Do-it-yourself service precautions

If you perform maintenance yourself, be sure to follow the correct procedure given in these sections.

Items	Parts and tools
Battery condition (→P. 293)	• Warm water • Baking soda • Grease • Conventional wrench (for terminal clamp bolts)
Brake fluid level (→P. 290)	• FMVSS No.116 DOT 3 or SAE J1703 brake fluid • Rag or paper towel • Funnel (used only for adding brake fluid)
Engine coolant level (→P. 288)	• "Toyota Super Long Life Coolant" or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite and non-borate coolant with long-life hybrid organic acid technology. For the USA: "Toyota Super Long Life Coolant" is pre-mixed with 50% coolant and 50% deionized water. For Canada: "Toyota Super Long Life Coolant" is pre-mixed with 55% coolant and 45% deionized water. • Funnel (used only for adding engine coolant)

Items		Parts and tools
Engine oil level	(→P. 284)	• "Toyota Genuine Motor Oil" or equivalent • Rag or paper towel, funnel (used only for adding engine oil)
Fuses	(→P. 315)	• Fuse with same amperage rating as original
Tire inflation pressure	(→P. 305)	• Tire pressure gauge • Compressed air source
Headlight aim	(→P. 324)	• Phillips-head screwdriver
Power steering fluid level	(→P. 291)	• Automatic transmission fluid DEXRON® II or III • Rag or paper towel • Funnel (used only for adding power steering fluid)
Radiator and condenser	(→P. 290)	—
Washer fluid	(→P. 296)	• Water washer fluid containing anti-freeze (for winter use) • Funnel

⚠ CAUTION

The engine compartment contains many mechanisms and fluids that may move suddenly, become hot, or become electrically energized. To avoid death or serious injury.

n When working on the engine compartment:

- Keep hands, clothing, and tools away from the moving fan and engine drive belt.
- Be careful not to touch the engine, radiator, exhaust manifold, etc. right after driving as they may be hot. Oil and other fluids may also be hot.
- Do not leave anything that may burn easily, such as paper or rags, in the engine compartment.
- Do not smoke, cause sparks or expose an open flame to fuel or the battery. Fuel and battery fumes are flammable.
- Be extremely cautious when working on the battery. It contains poisonous and corrosive sulfuric acid.
- Take care because brake fluid can harm your hands or eyes and damage painted surfaces.
  If fluid gets on your hands or in your eyes, flush the affected area with clean water immediately.

  If you still experience discomfort, see a doctor.

n When working near the electric cooling fan or radiator grille:

Be sure the engine switch is OFF.
With the engine switch in IG-ON mode, the electric cooling fan may automatically start to run if the air conditioning is on and/or the coolant temperature is high.
(→P. 290)

n Safety glasses

Wear safety glasses to prevent flying or falling material, fluid spray, etc. from getting in the eyes.

NOTICE

n **If you remove the air cleaner:**

Driving with the air filter removed may cause excessive engine wear due to dirt in the air. Also a backfire could cause a fire in the engine compartment.

n **If the fluid level is low or high**

It is normal for the brake fluid level to go down slightly as the brake pads wear or when the fluid level in the accumulator is high.
If the reservoir needs frequent refilling, it may indicate a serious problem.

Hood

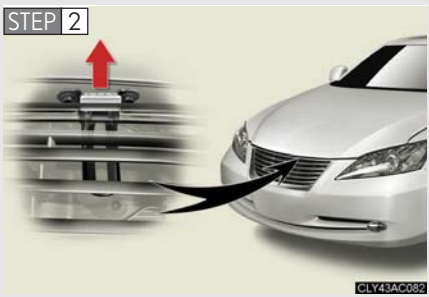
Release the lock from the inside of the vehicle to open the hood.

STEP 1

Pull the hood release lever.

The hood will pop up slightly.

STEP 2



Lift the hood catch and lift the hood.

⚠ CAUTION

n **Pre-driving check**

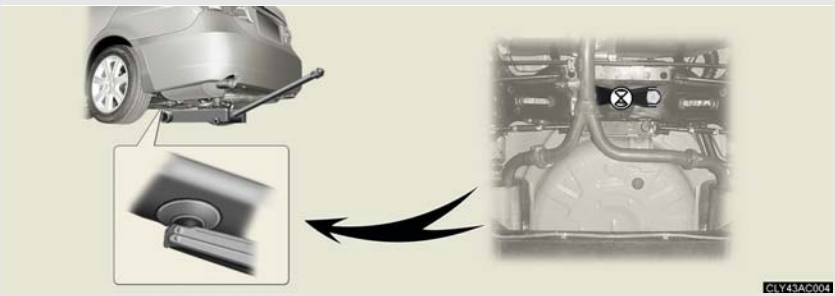
Check that the hood is fully closed and locked.
If the hood is not locked properly it may open while the vehicle is in motion and cause an accident, which may result in death or serious injury.

Positioning the jack

When raising your vehicle with the jack, position the jack correctly. Improper placement may damage your vehicle or cause injury.

n Front

n Rear



⚠ CAUTION

n When raising your vehicle:

Make sure to observe the following to reduce the possibility of death or serious injury.

- Do not put any part of your body or get underneath the vehicle supported only by the jack.
  Always use automotive jack stands or a solid, level, surface.
- Do not start the engine while the vehicle is supported by the jack.
- Stop the vehicle on level firm ground, firmly set the parking brake and put the shift lever in P.
- Make sure to set the jack properly at the jack point.
  Raising the vehicle with an improperly positioned jack will damage the vehicle and may cause the vehicle to fall off the jack.
- Do not raise the vehicle while someone is in the vehicle.
- When raising the vehicle, do not place any objects on top of or underneath the jack.

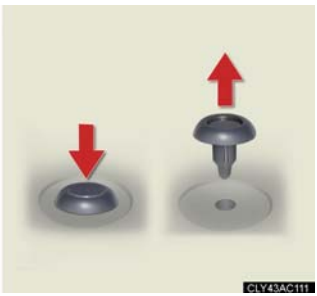
Engine compartment

1 Power steering fluid reservoir (→P. 291)
2 Engine oil filler cap (→P. 284)
3 Engine oil level dipstick (→P. 284)
4 Brake fluid reservoir (→P. 290)
5 Battery (→P. 293)
6 Fuse box (→P. 315)
7 Electric cooling fans
8 Condenser (→P. 290)
9 Radiator (→P. 290)
10 Washer fluid tank (→P. 296)
11 Engine coolant reservoir (→P. 288)

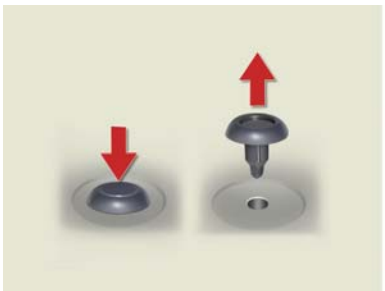
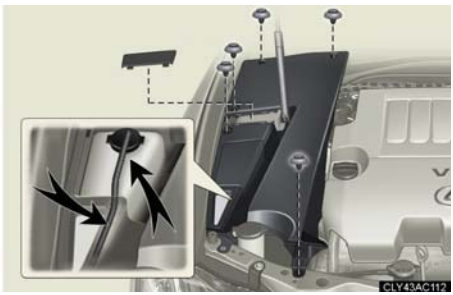
Engine compartment cover

n Removing the engine compartment cover

▶ Front

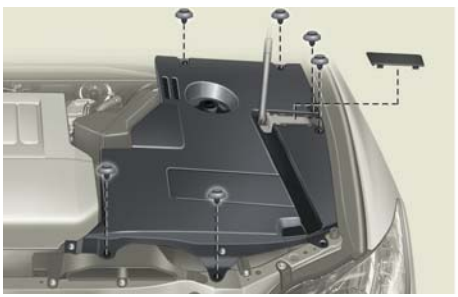
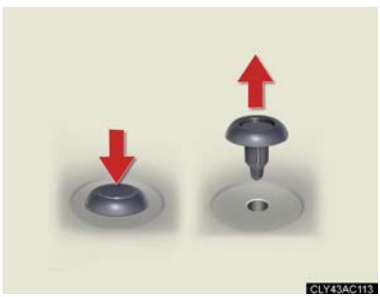



