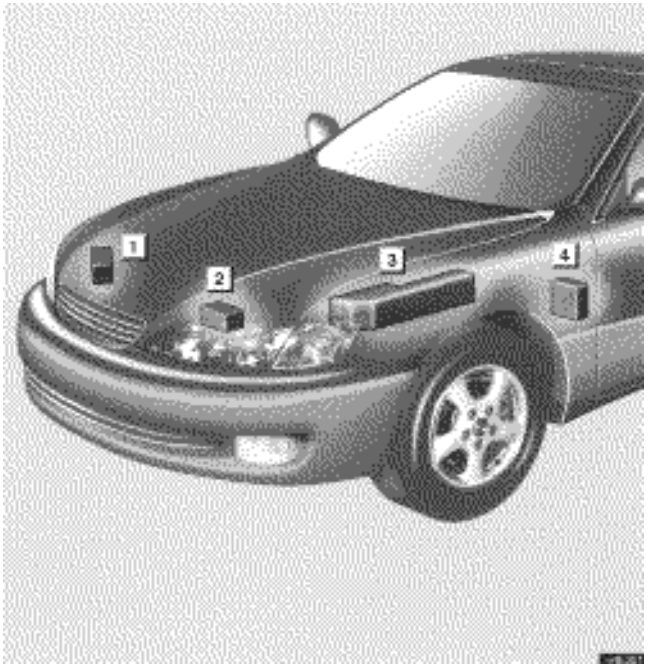
SERVICE PROCEDURES AND SPECIFICATIONS

Electrical components

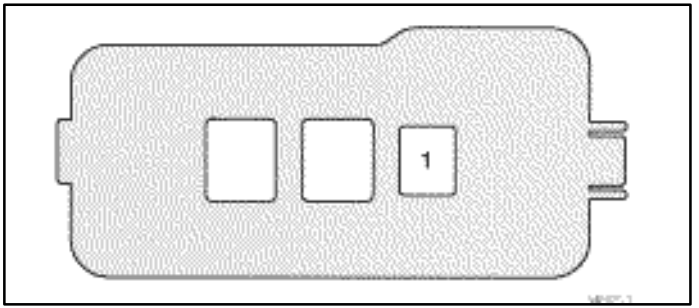
SPECIFICATIONS

– FUSE LOCATIONS

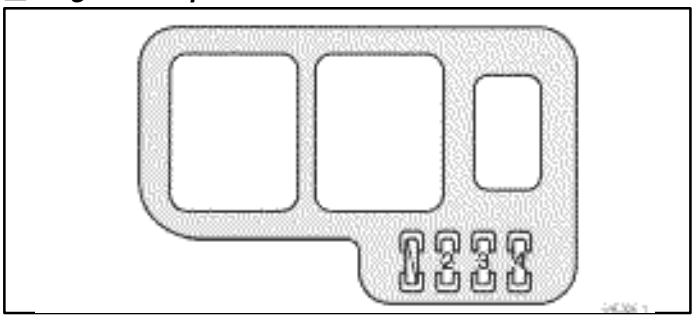


▶ 1 3 ***Engine compartment***
2 ***Engine compartment (Canada only)***
4 ***Driver's side instrument panel***

