

GROUP	NUMBER
Fuel Cell	23-FC-001H
DATE	MODEL(S)
OCTOBER 2023	NEXO (FE)

SUBJECT: HIGH-VOLTAGE BATTERY CHARGING USING GDS "FC RUN/STOP" FUNCTION

Description: When the high-voltage battery on a Nexø (FE) vehicle is discharged below the minimum State of Charge (SOC) the vehicle will not start or enter "READY" mode. This bulletin provides information on how to use the Global Diagnostic System (GDS) scan tool "FC Run/Stop" function to run the fuel cell for charging the high-voltage battery, allowing the vehicle to start and enter "READY" mode.

Applicable Vehicles:

- All Nexø (FE) Fuel Cell Electric Vehicles (FCEV)

Warranty Information:
Normal warranty applies.

NOTICE

- Confirm your GDS has the most recent software version and is adequately charged.
- If the GDS needs updating, select "Internet Update" on the GDS "More" screen and allow the update to complete before proceeding with this procedure.
- If you encounter any issues with GDS, call the GIT Helpline at 888-437-0308.

Service Procedure:

- Verify the vehicle will not start, after pressing the "12V Battery Reset" button. (Electrical system will not turn and enter "READY" mode) See Owner's Manual for detailed instructions.
 - Press the 12V Battery Reset switch.
 - Start the vehicle within 15 seconds of pressing the 12V Battery Reset switch.
 - If vehicle will not start, continue with this procedure.



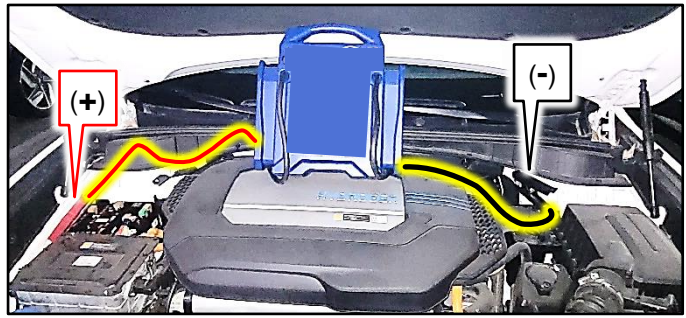
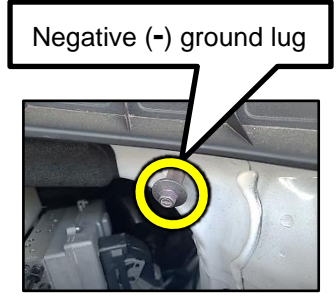
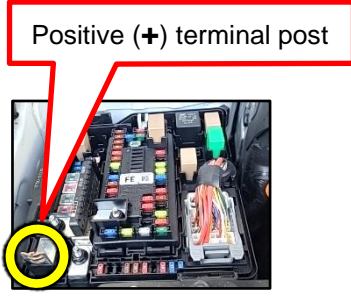
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2. Connect a 12-volt battery jumper as shown. Remove the fuse panel cover.

Connect the red positive (+) lead to the positive terminal in the fuse panel.

Connect the black negative (-) lead to the body ground lug.

Refer to the jump-starting section in the Owner's Manual for more information.



3. The vehicle electrical system may turn on but may not enter READY mode (will not start) even after connecting a 12-volt jumper pack.

The driver information center may display a warning indicating "Unable to start vehicle! Check high voltage system".



4. With the jumper battery pack connected, perform a Fault Code search with the GDS.

DTC B183088, "PTC HTR HV Low Fault" may set when the high-voltage battery is below 230 volts.

Clear DTCs before proceeding with procedure.

- DTC Description		Feedback
DTC B183088 will set if the vehicle voltage level that enters in the PTC high voltage input line is lower than the prescribed level.		
- DTC Setting Condition		
Trouble Shooting	Condition	Possible Cause
Main Action	• Monitor the CAN signal communication.	1. Poor connection
Prerequisite Condition	• Turn the ignition switch ON	2. PTC high voltage input line
Threshold Value	• PTC high voltage input line is lower than 230V	3. PTC module malfunction
Fail Safe	• PTC module off	4. A/c on control module malfunction

System	DTC	Description	State
AIRCON	B183088	PTC HTR HV Low Fault	Active

5. Using the GDS, monitor BMS data and check the following:

- State of Charge of Battery (BMS)
- Battery DC Voltage
- Available Discharge Power
- BHDC Input Voltage