▶ Right-hand side

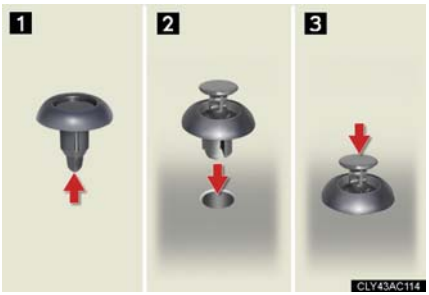



- When installing the cover, make sure that the engine coolant reservoir hose positioned as shown in the illustration.

▶ Left-hand side

n Installing the clips



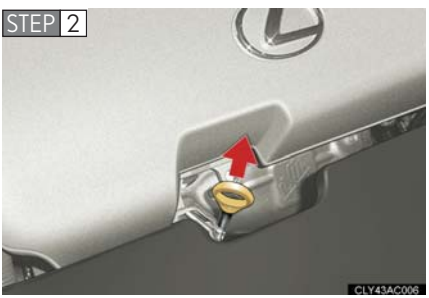
1 Press the tip of the clip against a hard surface, such as a desk, to allow the center part of the clip to be pushed up.
2 Insert
3 Press

Engine oil

With the engine at operating temperature and turned off, check the oil level on the dipstick.

n Checking the engine oil

STEP 1 Park the vehicle on level ground. After turning off the engine, wait a few minutes for the oil to drain back into the bottom of the engine.



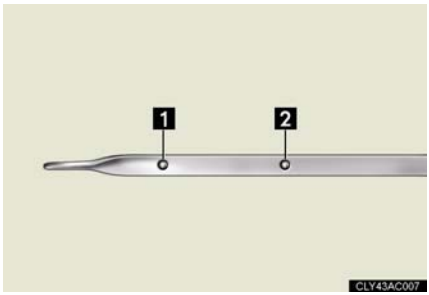
Hold a rag under the end and pull the dipstick out.

STEP 3 Wipe the dipstick clean.

STEP 4 Reinsert the dipstick fully.

STEP 5 Holding a rag under the end, pull the dipstick out and check the oil level.

STEP 6 Wipe the dipstick and reinsert it fully.



1 Low
2 Full

n Adding engine oil

If the oil level is below or near the low level mark, add engine oil of the same type as already in the engine.

Make sure to check the oil type and prepare the items needed before adding oil.

Oil grade	ILSAC multi-grade engine oil
Items	Clean funnel

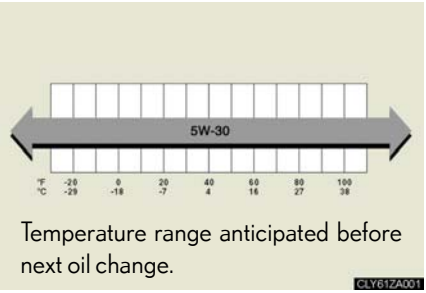
STEP 1 Remove the oil filler cap.

STEP 2 Add engine oil slowly, checking the dipstick.

STEP 3 Install the filler cap, turning it clockwise.

It takes about 1.6 qt. (1.5 L, 1.3 Imp. qt.) to raise the oil level from low to full on the dipstick.

n Recommended viscosity



Temperature range anticipated before next oil change.

SAE 5W-30 is the best choice for good fuel economy, and good starting in cold weather.

If SAE 5W-30 oil is not available, SAE 10W-30 oil may be used. However, it should be replaced with SAE 5W-30 at the next oil change.

n How to read oil container labels

Some oil containers are labeled with ILSAC certification marks that help you to select the proper oil.

n Engine oil consumption

- The amount of engine oil consumed depends on the oil viscosity, the quality of the oil and the way the vehicle is driven.
- More oil is consumed under driving conditions such as high speeds and frequent acceleration and deceleration.
- A new engine consumes more oil.
- When judging the amount of oil consumption, keep in mind that the oil may have become diluted, making it difficult to judge the true level accurately.
- Oil consumption: Max. 1.1 qt./600 miles, 0.9 Imp.qt./600 miles (1.0 L per 1000 km)
- If you consume more than 1.1 qt. (1.0 L, 0.9 Imp.qt.) every 600 miles (1000 km), contact your Lexus dealer.

n Changing the engine oil (USA only)

To reset the oil change system, follow the procedure below:

1. Turn the engine switch OFF with the trip meter A reading shown. (→P. 103)
2. While pressing the trip meter reset button, set the engine switch to the IG-ON mode. Continue to press and hold the knob until the trip meter displays 000000.

⚠ CAUTION

n Used engine oil

- Used engine oil contains potentially harmful contaminants which may cause skin disorders such as inflammation or skin cancer, so care should be taken to avoid prolonged and repeated contact. To remove used engine oil from your skin, wash thoroughly with soap and water.
- Dispose of used oil and filters only in a safe and acceptable manner. Do not dispose of used oil and filters in household trash, in sewers or onto the ground. Call your Lexus dealer, service station or auto parts store for information concerning recycling or disposal.
- Do not leave used engine oil within the reach of children.

NOTICE

n **To prevent serious engine damage:**

Check the oil level on regular basis.

n **When replacing the engine oil**

- Be careful not to spill engine oil on the vehicle components.
- Avoid overfilling, or the engine could be damaged.
- Check the oil level on the dipstick every time you refill the vehicle.
- Be sure the engine oil filler cap is properly retightened.

Engine coolant

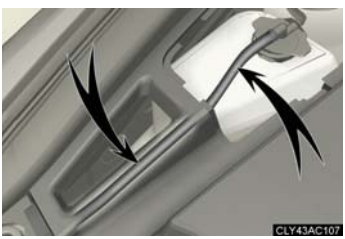
The coolant level is satisfactory if it is between the F and L lines on the reservoir when the engine is cold.

1 Full

2 Low

If the level is on or below the L line, add coolant up to the F line.

n **When adding the engine coolant**



When installing the reservoir cap, make sure that the engine coolant reservoir hose positioned as shown in the illustration.

If the coolant level drops within a short time after replenishing

Visually check the radiator, hoses, engine coolant filler cap, radiator cap, drain cock and water pump.
If you cannot find a leak, have your Lexus dealer pressure test the cap and check for leaks in the cooling system.

Coolant selection

Only use Toyota Super Long Life Coolant or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite, and non-borate coolant with long-life hybrid organic acid technology.

USA: Toyota Super Long Life Coolant is a mixture of 50% coolant and 50% deionized water. (Enabled: -31°F [-35°C])

Canada: Toyota Super Long Life Coolant is a mixture of 55% coolant and 45% deionized water. (Enabled: -44°F [-42°C])

For more details about engine coolant, contact your Lexus dealer.

CAUTION

When the engine is hot

Do not remove the radiator cap.
The cooling system may be under pressure and may spray hot coolant if the cap is removed, causing burns or other injuries.

NOTICE

When adding engine coolant

Coolant is neither plain water not straight antifreeze. The correct mixture of water and anti freeze must be used to provide proper lubrication, corrosion protection and cooling. Be sure to read the antifreeze or coolant label.