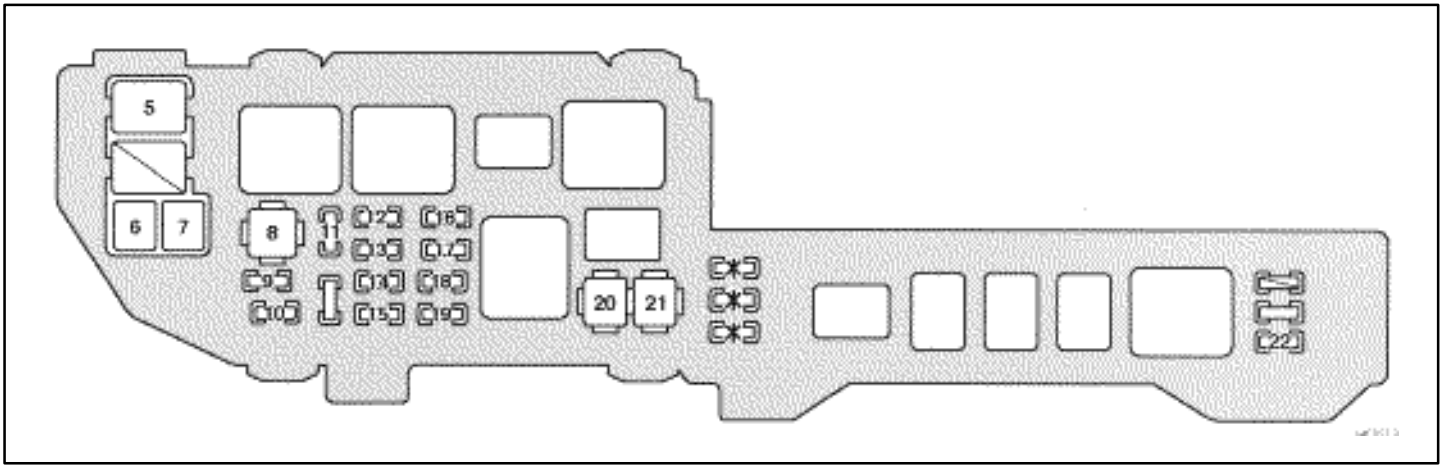
– FUSES



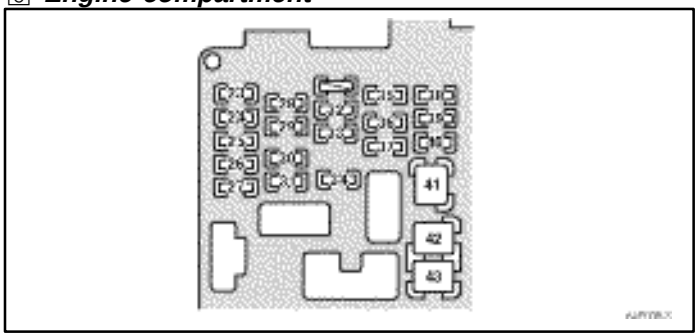
1 ***Engine compartment***



2 ***Engine compartment (Canada only)***



3 ***Engine compartment***



4 ***Driver's side instrument panel***

No.	FUSE	AMPERE	CIRCUIT
1	ABS	60	Anti–lock brake system
2	DRL NO. 2	5	**Vehicles sold in Canada** Daytime Running Light System
3	H–LP LH (LO)	10	**Vehicles sold in Canada** Left-hand headlight (low beam)
4	H–LP RH (LO)	10	**Vehicles sold in Canada** Right–hand headlight (low beam)
5	ALT	100	Charging system
6	CDS NO.2	30	No circuit
7	HTR	30	No circuit
8	MAIN	40	Headlight, Starting system
9	DOME	7.5	Theft deterrent system, Clock, Door courtesy light, Interior light, Ignition switch light, Vanity light, Wireless remote control system
10	ECU–B	10	Cruise control system, Air conditioning system, Power seat system
11	RAD NO.1	20	Audio system
12	HAZ	10	Emergency flashers, Turn signal lights
13	AM2	30	Starting system

No.	FUSE	AMPERE	CIRCUIT
14	TEL	5	Telephone
15	H–LP LH	15	**Vehicles sold in U.S.A.** Left–hand headlight (high beam)
	H–LP LH HI	15	**Vehicles sold in Canada** Left–hand headlight (high beam)
16	ALT–S	5	Charging system
17	H–LP RH	15	**Vehicles sold in U.S.A.** Right–hand headlight (high beam)
	H–LP RH HI	15	**Vehicles sold in Canada** Right–hand headlight (high beam)
18	EFI	15	Multiport fuel injection
19	HORN	10	Theft deterrent system
20	RDI FAN	30	Electronic cooling fan system
21	CDS	30	Air conditioning system
22	A/C	10	No circuit
23	S–HTR	20	Seat heater system
24	HTR	10	Air conditioning system
25	GAUGE	10	Gauges and measures, service reminder indicators and warning buzzers, Back–up light, Door courtesy light, Seat heater, Power window system
26	WIP	20	Windshield wipers and washer

