

Emergency Response Guide



NEXO

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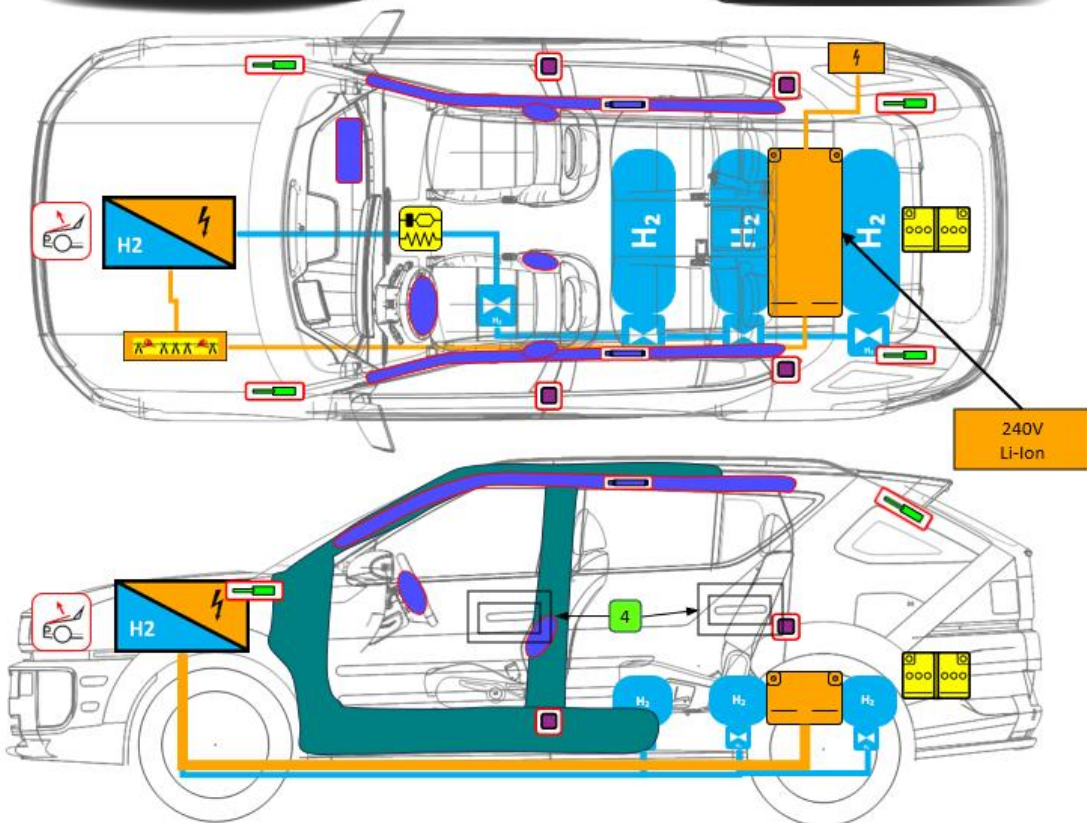
Warning

Failure to follow any of these instructions may result in serious injury, death or damage



Hyundai Nexo

SUV, 5 doors
From 2025



	Airbag		Stored gas inflator		Seat belt pretensioner		SRS control unit		Pedestrian protection active system
	Battery low-voltage		Gas strut / Preloaded spring		High strength zone		Fuel cell component		Gas line (H2)
	Battery pack, high-voltage		High voltage power cable		High voltage component		Cable Cut		Gas tank with gas type indication (H2)
	Zone requiring special attention				Automatic hydrogen overpressure safety valve with gas type indication				

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2025

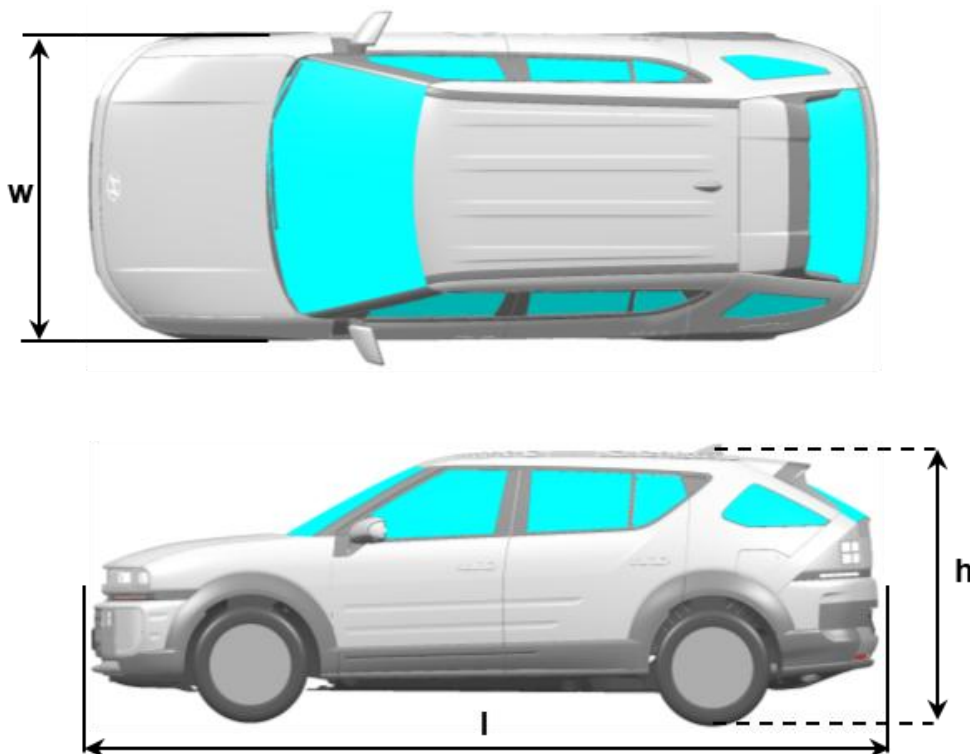
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1. Identification / Recognition

Initial Response: Identify, Immobilize and Disable

The following procedures should be used whenever you are dealing with a NEXO at an emergency scene. However, all operations should be consistent with your department's standard operating procedures, guidelines, and any applicable laws. When NEXO is damaged in a crash, the high voltage safety systems may have been compromised and present a potential high voltage electrical shock hazard. Exercise caution and wear appropriate personal protective equipment (PPE), including high voltage safety gloves and boots. Remove all metallic jewelry, including watches and rings.

Dimensions:



	Items	mm
l	Overall length	4750
w	Overall width	1865
h	Overall height	1640 1675 (R/Rack)

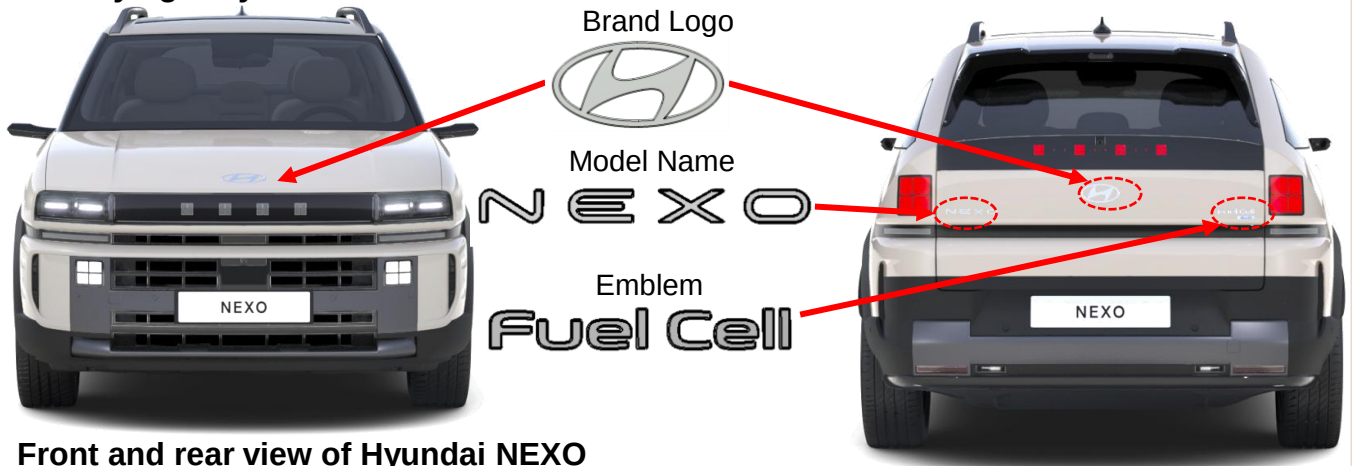


Identify

The NEXO is a fuelcell electric vehicle. Emergency responders should respond to emergency scenarios involving the NEXO accordingly, exercising extreme care and caution to avoid contact with the high voltage system within the vehicle.