If you spill coolant

Be sure to wash it off with water to prevent it damaging parts or paint.

Radiator and condenser

Check the radiator and condenser and clear any foreign objects.
If either of the above parts are extremely dirty or you are not sure of their condition, have your vehicle checked by your Lexus dealer.

⚠ CAUTION

n When the engine is hot

Do not touch the radiator or condenser, as they may be hot and you may be burned.

Brake fluid

n Checking fluid level

The brake fluid level should be between the MAX and MIN lines on the tank.

Make sure to check the fluid type and prepare the necessary items.

n Adding fluid

Fluid type	FMVSS No.116 DOT 3 or SAE J1703 brake fluid
Items	Clean funnel

n Brake fluid can absorb moisture from the air

Excess moisture in the fluid can cause a dangerous loss of braking efficiency. Use only newly opened brake fluid.

CAUTION

n When filling the reservoir

Take care because brake fluid can harm your hands or eyes and damage painted surfaces.
If fluid gets in your eyes, flush your eyes with clean water immediately.

If you still experience discomfort, see a doctor.

NOTICE

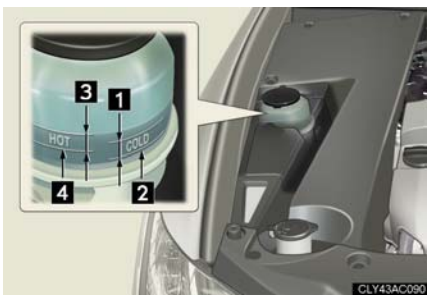
n If the fluid level is low or high

It is normal for the brake fluid level to go down slightly as the brake pads wear or when the fluid level in the accumulator is high.
If the reservoir needs frequent refilling, it may indicate a serious problem.

Power steering fluid

n Fluid level

The fluid level should be within the appropriate range.



1 Full (when cold)
2 Add fluid (when cold)
3 Full (when hot)
4 Add fluid (when hot)

Hot: Vehicle has been driven around 50 mph (80 km/h) for 20 minutes, or slightly longer in frigid temperatures. (Fluid temperature, 140°F - 175°F [60°C - 80°C])

Cold: Engine has not been run for about 5 hours. (Room temperature, 50°F - 85°F [10°C - 30°C])

n Checking the fluid level

Make sure to check the fluid type and prepare the necessary items.

Fluid type	Automatic transmission fluid DEXRON® II or III
Items	Rag or paper towel and funnel (only for adding fluid)

STEP 1 Clean all dirt off the reservoir.

STEP 2 Remove the reservoir cap by turning it counterclockwise and wipe the dipstick clean.

STEP 3 Reinstall the reservoir cap.

STEP 4 Remove the reservoir cap again and look at the fluid level.

⚠ CAUTION

n Checking the fluid level

Take care, as the reservoir may be hot.

⚠ NOTICE

n When adding fluid

Avoid overfilling, or the power steering may be damaged.

n After replacing the reservoir cap

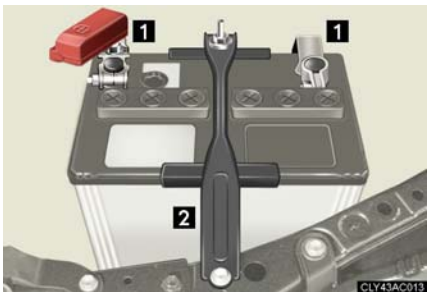
Check the steering box case, vane pump and hose connections for leaks or damage.

Battery

Check the battery as follows.

n Battery exterior

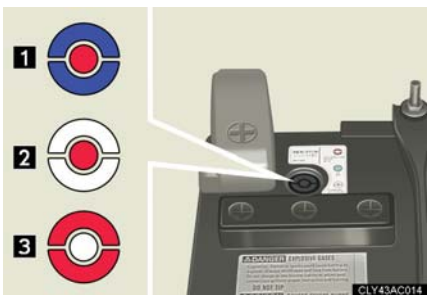
Make sure that the battery terminals are not corroded and that there are no loose connections, cracks, or loose clamps.



1 Terminals
2 Hold-down clamp

n Checking battery condition

Check the battery condition using the indicator color.



1 Blue: Good condition
2 White: Charging is necessary. Have the vehicle inspected by your Lexus dealer.
3 Red: Not working properly, have the battery checked by your Lexus dealer.

Before recharging

When recharging, the battery produces hydrogen gas which is flammable and explosive. Therefore, before recharging:

- If recharging with the battery installed on the vehicle, be sure to disconnect the ground cable.
- Make sure the power switch on the charger is off when connecting and disconnecting the charger cables to the battery.

After recharging the battery

The engine may not start. Follow the procedure below to initialize the system.

1. Shift the shift lever to P.
2. Open and close any of the doors.
3. Restart the engine.

⚠ CAUTION

Chemicals in the battery:

A battery contains poisonous and corrosive sulfuric acid and may produce hydrogen gas which is flammable and explosive. To reduce the risk of death or serious injury, take the following precautions while working on or near battery:

- Do not cause sparks by touching the battery terminals with tools.
- Do not smoke or light a match near the battery.
- Avoid contact with eyes, skin and clothes.
- Never inhale or swallow electrolyte.
- Wear protective safety glasses when working near the battery.
- Keep children away from the battery.

Where to safety charge the battery

Always charge the battery in an open area. Do not charge the battery in a garage or closed room where there is not sufficient ventilation.

How to recharge the battery

Only perform a slow charge (5 A or less). The battery may explode if charged at a quicker rate.

Emergency measures regarding electrolyte

- If electrolyte gets in your eyes
  Flush your eyes with clean water for at least 15 minutes and get immediate medical attention. If possible, continue to apply water with a sponge or cloth while traveling to the nearest medical facility.
- If electrolyte gets on your skin
  Wash the affected area thoroughly. If you feel pain or burning, get medical attention immediately.
- If electrolyte gets on your clothes
  It can soak through clothing on to your skin. Immediately take off the clothing and follow the procedure above if necessary.
- If you accidentally swallow electrolyte
  Drink a large quantity of water or milk. Follow with milk of magnesia, beaten raw egg or vegetable oil. Get emergency medical attention immediately.

NOTICE

n **When recharging the battery**

Never recharge the battery while the engine is running. Also, be sure all accessories are turned off.

Washer fluid

If any washer does not work or the warning message appears on the multi-information display, the washer tank may be empty. Add washer fluid.

NOTICE

n **Do not use any fluid other than washer fluid**

Do not use soapy water or engine antifreeze instead of washer fluid.
Doing so may cause streaking on the vehicle's painted surfaces.

n **Diluting washer fluid**

Dilute washer fluid with water as necessary.
Refer to the freezing temperatures listed on the washer fluid tank.

Replace or rotate tires in accordance with maintenance schedules and tread wear.

n Checking tires

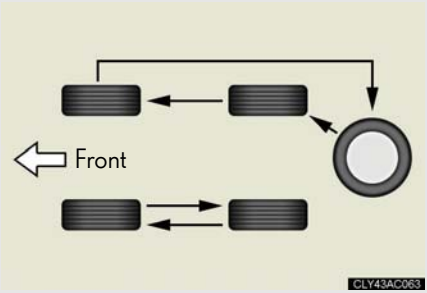
1 New tread
2 Tread wear indicator
3 Worn tread

The location of tread wear indicators is shown by the TWI or Δ marks, etc., molded on the sidewall of each tire.