No.	FUSE	AMPERE	CIRCUIT
27	M/HTR	10	Outside rear view mirror defogger
28	ECU–IG	15	Cruise control system, Anti–lock brake system, Shift lock system, Power brake antenna, Theft deterrent system, Electronic modulated suspension, Wireless remote control
29	IGN	5	SRS airbag system, Multiport fuel injection
30	STOP	15	Stop lights, High mounted stoplight, Cruise control system, Electronic modulated suspension, Anti–lock brake system, Shift lock system, Power seat system, Multiport fuel injection
31	TAIL	10	Tail light, Side marker lights, License plate lights
32	PWR OUTLET	15	Power outlet
33	OBD	7.5	On–board diagnosis system
34	FOG	15	Fog lamps
35	ST	5	Starting system
36	DOOR	25	Door courtesy light, Theft deterrent system, Power door lock system, Trunk lid opener, Fuel filler door opener
37	PANEL	7.5	Instrument panlel lights, Glovebox light
38	TURN	7.5	Emergency flashers, Turn signal lights
39	RAD NO.2	7.5	Audio System
40	CIG	15	Cigarette lighter, Clock, SRS airbag system, Theft deterrent system
41	DEF	40	Rear window defogger, Outside rear view mirror defogger
42	PWR	30	Power window, Electronic moon roof, Power seat system
43	AM1	40	Power window, Electronic moon roof, Power seat system
✳	SPARE		Spare fuse

CHECKING BATTERY CONDITION

Precautions

CAUTION

BATTERY PRECAUTIONS

The battery produces flammable and explosive hydrogen gas.

- **Do not cause a spark by contacting the battery terminals with tools.**
- **Do not smoke or light a match near the battery.**

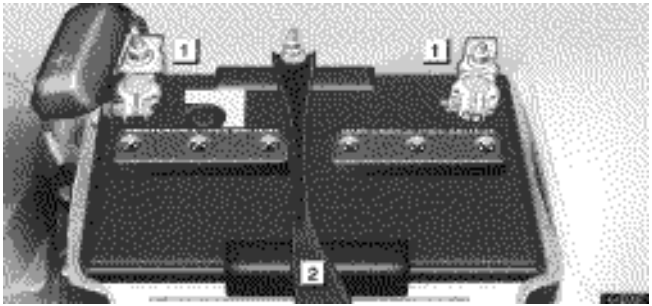
The electrolyte contains poisonous and corrosive sulfuric acid.

- **Avoid contact with eyes, skin or clothes.**
- **Never inhale or swallow electrolyte.**
- **Wear protective safety glasses when working near the battery.**
- **Keep children away from the battery.**

EMERGENCY MEASURES

- **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 medical office.**
- **If electrolyte gets on your skin, thoroughly wash the contacted area. If you feel a pain or burn, get medical attention immediately.**
- **If electrolyte gets on your clothes, there is a possibility of its soaking through to your skin, so immediately take off the exposed clothing and follow the procedure above, if necessary.**
- **If you happen to swallow electrolyte, drink a large quantity of water or milk. Follow with milk of magnesia, beaten raw egg or vegetable oil. Then go immediately for emergency help.**

Checking battery exterior



▶ 1 *Terminals* 2 *Hold–down clamp*

Check the battery for corroded or loose connections, cracks, or loose hold–down clamps.

1. If the battery is corroded, wash it off with a solution of warm water and baking soda. Coat the terminals with grease to prevent further corrosion.
2. If the connections are loose, tighten the clamp bolts – but do not overtighten.
3. Tighten the hold–down clamp only enough to keep the battery firmly in place. Overtightening may damage the battery case.

NOTICE

- ***Make sure the engine and all accessories are turned off before performing maintenance.***
- ***When checking the battery, remove the ground cable first and reinstall it last.***
- ***Be careful not to cause a short circuit with tools.***
- ***Take care no solution gets into the battery when washing it.***

Checking battery fluid

There are 2 types of batteries: maintenance type and non–maintenance type.

A non–maintenance battery has “MAINTENANCE FREE BATTERY” on its top. A maintenance type battery does not have such indication.

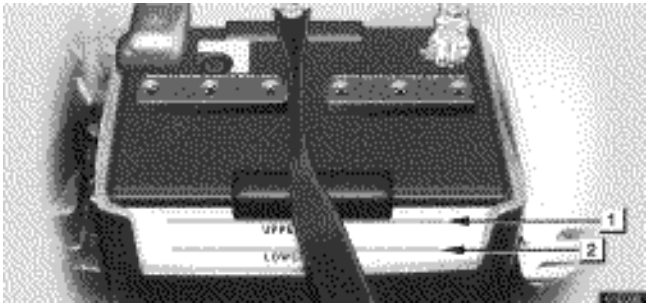
Maintenance type battery

Check the fluid condition by the fluid level lines on the side of the battery. Or if the battery has a hydrometer on its top, you can also check the hydrometer.

