

# Driving tips

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## New vehicle break-in driving – the first 1,000 miles (1,600 km)

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The performance and long life of your vehicle are dependent on how you handle and care for your vehicle while it is new. Follow these instructions during the first 1,000 miles (1,600 km):

- Do not race the engine.

### ▼ Break-in engine speed limit

- Vehicle with tachometer

Never exceed 4,000 rpm engine speed except for brief acceleration in an emergency.

- Vehicle without tachometer (for manual transmission)

Do not exceed the speed limits below for each gear position except for brief acceleration in an emergency.

				mph (km/h)
1st	2nd	3rd	4th	
22 (35)	37 (60)	50 (80)	65 (105)	

- Vehicles without tachometer (for automatic transmission)

Try to drive at moderate speeds while accelerating and braking smoothly. Proper gears are selected automatically according to the driving conditions.

- Do not drive at one constant engine or vehicle speed for a long time, either fast or slow.
- Avoid starting suddenly and rapid acceleration, except in an emergency.
- Avoid hard braking, except in an emergency.

The same break-in procedures should be applied to a newly installed or overhauled engine or when brake pads or brake linings are replaced with new ones.

## Fuel economy hints

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The following suggestions will help to save your fuel.

- Select the proper gear position for the speed and road conditions.
- Avoid sudden acceleration or deceleration. Always accelerate gently until you reach the desired speed. Then try to maintain that speed for as long as possible.
- Do not pump the accelerator and avoid racing the engine.
- Avoid unnecessary engine idling.
- Keep the engine properly tuned.
- Keep the tires inflated to the correct pressure shown on the tire placard, which is located under the door latch on the driver's side. Low pressure will increase tire wear and fuel consumption.
- Use the air conditioner only when necessary.
- Keep the front and rear wheels in proper alignment.
- Avoid carrying unnecessary luggage or cargo.

## Engine exhaust gas (Carbon monoxide)

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### **WARNING**

- **Never inhale engine exhaust gas. Engine exhaust gas contains carbon monoxide, a colorless and odorless gas which is dangerous, or even lethal, if inhaled.**
- **Always properly maintain the engine exhaust system to prevent engine exhaust gas from entering the vehicle.**
- **Never run the engine in a closed space, such as a garage, except for the brief time needed to drive the vehicle in or out of it.**
- **Avoid remaining in a parked vehicle for a lengthy time while the engine is running. If that is unavoidable, then use the ventilation fan to force fresh air into the vehicle.**
- **Always keep the front ventilator inlet grille free from snow, leaves or other obstructions to ensure that the ventilation system always works properly.**

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- If at any time you suspect that exhaust fumes are entering the vehicle, have the problem checked and corrected as soon as possible. If you must drive under these conditions, drive only with all windows fully open.
- Keep the trunk lid or rear gate closed while driving to prevent exhaust gas from entering the vehicle.

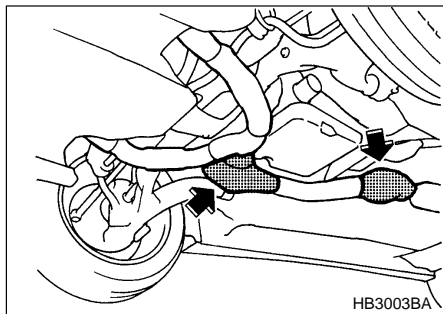
## NOTE

Due to the expansion and contraction of the metals used in the manufacture of the exhaust system, you may hear a crackling sound coming from the exhaust system for a short time after the engine has been shut off. This sound is normal.

## Catalytic converter

### WARNING

- Avoid fire hazards. Do not drive or park the vehicle anywhere near flammable materials (e.g. grass, paper, rags or leaves), because the catalytic converter operates at very high temperatures.
- Keep everyone and flammable materials away from the exhaust pipe while the engine is running. The exhaust gas is very hot.



The catalytic converter is installed in the exhaust system. It serves as catalyst to reduce HC, CO and NOx in exhaust gases, thus providing cleaner exhaust.

To avoid damage to the catalytic converter:

- Use only unleaded fuel. Even a small amount of leaded fuel will damage the catalytic converter.
- Never start the engine by pushing or pulling the vehicle.
- Avoid racing the engine.
- Never turn off the ignition switch while the vehicle is moving.
- Keep your engine tuned-up. If you feel the engine running rough (misfiring, backfiring or incomplete combustion), have your vehicle checked and repaired by an authorized SUBARU dealer.
- Do not apply undercoating or rust prevention treatment to the heat shield of catalytic converter and the exhaust system.

## **Periodic inspections**

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To keep your vehicle in the best condition at all times, always have the recommended maintenance services listed in the maintenance schedule in the "Warranty and Maintenance Booklet" performed at the specified time or mileage intervals.

## **Driving in foreign countries**

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When planning to use your vehicle in another country:

- Confirm the availability of the correct fuel. (Refer to the "Fuel requirement" section in chapter 7.)
- Comply with all regulations and requirements of each country.

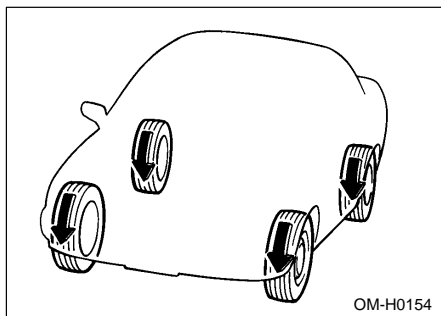
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## Driving tips for AWD vehicles

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### **WARNING**

- Always maintain a safe driving speed according to the road and weather conditions in order to avoid having an accident on a sharp turn, during sudden braking or under other similar conditions.
- Always use the utmost care in driving – overconfidence because you are driving an all wheel drive vehicle could easily lead to a serious accident.



All wheel drive distributes the engine power to all four wheels. AWD vehicles provide better traction when driving on slippery, wet or snow-covered roads and when moving out of mud, dirt and sand. By shifting power between the front and rear wheels, SUBARU AWD can also provide added traction during acceleration, and added engine braking force during deceleration.

Therefore, your SUBARU AWD vehicle may handle differently than an ordinary two wheel drive vehicle and it contains some features unique to AWD. For safety purposes as well as to avoid damaging the AWD system, you should keep the following tips in mind:

- An AWD vehicle is better able to climb steeper roads under snowy or slippery conditions than a two wheel drive vehicle. There is little difference in handling, however, during extremely sharp turns or sudden brak-

ing. Therefore, when driving down a slope or turning corners, be sure to reduce your speed and maintain an ample distance from other vehicles.

