


Maintenance for HV & Auxiliary Batteries

Service Category General

Section Pre-Delivery Service

Market USA

Lexus Supports
ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2010	RX450H	

TSB REVISION NOTICE

May 27, 2009 Rev1:

- The auxiliary battery location references have been corrected throughout the document.
- The CAUTION in step 5 "Before Delivery" section has been updated.

Any previous printed versions of this service bulletin should be discarded.

Introduction

The RX 450h is equipped with 2 types of batteries:

- Hybrid Vehicle (HV) battery
- 12-volt auxiliary battery
- If the RX 450h is put into storage, the state of charge (SOC) of its HV battery and auxiliary battery will gradually decrease. To prevent the auxiliary battery from becoming discharged during storage, proper maintenance is necessary.
- Please perform the following maintenance service for the HV battery and 12-volt auxiliary battery.

NOTE

- Before disconnecting the auxiliary battery, confirm the shift lever is in the "P" position and apply the parking brake completely. The shift lever cannot be shifted from the "P" position with the 12-volt auxiliary battery disconnected.
- If the auxiliary battery is disconnected when the back door is closed, the door will lock. To unlock the door, use the security opener on the inside of the back door. For details, refer to the Owner's Manual.
- If the negative (-) terminal of the auxiliary battery is reconnected, even if the power switch is selected to the "START" mode, the hybrid system may NOT start. In this case, push the POWER switch to select "START" again to start the hybrid system (the "READY" light is ON). If the hybrid system still does NOT start (the "READY" light is OFF), refer to the Repair Manual.

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Maintenance Items

CONDITION*	MAINTENANCE OPERATION
Before Delivery	Fully charge the 12-volt auxiliary battery. Fast charge is NOT recommended on the 12-volt battery in order to prevent battery damage. (Deliver the vehicle to the customer after it is fully charged to 12.6v).
To Store for 30 Days or More	Disconnect the negative (-) terminal of the 12-volt auxiliary battery to prevent the SOC of the auxiliary battery from decreasing during storage due to parasitic current.
Just After Unloading & Every 2 Months	Keep the Hybrid System ON for 30 minutes with the transmission in the "P" position (in order to charge the HV battery and the auxiliary battery).

* The condition also corresponds with the section titles within this TSIB.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFF	T1	T2
N/A	Not Applicable to Warranty	-	-	-	-

Required Tools and Equipment

SPECIAL SERVICE TOOLS (SST'S)	PART NUMBER	QTY
GR8 Battery Diagnostic Station*	00002-MCGR8	1

* Essential SST.

NOTE

- Additional SSTs may be ordered by calling 1-800-933-8335.

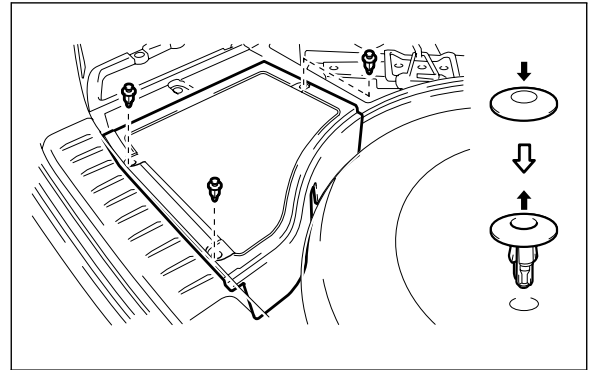
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Before Delivery

Fully charge the 12-volt auxiliary battery:

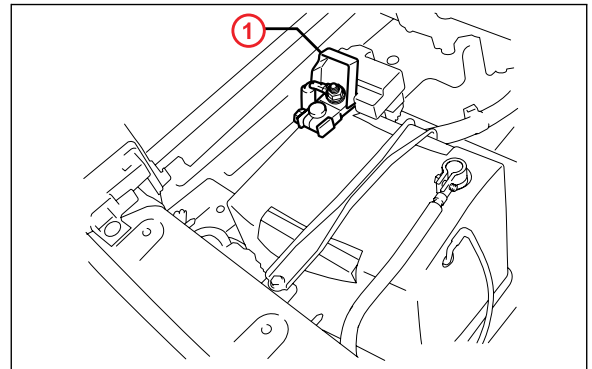
1. Before charging the auxiliary battery, turn OFF all lights and accessories and open the back door.
2. Push the core of the clips and remove the clips.

Figure 1.