Check spare tire condition and pressure if not rotated.

n Tire rotation

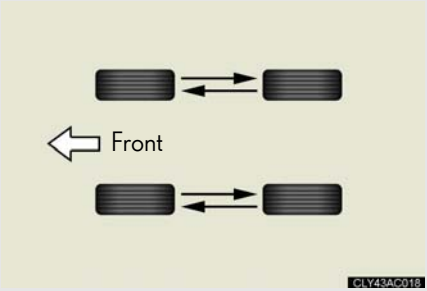
▶ If equipped with standard spare tire



Rotate the tires in the order shown.

Lexus recommends tire rotation in accordance with the maintenance schedule to equalize tire wear and extend tire life.

▶ If equipped with compact spare tire



n The tire pressure warning system

Your Lexus is equipped with a tire pressure warning system that uses tire pressure warning valve & transmitters to detect low tire inflation pressure before serious problems arise. (→P. 343)

Installing tire pressure warning valve & transmitters

When replacing tires or wheels, tire pressure warning valve & transmitters must also be installed.

When new tire pressure warning valve & transmitters are installed, new tire pressure warning valve & transmitter ID codes must be registered in the tire pressure warning ECU and tire pressure warning system must be initialized. Have tire pressure warning valve & transmitter ID codes registered by your Lexus dealer. (→P. 299, 300)

Initializing the tire pressure warning system

n The tire pressure warning system must be initialized in the following circumstances:

- When changing the tire inflation pressure by changing traveling speed or load weight, etc.
- When changing the tire size.

When the tire pressure warning system is initialized, the current tire inflation pressure is set as the pressure benchmark.

n How to initialize the tire pressure warning system

STEP 1 Park the vehicle in safe place and turn off the engine.

STEP 2 Adjust the tire inflation pressure to the specified cold tire inflation pressure level. (→P. 391)

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.

STEP 3 Turn the engine switch to IG-ON mode.

STEP 4

Press the tire pressure warning reset button for more than 3 seconds. At this time, the tire inflation pressure warning indicator flashes 3 times.

STEP 5 Wait for a few minutes with the IG-ON mode, and then turn the engine switch to OFF mode.

Registering and selecting ID codes

n Registering ID codes

2 sets of tire pressure warning valve & transmitter ID codes can be registered. Once a second set of tires is registered at "2nd", you can switch between tire set settings simply by pressing the tire pressure warning select switch.

There are 2 settings:

"MAIN" position: The ID code of the tire pressure warning valve & transmitter on the tires originally installed on the vehicle is registered.

"2nd" position: The code is not registered. When you replace a new set of tires, purchase tire pressure warning valve & transmitters from your Lexus dealer and have the new ID code registered by your Lexus dealer.

n Selecting ID codes

When replacing tires, make sure to select the ID code set that matches the new tire set. If the tire pressure select switch is set to the wrong tire setting, the system will not work properly. After about 1 hour, the tire pressure warning light blinks (comes on after blinking for 1 minute) to indicate a system malfunction.

1 MAIN
2 2nd

When to replace your vehicle's tires

Tires should be replaced if:

- You have tire damage such as cuts, splits, cracks deep enough to expose the fabric or bulges indicating internal damage
- A tire goes flat repeatedly or cannot be properly repaired due to the size or location of a cut or other damage

If you are not sure, consult with your Lexus dealer.

Tire life

Any tire over 6 years old must be checked by a qualified technician even if they have seldom or never been used or damage is not obvious.

If the tread wears down below 0.16 in. (4 mm) on snow tires

The effectiveness of snow tires is lost.

Maximum load of tire

Check that the maximum load of the replaced tire is greater than 1/2 of the Gross Axle Weight Ratings (GAWR) of either the front axle or the rear axle, whichever is greater.
As for the maximum load of the tire, see the load limit at maximum cold tire inflation pressure mentioned on the sidewall of the tire, and as for the Gross Axle Weight Ratings (GAWR), see the Certification Label. (→P. 305, 397).

n Tire types

1 Summer tires

Summer tires are high-speed performance tires best suited to highway driving under dry conditions. Since summer tires do not have the same traction performance as snow tires, summer tires are inadequate for driving on snow-covered or icy roads. For driving on snow-covered roads or icy roads, the use of snow tires is recommended. When installing snow tires, be sure to replace all four tires.

2 All season tires

All season tires are designed to provide better traction in snow and to be adequate for driving in most winter conditions, as well as for use year round. All season tires, however, do not have adequate traction performance compared with snow tires in heavy or loose snow. Also, all season tires fall short in acceleration and handling performance compared with summer tires in highway driving.

3 Snow tires

For driving on snow-covered roads or icy roads, we recommend using snow tires. If you need snow tires, select tires of the same size, construction and load capacity as the originally installed tires. Since your vehicle has radial tires as original equipment, make sure your snow tires also have radial construction. Do not install studded tires without first checking local regulations for possible restriction. Snow tires should be installed on all wheels. (→P. 147)

n Initializing the tire pressure warning system

Initialize the tires with the tire inflation pressure adjusted to the specified level.

n If you push the tire pressure reset switch accidentally

If initialization is performed, adjust the tire inflation pressure to the specified level and initialize the system again.

n When the initialization of the tire pressure warning system has failed

Initialization can be completed in a few minutes. However, in the following cases, the settings have not been recorded and the system will not operate properly. If repeated attempts to record tire inflation pressure settings are unsuccessful, have the vehicle inspected by your Lexus dealer.

- When operating the tire pressure warning reset switch, the warning light does not flash.
- After driving for a certain period of time since the initialization has been completed, the warning light flashes.

n Routine tire inflation pressure checks

The tire pressure warning system does not replace routine tire inflation pressure checks. Make sure to check tire inflation pressure as part of your routine of daily vehicle checks.

n Tire pressure warning system certification

▶ For vehicles sold in the USA

NOTE:
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTICE:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio-TV technician for help.

FCC WARNING:
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

▶ For vehicles sold in Canada

NOTE:
Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

⚠ CAUTION

When inspecting or replacing tires

Observe the following precautions to prevent accidents. Failure to do so may cause damage to parts of the drive train, as well as dangerous handling characteristics, which may lead to fatal or injury accidents.

- Do not mix tires of different makes, models, tread patterns or tread wear.
- Do not use tire sizes other than those recommended by Lexus.
- Do not mix radial, bias-belted, or bias-ply tires.
- Do not mix summer, all season and winter tires.

When initializing the tire pressure warning system

Do not push the tire pressure warning reset switch without first adjusting the tire inflation pressure to the specified level. Otherwise, the tire pressure warning light may not come on even if the tire inflation pressure is low, or it may come on when the tire not inflation pressure is actually normal.

⚠ NOTICE

Repairing or replacing tires, wheels and tire pressure warning valve & transmitters

- When removing or fitting the wheels, tires or the tire pressure warning valve & transmitter, contact your Lexus dealer as the tire pressure warning valve & transmitter may be damaged if not handled correctly.
- When replacing tires, make sure also to replace the tire pressure warning valve & transmitter grommets.

Do not use puncture sealant sprays to repair flats

Puncture sealant sprays may damage tire pressure warning valve & transmitters.

Driving on rough roads

Take particular care when driving on roads with loose surfaces or potholes.
These conditions may cause losses in tire inflation pressure, reducing the cushioning ability of the tires. In addition driving on rough roads may cause damage to the tires themselves, as well as the vehicle's wheels and body.

If tire inflation pressures become low while driving

Do not continue driving, or your tires and/or wheels may be ruined.

n Tire inflation pressure

The recommended cold tire inflation pressure and tire size is displayed on the tire and loading information label. (→P. 391)

n Inspection and adjustment procedure

1 Tire valve
2 Tire pressure gauge

STEP 1 Remove the tire valve cap.

STEP 2 Press the tip of the tire pressure gauge onto the tire valve.