- When replacing a tire, make sure you use only the same size, circumference, construction, brand, and load range as the original tires listed on the tire placard. Using other sizes, circumferences or construction may result in severe mechanical damage to the drive train 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.
- If you use a temporary spare tire to replace a flat tire, be sure to use the original temporary spare tire stored in the vehicle. Using other sizes may result in severe mechanical damage to the drive train of your vehicle.
- Always check the cold tire pressure before starting to drive. The recommended tire pressure is provided on the tire placard, which is located under the door latch on the driver's side.
- Tire chains should always be placed on the front wheels only.
- There are some precautions that you must observe when towing your vehicle. For detail information, see "Towing" section in chapter 9.

## Off road driving

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### **WARNING**

- **Always maintain a safe driving speed according to the road and weather conditions in order to avoid having an accident on a sharp turn, during sudden braking or under other similar conditions.**
- **Always use the utmost care in driving – overconfidence because you are driving an all wheel drive vehicle could easily lead to a serious accident.**

### **▼ All AWD models except OUTBACK**

Your AWD vehicle is neither a conventional off-road vehicle nor an all terrain vehicle. It is a passenger car designed primarily for on-road use. The AWD feature gives it some limited off-road capabilities in situations in which driving surfaces a relatively level, obstruction-free

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and otherwise similar to on-road driving conditions. Operating it under other than those conditions could subject the vehicle to excessive stress which might result in damage not eligible for repair under warranty. If you do take your SUBARU off road, you should review the common sense precautions in the next section (applicable to the OUTBACK) for general guidance. But please keep in mind that your vehicle's off-road capabilities are more limited than those of the OUTBACK.

Never attempt to drive through pools and puddles, or roads flooded with water. Water entering the engine air intake or the exhaust pipe or water splashing onto electrical parts may damage your vehicle and may cause it to stall.

### ▼ OUTBACK

Because of the AWD feature and higher ground clearance, your Subaru can be driven on ordinary roads or off-road. But please keep in mind that an AWD Subaru is a passenger car and is neither a conventional off-road vehicle nor an all-terrain vehicle. If you do take your Subaru off-road, certain common sense precautions such as the following should be taken:

- Make certain that you and all of your passengers are wearing seat belts.
- Carry some emergency equipment, such as a towing rope or chain, a shovel, wheel blocks, first aid kit and portable phone or citizens band radio.
- Drive carefully. Do not take unnecessary risks by driving in dangerous areas or over rough terrain.
- Slow down and employ extra caution at all times. When driving off-road, you will not have the benefit of marked traffic lanes, banked curves, traffic signs and the like.
- Do not drive across steep slopes. Instead, drive either straight up or straight down the slopes. A vehicle can much more easily tip over sideways than it can end over end. Avoid driving straight up or down slopes that are too steep.
- Avoid sharp turning maneuvers, especially at higher speeds.
- Do not grip the inside or spokes of the steering wheel. A bad



bump could jerk the wheel and injure your hands. Instead drive with your fingers and thumbs on the outside of the rim.

- If driving through water, such as when crossing shallow streams, first check the depth of the water and the bottom of the stream bed for firmness and ensure that the bed of the stream is flat. Drive slowly and completely through the stream. The water should be shallow enough that it does not reach the vehicle's undercarriage. Water entering the engine air intake or the exhaust pipe or water splashing onto electrical parts may damage your vehicle and may cause it to stall. Never attempt to drive through rushing water; regardless of its depth, it can wash away the ground from under your tires, resulting in possible loss of traction and even vehicle rollover.
- Always check your brakes for effectiveness immediately after driving in sand, mud or water. Do this by driving slowly and stepping on the brake pedal. Repeat that process several times to dry out the brake discs and brake pads.
- Do not drive or park over or near flammable materials such as dry grass or fallen leaves, as they may burn easily. The exhaust system is very hot while engine is running and right after engine stops. This could create a fire hazard.
- After driving through tall grass, mud, rock, sand, rivers, etc., check that there is no grass, bush, paper, rags, stones, sand, etc. adhering to or trapped on the underbody. Clear off any such matter from the underbody. If the vehicle is used with these materials trapped or adhering to the underbody, a mechanical breakdown or fire could occur.
- Secure all cargo carried inside the vehicle and make certain that it is not piled higher than the seatbacks. During sudden stops or jolts, unsecured cargo could be thrown around in the vehicle and cause injury. Do not pile heavy loads on the roof. Those loads raise the vehicle's center of gravity and make it more prone to tip over.
- If you must rock the vehicle to free it from sand or mud, depress the accelerator pedal slightly and move the selector lever back and forth between "D" and "R" repeatedly. Do not race the engine. For the best possible traction, avoid spinning the wheels when trying to free the vehicle.
- When the road surface is extremely slippery, you can obtain better

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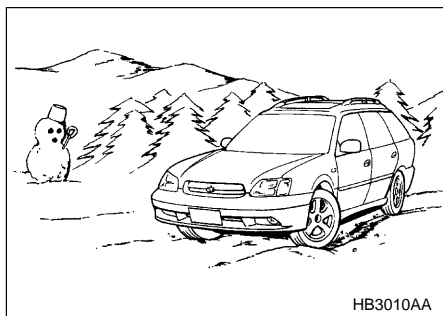
traction by starting the vehicle with the transmission in 2nd than 1st (both for MT and AT).

- Never equip your vehicle with tires larger than those specified in this manual.
- Frequent driving of an AWD vehicle under hard-driving conditions such as rough roads or off roads will necessitate more frequent replacement of engine oil, brake fluid and transmission oil than that specified in the maintenance schedule described in the "Warranty and Maintenance Booklet".

Remember that damage done to your Subaru while operating it off-road and not using common sense precautions such as those listed above is not eligible for warranty coverage.

## Winter driving

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### ▼ Operation during cold weather

Carry some emergency equipment, such as tire chains, a window scraper, a bag of sand, flares, a small shovel, and jumper cables.

Check the battery and cables. Cold temperatures reduce battery capacity. The battery must be in good condition to provide enough power for cold winter starts.

Use an engine oil of proper grade and viscosity for cold weather. Heavy summer oil will cause harder starting.

Keep the door locks from freezing by squirting them with deicer or glycerin.

Forcing a frozen door open may damage or separate the rubber weather strips around the door. If the door is frozen, use hot water to melt the ice, and afterwards thoroughly wipe the water away.

Use a windshield washer fluid that contains an antifreeze solution. Do not use engine antifreeze or other substitutes because they may damage the paint of the vehicle.

▽ **Before driving your vehicle**

Before entering the vehicle, remove any snow or ice from your shoes because that could make the pedals slippery and dangerous.

While warming up the vehicle before driving, check that the accelerator pedal, brake pedal, and all other controls operate smoothly.

Clear away ice and snow that has accumulated under the fenders to avoid making steering difficult. During severe winter driving, stop when and where it is safe to do so and check under the fenders periodically.