3. Remove the battery cover.
4. Remove the positive (+) terminal cover.

Figure 2.



1	Positive (+) Terminal Cover
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5. Check the battery SOC.
 - If the battery voltage is **LESS THAN** 12.6 V, then continue to step 6.
 - If the battery voltage is **12.6 V or MORE**, replace the positive (+) terminal cover and battery cover, and close the back door.

CAUTION

- If measuring the voltage with the negative (–) terminal connected, verify IG/OFF, and turn headlights on for 60 seconds or more. This removes the surface charge.

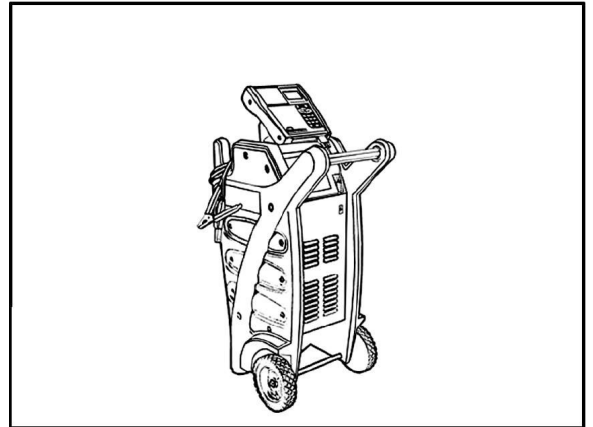
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Before Delivery

Fully charge the 12-volt auxiliary battery: (Continued)

6. Charge the 12-volt auxiliary battery.
 - A. Connect the red charger clamp to the positive (+) battery terminal and the black charger clamp to the negative (-) battery terminal.

Figure 3. GR8 Battery Diagnostic Station



- B. Plug the charger into a grounded 110-volt outlet and flip the power switch to the "ON" position.
 - C. Once the charger is properly turned ON, perform a diagnostic charge by "MODEL" (RX 450h). The GR8 Battery Diagnostic Station will indicate result when complete.

NOTE

If the auxiliary battery was stored at 32°F (0°C) or below, charge the auxiliary battery in a room above 32°F (0°C).

CAUTION

- Charge in a well-ventilated area.
- Do NOT allow sparks or fire near the auxiliary battery.

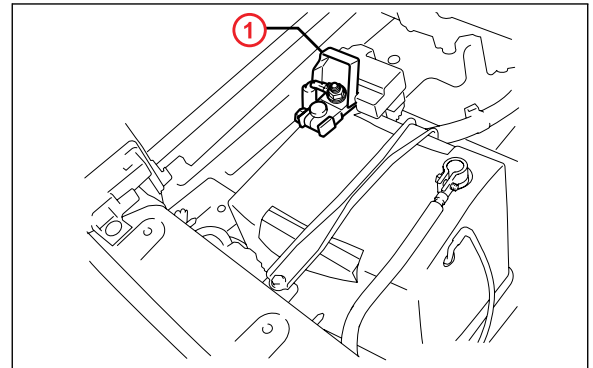
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Before Delivery

Fully charge the 12-volt auxiliary battery: (Continued)

7. If the GR8 Battery Diagnostic Station is NOT available, you may charge the 12-volt battery by turning the vehicle to "Ready-On."
 - Run time will vary depending on the state of charge.
 - If this method is used, you MUST confirm that the battery is charged to 12.8 volts using a DVOM.
8. After charging the auxiliary battery, install the positive (+) terminal cover.

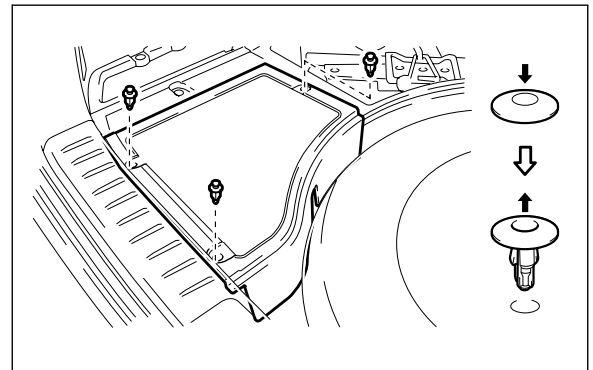
Figure 4.



1	Positive (+) Terminal Cover
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9. Install the battery cover and insert the clips into their original positions.

Figure 5.