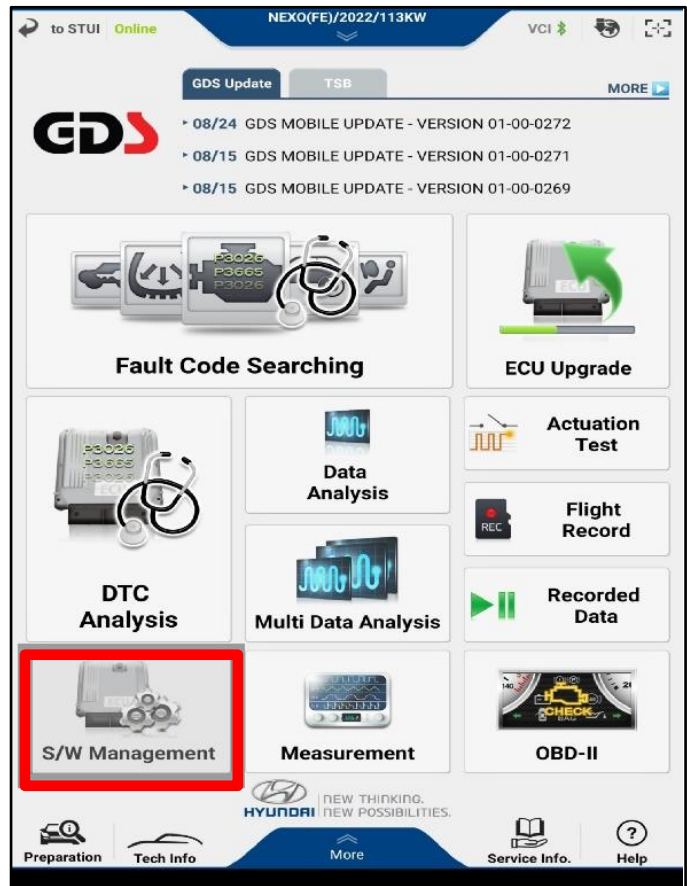
If the DC battery voltage is near or below 230 volts, the vehicle may not start.

Example Values

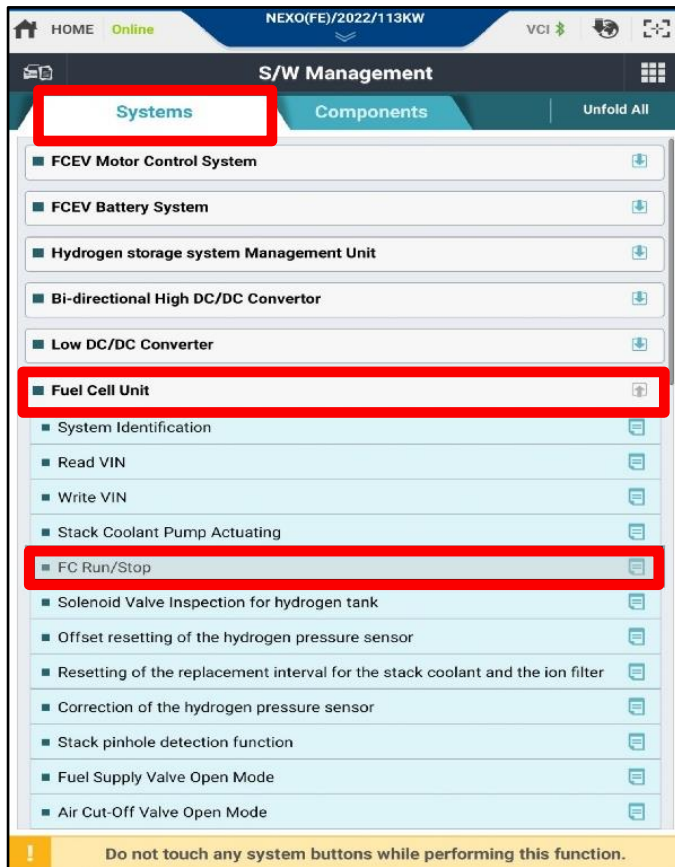
	Low Values	Normal Values
State of Charge of Battery(BMS)	0.0 %	55.0 %
Battery DC Voltage	132.3 V	244.7 V
Battery DC Current	0.0 A	-9.3 A
Max Cell Voltage	2.06 V	3.82 V
Min Cell Voltage	2.06 V	3.80 V
Average Internal Resistance	0.00 mOhm	0.00 mOhm
Available Charge Power	36.00 KW	36.00 KW
Available Discharge Power	0.00 KW	40.00 KW
BHDC Input Voltage	9 V	246 V

6. To activate the fuel cell to produce electricity for charging the high voltage battery.

Select “S/W Management” on the GDS opening screen.