▽ **Parking in cold weather**



**WARNING**

**Snow can trap dangerous exhaust gases under your vehicle. Keep snow clear of the exhaust pipe and from around your vehicle if you park the vehicle in snow with the engine running.**

Do not use the parking brake when parking for long periods in cold weather since it could freeze in that position. Instead, observe the following:

1. Place the shift lever in "1" or "R" for manual transmission vehicles, and in "P" for automatic transmission vehicles.
2. Use tire stops under the tires to prevent the vehicle from moving.

When the vehicle is parked in snow or when it snows, raise the wiper blades off the glass to prevent damage to them.

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When the vehicle has been left parked after use on roads heavily covered with snow, or has been left parked during a snowstorm, icing may develop on the brake system, which could cause poor braking action. Check for snow or ice buildup on the suspension, disc brakes and brake hoses underneath the vehicle.

If there is caked snow or ice, remove it, being careful not to damage the disc brakes and brake hoses and ABS harness.

### ▽ Refueling in cold weather

To help prevent moisture from forming in the fuel system and the risk of its freezing, use of an antifreeze additive in the fuel tank is recommended during cold weather.

Use only additives that are specifically designed for this purpose. When an antifreeze additive is used, its effect lasts longer if the tank is refilled whenever the fuel level reaches half empty.

If your SUBARU is not going to be used for an extended period, it is best to have the fuel tank filled to capacity.

### ▼ Driving on snowy and icy roads



## **WARNING**

**Do not use the cruise control on slippery roads such as snowy or icy roads. This may cause loss of vehicle control.**

To prevent skidding and slipping, avoid sudden braking, abrupt acceleration, high-speed driving, and sharp turning when driving on snowy or icy roads.


Always maintain ample distance between your vehicle and the vehicle ahead of you to avoid the need for sudden braking.


To supplement the foot brake, use the engine brake effectively to control the vehicle speed. (Shift into a lower gear when necessary.)

Avoid shifting down abruptly. Such behavior can cause the wheels to lock, possibly leading to loss of vehicle control.

An anti-lock brake system (ABS) enhances your vehicle's braking performance on snowy and icy roads. Refer to the "ABS (Anti-Lock Brake System)" section in chapter 7 for information on braking on slippery surfaces.

### ▽ Wiper operation when snowing

Before driving in cold weather, make sure the wiper blades are not frozen to the windshield or rear window. If the wiper blades are frozen to the windshield or rear window, use the defroster with the airflow control dial in the "  " position and the temperature control dial set for maximum warmth until the wiper blades are completely thawed out. If your vehicle is equipped with a wiper deicer, it is helpful to thaw the windshield wiper blades. To thaw out the rear wiper blade, use the rear window defogger.

When driving in snow, if frozen snow starts to stick on the surface of the windshield despite wiper operation, use the defroster with the airflow control dial in "  " and the temperature control dial set for maximum warmth. After the windshield gets warmed enough to melt the frozen snow on it, wash it away using the windshield washer.

Snow stuck on the wiper arm prevents the wiper from working effectively. If snow is stuck on the wiper arm, pull off the road to a safe place, then remove it. If you stop the car at road side, use the hazard warning flasher to alert other drivers.

We recommend use of non-freezing type wiper blades during the seasons you could have snow and sub-zero temperatures.

### ▼ Corrosion protection

Refer to the "Corrosion protection" section (chapter 10).

## ■ Snow tires



### WARNING

● When replacing a tire, make sure you use only the same size, circumferences, construction, brand, and load range as the original tires listed on the tire placard. Using other sizes, circumferences or construction may result in severe mechanical damage to the drive train 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.

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- **Do not use a combination of radial, belted bias or bias tires since it may cause dangerous handling characteristics and lead to an accident.**

Your vehicle is equipped with “all season tires” which are designed to provide an adequate measure of traction, handling and braking performance in year-round driving. In winter, it may be possible to enhance performance through use of tires designed specifically for winter driving conditions.

If you choose to install winter tires on your vehicle, be sure to use the correct tire size and type. All four tires should be of the same size, construction, brand and load range and you should never mix radial, belted bias or bias tires since this may result in dangerous handling characteristics.

Remember to drive with care at all times regardless of the type of tires on your vehicle.

## ■ Tire chains



### **CAUTION**

**Tire chains cannot be used on P205/55R16 tires for GT models and P225/60R16 tires for OUTBACK models because of lack of clearance between the tires and body.**

Driving on snowy grades or icy roads may require the use of tire chains, in which case put the chains on the front wheels only. Use only SAE class S type chains that are of the correct size for your tires so as not to damage the vehicle body or suspension.

When driving with tire chains, drive at speeds below 19 mph (30 km/h).

When a temporary spare tire is on a front wheel, replace the temporary spare tire with the rear tire on the same side of the vehicle, and then fit chains on the front tires.

Always use the utmost care when driving with tire chains — overconfidence because you are driving with tire chains could easily lead to a serious accident.

## ■ Rocking the vehicle

If you must rock the vehicle to free it from snow, sand, or mud, depress the accelerator pedal slightly and move the selector lever back and forth between “D” and “R” repeatedly. Do not race the engine. For the best possible traction, avoid spinning the wheels when trying to free the vehicle.

When the road surface is extremely slippery, you can obtain better traction by starting the vehicle with the transmission in 2nd than 1st (both for MT and AT).

Refer to the “Automatic transmission” section in chapter 7 for information on holding the transmission in 2nd position.

## Loading your vehicle



### **WARNING**

- **Never allow passengers to ride on the folded rear seatback, in the trunk or in the cargo area. Doing so may result in serious injury.**
- **Never stack luggage or other cargo higher than the top of the seatback because it could tumble forward and injure passengers in the event of a sudden stop or accident. Keep luggage or cargo low, as close to the floor as possible.**
- **When you carry something inside the vehicle, secure it whenever you can to prevent it from being thrown around inside the vehicle during sudden stops, sharp turns or in an accident.**
- **Do not pile heavy loads on the roof. These loads raise the vehicle’s center of gravity and make it more prone to tip over.**
- **Secure skis and other lengthy items properly to prevent them from shooting forward and causing serious injury during a sudden stop.**
- **Never exceed the maximum load limit. If you do, some parts on your vehicle can break, or it can change the way your vehicle handles. This could result in loss of control and cause personal**

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injury. Also, overloading can shorten the life of your vehicle.

- Do not place anything on the rear shelf behind the rear seat-back (for sedan) or the extended luggage cover (for station wagon). Such items could tumble forward in the event of a sudden stop or a collision. This could cause serious injury.

