

Driving your vehicle

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Driving your vehicle

Be sure the exhaust system does not leak.

The exhaust system should be checked whenever the vehicle is raised to change the oil or for any other purpose.

If you hear a change in the sound of the exhaust or if you drive over something that strikes the underneath side of the vehicle, have the exhaust system checked as soon as possible by an authorized Kia dealer.

3. Set the air intake control at "Fresh", the air flow control at "Floor" or "Face" and the fan at the highest speed.

WARNING



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Engine exhaust

Do not inhale exhaust fumes or leave your engine running in a enclosed area for a prolonged time. Exhaust fumes contain carbon monoxide, a colorless, odorless gas that can cause unconsciousness and death by asphyxiation.

WARNING



Open liftgate

Do not drive with the liftgate open. Poisonous exhaust gases can enter the passenger compartment. If you must drive with the liftgate open proceed as follows:

1. Close all windows.
2. Open side vents.

Before driving

Before getting into the vehicle, you should examine the car and its surroundings. After getting into the vehicle, you should check a number of things before driving.

Before entering vehicle

- Be sure that all windows, outside mirror(s), and outside lights are clean.
- Check the condition of the tires.
- Check under the vehicle for any sign of leaks.
- Be sure there are no obstacles behind you if you intend to back up.

Necessary inspections

Fluid levels, such as engine oil, engine coolant, brake fluid, and washer fluid should be checked on a regular basis, at the exact interval depending on the fluid. Further details are provided in chapter 7, "Maintenance".

⚠ WARNING

Distracted driving

Focus on the road while driving. The driver's primary responsibility is in the safe and legal operation of the vehicle. Any use of handled devices, other equipment or vehicle systems

that distract the driver should not be used during vehicle operation.

Before starting

- Close and lock all doors.
- Position the seat so that all controls are easily reached.
- Buckle your seat belt.
- Adjust the inside and outside rearview mirrors.
- Be sure that all lights work.
- Check all gauges.
- Check the operation of warning lights when the ENGINE START/STOP button is turned to the ON position.
- Release the parking brake and make sure the brake warning light is not on.

For safe operation, be sure you are familiar with your vehicle and its equipment.

⚠ WARNING

Fire risk

When you intend to park or stop the vehicle with the engine on, be careful not to depress the accelerator pedal for a long period of time. It may overheat the engine or exhaust system and cause fire.

⚠ WARNING

Check surroundings

Always check the surrounding areas near your vehicle for people, especially children, before putting a vehicle into D (Drive) or R (Reverse).

boots, sandals, etc.) may interfere with your ability to use the brake and accelerator pedals.

⚠ WARNING

Loose objects

Securely store items in your vehicle. When you make a sudden stop or turn the steering wheel rapidly, loose objects may drop on the floor and it could interfere with the operation of the foot pedals, possibly causing an accident.

5

⚠ WARNING

Driving while intoxicated

Do not drive while intoxicated. Drinking and driving is dangerous. Even a small amount of alcohol will affect your reflexes, perceptions and judgment.

Driving while under the influence of drugs is as dangerous as or more dangerous than driving drunk.

⚠ WARNING

Proper footwear

Always wear appropriate shoes when operating your vehicle. Unsuitable shoes (high heels, ski

ENGINE START/STOP button

Illuminated ENGINE START/STOP button



OON058002NR

The light will go off after about 30 seconds when the door is closed. It will also go off immediately when the theft-alarm system is armed.

ENGINE START/STOP button position

Your vehicle is equipped with four different ignition positions.

OFF

To turn off the engine (START/RUN position) or vehicle power (ON position), press the ENGINE START/STOP button with the shift lever in the P (Park) position. When you press the ENGINE START/STOP button without the shift lever in the P (Park) position, the ENGINE START/STOP button will not change to the OFF position but to the ACC position.

* NOTICE

You are able to turn off the engine (START/RUN) or vehicle power (ON), only when the vehicle is not in motion.

⚠ CAUTION

In an emergency situation while the vehicle is in motion, you are able to turn the engine off and to the ACC position by pressing the ENGINE START/STOP button for more than 2 seconds or 3 times repeatedly within 3 seconds.

If the vehicle is still moving, to restart the vehicle:

- Press the ENGINE START/STOP button when vehicle speed is 3 mph (5 km/h) or over.

ACC (Accessory)



OON058071NR

Press the ENGINE START/STOP button while it is in the OFF position without engaging the brake pedal.

Some electrical accessories are operational.

If the ENGINE START/STOP button is in the ACC position for more than 1 hour, the button is turned off automatically to prevent battery discharge.

ON

Press the ENGINE START/STOP button while it is in the ACC position without depressing the brake pedal.

The warning lights can be checked before the engine is started. Do not leave the ENGINE START/STOP button in the ON position for a long time. The battery may discharge, because the engine is not running.

START/RUN

To start the engine, press the brake pedal and push the ENGINE START/STOP button with the shift lever in the P (Park) or the N (Neutral) position. For your safety, start the engine with the shift lever in the P (Park) position.

* NOTICE

If you press the ENGINE START/STOP button without pressing the brake pedal, the engine will not start and the ENGINE START/STOP button changes as follow:

OFF → ACC → ON → OFF or ACC

⚠ WARNING

- Never press the ENGINE START/STOP button while the vehicle is in motion. This would result in loss of directional control and braking function, which could cause an accident.
- Before leaving the driver's seat, always make sure the shift lever is engaged in P (Park), set the parking brake fully and shut the engine off. Unexpected and sudden vehicle movement may occur if these precautions are not taken.
- Never reach for the ENGINE START/STOP button or any other controls through the steering wheel while the vehicle is in motion. The presence of your hand or arm in the area could cause loss of vehicle control, an accident and serious bodily injury or death.
- Do not place any movable objects around the driver's seat as they may move while driving, interfere

with the driver and lead to an accident.

Starting the engine

⚠ WARNING

- Do not start the vehicle with the accelerator pedal engaged. The vehicle can move and lead to an accident.
- Wait until the engine rpm is normal. The vehicle may suddenly move if the brake pedal is released when the rpm is high.

Starting the engine

1. Make sure the smart key is located inside the vehicle and close the driver seat. The vehicle may not start if it is not located near the driver seat.
2. Make sure the parking brake is applied.
3. Make sure the shift lever in P (Park).
 - Press the brake pedal fully. You can also start the engine when the shift lever is in the N (Neutral) position.
4. Press the ENGINE START/STOP button.
Make sure that the accelerator pedal is not pressed.
5. Do not wait for the engine to warm up while the vehicle remains stationary. Start driving at moderate engine speeds.

(Steep accelerating and decelerating should be avoided.)

Starting the engine with smart key

At the time that the vehicle doors are opened or when the ENGINE START/STOP button is pressed the vehicle will check for the smart key.

If the smart key is not in the vehicle, the "  " indicator and a message "Key is not in the vehicle" will appear on the instrument cluster and LCD window. And if all doors are closed, the chime will sound for 5 seconds. The indicator or warning will turn off while the vehicle is moving.

Always have the smart key with you.

⚠ WARNING

The engine will start, only when the smart key is in the vehicle. Never allow children or any person who is unfamiliar with the vehicle touch the ENGINE START/STOP button or related parts. Pushing the ENGINE START/STOP button while the smart key is in the vehicle may result in unintended engine activation and/or unintended vehicle movement.

⚠ CAUTION

If the engine stalls while the vehicle is in motion, do not attempt to move the shift lever to the P (Park)

position. If the traffic and road conditions permit, you may put the shift lever in the N (Neutral) position while the vehicle is still moving and press the ENGINE START/STOP button in an attempt to restart the engine.



* NOTICE

- If the battery is weak or the smart key does not work correctly, you can start the engine by pressing the ENGINE START/STOP button with the smart key.
When you press the ENGINE START/STOP button directly with the smart key, the smart key should contact the button at a right angle.
- When the stop lamp fuse is blown, you cannot start the engine normally.
Replace the fuse with a new one. If it is not possible, you can start the engine by pressing the ENGINE START/STOP button for

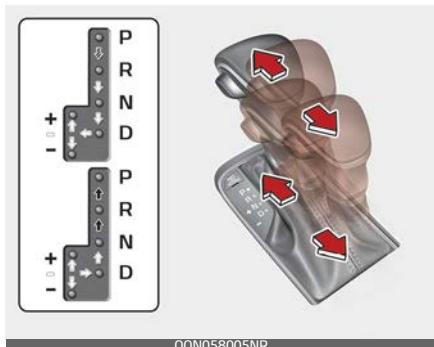
10 seconds while it is in the ACC position. The engine can start without pressing the brake pedal. But for your safety always press the brake pedal before starting the engine.

⚠ CAUTION

Do not press the ENGINE START/STOP button for more than 10 seconds except when the stop lamp fuse is blown.

Automatic transmission

The automatic transmission has 8 forward speeds and one reverse speed.



▶ Press the brake pedal and the lock release button when shifting.

▶ Press the lock release button when shifting.

▶ The shift lever can be shifted freely.

