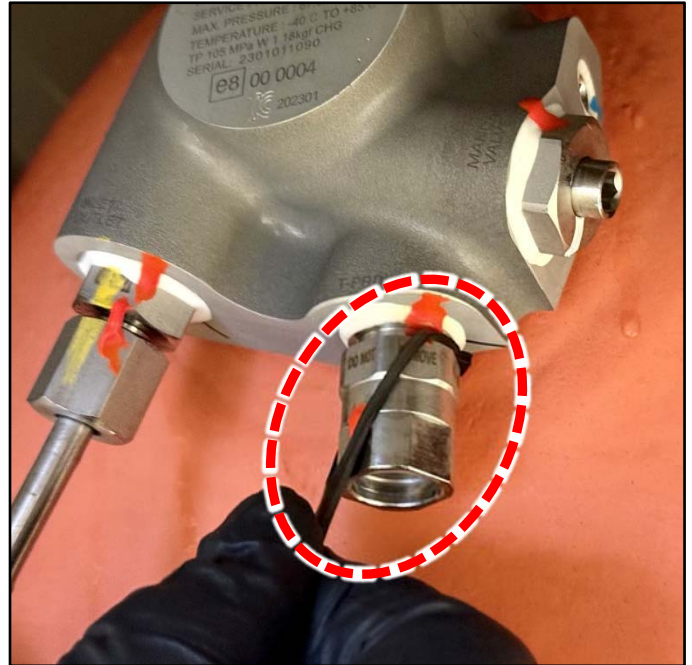
11. After all 3 hydrogen tanks have been fully vented, disconnect the venting SST from the HPR and **relocate the vehicle back inside the service bay**.
12. Raise vehicle on a hoist and reconnect the hydrogen supply tube into the HPR after removing the tube cap.
- A “click” sound can be heard after fully inserting the hydrogen supply tube to the HPR.
 - Reinstall the lock mechanism (L).
13. Using a clean lint-free cloth such as a microfiber towel (or equivalent), completely wipe all the condensation moisture from the TPRD (M) and surrounding valve area.

Repeat this step for all 3 hydrogen tanks.

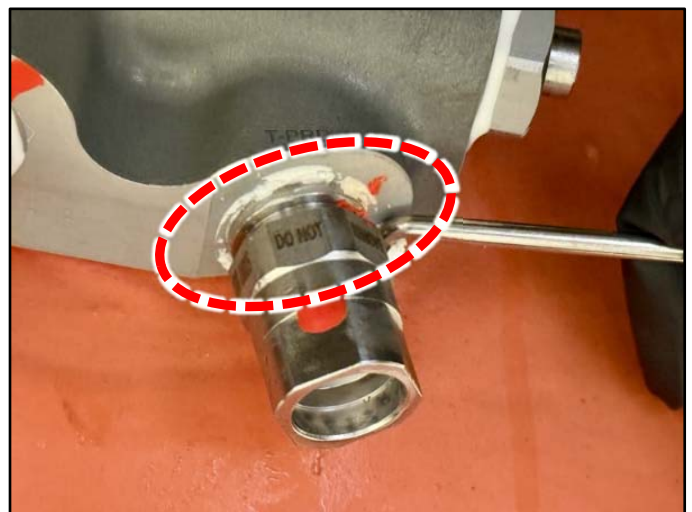


14. Pull and remove the existing TPRD cap.

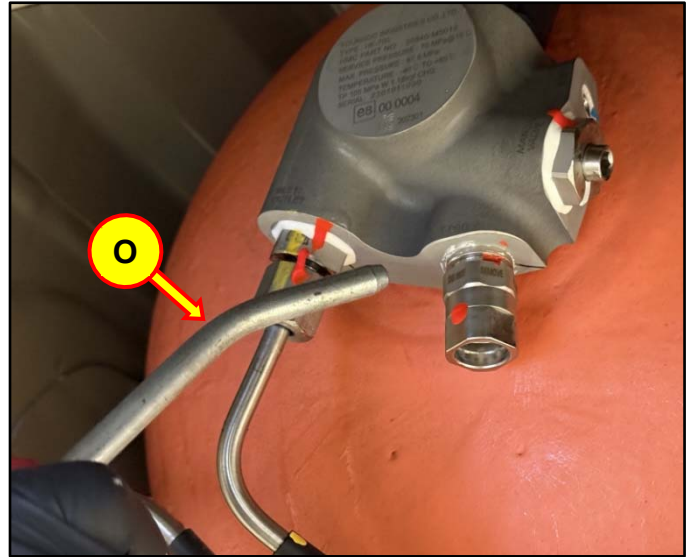
Repeat this step for each TPRD of all 3 tanks.



