Towing and Road Service Guide For The Lexus ES300h

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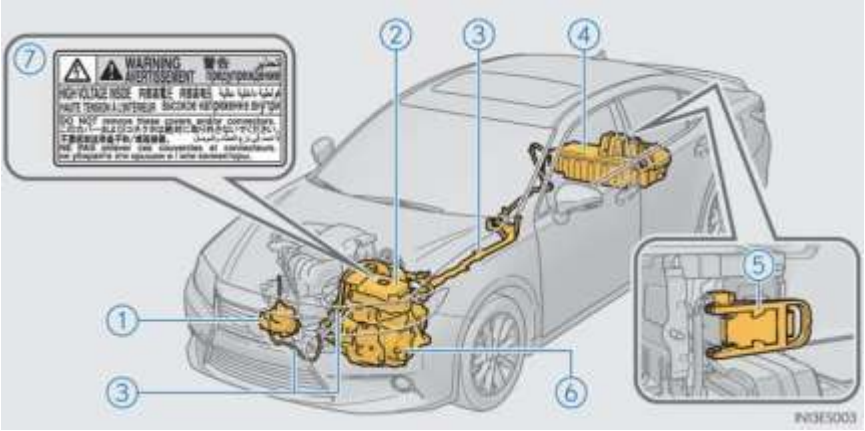
General Information

The hybrid system combines the use of a gasoline engine and an electric motor (traction motor) according to driving conditions, improving fuel efficiency and reducing exhaust emissions.



1. Air Conditioning Compressor
2. Power Control Unit
3. High Voltage Cables (Orange)
4. Hybrid Battery
5. Service Plug
6. Electric Motor (Traction motor)
7. Caution Label

Take care when handling the hybrid system, as it contains a high voltage system (about 650V at maximum) as well as parts that become extremely hot when the hybrid system is operating. Obey the caution labels attached to the vehicle.

Sounds and vibrations specific to a hybrid vehicle:

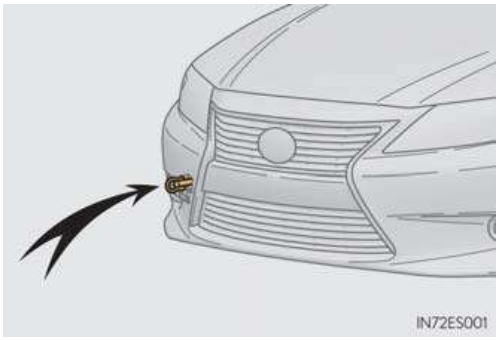
There may be no engine sounds or vibration even though the vehicle is able to move. Always change the shift position to P when parked.
The following sounds or vibrations may occur when the hybrid system is operating and are not a malfunction:

- Sounds may be heard from the hybrid battery (traction battery) behind the rear seats when the hybrid system starts or stops.
- Motor sounds may be heard from the engine compartment.
- Sounds from the hybrid system may be heard when the cargo area lid is open.
- Sounds may be heard from the transaxle when the hybrid system starts or stops, or while the vehicle is idling.
- Engine sounds may be heard when accelerating sharply.
- Sounds may be heard due to regenerative braking when the brake pedal is depressed and accelerator is loosened.
- Other sounds, such as motors and mechanical noises, may be heard from the brake system when the brake pedal is depressed.
- Vibration may be felt when the gasoline engine starts or stops.
- Cooling fan sounds may be heard from the air intake vent on the side of rear left seatback. When driving in Eco mode, the fan noise may be louder than when driving normally.

GENERAL TOWING INFORMATION

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.

SPECIAL PRECAUTIONS:

- The ES300h **has** a locking steering column with Push-Button start

- If the vehicle needs to be towed, do so with front wheels raised. If the wheels connected to the electric motor (traction motor) are on the ground when towing, the motor may continue to generate electricity. This may cause electricity leakage leading to a fire.

- Wheel-lift and car carrier equipment are authorized methods of transporting this vehicle. A car carrier is the preferred method of transporting. THERE IS NO APPROVED PROCEDURE FOR THE USE OF SLING-TYPE EQUIPMENT ON THIS VEHICLE.

