Part 7

DO-IT-YOURSELF MAINTENANCE—

Chapter 7-3

Electrical components

- Checking battery condition
- Battery recharging precautions
- Checking and replacing fuses
- Adding washer fluid
- Replacing light bulbs and units

Checking battery condition— —Precautions

CAUTION

BATTERY PRECAUTIONS

The battery produces flammable and explosive hydrogen gas.

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

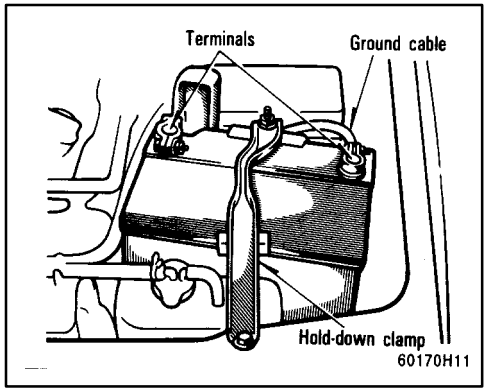
The electrolyte contains poisonous and corrosive sulfuric acid.

- **Avoid contact with eyes, skin or clothes.**
- **Never ingest 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 en route to the medical office.**
- **If electrolyte gets on your skin, thoroughly wash the contact area. If you feel pain or burning, 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



Check the battery for corroded or loose terminal connections, cracks, or loose hold-down clamp.

a. If the battery is corroded, wash it off with a solution of warm water and baking soda. Coat the outside of the terminals with grease to prevent further corrosion.

b. If the terminal connections are loose, tighten their clamp nuts—but do not overtighten.

c. Tighten the hold-down clamp only enough to keep the battery firmly in place. Overtightening may damage the battery case.

NOTICE

- ***Be sure the engine and all accessories are off before performing maintenance.***
- ***When checking the battery, remove the ground cable from the negative terminal ("-" mark) 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 two types of batteries: maintenance type and non-maintenance type.

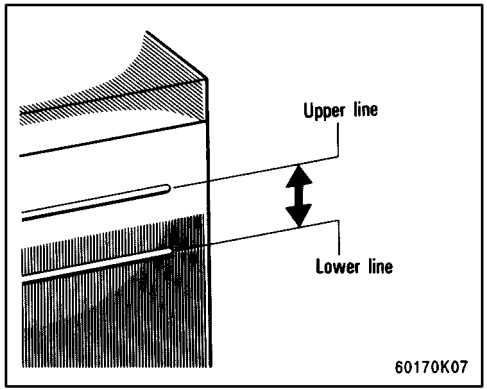
A non-maintenance battery has "MAINTENANCE FREE BATTERY" on its top. A maintenance type battery does not have such indication.

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 the top of the battery.

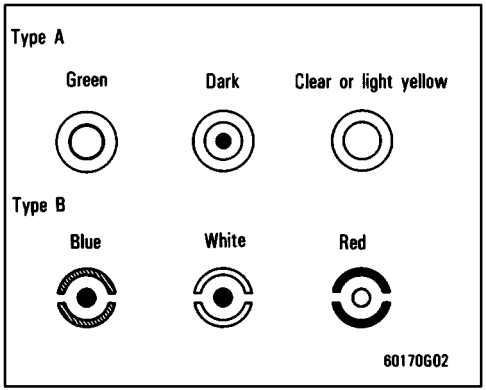


CHECKING BY THE FLUID LEVEL LINES (MAINTENANCE TYPE BATTERY ONLY)

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”.)



CHECKING BY THE HYDROMETER

Check the battery condition by the hydrometer color.