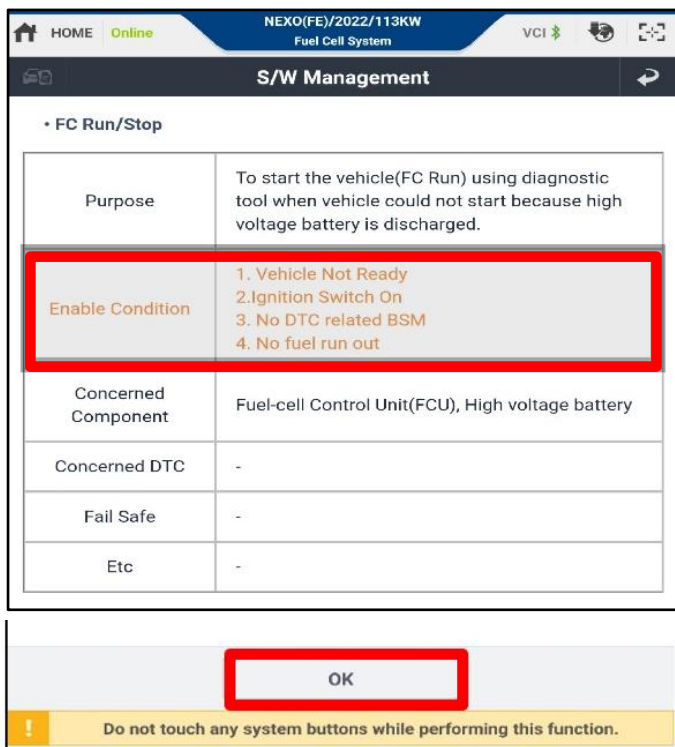


7. Select “Systems” tab, then select “Fuel Cell Unit”, in the drop-down list, select the “FC Run/Stop” function.

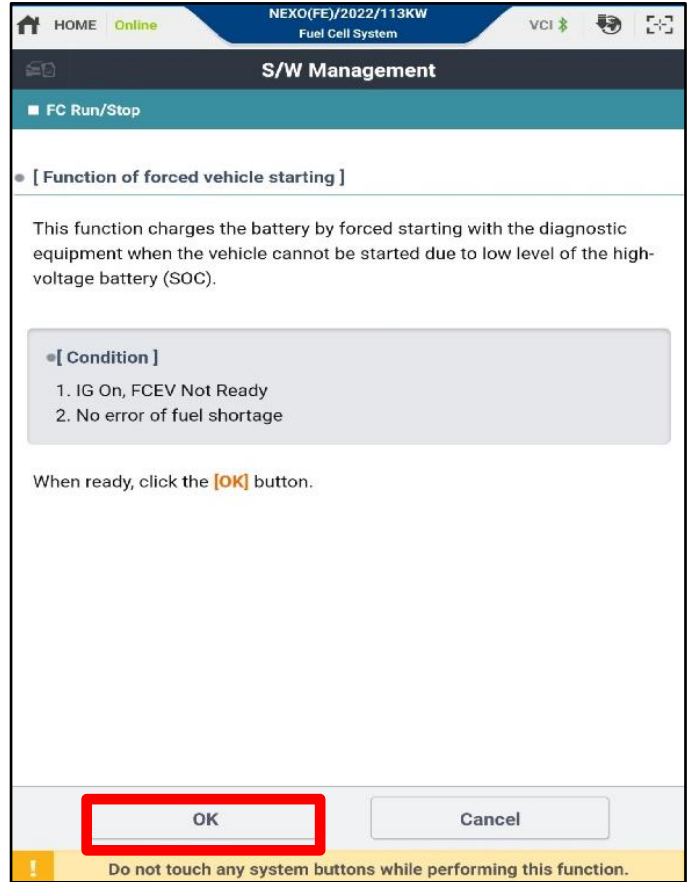


8. Ensure the following conditions prior to beginning the “Run/Stop” procedure, then select “OK”.

1. Vehicle is not in the “READY” mode.
2. The vehicle electrical system is “On” but not in “Ready” mode.
3. There are no DTCs related to BSM.
4. There is sufficient Hydrogen in the storage tanks to run the vehicle for at least 30 minutes.

