

*Towing and  
Road Service Guide  
For  
Lexus RX400h  
Hybrid SUV*



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## **EQUIPMENT AVAILABILITY**

- To eliminate the need to remove the eyebolt from the vehicle's tool kit during loading or recovery, a screw-in eyebolt is available from any authorized Lexus dealer's parts department.

Towing Eyebolt Part number 5196148202

- The towing and tie-down equipment discussed in this guide is available through AW Direct, a preferred AAA supplier. Contact your local AAA club representative for special offers available to AAA contractors.

**AAA Towing and Roadside Assistance Guide for Lexus RX400h**  
**April 12, 2005**

**GENERAL TOWING INFORMATION**

**SPECIAL PRECAUTIONS:**

- 2006 Lexus RX400h models are sold as an All Wheel Drive configuration only. NEVER ATTEMPT TO MOVE AN ALL WHEEL DRIVE VEHICLE WITH ONLY TWO WHEELS ON THE GROUND. This vehicle uses two separate electric motors for power, one powering the front axle and one powering the rear axle. Towing with either end on the ground will damage the electric motor assembly on the axle remaining on the ground as well as possible damage the high voltage battery.
- Wheel-lift with towing dolly or car carrier equipment are authorized methods of towing this vehicle. A car carrier is the preferred method of transporting the 2006 Lexus RX400h; however, a wheel-lift and towing dolly can be used with the dolly being placed under the trailing wheels THERE IS NO APPROVED PROCEDURE FOR THE USE OF SLING-TYPE EQUIPMENT ON THIS VEHICLE.
- When loading or pulling the RX400h, DO NOT USE HOOKS OF ANY TYPE ON THE LOWER CONTROL ARMS. Follow only the approved loading procedures specified in the following pages.
- In an emergency situation where the vehicle will not roll or must be moved for towing access, wheel-jacking equipment, such as Go-Jacks are recommended. NOTE: ALL DRIVE WHEELS MUST BE RAISED BEFORE MOVING.

## **CAR CARRIER LOADING AND TRANSPORTING:**

The use of car carrier equipment is the preferred method of transporting the new Lexus RX400h vehicles.

**CAUTION: The curb weight for the Lexus RX400h 4,365lbs for the All Wheel Drive version. If fully loaded, the gross vehicle weight may be near 5,520lbs**

The Lexus RX400h has adequate ground clearance at front and rear to permit loading onto a conventional car carrier without additional ramping in normal circumstances. However, clearance at the trailing end of the vehicle should always be monitored as it is loaded.

The towing eyebolt should be used for front loading of the RX400h. The eyebolt is located in the tool kit located in the center under the floor in the rear cargo area. (See Figure 1)



*Figure 1*

If the towing eyebolt is missing or otherwise inaccessible, the tie-down slots on the undercarriage can be used to load the vehicle.

NOTE: The eyebolt on this model has RIGHT-HAND THREADS. Screw the eyebolt clockwise into the front pull point and attach the winch line to the eyebolt with the open side of the hook facing upward. (See Figure 2)



*Figure 2*

Before loading, ensure that the transmission is in “Neutral” and the ignition switch is in position to unlock the steering. When loading, remember that the eyebolts are designed for a straight ahead pull within a 20 degree window, so stop the vehicle as the winch wire rope begins to pull downward. To prevent too much downward pull, you will need to keep the leading edge of the RX400h, 3 feet or more from the winch drum

Once loaded, set the parking brake and secure the vehicle onto the carrier.

**NOTE:** Lexus states that the four tie-downs slots in the frame can be used to secure the vehicle. Slots are provided in the frame to take either “T” or “mini-J” type hooks. (See Figures 3 and 4). AAA recommends the use of wheel strap tie-downs around each wheel to assist in preventing damage to sensitive under body and suspension components.



*Figure 3 (front tie down slot)*



*Figure 4 (rear tie down slot)*

After securing, return the bed to the transporting position, then slacken the winch wire rope slightly to prevent downward pull on the towing eyebolt as bumps are encountered during transport. Make sure that the ignition switch is turned to the OFF position to avoid unnecessary battery drain.

## SHIFTER LOCK OVERRIDE

If there is a problem with the shifter or if the ignition key is not available, the transmission can be shifted out of the park position. This is accomplished by lifting out the small cover to the left of the shifter “Park (P)” indicator and depressing the button below the cover to allow the shifter to be moved out of the Park position. See Figure 5.



*Figure 5*

## WHEEL-LIFT TOWING PROCEDURE:

If a wheel-lift is used, the procedures shown below must be used with no exceptions.