Maintenance type battery

Hydrometer color		Condition
Type A	Type B	
GREEN	BLUE	Good
DARK	WHITE	Charging necessary. Have battery checked by your Toyota dealer.
CLEAR or LIGHT YELLOW	RED	Add distilled water*

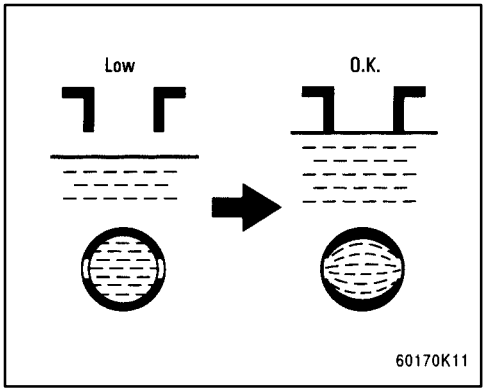
*: See “ADDING DISTILLED WATER”.

Non-maintenance battery

Hydrometer color		Condition
Type A	Type B	
GREEN	BLUE	Good
DARK	WHITE	Charging necessary. Have battery checked by your Toyota dealer.
CLEAR or LIGHT YELLOW	RED	Have battery checked by your Toyota dealer.

NOTICE

Do not refill the battery with water.



ADDING DISTILLED WATER (MAINTENANCE TYPE BATTERY ONLY)

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.

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. Be sure the power switch on the recharger is off when connecting the charger cables to the battery and when disconnecting them.

⚠ CAUTION

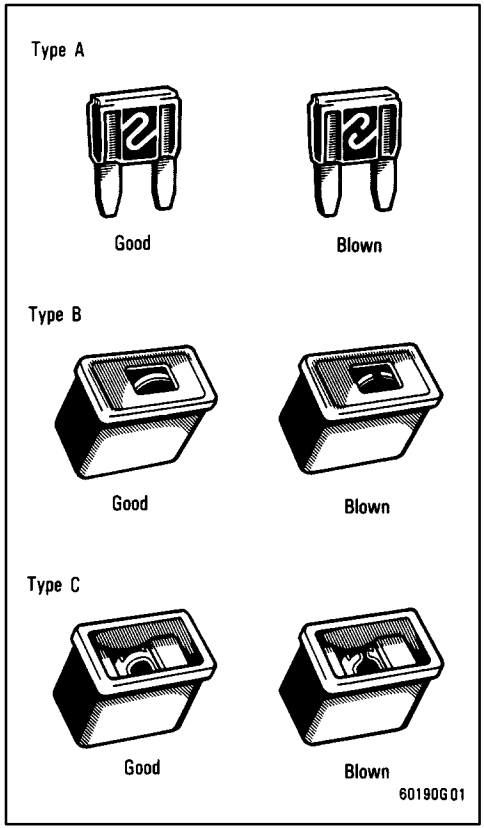
- **Always charge the battery in an unconfined area. Do not charge the battery in a garage or closed room where there is not sufficient ventilation.**
- **Non-maintenance batteries: Only do a slow charge (5A or less). Charging at a quicker rate is dangerous. The battery may explode, causing personal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

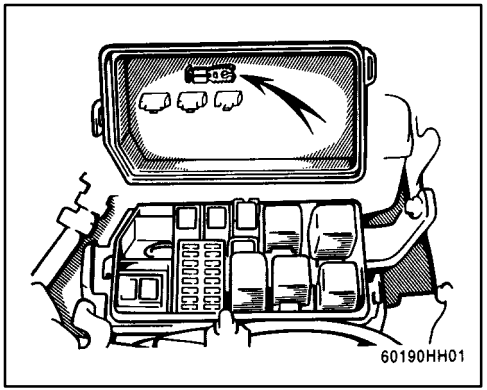
  Maintenance type batteries: Be sure to remove the vent plugs before recharging.

NOTICE

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

Checking and replacing fuses





If the headlights or other electrical components do not work, check the fuses. If any of the fuses are blown, they must be replaced.

See “Fuse locations” in Chapter 7-1 for locations of the fuses.

Turn the ignition switch and inoperative component off. Pull a suspected fuse straight out and check it.

Determine which fuse may be causing the problem. The lid of the fuse box shows the name of the circuit for each fuse. See Part 8 of this manual for the functions controlled by each circuit.

