

SECTION 6 – 4

SERVICE PROCEDURES AND SPECIFICATIONS

Electrical components

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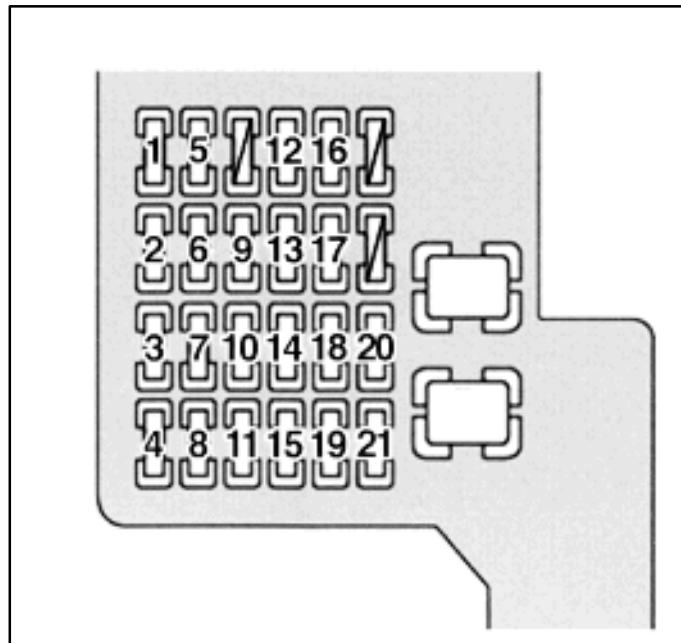
SPECIFICATIONS

– FUSE LOCATIONS

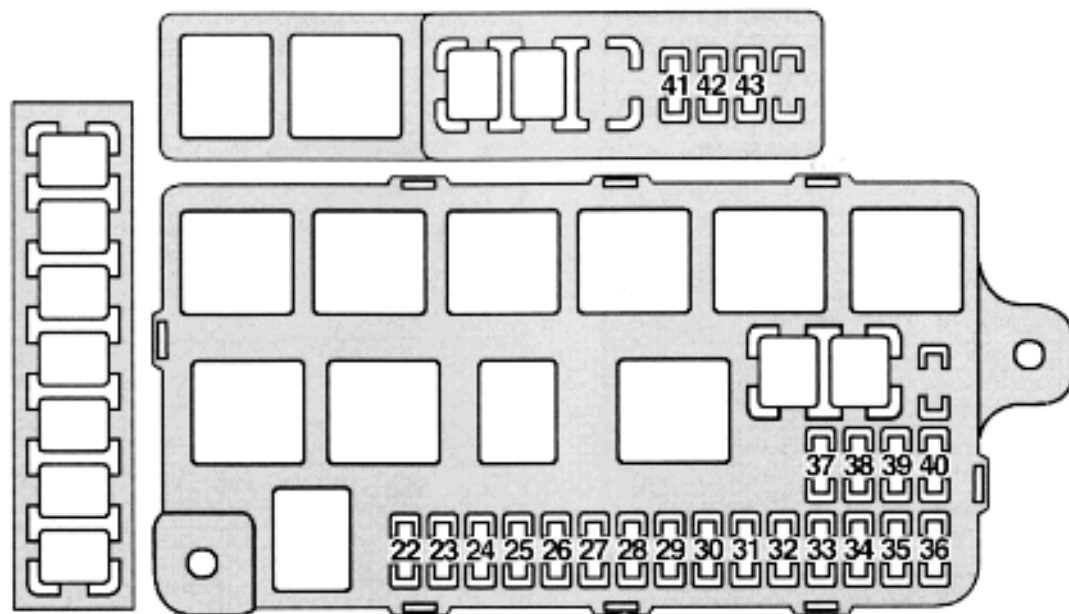


- 1 *Engine compartment*
- 2 *Driver's side instrument panel*

– FUSES



► *Driver's side instrument panel*



► *Engine compartment*

ELECTRICAL COMPONENTS

No.	FUSE	AMPERE	CIRCUIT
1	TURN	10	Turn signal lights
2	WIPER	20	Windshield wipers and washer
3	ECU-IG	15	Power steering control system, Shift lock system, Power seat control system, Anti-lock brake system, Traction control system, Telephone, Charging system
4	FR FOG	15	Fog lights
5	PWR-IG	10	Gauges and meters, service reminder indicators and warning buzzers, Power antenna
6	HEATER	15	Air conditioning system, Rear window defogger
7	GAUGE	10	Gauges and meters, service reminder indicators and warning buzzers, Preset steering, Wireless remote control system, Back-up lights
8	IGN	10	SRS airbag system, Multiport fuel injection system/sequential multiport fuel injection system
9	FUEL OPN	15	Fuel opener system, Air conditioning system