The individual speeds are selected automatically, depending on the position of the shift lever.

* NOTICE

The first few shifts on a new vehicle, if the battery has been disconnected, may be somewhat abrupt. This is a normal condition, and the shifting sequence will adjust after shifts are cycled a few times by the TCM (Transmission Control Module) or PCM (Powertrain Control Module).

For smooth operation, press the brake pedal when shifting from N (Neutral) to a forward or reverse gear.

⚠ WARNING

Automatic transmission

- Always check the surrounding areas near your vehicle for people, especially children, before shifting a vehicle into D (Drive) or R (Reverse).
- Before leaving the driver's seat, always make sure the shift lever is in the P (Park) position; then set the parking brake fully and shut the engine off. Unexpected and sudden vehicle movement can occur if these precautions are not followed in the order identified.
- Do not use the engine brake (shifting from a high gear to lower gear) rapidly on slippery roads. The vehicle may slip causing an accident.

⚠ CAUTION

- To avoid damage to your transmission, do not accelerate the engine in R (Reverse) or any forward gear position with the brakes on.
- When stopped on an incline, do not hold the vehicle stationary with engine power. Use the service brake or the parking brake.

- Do not shift from N (Neutral) or P (Park) into D (Drive), or R (Reverse) when the engine is above idle speed.

⚠ CAUTION //

The transmission may be damaged if you shift into P (Park) while the vehicle is in motion.

Transmission ranges

The indicator in the instrument cluster displays the shift lever position when the ENGINE START/STOP button is in the ON position.

P (Park)

Always come to a complete stop before shifting into P (Park). This position locks the transmission and prevents the front wheels from rotating.

⚠ WARNING //

- Shifting into P (Park) while the vehicle is in motion will cause the drive wheels to lock which will cause you to lose control of the vehicle and possibly damage the transmission.
- Do not use the P (Park) position in place of the parking brake. Always make sure the shift lever is latched in the P (Park) position and set the parking brake fully.
- Never leave a child unattended in a vehicle.

R (Reverse)

Use this position to drive the vehicle backward.

⚠ CAUTION //

Always come to a complete stop before shifting into or out of R (Reverse); you may damage the transmission if you shift into R while the vehicle is in motion, except as explained in "Rocking the vehicle" in this section.

N (Neutral)

When in Neutral, wheels and transmission are not engaged. The vehicle will roll freely even on the slightest incline unless the parking brake or service brakes are applied.

⚠ WARNING //

Do not drive with the shift lever in N (Neutral). The engine brake will not work and could lead to an accident.

⚠ CAUTION

Always park the vehicle in "P" (Park) for safety and engage the parking brake.

D (Drive)

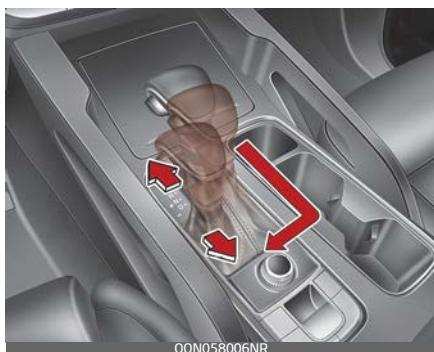
This is the normal forward driving position. The transmission will automatically shift through a 8-gear sequence, providing the best fuel economy and power.

* NOTICE

Always come to a complete stop before shifting into D (Drive).

Manual mode

Whether the vehicle is stationary or in motion, Manual mode is selected by pushing the shift lever from the D (Drive) position into the manual gate. To return to D (Drive) range operation, push the shift lever back into the main gate.



In Manual mode, moving the shift lever backwards or forwards will allow you to make gearshifts rapidly. In contrast to a manual transmission, the Manual mode allows gearshifts with the accelerator pedal depressed.

- Up (+): Push the lever forward once to shift up one gear.
- Down (-): Pull the lever backwards once to shift down one gear.

* NOTICE

- In Manual mode, the driver must execute upshifts in accordance with road conditions, being careful to keep the engine speed below the red zone.
- In Manual mode, only the 8 forward gears can be selected. To reverse or park the vehicle, move the shift lever to the R (Reverse) or P (Park) position as required.
- In Manual mode, downshifts are made automatically when the vehicle slows down. When the vehicle stops, 1st gear is automatically selected.
- In Manual mode, when the engine rpm approaches the red zone, shift points are varied to upshift automatically.
- To maintain the required levels of vehicle performance and safety, the system may not execute certain gearshifts when the shift lever is operated.

- When driving on a slippery road, push the shift lever forward into the + (up) position. This causes the transmission to shift into the 2nd gear which is better for smooth driving on a slippery road. Push the shift lever to the - (down) side to shift back to the 1st gear.
- When Manual mode is activated:
 - The engine rpm will tend to remain raised over a certain length of time even after releasing the accelerator.
 - Upshifts are delayed when accelerating.
- In Manual mode, the fuel efficiency may decrease.

Shift lock system

For your safety, the Automatic transmission has a shift lock system which prevents shifting the transmission from P (Park) into R (Reverse) unless the brake pedal is engaged.

Shifting the transmission from P (Park) into R (Reverse)

To shift the transmission from P (Park) into R (Reverse):

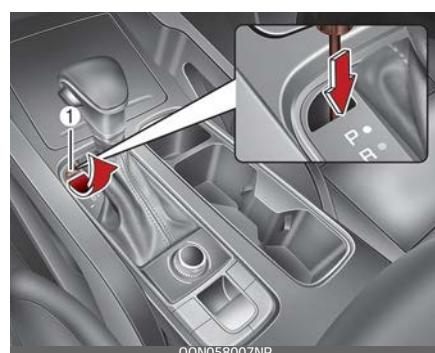
- Press and hold the brake pedal.
- Start the engine or place the ENGINE START/STOP button in the ON position.
- Move the shift lever.

If the brake pedal is repeatedly engaged and released with the shift lever in the P (Park) position, a chattering noise near the shift lever may be heard. This is a normal condition.

WARNING

Always fully depress the brake pedal before and while shifting out of the P (Park) position into another position to avoid inadvertent motion of the vehicle which could injure persons in or around the vehicle.

Overriding the shift lock



If the shift lever cannot be moved from the P (Park) position into R (Reverse) position with the brake pedal engaged, continue engaging the brake, then do the following:

- Place the ENGINE START/STOP button in the OFF position.
- Apply the parking brake.
- Carefully remove the cap covering the shift-lock release access hole.

4. Insert a tool (e.g., flathead screwdriver) into the access hole and press down on the tool.
5. Move the shift lever.
6. Remove the tool from the shift-lock override access hole then install the cap.

If the shift lever does not move even after performing this procedure, have your vehicle inspected by an authorized Kia dealer immediately.

ENGINE START/STOP button inter-lock system

The ENGINE START/STOP button will not change to the OFF position unless the shift lever is in the P (Park) position.

Good driving practices

- Never move the shift lever from P (Park) or N (Neutral) to any other position with the accelerator pedal engaged.
- Never move the shift lever into P (Park) when the vehicle is in motion.
- Be sure the vehicle is completely stopped before you attempt to shift into R (Reverse) or D (Drive).
- Never take the vehicle out of gear and coast down a hill. This may be extremely hazardous. Always leave the vehicle in gear when moving.
- Do not "ride" the brakes. This can cause them to overheat and mal-

function. Instead, when you are driving down a long hill, slow down and shift to a lower gear. When you do this, engine braking will help slow down the vehicle.

- Slow down before shifting to a lower gear. Otherwise, the lower gear may not be engaged.
- Always use the parking brake. Do not depend on placing the transmission in P (Park) to keep the vehicle from moving.

WARNING

Exercise extreme caution when driving on a slippery surface. Be especially careful when braking, accelerating or shifting gears. On a slippery surface, an abrupt change in vehicle speed can cause the drive wheels to lose traction and the vehicle to go out of control.

- Optimum vehicle performance and economy is obtained by smoothly pressing and releasing the accelerator pedal.

WARNING

- When driving uphill or downhill, always shift to D (Drive) for driving forward or shift to R (Reverse) for driving backwards, and check the gear position indicated on the cluster before driving.

Driving in the opposite direction of the selected gear can lead to a

dangerous situation by shutting off the engine and affecting the braking performance.

- Always buckle-up! In a collision, an unbelted occupant is significantly more likely to be seriously injured or killed than a properly belted occupant.
- Avoid high speeds when cornering or turning.
- Do not make quick steering wheel movements, such as sharp lane changes or fast, sharp turns.
- The risk of a rollover is greatly increased if you lose control of your vehicle at highway speeds.
- Losing control often occurs if two or more wheels drop off the roadway and the driver oversteers to reenter the roadway.
- In the event your vehicle leaves the roadway, do not steer sharply. Instead, slow down before pulling back into the travel lanes.
- Never exceed posted speed limits.

unstuck, causing injury or damage to nearby people or objects.