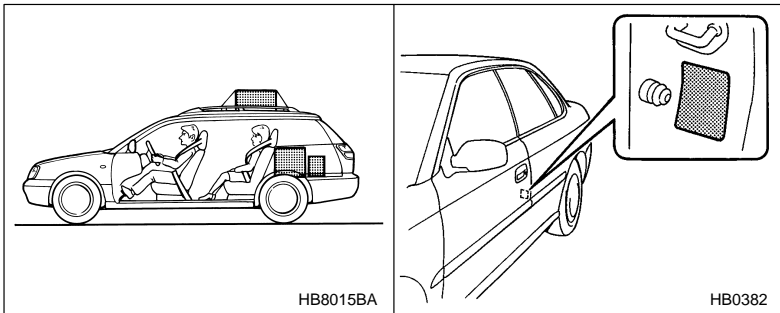
## CAUTION

Do not carry spray cans, containers with flammable or corrosive liquids or any other dangerous items inside the vehicle.

## NOTE

For better fuel economy, do not carry unneeded cargo.

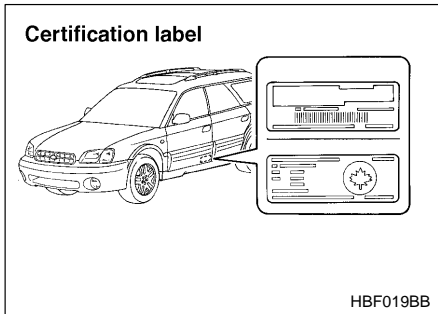
## ■ Vehicle capacity weight



The load capacity of your vehicle is determined by weight, not by available cargo space. The maximum load you can carry in your vehicle is shown as the Vehicle Capacity Weight on the tire information label attached to the driver's side door jamb. It includes the total weight of driver and all passengers and their belongings, any optional equipment such as a trailer hitch, roof rack or bike carrier, etc., and the tongue load of a trailer.



## ■ GVWR and GAWR (Gross Vehicle Weight Rating and Gross Axle Weight Rating)



The certification label attached to the driver's side door shows GVWR (Gross Vehicle Weight Rating) and GAWR (Gross Axle Weight Rating). The GVW (Gross Vehicle Weight) must never exceed the GVWR. GVW is the combined total of weight of the vehicle, fuel, driver, all passengers, luggage, any optional equipment and trailer tongue load. Therefore, the GVW changes depending on the situation. The GVWR equals Curb Weight (actual weight of your vehicle – including standard equipment, fluids, emergency tools and spare tire assembly) plus the vehicle capacity weight.

In addition, the total weight applied to each axle (GAW) must never exceed the GAWR. The front and rear GAWs can be adjusted by relocating luggage inside the vehicle.

Even if the total weight of your luggage is lower than the vehicle capacity weight, either front or rear GAW may exceed the GAWR, depending on the distribution of the luggage.

If you carry heavy loads in the vehicle, you should confirm that GVW and front and rear GAWs are within the GVWR and GAWR by putting your vehicle on a vehicle scale, found at a commercial weighing station.

Do not use replacement tires with a lower load range than the originals because they may lower the GVWR and GAWR limitations. Replacement tires with a higher load range than the originals do not increase the

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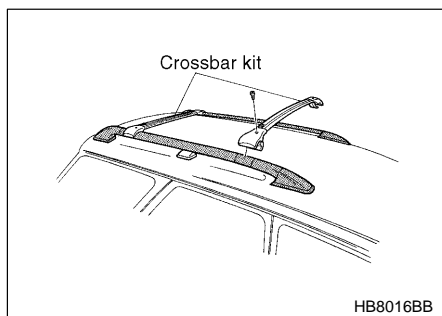
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GVWR and GAWR limitations.

## ■ Roof rail and crossbar (if equipped)

### **⚠ CAUTION**

- For cargo carrying purposes, the roof rail must be used together with a roof crossbar kit and the appropriate carrying attachment. The roof rail must never be used alone to carry cargo. Otherwise, damage to the roof or paint or a dangerous road hazard due to loss of cargo could result.
- When using the roof crossbar kit, make sure that the total weight of the crossbars, carrying attachment and cargo does not exceed the maximum load limit. Overloading may cause damage to the vehicle and create a safety hazard.



The roof rail is not designed to carry cargo by itself. Cargo can be carried after securing the roof crossbar kit to the roof rail and installing the appropriate carrying attachment. When installing the roof crossbar kit, follow the manufacturer's instructions.

Roof slats are not designed to carry or hold cargo, but are designed as the protector to prevent the roof from being damaged by cargo while it is being loaded and unloaded on the roof crossbar or on any carrying attachment.

When you carry cargo on the roof using the roof crossbar kit and a carry-

ing attachment, never exceed the maximum load limit explained below. You should also be careful that your vehicle does not exceed the Gross Vehicle Weight Rating (GVWR) and front and rear Gross Axle Weight Rating (GAWR). See the "Loading your vehicle" section in this chapter for information on loading cargo into or onto your vehicle. The maximum load limit of the cargo, crossbars and carrying attachment must not exceed 100 lb. (45 kg). Place the heaviest load at the bottom, nearest the roof, and evenly distribute the cargo. Always properly secure all cargo.

### ▼ **Installing carrying attachments on the crossbars**

When installing any carrying attachment such as a bike carrier, ski carrier, kayak carrier, cargo basket, etc. on the crossbars, follow the manufacturer's instructions and make sure that the attachment is securely fixed to the crossbars. Use only attachments designed specifically for the crossbars. A set of the crossbars is designed to carry loads (cargo and attachment) of not more than **100 lb. (45 kg)**. Before operating the vehicle, make sure that the cargo is properly secured on the attachment.

### **NOTE**

**Remember that the vehicle's center of gravity is altered with the weight of the load on the roof, thus affecting the driving characteristics.**

**Drive carefully. Avoid rapid starts, hard cornering and abrupt stops. Crosswind effects will be increased.**

### ▼ **Removal and installation of the crossbars**



### **CAUTION**

**Do not carry cargo on the roof when the crossbars are removed. Luggage on the roof will be thrown forward or backward in sudden stops or rapid accelerations, resulting in a dangerous road hazard.**

The crossbars can be removed when you do not use the roof to carry cargo.

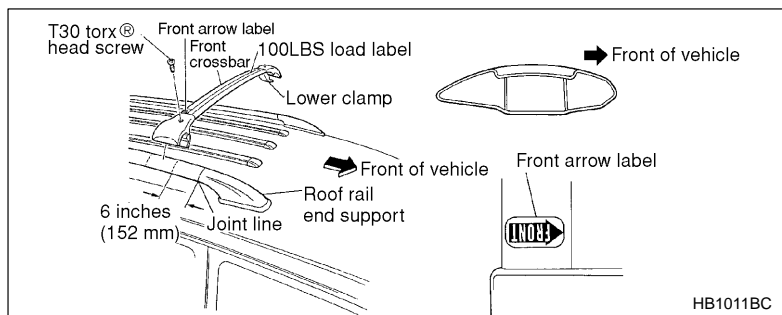
### ▽ To remove the crossbar

1. Loosen and remove the T-30 torx® head screw from the top of each crossbar end support.
2. Rotate the lower clamp on the bottom of each end support downward approximately 90°.
3. Carefully raise the crossbar from roof rails.