STEP 3 Read the pressure using the graduations of the gauge.

STEP 4 If the tire inflation pressure is not within the recommended levels, adjust inflate the tire.
If you add too much air, press the center of the valve to lower.

STEP 5 After completing the tire inflation pressure measurement and adjustment, apply soapy water to the valve and check for leakage.

STEP 6 Reinstall the tire valve cap.

n Tire inflation pressure check interval

You should check tire inflation pressure every two weeks, or at least once a month. Do not forget to check the spare.

n Effects of incorrect tire inflation pressure

Driving with incorrect tire inflation pressure may result in the following:

- Reduced fuel efficiency
- Reduced driving comfort and tire life
- Reduced safety
- Damage to the drive train

If a tire needs frequent refilling, have it checked by your Lexus dealer.

n Instructions for checking tire inflation pressure

When checking tire inflation pressure, observe the following:

- Check only when the tires are cold.
  If your vehicle has been parked for at least 3 hours and has not been driven for more than 1 mile or 1.5 km, you will get an accurate cold tire inflation pressure reading.
- Always use a tire pressure gauge.
  The appearance of the tire can be misleading. In addition, tire inflation pressures that are even just a few pounds off can degrade ride and handling.
- Do not bleed or reduce tire inflation pressure after driving. It is normal for the tire inflation pressure to be higher after driving.
- Never exceed the vehicle capacity weight.
  Passengers and luggage weight should be placed so that the vehicle is balanced.

⚠ CAUTION

n Proper inflation is critical to save tire performance

Keep your tires properly inflated. Otherwise, the following conditions may occur and result in an accident causing death or serious injury.

- Excessive wear
- Uneven wear
- Poor handling
- Possibility of blowouts resulting from overheated tires
- Poor sealing of the tire bead
- Wheel deformation and/or tire separation
- A greater possibility of tire damage from road hazards

⚠ NOTICE

n When inspecting and adjusting tire inflation pressure

Be sure to reinstall the tire valve caps.
Without the valve caps, dirt or moisture could get into the valve and cause air leakage, which could result in an accident. If the caps have been lost, replace them as soon as possible.

If a wheel is bent, cracked or heavily corroded, it should be replaced. Otherwise, the tire may separate from the wheel or cause loss of handling control.

n Wheel selection

When replacing wheels, care should be taken to ensure that they are equivalent to those removed in load capacity, diameter, rim width, and offset.
Replacement wheels are available at your Lexus dealer.

Lexus does not recommend using:

- Wheels of different sizes or types
- Used wheels
- Bent wheels that have been straightened

n Aluminum wheel precautions

- Use only Lexus wheel nuts and wrenches designed for use with your aluminum wheels.
- When rotating, repairing or changing your tires, check that the wheel nuts are still tight after driving 1000 miles (1600 km).
- Be careful not to damage the aluminum wheels when using tire chains.
- Use only Lexus genuine balance weights or equivalent and a plastic or rubber hammer when balancing your wheels.

n When replacing wheels

The wheels of your Lexus are equipped with sensors that allow the tire pressure warning system sensors to provide advanced warning in the event of a loss in tire pressure. Whenever wheels are replaced, the tire pressure warning valve & transmitters must be switched over from the old wheels. (→P. 299)

⚠ CAUTION

n When replacing wheels

- Do not use wheels that are a different size from those recommended in the Owner's Manual, as this may result in loss of handling control.
- Never use an inner tube in a leaking wheel which is designed for a tubeless tire. Doing so may result in an accident, causing serious injury or death.

⚠ NOTICE

n Replacing tire pressure warning valve & transmitters

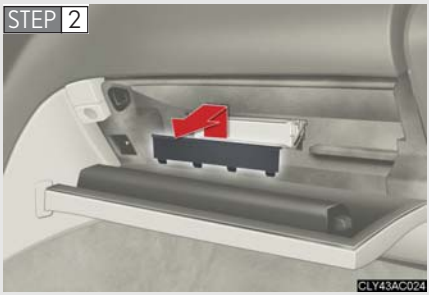
- Because tire repair or replacement may affect the tire pressure warning valve & transmitters, make sure to have tires serviced by your Lexus dealer or other qualified service shop. In addition, make sure to purchase your tire pressure warning valve & transmitters at your Lexus dealer.
- Ensure that only Genuine Lexus wheels are used on your vehicle.
  Tire pressure warning valve & transmitters may not work properly with non-genuine wheels.

Air conditioning filter

The air conditioning filter must be changed regularly to maintain air conditioning efficiency.

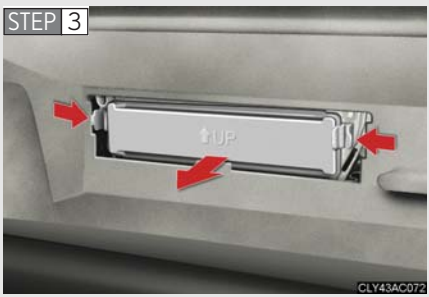
STEP 1 Turn the engine switch OFF.

STEP 2



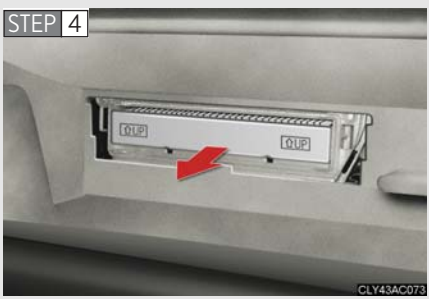
Open the glove box. Remove the glove box cover.

STEP 3



Remove the filter cover.

STEP 4



Remove the filter.

Be sure that the correct side of the filter faces up when installing it.

n **Changing interval**

Inspect and replace the air conditioning filter according to the maintenance schedule. In dusty areas or areas with heavy traffic flow, early replacement may be required. (For scheduled maintenance information, please refer to the “Warranty and Services Guide/Owner's Manual Supplement/Scheduled Maintenance".)

n **If air flow from the vents decreases dramatically**

The filter may be clogged. Check the filter and replace if necessary.

⚠ NOTICE

n **When using the air conditioning system**

Make sure that a filter is always installed.

Using the air conditioning system without a filter may cause damage to the system.

Electronic key battery

Replace the battery with a new one if it is discharged.

n You will need the following items:

- l Flathead screwdriver
- l Small Phillips-head screwdriver
- l Lithium battery (CR1632)

n Replacing the battery

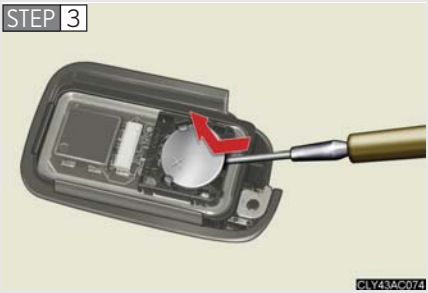
STEP 1

Take out the mechanical key.

STEP 2

Remove the cover.

STEP 3



Remove the depleted battery.

Insert a new battery with the + terminal facing up.

If the electronic key battery is discharged

The following symptoms may occur.

- The smart access system with push-button start and wireless remote control will not function properly.
- The operational range is reduced.

Use a CR1632 lithium battery

- Batteries can be purchased at your Lexus dealer, jewelers, or camera stores.
- Replace only with the same or equivalent type recommended by a Lexus dealer.
- Dispose of used batteries according to the local laws.

⚠ CAUTION

Removed battery and other parts

Keep away from children.
These parts are small and if swallowed by a child they can cause choking.

⚠ NOTICE

For normal operation after replacing the battery

Observe the following precautions to prevent accidents.