Type A fuses can be pulled out by using the pull-out tool. The location of the pull-out tool is shown in the illustration.

If you are not sure whether the fuse has blown, try replacing the suspected fuse with one that you know is good.

If the fuse has blown, push a new fuse into the clip.

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 “CIG”, “RADIO”, “DOME” or “A.C” 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 that is lower, but as close as possible to the rating. 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 clip.

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 Toyota 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.

Adding washer fluid

If any washer does not work, the washer tank may be empty. Add washer fluid.

You may use plain water as washer fluid. However, in cold areas where temperatures range below freezing point, use washer fluid containing antifreeze. This product is available at your Toyota 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.

Replacing light bulbs and units—

The following illustrations show how to gain access to the bulbs and units. When replacing a bulb or unit, make sure the ignition switch and light switch are off. Use bulbs or units with the wattage ratings given in the table.

NOTICE

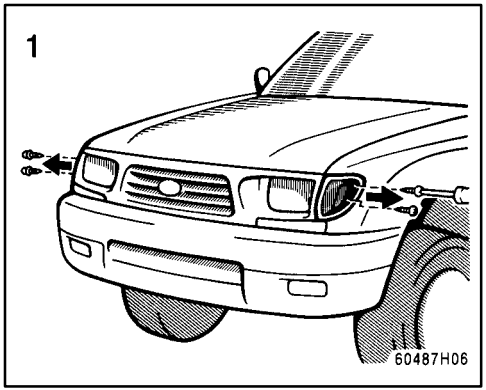
Only use a bulb or unit of the listed type.

Light Bulbs and Units	Bulb and Unit No.	W	Type
Headlight units	H6059	65/35	—
Parking lights	168	5	B
Front turn signal lights	1156	27	A
Rear turn signal lights	1156	27	A
Stop and tail lights	1157	27/8	A
Back-up lights	1156	27	A
License plate lights	194	3.8	B
High mounted stop-light	168	5	B

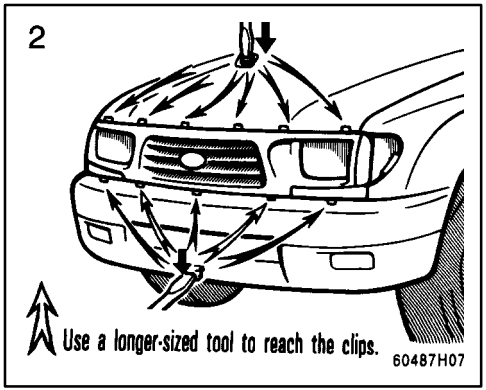
Light Bulbs and Units	Bulb and Unit No.	W	Type
Interior light			
Normal cab	—	5	C
Xtra-cab	—	10	C
Personal lights	—	5	C
Door courtesy lights	—	3	C
Glovebox light	—	1.4	B

A: Single end bulbs
B: Wedge base bulbs
C: Double end bulbs

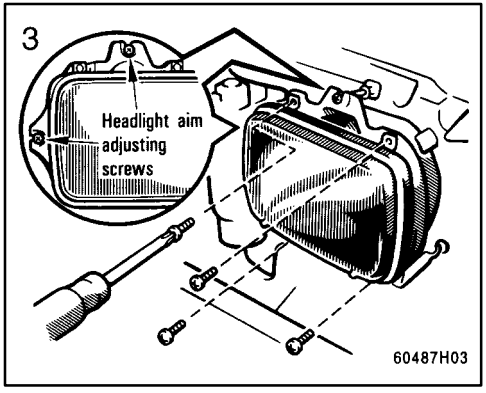
—Headlight units



1. Loosen the parking light unit retaining screws and remove the units unplugging the connectors.



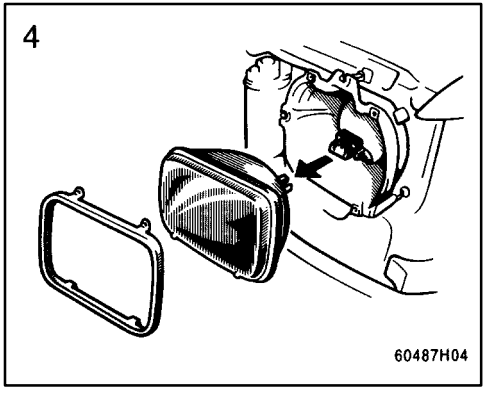
2. Open the hood. Release the clips and remove the radiator grille.
The clips can be released with a flat-blade screwdriver as shown.