1. Identification / Recognition

Identifying a Hyundai NEXO



Front and rear view of Hyundai NEXO

The Brand Logo placed on the hood and on the tailgate

Model name on Tailgate "NEXO"

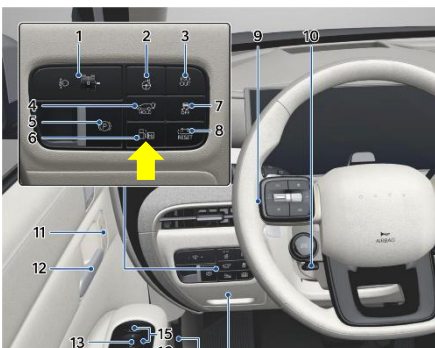
The model name "NEXO" is placed in the left side of the tailgate.

The emblem "Fuel Cell" is placed in the right side of the tailgate.

The font of the trim emblem is Silver.

Fuel filler door

The NEXO has a fuel filler door on the rear left side.



Turn off the engine and press the fuel charge button.

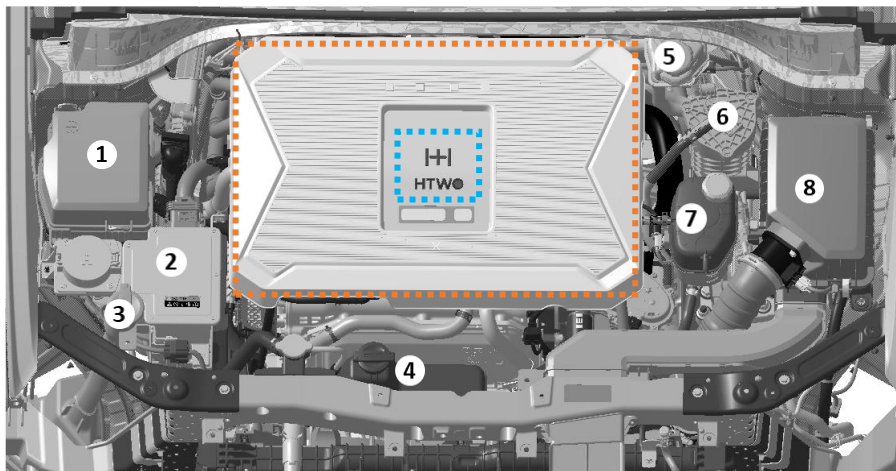


1. Identification / Recognition

Engine room

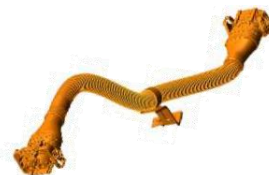
You will find FC System Cover [orange] in the center, and the FC System is located under the cover. The „“ HTWO brand logo [blue] is marked on the top of FC system Cover.

1	Windshield washer fluid reservoir
2	Air cleaner
3	Engine oil filler cap
4	Engine oil dipstick
5	Brake fluid reservoir
6	Engine coolant reservoir
7	Fuse Box
8	Battery system coolant reservoir



High Voltage Cable (Orange color)

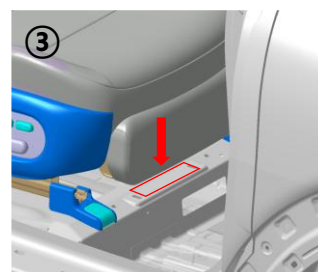
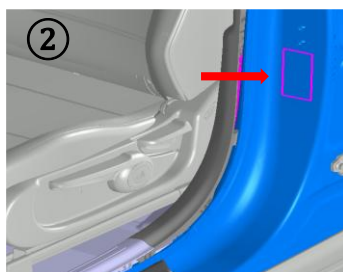
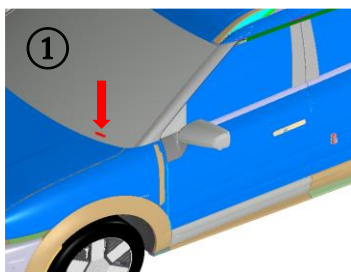
When opening the hood, the orange color cable identifies a HV-System. Additionally, the orange color cables run under the floor of the vehicle.



Vehicle Identification Number (VIN) Label

The VIN Number is specified in the NEXO and identifies the single variants as below.

1. VIN Plate can be seen through the windshield from outside ①
2. On the vehicle certification label attached to the driver's side center pillar ②
3. The VIN can be also found under the driver's seat (or passenger's seat) ③



1. Identification / Recognition

Instrument Cluster

The instrument cluster of NEXO display some specific features for using high voltage battery. The cluster in the vehicle can be change individual and may be differ from the illustration.



1	READY	Indicator permanent illuminate when normal driving is possible.
2	Hydrogen fuel gauge	It indicates the remaining amount of hydrogen fuel in the fuel tank when power is on.
3	CHARGE gauge	It indicates the state of charge of the battery through regenerative braking when decelerating a vehicle by pressing the brake pedal or coasting
4	POWER gauge	It indicates the power consumed by the motor when the vehicle is accelerated by pressing the accelerator pedal.
5	Power down	Indicator illuminate when the power of the vehicle is limited

2. Immobilization / Stabilization / Lifting

Immobilization

The next step is to immobilize the vehicle to prevent any accidental movement that can endanger response personnel or civilians. Responders should approach the vehicle from the sides and stay away from the front or rear as they are potential paths for vehicle movement. Be sure to immobilize the vehicle in the following manner.



Chock the wheels



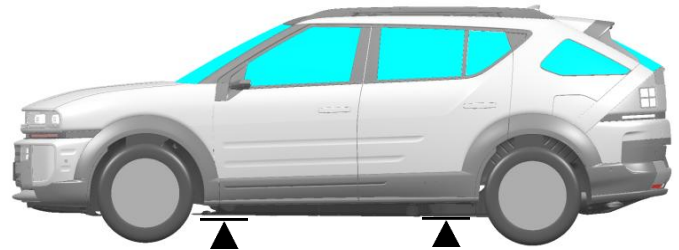
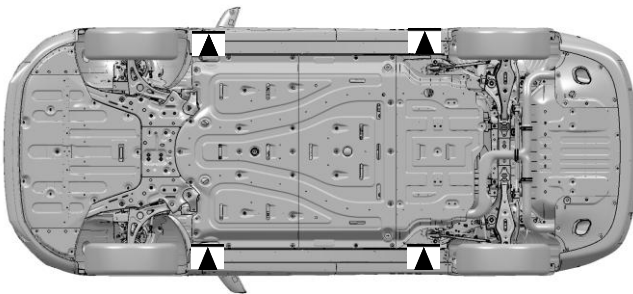
Put the vehicle in P (Park) position by pressing the 'P' button on the rotary shifter



Set the Electronic Parking Brake (EPB)

Stabilization

Use standard stabilization (lift) points, as shown beside. Always be sure to connect to a structural component of the vehicle and avoid placing cribbing under high voltage cables, and other areas not normally considered acceptable.