- Always work with dry hands.
  Moisture may cause the battery to rust.
- Do not touch or move any other components inside the remote control.
- Do not bend either of the battery terminals.

Checking and replacing fuses

If any of the electrical components do not operate, a fuse may have blown. If this happens, check and replace the fuses as necessary.

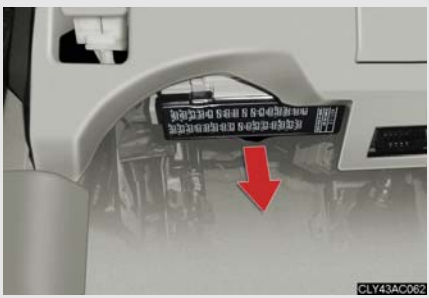
STEP 1 Turn the engine switch OFF.

STEP 2 Remove the engine compartment cover.
→P. 283

STEP 3 Open the fuse box cover.

▶ Engine compartment

Push the tabs in and lift the lid off.



▶ Driver's side instrument panel

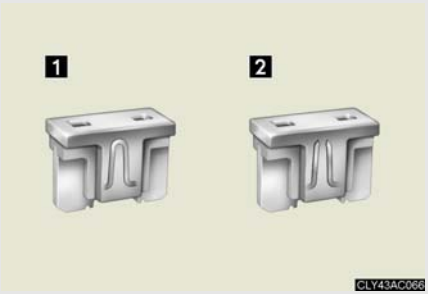
Remove the lid.

STEP 4 After a system failure, see "Fuse layout and amperage ratings" (→P. 317) for details about which fuse to check.

STEP 5

Remove the fuse with the pull-out tool.

STEP 6 Check if the fuse has blown.

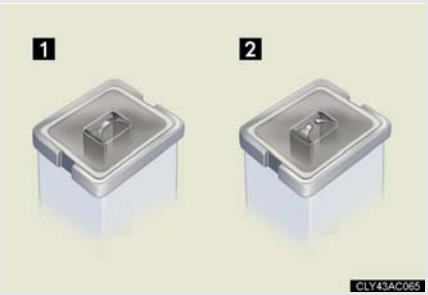


▶ Type A

1 Normal fuse

2 Blown fuse

Replace it with one of an appropriate amperage rating. The amperage rating can be found on the fuse box lid.

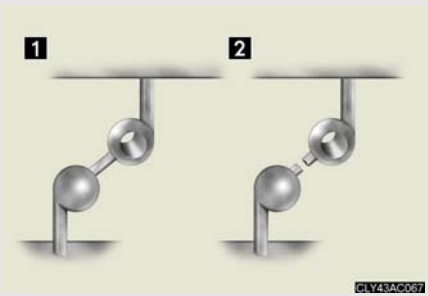


▶ Type B

1 Normal fuse

2 Blown fuse

Replace it with one of an appropriate amperage rating.



▶ Type C

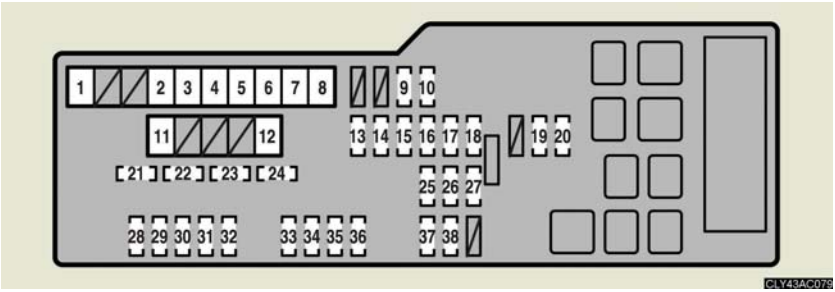
1 Normal fuse

2 Blown fuse

Contact your Lexus dealer.

Fuse layout and amperage ratings

n Engine compartment

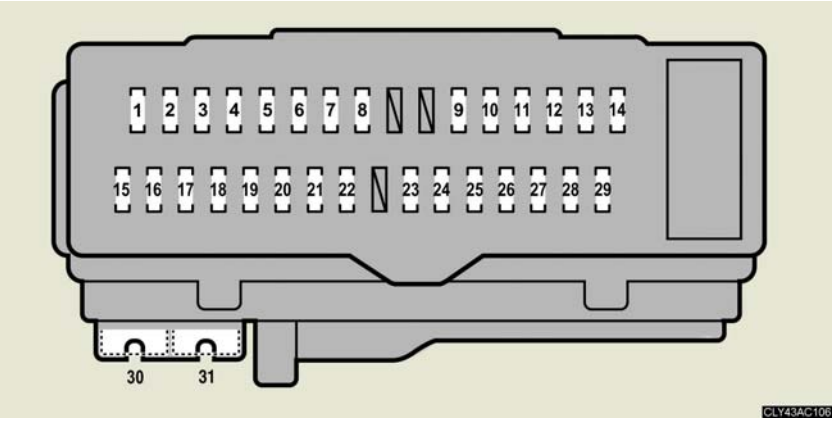


Fuse		Ampere	Circuit
1	PSB	30 A	Pre-collision seat belt
2	H-LP CLN	30 A	———
3	P-P / SEAT	30 A	Power seat
4	RR DEF	50 A	Rear window defogger
5	ABS NO.2	30 A	Anti-lock brake system, vehicle stability control system
6	FAN MAIN	50 A	Electric cooling fans
7	ABS NO.1	50 A	Anti-lock brake system, vehicle stability control system
8	HTR	50 A	Air conditioning system
9	RR FOG	10 A	———
10	ALT-CDS	10 A	Alternator condenser
11	ST	30 A	Starting system

Fuse		Ampere	Circuit
12	ALT	140 A	PSB, H-LP CLN, P-P/SEAT, RR DEF, ABS NO.2, FAN MAIN, ABS NO.1, HTR, RR FOG, RR DOOR RH, RR DOOR LH, FUEL OPN, FR FOG, OBD, STOP, TI & TE, A/C, PWR, DOOR NO.2, S/ROOF, GAUGE NO.2, POWER, P/SEAT
13	STR LOCK	20 A	Steering lock system
14	IG2	20 A	GAUGE NO.2, IGN, multiport fuel injection system/sequential multiport fuel injection system
15	HAZ	15 A	Turn signal lights
16	ETCS	10 A	Electronic throttle control system
17	E-ACM	10 A	Electric active control mount
18	A/C CTRL PNL	15 A	Air conditioning system
19	ALT-S	7.5 A	Charging system
20	AM2	7.5 A	Starting system
21	EFI MAIN	30 A	EFI NO.2, EFI NO.3, fuel system, ECT system
22	AMP	30 A	Audio system
23	AMP2	30 A	Audio system
24	DOOR NO.1	25 A	Power door lock system
25	RADIO NO.1	15 A	Audio system
26	ECU-B NO.1	10 A	ECU powers
27	DOME	10 A	Interior lights, meters, vanity lights
28	H-LP (LH)	15 A	Left-hand headlight (high beam)
29	H-LP (RH)	15 A	Right-hand headlight (high beam)