- When loading or pulling the ES300h, DO NOT USE HOOKS OF ANY TYPE ON THE LOWER CONTROL ARMS. Follow only the approved loading procedures specified in the following pages and listed in the AAA/CAA Towing & Service Manual.

- In an emergency situation where the vehicle will not roll or must be moved for towing access, wheel-jacking equipment, such as GoJaks are recommended.

Shifting out of Park and into Neutral:

The vehicle may be shifted out of **P**ark into **N**eutral by pressing the POWER button to attain either Ignition-on or READY-on modes. To select **N**eutral, press the brake pedal while moving the shifter from Park

If the 12-Volt auxiliary battery is discharged, the vehicle will not start. However, shifting out of Park is possible using the manual override procedure listed on page 13 of this guide.

CAR CARRIER LOADING AND TRANSPORTING:

The use of car carrier equipment is the preferred method of transporting a Lexus ES300h vehicle.

Note: The curb weight for the ES300h is 3,660 lbs/2,196 kg

The ES300h has a moderate amount of ground clearance at front and rear. Loading onto a conventional car carrier may require additional ramping in some circumstances. However, clearance at the trailing end of the vehicle should always be monitored as it is loaded.

The towing eyebolt can be used for front loading of the ES300h. The eyebolt is located in a tool tray located in the rear cargo area; however exact placement depends on the type of spare tire the vehicle is equipped with (See Figure 1 and 2).

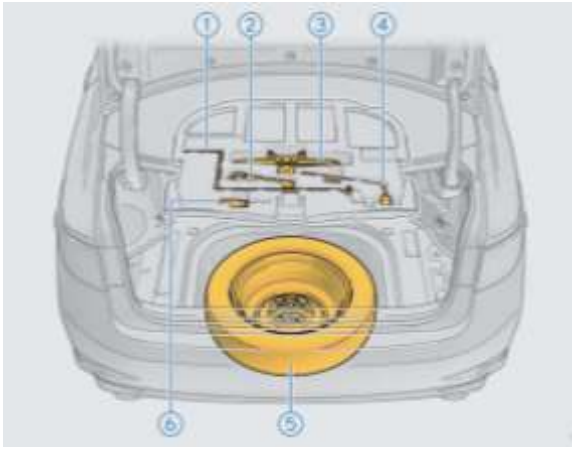


Figure 1
Compact Spare Eyebolt in location (2)

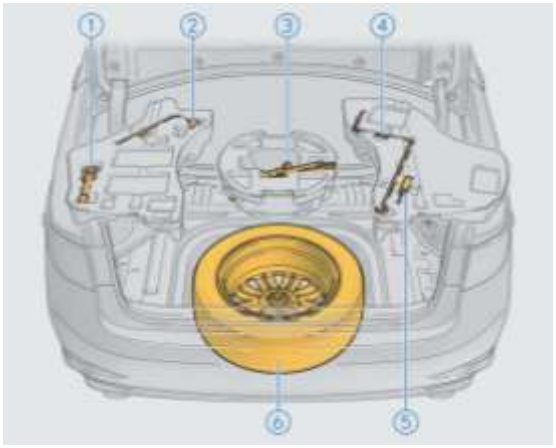


Figure 2
Full Size Spare Eyebolt in location (1)

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

NOTE: Use a plastic trim tool or a plastic card, such as an old credit card to avoid damaging the painted surface when removing the plug from the bumper to gain access to the eyebolt receiver. The eyebolt on this model has RIGHT-HAND THREADS. Screw the eyebolt clockwise into the front pull point and ensure that it is tight. Attach the winch line to the eyebolt with the open side of the hook facing upward (See Figure 3, 4 and 5).