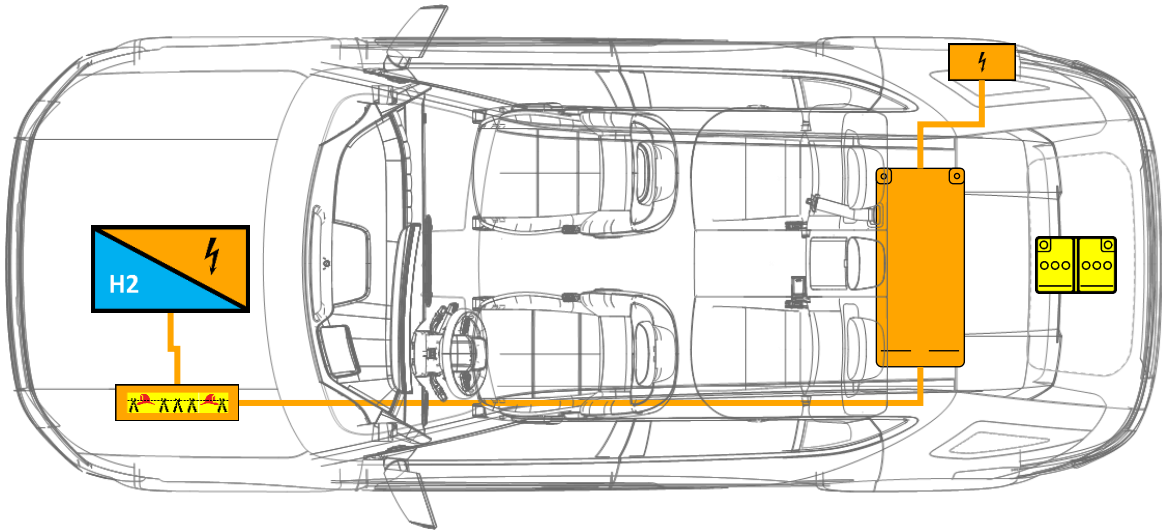


Lifting

- When installing a block or jack, avoid high voltage cable, battery and fuel system.
- If high voltage components or cables are exposed, do not place any support on them.

3. Disable Direct Hazards / Safety Regulations

The final step in the initial response process, conducted after immobilizing the vehicle, is to disable the vehicle, its SRS components and the high voltage electrical system. To prevent current flow through the system, use one of the following procedures to disable the vehicle.



High Voltage Cables

- Never cut or disconnect the high voltage orange cabling and connectors without first disabling the HV system. (refer to page 10).
- Exposed cables or wires may be visible inside or outside the vehicle. Never touch the metal chassis wires, cables, connectors, or any electric components before disabling the system.

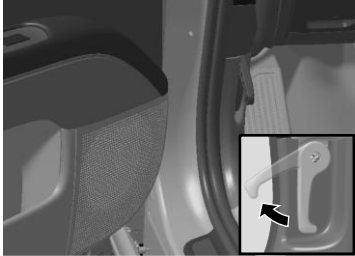
3. Disable Direct Hazards / Safety Regulations

Disabling of high voltage electrical system

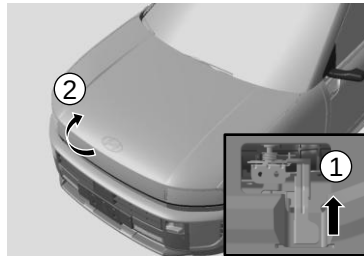
Via Service Interlock

To disable the HV-system use the service interlock device located in the PE room.

For longer work on the vehicle, the 12V Battery System in the luggage should be additional disconnect by following the procedure on the next page.



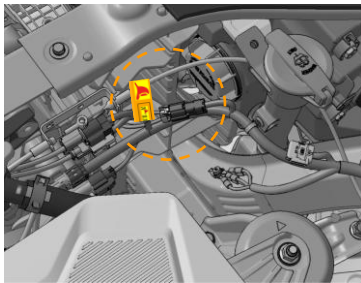
Pull the hood release lever to unlatch the hood.



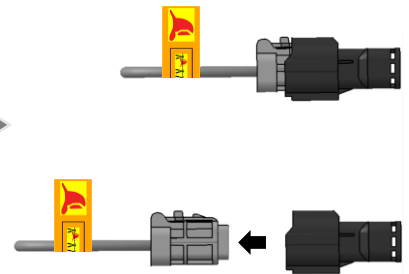
Go to the front of the vehicle, raise the hood slightly, push up the secondary hood release lever (1) inside of the hood center and lift the hood (2).



The service interlock is located in front of the fusebox, nearby the washer reservoir.

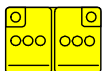


Pull up the
"Service Interlock"
or cut the cable



3. Disable Direct Hazards / Safety Regulations

Disabling the 12V battery system



Open the luggage compartment and remove the luggage board and luggage tray.

The high voltage battery system is mounted in the trunk.



Remove the 12 V battery negative connector to the left of the battery system to disconnect power.

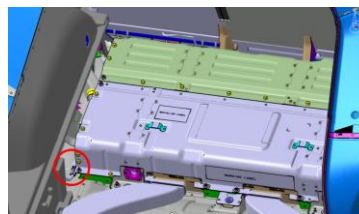
■ Disabling procedure

· Location : Rear of second row seat·

To disconnect 12V battery and high voltage battery, follow steps:

- ① Wait about 10 minutes after you turn off the engine.
- ② Remove the GND connector of the 12V Li-ion battery on the left side of the high voltage battery system in the trunk.
- ③ Disconnect the HV service interlock connector in the engine room.
- ④ Disconnect the 12V(+), HV(-) and HV(+) connector under the rear seat .
- ⑤ Disconnect the BMS EXTN connector.

Turn the ignition switch OFF and disconnect the 12V battery negative (-) connector.



Electrocution Risk

- Before engaging in any emergency response procedures, ensure the vehicle is disabled and wait 5 minutes to allow the capacitor in the high voltage system to discharge to avoid electrocution.
- Exposed cables or wires may be visible inside or outside the vehicle. Never touch the metal chassis wires, cables, connectors, or any electric components before disabling the system.

3. Disable Direct Hazards / Safety Regulations

Via IG (Ignition) Fuse Removal

Confirm the status of the READY light on the instrument panel. If the READY light is illuminated, the vehicle is ON.

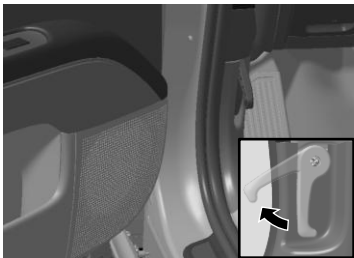
- a) If the READY light is NOT illuminated, the vehicle is off. Do not push the **“EV” START/STOP** button because the vehicle may start (go into READY mode).
- b) To turn OFF the system, press the 'P' (Park) button on the rotary shifter dial, and press the EV button.

If it is necessary, lower the windows, unlock the doors and open the tailgate as required, before disconnecting the 12V battery. Once the 12V battery is disconnected, power controls will not operate.

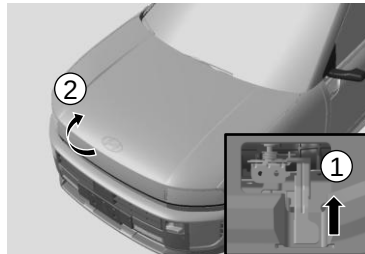


Before disconnecting the 12V battery, remove the smart key at least 2 meters away from the vehicle to prevent accidental restart.

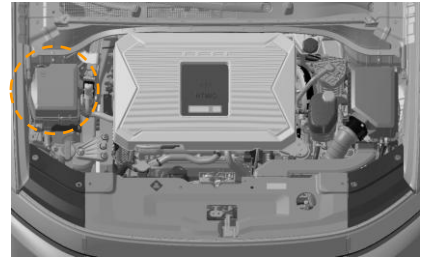
To remove the IG Fuse follow procedure is prefer:



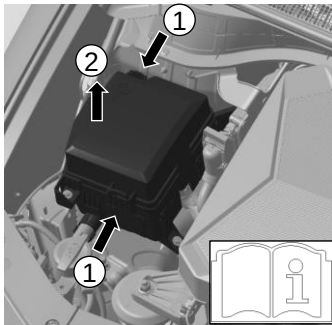
Pull the hood release lever to unlatch the hood.



Go to the front of the vehicle, raise the hood slightly, push up the secondary hood release lever (1) inside of the hood center and lift the hood (2).