Moving up a steep grade from a standing start

To move up a steep grade from a standing start:

1. Press the brake pedal, release the parking break, and shift the shift lever to D (Drive).
2. Select the appropriate gear depending on load weight and steepness of the grade, and release the parking brake.
3. Press the accelerator gradually while releasing the service brakes.

When accelerating from a stop on a steep hill, the vehicle may have a tendency to roll backwards.

5

WARNING

When you start driving after the car was stopped on a hill, even though the shift lever is in D (Driving) position, if you do not step on the accelerator pedal or brake pedal, the car may roll backward, resulting in a fatal accident.

Always come to a complete stop before shifting into D (Drive).

WARNING

If your vehicle becomes stuck in snow, mud, sand, etc., then you may attempt to rock the vehicle free by moving it forward and backward. Do not attempt this procedure if people or objects are anywhere near the vehicle. During the rocking operation the vehicle may suddenly move forward or backward as it becomes

All Wheel Drive (AWD) system (if equipped)

The All Wheel Drive (AWD) system delivers engine power to front and rear wheels for maximum traction.

AWD is useful when extra traction is required, such as when driving slippery, muddy, wet, or snow-covered roads.

If the system determines there is a need for four wheel drive, the engine's driving power will be distributed to all four wheels automatically.

- Do not make quick steering wheel movements, such as sharp lane changes or fast, sharp turns.
- The risk of a rollover is greatly increased if you lose control of your vehicle at highway speeds.
- Loss of control often occurs if two or more wheels drop off the roadway and the driver over steers to reenter the roadway.
- In the event your vehicle leaves the roadway, do not steer sharply. Instead, slow down before pulling back into the travel lanes.

⚠ WARNING

If the AWD warning light (✉) stays on the instrument cluster, your vehicle may have a malfunction with the AWD system. When the AWD warning light (✉) illuminates, have your vehicle checked by an authorized Kia dealer as soon as possible.

AWD (AWD/SNOW MODE)

AWD helps the vehicle's performance by controlling 4 wheels.

Switching from/to SNOW MODE



You can switch from DRIVE MODE to SNOW mode by turning the knob.

⚠ WARNING

To reduce the risk of SERIOUS INJURY or DEATH:

- Do not drive in conditions that exceed the vehicle's intended design such as challenging off-road conditions.
- Avoid high speeds when cornering or turning.

*** NOTICE**

Even if you turn off the vehicle in SNOW mode, DRIVE mode will be set when you restart the vehicle.

AWD transfer mode selection

Transfer mode	Selection mode	Description
AWD AUTO	-	<ul style="list-style-type: none">• AWD AUTO is used when driving on roads in normal conditions, roads in urban areas, and on highways.• All wheels are in operation when a vehicle travels at a constant speed. Required tractions are applied on front and rear wheels vary depending on road and driving conditions, which will be automatically controlled by the computing system.• When the cluster's AWD display mode is selected, the cluster displays the status of how four wheels' traction forces are distributed.
SNOW		 SNOW

Transfer mode	Selection mode	Description
AWD LOCK	 LOCK (Indicator light is illuminated)	<ul style="list-style-type: none"> The main goal of AWD Lock mode is to allow a driver to maximize the vehicle's traction under extreme driving conditions such as unpaved off-road, sandy roads, and muddy roads. AWD Lock mode is in operation only when a vehicle travels at 25 mph (40 km/h) or less. When travelling at 25 mph (40 km/h) or faster, the mode will switch to AWD Auto. When travelling at 20 mph (30 km/h) or less, the mode will switch back to AWD Lock. Press the AWD Lock mode switch again to switch back to AWD Auto.

When the AWD LOCK mode is deactivated, a shock may be felt as the drive power is delivered entirely to the front wheels. This shock is not a mechanical failure.

* NOTICE

Normal road conditions

- Maintain AWD Auto mode when driving on roads in normal conditions.
- When driving under normal road conditions (especially when cornering) in AWD Lock mode, a driver may find minor mechanical vibration or noise, which is extremely normal phenomenon, not a malfunction. When AWD Lock mode is released, such noise or vibration will be immediately gone.

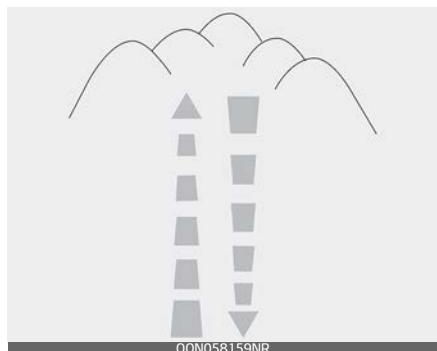
For safe All Wheel Drive (AWD) operation

⚠ WARNING

All Wheel Drive

The conditions of on-road or off-road that demand All Wheel Drive mean all functions of your vehicle are exposed to extreme stress than under normal road conditions. Slow down and be ready for changes in the composition and traction of the surface under your tires. If you have any doubt about the safety of the conditions you are facing, stop and consider the best way to proceed.

- Do not try to drive in deep standing water or mud since such conditions can stall your engine and clog your exhaust pipes. Do not drive down steep hills since it requires extreme skill to maintain control of the vehicle.



- When you are driving up or down hills drive as straight as possible. Use extreme caution in going up or down steep hills, since you may flip your vehicle over depending on the grade, terrain and water/mud conditions.



⚠ WARNING

Hills

Driving across the contour of steep hills can be extremely dangerous. This danger can come from slight changes in the wheel angle which can destabilize the vehicle or, even if the vehicle is maintaining stability under power, it can lose that stability if the vehicle stops its forward motion. Your vehicle may roll over without warning and without time for you to correct a mistake that could cause serious injury or death.

- You must learn how to corner in a AWD vehicle. Do not rely on your experience in conventional FWD vehicles when cornering the vehicle in AWD mode. For starters, you must drive slower in AWD.

⚠ WARNING

All Wheel Drive (AWD)

Reduce speed when you turn corners. The center of gravity of AWD vehicles is higher than that of conventional FWD vehicles, making them more likely to roll over when you turn corners too fast.



⚠ WARNING

Steering wheel

Do not grab the inside of the steering wheel when you are driving on unpaved roads. You may hurt your arm by a sudden steering maneuver or from steering wheel rebound due to impact with objects on the ground. You could lose control of the steering wheel.

- Always hold the steering wheel firmly when you are driving on unpaved roads.
- Make sure all passengers are wearing seat belts.

⚠ WARNING

Wind danger

If you are driving in heavy wind, the vehicle's higher center of gravity decreases your steering control capacity and requires you to drive more slowly.

- If you need to drive in the water, stop your vehicle, set your transfer to the AWD LOCK mode and drive at less than 5 mph (8 km/h).

⚠ WARNING

Driving through water

Drive slowly. If you are driving too fast in water, the water can get into the engine compartment and wet the ignition system, causing your vehicle to suddenly stop. If this happens and your vehicle is in a tilted position, your vehicle may roll over.

* NOTICE

- Do not drive in water if the level is higher than the bottom of the vehicle.
- Check your brake condition once you are out of mud or water. Press the brake pedal several times as you move slowly until you feel normal braking forces return.
- Shorten your scheduled maintenance interval if you drive in offroad conditions such as sand, mud or water (refer to "Maintenance Under Severe Usage Conditions - Non Turbo Models" on page 7-14). Always wash your vehicle thoroughly after off-road use, especially cleaning the bottom of the vehicle.

- Since the driving torque is always applied to the 4 wheels the performance of the AWD vehicle is greatly affected by the condition of the tires. Be sure to equip the vehicle with four tires of the same size and type.
- A full time All Wheel Drive vehicle cannot be towed by an ordinary tow truck. Make sure that the vehicle is placed on a flat bed truck for moving.

⚠ WARNING

All Wheel Drive (AWD) driving

- Avoid high cornering speed.
- Do not make quick steering wheel movements, such as sharp lane changes or fast, sharp turns.
- The risk of rollover is greatly increased if you lose control of your vehicle at high speed.
- In a collision, an unbelted person is significantly more likely to die compared to a person wearing a seat belt.
- Loss of control often occurs if two or more wheels drop off the roadway and the driver over-steers to re-enter the roadway. In the event your vehicle leaves the roadway, do not steer sharply. Instead, slow down before pulling back into the travel lanes.

⚠ CAUTION

Mud or snow

If one of the front or rear wheels begins to spin in mud, snow, etc. the vehicle can sometimes be driven out by engaging the accelerator pedal further; however avoid running the engine continuously at high rpm because doing so could damage the AWD system.

5

Driving in sand or mud

- Maintain slow and constant speed. Operate the accelerator pedal slowly to ensure safe driving (wheel-slip prevention).
- Use tire chains driving in mud if necessary.
- Keep sufficient distance between your vehicle and the vehicle in front of you.
- Reduce vehicle speed and always check the road condition.
- Avoid speeding, rapid acceleration, sudden brake applications, and sharp turns to prevent getting stuck.
- When the vehicle is stuck in snow, sand or mud, the tires may not operate.
- This is to protect the transmission and not a malfunction.