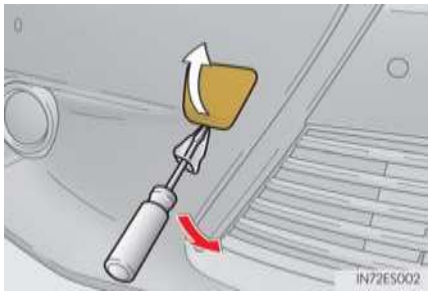


Figure 3

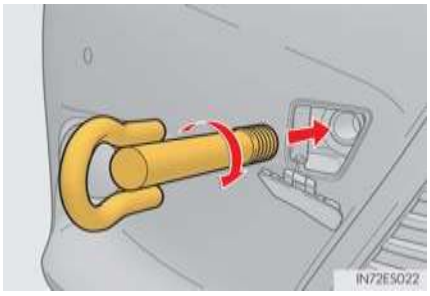


Figure 4

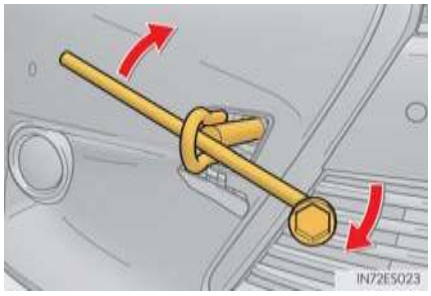


Figure 5

Before loading, ensure that the transmission is in “Neutral”. 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 ES300h about 2 feet or more from the winch drum.

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

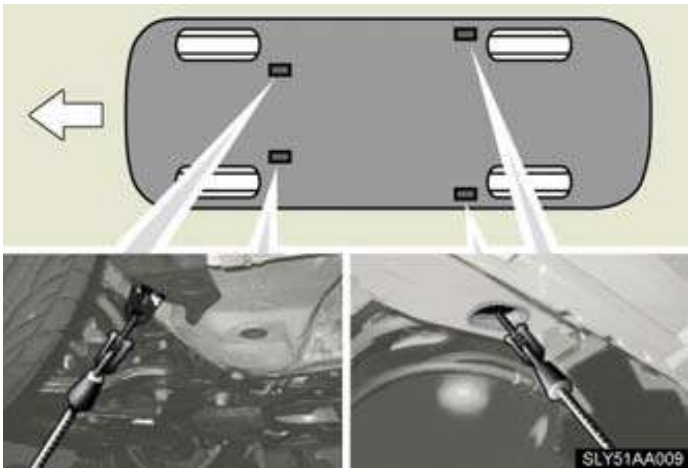


Figure 6 (Tie-down points)

NOTE: Lexus states that the four tie-down 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 (Figure 6).

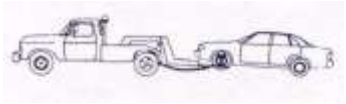
Do not overly tighten the tie-downs or the vehicle may be damaged. AAA recommends the use of wheel strap tie-downs around each wheel.

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 is in the OFF position and the smart key is located in the cab of the tow vehicle.

WHEEL-LIFT TOWING PROCEDURE:

If a wheel-lift is used, the procedures shown below must be followed. Refer to the AAA/CAA Tow and Service Manual for detailed information regarding towing this vehicle. Follow all general towing precautions.

Front Tow:



To tow ES300h with a wheel-lift from the front of the vehicle, observe the following:

- Secure the front wheels firmly to the wheel-lift
- Use a steering wheel securing device
- Attach safety chains and tow lights to the vehicle
- Ensure that the ignition is turned OFF to prevent unnecessary battery drain and smart key is removed from the vehicle and placed in the cab of the tow vehicle

Rear Tow:

To tow ES300h with a wheel-lift and dolly, observe the following:

- Secure the rear wheels firmly to the wheel-lift and the front set of wheels firmly to the dolly
- After loading the ES300h onto the dolly and wheel-lift, place the transmission in Park and set the parking brake
- Use a steering wheel securing device
- Attach safety chains and tow lights to the vehicle
- Ensure that the ignition is turned OFF to prevent unnecessary battery drain and smart key is removed from the vehicle and placed in the cab of the tow vehicle

EMERGENCY ROAD SERVICE PROCEDURES

JACKING and TIRE SERVICE:

The jack supplied with the ES300h is located in the tray beneath the rear cargo liner. The location of the jack and tire changing tools is affected by the type of spare tire the vehicle is equipped with. Below are images of the two different layouts with the jack being in position 3 (See Figure 7 and 8).

