

# Maintenance and service

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## Maintenance precautions

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When maintenance and service are required, it is recommended that all work be done by an authorized SUBARU dealer.

If you perform maintenance and service by yourself, you should familiarize yourself with the information provided in this section on general maintenance and service for your SUBARU.

Incorrect or incomplete service could cause improper or unsafe vehicle operation. Any problems caused by improper maintenance and service performed by you are not eligible for warranty coverage.



### **WARNING**

- **Testing of an All-Wheel Drive vehicle must NEVER be performed on a single two-wheel dynamometer or similar apparatus. Attempting to do so will result in uncontrolled vehicle movement and may cause an accident or injuries to persons nearby.**
- **Always select a safe area when performing maintenance on your vehicle.**
- **Always be very careful to avoid injury when working on the vehicle. Remember that some of the materials in the vehicle may be hazardous if improperly used or handled, for example, battery acid.**
- **Your vehicle should only be serviced by persons fully competent to do so. Serious personal injury may result to persons not experienced in servicing vehicles.**
- **Always use the proper tools and make certain that they are well maintained.**
- **Never get under the vehicle supported only by a jack. Always use a safety stand to support the vehicle.**
- **Never keep the engine running in a poorly ventilated area, such as a garage or other closed areas.**
- **Do not smoke or allow open flames around the fuel or battery. This will cause a fire.**

- 
- Because the fuel system is under pressure, replacement of the fuel filter should be performed only by your SUBARU dealer.
  - The SRS AIRBAG has no user-serviceable parts. Tampering with or disconnecting the system's wiring could result in accidental inflation of the airbag or could make the system inoperative, which may result in serious injury. The wiring harnesses of the SRS AIRBAG system are covered with yellow insulation and the connectors of the system are yellow, for easy identification. Do not use electrical test equipment on any circuit related to the SRS AIRBAG system. For required servicing of the SRS AIRBAG, see your nearest SUBARU dealer.

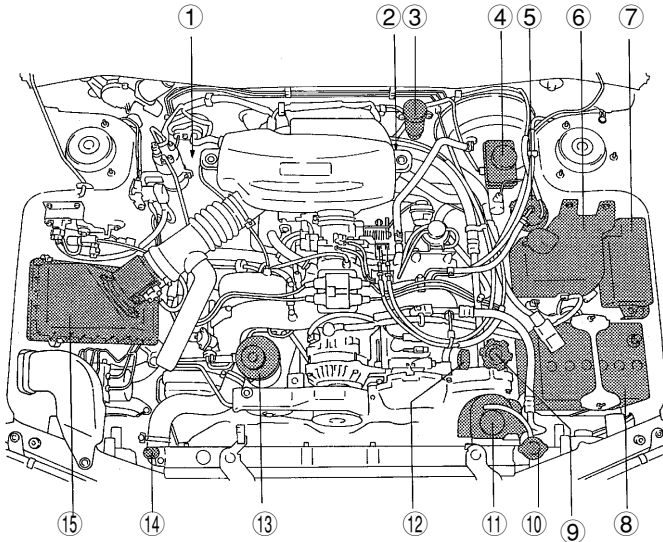
■ Before checking or servicing in the engine compartment

- Always stop the engine and set the parking brake firmly to prevent the vehicle from moving.
- Always let the engine cool down. Engine parts become very hot when the engine is running and remain hot for some time after the engine is stopped.
- Do not spill engine oil, engine coolant, brake fluid or any other fluid on hot engine components. This may cause a fire.
- Always remove the key from the ignition switch. When the ignition switch is in the "ON" position, the cooling fan may operate suddenly even when the engine is stopped.

■ When you do the checking or servicing in the engine compartment while the engine is running

- A running engine can be dangerous. Keep your fingers, hands, clothing, hair and tools away from the cooling fan, belts and any other moving engine parts. Removing rings, watches and ties is advisable.

## Engine compartment overview



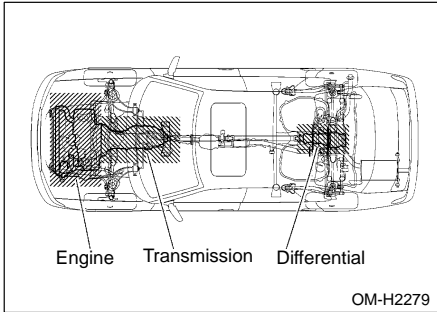
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|---|---|
| <ul style="list-style-type: none"> <li>① Manual transmission oil level gauge (MT) (page 10-21) or Differential gear oil level gauge (AT) (page 10-24)</li> <li>② Automatic transmission fluid level gauge (page 10-23)</li> <li>③ Clutch fluid reservoir (2.5L, MT) (page 10-31)</li> <li>④ Brake fluid reservoir (page 10-29)</li> <li>⑤ Fuel filter</li> <li>⑥ Windshield washer tank (page 10-33)</li> </ul> | <ul style="list-style-type: none"> <li>⑦ Fuse box (page 10-45)</li> <li>⑧ Battery (page 10-32)</li> <li>⑨ Engine oil filler cap (page 10-7)</li> <li>⑩ Radiator cap (page 10-12)</li> <li>⑪ Engine coolant reservoir (page 10-12)</li> <li>⑫ Engine oil level gauge (page 10-7)</li> <li>⑬ Power steering fluid reservoir (page 10-27)</li> <li>⑭ Air vent plug (Page 10-14)</li> <li>⑮ Air cleaner (page 10-17)</li> </ul> |
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## Engine, transmission, and differential gear oil leaks

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Inspect the following for oil leaks:

- Oil pan mating area

- Oil filter mating area

- Mating area between the engine and transmission

- Around the rear differential case cover (AWD vehicles only)

- Each drain plug and filler plug

If you find any leaks, contact your SUBARU dealer.

## Engine oil

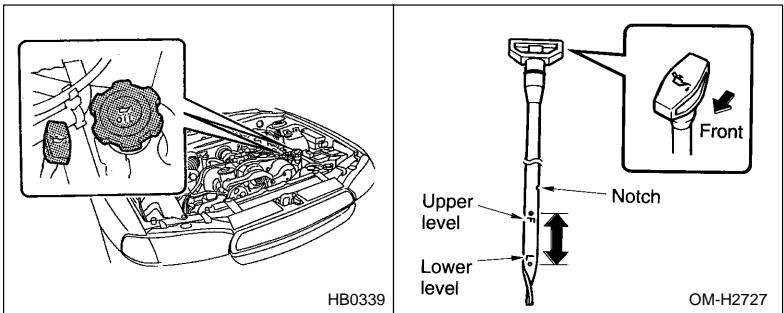



### WARNING

Never let engine oil contact your eyes because engine oil can be harmful to your eyes. If engine oil gets in your eyes, immediately flush them thoroughly with clean water. For safety, when performing this work, wearing eye protection is advisable.

### ■ Checking the oil level

Check the engine oil level at each fuel stop.



1. Park the vehicle on a level surface and stop the engine.
2. Pull out the dipstick, wipe it clean, and insert it again.
3. Be sure the dipstick is correctly inserted until it stops with the graphic symbol  on its top appearing as shown in the illustration.
4. Pull out the dipstick again and check the oil level on it. If it is below the lower level, add oil to bring the level up to the upper level.



### CAUTION

Use only engine oil with the recommended grade and viscosity.

If you check the oil level just after stopping the engine, wait a few minutes for the oil to drain back into the oil pan before checking the level.

Just after driving or while the engine is warm, the engine oil level reading

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may be in a range between the upper level and the notch mark. This is caused by thermal expansion of the engine oil.

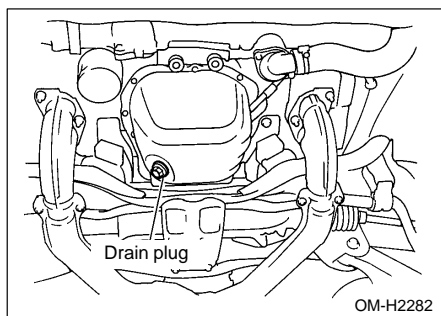
To prevent overfilling the engine oil, do not add any additional oil above the upper level when the engine is cold.

### ■ Changing the oil and oil filter

Change the oil and oil filter according to the maintenance schedule in the warranty and maintenance booklet.

The engine oil and oil filter must be changed more frequently than listed in the maintenance schedule when driving on dusty roads, when short trips are frequently made when towing a trailer, or when driving in extremely cold weather.

1. Warm up the engine by letting the engine idle for about 10 minutes to ease draining the engine oil.
2. Park the vehicle on a level surface and stop the engine.
3. Remove the oil filler cap.



4. Drain out the engine oil by removing the drain plug while the engine is still warm. The used oil should be drained into an appropriate container and disposed of properly.

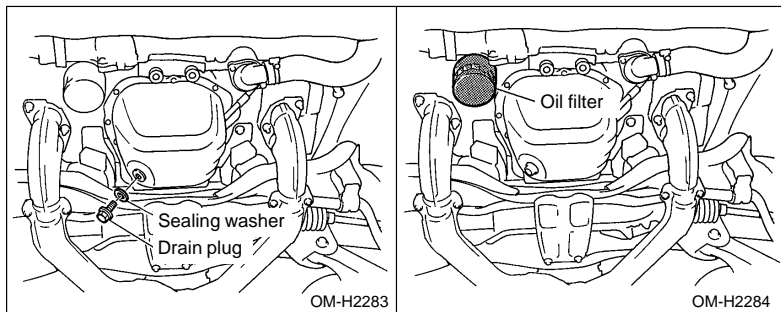


### **WARNING**

**Be careful not to burn yourself with hot engine oil.**



5. Wipe the seating surface of the drain plug with a clean cloth and tighten it securely with a new sealing washer after the oil has completely drained out.



6. Remove the under cover. (if equipped)
7. Remove the oil filter with an oil filter wrench.
8. Before installing a new oil filter, apply a thin coat of engine oil to the seal.
9. Clean the rubber seal seating area of the lower crank case and install the oil filter by hand turning. Be careful not to twist or damage the seal.
10. Tighten it approximately two-thirds of a turn after the seal makes contact with underside of the crank case.