No.	FUSE	AMPERE	CIRCUIT
10	RR CIG	15	Rear cigarette lighter, Shift lock system
11	FR CIG	15	Front cigarette lighter, SRS airbag system, Air conditioning system, Clock
12	OBD-II	7.5	On-board diagnosis system
13	TRAC	15	Traction control system
14	STOP LP	25	Stop lights, High mounted stop light
15	RADIO NO.2	7.5	Audio system, Outside rear view mirror
16	PANEL	10	Instrument panel lights, Air conditioning system, Glovebox light, Audio system
17	STARTER	7.5	Starting system
18	TAIL	10	Tail lights, Side marker lights, License plate lights
19	STOP-S	5	Shift lock system, Height control system, Anti-lock brake system, Traction control system
20	AIR SUS	20	Height control system

No.	FUSE	AMPERE	CIRCUIT
21	DOOR	20	Door lock
22	HORN	10	Horns
23	RADIO NO.1	20	Audio system
24	H-LP R LWR	10	Vehicles sold in U.S.A. Right-hand headlight (low beam)
25	H-LP L LWR	10	Vehicles sold in U.S.A. Left-hand headlight (low beam)
26	H-LP L UPR	20	Left-hand headlight (high beam)
27	H-LP R UPR	20	Right-hand headlight (high beam)
28	EFI NO.2	10	Emission control system
29	MIR-HTR	10	Outside rear view mirror defogger
30	FR S/HTR	20	Seat heater
31	ALT-S	7.5	Charging system
32	SRS	7.5	SRS airbag system
33	TEL	15	Telephone
34	ANTENA	10	Power antenna

No.	FUSE	AMPERE	CIRCUIT
35	SEC HORN	7.5	Theft deterrent system
36	ECU-B	15	Anti-lock brake system, Traction control system
37	HAZ	15	Emergency flashers
38	EFI NO.1	20	Multipoint fuel injection system/sequential multipoint fuel injection system
39	DOME FR	7.5	Front door courtesy lights, Ignition switch light, Foot lights, Interior light, Vanity lights, Wireless remote control system, Clock
40	DOME RR	7.5	Rear courtesy lights, Trunk light, Audio system
41	DRL	10	Vehicles sold in Canada Daytime Running Light System
42	H-LP RH	10	Vehicles sold in Canada Right-hand headlight
43	H-LP LH	10	Vehicles sold in Canada Left-hand headlight

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 the 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 type battery

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

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

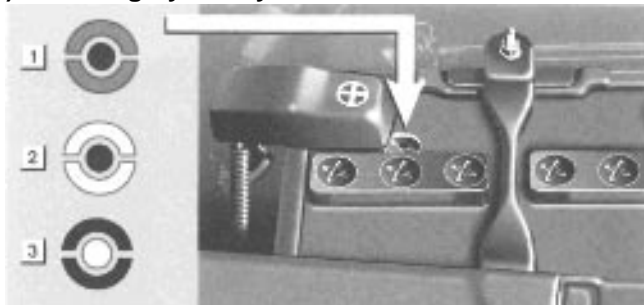


► ① Upper line ② Lower line

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 220.)

(b) Checking by the hydrometer

Check the battery condition by the hydrometer color.

Maintenance type battery

- ① BLUE – Good condition.
- ② WHITE – Charging necessary. Have the battery checked by your Lexus dealer.
- ③ RED – Add distilled water. (See “Adding distilled water” on page 220.)