### ▽ To install the crossbar

#### Front crossbar:

Front crossbar has 100 LBS. Load Label on left-hand side.

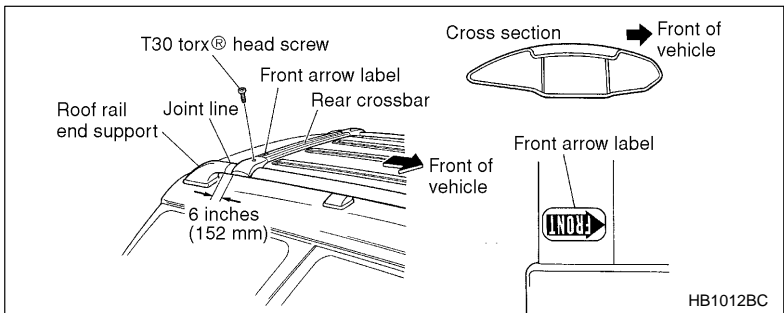


1. Before placing the crossbar on the roof rails, make sure that the T-30 torx® head screw is removed from the top of each crossbar end support.
2. Rotate the lower clamp on the bottom of each end support downward approximately 90°.
3. With the front direction arrow label on the top right side of the crossbar pointing toward the front of the vehicle, carefully place the crossbar across the top of the vehicle so that the crossbar end supports rest on the top of the roof rails approximately 6 inches (152 mm) rearward from the seam (joint) between the front roof rail support and the roof rail.
4. Rotate (raise) the lower clamp up to the bottom of the roof rail and loosely tighten the T-30 torx® head screw with the torx® wrench provided, through the top of the end support and into the threaded insert in the lower clamp on each end of the crossbar.

**NOTE**

It may be necessary to squeeze the lower clamp and the end support together to compress the pads and gain a better alignment of the pieces while trying to start the screw. Use care not to crossthread the screw in the insert.

5. Adjust the alignment of the crossbar on the roof rails, and if available, use a T-30 torx® bit and torque wrench and tighten the T-30 torx® head screws to 30 to 35 inch lbs. (3.4 to 4.0 N-m, 0.35 to 0.41 kg-m) of torque (or tighten securely with the torx® wrench provided).

**Rear crossbar:**

Install the rear crossbar in the same manner as the front crossbar.

**NOTE**

The rear crossbar should be positioned 6 inches (152 mm) forward of the rear seam (joint) between the rear roof rail support and the roof rail.

**NOTE**

Before each use of the roof crossbar, make sure the four T-30 crossbar clamp screws have been checked, and retightened if necessary to 35 inch lbs. (4.0 N-m, 0.41 kg-m), as outlined in Step #5 above.

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## Trailer hitch (if equipped)

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### **WARNING**

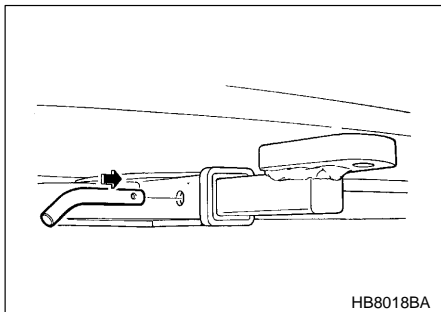
- Never exceed the maximum weight specified for the trailer hitch. Exceeding the maximum weight could cause an accident resulting in serious personal injuries. Permissible trailer weight changes depending on the situation. Refer to the next section “Trailer towing” for possible recommendations and limitations.
- Trailer brakes are required when the towing load exceeds 1,000 lbs. (453 kg). Be sure your trailer has safety chains and that each chain will hold the trailer’s maximum gross weight. Towing trailers without safety chains could create a traffic safety hazard if the trailer separates from the hitch due to coupling damage or hitch ball damage.
- Be sure to check the hitch pin and safety pin for positive locking placement before towing a trailer. If the ball mount comes off the hitch receiver, the trailer could get loose and create a traffic safety hazard.
- Use only the ball mount supplied with this hitch. Use the hitch only as a weight carrying hitch. Do not use with any type of weight distributing hitch.

The trailer hitch is designed to tow a Class 1 rated load. A maximum of **2,000 lbs. (906 kg)** gross trailer weight and a maximum of **200 lbs. (90 kg)** gross tongue weight are permissible for the trailer hitch.

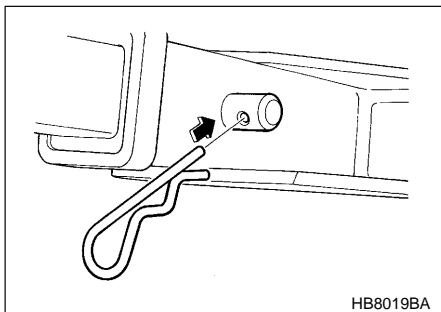
When you tow a trailer, follow the instructions in the next section “Trailer towing”.

▼ **Connecting a trailer**

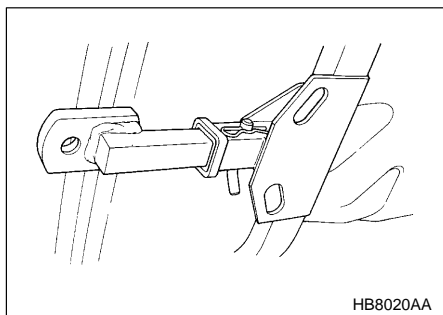
1. Remove the receiver cover from the hitch receiver tube. Then insert the ball mount into the hitch receiver tube.
2. Insert the hitch pin into the hole on the hitch receiver tube so that the pin passes through the ball mount.



3. Insert the safety pin into the hitch pin securely.



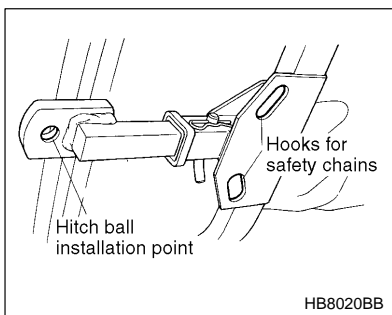
4. Pull the ball mount to make sure it does not come off the hitch receiver.



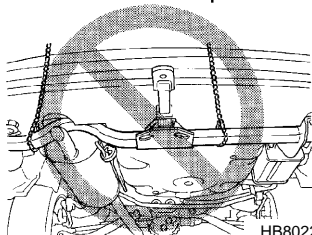
5. Use only a hitch ball that is appropriate for the ball mount and your trailer. The hitch ball must be securely installed on the ball mount.