Fuse		Ampere	Circuit
30	H-LP (LL)	15 A	Left-hand headlight (low beam)
31	H-LP (RL)	15 A	Right-hand headlight (low beam)
32	HORN	10 A	Horns
33	EFI NO.1	10 A	Multiport fuel injection system/ sequential multiport fuel injection system, ECT system
34	MPX-B	10 A	Meters
35	A/F	20 A	Multiport fuel injection system/ sequential multiport fuel injection system
36	S-HORN	7.5 A	Horn
37	EFI NO.2	15 A	Multiport fuel injection system/ sequential multiport fuel injection system
38	EFI NO.3	10 A	Multiport fuel injection system/ sequential multiport fuel injection system

n Driver's side instrument panel



Fuse		Ampere	Circuit
1	RR DOOR RH	25 A	Power window
2	RR DOOR LH	25 A	Power window
3	FUEL OPN	7.5 A	Fuel filler door opener
4	FR FOG	15 A	Front fog lights
5	OBD	7.5 A	On-board diagnosis system
6	ECU-B NO.2	7.5 A	ECU powers
7	STOP	10 A	Stop lights
8	TI & TE	30 A	Tilt and telescopic steering
9	A/C	7.5 A	Air conditioning system
10	PWR	25 A	Power windows
11	DOOR NO.2	25 A	Main body ECU
12	S/ROOF	30 A	Moon roof
13	TAIL	10 A	Front and rear side marker lights, tail lights, license plate lights

Fuse		Ampere	Circuit
14	PANEL	7.5 A	Seat heaters, air conditioning system, audio system, rear sunshade, steering switches, fuel filler door opener, outside rear view mirror
15	ECU-IG NO. 1	10 A	Moon roof, seat heaters, power windows, clock, automatic windshield wiper, electric cooling fans, driving position memory system, seat position memory system
16	ECU-IG NO. 2	7.5 A	Anti-lock brake system, vehicle stability control system, traction control system, brake assist system, cruise control system, stop lights, shift lock control system
17	A/C NO. 2	10 A	Air conditioning system, rear window defogger
18	WASH	10 A	Windshield washer
19	S-HTR	20 A	Seat heaters, air conditioning system
20	GAUGE NO. 1	10 A	Emergency flashers, back-up lights, rear sunshade, charging system
21	WIP	25 A	Windshield wipers
22	H-LP LVL	7.5 A	Headlight leveling system
23	IGN	10 A	Multiport fuel injection system/ sequential multiport fuel injection system, SRS airbag system, steering lock system
24	GAUGE NO. 2	7.5 A	Meters
25	ECU-ACC	7.5 A	Clock, main body ECU
26	CIG	20 A	Cigarette lighter

Fuse		Ampere	Circuit
27	PWR OUTLET	20 A	Power outlet
28	RADIO NO. 2	7.5 A	Audio system
29	MIR HTR	15 A	Outside rear view mirror defoggers
30	POWER	30 A	Power window
31	P/SEAT	30 A	Power seat

n **After a fuse is replaced**

- If the lights do not turn on even after the fuse has been replaced, a bulb may need replacement. (→P. 325)
- If the replaced fuse blows again, have the vehicle inspected by your Lexus dealer.

n **If there is an overload in the circuits**

The fuses are designed to blow before the entire wiring harness is damaged.

⚠ CAUTION

n **To prevent system breakdowns and vehicle fire**

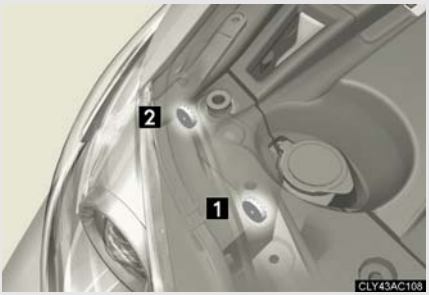
- Observe the following precautions.
  Failing to do so may cause damage, and possibly a fire or injury.
- Never use a fuse of a higher amperage rating than indicated, or use any other object in place of a fuse.
- Always use a genuine Lexus fuse or equivalent.
  Never replace a fuse with a wire, even as a temporary fix.
  This can cause extensive damage or even fire.
- Do not modify fuses or the fuse box.

NOTICE

n **Before replacing fuses**

Have the cause of electrical overload determined and repaired by your Lexus dealer.

n Vertical movement adjusting bolts



1 Adjustment bolt A
2 Adjustment bolt B

n Before checking the headlight aim

STEP 1 Make sure the vehicle has a full tank of gas and the area around the headlight is not deformed.

STEP 2 Park the vehicle on level ground.

STEP 3 Sit in the driver's seat.

STEP 4 Bounce the vehicle several times.

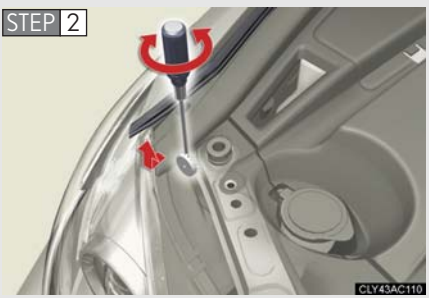
n Adjusting the headlight aim

STEP 1

Turn bolt A in either direction using a Phillips-head screwdriver.

Remember the turning direction and the number of turns in mind.

STEP 2



Turn bolt B the same number of turns and in the same direction as step 1 using a Phillips-head screwdriver.

If the error is over the value specified above, take the vehicle to your Lexus dealer to adjust the headlight aim.

Light bulbs

You may replace the following bulbs yourself. For more information about replacing other light bulbs, contact your Lexus dealer.

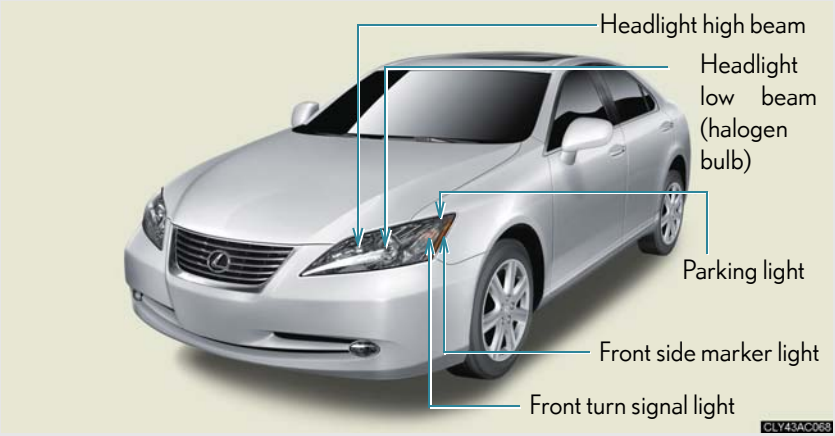
n Prepare a replacement light bulb.

Check the wattage of the light bulb being replaced. (→P. 393)

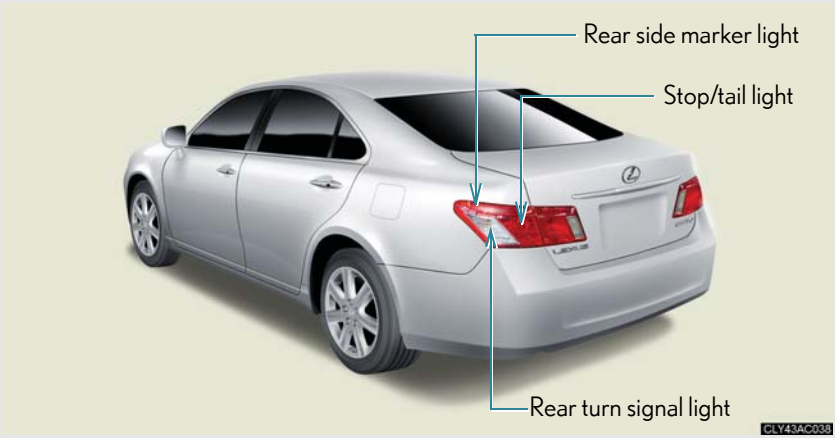
n Remove the engine compartment cover.

