

SECTION 6 – 4

SERVICE PROCEDURES AND SPECIFICATIONS

Electrical components

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ELECTRICAL COMPONENTS

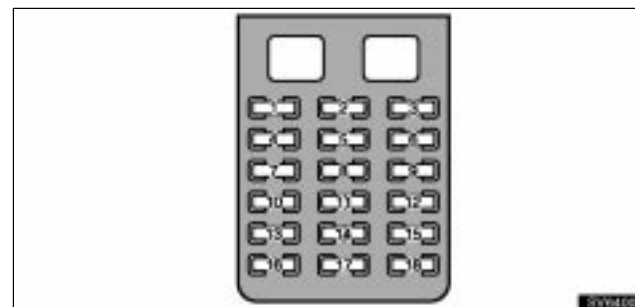
SPECIFICATIONS

– FUSE LOCATION

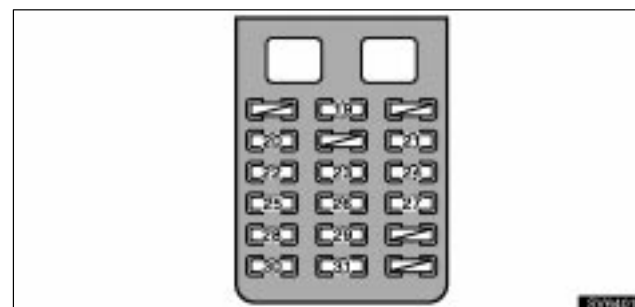


- **1** *Engine compartment*
- **2** *Passenger's side kick panel*
- **3** *Driver's side kick panel*