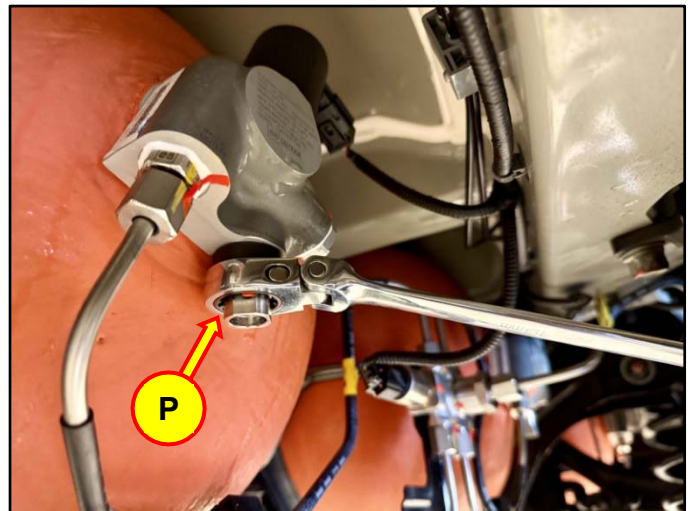
15. Using an angled pick and a flat blade, carefully remove all existing sealant from the threaded mounting areas (N) on each TPRD for all 3 tanks.



16. Use shop air and blow gun tip (O) to clear away all exterior debris for each TPRD of all 3 tanks.



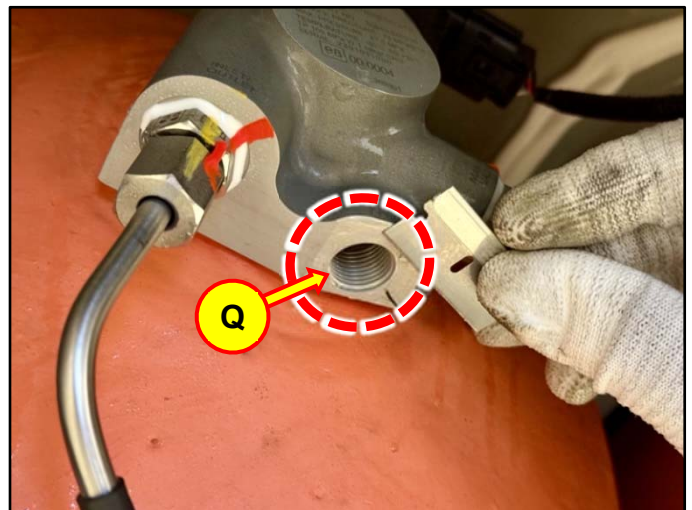
17. Using a 19 mm universal spline wrench (or equivalent), remove the TPRD (P) of the front tank.



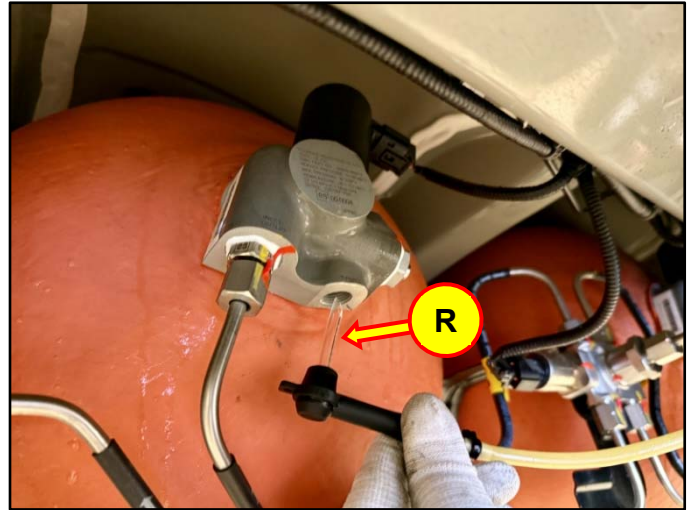
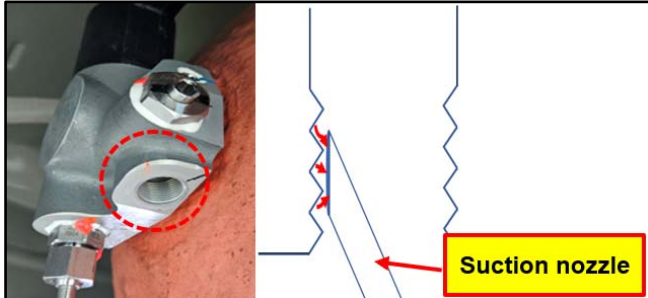
Once the TPRD has been removed, **perform the next 3 steps within a limited time of 2 minutes to prevent contamination of the Fuel Cell tanks.**