## CAUTION

**Never over tighten the oil filter because that can result in an oil leak.**

11. Install the under cover.
12. Pour the specified amount of engine oil through the filler neck.

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### Oil capacity

2.2 Liter models: 4.2 US qt (4.0 liters, 3.5 Imp qt)

2.5 Liter models: 4.8 US qt (4.5 liters, 4.0 Imp qt)

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13. Start the engine and make sure that no oil leaks appear around the

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filter's rubber seal.

14. Run the engine until it reaches the normal operating temperature. Then stop the engine and wait a few minutes to allow the oil drain back. Check the oil level again and if necessary, add more engine oil.

### ■ Recommended grade and viscosity



## CAUTION

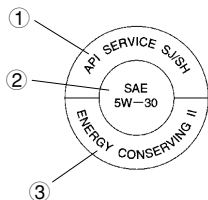
Use only engine oil with the recommended grade and viscosity.

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**Oil grade: API classification SJ or SH with the words “ENERGY CONSERVING II” (if you cannot obtain the oil with SJ or SH grade, you may use SG grade oil.) or the new API mark certification mark (Starburst mark) displayed on the container.**

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#### API Service label



#### New API Certification Mark (Starburst Mark)



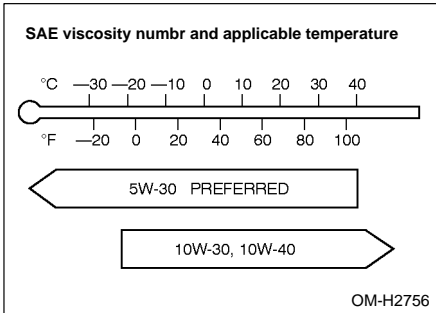
- ① Indicates the oil quality by API designations
- ② Indicates the SAE oil viscosity grade
- ③ Indicates that the oil has fuel saving capabilities

In choosing an oil, you want the proper quality and viscosity, as well as one that will add to fuel economy. The following table lists the recommended viscosities and applicable temperatures.

When adding oil, different brands may be used together as long as they are the same API classification and SAE viscosity as those recommended by SUBARU.

Engine oil viscosity (thickness) affects fuel economy. Oils of lower vis-

cosity provide better fuel economy. However, in hot weather, oil of higher viscosity is required to properly lubricate the engine.



■ **Recommended grade and viscosity under severe driving conditions**

If the vehicle is used in desert areas, in areas with very high temperatures, or used for heavy-duty applications such as a towing a trailer, use of oil with the following grade and viscosities is recommended.

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**API classification SJ or SH:**

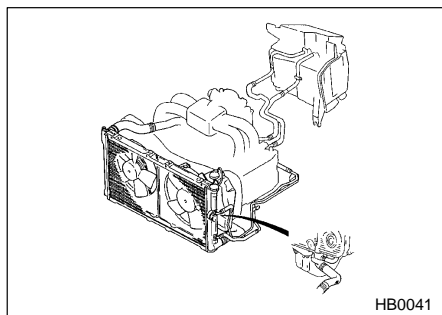
**SAE viscosity No.: 30, 40, 10W-50, 20W-40, 20W-50**

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## Cooling system, hoses and connections

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Your vehicle employs an electric cooling fan which is thermostatically controlled to operate when the engine coolant reaches a specific temperature.

If the radiator cooling fan does not operate even when the engine coolant temperature gauge exceeds the normal operating range, the circuit of the cooling fan may be defective. Check the fuse and replace it if necessary. If the fuse is not blown, have the cooling system checked by your SUBARU dealer.

If frequent addition of coolant is necessary, there may be a leak in the engine cooling system. It is recommended that the cooling system and connections be checked for leaks, damage, or looseness.

## Engine coolant

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### ■ Checking the coolant level

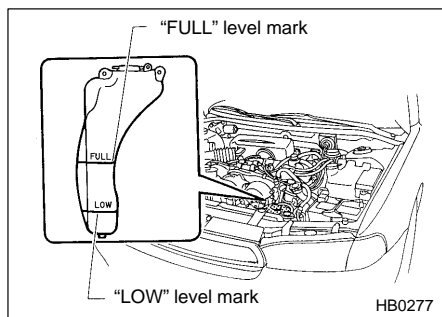


### **WARNING**

- **Never attempt to remove the radiator cap until the engine has been shut off and has cooled down completely. Since the coolant is under pressure, you may suffer serious burns by a spray of boiling hot coolant when the cap is removed.**

- **Never let engine coolant contact your eyes because engine coolant can be harmful to your eyes. If engine coolant gets in your eyes, immediately flush them thoroughly with clean water. For safety, when performing this work, wearing eye protection is advisable.**

Check the coolant level at each fuel stop.

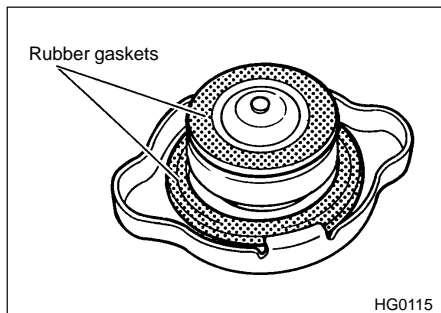


1. Check the coolant level on the outside of the reservoir while the engine is cool.
2. If the level is close to or lower than the "LOW" level mark, add coolant up to the "FULL" level mark. If the reserve tank is empty, remove the radiator cap and refill as required.

### CAUTION

- **The cooling system has been filled at the factory with a high quality, corrosion-inhibiting, year-around coolant which provides protection against freezing down to  $-33^{\circ}\text{F}$  ( $-36^{\circ}\text{C}$ ). For adding, use genuine SUBARU coolant or an equivalent: a mixture of 50% soft water and 50% ethylene-glycol basis coolant. Use of improper coolants may result in corrosion in the cooling system. It is important to maintain protection against freezing and corrosion, even if freezing temperatures are not expected. Never mix different kinds of coolant.**

- Do not splash the engine coolant over painted parts. The alcohol contained in the engine coolant may damage the paint surface.



3. After refilling the reserve tank and the radiator, reinstall the caps and check that the rubber gasket inside the radiator cap is in the proper position.

## ■ Changing the coolant

### **WARNING**

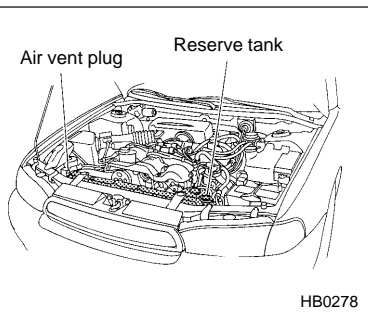
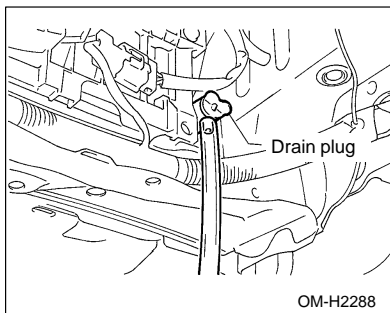
- Never attempt to remove the radiator cap until the engine has been shut off and has cooled down completely. Since the coolant is under pressure, you may suffer serious burns by a spray of boiling hot coolant when the cap is removed.
- Never let engine coolant contact your eyes because engine coolant can be harmful to your eyes. If engine coolant gets in your eyes, immediately flush them thoroughly with clean water. For safety, when performing this work, wearing eye protection is advisable.

**⚠ CAUTION**

- The cooling system has been filled at the factory with a high-quality, corrosion-inhibiting, year-around coolant which provides protection against freezing down to  $-33^{\circ}\text{F}$  ( $-36^{\circ}\text{C}$ ). Use the recommended coolant only. Use of improper coolants may result in corrosion in the cooling system. It is important to maintain protection against freezing and corrosion, even if freezing temperatures are not expected. Never mix different kinds of coolant.
- Do not splash the engine coolant over painted parts. The alcohol contained in the engine coolant may damage the paint surface.

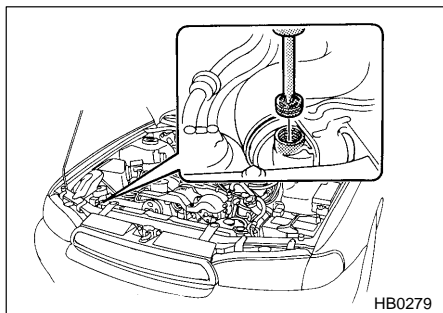
Change the engine coolant in the following procedures according to the maintenance schedule in the warranty and maintenance booklet.

1. Place a proper container under the drain plug and loosen the drain plug.

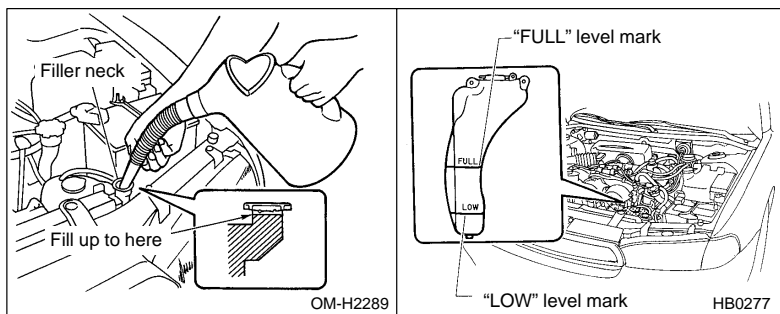


2. Loosen the radiator cap to drain the coolant from the radiator. Then drain the coolant from the reserve tank. Tighten the drain plug securely.

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3. Remove the air vent plug from the radiator.



4. Slowly pour the coolant and fill to the radiator filler neck and to the reserve tank's "FULL" level mark. Do not pour the coolant too quickly, as this may lead to insufficient air bleeding and trapped air in the system.

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#### Coolant capacity

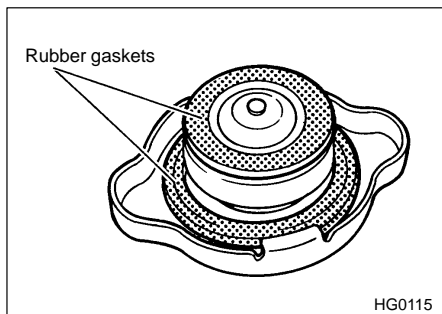
2.2 Liter models: 6.2 US qt (5.8 liters, 5.2 Imp qt)

2.5 Liter models: 6.3 US qt (6.0 liters, 5.3 Imp qt)

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5. Put the air vent plug back on and tighten firmly.