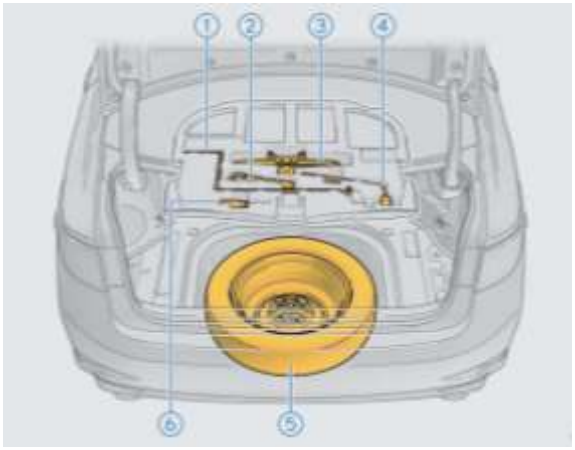


Figure 7 Compact Spare

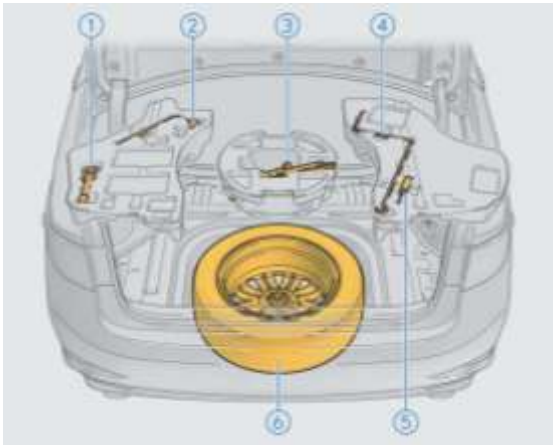


Figure 8 Full Size Spare

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

Observe all standard jacking precautions. Ensure that the vehicle is on firm, level ground and chock the wheel diagonal from the one you will be raising. Prior to jacking the vehicle, loosen the lug nuts. As the jack comes in contact with the vehicle body, ensure that it is contacting the correct location on the vehicle. Figure 9 shows the location for the factory jack while Figure 10 show the jacking and lifting locations for a trolley jack and hoist. Continue lifting to raise the vehicle high enough to change the tire.

CAUTION: Locating the proper lifting points along the sides of the vehicle can be difficult due the shape of the lower body panels. To avoid damage, ensure that the jack you are using is properly placed in its correct location before lifting the vehicle.