3. Loosen the retainer screws.

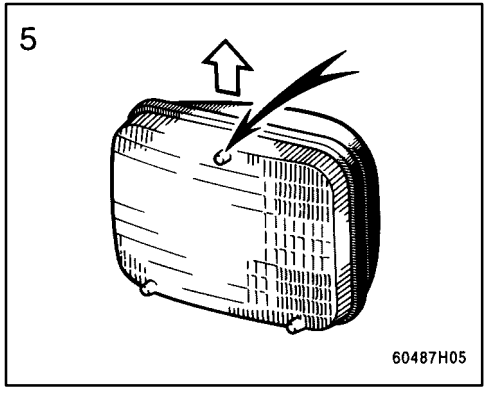
NOTICE

Never attempt to loosen the headlight aim adjusting screws.



4. Take out the beam unit together with the retainer, unplugging the connector.

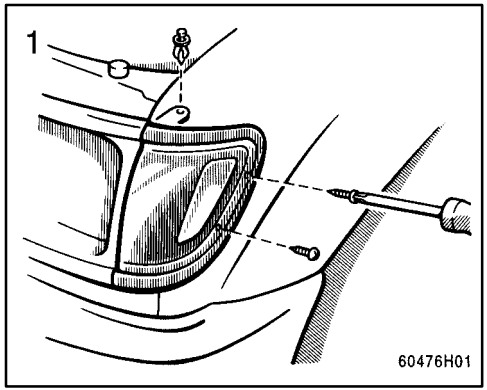
To disconnect the wire connector, compress the lock releases. If the connector is tight, wiggle it.



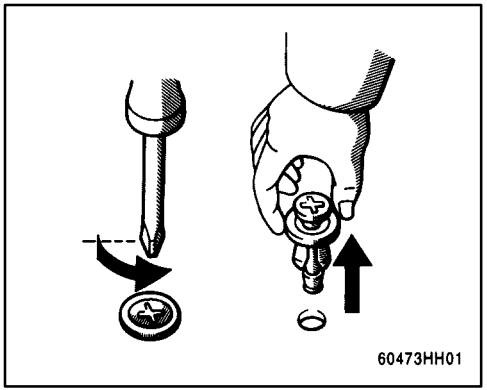
5. Install a new beam unit with the single protrusion on the glass face upward, plugging the connector. Put the retainer on the unit and tighten the screws. Install the radiator grille and parking light units.

When aiming adjustment is necessary, contact your Toyota dealer.

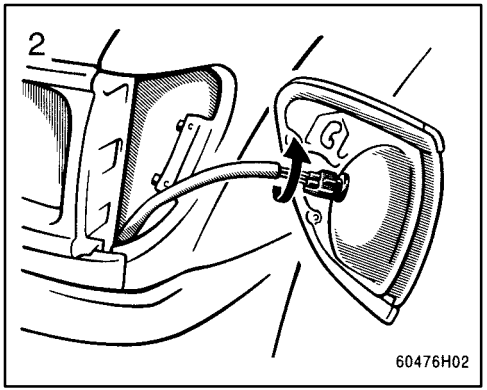
—Parking lights

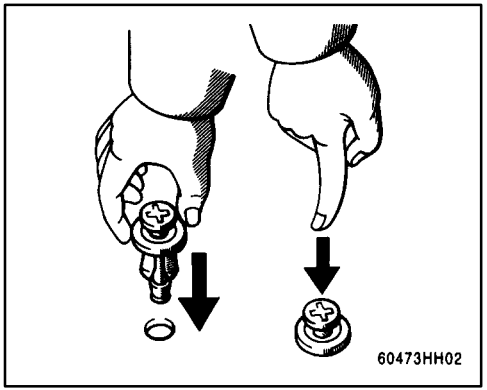


Use a Phillips-head screwdriver.