6. Put the radiator cap back on and tighten firmly. At this time, make sure that the rubber gasket in the radiator cap is correctly in place.
7. Start and run the engine for more than five minutes at 2,000 to 3,000 rpm.
8. Stop the engine and wait until the coolant cools down (122 to 140°F [50 to 60 °C]). If there is any loss of coolant, add coolant to the radiator's filler neck and to the reserve tank's "Full" level.
9. Put the radiator cap and reservoir cap back on and tighten firmly.

## Air cleaner element

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### **WARNING**

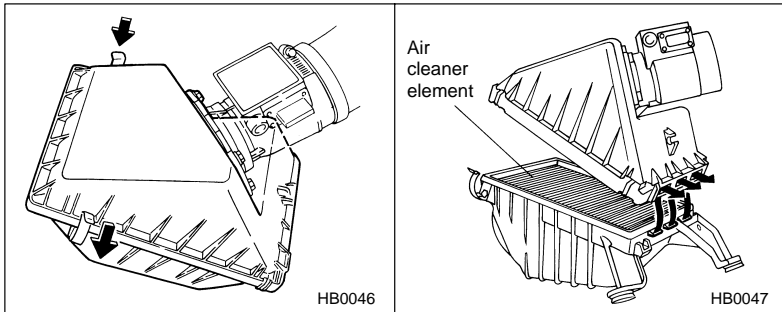
**Do not operate the engine with the air cleaner element removed. The air cleaner element not only filters intake air but also stops flames if the engine backfires. If the air cleaner element is not installed when the engine backfires, you could be burned.**

The air cleaner element functions as a filter screen. When the element is perforated or removed, engine wear will be excessive and engine life shortened.

The air cleaner element is a viscous type. It is unnecessary to clean or wash the element.

## ■ Replacing the air cleaner element

Replace the air cleaner element according to the maintenance schedule in the warranty and maintenance booklet. Under extremely dusty conditions, replace it more frequently. It is recommended that you always use genuine SUBARU parts.



1. Unsnap the two clamps holding the air cleaner case cover.
2. Open the air cleaner case cover and remove the air cleaner element.
3. Clean the inside of the air cleaner cover and case with a damp cloth and install a new air cleaner element.
4. To install the air cleaner case cover, insert three projections on the air cleaner case into the slits on the cleaner case cover and then snap the two clamps on the air cleaner case cover.

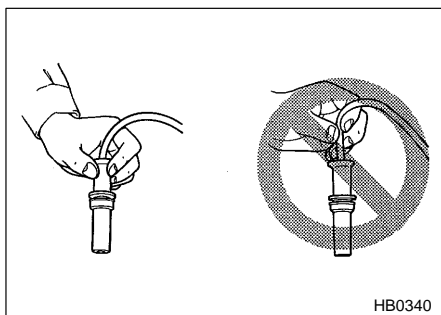
## Spark plugs

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### ■ Replacing the spark plug

#### **CAUTION**

- When disconnecting the spark plug cables, always grasp the spark plug cap, not the cables.
- Make sure the cables are replaced in the correct order.



Replace the spark plugs according to the maintenance schedule in the warranty and maintenance booklet.

### ■ Recommended spark plugs

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#### 2.2 Liter models

**RC10YC4 (Champion)**

[Alternate]

**BKR6E-11 (NGK), K20PR-U11 (NIPPON DENSO)**

#### 2.5 Liter models

**PFR5B-11 (NGK)**

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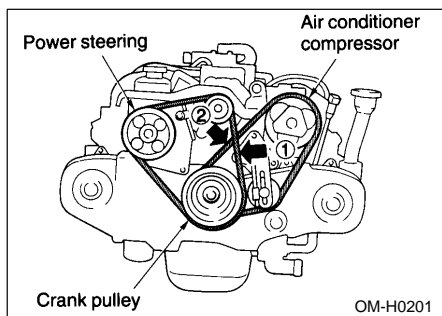
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## Drive belts

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### ■ Inspection

The alternator, power steering pump, and air conditioner compressor depend on drive belts. Satisfactory performance requires that belt tension be correct.



in. (mm)

	Deflection	
	New belt	Used belt
①	0.28 — 0.35 (7.0 — 9.0)	0.35 — 0.43 (9.0 — 11.0)
②	0.30 — 0.33 (7.5 — 8.5)	0.35 — 0.40 (9.0 — 10.0)

To check belt tension, place a straightedge (ruler) across two adjacent pulleys and apply a force of 98 N (22 lb, 10 kg) midway between the pulleys by using a spring scale. Belt deflection should be the amount specified. If a belt is loose, cracked, or worn, contact your SUBARU dealer.

## Manual transmission oil

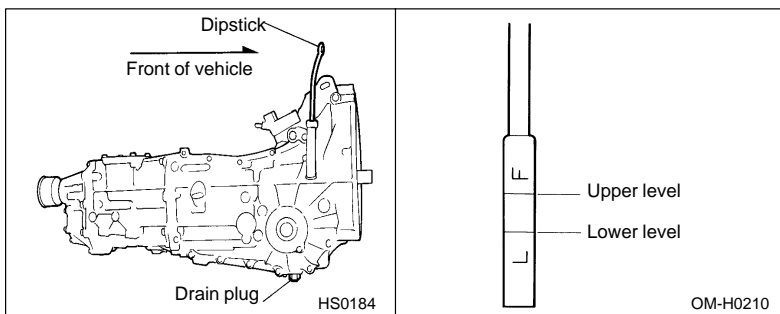
### **WARNING**

Never let transmission oil contact your eyes because transmission oil can be harmful to your eyes. If transmission oil gets in your eyes, immediately flush them thoroughly with clean water. For safety, when performing this work, wearing eye protection is advisable.

### ■ **Checking the oil level**

Check the oil level monthly.

1. Park the vehicle on a level surface and stop the engine.



2. Pull out the dipstick, wipe it clean, and insert it again.
3. Pull out the dipstick again and check the oil level on it. If it is below the lower level, add oil through the dipstick hole to bring the level up to the upper level.

### ■ **Recommended grade and viscosity**

Each oil manufacturer has its own base oils and additives. Never use different brands together.

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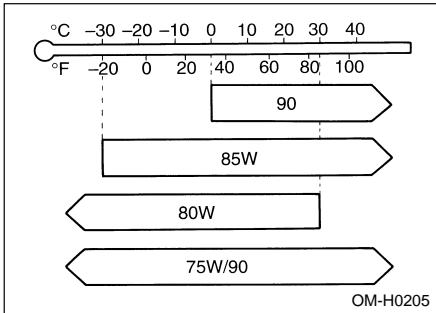
**Oil grade: API classification GL-5**

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## SAE viscosity No. and Applicable Temperature



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## Automatic transmission fluid



### WARNING

**Never let automatic transmission fluid contact your eyes because automatic transmission fluid can be harmful to your eyes. If automatic transmission fluid gets in your eyes, immediately flush them thoroughly with clean water. For safety, when performing this work, wearing eye protection is advisable.**

The automatic transmission fluid expands largely as its temperature rises; the fluid level differs according to fluid temperature. Therefore, there are two different scales for checking the level of hot fluid and cold fluid on each side of the dipstick.

Though the fluid level can be checked without warming up the fluid on the "COLD" side, we recommend checking the fluid level when the fluid is operating temperature.

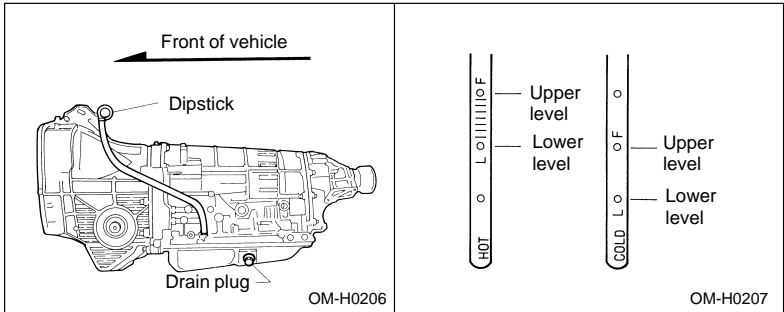
### ■ Checking the fluid level when the fluid is hot

Check the fluid level monthly.

1. Drive the vehicle several miles to raise the temperature of the transmission fluid up to normal operating temperature; 140 to 176°F (60 to 80

°C) is normal.

2. Park the vehicle on a level surface and set the parking brake.
3. First shift the selector lever in each position. Then shift it in the “P” position, and run the engine at idling speed.



4. Pull out the dipstick and check the fluid level on the gauge. If it is below the lower level on the “HOT” side, add the recommended automatic transmission fluid up to the upper level.

### ■ Checking the fluid level when the fluid is cold

When the fluid level has to be checked without time to warm up the automatic transmission, check to see that the fluid level is between the lower level and upper level on the “COLD” side. If it is below that range, add fluid up to the upper level. Be careful not to overfill.

### ■ Recommended fluid

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**“Dexron II” or “Dexron III” Type Automatic Transmission Fluid**

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## Front differential gear oil (Automatic transmission)

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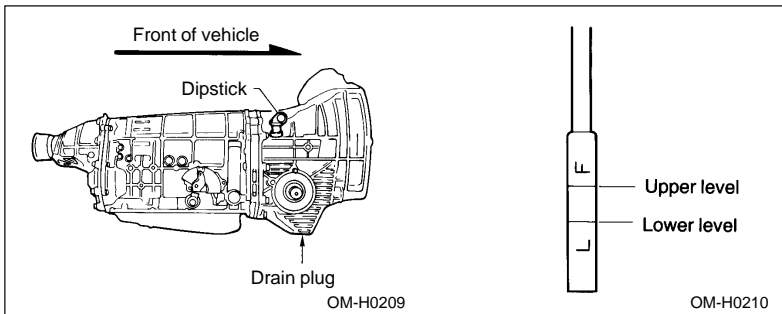
### ■ Checking the oil level



### WARNING

Never let differential oil contact your eyes because differential oil can be harmful to your eyes. If differential oil gets in your eyes, immediately flush them thoroughly with clean water. For safety, when performing this work, wearing eye protection is advisable.