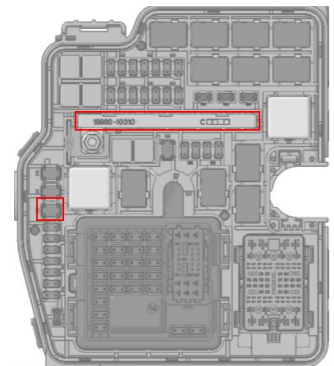
From the point of view the fusebox is located on the right side



Remove the fuse box cover



Refer to the label on owner' manual



Pull both the **“IG1”** and **“IG2”** fuse straight out from the fuse box. Use the removal tool provided in the fuse box cover



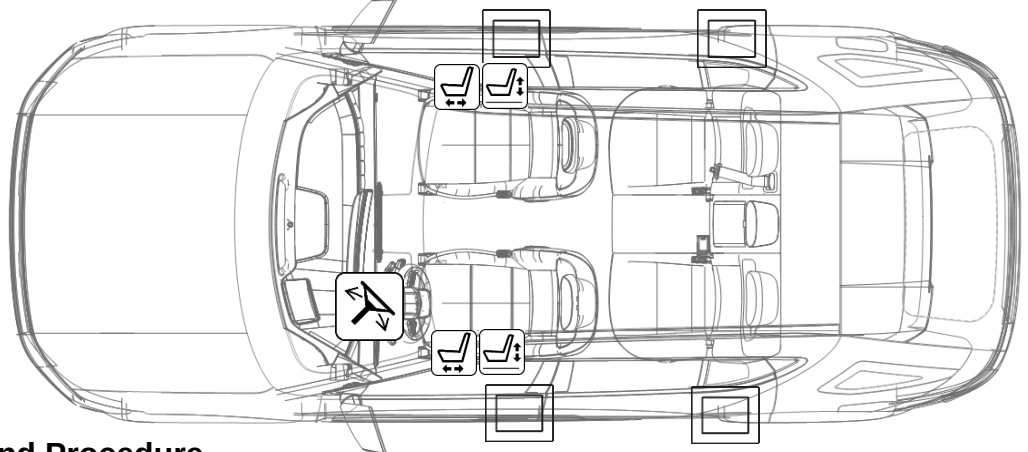
Safety Risk

If mentioned methods of disabling the vehicle's system are unsuccessful, any emergency procedures involving the electric vehicle may cause the accidental deployment of undeployed airbags and electric shock from high-voltage components.

4. Access to the Occupants

Extraction Operations

The NEXO is an Fuelcell electric vehicle. Because of the high voltage components contained therein, first responders should pay special attention when they extract occupants in the car. Before performing any extraction operations, the first responders should "Identify, Immobilize and Disable" the vehicle as discussed in sections on emergency procedures. When the first responders cut the vehicle, they should always pay special attention to the airbag system, orange colored high voltage cables and other high voltage components so that the parts are not damaged and to prevent a risk of explosion or electrocution.

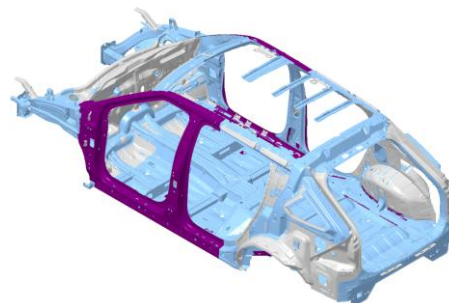
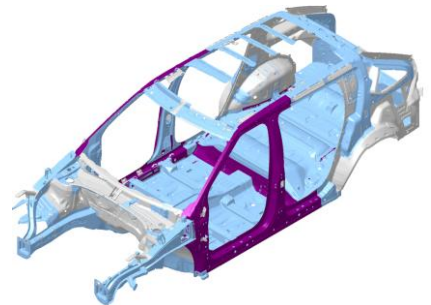
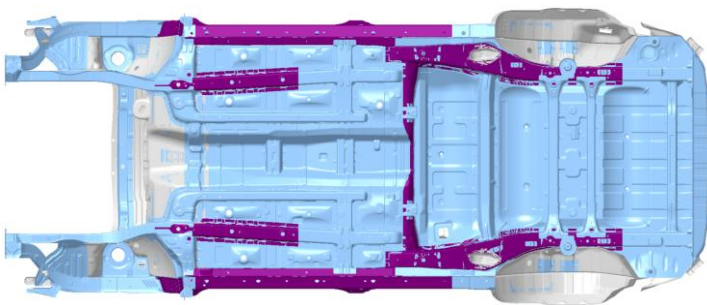


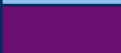
Extraction Tools and Procedure

When responding to an incident involving a NEXO, we recommend that the first responders follow their organization's standard operating procedures for dealing with vehicle emergencies.

Location of Ultra-high Strength Steel

In these images, high strength steel is used in the areas colored in blue and ultra-high strength steel is used in the red colored areas. Depending on the tools used, ultra-high strength steel can be challenging or impossible to cut. If necessary, use a workaround technique.



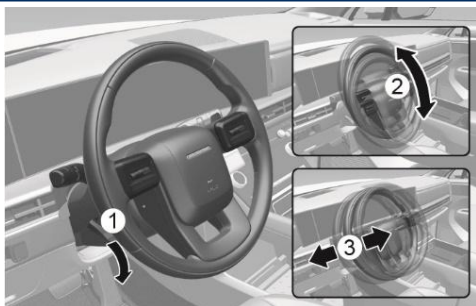
Color	Steel type
	Mild
	High-strength
	Ultra-high-strength

4. Access to the Occupants

Steering wheel adjustment

The Hyundai NEXO is equipped with manual steering wheel adjustment. For better access to the occupant after accident, the steering wheel can be moved as follow.

Manual adjustment



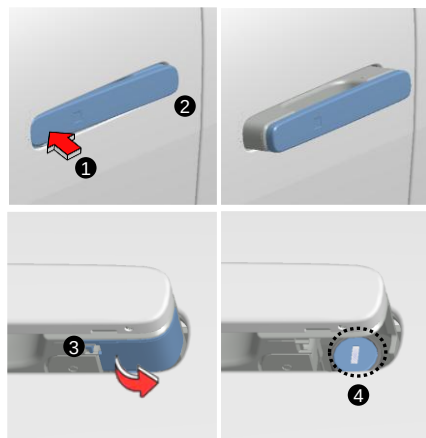
Pull down the lock-release lever (1).

Adjust the steering wheel angle (2) and distance forward/back (3).

Pull up the lock-release lever up to lock the steering wheel in place

Door and tailgate unlocking

Mechanical unlock



Push the front part (1) of the door handle to pull out the rear part (2).

Release the cover hook (3) at the bottom of the door handle with your finger, then pull out the cover from the door handle.

Insert the mechanical key into the key hole (4), and rotate clockwise to unlock and reverse to lock.

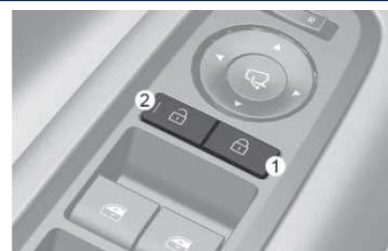
Inside the vehicle



If the inner “**Driver**” door handle is pulled, the door is unlocked and opened.

All other inner doors handles needs to be pulled once to be unlocked. A second pull will open the door

Central door lock

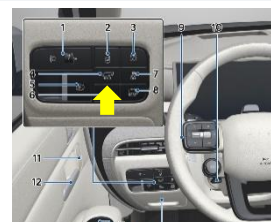


Pressing button (2) on the switch, all vehicle doors are unlocked

Tailgate



Remove the cover at the bottom of the tailgate (1). Slide the latch in the direction of the arrow to unlock the tailgate (2). Push the tailgate to open.