* NOTICE

Moving the car forcibly to get out of mud or sand can cause damage/overheat of the engine or damage/breakdown of the transaxle, differential or 4WD system as well as damage to tires. If excessive wheel slip occurs after entering a sandy/muddy road, the vehicle may fall into the sand/mud. When it happens, put a stone or a tree branch under the tire, and then try to pull out the car, or try to get it unstuck by repeatedly moving forwards and backwards.

⚠ WARNING

Your vehicle is equipped with tires designed to provide safe ride and handling capability. Do not use tires and wheels that are different in size and type from the originally installed ones. It can affect the safety and performance of your vehicle, which could lead to steering failure or rollover and serious injury. When replacing the tires, be sure to equip all four tires with the tire and wheel of the same size, type, tread, brand and load-carrying capacity.

⚠ WARNING

Jacked vehicle

While the full-time AWD vehicle is being raised on a jack, never start the engine or cause the tires to rotate.

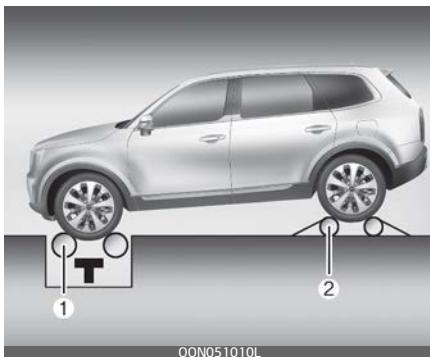
There is the danger that rotating tires touching the ground could cause the vehicle to go off the jack and to jump forward.

- Full-time AWD vehicles must be tested on a special four wheel chassis dynamometer.

* NOTICE

Never engage the parking brake while performing these tests.

- A full-time AWD vehicle should not be tested on a FWD roll tester. If a FWD roll tester must be used, perform the following:



1. Check the tire pressures recommended for your vehicle.

2. Place the front wheels on the roll tester (1) for a speedometer test as shown in the illustration.
3. Release the parking brake.
4. Place the rear wheels on the temporary free roller (2) as shown in the illustration.

WARNING

Dynamometer testing

Keep away from the front of the vehicle while the vehicle is in gear on the dynamometer. This is very dangerous as the vehicle can jump forward and cause serious injury or death.

CAUTION

- When lifting up the vehicle, do not operate front and rear wheel separately. All four wheels should be operated.
- If you need to operate the front wheel and rear wheel when lifting up the vehicle, you should release the parking brake.

Brake system

Your vehicle has power-assisted brakes, parking brake, and various braking systems for safe driving.

Power brakes

Your vehicle has power-assisted brakes that adjust automatically through normal usage.

In the event that the power-assisted brakes lose power because of a stalled engine or some other reason, you can still stop your vehicle by applying greater force to the brake pedal than you normally would. The stopping distance, however, will be longer.

When the engine is not running, the reserve brake power is partially depleted each time the brake pedal is applied. Do not pump the brake pedal when the power assist has been interrupted.

Pump the brake pedal only when necessary to maintain steering control on slippery surfaces.

NOTICE

- When stepping on the brake pedal under a certain driving or weather condition you may witness your car make a sound of squealing or some other noises. This is not a brake malfunction but a normal phenomenon.

- When driving on the road to which deicing chemicals are applied, the vehicle may witness noises from the brake or abnormal abrasion of tires because of such deicing chemicals. You should operate brake additionally so that you would be able to remove the deicing chemicals on the brake disk and pad under a safe traffic condition.

CAUTION

Brake Pedal

Do not drive with your foot resting on the brake pedal. This will create abnormally high brake temperatures which can cause excessive brake lining and pad wear.

WARNING

Steep hill braking

Avoid continuous application of the brakes when descending a long or steep hill by shifting to a lower gear. Continuous brake application will cause the brakes to overheat and could result in a temporary loss of braking performance.

Wet brakes may impair the vehicle's ability to safely slow down; the vehicle may also pull to one side when the brakes are applied. Applying the brakes lightly will indicate

whether they have been affected in this way. Always test your brakes in this fashion after driving through deep water. To dry the brakes, apply them lightly while maintaining a safe forward speed until brake performance returns to normal.

In the event of brake failure

If service brakes fail to operate while the vehicle is in motion, you can make an emergency stop with the parking brake. The stopping distance, however, will be much greater than normal.

WARNING

Parking brake

Avoid applying the parking brake to stop the vehicle while it is moving except in an emergency situation. Applying the parking brake while the vehicle is moving at normal speeds can cause a sudden loss of control of the vehicle. If you must use the parking brake to stop the vehicle, use great caution in applying the brake.

Brake Over Accelerator

In the event the accelerator pedal becomes stuck or entrapped, apply steady and firm pressure to the brake pedal to slow the vehicle and reduce engine power.

If you experience this condition, take the following steps:

1. Apply the brakes and bring your vehicle to a safe stop.
2. Move the transmission to P (Park), switch the engine off and apply the parking brake.
3. Inspect the accelerator pedal for any interference.

If none are found and the condition persists, have your vehicle towed to an authorized Kia dealer and inspected.

Disc brakes wear indicator

When your brake pads are worn and new pads are required, you will hear a high-pitched warning sound from your front brakes or rear brakes. You may hear this sound come and go or it may occur whenever you press the brake pedal.

CAUTION

Replace brake pads

Do not continue to drive with worn brake pads. Continuing to drive with worn brake pads can damage the braking system and result in costly brake repairs.

WARNING

Brake wear

Do not ignore high pitched wear sounds from your brakes. If you

ignore this audible warning, you will eventually lose braking performance, which could lead to a serious accident.

*** NOTICE**

Brake dust may accumulate on the wheels, even under normal driving conditions. Some dust is inevitable as the brakes wear and does contribute to brake noise.



5

Check the brake warning light by turning the ENGINE START/STOP button ON (do not start the engine). This light will be illuminated when the parking brake is applied with the ENGINE START/STOP button in the START or ON position.

Before driving, be sure the parking brake is fully released and the brake warning light is off.

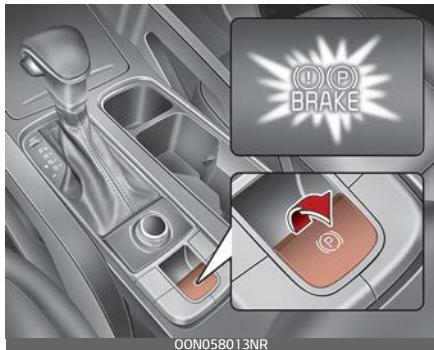
If the brake warning light remains on after the parking brake is released while engine is running, there may be a malfunction in the brake system. Immediate attention is necessary.

If at all possible, cease driving the vehicle immediately. If that is not possible, use extreme caution while

operating the vehicle and only continue to drive the vehicle until you can reach a safe location or repair shop.

Electronic Parking Brake (EPB)

Applying the parking brake



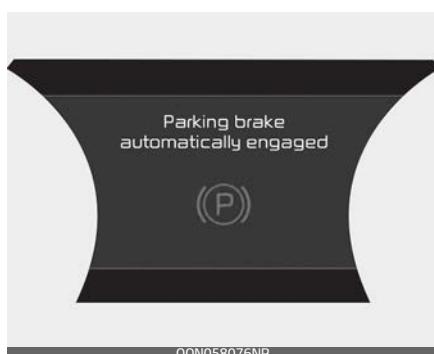
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To apply the EPB (electronic parking brake) manually:

1. Stop the vehicle.
2. Depress the brake pedal and pull up the EPB switch. Make sure the warning light comes on.

EPB may be automatically applied when:

- Requested by other systems.
- If the driver applies the EPB while the engine is ON then turn the engine off, the EPB may be applied again automatically.



- If the driver turns the engine off by mistake while Auto Hold is operating, EPB will be automatically applied. But if the driver turns the engine off and push the EPB switch in 1 second, the EPB does not apply.

Emergency Braking

- If there is a problem with the brake pedal while driving, emergency braking is possible by pulling up and holding the EPB switch. Braking is possible only while you are holding the EPB switch. If you hand off the EPB switch, the braking force is lost. If you hold the EPB switch and the vehicle stop, the EPB is applied.
- During emergency braking by the EPB, the parking brake warning light will illuminate and the warning sounds will occur to indicate that the system is operating.

- The braking distance may be longer than under normal braking conditions.
- * EPB stands for Electronic Parking Brake.

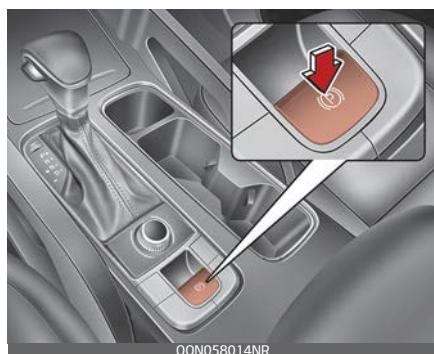
⚠ WARNING

Do not operate the parking brake while the vehicle is moving except in an emergency situation. It could damage the vehicle system and endanger driving safety.