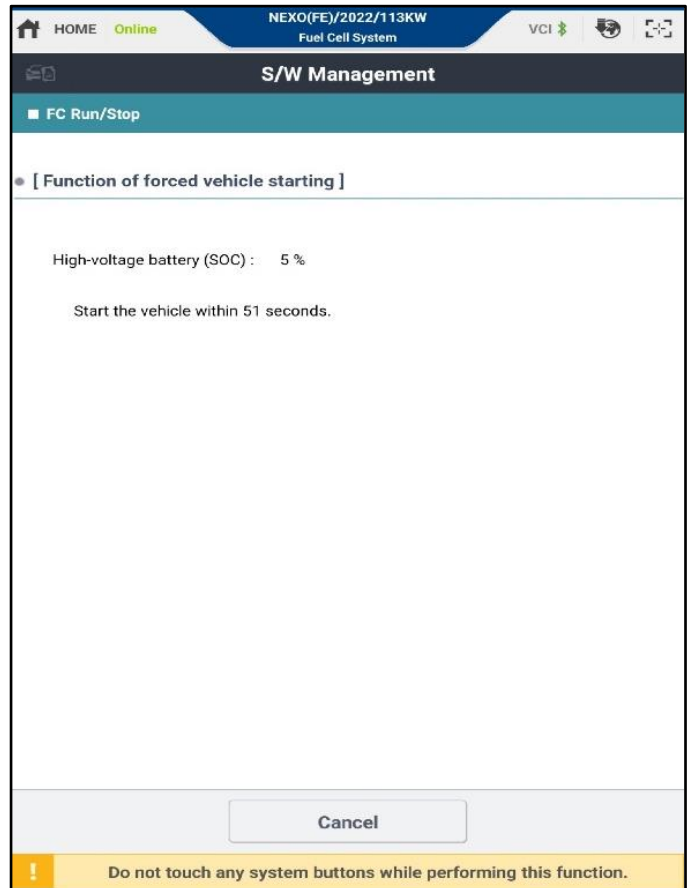


9. Once the “OK” button is pushed, the vehicle will start and run the Fuel Cell to charge the high-voltage battery.

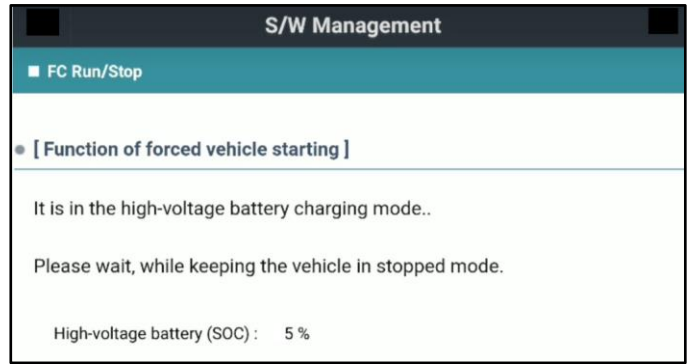


10. Initially, the Fuel Cell may not stay running for more than ten seconds.

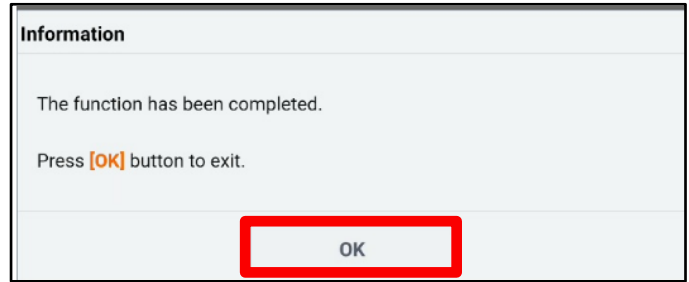
The “Run/Stop” procedure may need to be performed two or more times before the voltage in the high-voltage battery SOC increases enough to allow the Fuel Cell to continue running.