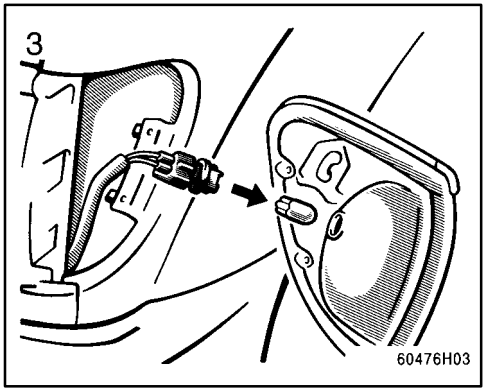


Removing cover clips

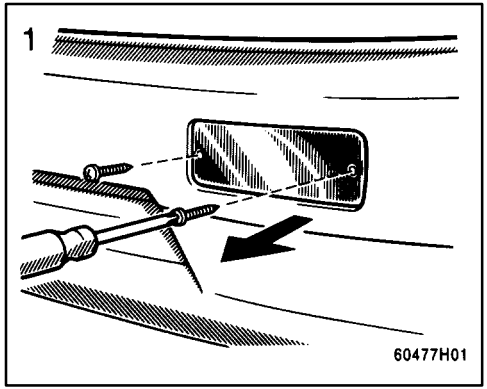




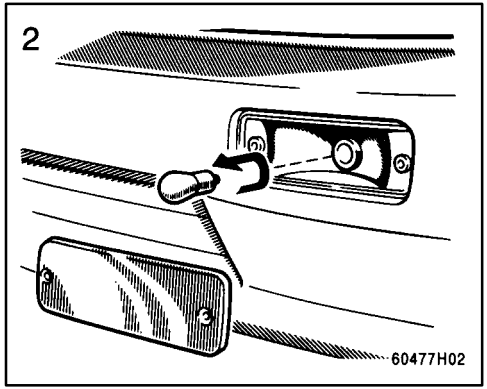
Installing cover clips



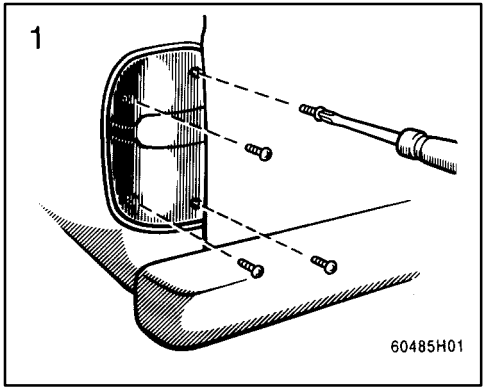
—Front turn signal lights



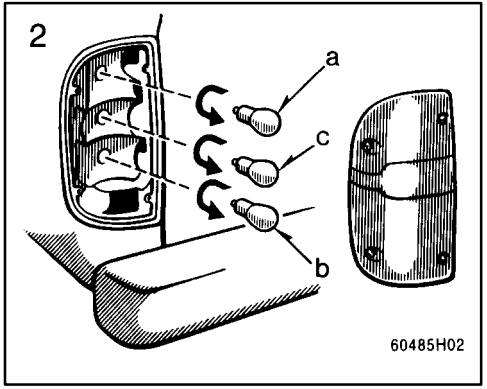
Use a Phillips-head screwdriver.