⚠ CAUTION

If you continuously notice a noise or burning smell when the EPB is used for emergency braking, have the system checked by an authorized Kia dealer.

Releasing the parking brake



To release the EPB manually:

Press the EPB switch in the following condition.

- Have the ENGINE START/STOP button in the ON position.
- Depress the brake pedal.
- The shift lever must be in P (Park).
- Make sure the brake warning light goes off.

To release EPB automatically (automatic transmission):

- Close the driver's door, engine hood and liftgate.
- Fasten the driver's seat belt.
- Start the engine.
- If the shift lever is in P (Park), depress the brake pedal and shift out of P (Park) to R (Rear) or D (Drive), the EPB is released automatically. Make sure the brake warning light goes off.
- If the shift lever is in N (Neutral), depress the brake pedal and shift out of N (Neutral) to R (Rear) or D (Drive), the EPB is released automatically. Make sure the brake warning light goes off.
 - If you try to drive off depressing the accelerator pedal with the EPB applied, but doesn't release automatically, a warning will sound once and a message will appear.



- If the driver's seat belt is not fastened, driver's door is opened, the engine hood is opened in D or the liftgate is opened in R, a warning will sound once and a message will appear.
- If there is a problem with the vehicle, a warning may sound once and a message may appear. If the above situation occurs, depress the brake pedal and release EPB by pressing the EPB switch.

⚠ WARNING

- Never allow anyone who is unfamiliar with the vehicle to touch the parking brake. If the parking brake is released unintentionally, serious injury may occur.
- Do not place any objects around the EPB switch. They could release the EPB switch.

⚠ CAUTION

- To prevent unintentional movement when stopped and leaving the vehicle, do not use the shift lever in place of the parking brake. Set the parking brake and make sure the shift lever is securely positioned in P (Park). Use wheel chocks if necessary.
- In winter or cold conditions, the EPB may freeze. Park the vehicle with the shift lever in P on the even and safe place without applying the EPB. And use wheel chocks.
- Do not drive your vehicle with the EPB applied. It may cause excessive wear of brake pad and brake rotor.
- A click sound may be heard while operating or releasing the EPB, but these conditions are normal and indicate that the EPB is functioning properly.
- When leaving your keys with a parking lot attendant or valet, make sure to inform him/her how to operate the EPB.
- When the battery is drained, the EPB does not apply or release. In this case, jump start your vehicle.

Malfunction of EPB



If the EPB malfunction indicator remains on, it indicates that the EPB may have malfunctioned. If this occurs, have the system checked by an authorized Kia dealer.

The EPB malfunction indicator may illuminate when the ESC indicator comes on to indicate that the ESC is not working properly, but it does not indicate a malfunction of the EPB.

CAUTION

- The EPB warning light may illuminate if the EPB switch operates abnormally. Shut the engine off and turn it on again after a few minutes. The warning light will go off and the EPB switch will operate normally. However, if the EPB warning light is still on, have the system checked by an authorized Kia dealer.
- If the parking brake warning light does not illuminate or blinks even

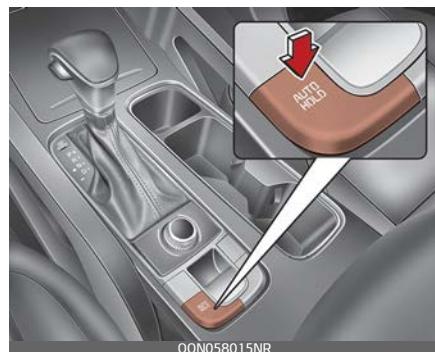
though the EPB switch was pulled up, the EPB is not applied. If the parking brake warning light blinks when the EPB warning light is on, press the switch, then pull it up. Once more press it back to its original position and pull it back up. If the EPB warning does not go off, have the system checked by an authorized Kia dealer.

AUTO HOLD

The Auto Hold is designed to maintain the vehicle in a standstill even though the brake pedal is not pressed after the driver brings the vehicle to a complete stop by pressing the brake pedal.

Applying Auto Hold function

1. Press the brake pedal and start the vehicle.
2. Press the Auto Hold button. The white AUTO HOLD indicator will come on indicating the system is in standby.



Before the Auto Hold will engage, the driver's door and engine hood must be closed and the liftgate must be closed.

When coming to a complete stop by pressing the brake pedal, the AUTO HOLD indicator changes from white to green indicating the AUTO HOLD is engaged. The vehicle will remain at a standstill even if you release the brake pedal.



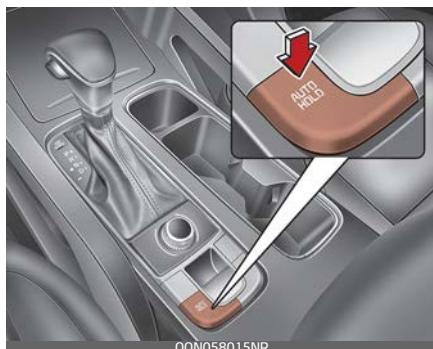
If EPB is applied, Auto Hold will be released.

If you press the accelerator pedal with the shift lever in D (Drive) or Manual mode, the Auto Hold will be released automatically and the vehicle will start to move. The indicator changes from green to white indicating the Auto Hold is in standby and the EPB is released.

When driving off from Auto Hold by pressing the accelerator pedal, always check the surrounding area near your vehicle.

Slowly press the accelerator pedal for a smooth launch.

Cancelling Auto Hold function



- To cancel the Auto Hold operation, press the Auto Hold button. The AUTO HOLD indicator will go out.
- To cancel the Auto Hold operation when the vehicle is at a standstill, press the Auto Hold button while pressing the brake pedal.

*** NOTICE**

- The following are conditions when the Auto Hold will not engage (Auto Hold light will not turn green and the Auto Hold system remains in stand by):
 - The driver's door is opened
 - The engine hood or liftgate is opened
 - The shift lever is in P (Park)
 - The EPB is applied
- For your safety, the Auto Hold automatically switches to EPB under any of the following conditions (Auto Hold light remains

white and the EPB automatically applies):

- The driver's door is opened.
- The engine hood or liftgate is opened.
- The vehicle is in a standstill for more than 10 minutes.
- The vehicle is standing on a steep slope.
- The vehicle moved for a few seconds.

In these cases, the brake warning light comes on, the AUTO HOLD indicator changes from green to white, and a warning sounds and a message will appear to inform you that EPB has been automatically engaged. Before driving off again, press foot brake pedal, check the surrounding area near your vehicle and release parking brake manually with the EPB switch.

- If the AUTO HOLD indicator lights up yellow, the Auto Hold is not working properly. Take your vehicle to an authorized Kia dealer and have the system checked.

⚠ WARNING

To reduce the risk of an accident, do not activate Auto Hold while driving downhill, backing up or parking your vehicle.

If there is a malfunction with the driver's door or engine hood or liftgate open detection system, the Auto Hold may not work properly.

Take your vehicle to an authorized Kia dealer and have the system checked.

*** NOTICE**

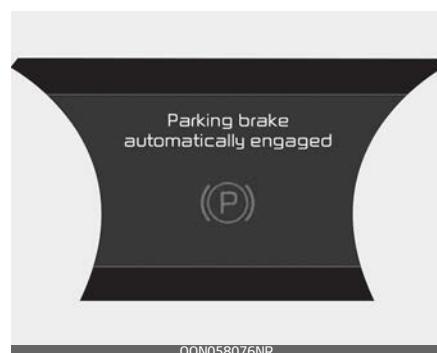
A click or electric brake motor whine sound may be heard while operating or releasing the EPB, but these conditions are normal and indicate that the EPB is functioning properly.

5

Warning messages

The Auto Hold function will display a warning message with sound under certain conditions.

When the EPB is applied from Auto Hold, a warning will sound and a message will appear.



When the conversion from Auto Hold to EPB is not working properly

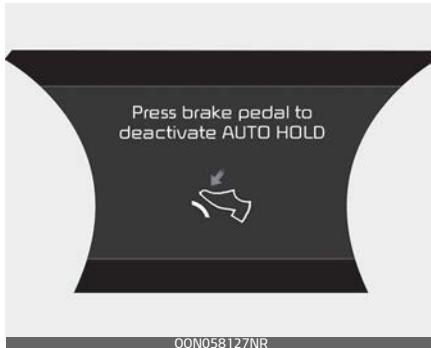
a warning will sound and a message will appear.



* NOTICE

When this message is displayed, the Auto Hold and EPB may not operate. For your safety, press the brake pedal.

If you do not apply the brake pedal when you release the Auto Hold by pressing the Auto Hold button, a warning will sound and a message will appear.



When you press the Auto Hold button, if the driver's door and engine

hood are not closed or the liftgate is not closed, a warning will sound and a message will appear on the LCD display.



At this moment, press the Auto Hold button after closing the driver's door, engine hood and liftgate.

Anti-lock Brake System (ABS)

The Anti-lock Brake System (ABS) prevents the wheels from locking. So the vehicle remains stable and can still be steered.