6. Connect your trailer to the hitch ball.

7. Connect the trailer and the hitch with safety chains that will hold the trailer's maximum gross weight. The chains should cross under the trailer tongue to prevent the tongue from dropping onto the ground in case it should disconnect from the hitch ball. Allow sufficient slack in the chains taking tight-turn situations into account; however, be careful not to let them drag on the ground.

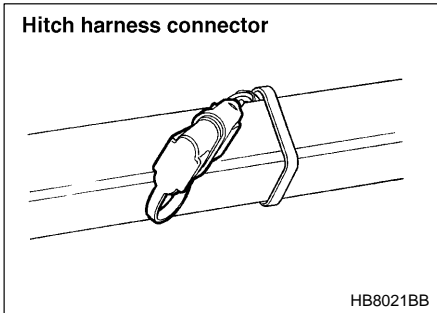


**⚠ Do not connect safety chains to improper positions such as those shown in this picture.**





8. Connect the hitch wire harness's black four-pin wire connector to the towing trailer's wire harness



9. Confirm proper function of the hitch wire harness by individually activating the brake, right turn signal, left turn signal, stop, and parking lights on the trailer.

## **NOTE**

**Always disconnect the trailer wire harness before launching or retrieving a watercraft.**

### **▼ When you do not tow a trailer**

- Remove the ball mount from the hitch receiver tube and insert the receiver cover onto the hitch receiver tube.
- Place the dust cap over the four-pin connector of the hitch wire harness to protect against possible damage.
- Occasionally lubricate terminals of the four-pin connector using the terminal grease.

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## Trailer towing

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Your car is designed and intended to be used primarily as a passenger-carrying vehicle. Towing a trailer puts additional loads on your car's engine, drivetrain, brakes, tires and suspension and has an adverse effect on fuel economy.

If you do decide to tow a trailer, your safety and satisfaction depend upon proper use of correct equipment and cautious operation of your vehicle. Seek the advice of your SUBARU dealer to assist you in purchasing a hitch and other necessary towing equipment appropriate for your vehicle. In addition, be sure to follow the instructions on correct installation and use provided by the trailer and other towing equipment manufacturers.

SUBARU assumes no responsibility for injuries or vehicle damage that result from trailer towing equipment, or from any errors or omissions in the instructions accompanying such equipment or for your failure to follow the proper instructions.

### ▼ Warranties and maintenance

SUBARU warranties do not apply to vehicle damage or malfunction caused by trailer towing. If you use your vehicle to tow a trailer, more frequent maintenance will be required due to the additional load. (Refer to "Maintenance schedule under severe driving conditions" in the "Warranty and Maintenance Booklet".)

Under no circumstances should a trailer be towed with a new vehicle or a vehicle with any new powertrain component (engine, transmission, differential, wheel bearings, etc.) for the first 1,000 miles (1,600 km) of driving.

### ▼ Maximum load limits



## **WARNING**

**Never exceed the maximum load limits explained below. Exceeding the maximum load limits could cause personal injury and/or vehicle damage.**

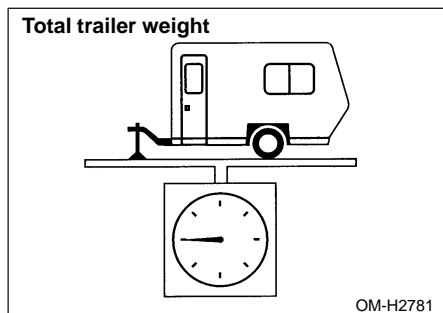
## CAUTION

- Adequate size trailer brakes are required when the trailer and its cargo exceed 1,000 lbs (453 kg) total weight.
- Before towing a trailer, check the trailer total weight, GVW, GAWs and tongue load. Make sure the load and its distribution in your vehicle and trailer are acceptable.

### ▽ Total trailer weight

The total trailer weight (trailer weight plus its cargo load) must never exceed the maximum weight shown below.

Model	Conditions	Maximum total trailer weight
MT models	When towing a trailer without brakes.	1,000 lbs (453 kg)
	When towing a trailer with brakes.	2,000 lbs (906 kg)
AT models	When towing a trailer without brakes.	1,000 lbs (453 kg)
	When towing a trailer with brakes.	2,000 lbs (906 kg)
	When towing a trailer on a long uphill grade continuously for over 5 miles (8 km) with an outside temperature of 104°F (40°C) or above.	1,000 lbs (453 kg)

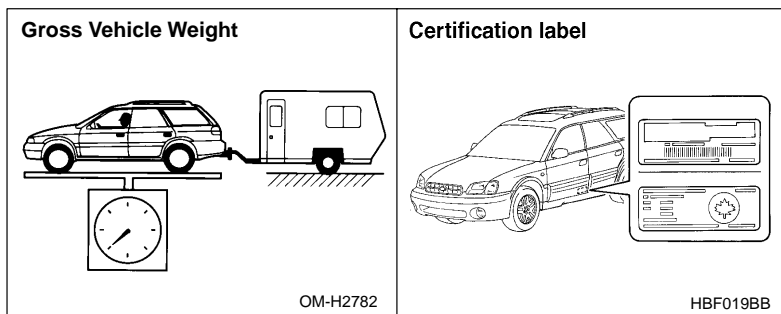


## ▽ Gross Vehicle Weight (GVW) and Gross Vehicle Weight Rating (GVWR)

The Gross Vehicle Weight (GVW) must never exceed the Gross Vehicle Weight Rating (GVWR).

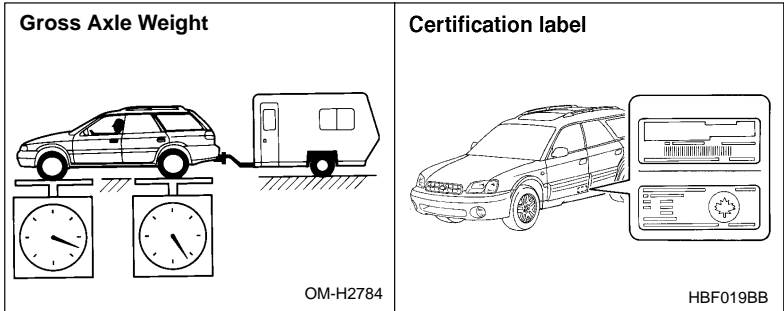
Gross Vehicle Weight (GVW) is the combined total of the weight of the vehicle, driver, passengers, luggage, trailer hitch, trailer tongue load and any other optional equipment installed on your vehicle. Therefore, the GVW changes depending on the situation. Determine the GVW each time before going on a trip by putting your vehicle and trailer on a vehicle scale.

GVWR is shown on the certification label located on the driver's door of your vehicle.