Non–maintenance battery

Check the battery condition by the hydrometer on top of the battery.

(a) Checking by the fluid level lines (Maintenance type battery only)



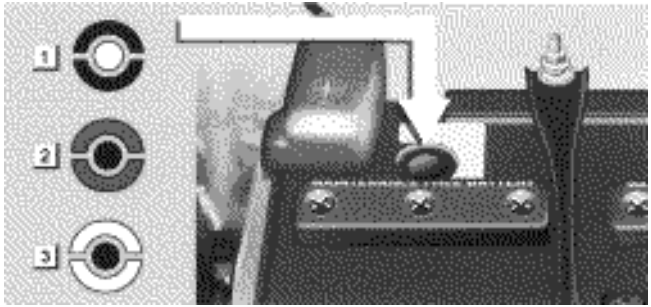
▶ 1 ***Upper line*** 2 ***Lower line***

The fluid (electrolyte) level must be between the upper and lower lines.

When checking the fluid level, look at all six cells, not just one or two.

If the level is lower than the lower line, add distilled water. (See “Adding distilled water” on page 225.)

(b) Checking the hydrometer



Check the battery condition by the hydrometer color.

Maintenance type battery

1 RED – Add distilled water. (See “Adding distilled water” on page 225.)

2 BLUE – Good condition

3 WHITE – Charging necessary. Have the battery checked by your Lexus dealer.

Non–maintenance type battery

1 RED – Have the battery checked by your Lexus dealer.

2 BLUE – Good condition.

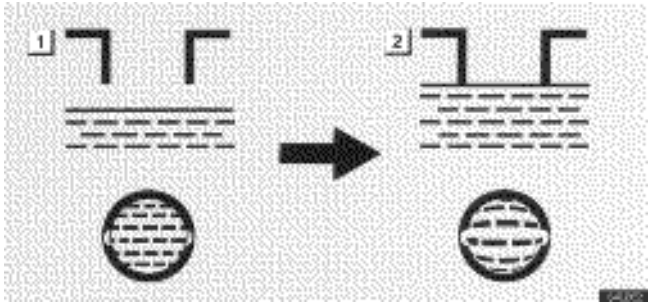
3 WHITE – Charging necessary. Have the battery checked by your Lexus dealer.

NOTICE

For non–maintenance battery:

Do not refill the battery with water.

Adding distilled water (Maintenance type battery only)



▶ 1 ***Low*** 2 ***O.K.***

1. Remove the vent plugs.
2. Add distilled water to cells needing fluid.

If the side of the battery is covered, check the water level by looking down directly above the cell as illustrated above.

3. Retighten the vent plugs securely.

NOTICE

- ***Do not overfill the cells. Excess electrolyte could squirt out of the battery during heavy charging, causing corrosion or damage.***
- ***Use a cover on the battery for longer life.***

BATTERY RECHARGING PRECAUTIONS

During recharging, the battery is producing hydrogen gas.

Therefore, before recharging:

1. Maintenance type batteries – Remove the vent plugs.
2. If recharging with the battery installed on the vehicle, be sure to disconnect the ground cable.
3. Make sure the power switch on the recharger is off when connecting the charger cables to the battery and when disconnecting them.

CAUTION

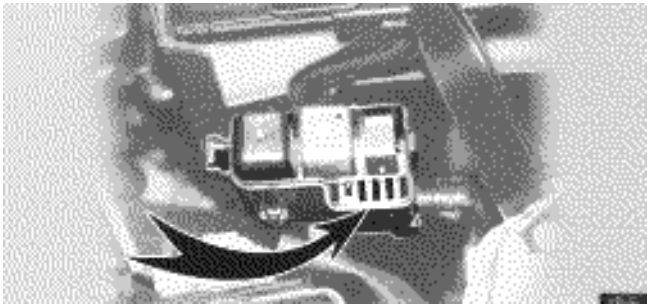
- **Always charge the battery in an unconfined area. Do not charge the battery in a garage or closed room where there is not sufficient ventilation.**
- **Non–maintenance batteries: Only do a slow charge (5A or less). Charging at a quicker rate is dangerous. The battery may explode causing personal injuries.**

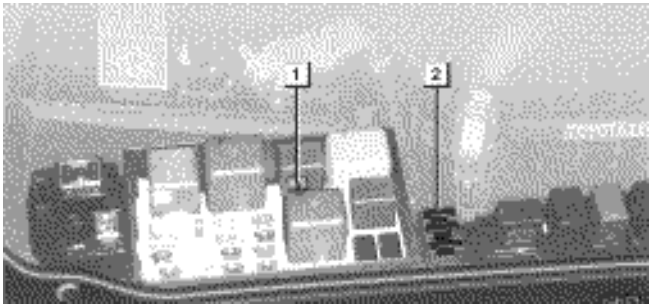
  Maintenance type batteries: Be sure to remove the vent plugs before recharging.