ABS (or ESC) will not prevent accidents due to improper or dangerous driving maneuvers. Even though vehicle control is improved during emergency braking, always maintain a safe distance between you and objects ahead. Vehicle speeds should always be reduced during extreme road conditions. The vehicle should be driven at reduced speeds in the following circumstances:

- When driving on rough, gravel or snow-covered roads

- When driving with tire chains installed
- When driving on roads where the road surface is pitted or has different surface heights.

Driving in these conditions increases the stopping distance for your vehicle.

The ABS continuously senses the speed of the wheels. If the wheels are going to lock, the ABS repeatedly modulates the hydraulic brake pressure to the wheels.

When you apply your brakes under conditions which may lock the wheels, you may hear a "tik-tik" sound from the brakes, or feel a corresponding sensation in the brake pedal. This is normal and it means your ABS is active.

In order to obtain the maximum benefit from your ABS in an emergency situation, do not attempt to modulate your brake pressure and do not try to pump your brakes. Press your brake pedal as hard as possible to allow the ABS to control the force being delivered to the brakes.

* NOTICE

A click sound may be heard in the vehicle compartment when the vehicle begins to move after the vehicle is started. These conditions

are normal and indicate that the Anti-lock Brake System is functioning properly.

Even with the Anti-lock Brake System, your vehicle still requires sufficient stopping distance. Always maintain a safe distance from the vehicle in front of you.

Always slow down when cornering. The Anti-lock Brake System cannot prevent accidents resulting from excessive speeds.

On loose or uneven road surfaces, operation of the Anti-lock Brake System may result in a longer stopping distance than for vehicles equipped with a conventional brake system.

The ABS warning light will stay on for approximately 3 seconds after the ENGINE START/STOP button is ON.



During that time, the ABS will go through self diagnosis and the light will go off if everything is normal. If the light stays on, you may have a problem with your ABS. Contact an authorized Kia dealer as soon as possible.

When you drive on a road having poor traction, such as an icy road,

and have operated your brakes continuously, the ABS will be active continuously and the ABS warning light may illuminate. Pull your vehicle over to a safe place and stop the vehicle.

Restart the vehicle. If the ABS warning light goes off, then your ABS is normal. Otherwise, you may have a problem with the ABS. Contact an authorized Kia dealer as soon as possible.

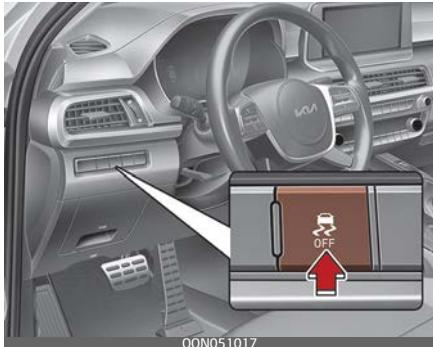
* NOTICE

When you jump start your vehicle because of a drained battery, the vehicle may not run as smoothly and the ABS warning light may turn on at the same time. This happens because of low battery voltage. It does not mean your ABS has malfunctioned.

- Do not pump your brakes!
- Have the battery recharged before driving the vehicle.

Electronic Stability Control (ESC) system

The Electronic Stability Control (ESC) is designed to stabilize the vehicle during cornering maneuvers.



ESC applies the brakes on individual wheels and intervenes with the vehicle management system to stabilize the vehicle.

ESC will not prevent accidents. Excessive speed in turns, abrupt maneuvers and hydroplaning on wet surfaces can still result in serious accidents.

Only a safe and attentive driver can prevent accidents by avoiding maneuvers that cause the vehicle to lose traction. Even with ESC installed, always follow all the normal precautions for driving - including driving at safe speeds for the conditions.

⚠ WARNING

For maximum protection, always wear your seat belt. No system, no matter how advanced, can compensate for all driver error and/or driving conditions. Always drive responsibly.

The ESC system is an electronic system designed to help the driver maintain vehicle control under adverse conditions. It is not a substitute for safe driving practices. Factors including speed, road conditions and driver steering input can all affect whether ESC will be effective in preventing a loss of control. It is still your responsibility to drive and corner at reasonable speeds and to leave a sufficient margin of safety.

When you apply your brakes under conditions which may lock the wheels, you may hear a "tik-tik" sound from the brakes, or feel a corresponding sensation in the brake pedal. This is normal and it means your ESC is active.

* NOTICE

A click sound may be heard in the vehicle compartment when the vehicle begins to move after the vehicle is started. These conditions are normal and indicate that the

Electronic Stability Control system is functioning properly.

ESC operation

ESC ON condition

- When the ENGINE START/STOP button is turned ON, ESC and ESC OFF indicator lights illuminate for approximately 3 seconds, then ESC is turned on.
- Press the ESC OFF button for at least half a second after turning the vehicle ON to turn ESC off. (ESC OFF indicator will illuminate). To turn the ESC on, press the ESC OFF button (ESC OFF indicator light will go off).
- When starting the vehicle, you may hear a slight ticking sound. This is the ESC performing an automatic system self-check and does not indicate a problem.

When operating

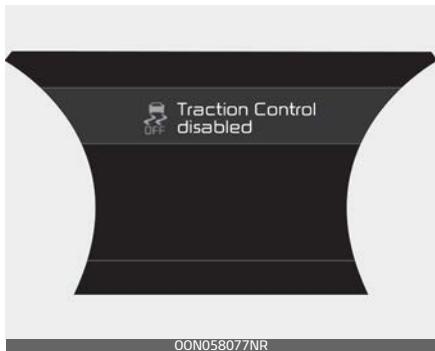
-  When the ESC is in operation, the ESC indicator light blinks.
 When the ESC is operating properly, you can feel a slight pulsation in the vehicle. This is only the effect of brake control and indicates nothing unusual.

When moving out of the mud or driving on a slippery road, pressing the accelerator pedal may not cause the vehicle rpm (revolutions per minute) to increase.

ESC operation off

 This car has 2 kinds of ESC off states.
OFF

If the vehicle stops when ESC is off, ESC remains off. Upon restarting the vehicle, the ESC will automatically turn on again.



ESC off state 1 – Traction control disabled

To turn off the traction control function and only operate the brake control function of the ESC, press the ESC OFF button (ESC OFF  OFF) for less than 3 seconds and the ESC OFF indicator light (ESC OFF  OFF) will illuminate.



ESC off state 2 – Traction & stability control disabled

To turn off the traction control function and the brake control function of the ESC, press the ESC OFF button (ESC OFF  OFF) for more than 3 seconds. ESC OFF indicator light (ESC OFF  OFF) will illuminate and ESC OFF warning chime will sound. At this state, the car stability control function does not operate any more.

Indicator light

ESC indicator light



ESC OFF indicator light



When ENGINE START/STOP button is turned to ON, the indicator light illuminates, then goes off if the ESC system is operating normally.

The ESC indicator light blinks whenever ESC is operating or illuminates when ESC fails to operate.

The ESC OFF indicator light comes on when the ESC is turned off with the button.

WARNING

Electronic Stability Control

Drive carefully even though your vehicle has Electronic Stability Control. It can only assist you in maintaining control under certain circumstances.

ESC OFF usage

When driving

- ESC should be turned on for daily driving whenever possible.
- To turn ESC off while driving, press the ESC OFF button while driving on a flat road surface.

WARNING

Operating ESC

Never press the ESC OFF button while ESC is operating (ESC indicator light blinks).

If ESC is turned off while ESC is operating, the vehicle may slip out of control.

*** NOTICE**

- When operating the vehicle on a dynamometer, ensure that the ESC is turned off (ESC OFF light illuminated). If the ESC is left on, it may prevent the vehicle speed from increasing, and result in false diagnosis.
- Turning the ESC off does not affect ABS or brake system operation.

Vehicle Stability Management (VSM) system

The Vehicle Stability Management (VSM) provides further enhancements to vehicle stability and steering responses under the following condition:

- when driving on a slippery road or
- when a change in the coefficient of friction between left and right wheels is detected.

WARNING

Tire/Wheel size

When replacing tires and wheels, make sure they are the same size as the original tires and wheels installed. Driving with varying tire or wheel sizes may diminish any supplemental safety benefits of the VSM system.

VSM operation

When the VSM is in operation, ESC indicator light () blinks.

When the VSM is operating properly, you can feel a slight pulsation in the vehicle and/or abnormal steering responses (Electric Power Steering (EPS)). This is only the effect of brake and EPS control and indicates nothing unusual.

The VSM does not operate when:

- Driving on a sloping road such as a gradient or incline
- Driving in reverse
- ESC OFF indicator light () remains on the instrument cluster
- EPS indicator light remains on the instrument cluster

VSM operation off

If you press the ESC OFF button to turn off the ESC, the VSM will also cancel and the ESC OFF indicator light () illuminates.

To turn on the VSM, press the button again. The ESC OFF indicator light goes out.

WARNING

Vehicle Stability Management

Drive carefully even though your vehicle has Vehicle Stability Management. It can only assist in

maintaining control of the vehicle under certain circumstances.