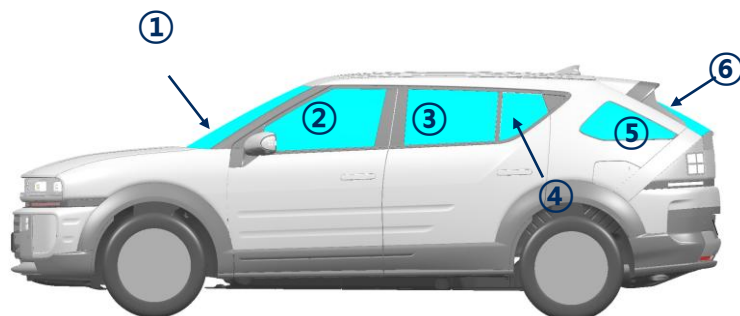


Press the power tailgate open/close button for 1 second.(PTG option only)

4. Access to the Occupants

Windows and Glass

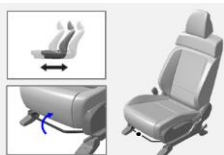
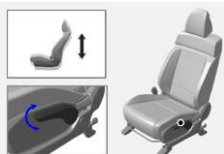
The NEXO is equipped with power windows. Each door has his own switch to control the door's window. The driver door has central power window lock button which can block and unblock all operation of the rear passenger windows. The power windows operate for about 3 minutes after the Engine Start/Stop button is in the ACC or OFF position. The NEXO can optional with sunroof window.



Glasstype	
1	Laminated
2	Tempered (OPT: Laminated)
3	Tempered (OPT: Laminated)
4	Tempered
5	Tempered
6	Tempered

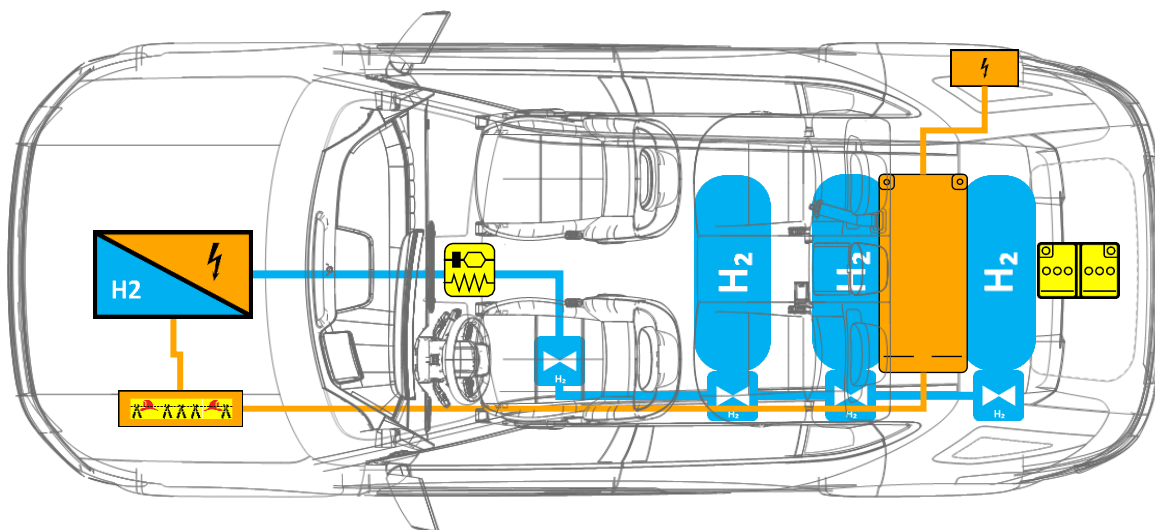
Seat adjustment

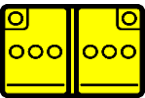
NEXO is equipped with manual or powered seats in the 1st and 2nd row. Main functions are following:

Item	Manual	Power
Forward and rearward 	Pull up the slide adjustment lever and hold it. You can slide the seat forward And rearward. Release the lever to lock. 	Push the control switch forward or rearward. 
Seat cushion high 	Push down the lever several times, to lower the seat cushion. Pull up the lever several times, to raise the seat cushion 	Push the front portion up to raise or down to lower the front part of the seat cushion. Push the rear portion up to raise or down to lower the height of the seat cushion 
Seatback angle	Lean forward slightly and lift up the seatback lever. Carefully lean back on the seat and adjust the seatback. Release the lever to lock. 	Push the control switch forward or rearward 

5. Stored Energy / Liquid / Gases / Solids

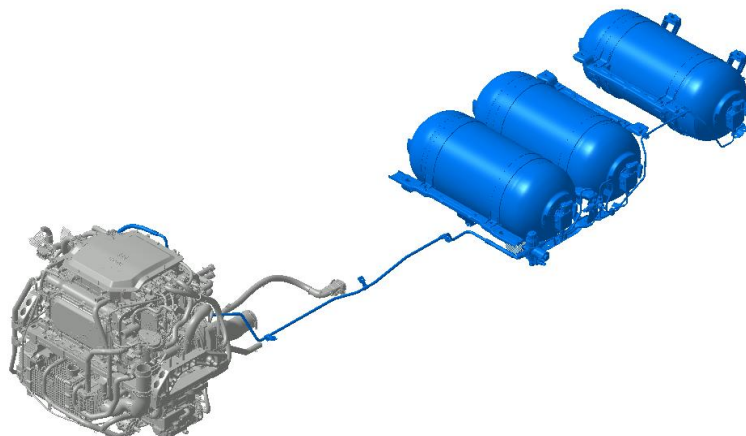
The NEXO is equipped with fuelcell stack and hydrogen tank.
3 hydrogen tanks are installed in the rear of the NEXO



	   	54.2ℓ X 3	
	   	12V	R-1234yf 575g
	     	240V	 

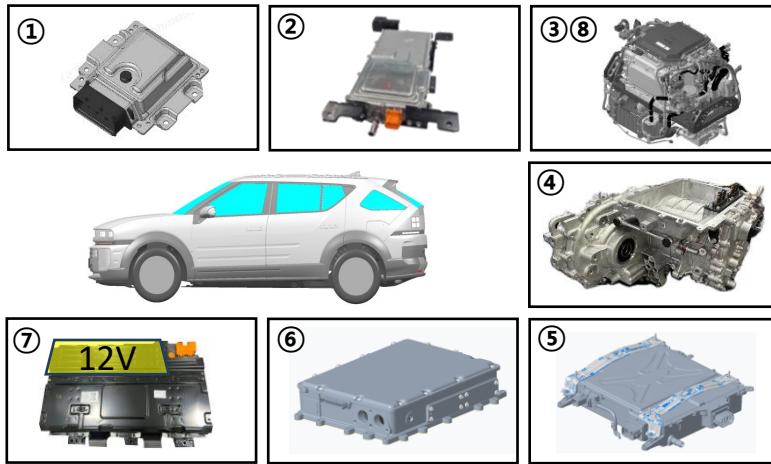
Hydrogen System

NEXO has a Fuelcell stack. The fuel type is hydrogen that is stored in the hydrogen gas tank and delivered through the gas line. When dealing with an emergency situation, be careful not to cut the gas line and tank.



5. Stored Energy / Liquid / Gases / Solids

High Voltage System



1. Vehicle Charging Management System (VCMS)
2. Combo Charger Inlet Assembly
3. Power Distribution Unit (PDU)
4. Motor & Reduction Gear Assembly
5. IDC
6. Multi Inverter Assembly
7. Battery System Assembly (BSA)
8. Fuel cell system

Specification HV-System

Motor	Type	Permanent magnet synchronous motor
	Max. Output (kW)	150
	Max Torque (Nm)	350
Fuel-cell Stack	Max. Output (kW)	Gross: 110 Net: 94
	Voltage(V) @ Max Output	274
High Voltage Battery	Type	Lithium-ion
	Voltage(V)	240V
	Capacity (kWh)	2.64
	Max Output (kW)	80
	Composition	128 cell (8 module)

6. In case of Fire

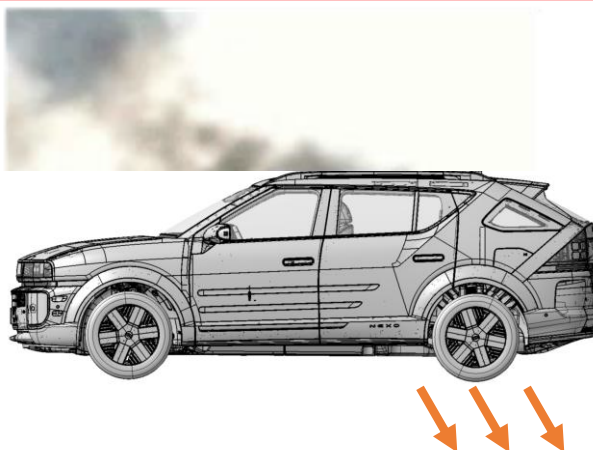
Firefighting Operations

Strict precautions must be taken while conducting firefighting operations due to the emergency release of hydrogen gas as shown below:

- Safety valves in each tank open within minutes when fires spreading to the rear underbody, and then allowing the emergency release of hydrogen gas.
 - When internal temperature of the safety valves exceeds 110 °C, the valves opens.
 - Vehicle contains three hydrogen tanks, each with a safety valves. The gas is released after valves open with three loud noises.
- For releasing all the hydrogen gas, it takes approximately 300sec. And the rapid release rate of gas can cause loud noise.
- Hydrogen gas jet stream may ignite, stay away from the vehicle.