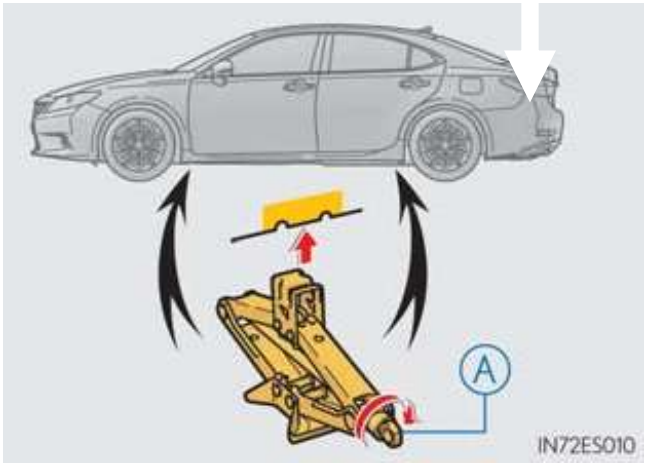


Figure 9

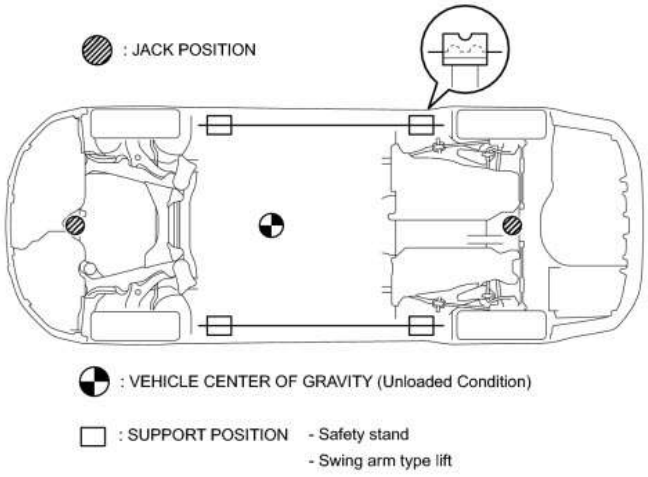


Figure 10

Clean all debris or rust from the tire mounting surfaces. Use a rag and or wire brush (Figure 11).

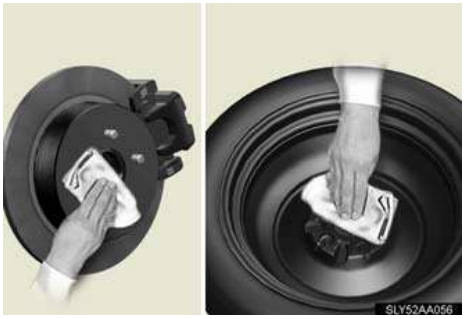


Figure 11

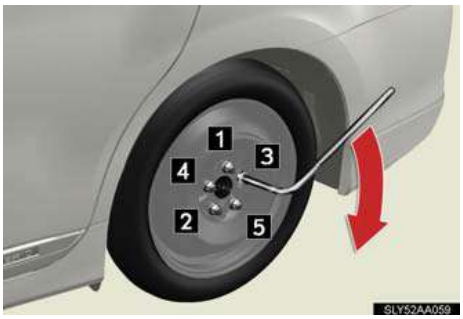


Figure 12

Install the spare tire and tighten lug nuts. On an aluminum spare wheel, the nut washer should contact the wheel surface. On a steel spare wheel, the tapered portion of the lug nut should contact the wheel surface. Firmly tighten each wheel nut two or three times in the order shown in the illustration below (Figure 12).
Lug Nut Tightening Specification: Tightening torque: 76 ft•lbs/103 N•m/ 10.5 kgf•m

When using the compact spare tire:

As the compact spare tire is not equipped with a tire pressure warning valve and transmitter, low inflation pressure of the spare tire will not be indicated by the tire pressure warning system. Also, if you replace the compact spare tire after the tire pressure warning light comes on, the light remains on.

NOTE: If the compact spare is used when the road surface is snowy or icy, it needs to be installed on the rear only. If the vehicle has a front flat, install the compact spare on the rear and move a good road wheel from the rear axle to the front axle for safety reasons.

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.

STOWING THE DEFLATED ROAD WHEEL:

The deflated road wheel can be stored in the rear cargo area in the same location as the spare wheel. Use caution not to damage the wheel nor pinch your hand between the wheel and the trunk surface when stowing the deflated tire. The center wheel ornament will need to be removed from the road wheel in order to secure the wheel in the rear cargo area.

After completing the tire change

The tire pressure warning system must be reset.

How to initialize the tire pressure warning system:

1. Park the vehicle in a safe place and turn the “POWER” switch off. Initialization cannot be performed while the vehicle is moving.
2. Adjust the tire inflation pressure to the specified cold tire inflation pressure level. Make sure to adjust the tire pressure to the specified cold tire inflation pressure level. The tire pressure warning system will operate based on this pressure level.
3. Turn the “POWER” switch to ON mode.
4. Press and hold the tire pressure warning reset switch until the tire pressure warning light flashes slowly three times (Figure 13).