Malfunction indicator

The VSM can be deactivated even if you don't cancel the VSM operation by pressing the ESC OFF button. It indicates that a malfunction has been detected somewhere in the Electric Power Steering system or VSM system. If the ESC indicator light () or EPS warning light remains on, take your vehicle to an authorized Kia dealer and have the system checked.

The VSM is not a substitute for safe driving practices but a supplementary function only. It is the responsibility of the driver to always check the speed and the distance to the vehicle ahead. Always hold the steering wheel firmly while driving.

Your vehicle is designed to activate according to the driver's intention, even with installed VSM. Always follow all the normal precautions for driving at safe speeds for the conditions – including driving in clement weather and on a slippery road.

WARNING

For maximum protection, always wear your seat belt. No system, no matter how advanced, can compensate for your lack of attention.

sate for all driver error and/or driving conditions. Always drive responsibly.

Trailer Stability Assist (TSA) system

The Trailer Stability Assist (TSA) is operated as a vehicle stability control system. The TSA is designed to stabilize the vehicle and trailer when the trailer sways or oscillates. There are various factors that make the vehicle sway or oscillate.

Such incidents mostly happen at high speed, but, there is also a risk of swaying when the trailer is affected by crosswinds, buffeting or improper overloading.

Factors of swaying such as:

- High speed
- Strong crosswinds
- Improper overloading
- Sudden controlling of steering wheel
- Uneven road

The TSA continuously analyzes the vehicle and trailer instability. When the TSA detects some sway, the brakes are applied automatically to stabilize the vehicle on the front wheel. However, if it is not enough to stabilize, the brakes are applied on all wheels automatically and engine power is properly reduced.

When the vehicle is stable from swaying, the TSA does not operate.

Hill-start Assist Control (HAC)

A vehicle has the tendency to roll back on a steep hill when it starts to go after stopping. The Hill-start Assist Control (HAC) prevents the vehicle from rolling back by applying the brakes automatically for about 2 seconds.

The brakes are released when the accelerator pedal is engaged or after about 2 seconds.

The HAC is activated only for about 2 seconds, so when the vehicle is starting off on an incline, always engage the accelerator pedal.

WARNING

Maintaining Brake Pressure on Incline

HAC does not replace the need to apply brakes while stopped on an incline. While stopped, make sure you maintain brake pressure sufficient to prevent your vehicle from rolling backward and causing an accident. Don't release the brake pedal until you are ready to accelerate forward.

Good braking practices

Good braking practices help keep occupants safe and extend brake life.

- Check to be sure the parking brake is not engaged and the parking brake indicator light is out before driving away.
- Driving through water may get the brakes wet. They can also get wet when the vehicle is washed. Wet brakes can be dangerous! Your vehicle will not stop as quickly if the brakes are wet. Wet brakes may cause the vehicle to pull to one side.
To dry the brakes, apply the brakes lightly until the braking action returns to normal, taking care to keep the vehicle under control at all times. If the braking action does not return to normal, stop as soon as it is safe to do so and call an authorized Kia dealer for assistance.
- Don't coast down hills with the vehicle out of gear. This is extremely hazardous. Keep the vehicle in gear at all times, use the brakes to slow down, then shift to a lower gear so that vehicle braking will help you maintain a safe speed.
- Don't "ride" the brake pedal. Resting your foot on the brake pedal while driving can be dangerous because the brakes might over-

heat and lose their effectiveness. It also increases the wear of the brake components.

- If a tire goes flat while you are driving, apply the brakes gently and keep the vehicle pointed straight ahead while you slow down. When you are moving slowly enough for it to be safe to do so, pull off the road and stop in a safe place.
- Be cautious when parking on a hill. Firmly engage the parking brake and place the shifter lever in P. If your vehicle is facing downhill, turn the front wheels into the curb to help keep the vehicle from rolling.
If your vehicle is facing uphill, turn the front wheels away from the curb to help keep the vehicle from rolling. If there is no curb or if it is required by other conditions to keep the vehicle from rolling, block the wheels.
- Under some conditions your parking brake can freeze in the engaged position. This is most likely to happen when there is an accumulation of snow or ice around or near the rear brakes or if the brakes are wet. If there is a risk that the parking brake may freeze, apply it only temporarily while you put the shifter lever in P and block the rear wheels so the vehicle cannot roll. Then release the parking brake.

- Do not hold the vehicle on an incline with the accelerator pedal. This can cause the reduction gear to overheat. Always use the brake pedal or parking brake.

Idle Stop and Go (ISG) system

The Idle Stop and Go (ISG) system reduces fuel consumption by automatically shutting down the engine when the vehicle is at a standstill. (For example: red light, stop sign and traffic jam)

The engine starts automatically as soon as the starting conditions are met.

The ISG is ON whenever the engine is running.

* NOTICE //

When the engine automatically starts by the ISG system, some warning lights (ABS, ESC, ESC OFF, EPS or Parking brake warning light) may turn on for a few seconds.

This happens because of low battery voltage. It does not mean the system has malfunctioned.

5

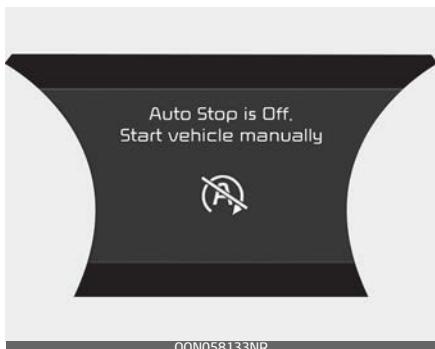
Auto stop

If you depress the brake pedal and the vehicle comes to a stop with the ISG ON, the engine will stop automatically.

Stop the vehicle completely by pressing the brake pedal when the shift lever is in the D (Drive) or N (Neutral) position.



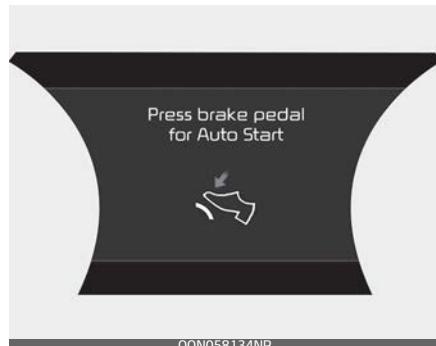
The engine will stop and the green AUTO STOP (A) indicator on the instrument cluster will illuminate.



* NOTICE

If you open the engine hood in auto stop mode, the following will happen:

- The ISG system will deactivate (the light on the ISG OFF button will illuminate).
- A message will appear on the LCD display.



- If you move the transmission lever from N to D (Manual mode) or R without depressing the brake pedal after stopping engine automatically, the engine does not restart automatically and a warning chime alarms. When this happens, press the brake pedal for auto start.

Auto start

When the engine stops automatically by ISG, the engine will restart if one of the following driver actions.

- Release the brake pedal.
- Move the shift gear to the R (Reverse) position or the Manual mode while depressing the brake pedal.



The engine will start and the green AUTO STOP indicator (A) on the instrument cluster will go out.

The engine will also restart automatically without any driver actions if the following occurs:

- The brake vacuum pressure is low.
- The engine has stopped for about 5 minutes.
- The air conditioning is ON with the fan speed set to the highest position.
- The front defroster is ON.
- The battery is weak.
- The cooling and heating performance of the climate control system is unsatisfactory.
- The vehicle is shifted to P (Park) when Auto Hold is activated.
- The door is opened or the seatbelt is unfastened when Auto Hold is activated.
- The EPB switch is pressed when Auto Hold is activated.

Operating conditions

The ISG will operate under the following condition:

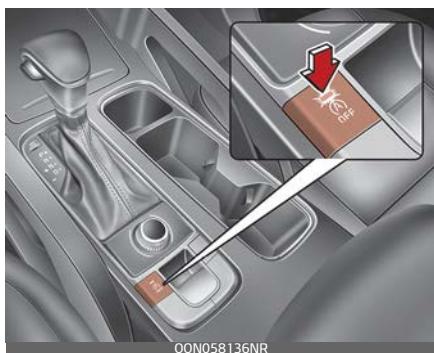
- The driver's seatbelt is fastened.
- The driver's door and hood are closed.
- The brake vacuum pressure is adequate.
- The battery sensor is activated and the battery is sufficiently charged.
- Outside temperature is not too low or too high.
- The vehicle is driven over a constant speed and stops.
- The climate control system satisfies the conditions.
- The vehicle is sufficiently warmed up.
- The incline is gradual.
- The steering wheel is turned less than 180 degrees and then the vehicle stops.

5

* NOTICE //

- If the ISG system does not meet the operation condition, the ISG system is deactivated. The light on the ISG OFF button and yellow AUTO STOP (A) indicator on the instrument cluster will illuminate.
- If the light comes on continuously, please check the operation condition.

Deactivating the ISG



- If you wish to deactivate the ISG, press the ISG OFF button. The light on the ISG OFF button will illuminate.
- If you press the ISG OFF button again, the ISG will be activated and the light on the ISG OFF button will turn off.