NOTICE

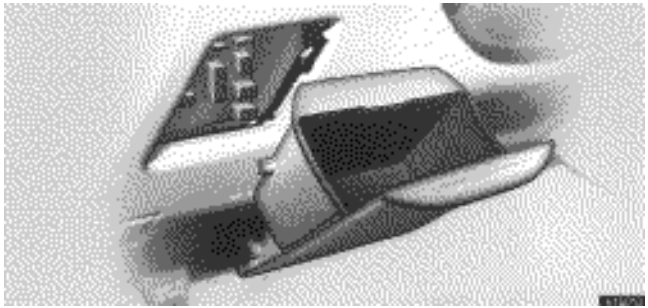
Never recharge the battery while the engine is running. Also, be sure all accessories are turned off.

CHECKING AND REPLACING THE BLADE TYPE FUSES





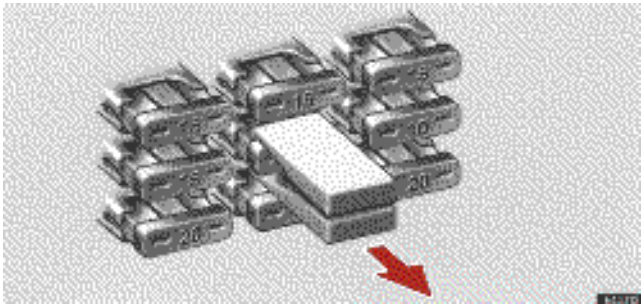
▶ ***Engine compartment*** ***1 Pull–out tool***
2 Spare fuses



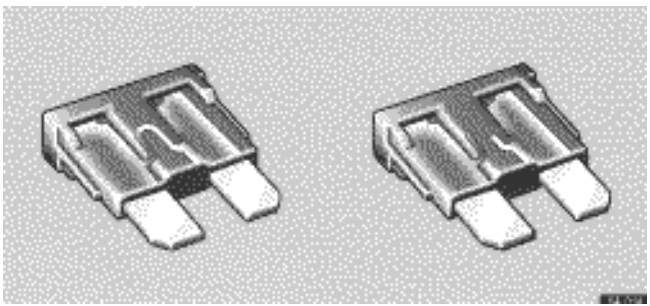
▶ ***Driver's side instrument panel***

1. Turn the ignition switch off and remove the auxiliary box.

Determine which fuse may be causing the problem. The auxiliary box shows the name of the circuit for each fuse.



2. Make sure the inoperative component is turned off. Pull the suspected fuse straight out with the pull–out tool and check it. If it has blown, push a new fuse into the clips.



▶ ***Good*** ▶ ***Blown***

a. Look carefully at the fuse. If the thin wire is broken, the fuse has blown. If you are not sure or if it is too dark to see, try replacing the suspected fuse with one of the same value that you know is good.

b. Only install a fuse with the amperage rating designated on the fuse box lid.

If you do not have a spare fuse, in an emergency you can pull out the “RAD NO.1”, “RAD NO.2”“ or “PWR OUTLET” fuse, which may be dispensable for normal driving, and use it if its amperage rating is the same.

If you cannot use one of the same amperage, use one lower than, but as close as possible to, the amperage. If the amperage is lower than the specified, the fuse might blow out again but this does not indicate anything wrong. Be sure to get the correct fuse as soon as possible and return the substitute to its original clips.

It is a good idea to purchase a set of spare fuses and keep them in your vehicle for emergencies.

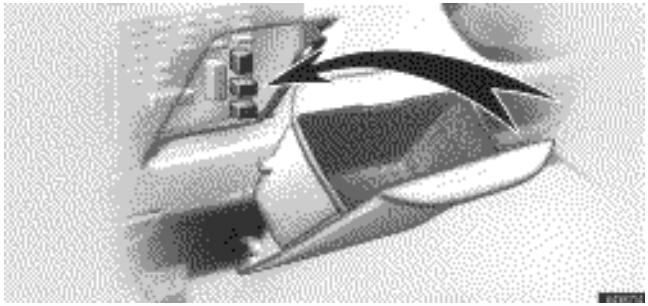
If the new fuse immediately blows out, there is a problem with the electrical system. Have your Lexus dealer correct it as soon as possible.