18. Using a flat blade, carefully remove any residual sealant near the threaded opening (Q) of the front tank valve body.

Perform this step quickly and **proceed to the next step without stopping.**



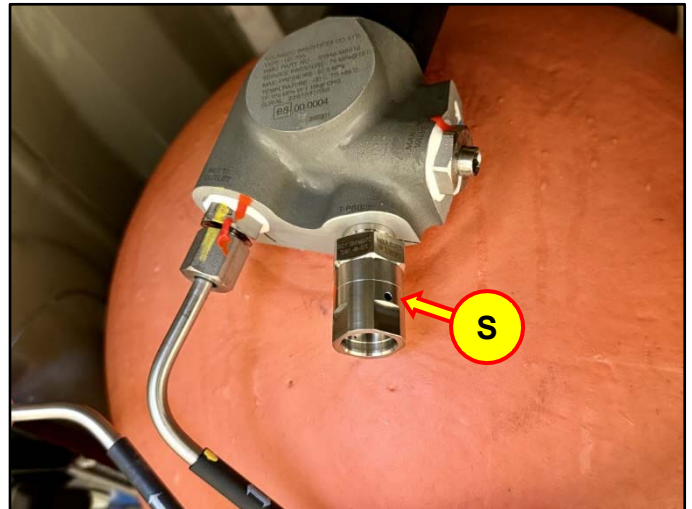
19. Remove any sealant residue from the inner threaded portion of the **front tank** valve body using the suction tool and the supplied suction nozzle (R).
- Insert the suction nozzle a maximum of 10mm into the inner threaded opening to remove any foreign debris.
 - Perform the suction as needed for a **maximum time of 30 seconds** to clear any debris.



20. Hand thread a new TPRD (S) to the **front tank**.

NOTICE

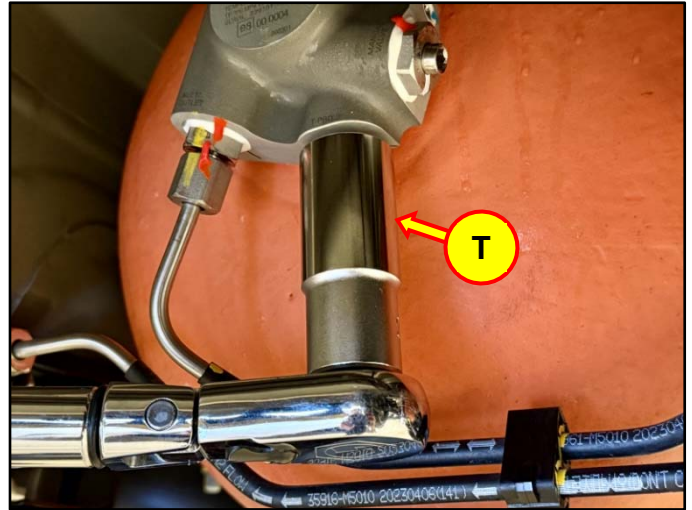
- A **maximum** time of **2 minutes** should **NOT** be exceeded when the existing TPRD was removed at the end of step 17 up to this point.
- To avoid contamination, **do NOT** allow any hydrogen tanks to remain open to the atmosphere for an extended period.