– FUSES

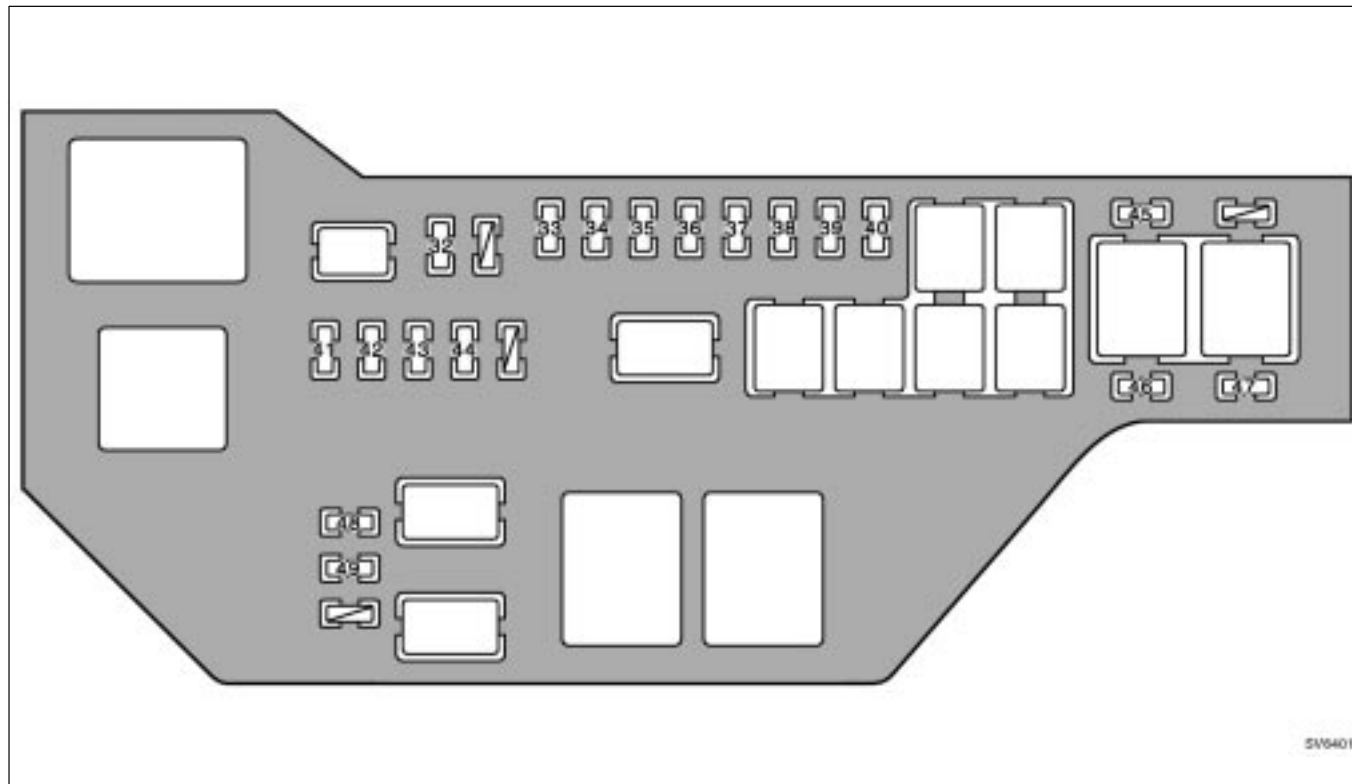


► *Driver's side kick panel*



► *Passenger's side kick panel*

ELECTRICAL COMPONENTS



► *Engine compartment*

ELECTRICAL COMPONENTS

No.	FUSE	AMPERE	CIRCUIT
1	D FR P/W	20	Power window system
2	TAIL	10	Tail lights, Side marker lights, License plate lights, Parking lights
3	GAUGE	10	Back-up lights, Power window, Gauges and meters, Service reminder indicators and buzzers, Emergency flashers, Windshield defogger, Outside rear view mirror defogger
4	DOOR	20	Door lock system
5	PANEL	7.5	Instrument panel lights, Seat heater, Cigarette lighter, Automatic transmission system, Traction control system, Rear fog light, Ashtray light
6	WASHER	15	Windshield washer, Headlight cleaner
7	STARTER	7.5	Starting system
8	FR DEF	20	No circuit
9	A/C	10	Air conditioning system
10	SEAT HTR	15	Seat heater
11	CIG	15	Cigarette lighter, Power outlet
12	S/ROOF	30	Moon roof

No.	FUSE	AMPERE	CIRCUIT
13	ECU-IG	10	Radiator fan, Anti-lock brake system, Moon roof, Shift lock system, Air conditioning system, Door lock system, Headlight beam level control, Theft deterrent system
14	SRS-ACC	10	SRS system
15	STOP	15	Stop lights, Shift lock system, Anti-lock brake system
16	WIPER	25	Windshield wipers
17	RADIO NO.2	10	Audio, Air conditioning, Outside rear view mirror, Shift lock system
18	D P/SEAT	30	Power seat system
19	DOME	7.5	Interior lights, Trunk light, Vanity lights, Ignition switch light, Map light, Door courtesy lights
20	FR FOG	15	Fog lights
21	P FR P/W	20	Power window system
22	TV	7.5	Television
23	ECU-B2	7.5	Theft deterrent system, Door lock system
24	D RR P/W	20	Power window system
25	MIR HTR	15	Outside rear view mirror

ELECTRICAL COMPONENTS

No.	FUSE	AMPERE	CIRCUIT
26	MPX-B	10	Power window system, Air conditioning, Gauges and meters, Theft deterrent system
27	P RR P/W	20	Power window system
28	SRS-B	7.5	SRS system, Door lock system
29	P P/SEAT	30	Power seat system
30	OBD	7.5	On-board diagnosis system
31	IGN	7.5	SRS system, Multiport fuel injection system/sequential multiport fuel injection system, Cruise control system
32	ECU-B1	20	Theft deterrent system, Door lock system, Interior light, Trunk light, Vanity light, Ignition switch light, Map light, Door courtesy lights, Power window system, Air conditioning, Gauges and meters
33	ALT-S	7.5	Charging system
34	ETCS	15	Electronic throttle control system
35	AM2	20	Starting system, SRS system, Multiport fuel injection system/sequential multiport fuel injection system, Cruise control system
36	HORN	10	Horn