! CAUTION

Never use a fuse with a higher amperage rating, or any other object, in place of a fuse. This may cause extensive damage and possibly a fire.

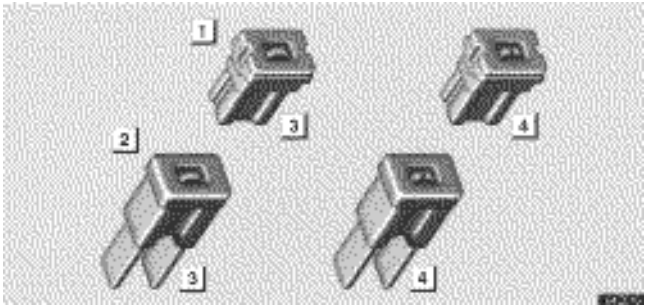
CHECKING THE CARTRIDGE TYPE FUSES

▶ ***Engine compartment***



▶ ***Driver's side instrument panel***

If the headlights or other electrical components do not work and the blade type fuses are O.K., check the cartridge type fuses. If any of the cartridge type fuses are blown, they must be replaced.



▶ 1 *Type A* 2 *Type B* 3 *Good* 4 *Blown*

If there is an overload in the circuits from the battery, the fuses are designed to blow before the entire wiring harness is damaged.

NOTICE

Before replacing the fuses, have the cause of electrical overload determined and repaired by your Lexus dealer.

CAUTION

Always use a genuine Lexus fuse or equivalent for replacement. Never install an ordinary wire – even for a temporary fix. This may cause extensive damage and possibly a fire.

ADDING WASHER FLUID

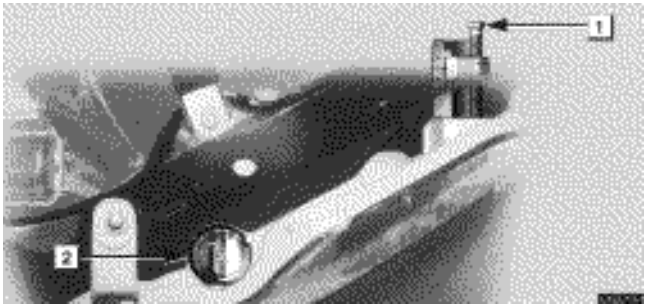
If the washer tank becomes nearly empty, add washer fluid.

You may use plain water as washer fluid. However, in cold areas where temperatures range below the freezing point, use washer fluid containing antifreeze. This product is available at your Lexus dealer and most auto parts stores. Follow the manufacturer's directions for how much to mix with water.

NOTICE

Do not use engine antifreeze or any other substitute because it may damage your vehicle's paint.

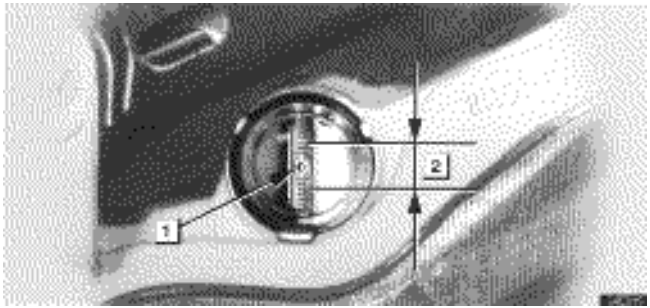
CHECKING THE HEADLIGHT AIM



▶ 1 ***Beam angle gauge (horizontal movement)***
2 ***Beam angle gauge (vertical movement)***

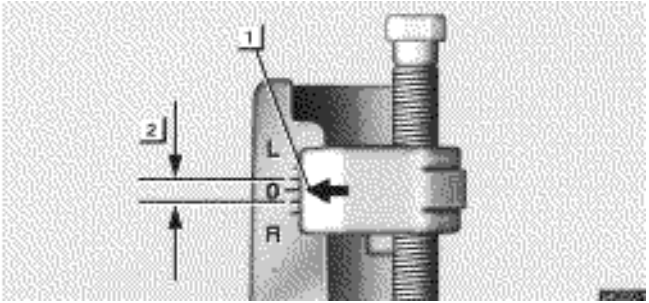
Before checking the headlight aim:

1. Be sure that the body around the headlights is not deformed.
2. Park the vehicle on a level spot.
3. The driver gets into the driver's seat so that the vehicle has its normal load (with the tank full).
4. Bounce the vehicle several times.