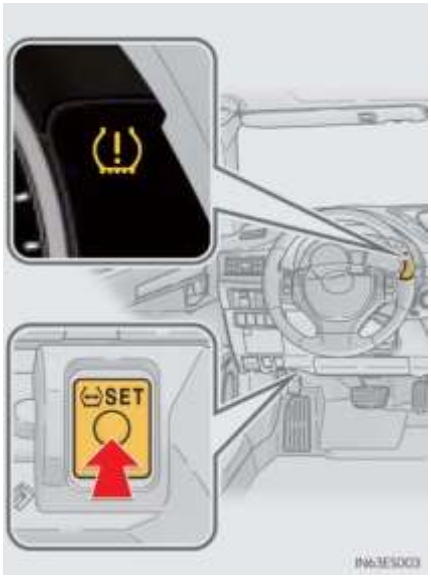


Figure 13

5. Wait for a few minutes with the “POWER” switch in ON mode and then turn the “POWER” switch off.

OUT OF FUEL SERVICE:

The fuel filler is located on the left-hand (driver's) side of the vehicle's 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 14 and 15).

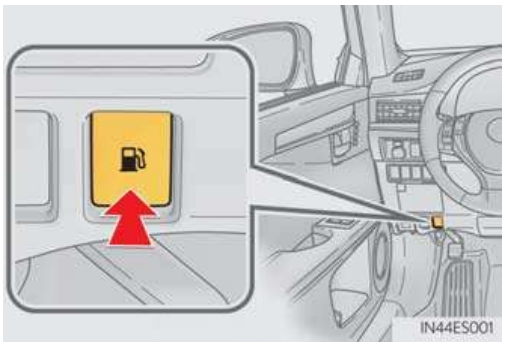


Figure 14

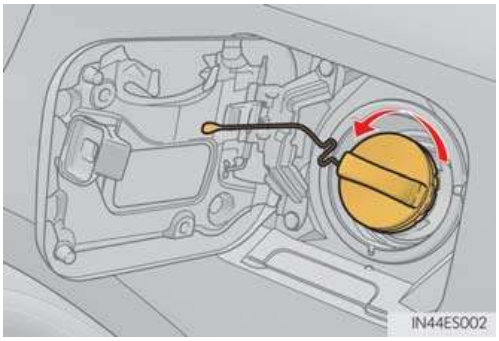


Figure 15

Electric fuel door opener:

The ES300h is equipped with an electric fuel door opener. In the event of 12-volt power loss or other electrical problem with the release mechanism, the fuel door can only be opened using the manual release located behind a trim panel on the left side of the rear cargo area (Figure 16).

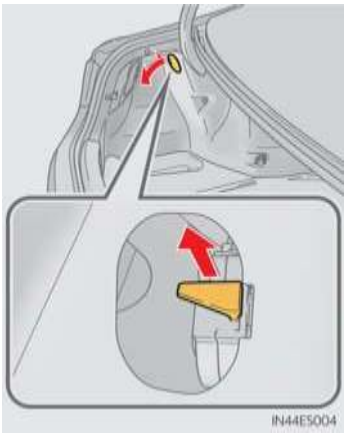


Figure 16

Running out of fuel:

When the vehicle has run out of fuel and the hybrid system cannot be started, refuel the vehicle with at least enough gasoline to make the low fuel level warning light go off. If there is only a small amount of fuel, the hybrid system may not be able to start. (The minimum amount of fuel to add to make the low fuel level warning light go off is **3.0 gal**, when the vehicle is on a level surface. This value may vary when the vehicle is on a slope.)

NOTE: If the ES300h runs out of fuel (warning light is on) and the engine quits running, add fuel to the vehicle and try to start the engine (as long as the READY light is ON) if the READY light is not illuminating. The vehicle MUST go to the Lexus dealer for service. If the READY light does not illuminate, multiple attempts to start the vehicle may have been performed prior to adding fuel, and the vehicle will not start, even if fuel is added.

BATTERY & JUMP-STARTING:

The Lexus ES300h battery is located in the passenger side of the rear cargo area, under a removable trim panel on the right side (Figure 17). If the battery has been discharged you will need to access the trunk area using the metal key found in the key fob (Figure 18).