No.	FUSE	AMPERE	CIRCUIT
37	TEL	7.5	Telephone
38	RADIO NO.1	20	Audio
39	TURN-HAZ	15	Turn signal lights
40	EFI	25	Multiport fuel injection system/sequential multiport fuel injection system, Emission control system, Engine immobiliser system
41	DRL NO.2	30	Daytime running light system
42	DRL NO.1	7.5	Daytime running light system
43	H-LP L LWR	15	Left-hand headlight (low beam), Fog lights
44	H-LP R LWR	15	Right-hand headlight (low beam)
45	SPARE		Spare fuse
46	SPARE		Spare fuse
47	SPARE		Spare fuse
48	H-LP L UPR	10	Left-hand headlight (high beam)
49	H-LP R UPR	10	Right-hand headlight (high beam), Service reminder indicators and buzzers

ELECTRICAL COMPONENTS

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 accidentally 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.

Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

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.*

ELECTRICAL COMPONENTS

Checking battery fluid

Checking by hydrometer



Check the battery condition by the hydrometer color.

- 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

Do not refill the battery with water.

BATTERY RECHARGING PRECAUTIONS

During recharging, the battery is producing hydrogen gas.

Therefore, before recharging:

1. If recharging with the battery installed on the vehicle, be sure to disconnect the ground cable.
2. 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.
- Only do a slow charge (5 A or less). Charging at a quicker rate is dangerous. The battery may explode causing personal injuries.

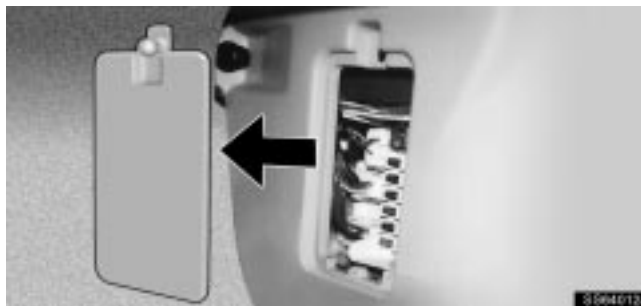
NOTICE

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

CHECKING AND REPLACING THE BLADE TYPE FUSES



► *Driver's side kick panel*



► *Passenger's side kick panel*

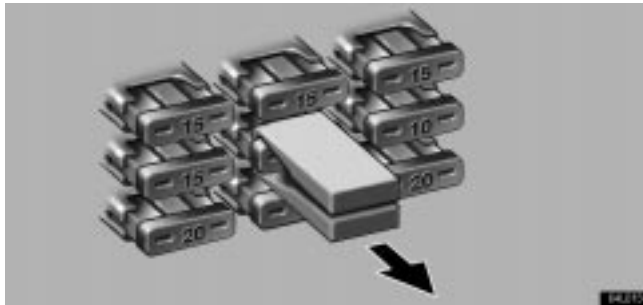


► *Engine compartment* 1 *Spare fuses* 2 *Pull-out tool*

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.

ELECTRICAL COMPONENTS



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. Install only 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 "CIG", "RADIO NO.1" or "OBD" 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.

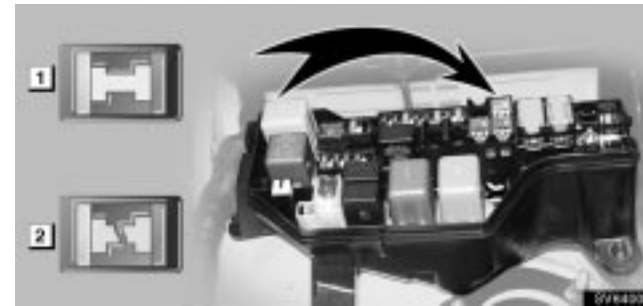
It is a good idea to purchase a set of spare fuses and keep them in your vehicle for emergencies.

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.

ELECTRICAL COMPONENTS



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.

NOTICE

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

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** *Vertical movement adjusting bolt 1*
- 2** *Vertical movement adjusting bolt 2*

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.

Adjusting the vertical aiming



1. Turn the vertical movement adjusting bolt 1 in either direction. At this time, keep the turning direction and number of turns in mind.