Check the differential oil level monthly.



1. Park the vehicle on a level surface and stop the engine.
2. Pull out the dipstick, wipe it clean, and insert it again.
3. Pull out the dipstick again and check the oil level on it. If it is below the lower level, add oil to bring the level up to the upper level.

### ■ Recommended grade and viscosity

Each oil manufacturer has its own base oils and additives. Never use different brands together.

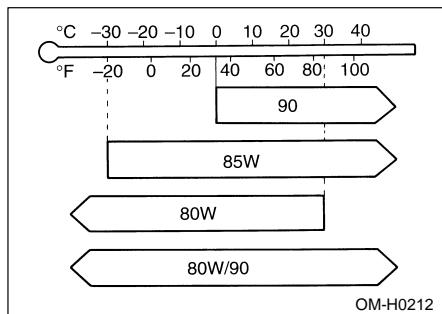
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**Oil grade: API classification GL-5**

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## SAE viscosity No. and Applicable Temperature



## Rear differential gear oil (AWD vehicles)

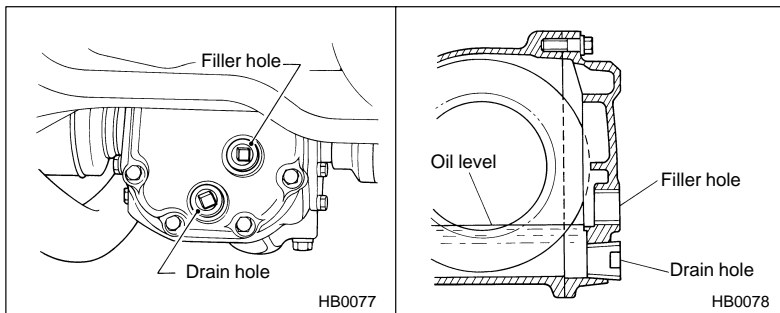
## ■ Checking the oil level

**WARNING**

Never let differential oil contact your eyes because differential oil can be harmful to your eyes. If differential oil gets in your eyes, immediately flush them thoroughly with clean water. For safety, when performing this work, wearing eye protection is advisable.

**CAUTION**

If the vehicle requires frequent refilling, there may be an oil leak. If you suspect a problem, have the vehicle checked at your SUBARU dealer.



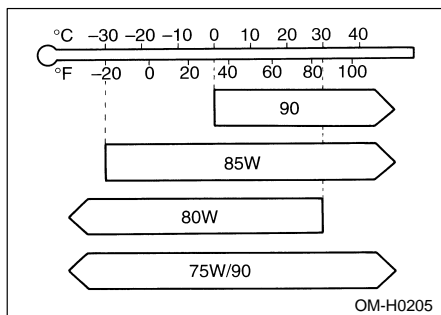
Remove the plug from the filler hole and check the oil level. The oil level should be kept even with the bottom of the filler hole. If the oil level is below the bottom edge of the hole, add oil through the filler hole to raise the level.

### ■ Recommended grade and viscosity

Each oil manufacturer has its own base oils and additives. Never use different brands together.

#### Oil grade: API classification GL-5

#### SAE viscosity No. and Applicable Temperature



## Power steering fluid

---

### **WARNING**

Never let power steering fluid contact your eyes because power steering fluid can be harmful to your eyes. If power steering fluid gets in your eyes, immediately flush them thoroughly with clean water. For safety, when performing this work, wearing eye protection is advisable.

The power steering fluid expands largely as its temperature rises; the fluid level differs according to fluid temperature. Therefore, the dipstick has two different checking ranges for hot and cold fluids on it.

### ■ **Checking the fluid level when the fluid is hot**

### **WARNING**

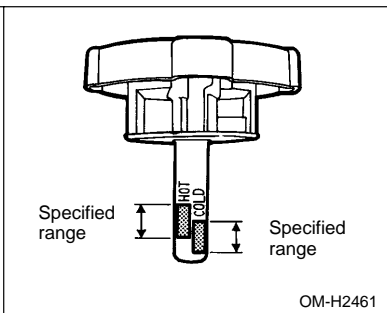
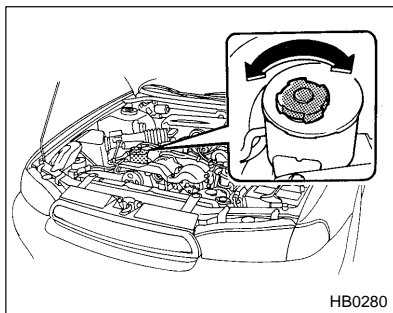
Be careful not to burn yourself because the fluid may be hot.

### **CAUTION**

- **When power steering fluid is being added, use only clean fluid, and be careful not to allow any dirt into the tank. And never use different brands together.**
- **Avoid spilling fluid when adding it in the tank.**

Check the power steering fluid level monthly.

1. Drive the vehicle several miles to raise the temperature of the power steering fluid up to normal operating temperature, about 140°F (60°C).
2. Park the vehicle on a level surface, and stop the engine.
3. Turn the reservoir cap counterclockwise to remove the fluid level dipstick, wipe the dipstick clean, and reinsert it.



4. Remove the dipstick again and check the fluid level on it. If it is below the lower level of the “HOT” range, add the recommended steering fluid up to the specified range of the dipstick.

If the fluid level is extreme low, it may indicate possible leakage. Consult your SUBARU dealer for inspection.

#### ■ Checking the fluid level when the fluid is cold

When the fluid level has to be checked without warming up the power steering system (approximately 70°F [21°C]), read the fluid level on the “COLD” range.

#### ■ Recommended fluid

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“Dexron II”, “Dexron IIE” or “Dexron III” Type Automatic Transmission Fluid

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## Brake fluid

### ■ Checking the fluid level

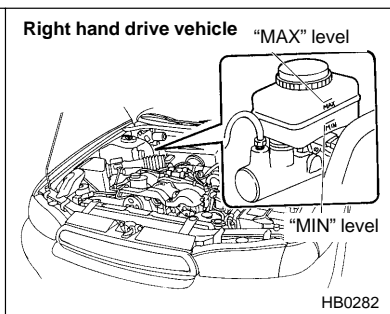
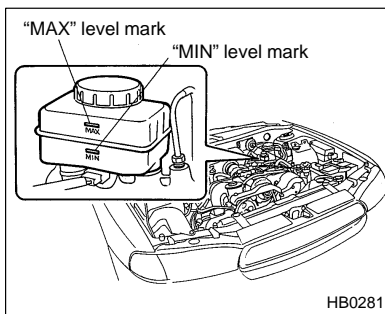
#### **WARNING**

- Never let brake fluid contact your eyes because brake fluid can be harmful to your eyes. If brake fluid gets in your eyes, immediately flush them thoroughly with clean water. For safety, when performing this work, wearing eye protection is advisable.
- Brake fluid absorbs moisture from the air. Any absorbed moisture can cause a dangerous loss of braking performance.
- If the vehicle requires frequent refilling, there may be a leak. If you suspect a problem, have the vehicle checked at your SUBARU dealer.

#### **CAUTION**

- Never use different brands of brake fluid together.
- When adding brake fluid, be careful not to allow any dirt into the reservoir.
- Never splash the brake fluid over painted surfaces or rubber parts. Alcohol contained in the brake fluid may damage them.

Check the fluid level monthly.



Check the fluid level on the outside of the reservoir. If the level is below

– CONTINUED –

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“MIN”, add the recommended brake fluid to “MAX”.  
Use only brake fluid from a sealed container.

### ■ Recommended brake fluid

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**FMVSS No. 116, fresh DOT 3 or 4 brake fluid**

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## Clutch fluid (2.5 liter MT models)

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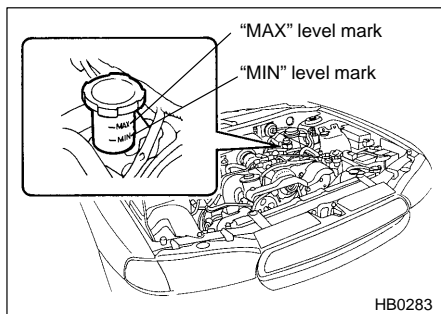
### **WARNING**

Never let clutch fluid contact your eyes because clutch fluid can be harmful to your eyes. If clutch fluid gets in your eyes, immediately flush them thoroughly with clean water. For safety, when performing this work, wearing eye protection is advisable.

### **CAUTION**

- Clutch fluid absorbs moisture from the air. Any absorbed moisture can cause improper clutch operation.
- If the vehicle requires frequent refilling, there may be a leak. If you suspect a problem, have the vehicle checked at your SUBARU dealer.
- Never use different brands of clutch fluid together.
- When clutch fluid is added, be careful not to allow any dirt into the tank.

Check the fluid level on the outside of the reservoir. If the level is below “MIN” level mark, add the recommended clutch fluid to “MAX” level mark. Use only clutch fluid from a sealed container.



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■ Recommended clutch fluid

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FMVSS No. 116, fresh DOT 3 or 4 brake fluid

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## Brake booster

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■ Checking brake booster operation

If the brake booster does not operate as described below, have it checked by your SUBARU dealer.

1. With the engine off, depress the brake pedal several times, applying the same pedal force each time. The distance the pedal travels should not vary.
2. With the brake pedal depressed, start the engine. The pedal should move slightly down to the floor.
3. With the brake pedal depressed, stop the engine and keep the pedal depressed for 30 seconds. The pedal height should not change.
4. Start the engine again and run for about one minute then turn it off. Depress the brake pedal several times to check the brake booster. Brake booster operates properly if the pedal stroke decreases with each depression.

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## Battery

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### **WARNING**

- Before beginning work on or near any battery, be sure to extinguish all cigarettes, matches, and lighters. Never expose a battery to an open flame or electric sparks. Batteries give off a gas which is highly flammable and explosive.
- For safety, in case an explosion does occur, wear eye protection or shield your eyes when working near any battery. Never lean over a battery.
- Do not let battery fluid contact eyes, skin, fabrics, or paint because battery fluid is a corrosive acid. If battery fluid gets on your skin or in your eyes, immediately flush the area with water thoroughly. Seek medical help immediately if acid has entered the eyes.
- To lessen the risk of sparks, remove rings, metal watchbands, and other metal jewelry. Never allow metal tools to contact the positive battery terminal and anything connected to it **WHILE** you are at the same time in contact with any other metallic portion of the vehicle because a short circuit will result.
- Keep everyone including children away from the battery.
- Charge the battery in a well-ventilated area.