## ▼ Gross Axle Weight (GAW) and Gross Axle Weight Rating (GAWR)

The total weight applied to each axle (GAW) must never exceed the Gross Axle Weight Rating (GAWR). The front and rear GAWs can be adjusted by relocating passengers and luggage inside the vehicle. The front and rear GAWR are also shown on the certification label.



To check both GVWR and GAWR and to confirm that the total weight and weight distribution are within safe driving limits, you should have your vehicle and trailer weighed at a commercial weighing station.

Be sure that all cargo is firmly secured to prevent a change in weight distribution while driving.

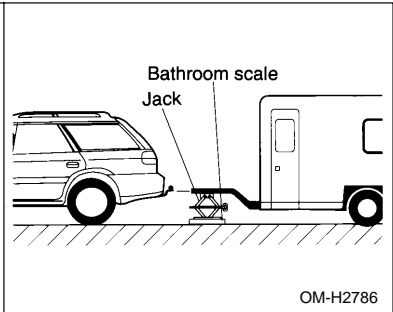
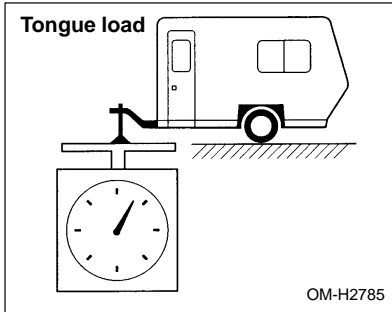
#### ▽ Tongue load

### **WARNING**

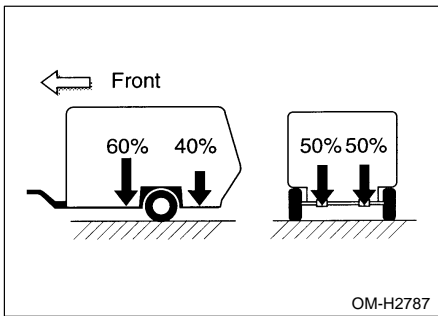
**If the trailer is loaded with more weight in the back of trailer's axle than in the front, the load is taken off the rear axle of the towing vehicle. This may cause the rear wheels to skid, especially during braking or when vehicle speed is reduced during cornering, resulting in over-steer, spin out and/or jackknifing.**

Ensure that the trailer tongue load is from 8 to 11 percent of the total trailer weight and does not exceed the maximum value of 200 lbs (90 kg).

The tongue load can be weighed with a bathroom scale as shown in the illustration below. When weighing the tongue load, be sure to position the towing coupler at the height at which it would be during actual towing, using a jack as shown.



The tongue load can be adjusted by proper distribution of the load in the trailer. Never load the trailer with more weight in the back than in the front; approximately 60 percent of the trailer load should be in the front and approximately 40 percent in the rear. Also, distribute the load as evenly as possible on both the left and right sides. Be sure that all cargo is firmly secured to prevent a change in weight distribution while driving.



▼ Trailer hitches



**WARNING**

Never drill the frame or under-body of your vehicle to install a commercial trailer hitch. If you do, dangerous exhaust gas, water or mud may enter the passenger compartment through the drilled hole. Exhaust gas contains carbon monoxide, a colorless and odorless gas which is dangerous, or even lethal, if inhaled. Also, drilling the frame or under-body of your vehicle could cause deterioration of strength of your vehicle and cause corrosion around the drilled hole.



**CAUTION**

- Do not modify the vehicle exhaust system, brake system, or other systems when installing a hitch or other trailer towing equipment.
- Do not use axle-mounted hitches as they can cause damage to the axle housing, wheel bearings, wheels or tires.

Choose a proper hitch for your vehicle and trailer.

▼ **OUTBACK wagon**

The use of a genuine SUBARU trailer hitch is recommended. A genuine SUBARU hitch is available from your SUBARU dealer.

If use of a non-genuine hitch is unavoidable, be sure the hitch is suited to your vehicle and trailer. Consult with a professional hitch supplier to assist you in choosing an appropriate hitch for your vehicle. Be sure to follow all of the hitch manufacturer's instructions for installation and use.

Never use a hitch that mounts only to the rear bumper. The bumper is not designed to handle that type of load.

For all types of hitches, regularly check that the hitch mounting bolts and nuts are tight.

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### ▼ All vehicles except OUTBACK wagon

SUBARU does not offer accessory trailer hitches. Consult with a professional hitch supplier to assist you in choosing an appropriate hitch for your vehicle. Be sure to follow all of the hitch manufacturer's instructions for installation and use.

Never use a hitch that mounts only to the rear bumper. The bumper is not designed to handle that type of load.

Regularly check that the hitch mounting bolts and nuts are tight.

### ▼ Connecting a trailer

#### ▽ Trailer brakes

#### **WARNING**

- Adequate size trailer brakes are required when the trailer and its cargo exceed 1,000 lbs (453 kg) total weight.
- Do not directly connect your trailer's hydraulic brake system to the hydraulic brake system in your vehicle. Direct connection would cause the vehicle's brake performance to deteriorate and could lead to an accident.

If your trailer's total weight (trailer weight plus its cargo weight) exceeds 1,000 lbs (453 kg), the trailer is required to be equipped with its own brake system. Electric brakes or surge brakes are recommended, and must be installed properly. Check that your trailer's brakes conform with Federal, state/province and/or other applicable regulations. Your SUBARU's brake system is not designed to be tapped into the trailer's hydraulic brake system. Please ask your SUBARU dealer and professional trailer supplier for more information about the trailer's brake system.

#### ▽ Trailer safety chains

#### **WARNING**

**Always use safety chains between your vehicle and the trailer. Towing trailer without safety chains could create a traffic safety hazard if the trailer separates from the hitch due to coupling damage or hitch ball damage.**



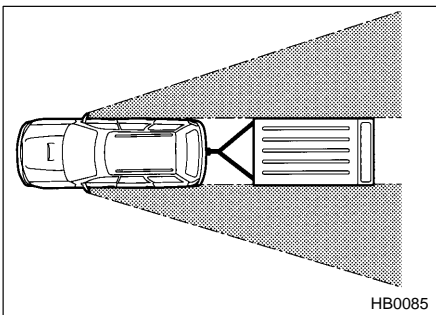
In case the trailer hitch connector or hitch ball should break or become disconnected, the trailer could get loose and create a traffic safety hazard.

For safety, always connect the towing vehicle and trailer with trailer safety chains. Pass the chains crossing each other under the trailer tongue to prevent the trailer from dropping onto the ground in case the trailer tongue should disconnect from the hitch ball. Allow sufficient slack in the chains taking tight-turn situations into account; however, be careful not to let them drag on the ground.

For more information about the safety chain connection, refer to the instructions for your hitch and trailer.