- *Stay away from the vehicle for 5 minutes while the hydrogen gas is being released.*
- *Flames form at the rear of the vehicle.*
If emergency response is required, it is recommended to approach from 45° at the front (avoid approaching from the rear).



Hydrogen release position and direction

6. In case of Fire

Firefighting Operations

Strict precautions must be taken while conducting firefighting operations due to following reasons:

- Lithium-ion batteries contain gel electrolyte that can vent, ignite, and produce sparks when subjected to temperatures above 149°C.
- Vehicle may burn rapidly with a flare-burning effect.
- Even after the high/low voltage battery fire appears to have been extinguished, renewed or delayed fire can occur.
 - Use a thermal imaging camera to ensure the high/low voltage battery is completely cooled before leaving the incident.
 - Always advise second responders that there is a risk of the battery re-igniting.
 - In a fire, submersion or a collision that has compromised the high/low voltage battery, always store it in an open area with no exposures within 15 meters.
- A burning battery could release hydrogen fluoride, carbon monoxide, and carbon dioxide gasses. Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear. Even if the high/low voltage battery pack is not directly involved in a vehicle fire, approach the vehicle very carefully.



Extinguishers

Small fires that do not involve the high/low voltage battery should be extinguished using an ABC fire extinguisher. (ex. Fire caused by wiring harnesses, electrical components, etc.)

Do not attempt to extinguish fires that involve the high/low voltage battery with small amounts of water as this can result in electrocution. Fires that involve the high/low voltage battery should be extinguished using large amounts of water (Max 10,000 liter) to cool the high/low voltage battery. Fire fighters should not hesitate to pour larger amounts of water on the vehicle in such scenarios. Make sure the battery is fully cooled to avoid fire re-ignition.

How to Deal with the Situation

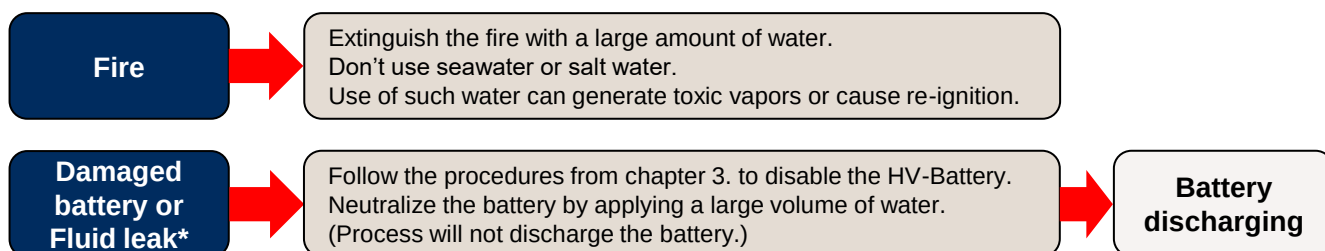
When fire:

Extinguish the fire with a large amount of water. Don't use seawater or salt water. It can generate the toxic vapor or cause the re-ignition.

When damaged battery or fluid leak:

- Disconnecting 12 V Battery (-) terminal
- Disabling the high-voltage system
- Neutralize the battery by applying a large volume of water. (It doesn't discharge the battery)
- Battery discharging

* If electrolyte solution leakage, or any damage to the High-voltage battery casing is observed.



*To be used if electrolyte solution leakage or damage to the high/low voltage battery casing is observed.

6. In case of Fire

Vehicle Fire

- Use a large volume of water (max. 10,000 liter). Water must cool down the battery.
- If water is applied directly onto the high/low voltage battery module inside the casing, it will better cool the battery. (But, never attempt to penetrate the HV battery or its casing to apply water.)
- Putting water into the high/low voltage battery can be difficult due to the battery case.
- Put water through the hole that might be made due to the accident or fire.

High/Low Voltage Battery Damage and Fluid Leaks

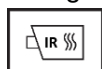
If electrolyte solution leakage or any damage to the Lithium ion battery casing is observed, the first responders should attempt to neutralize the battery by applying a large volume of water to the battery pack while wearing appropriate Personal Protective Equipment (PPE). The neutralization process helps stabilize the thermal condition of the battery pack but does not discharge the battery.

- Do not put any smoke, spark, flame around the vehicle.
- Do not touch or step on the spilled electrolyte.
- If electrolyte leak occurs, wear appropriate solvent resistant PPE and use soil, sand, or a dry cloth to clean up the spilled electrolyte.

Be sure to adequately ventilate the area.

High/Low Voltage Battery Re-ignition by Stranded Energy

Damaged cells in the high/low voltage battery can experience thermal runaway* and re-ignition.



Use Infrared Camera (IR-Cam) to observe thermal runaway. Focus the battery with the IR-Cam the whole time. Increase of the temperature could indicate a thermal runaway.

To prevent re-ignition, the first responder and second responder need to be aware of the risk of stranded energy* which remains in the damaged cells and can lead to re-ignition. Therefore disconnect the 12V battery (-) terminal to depower the battery management system (BMS). After that shut off the HV-System explained in chapter 3 and discharge the HV-Battery refer in chapter 8.

*Thermal Runaway

The originating cause of thermal runaway is generally short-circuiting inside a battery cell and a resulting increase in the cell's internal temperature.

Battery produces heat with thermal runaway and it can spread from one battery cell to many cells, in a domino effect.

*Stranded energy

Energy remains inside any undamaged battery cells after the accident. Stranded energy can cause a high/low voltage battery to reignite multiple times after a fire has been extinguished.

Electrolyte Irritation



The high/low voltage battery contains electrolyte solution. To avoid exposure to electrolyte solution and serious personal injury, always wear appropriate solvent resistant PPE (Personal Protective Equipment) and SCBA (Self-Contained Breathing Apparatus).

- *Electrolyte solution is an eye irritant. In the event of contact with eyes, rinse with plenty of water for 15 minutes.*
- *Electrolyte solution is a skin irritant. Therefore, in the event of contact with skin, wash off with soap.*
- *Electrolyte liquid or fumes coming into contact with water will create vapors in the air from oxidization. These vapors may irritate skin and eyes. In the event of contact with vapors, rinse with plenty of water and consult a doctor immediately.*
- *Electrolyte fumes (when inhaled) can cause respiratory irritation and acute intoxication. Inhale fresh air and wash mouth with water. Consult a doctor immediately.*

7. In Case of Submersion

Submerged or Partially Submerged Vehicles

Some emergency responses can involve a submerged vehicle. The NEXO does not have high voltage components on the vehicle's body or framework. It is safe to touch the vehicle's body or framework if there is no severe damage to the vehicle, whether it is in water or on land.

In the event that the vehicle is submerged or partially submerged, remove the vehicle from the water before attempting to disable the vehicle. Drain the water from the vehicle. Use the methods described in chapter 3. to disable the vehicle. Then, discharge the battery by referring to chapter 8.