### **CAUTION**

Never use more than 10 amperes when charging the battery because it will shorten battery life.



## Windshield washer fluid



### CAUTION

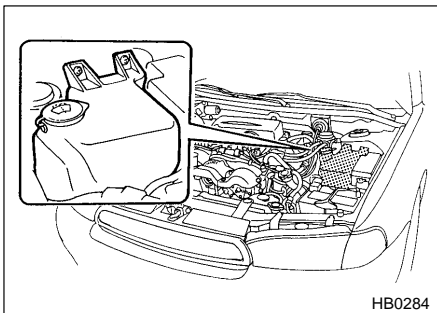
**Never use engine coolant as washer fluid because it could cause paint damage.**

Check the level of the washer fluid at each fuel stop. If the level is low, fill the fluid up to the neck of the reservoir.

Use windshield washer fluid. If windshield washer fluid is unavailable use clean water.

In areas where water freezes in winter, use an anti-freeze type windshield washer fluid. SUBARU Windshield Washer Fluid contains 58.5% methyl alcohol and 41.5% surfactant, by volume. Its freezing temperature varies according to how much it is diluted, as indicated below.

Washer Fluid Concentration	Freezing Temperature
30%	10.4°F (-12°C)
50%	-4 °F (-20°C)
100%	-49°F (-45°C)



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## Replacement of windshield wiper blades

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Grease, wax, insects, or other material on the windshield or the wiper blade results in jerky wiper operation and streaking on the glass. If you cannot remove the streaks after operating the windshield washer or if the wiper operation is jerky, clean the outer surface of the windshield (or rear window) and the wiper blades using a sponge or soft cloth with a neutral detergent or mild-abrasive cleaner. After cleaning, rinse the windshield and wiper blades with clean water. The windshield is clean if beads do not form when you rinse the windshield with water.

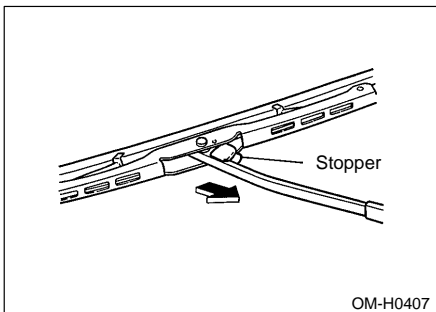


### CAUTION

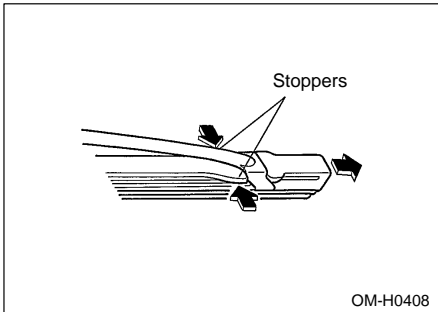
**Do not clean the wiper blades with gasoline or a solvent, such as paint thinner or benzene. This will cause deterioration of the wiper blades.**

If you cannot eliminate the streaking even after following this method, replace the wiper blades using the following procedures:

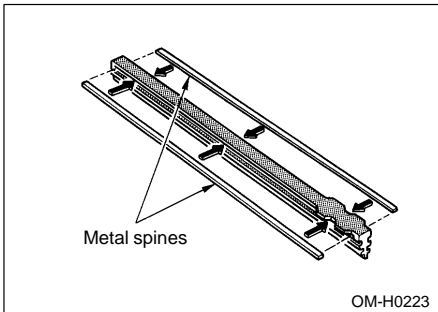
1. Raise the wiper arm off the windshield.
2. Remove the wiper blade assembly by holding its pivot area and pushing it in the direction shown by the arrow while depressing the wiper blade stopper.



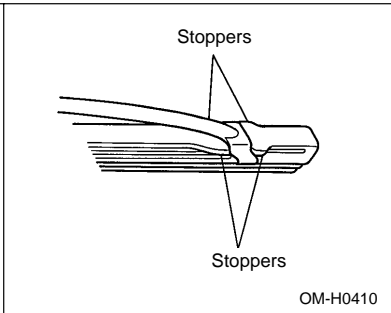
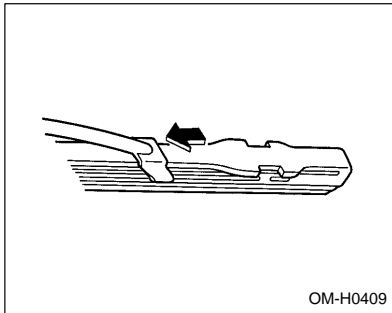
3. Pull out the blade rubber assembly while depressing the stoppers on the rubber.



4. If the new blade rubber is not provided with two metal spines, remove the metal spines from the old blade rubber and install them in the new blade rubber.



5. Align the claws of the metal support with the grooves in the rubber and slide the blade rubber assembly into the metal support until it locks. Be sure to position the claws at the end of the metal support between the stoppers on the rubber as shown.

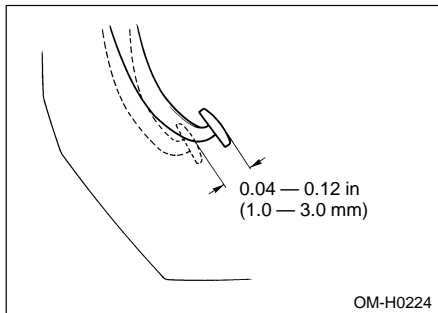


6. Install the wiper blade assembly to the wiper arm. Make sure that it locks in place.
7. Lower the wiper arm.

## Brake pedal

Check the brake pedal free play and reserve distance according to the maintenance schedule in the warranty and maintenance booklet.

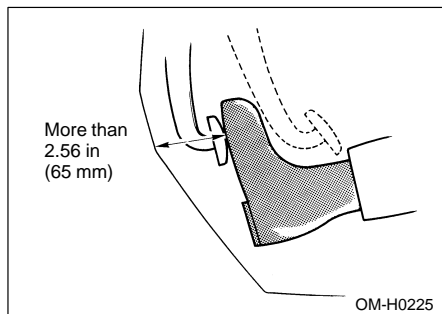
### ■ Checking the brake pedal free play



Stop the engine and firmly depress the brake pedal several times. Lightly press the brake pedal down by finger to check the free play with a force of less than 10 N (2 lb, 1 kg).

If the free play is not within proper specification, contact your SUBARU dealer.

### ■ Checking the brake pedal reserve distance



Depress the pedal with a force of approximately 294 N (66 lb, 30 kg) and measure the distance between the upper surface of the pedal pad and the floor.

When the measurement is smaller than the specification, or when the pedal does not operate smoothly, contact with your SUBARU dealer.

## Clutch pedal (Manual transmission)

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Check the clutch pedal free play and reserve distance according to the maintenance schedule in the warranty and maintenance booklet.

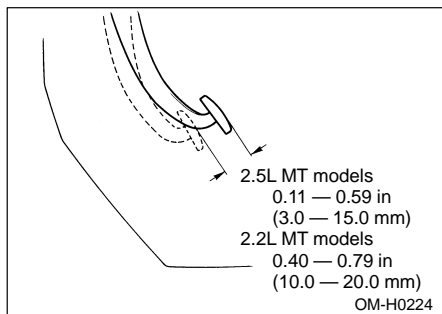
### ■ Checking the clutch function

Check the clutch engagement and disengagement.

1. With the engine idling, check that there are no abnormal noises when the clutch pedal is depressed, and that shifting into 1st or reverse feels smooth.
2. Start the vehicle by releasing the pedal slowly to check that the engine and transmission smoothly couple without any sign of slippage.

---

## ■ Checking the clutch pedal free play



Lightly press the clutch pedal down with your finger until you feel resistance, and check the free play.

If the free play is not within proper specification, contact your SUBARU dealer.

## Hill holder (Manual transmission — if equipped)

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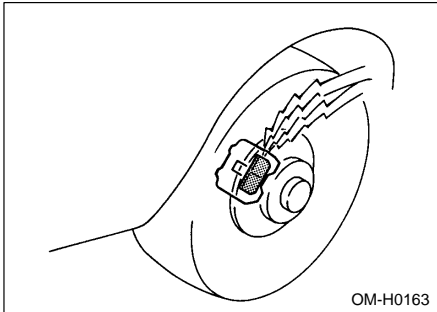
Ensure that the hill holder operates properly under the following circumstances:

1. Stop the vehicle on an uphill grade by depressing the brake pedal and clutch pedal, with the engine running.
2. Make sure that the vehicle does not move backward even after the brake pedal is released.
3. Then make sure the vehicle starts climbing the grade by following the normal starting procedures.

If the hill holder does not operate as described above, contact with your SUBARU dealer.

## Replacement of brake pad and lining

### ■ Audible brake pad wear indicator



The front disc brakes and the right side rear disc brake have audible wear indicators on the brake pads. If the brake pads wear close to their service limit, the wear indicator makes a very audible scraping noise when the brake pedal is applied.

If you hear this scraping noise each time you apply the brake pedal, have the brake pads serviced by your SUBARU dealer as soon as possible.



### **CAUTION**

**If you continue to drive despite the scraping noise from the audible brake pad wear indicator, it will result in the need for costly brake rotor repair or replacement.**

### ■ Breaking-in of new brake pads and linings

When replacing the brake pad or lining, use only genuine SUBARU parts. After replacement, the new parts must be broken in as follows:

#### ▼ Brake pad and lining

While maintaining a speed of 30 to 40 mph (50 to 65 km/h), step on the brake pedal lightly. Repeat this five or more times.

– CONTINUED –

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## ▼ Parking brake lining



### **WARNING**

**A safe location and situation should be selected for break-in driving.**



### **CAUTION**

**Pulling the parking brake lever too forcefully may cause the rear wheels to lock. To avoid this, be certain to pull the lever up slowly and gently.**

1. Drive the vehicle at a speed of about 22 mph (35 km/h).
2. With the parking brake release button pushed in, pull the parking brake lever **SLOWLY** and **GENTLY**. (Pulling with a force of approximately 147 N [33 lb, 15 kg].)
3. Drive the vehicle for about 220 yards (200 meters) in this condition.
4. Wait 5 to 10 minutes for the parking brake to cool down. Repeat this procedure again.
5. Check the parking brake stroke. If the parking brake stroke is out of the specified range, adjust it by turning the adjusting nut located on the parking brake lever.