→P. 283

n Front bulb locations

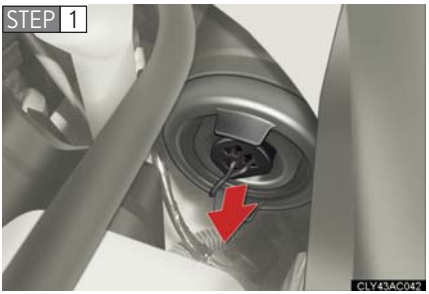


n Rear bulb locations

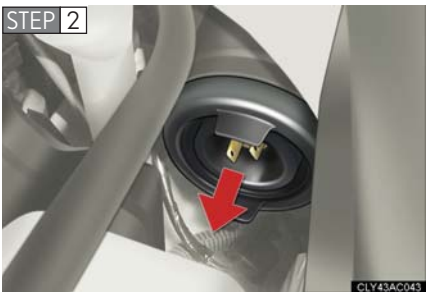


Replacing light bulbs

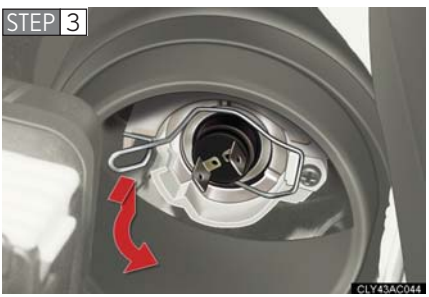
n Headlight low beams (for vehicles without discharge bulbs)



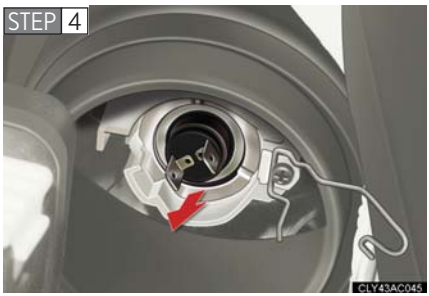
Unplug the connector.



Remove the cover.



Release the lock.



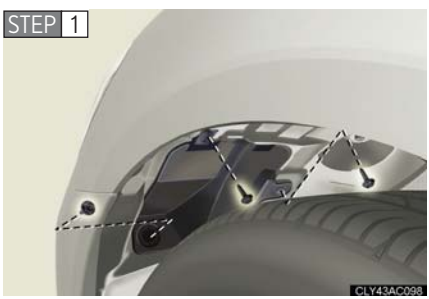
Remove the light bulb.

n Headlight high beams

Turn the bulb base counterclockwise.

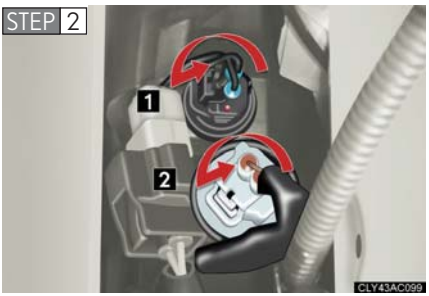
Unplug the connector while depressing the lock release.

n Parking lights and front side marker lights, front turn signal lights



Remove the access hole cover.

STEP 2



1 Parking light and front side marker light

2 Front turn signal light

Turn the bulb base counterclockwise.

▶ Parking light and front side marker light

STEP 3

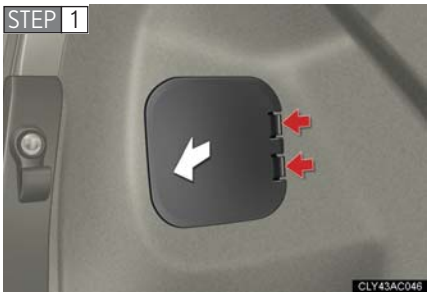
Remove the light bulb.

▶ Front turn signal light

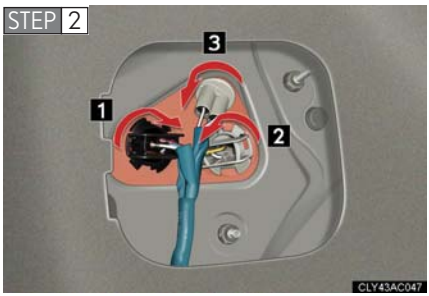
STEP 3

Remove the light bulb.

n Stop/tail, rear turn signal and rear side marker lights



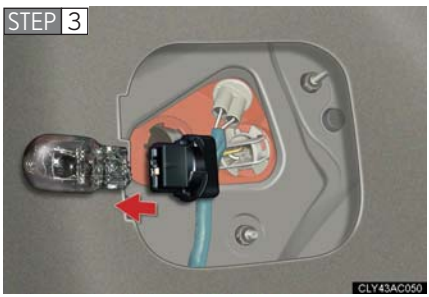
Open the trunk lid and remove the access hole cover.



1 Stop/tail light
2 Rear turn signal light
3 Rear side marker light

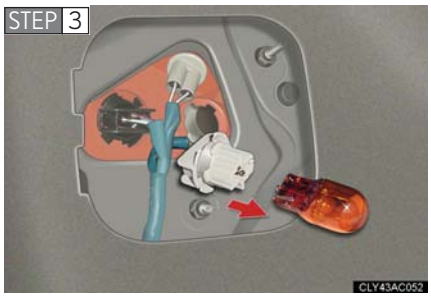
Turn the bulb base counterclockwise.

▶ Stop/tail light



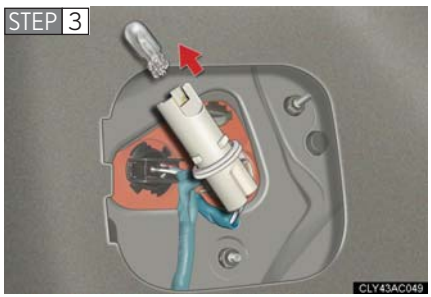
Remove the light bulb.

▶ Rear turn signal light



Remove the light bulb.

▶ Rear side marker light



Remove the light bulb.

n **Bulbs other than the above**

If any of the bulbs listed below has burnt out, have your Lexus dealer replace it.

- Headlight low beams (discharge bulbs)
- Front fog lights
- Tail lights
- High mounted stoplight
- License plate lights
- Back-up lights

n Condensation build-up on the inside of the lens

Contact your Lexus dealer for more information in the following situations. Temporary condensation build-up on the inside of the headlight lens does not indicate a malfunction.

- Large drops of water are built up on the inside of the lens.
- Water has built up inside the headlight.

n Discharge headlights

If voltage to the discharge bulbs is insufficient, the bulbs may not come on, or may go out temporarily. The discharge bulbs will come on when normal power is restored.

n LED stop lights

The high mounted stoplight consists of a number of LEDs. If any of the LEDs burn out, take your vehicle to your Lexus dealer to have the light replaced.

⚠ CAUTION

n Replacing light bulbs

- Turn off the headlights. Do not attempt to replace the bulb immediately after turning off the headlights.
  The bulbs become very hot and may cause burns.
- Do not touch the glass portion of the light bulb with bare hands. Hold the bulb by the plastic or metal portion.
  If the bulb is scratched or dropped it may blow out or crack.
- Fully install light bulbs and any parts used to secure them. Failing to do so may result in heat damage, fire, or water entering the headlight unit. This may damage the headlights or cause condensation to build up on the lens.
- Do not attempt to take apart or repair the low beam headlight bulbs, connectors, power supply circuits, or related components.
  Doing so could result in electric shock and serious injury or death.

n Discharge headlights

- Contact your Lexus dealer before replacing discharge headlights (including light bulbs).
- Do not touch the high-intensity discharge headlight's high voltage socket when the headlights are turned on.
  An extremely high voltage of 20000 V will be discharged and could result in serious injury or death by electric shock.

n To prevent damage or fire

Make sure bulbs are fully seated and locked.