WARNING

- *If severe damage causes high-voltage components to become exposed, responders should take appropriate precautions and wear appropriate insulated personal protective equipment.*
- *Do not attempt to remove a service interlock connector while the vehicle is in water.*
- *Failure to follow these instructions can lead to death or serious injury by electrocution.*

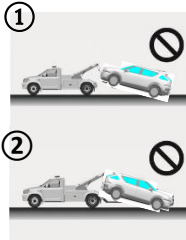
8. Towing / Transportation / Storage

Towing service

If towing the NEXO is necessary, it is recommend to having it done by an authorized HYUNDAI dealer or a commercial tow-truck service. To prevent damage to the vehicle, proper lifting and towing procedures are necessary. The best way to tow is to use a towing vehicle to tow the entire vehicle with a standing tow(A). If standing towing is not possible, the front or rear wheels are placed on a jig and the rest of the wheels are towed using a dolly(①) to avoid touching the ground.(B)



In the event of an accident, the high-voltage system must be disabled. The service interlock connector must be removed from the high-voltage battery according to one of the methods described in page 8-11 to disable the vehicle.



Do NOT

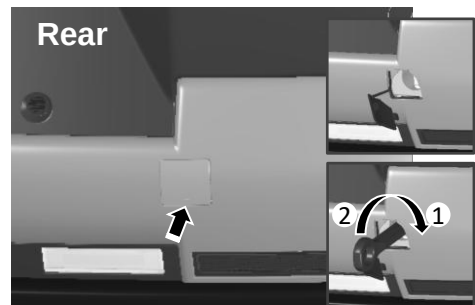
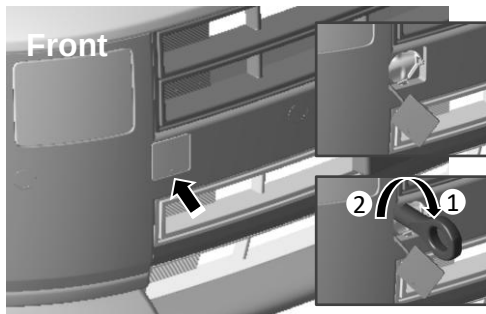
- Do not lift using the trailer hitch or body and chassis parts.
- Do not tow with sling-type equipment. Use wheel lift or flatbed equipment. **(1)**
- Do not tow the vehicle with the front wheels on the ground (forward or backward), as this may cause fire or damage to the motor. **(2)**
- If it is impossible to operate the reduction gear and parking brake, move the vehicle by using dollies, tire skate, etc with the front wheels(2WD : Front) lifted.
- Move short distances within 100m at a speed of 5km/h or less only when loading on a tow truck or if the vehicle needs to be repositioned. At this time, the gear must be in the N(Neutral) position and the parking brake must be released.

8. Towing / Transportation / Storage

Removable towing hook

If emergency towing is necessary, it is recommended that you contact an authorized HYUNDAI dealer or a commercial tow-truck service. If tow-truck service is not available in an emergency, your vehicle can be temporarily towed using a cable or chain secured to the removable towing hook at the front (or rear) of the vehicle. Perform emergency towing using cables or chains on hard-surfaced roads for a short distance and at low speeds. The wheels, axles, powertrain, steering, and brakes must all be in good working condition. In that case use the removable towing hook from the vehicle by following the installation instructions.

- Open the tailgate and take out the towing hook from the tray beneath the luggage area.
- Remove the hole cover by pressing the lower part of the cover on the bumper.
- Install the towing hook by turning it clockwise into the hole until it is fully secured.
- Remove the towing hook and install the cover after use.



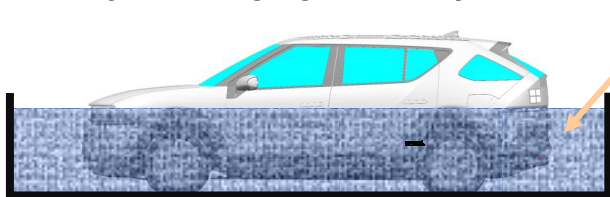
For emergency towing, place the Engine Start/ Stop button into the ACC position to unlock the steering wheel and shift the gear in N (neutral) position.

8. Towing / Transportation / Storage

Storage of damaged vehicle with the damaged battery

- Drain fluids and water, then disconnect the negative (-) terminal of the 12 V battery before storing a damaged vehicle.
- In addition, remove the water inside the battery or vehicle, then remove the service plug from the high voltage battery before storing a damaged vehicle.
- Place the vehicle in an open space away from any structure, vehicle, or building.
- Then, keep on eye on the vehicle until the discharging procedures are completed.
- If the battery can be removed from the vehicle by moving the vehicle on the lift, remove and discharge the battery.
- If the battery can't be removed, set the water pool and pouring water until the entire battery is submerged.

Battery discharging in water pool



Water pool condition

- Tap water or pond water that does not contain salt
- Maintain this water level for at least 90 hours.
- Then, put salt into the water pool to make 3.5 % salt water.
- Wait for additional 48 hours in salt water.
- Drain the water and dry it.

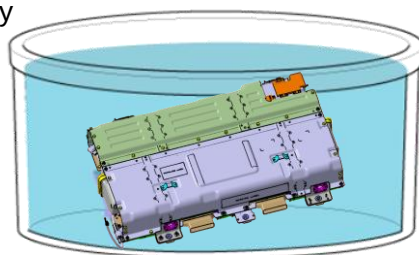


Battery discharging

- *DO NOT USE SALT WATER for the first step.*
 - *A large volume of flammable hydrogen gas can be generated in salt water due to electrolysis.*
- *After submerging the vehicle in pure water for at least 90 hours, put salt in the water pool.*

Damaged Battery Storage

- To store the damaged battery safely, the battery must be discharged.
- If the battery can be removed from the vehicle, discharge the battery to prevent re-ignition.
- Prepare water that does not contain salt such as tap water or pond water.
- Leave the battery in water for at least 90 hours.
- Then, put salt in water to make 3.5% salt water.
- Wait for additional 48 hours in salt water.
- Take out the battery from the container and dry it.



Safety Risk

- *Extinguish all smoke, spark, flame around the vehicle.*
 - *Electrolyte solution is a skin irritant.*
 - *Do not touch or step on the spilled electrolyte.*
- *If electrolyte leak occurs, wear appropriate solvent resistant PPE and use soil, sand, or a dry cloth to clean up the spilled electrolyte. Be sure to adequately ventilate the area.*

9. Important Additional Information

Fuelcell Stack

Unlike other vehicles equipped internal combustion engines, FCEVs(Fuel Cell Electric Vehicle) use high voltage electric power produced by fuel cell systems.

Therefore, FCEVs should be handled carefully to prevent accidents caused by high voltage.

The following are the safety information of high voltage of fuel cell systems.

- 1) To prevent electric shock, metal chassis and conductive covers are placed inside of the fuel cell stack.
The fuel cell stack has a high dust/waterproof rating : IP67, IP69K
- 2) Stack modules and high voltage components that produce high voltage more than DC 400V located inside the fuel cell stacks and conductive covers are designed to maintain constant insulation resistance.
The fuel cell system warns the driver and limits the output current of the fuel cell stack if the insulation resistance is detected lower than usual.

Hydrogen (General characteristics of hydrogen)

Hydrogen is a gaseous element with the lowest molecular weight of all gases and must be treated with care because it is colorless, odorless, tasteless, non-corrosive, flammable, and diffusive. however, it is not dangerous beyond that. In some respects, it is also less dangerous than other fuels. hydrogen is the lightest substance and is relatively safe because it does not mix with air and quickly disperses into the atmosphere and rises into the sky, not easily reaching the concentrations required for an explosion.

9. Important Additional Information

H₂ Gas (Characteristics of gas hydrogen)

Hydrogen has a very low density and quickly volatilizes into the sky, so even if the situation of ignition by an accident, the fire quickly rises to the sky and then disappears.

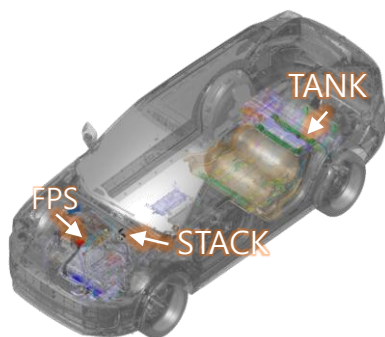
Hydrogen gas leaks should be prevented, because it can cause accidents.