10. Close the back door.

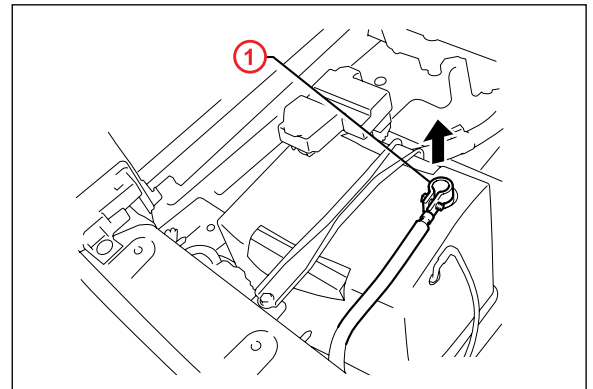
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To Store for 30 Days or More

Disconnect the negative (-) terminal:

1. Turn OFF all lights and accessories.
2. Open the back door.
3. Push the core of the battery cover clips and remove the clips.
4. Remove the battery cover.
5. Disconnect the negative (-) terminal.

Figure 6.



1 Negative (-) Terminal

6. Install the battery cover and insert the clips in their original positions.
7. Close the back door.

NOTE

When it is necessary to move the vehicle, reconnect the negative (-) terminal.

Connect the negative (-) terminal:

1. Open the back door.
2. Push the core of the battery cover clips and remove the clips.
3. Remove the battery cover.

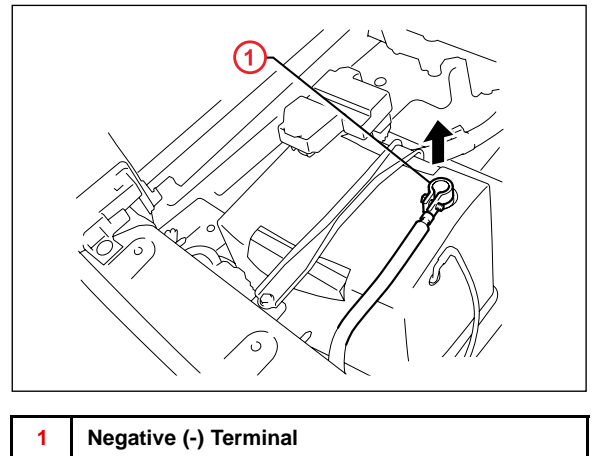
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To Store for 30 Days or More

Connect the negative (-) terminal: (Continued)

4. Connect the negative (-) terminal.
Torque: 6.0 N*m (61 kgf*cm, 4.4 ft*lbf)

Figure 7.



5. Install the battery cover and insert the clips in their original positions.
6. Close the back door.

Every Two Months

Cycle vehicle to "READY" ON:

NOTE

- When the remaining capacity of the HV battery is low, the gasoline engine automatically starts and the HV battery is charged. The 12-volt auxiliary battery is also charged by the HV battery regardless of the gasoline engine operation.
- Be sure to reconnect the negative (-) terminal of the auxiliary battery before performing this procedure.

1. Park the vehicle in open air or connect the exhaust extraction hose to the exhaust pipe.
2. Apply the parking brake.

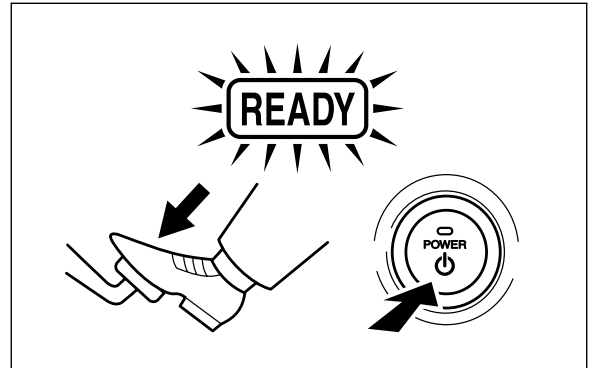
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Every Two Months

Cycle vehicle to "READY" ON: (Continued)

3. With the brake pedal depressed, push the POWER switch and check that the "READY" light in the meter illuminates when the hybrid system starts (the "READY" light is ON).

Figure 8.



4. Turn OFF all lights and accessories.
5. Check that the shift lever is in the "P" position.
6. Keep the "READY" light on and charge the HV battery for 30 minutes.

NOTE

- If the amount of charging energy is small, the display may NOT indicate the energy flow.
- Ensure there is a sufficient amount of fuel for the vehicle to run for 30 minutes.

Figure 9.