—Rear turn signal, stop and tail, and back-up lights

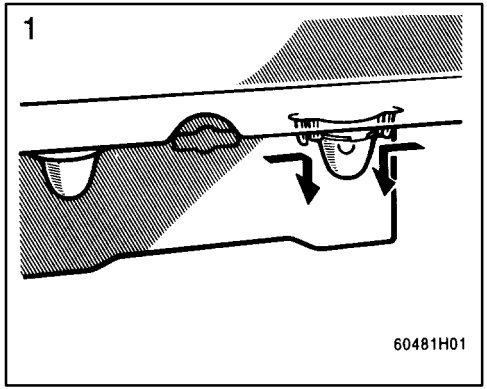


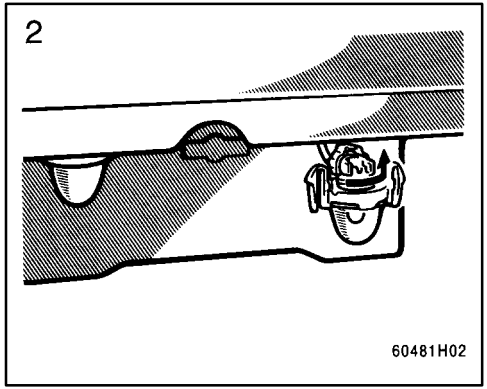
Use a Phillips-head screwdriver.

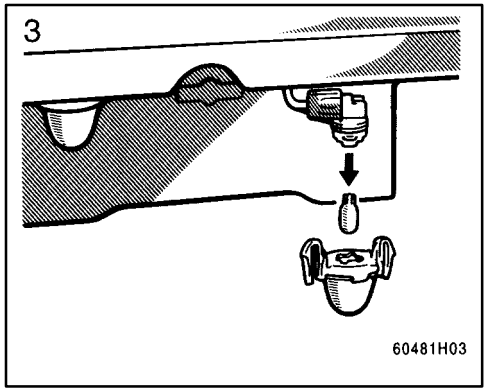


a: Rear turn signal light
b: Stop and tail light
c: Back-up light

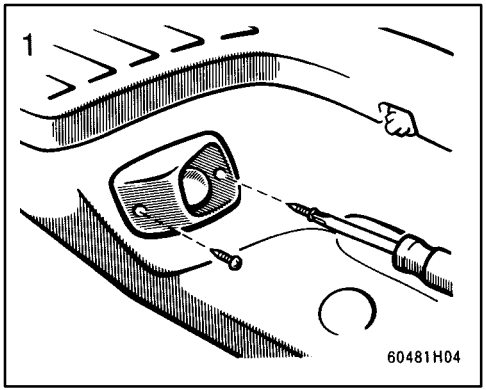
—License plate lights (type A)



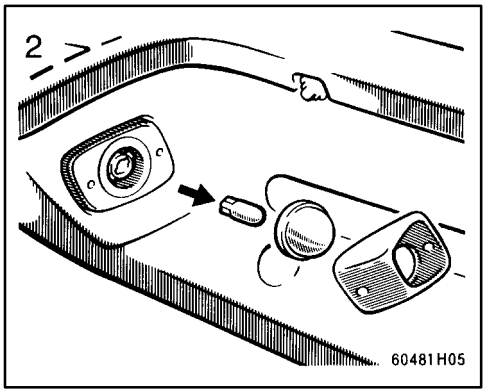




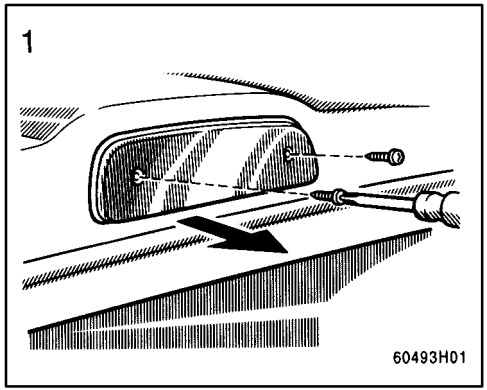
—License plate lights (type B)



Use a Phillips-head screwdriver.



—High mounted stoplight



Use a Phillips-head screwdriver.