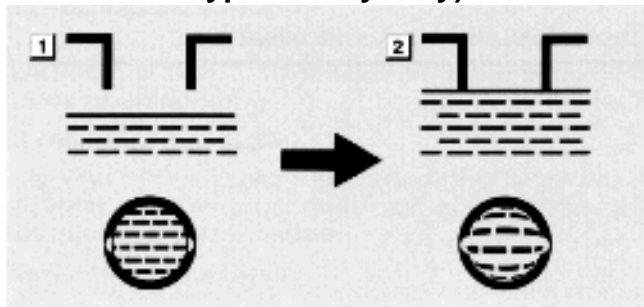
Non-maintenance type battery

- ① BLUE – Good condition.
- ② WHITE – Charging necessary. Have the battery checked by your Lexus dealer.
- ③ RED – Have the battery checked by your Lexus dealer.

NOTICE

For non-maintenance type 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 your 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 (5 A 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, make sure all accessories are turned off.

CHECKING AND REPLACING THE BLADE TYPE FUSES



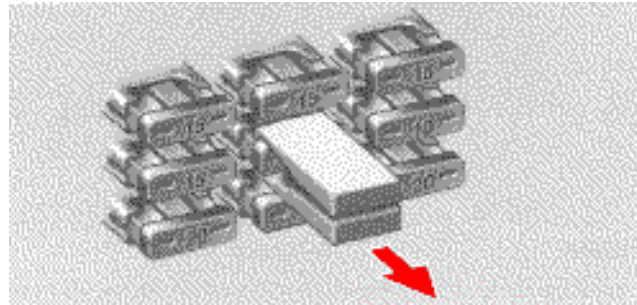
► *Driver's side instrument panel*



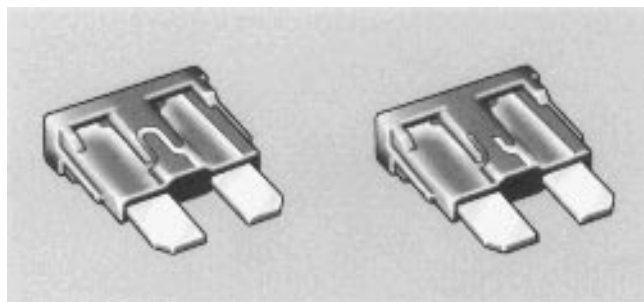
► *Engine compartment* 1 *Spare fuses*
2 *Pull-out tool*

1. Turn the ignition switch off and open the fuse box lid.

Determine which fuse may be causing the problem. The lid of the fuse 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 “RADIO NO.1”, “MIR-HTR” or “DOME RR” 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 that 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



► 1 **Good** 2 **Melted**

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.

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



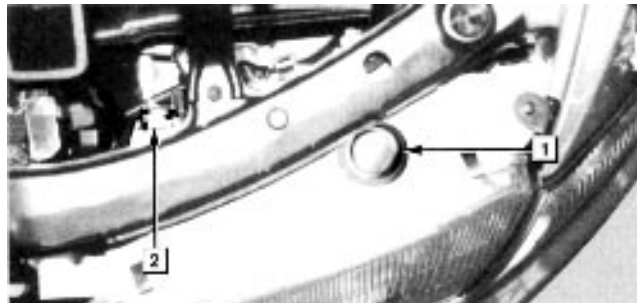
If the washer tank becomes nearly empty, add washer fluid.

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.

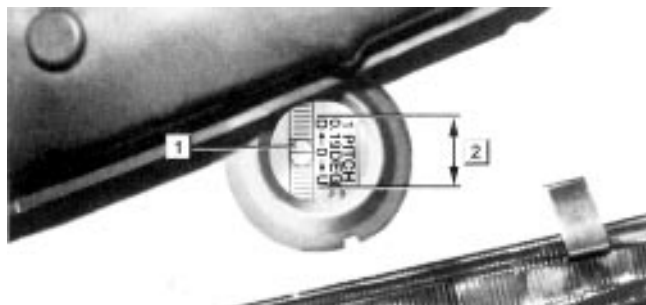
CHECKING THE HEADLIGHT AIM



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

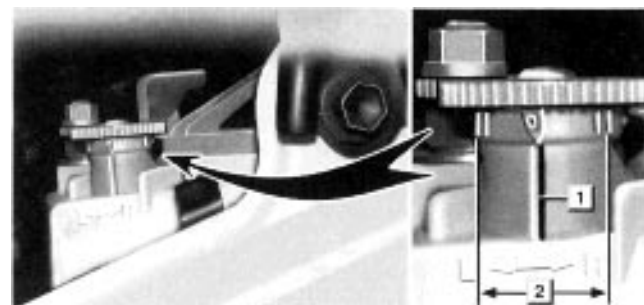
Before checking the headlight aim:

1. Be sure that the body around the headlight is not deformed.
2. Park the vehicle on a level spot.
3. The driver gets into the driver's seat and puts the vehicle in a state readying for a driving (with a full tank).
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 four marks to either side of the gauge.