The following are the property of gaseous hydrogen

- Smaller and lighter than any element.
- It has a lower density and higher buoyancy than any element.
- It can cause brittleness in some materials, including metals.
(The vehicle material in contact with hydrogen is irrelevant.)
- Colorless, odorless and tasteless.
- It does not appear to produce smoke during combustion.
- It had lower ignition energy than any other fuel.
(less than 10% of other fuel ignition energy)
- Gases or substances containing hydrogen have a wide combustible range that can be burned when the concentration of hydrogen is 4% to 75%.

Hydrogen gas leak detection system

The hydrogen gas detecting sensors detect a hydrogen leak. If hydrogen leaks, the hydrogen storage system and the power system are stopped immediately. The hydrogen sensors detect a hydrogen leak and sound an alarm at under minimum flammable concentration. The sensors are installed between the fuel cell stack, fuel supply system and the hydrogen storage tank.



[Hydrogen detecting sensor location]

[The speed ratio of diffusion & flow in the atmosphere]

Gas	CH_4	C_3H_8	H_2
Diffusion	1.0	0.63	3.8
Turbulence	1.0	0.6	2.83

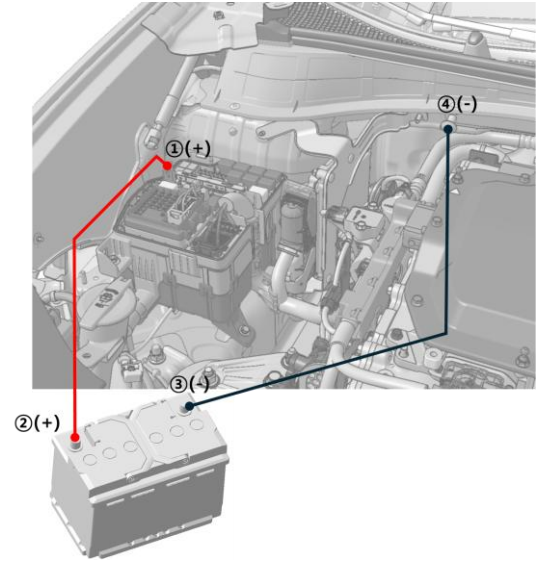
9. Important Additional Information

Emergency Starting

Jump Starting

Do not attempt to jump start the high voltage battery, as it cannot be jump started. In case of full discharge of the high voltage battery, the vehicle must be towed as mentioned on the previous page.

In case the 12V auxiliary battery is discharged, connect a starting device to the jump terminal in the PE room as you would any 12V battery (see image). Refer to the “Emergency Starting” section of the Owner’s Manual for additional information. Connect jumper cables in the order shown in the image and disconnect in reverse order.



Jump Starting Procedure

1. Make sure the booster battery is 12-Volt and that its negative terminal is grounded.
2. If the booster battery is in another vehicle, do not allow the vehicles to come in contact.
3. Turn off all unnecessary electrical loads.
4. Connect the jumper cables in the exact sequence shown in the illustration.

First connect one end of a jumper cable to the positive terminal of fuse box ①, then connect the other end to the positive terminal on the booster battery ②. Proceed to connect one end of the other jumper cable to the negative terminal of the booster battery ③, then the other end to negative terminal of vehicle ④.



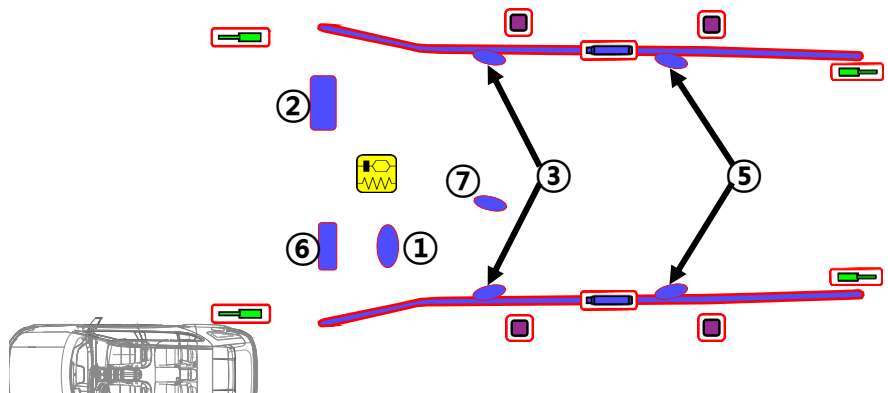
Risk

*Do not attempt to jump start the NEXO high voltage battery.
Failure to follow these instructions will lead to serious bodily injury or death by electrical shock.*

Airbag system (SRS: Supplemental Restraint System)

The NEXO comes standard with airbags, seatbelt pre-tensioners and gas struts, see picture below. Some of the features are explained in this chapter.

Safety Equipment	
	Airbags
	Gas Inflator
	Pre-tensioner
	Gas strut
	SRS control unit



9. Important Additional Information

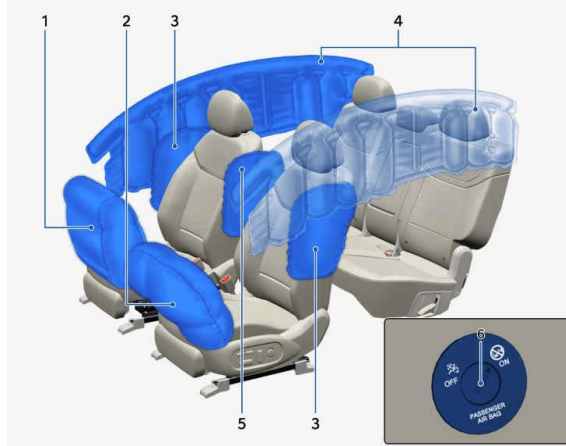
Airbag system (SRS: Supplemental Restraint System)

Airbag

7 airbags are installed in the NEXO, located in the areas shown in the image below. Before performing any emergency procedure, make sure the vehicle ignition switch is turned off and disconnect the negative connector from the 12V auxiliary battery (located in the left side motor compartment) to prevent accidental deployment of undeployed airbags.

Type	
1	Driver's front air bag
2	Passenger's front air bag
3	Side air bag 1 st row (left/ right)
4	Curtain air bag (left/ right)
5	Front center side air bag only driver seat

* The actual air bags and seats in the vehicle may differ from the illustration.



Seat Belt Pre-tensioner

In the NEXO, the driver's, front passenger's and rear(except center seating position) seat belts are equipped with pre-tensioners. When the seat belt pre-tensioners are activated in a collision, a loud noise may be heard and fine dust, which may appear to be smoke, may be visible in the passenger compartment. These are normal operating conditions and are not hazardous. The seat belt pre-tensioner assembly mechanisms may become hot during activation, and may need several minutes to cool down after they have been activated.



Front



Rear



Undeployed Airbags

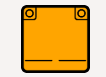
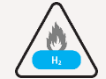
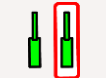


- Do not cut the red colored part shown in the image above.
- Make sure the vehicle ignition switch is turned off, disconnect the negative cable from the 12V auxiliary battery (located in the left side of motor room) and wait 3 minutes or longer to allow the system to deactivate.



10. Explanation of pictograms used

Table of used pictograms in this document.

	Hydrogen vehicle		Gas tank with gas type indication (H2)		Bonnet
	General warning sign		Air-conditioning component		Boot
	Corrosives		Hazardous to the human health		Flammable
	Explosives		Acute toxicity		Environmental hazard
	Infrared Camera		Use water to extinguish the fire		Warning, Electricity
	Steering wheel, tilt control		Seat adjustment longitudinal		Seat height adjustment
	Battery pack, high-voltage		Battery pack, low-voltage		Use ABC powder to extinguish the fire
	High-voltage component		SRS control unit		LV-device disconnects high voltage
	Remove smart key		Zone requiring special attention		
	Attention; hydrogen burns with an almost invisible flame				Fuel cell component
	Automatic hydrogen overpressure safety valve with gas type indication				Gas strut / Preloaded spring
	High strength zone		Airbag		Cable cut
	Stored gas inflator		Seat belt pretensioner		Pedestrian protection active system
	Gas strut / Preloaded spring		Gas line (H2)		High voltage power cable