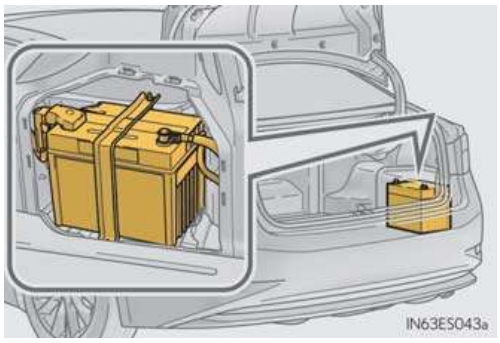


Figure 17

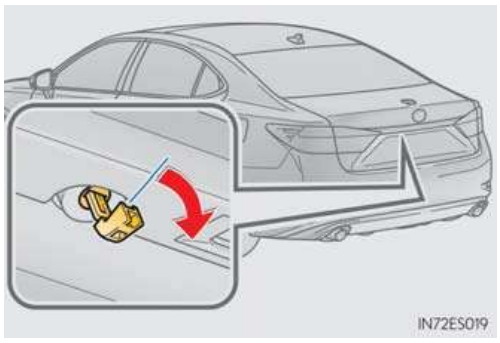


Figure 18

The following jump-starting procedures should be followed when rendering assistance to a Lexus ES300h:

- Never use jump-starting equipment that can exceed normal 12-volt charging system voltage
- Ensure that all electrical accessories and the ignition are OFF and all the key fobs are at least 10 feet away from the vehicle before connecting jumper cables or a jumper box to the discharged vehicle

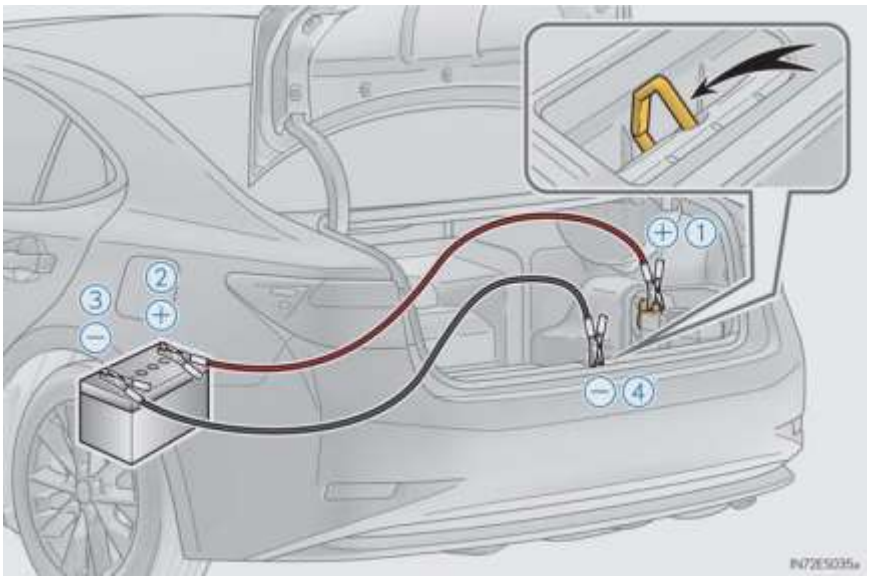


Figure 19

Connect cables to the designated locations and in the order shown in Figure 19 above. Disconnect cables in reverse order:

- Connect a positive jumper cable clamp to the positive (+) terminal on the discharged battery
- Connect the clamp on the other end of the positive cable to the positive (+) battery terminal on the second vehicle
- Connect a negative cable clamp to the negative (-) battery terminal on the second vehicle

- Connect the clamp at the other end of the negative cable to a solid, stationary, unpainted metallic point away from the discharged battery such as the trunk latch striker, as shown (Figure 19).
- **If using a portable jump pack**:
    - Connect the positive cable of the jump pack to the positive terminal of the discharged battery
    - Connect the negative cable of the jump pack to a solid, stationary, unpainted metallic point away from the discharged battery such as the trunk latch striker, as shown (Figure 19).
    - If the jump pack has an ON/OFF switch, turn the jump pack on
- Start the engine of the second vehicle. Increase the engine speed slightly and maintain that level for approximately 5 minutes to recharge the 12-volt battery in the Lexus ES300h
- Maintain the engine speed of the second vehicle and start the hybrid system by turning the “POWER” switch to ON mode
- Make sure the “READY” indicator comes on. If the indicator does not come on, follow the start override procedures listed below
- Once the hybrid system has started, remove the jumper cables in the exact reverse order from which they were connected

After recharging/reconnecting the 12-volt battery:

Unlocking the doors using the smart key system may not be possible immediately after reconnecting the 12-volt battery. If this happens, use the wireless remote control or the mechanical key to lock/unlock the doors.