### ▽ Side mirrors

After hitching a trailer to your vehicle, check that the standard side mirrors provide a good rearward field of view without significant blind spots. If significant blind spots occur with the vehicle's standard side mirrors, use towing mirrors that conform with Federal, state/province and/or other applicable regulations.



### ▽ Trailer lights



## **CAUTION**

**Direct splicing or other improper connection of trailer lights may damage your vehicle's electrical system and cause a malfunction of your vehicle's lighting system.**

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Connection of trailer lights to your vehicle's electrical system requires modifications to the vehicle's lighting circuit to increase its capacity and accommodate wiring changes. To ensure the trailer lights are connected properly, please consult your SUBARU dealer. Check for proper operation of the turn signals, the brake lights and parking lights each time you hitch up.

## ▽ Tires



### **WARNING**

**Never tow a trailer when the temporary spare tire is used. The temporary spare tire is not designed to sustain the towing load. Use of the temporary spare tire when towing can result in failure of the spare tire and/or less stability of the vehicle.**

Make sure that all the tires on your vehicle are properly inflated.

**OUTBACK:** The recommended cold tire pressure under trailer towing conditions is indicated on the tire placard located under the door striker on the driver's side. Adjust the rear tire pressure to the recommended pressure shown on the tire placard when the tires are cold. Normal pressure should be maintained in the front tires.

**Other models:** It is recommended to inflate the rear tires to 3 psi (20 kPa, 0.2 kg/cm<sup>2</sup>) above their normal operating pressure when the tires are cold. Normal pressure should be maintained in the front tires.

Trailer tire condition, size, load rating and proper inflation pressure should be in accordance with the trailer manufacturer's specifications.

In the event your vehicle gets a flat tire when towing a trailer, ask a commercial road service to repair the flat tire.

If you carry a regular size spare tire in your vehicle or trailer as a precaution against getting a flat tire, be sure that the spare tire is firmly secured.

▼ Trailer towing tips



**CAUTION**

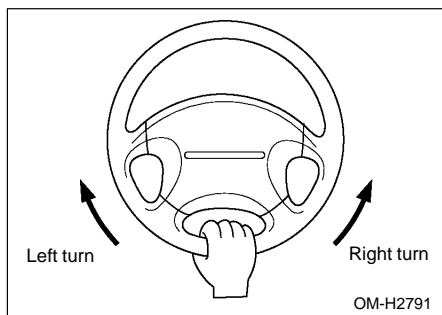
- **Never exceed 45 mph (72 km/h) when towing a trailer in hilly country on hot days.**
- **When towing a trailer, steering, stability, stopping distance and braking performance will be different from normal operation. For safety's sake, you should employ extra caution when towing a trailer and you should never speed. You should also keep the following tips in mind:**

▽ **Before starting out on a trip**

- Check that the vehicle and vehicle-to-hitch mounting are in good condition. If any problems are apparent, do not tow the trailer.
- Check that the vehicle sits horizontally with the trailer attached. If the vehicle is tipped sharply up at the front and down at the rear, check the total trailer weight, GVW, GAWs and tongue load again, then confirm that the load and its distribution are acceptable.
- Check that the tire pressures are correct.
- Check that the vehicle and trailer are connected properly. Confirm that.
  - the trailer tongue is connected properly to the hitch ball.
  - the trailer lights connector is connected properly and trailer's brake lights illuminate when the vehicle's brake pedal is pressed, and that the trailer's turn signal lights flash when the vehicle's turn signal lever is operated.
  - the safety chains are connected properly.
  - all cargo in the trailer is secured safely in position.
  - the side mirrors provide a good rearward field of view without a significant blind spot.
- Sufficient time should be taken to learn the "feel" of the vehicle/trailer combination before starting out on a trip. In an area free of traffic, practice turning, stopping and backing up.

### ▽ Driving with a trailer

- You should allow for considerably more stopping distance when towing a trailer. Avoid sudden braking because it may result in skidding or jackknifing and loss of control.
- Avoid abrupt starts and sudden accelerations. If your vehicle has a manual transmission, always start out in first gear and release the clutch at moderate engine revolution.
- Avoid uneven steering, sharp turns and rapid lane changes.
- Slow down before turning. Make a longer than normal turning radius because the trailer wheels will be closer than the vehicle wheels to the inside of the turn. In a tight turn, the trailer could hit your vehicle.
- Crosswinds will adversely affect the handling of your vehicle and trailer, causing sway. Crosswinds can be due to weather conditions or the passing of large trucks or buses. If swaying occurs, firmly grip the steering wheel and slow down immediately but gradually.
- When passing other vehicles, considerable distance is required because of the added weight and length caused by attaching the trailer to your vehicle.
- Backing up with a trailer is difficult and takes practice. When backing up with a trailer, never accelerate or steer rapidly. When turning back, grip the bottom of the steering wheel with one hand and turn it to the left for a left turn, and turn it to the right for a right turn.



- If the ABS warning light illuminates while the vehicle is in motion, stop towing the trailer and have repairs performed immediately by the

nearest SUBARU dealer.

### ▽ **Driving on grades**

- Before going down a steep hill, slow down and shift into lower gear (if necessary, use 1st gear) in order to utilize the engine braking effect and prevent overheating of your vehicle's brakes. Do not make sudden downshifts.
- When driving uphill in hot weather, the air conditioner may turn off automatically to protect the engine from overheating.
- When driving uphill in hot weather, pay attention to the water temperature gauge pointer (for all vehicles) and AT OIL TEMP warning light (for AT vehicles) since the engine and transmission are relatively prone to overheating under these conditions. If the water temperature gauge pointer approaches the OVERHEAT zone or the AT OIL TEMP warning light illuminates, immediately switch off the air conditioner and stop the vehicle at the nearest safe place. Refer to the "Engine overheat" section in chapter 9, and "Warning and indicator lights" section in chapter 3.
- If your vehicle has a automatic transmission, avoid using the accelerator pedal to stay stationary on an uphill slope instead of using the parking brake or foot brake. That may cause the transmission fluid to overheat. Also, if your vehicle is equipped with an automatic transmission, avoid driving with the gear selector lever in "D" when towing a heavy trailer to prevent fluid overheating.

### ▽ **Parking on a grade**

Always block the wheels under both vehicle and trailer when parking. Apply the parking brake firmly. You should not park on a hill or slope. But if parking on a hill or slope cannot be avoided, you should take the following steps:

1. Apply the brakes and hold the pedal down.
2. Have someone place wheel blocks under both the vehicle and trailer wheels.
3. When the wheel blocks are in place, release the regular brakes slowly until the blocks absorb the load.
4. Apply the regular brakes and then apply the parking brake; slowly release the regular brakes.

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5. Shift into 1st or reverse gear (manual transmission) or "P" (automatic transmission) and shut off the engine.