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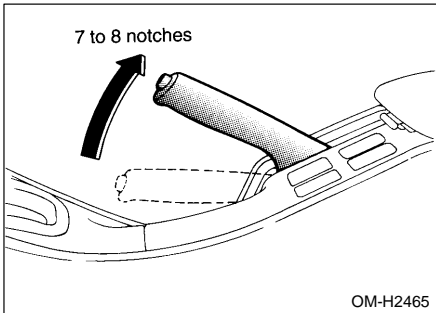
Parking brake stroke: 7 — 8 notches / 196 N (44 lb, 20 kg)

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## Parking brake stroke

Check the parking brake stroke according to the maintenance schedule in the warranty and maintenance booklet. When the parking brake is properly adjusted, braking power is fully applied by pulling the lever up seven to eight notches gently but firmly (about 196 N, 44 lb, 20 kg). If the parking brake lever stroke is not within the specified range, have the brake system checked and adjusted at your SUBARU dealer.



## Tires and wheels

### ■ Inspection and rotation

#### **WARNING**

- When replacing a tire, make sure you use only the same size, construction, brand, and load range as the original tires listed on the tire placard. Using other sizes or construction may result in severe mechanical damage to the drivetrain of your vehicle and may affect ride, handling, braking, speedometer/odometer calibration, and clearance between the body and tires. It also may be dangerous and lead to loss of vehicle control.
- Do not use a combination of radial, belted bias or bias tires since it may cause dangerous handling characteristics and lead to an accident.

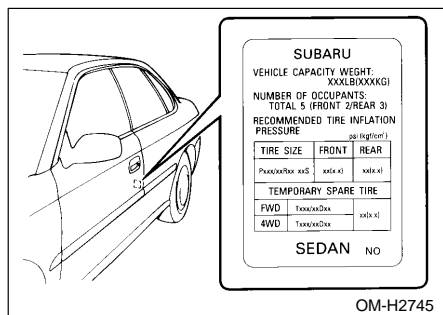
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- **Do not let air out of warm tires to adjust pressure. Doing so will result in low tire pressure.**

The tires should be checked frequently for proper tire pressure, wear, and cuts.

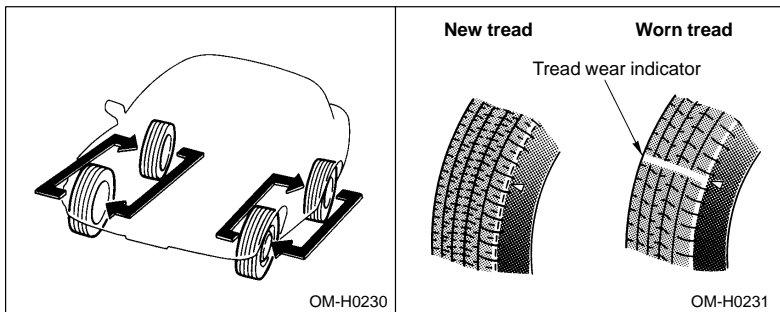
### ▼ Checking the tire pressure

For the best balance between fuel economy, tire life, ride comfort, and handling, tire pressure should be maintained in accordance with specifications. Check the tire pressure when the tires are cold. Cold means that the vehicle has been parked for three hours or has been driven less than 1 mile (1.6 km).



The recommended tire pressure and sizes are provided on the tire inflation pressure label, which is located under the door latch on the driver's side.

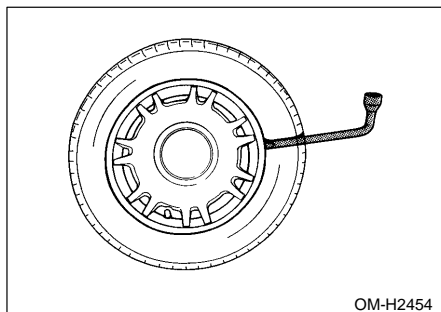
Tire wear will vary with each wheel. To increase the life of tires and keep wear uniform, it is best to rotate them every 7,500 miles (12,500 km). When rotating tires, replace any unevenly worn or damaged tire. After rotating the tires, adjust tire pressure and be sure to check wheel nut tightness.



A tire should be replaced when the tread wear indicator appears as a solid band across the tread. The indicators appear when the remaining tread has been worn to 0.063 in (1.6 mm) or less.

## ■ Wheel covers

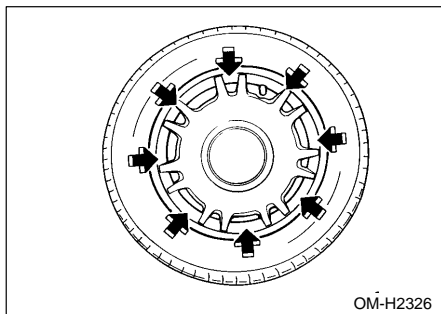
### ▼ Removing the wheel cover



Insert the wheel nut wrench into the notch provided, and pry the wheel cover off.

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## ▼ Installing the wheel cover



Align the valve with the valve hole in the cover, then fit the cover on the wheel by tapping your hand evenly around the circumference of the cover.

### **NOTE**

When any of the wheels is removed and replaced for tire rotation or to change a flat tire, always check the tightness of the wheel nuts after driving approximately 600 miles (1,000 km). If any nut is loose, tighten it to the specified torque.

## **Aluminum wheels (If equipped)**

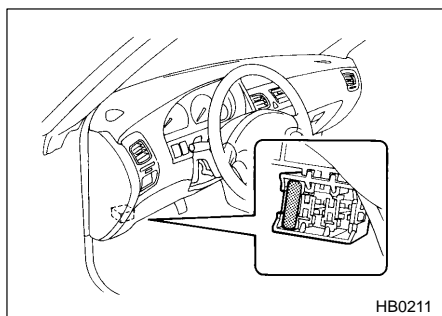
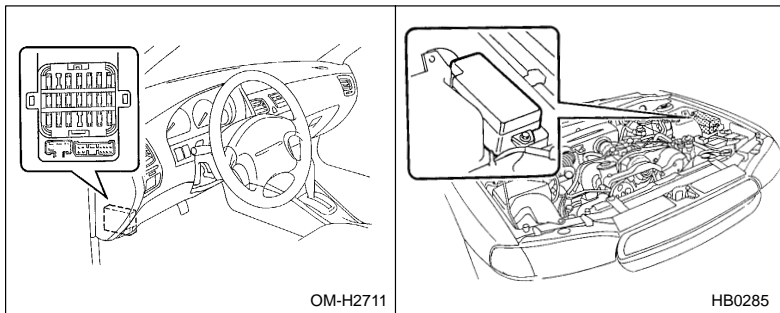
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Aluminum wheels can be scratched and damaged easily. Handle them carefully to maintain their appearance, performance, and safety.

- When any of the wheels is removed and replaced for tire rotation or to change a flat, always check the tightness of the wheel nuts after driving approximately 600 miles (1,000 km). If any nut is loose, tighten it to the specified torque.
- Never apply oil to the threaded parts, wheel nuts, or tapered surface of the wheel.
- Never let the wheel rub against sharp protrusions or curbs.
- Be sure to fit tire chains on uniformly and completely around the tire, otherwise the chains may scratch the wheel.
- When wheel nuts, balance weights, or the center cap are replaced,

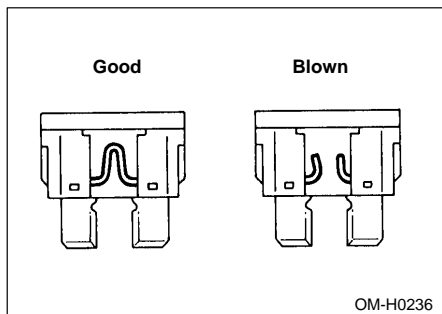
be sure to replace them with genuine SUBARU parts designed for aluminum wheels.

## Fuses



The fuses are designed to melt during an overload to prevent damage to the wiring harness and electrical equipment. The fuses are located in three fuse boxes.

If any lights, accessories or other electrical controls do not operate, inspect the corresponding fuse. If a fuse has blown, replace it.



## ■ Replacing a fuse

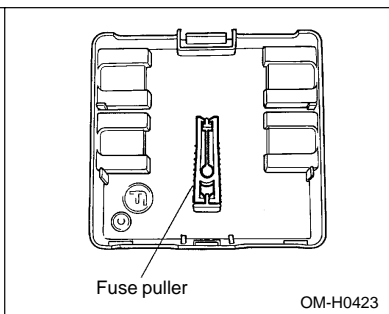
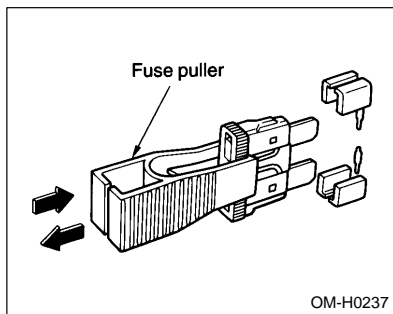


### CAUTION

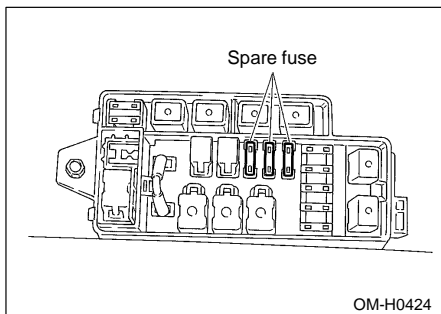
Never replace a fuse with one having a higher rating or with material other than a fuse because serious damage or a fire could result.

#### ▼ Fuse box

1. Turn the ignition switch to the “LOCK” position and turn off all electrical accessories.
2. Determine which fuse may be blown. The fuse box lids and the Fuse and circuits section in chapter 11 show the circuit for each fuse.
3. Remove the cover from the fuse box.