► ① **Mark** ② **Acceptable range**

Horizontal movement gauge: The mark should not deviate by more than two marks 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.



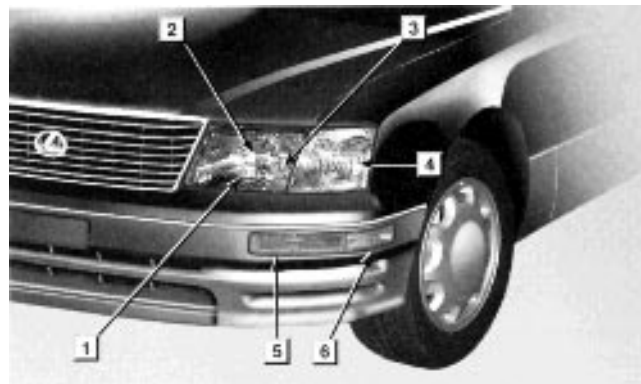
CAUTION

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.

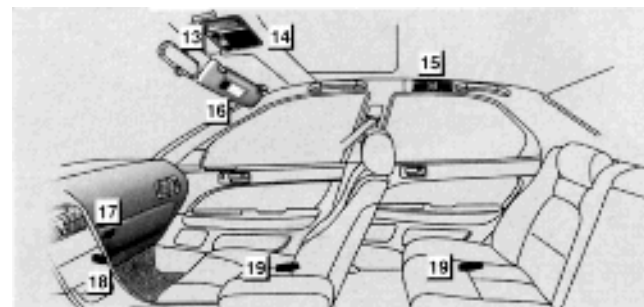
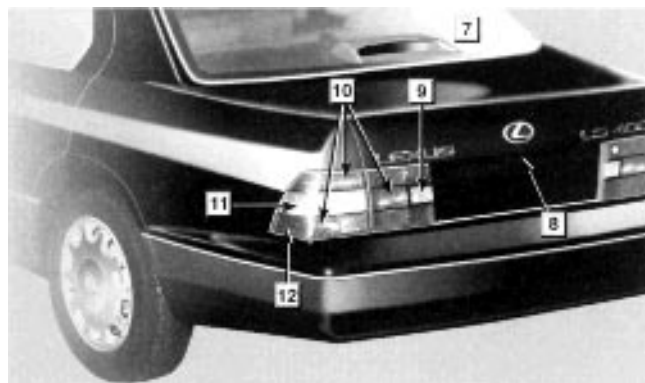
NOTICE

Only use a bulb of the listed type.

LIGHT LOCATION



	Light Bulbs	Bulb No.	W	Type
1	Headlights (High beam)	HB3	60	A
2	Headlights (High and low beam)	H4	60/55	B
3	Fog lights	HB4	51	C
4	Parking lights	—	5	D
5	Front turn signal lights	1156	21	F
6	Front side marker lights	—	3.8	D



Light Bulbs	Bulb No.	W	Type
7 High mounted stoplight	921	18	D
8 License plate lights	—	5	D
9 Back-up lights	—	21	D
10 Stop and tail lights	—	21/5	D
11 Rear turn signal lights	—	21	D
12 Rear side marker lights	—	5	D

Light Bulbs	Bulb No.	W	Type
13 Front personal lights	—	8	F
14 Front interior light	—	8	E
15 Rear interior light	—	8	D
Rear personal light	—	5	F
16 Vanity lights	—	3	E
17 Glovebox light	—	1.2	D
18 Footlights	—	1.4	D
19 Door courtesy lights	194	3.8	D



Light Bulbs		Bulb No.	W	Type
20	Trunk light	194	3.8	D

- A: HB3 halogen bulbs
- B: H4 halogen bulbs
- C: HB4 halogen bulbs
- D: Wedge base bulbs
- E: Double end bulbs
- F: Single end bulbs