Start the hybrid system with the “POWER” switch in ACCESSORY mode. The hybrid system may not start with the “POWER” switch turned OFF. However, the hybrid system will operate normally from the second attempt.

The “POWER” switch mode is recorded by the vehicle. If the battery is reconnected, the vehicle will return the “POWER” switch mode to the status it was in before the battery was disconnected. Make sure to turn off the power before disconnecting the battery. Take extra care when connecting the battery if the “POWER” switch mode prior to discharge is unknown.

Caution: When recharging the 12-volt battery **NEVER** recharge the 12-volt battery while the hybrid system is operating. Also, be sure all accessories are turned off.

Starting with a dead key fob battery:

This vehicle displays a symbol on the instrument panel to indicate that it recognizes the correct key being in the vehicle. The symbol looks like this: 

If this symbol isn’t displayed when you attempt to start the vehicle, you may be dealing with a dead key fob battery or another problem where the following procedures may allow the vehicle to be started.

Discharge Key Fob Battery Override

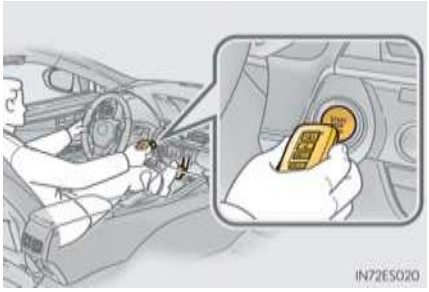


Figure 20

- Depress and hold the brake pedal
- Hold the Lexus emblem side of the key fob next to the Power Button allowing system to recognize the key fob (Figure 20)
- Depress and hold the start button

Emergency Start Function:

When the hybrid system does not start, the following steps can be used as an interim measure to start the hybrid system if the “POWER” switch is functioning normally:

1. Set the parking brake.
2. Turn the “POWER” switch to ACCESSORY mode.
3. Press and hold the “POWER” switch for about 15 seconds while depressing the brake pedal firmly.

Even if the hybrid system can be started using the above steps, the system may be malfunctioning.

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 as follows:

- Set the parking brake
- Depress the brake pedal
- Using a flat screwdriver type tool, gently pry up on the edge of the cover plug above the shifter “PARK” (P) indicator (Figure 21)
- Depress the button below the cover and move the shifter out of the “PARK” (P) position (Figure 22)

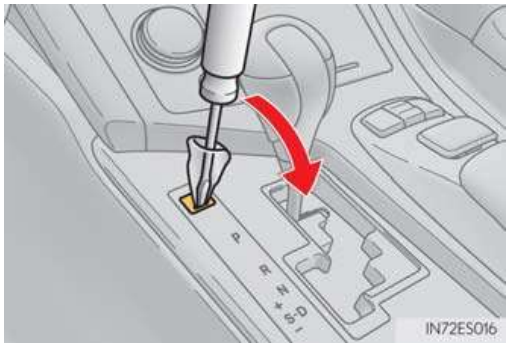


Figure 21

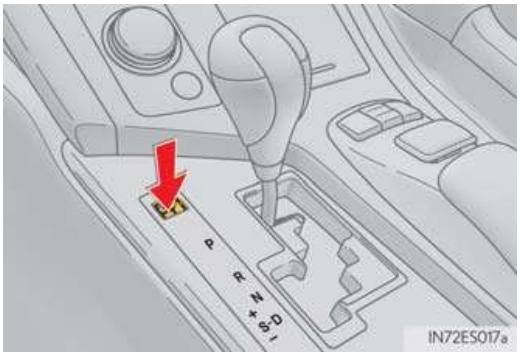


Figure 22