21. Using the supplied **23 mm** deep $\frac{1}{2}$ " drive socket (T), tighten the new TPRD to the specified torque.

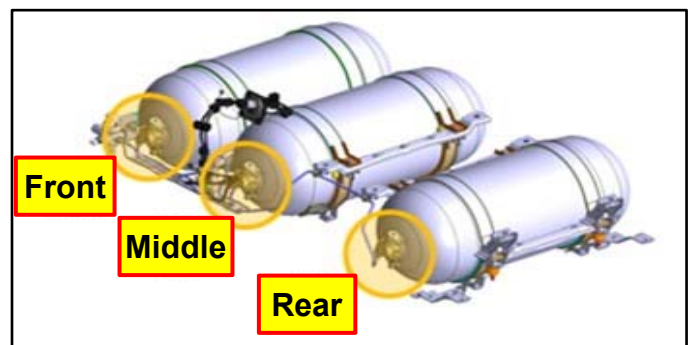
Tightening Torque (TPRD):

lb-ft	56
N.m	77



22. Repeat steps 17 through 21 for the **middle tank**.

Repeat steps 17 through 21 for the **rear tank**.



23. Reconnect the high voltage circuit.

- Reinstall the HV Safety Plug (U).
- Reinstall the cover shield.



24. Transport the vehicle via flatbed tow truck to refuel at the nearest hydrogen station.
- The technician will need to be present with the Nexo vehicle at all times during transportation by flatbed tow truck and while refueling at the hydrogen station.



Information

Refer to the websites below to confirm hydrogen station availability before towing the vehicle to any local station:

- <https://h2fcp.org/stationmap/>
(Hydrogen Fuel Cell Partnership)
- <https://h2-ca.com/>
(H2 California)

25. Refuel the hydrogen tank of the vehicle.

- Refuel to add at least **4 Kilograms**. (Certain stations may require multiple refueling attempts due to dispenser settings and condition variations.)
- Do **NOT** exceed maximum allowance of **\$150**. (Certain stations may have a set limit lower than \$150.)

26. Transport the vehicle back to the dealership via flatbed tow truck.

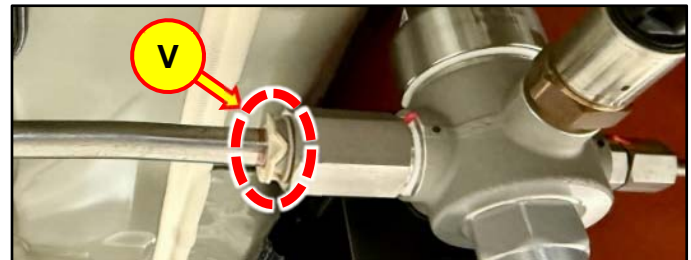
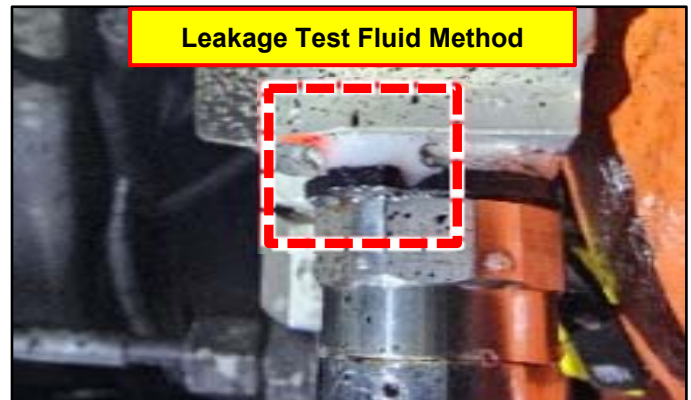
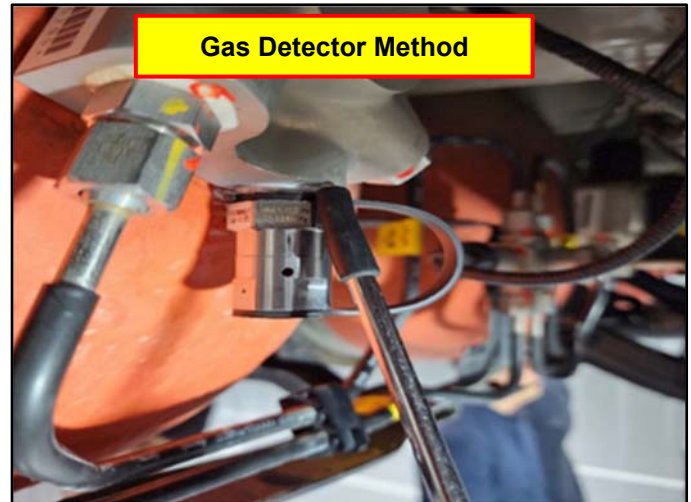
27. Relocate vehicle into the service bay and raise on a hoist.