▶ 1 ***Bubble*** 2 ***Acceptable range***

Vertical movement gauge: The bubble of the gauge should not deviate from the center of the gauge by more than two marks to either side of the gauge.



▶ 1 *Arrow head* 2 *Acceptable range*

Horizontal movement gauge: The arrow head should not deviate by more than one mark to either side of the gauge. If the error is over the value specified above, take the vehicle to your Lexus dealer to adjust the headlight aim.

REPLACING LIGHT BULBS

The illustration on the following pages show the locations of light bulbs. If it is necessary to replace a bulb, take your vehicle to your Lexus dealer as soon as possible. Use bulbs with the bulb numbers and wattage ratings given in the table.

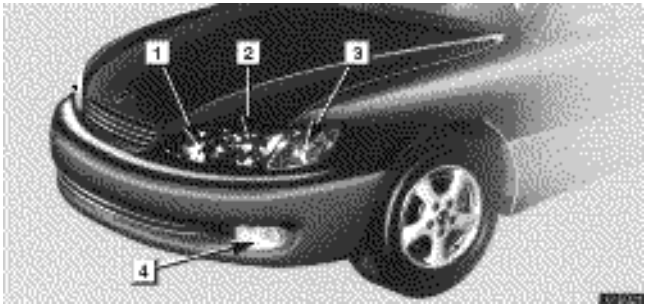
CAUTION

Halogen bulbs have pressurized gas inside and require special handling. They can burst or shatter if scratched or dropped. Hold a bulb only by its plastic or metal case. Do not touch the glass part of a bulb with bare hands.

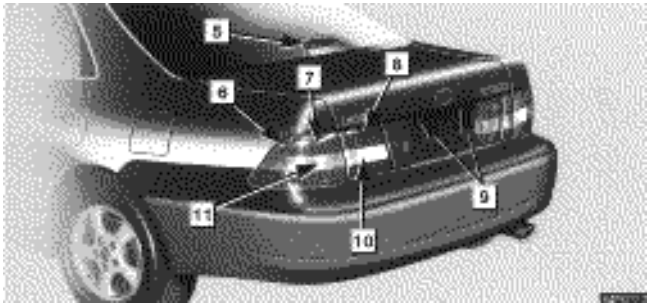
NOTICE

Only use a bulb of the listed type.

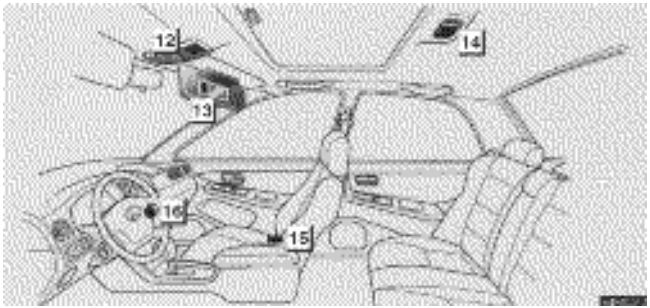
LIGHT LOCATION



	Light Bulbs	Bulb No.	W	Type
1	Headlights (high beam)	9005	65	A
2	Headlights (low and high beam)	H7	55	B
3	Front turn signal and parking lights	1157NA	27/8	D
4	Fog lights	H3	55	C



	Light Bulbs	Bulb No.	W	Type
5	High mounted stoplight	—	21	E
6	Rear side marker lights	W5W	5	E
7	Tail and stop lights	—	21/5	E
8	Tail lights	W5W	5	E
9	License plate lights	W5W	5	E
10	Back–up lights	—	21	E
11	Rear turn signal lights	—	21	E



	Light Bulbs	Bulb No.	W	Type
12	Personal light	—	10	D
13	Vanity lights	—	1.5	F
14	Interior lights	—	8	F
15	Door courtesy light	—	3.8	E
16	Glovebox light	—	1.2	E

	Light Bulbs	Bulb No.	W	Type
17	Trunk light	194	2.8	F

A: HB3 halogen bulbs
B: H7 halogen bulbs
C: H3 halogen bulbs
D: Single end bulbs
E: Wedge base bulbs
F: Double end bulbs