**CAUTION:** The RX400h is All Wheel Drive. It is essential that no attempt be made to move these vehicles with only two wheels lifted. *All four wheels must either be on the ground or lifted before moving an All Wheel Drive RX400h.*

The RX400h has adequate undercarriage clearance to permit the use of a wheel-lift with a towing dolly installed under the trailing wheels. As stated above, the use of a wheel-lift without a towing dolly will cause damage to the drivetrain on these All Wheel Drive models, even if the vehicle is towed a very short distance.

To tow an All Wheel Drive RX400h with a wheel-lift and dolly, observe the following:

- Secure the one set of wheels firmly to the wheel-lift and the other set of wheels firmly to the dolly.
- After loading the RX400h onto the dolly and wheel-lift, place the transmission selector in Park and set the parking brake.
- Use a steering wheel securing device to prevent possible excessive load on the steering column lock.
- Attach safety chains and tow lights to the vehicle.
- Ensure that the ignition switch is turned OFF to prevent unnecessary battery drain.

NOTE: The 2006 Lexus RX400h has a gasoline/electric hybrid powertrain in it and the gasoline engine does not have to be running for the vehicle to move under its own power when the ignition is turned on. It is essential that you monitor the display on the instrument panel to know if the vehicle is able to operate under its own power. Figure 6 below show what the display will look like when electric portion of the powertrain is ready to power the vehicle.



Figure 6

## EMERGENCY ROAD SERVICE PROCEDURES

### JACKING:

The jack supplied with the RX400h is located in the toolbox in the center of the rear cargo area, under the floor. (See Figure 7 below.)



*Figure 7*

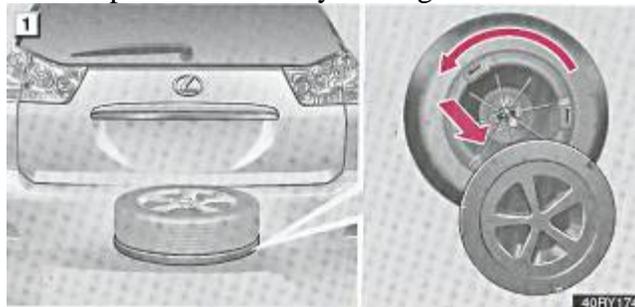
The approved lifting locations are on the pinch weld or rocker sills, located inboard of the wheels.

Place the jack in its proper location. Observe all standard jacking precautions and ensure that the vehicle is on firm, level ground. As the jack comes in contact with the vehicle body, ensure that it is contacting the correct location on the vehicle. Continue lifting to raise the vehicle high enough to change the tire.

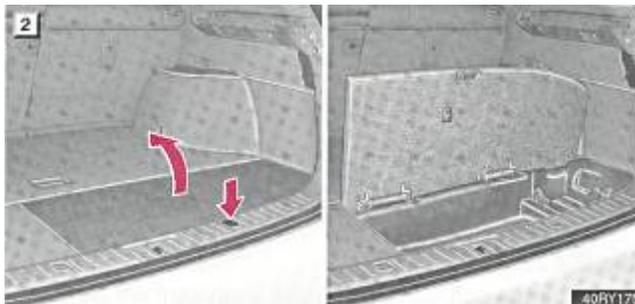
## TIRE SERVICE:

The Lexus RX400h is equipped with a full size spare tire mounted on an alloy rim which stored under the vehicle and is held in place by a winch and cable assembly. There is a multi-step process to lower the tire which is best described through the following illustrations.

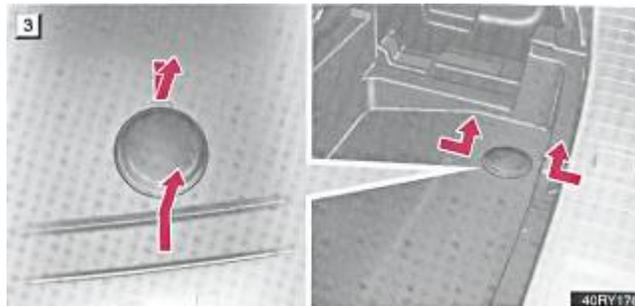
1. Remove the inside spare tire cover by turning it counterclockwise.



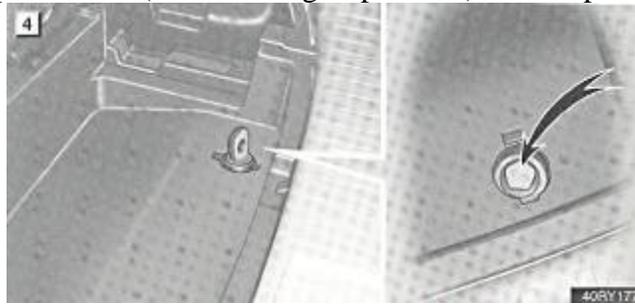
2. In the luggage compartment, open the right side auxiliary box by pushing on the button. You will find the spare tire clamp bolt on the right side of the auxiliary box.