28. Using the hydrogen gas detector and/or leakage test fluid, inspect the surrounding mounting areas of the TPRD at all 3 hydrogen tank valves and the hydrogen supply tube at the HPR (V).



Repair as needed if any leaks are found.



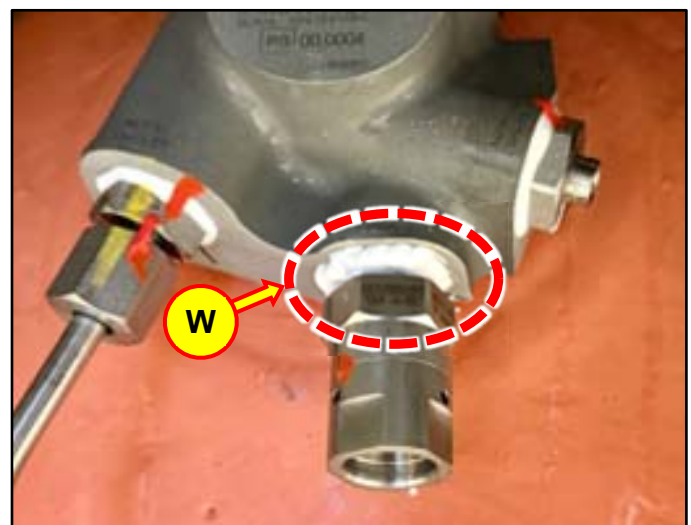
29. Completely wipe off the leakage test fluid and fully dry the exposed threaded area of the TPRD and valve body.

Repeat this step for each TPRD of all 3 tanks.

30. Apply Threebond 1211 sealant to the surrounding thread of the TPRD (W) and valve body of the tank.

***i* Information**

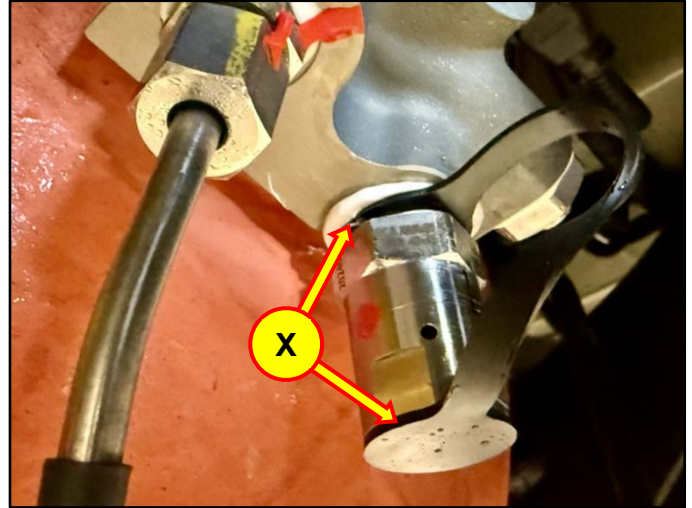
This will help create a barrier from outside contamination.



Repeat this step for each TPRD of all 3 tanks.

31. Install the TPRD cap (X).

Repeat this step for each TPRD of all 3 tanks.



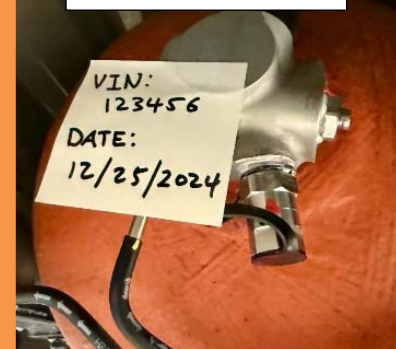
32.

STUI



Using STUI, take a total of 3 photos of all 3 newly installed TPRD with the last 6 digits of VIN and date of repair on a piece of paper. Ensure the pictures are in focus and VIN with date of repair are legible. Upload the photos to STUI.

Sample STUI Photo 1



Sample STUI Photo 2



Sample STUI Photo 3



33. Reinstall all 3 undercovers removed in step 1.

34. Scan and clear DTCs in all systems.

35. Perform final quality checks.

36. The service procedure is now complete.