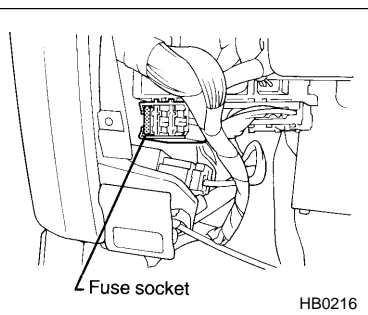
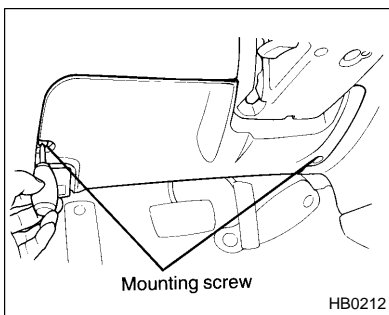
4. Pull out the fuse with the fuse puller provided in the interior fuse box cover.
5. Inspect the fuse. If it has blown, replace it with a spare fuse of the same rating. The spare fuses are stored in the main fuse box in the engine compartment.



6. If the same fuse blows again, this indicates that its system has a problem. Contact your SUBARU dealer for repairs.

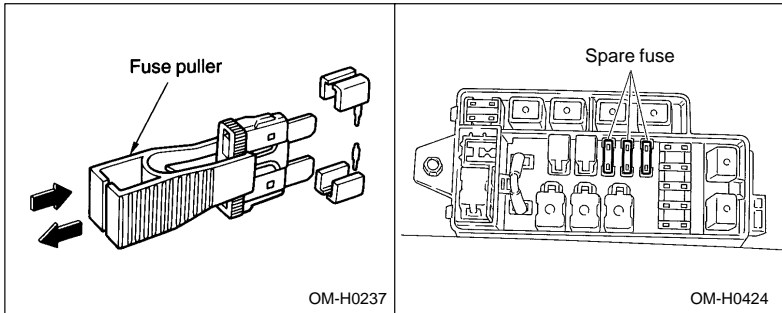
▼ **Fuse socket (behind the instrument panel lower cover)**

1. Turn the ignition switch to the "LOCK" position and turn off all electrical accessories.
2. Determine which fuse may be blown. Fuse and Circuits section in chapter 11 show the circuit for each fuse.



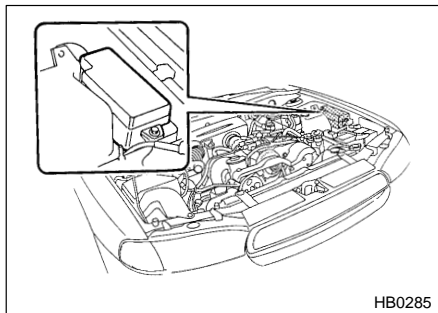
3. Remove the instrument panel lower cover.

– CONTINUED –



4. Pull out the fuse with the fuse puller provided in the interior fuse box cover.
5. Inspect the fuse. If it has blown, replace it with a spare fuse of the same rating. The spare fuses are stored in the main fuse box in engine compartment.
6. If the same fuse blows again, this indicates that its system has a problem. Contact your SUBARU dealer for repairs.

## Main fuse and fusible link



The main fuses and fusible link are designed to melt during an overload to prevent damage to the wiring harness and electrical equipment. Check the main fuses and fusible link if any electrical component fails to



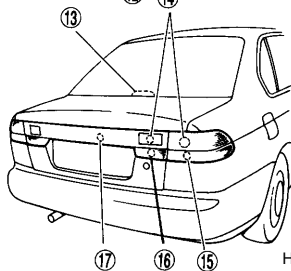
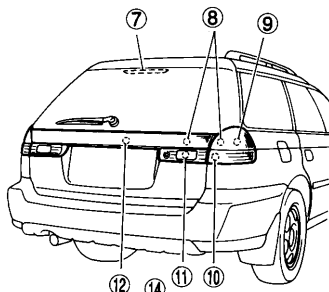
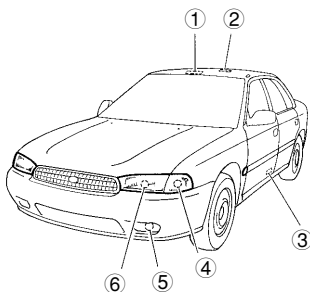
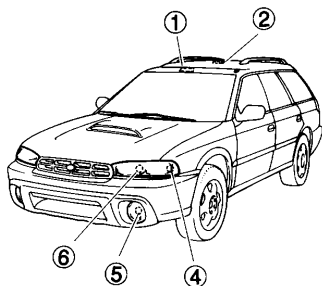
operate (except the starter motor) and other fuses are good. A melted main fuse or fusible link must be replaced. Use only replacements with the same specified rating as the melted main fuse or fusible link. If a main fuse or fusible link blows after it is replaced, have the electrical system checked by your nearest SUBARU dealer.

## **Installation of accessories**

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Always consult your SUBARU dealer before installing fog lights or any other electrical equipment in your vehicle. Such accessories may cause the electronic system to malfunction if they are incorrectly installed or if they are not suited for the vehicle.

## Replacing bulbs



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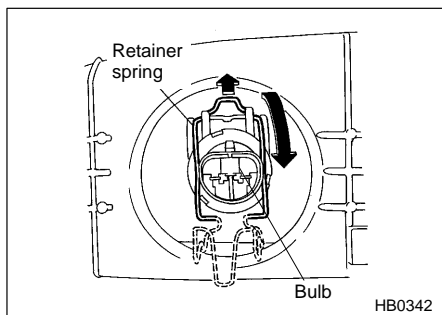
- ① Spot light
- ② Room light
- ③ Step light
- ④ Front turn signal, parking light and front side marker light
- ⑤ Fog light (OUTBACK and SUS)  
Fog light (GT)
- ⑥ Headlight
- ⑦ High mount stop light
- ⑧ Brake/tail light
- ⑨ Rear side marker light
- ⑩ Rear turn signal light
- ⑪ Backup light
- ⑫ License plate light
- ⑬ High mount stop light (except GT models)
- ⑭ Brake/tail light
- ⑮ Rear turn signal light
- ⑯ Back-up light
- ⑰ License plate light

Wattate	Bulb No.
(12V-8W)	—
(12V-8W)	—
(12V-3.4W)	—
(12V-27/8W)	1157
(12V-51W)	9006
(12V-55W)	H3
(12V-65/55W)	9007 (HB5)
(12V-13W)	912
(12V-27/8W)	1157
(12V-5W)	168
(12V-27W)	1156
(12V-27W)	1156
(12V-3.8W or 5W)	194 or 168
(12V-18W)	921
(12V-27/8W)	1157
(12V-27W)	1156
(12V-27W)	1156
(12V-3.8W or 5W)	194 or 168

## ■ Headlight

### CAUTION

Halogen headlight bulbs become very hot while in use. If you touch the bulb surface with bare hands or greasy gloves, finger prints or grease on the bulb surface develop into hot spots, causing the bulb to break. If there are finger prints or grease on the bulb surface, wipe them away with a soft cloth moistened with alcohol.

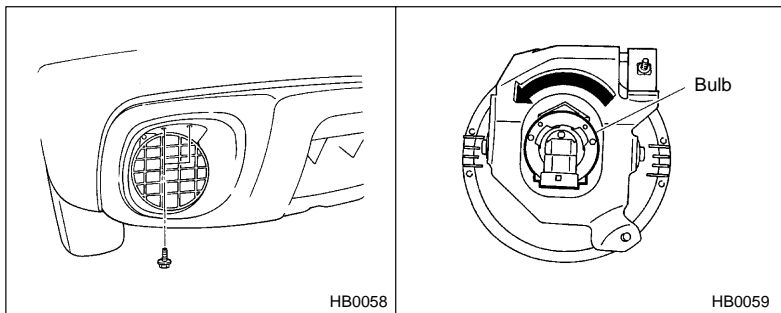


1. Disconnect the electrical connector.
2. Remove the retainer spring.
3. Replace the bulb, then set the retainer spring securely.
4. Reconnect the electrical connector.

## ■ Fog light (OUTBACK and SUS)

### CAUTION

Halogen light bulbs become very hot while in use. If you touch the bulb surface with bare hands or greasy gloves, finger prints or grease on the bulb surface develop into hot spots, causing the bulb to break. If there are finger prints or grease on the bulb surface, wipe them away with a soft cloth moistened with alcohol.



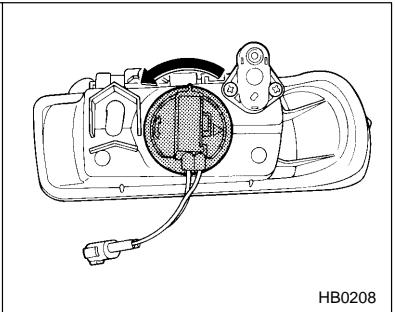
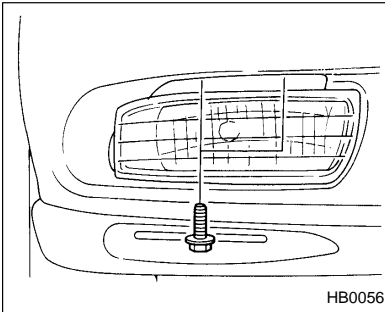
1. Remove the front fog light assembly by removing the two bolts.
2. Disconnect the connector.
3. Remove the front fog light bulb by turning it counterclockwise.
4. Replace the bulb with a new one. Then reconnect the connectors and reinstall the removed parts in the reverse order of removal.

#### ■ Fog light (GT)

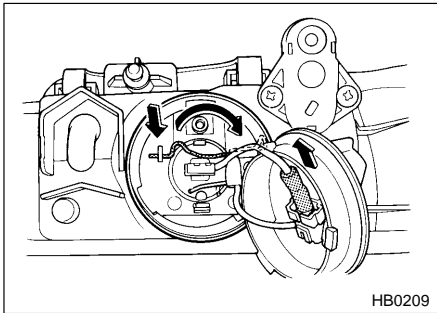


### CAUTION

Halogen light bulbs become very hot while in use. If you touch the bulb surface with bare hands or greasy gloves, finger prints or grease on the bulb surface develop into hot spots, causing the bulb to break. If there are finger prints or grease on the bulb surface, wipe them away with a soft cloth moistened with alcohol.