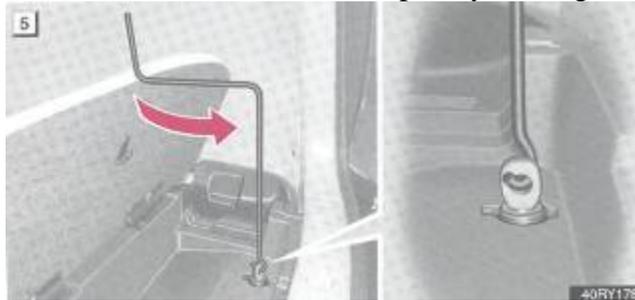
3. Remove the cover as shown in the illustration below.



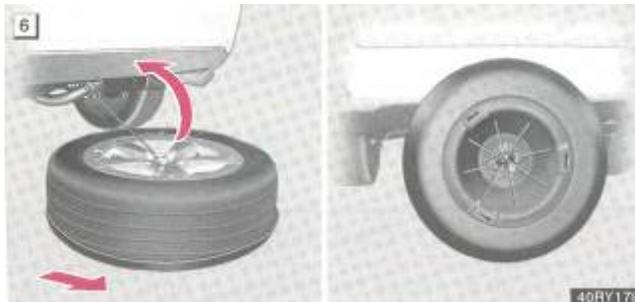
4. Put the adapter socket (for removing a spare tire) on the spare tire clamp bolt.



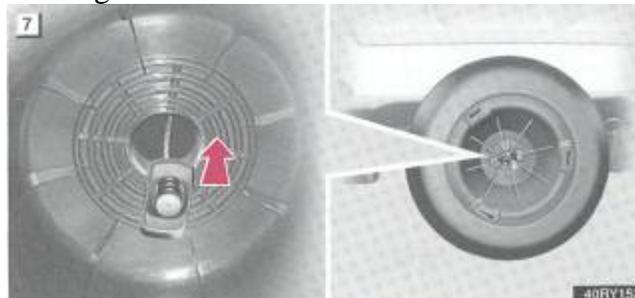
5. Connect a jack handle and the adapter socket. Turn the jack handle counterclockwise. The tire will lower completely to the ground.



6. Pull out the spare tire and stand it up. Use caution not to damage the bumper surface.



7. Remove the holding bracket.



**CAUTION:** Before mounting the spare tire on the vehicle, ensure that the rim and axle mounting surfaces are clean and free from dirt and corrosion. If the spare rim is badly corroded, mounting the spare on the vehicle is not recommended. Instead, transport the vehicle to a repair facility to have the problem corrected.

**NOTE:** Lexus recommends that the wheel nuts be tightened with a torque wrench to 76 foot pounds (103 Newton meters) as soon as possible after changing the wheels.

## OUT OF FUEL SERVICE:

There are no special fueling requirements for the 2006 Lexus RX400h, although it is important to take care not to damage the vehicle's finish during refueling. The fuel filler is located on the left-hand (driver's) side of the vehicle on the rear quarter panel and is covered by a locking door. A button on the lower left side of the dash opens the fuel filler door.



*Figure 8*

Due to the special fuel monitoring system on the RX400h you may come across a vehicle where the fuel door does not open when the fuel door release switch is depressed. You will need to wait about a minute for the pressurized fuel tank to depressurize before the system will let you open the fuel door. When the readout on the instrument cluster looks similar to the one in Figure 9, it is then safe to open the fuel door and release the fuel cap



*Figure 9*

If the fuel filler door is inoperative due to a discharged battery or other trouble, there is an override pull cable inside the auxiliary box in the left side of the luggage compartment. You will need to lift up the left rear luggage floor compartment door to access the override pull handle on most vehicles. See Figure 10.



*Figure 10*

## **JUMP-STARTING:**

The Lexus RX400h has one battery which is located under the hood. It is positioned on the right (passenger's) side of the engine compartment behind the right front headlamp assembly



*Figure 11*

The RX400h uses the high voltage system to start the gasoline engine. If the 12 volt battery is discharged, the high voltage system does not function so there may be the need to jump-start these vehicles.

The following jump-starting procedures should be followed when rendering assistance to a Lexus RX400h:

- Never use jump-starting equipment that can exceed normal 12-volt charging system voltage.
- Ensure that all electrical accessories and the ignition switch are turned OFF before connecting jumper cables or a jumper box to the discharged vehicle.
- If using jumper cables, make connections in the following order:
  1. Connect the positive (+) jumper cable to the positive battery terminal of the discharged vehicle and to the positive (+) battery terminal of the donor vehicle or jumper box.
  2. Connect the negative (-) jumper cable to the negative battery terminal of the donor vehicle. (Skip this step if using a jumper box.)
  3. Connect the negative (-) cable to a good ground on the engine of the discharged vehicle. NOTE: You may have to remove the decorative engine cover to access a good connection location.