11. The GDS will display the high-voltage battery is charging.



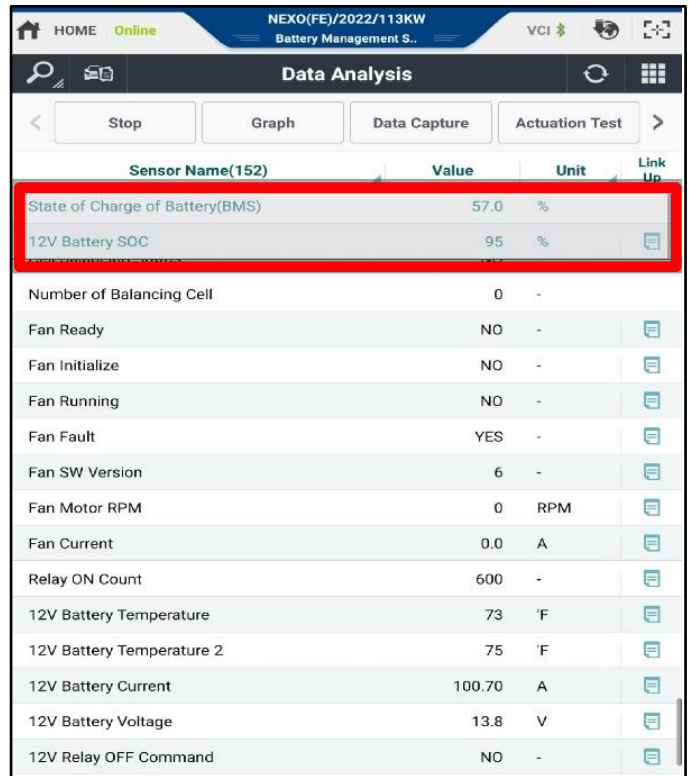
12. When the “Run/Stop” function has completed, push the “OK” button.



13. Using the GDS, monitor the BMS data.

Select the following:

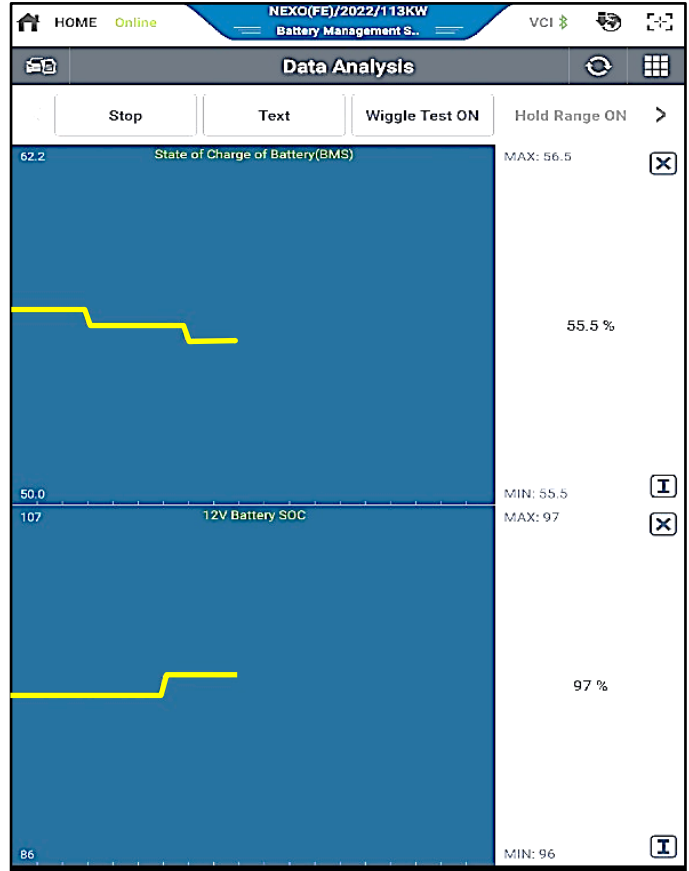
- **State of Charge of Battery (BMS)**
(Above is the high-voltage battery)
- **12V Battery SOC**
(Above is the 12-volt battery)



14. Start the vehicle, ensure vehicle is in READY mode, then remove the 12-volt jumper battery and reinstall the underhood fuse box cover.

Allow the vehicle to run while monitoring the following GDS data until the following SOC's or greater are achieved:

- **State of Charge of Battery (BMS): 55~60%**
- **12V Battery SOC: 45~50%**



15. The service procedure is complete.