ELECTRICAL COMPONENTS



2. Turn the vertical movement adjusting bolt 2 the same number of turns and in the same direction at step 1.

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

- To prevent yourself from burning, do not replace the light bulbs while they are hot.
- Do not disassemble, repair or take apart the low beam headlight bulbs, connector, power supply circuits and rotated components. Or you may be injured by electric shocks. Call your dealer when the headlights fail to work or have to be replaced or disposed of.
- 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.

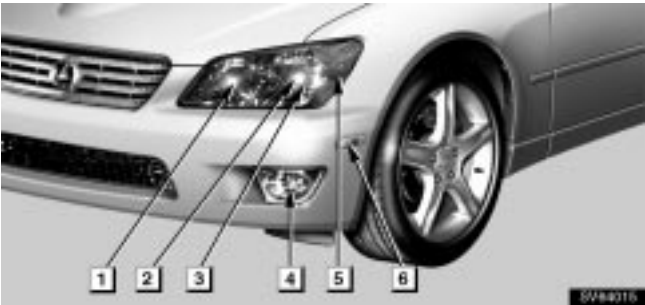
NOTICE

Only use a bulb of the listed type.

ELECTRICAL COMPONENTS

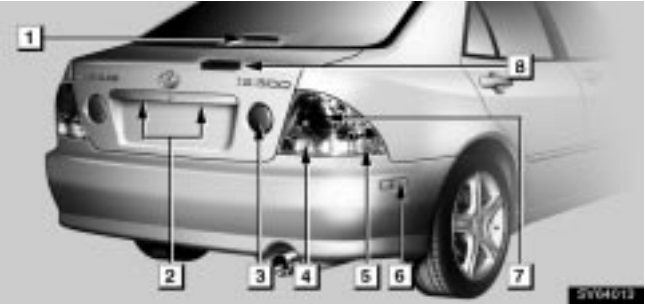
The inside of the lens of exterior lights such as headlights may temporarily fog up when the lens becomes wet in the rain or in a car wash. This is not a problem because the fogging is caused by the temperature difference between the outside and inside of the lens, just like the windshield fogged up in the rain. However, if there is a large drop of water on the inside of the lens, or if there is water pooled inside the light, contact your Lexus dealer.

LIGHT LOCATION

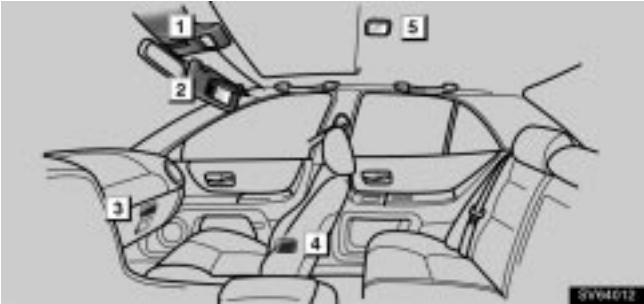


Light Bulbs		Bulb No.	W	Type
1	Headlights (High beam)	HB3	60	A
2	Parking lights	168	5	D
3	Headlights (Low beam)	D2R	35	B
4	Fog lights	HB4	51	C
5	Front turn signal lights	—	21	F
6	Front side marker lights	168	3.8	D

ELECTRICAL COMPONENTS



Light Bulbs	Bulb No.	W	Type
1 High mounted stop light	921	16	F
2 License plate lights	168	5	D
3 Tail/stop lights	7443	5/21	E
4 Back-up lights	7440	21	F
5 Rear turn signal lights	—	21	F
6 Rear side marker lights	168	3.8	D
7 Tail/stop lights	7443	5/21	E
8 Trunk light	194	3.8	D



Light Bulbs	Bulb No.	W	Type
1 Front personal lights			
with moon roof	—	10	F
without moon roof	—	8	F
2 Vanity lights	—	3	E
3 Glove box light	—	1.2	F
4 Door courtesy lights	194	3.8	D
5 Interior light	—	8	E

- A: HB3 halogen bulbs
B: D2R discharge bulbs
C: HB4 halogen bulbs
D: Wedge base bulbs
E: Double end bulbs
F: Single end bulbs