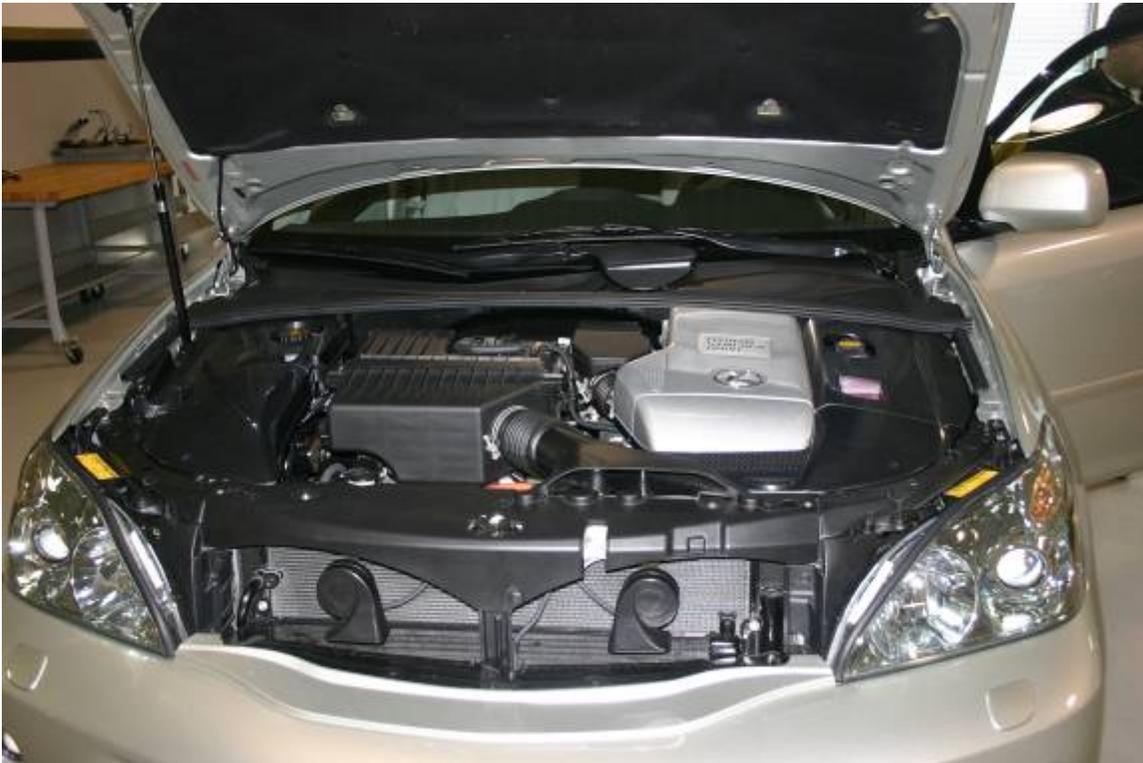
Allow the discharged battery to charge for a few minutes before attempting start the vehicle. Since the high voltage system actually starts the gasoline engine, there may not be any “cranking” that takes place. The computers on this vehicle decide whether or not the gasoline engine needs to run to charge the high voltage battery which in turn charges the 12 volt battery through a connection in the system’s inverter/converter assembly. The RX400h usually moves at low speeds and in reverse under electrical power only.

## HIGH VOLTAGE ELECTRICAL SYSTEM:

The high voltage electrical system on the 2006 Lexus 400h is similar in design to other vehicles that are currently on the market built by Toyota Motor Corporation. The system uses a high voltage storage battery that is located under the rear seat area of the vehicle which has a voltage of 288 VDC. High voltage electric wiring runs under the vehicle from the battery pack to converter/inverter under the hood where the 288 VDC is converted to 650 VAC to power each electric drive motor. The front drive motor assembly is incorporated in the transaxle under the hood and the rear one is located in the rear differential on the back axle. In addition to high voltage wiring going to the transaxle under the hood, the Lexus RX400h also uses an electrically powered air conditioning compressor that is powered off of the high voltage electrical system as well as electrically assisted power steering.

***NOTE: All High Voltage wiring is wrapped in a bright orange plastic loom so it is easy to identify. For your safety, avoid contact with the bright orange loom whenever possible.***

As you can see from what is shown in Figure 12, most of the high voltage components are located under removable plastic panels, some of which have built in micro switches which disable the high voltage system when moved.



*Figure 12*

All high voltage systems have several levels of safety built into them to prevent personal injury to people either servicing or operating these vehicles. If any level of the safety barrier is breached on these vehicles, the high voltage system becomes inoperative, so risk of personal injury from providing service to these vehicles is very low.