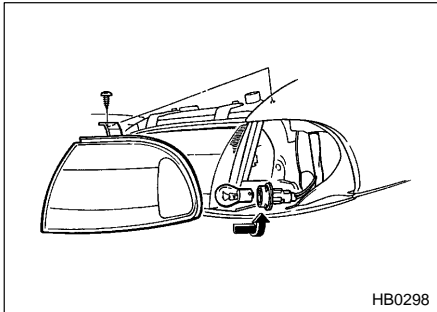
1. Remove the front fog light assembly by removing the two bolts.
2. Disconnect the connector.
3. Remove the front fog light case cap by turning it counterclockwise.
4. Disconnect the connector behind the case cap.



5. Release the retainer spring.
6. Replace the bulb with a new one. Then reconnect the connectors and reinstall the removed parts in the reverse order of removal.

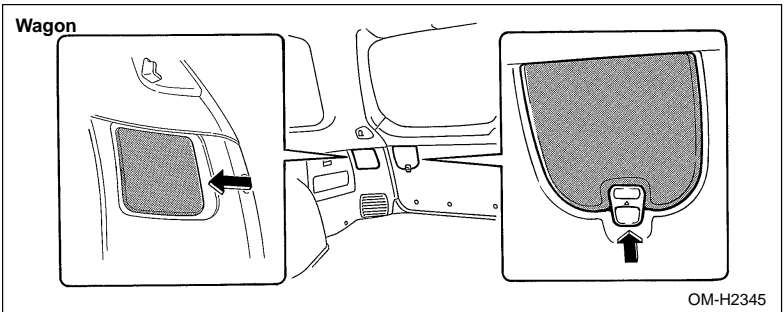
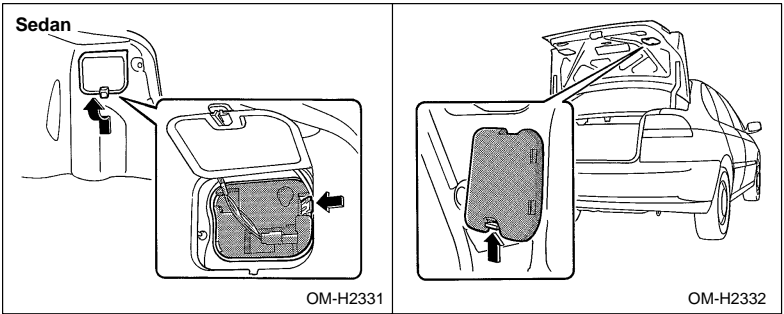
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## ■ Front turn signal, parking light and front side marker light



1. Remove the front turn signal light assembly mounting screw located at the top of the headlight assembly using a phillips screwdriver.
2. Move the front turn signal light assembly forward until it pops out from the fender.
3. Remove the bulb holder from the front turn signal light assembly by turning it counterclockwise.
4. Pull the bulb out of the socket. Install a new bulb.
5. Set the bulb holder into the front turn signal light assembly and turn it clockwise until it locks.
6. Set the front turn signal light assembly into the fender. Tighten the mounting screw.

## ■ Rear combination lights

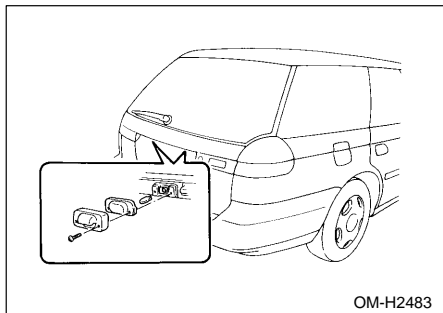


1. Unlatch the rear combination light cover by pulling the knob. Open the cover up.
2. Remove the bulb holder from the rear combination light assembly by turning it counterclockwise.
3. Remove the bulb from the socket by pushing it and turning counterclockwise. Install a new bulb.
4. Set the bulb holder into the rear combination light assembly and turn it clockwise until it locks.
5. Close the cover and latch the lock.

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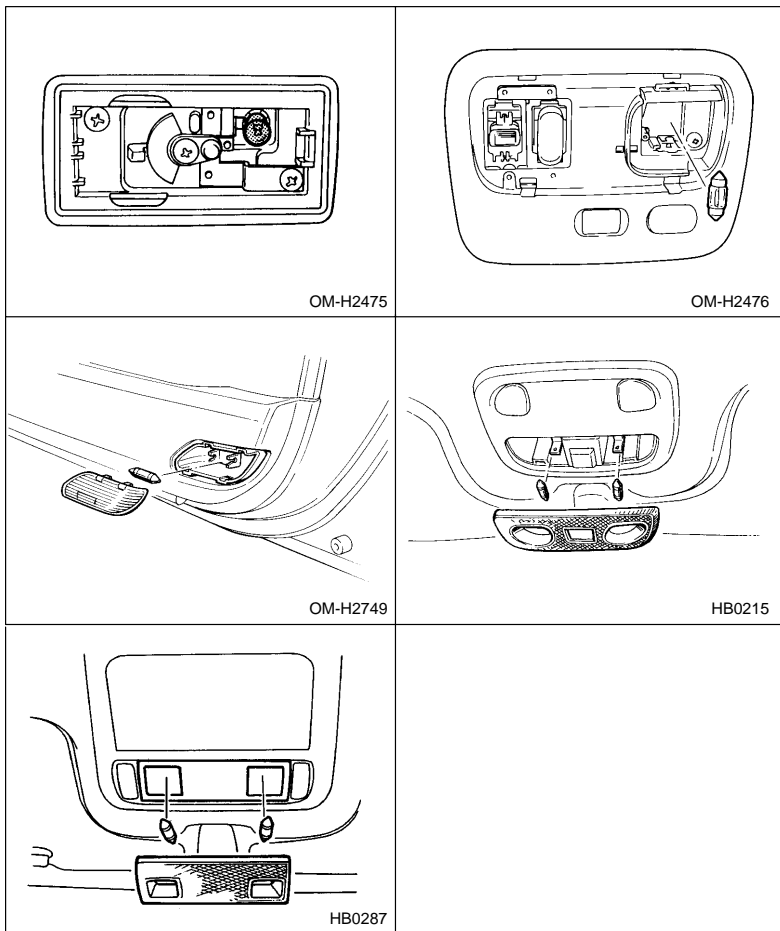
## ■ License plate light



1. Remove the mounting screws using a phillips screwdriver.
2. Remove the cover and lens.
3. Pull the bulb out of the socket. Install a new bulb.
4. Reinstall the lens and cover.
5. Tighten the mounting screws.



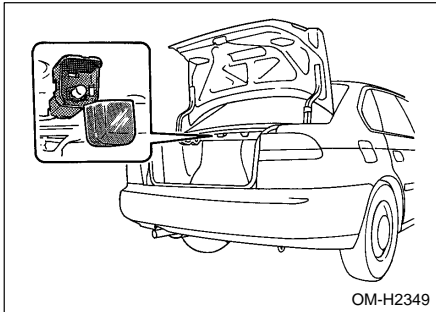
■ Interior light, spot light, luggage compartment light and step light



1. Remove the lens by prying the edge of the lens with a regular screwdriver.
2. Pull the bulb out of the socket. Install a new bulb.
3. Reinstall the lens.

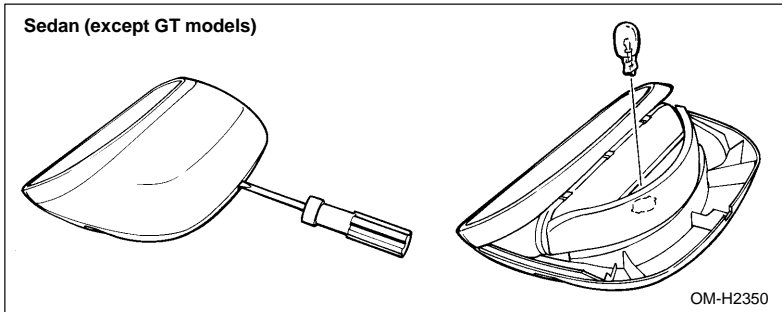
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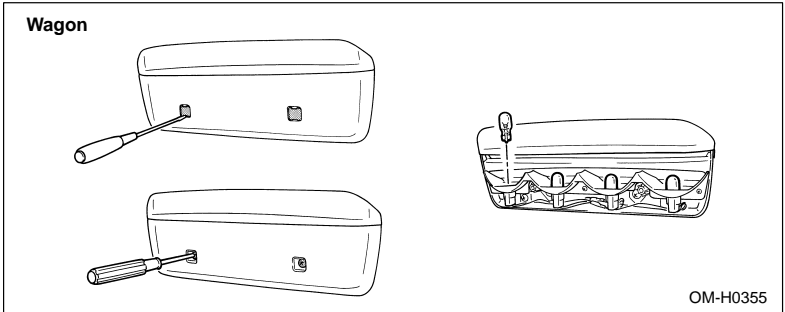
## ■ Trunk light



1. Remove the cover by pulling it out.
2. Pull the bulb out of the socket. Install a new bulb.
3. Reinstall the cover.

## ■ High mount stop light





▼ **Sedan (except GT models)**

1. Remove the high mount stop light cover by prying on the edge with a screwdriver.
2. Pull the bulb out of the socket. Install a new bulb.
3. Reinstall the cover.

▼ **Wagon**

1. Remove the mounting screw covers by prying on the edge with a screwdriver.
2. Remove the mounting screws using a phillips screwdriver and then remove the high mount stop light cover.
3. Pull the bulb out of the socket. Install a new bulb.
4. Reinstall the cover.
5. Tighten the mounting screws then reinstall the covers.

**NOTE**

Other bulbs may be difficult for owner to replace. Have your SUBARU dealer replace these bulbs if necessary.

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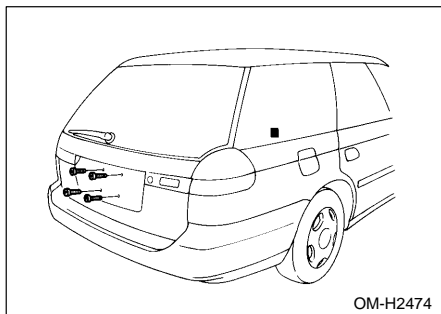
## To install the rear license plate (Wagon)

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### **CAUTION**

Do not use a bolt longer than 12 mm.



Use M5 x 12 bolts to install a license plate on the rear gate.