ISG malfunction

The ISG may not operate when:



The ISG may not operate when an ISG related sensor or system error occurs.

The following will happen:

- The yellow AUTO STOP (A) indicator on the instrument cluster will stay on after blinking for 5 seconds.
- The light on the ISG OFF button will illuminate.

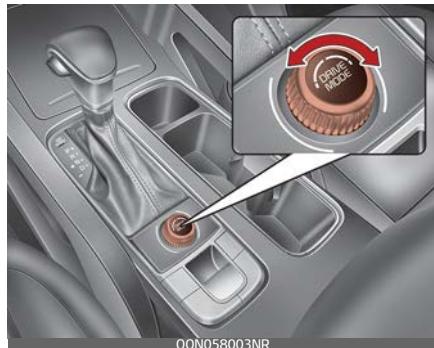
When the engine is in Idle Stop mode, it's possible to restart the engine without the driver taking any action. Before leaving the car or doing anything in the engine compartment, stop the engine by the ENGINE START/STOP button to the OFF position.

* NOTICE

If the AGM battery is reconnected or replaced, ISG system will not operate immediately. If you want to use the ISG system, the battery sensor needs to be calibrated for approximately 4 hours with the ignition off. After calibration, turn the engine on and off 2 or 3 times.

Drive mode integrated control system (FWD)

The drive mode may be selected according to the driver's preference or road condition.



The mode changes whenever the DRIVE MODE knob is turned.

- SMART mode: SMART mode automatically adjusts the driving mode (ECO ↔ COMFORT ↔ SPORT) in accordance with the driver's driving habits.
- COMFORT mode: COMFORT mode provides soft driving and comfortable riding.
- SPORT mode: SPORT mode provides sporty but firm riding.
- ECO mode: ECO mode improves fuel efficiency for eco-friendly driving.

The driving mode will be set to COMFORT or ECO mode when the engine is restarted. If it is in COMFORT/SPORT mode, COMFORT mode will be set, when the engine is restarted.

If it is in ECO mode, ECO mode will be set when the engine is restarted.

SMART mode



SMART SMART mode selects the proper driving mode among ECO, COMFORT and SPORT by judging the driver's driving habits (i.e., mild or dynamic) from the brake pedal or the steering wheel operation.

- Turning the DRIVE MODE knob to activate SMART mode. When SMART mode is activated, the indicator illuminates on the instrument cluster.
- The vehicle starts in SMART mode, when the engine was turned OFF in SMART mode.
- SMART mode automatically controls the vehicle driving, such as gear shifting patterns, engine torque, in accordance with the driver's driving habits.

* NOTICE

- When you mildly drive the vehicle in SMART mode, the driving mode changes to ECO mode to improve fuel efficiency. However, the actual fuel efficiency may differ in accordance with your driving situations (i.e., upward/downward slope, vehicle deceleration/acceleration).
- When you dynamically drive the vehicle in SMART mode by abruptly decelerating or sharply curving, the driving mode changes

to SPORT mode. However, it may adversely affect fuel economy.

Various driving situations, which you may encounter in SMART mode

- The driving mode automatically changes to ECO mode after a certain period of time, when you gently press the accelerator pedal (Your driving is categorized to be mild.).
- The driving mode automatically changes from SMART ECO mode to SMART NORMAL mode after a certain period of time, when you sharply or repetitively press the accelerator pedal.
- The driving mode automatically changes to SMART COMFORT mode with the same driving patterns, when the vehicle starts to drive on an upward slope of a certain angle. The driving mode automatically returns to SMART ECO mode, when the vehicle enters a leveled road.
- The driving mode automatically changes to SMART SPORT, when you abruptly accelerate the vehicle or repetitively operate the steering wheel (Your driving is categorized to be sporty.). In this mode, your vehicle drives in a lower gear for abrupt accelerating/decelerating and increases the engine brake performance.

- You may still sense the engine brake performance, even when you release the accelerator pedal in SMART SPORT mode. It is because your vehicle remains to be in a lower gear over a certain period of time for next acceleration. Thus, it is a normal driving situation, not indicating any malfunction.
- The driving mode automatically changes to SMART SPORT mode only in harsh driving situations. In most of the normal driving situations, the driving mode sets to be either in SMART ECO mode or in SMART COMFORT mode.

Limitation of SMART mode

The SMART mode may be limited in following situations. (The OFF indicator illuminates in those situations.)

- The driver manually moves the shift lever: It deactivates SMART mode. The vehicle moves, as the driver manually moves the shift lever.
- Cruise control is activated: The Cruise function may deactivate the SMART mode. When a higher system is set by the cruise system, it starts to control vehicle speed and deactivates SMART mode. (SMART mode is not deactivated just by activating the cruise system.)

- The transmission oil temperature is either extremely low or extremely high: The SMART mode can be active in most of the normal driving situations. However, an extremely high/ low transmission oil temperature may temporarily deactivate the SMART mode, because the transmission condition is out of normal operation condition.

SPORT mode

SPORT

SPORT mode manages the driving dynamics by automatically adjusting the steering effort, and the engine and transmission control logic for enhanced driver performance.

- When SPORT mode is selected by turning the DRIVE MODE knob, the SPORT indicator (orange color) will illuminate.
- Whenever the engine is restarted, the Drive Mode will revert back to COMFORT mode. If SPORT mode is desired, re-select SPORT mode from the DRIVE MODE knob.
- When SPORT mode is activated:
 - The engine rpm will tend to remain raised over a certain length of time even after releasing the accelerator.
 - Upshifts are delayed when accelerating.

* NOTICE

In SPORT mode, the fuel efficiency may decrease.

ECO mode

ECO

When the Drive Mode is set to ECO mode, the engine and transmission control logic are changed to maximize fuel efficiency.

- When ECO mode is selected by turning the Drive mode knob, the ECO indicator (green color) will illuminate.
- If the vehicle is set to ECO mode, when the engine is turned OFF and restarted the Drive Mode setting will remain in ECO mode.

* NOTICE

Fuel efficiency depends on the driver's driving habit and road condition.

When ECO mode is activated:

- The acceleration response may be slightly reduced if the accelerator pedal is engaged moderately.
- The shift pattern of the automatic transmission may change.

The above situations are normal conditions when ECO mode is activated to improve fuel efficiency.

Limitation of ECO mode operation:

If the following conditions occur while ECO mode is operating, the system operation is limited even though there is no change in the ECO indicator.

- When driving the vehicle with the automatic transmission gear shift lever in Manual mode. The system will be limited according to the shift location.

Drive mode integrated control system (AWD)

The drive mode may be selected according to the driver's preference or road condition.



The Drive mode is activated by turning the knob.

The Drive mode changes whenever the knob is turned.



- SMART mode: SMART mode automatically adjusts the driving mode (ECO ↔ COMFORT ↔ SPORT) in accordance with the driver's driving habits.

- COMFORT mode: COMFORT mode provides soft driving and comfortable riding.
- SPORT mode: SPORT mode provides sporty but firm riding.
- ECO mode: ECO mode improves fuel efficiency for eco-friendly driving.

The driving mode will be set to COMFORT or ECO mode when the engine is restarted. If it is in COMFORT/SPORT mode, COMFORT mode will be set, when the engine is restarted.

If it is in ECO mode, ECO mode will be set when the engine is restarted.

SMART mode



SMART SMART mode selects the proper driving mode among ECO, COMFORT and SPORT by judging the driver's driving habits (i.e., mild or dynamic) from the brake pedal or the steering wheel operation.

- Turning the knob to activate SMART mode. When SMART mode is activated, the indicator illuminates on the instrument cluster.
- The vehicle starts in SMART mode, when the engine was turned OFF in SMART mode.
- SMART mode automatically controls the vehicle driving, such as gear shifting patterns, engine

torque, in accordance with the driver's driving habits.

* NOTICE

- When you mildly drive the vehicle in SMART mode, the driving mode changes to ECO mode to improve fuel efficiency. However, the actual fuel efficiency may differ in accordance with your driving situations (i.e., upward/downward slope, vehicle deceleration/acceleration).
- When you dynamically drive the vehicle in SMART mode by abruptly decelerating or sharply curving, the driving mode changes to SPORT mode. However, it may adversely affect fuel economy.

Various driving situations, which you may encounter in SMART mode

- The driving mode automatically changes to ECO mode after a certain period of time, when you gently press the accelerator pedal (Your driving is categorized to be mild.).
- The driving mode automatically changes from SMART ECO mode to SMART NORMAL mode after a certain period of time, when you sharply or repetitively press the accelerator pedal.
- The driving mode automatically changes to SMART COMFORT mode with the same driving pat-

terns, when the vehicle starts to drive on an upward slope of a certain angle. The driving mode automatically returns to SMART ECO mode, when the vehicle enters a leveled road.

- The driving mode automatically changes to SMART SPORT, when you abruptly accelerate the vehicle or repetitively operate the steering wheel (Your driving is categorized to be sporty.). In this mode, your vehicle drives in a lower gear for abrupt accelerating/decelerating and increases the engine brake performance.
- You may still sense the engine brake performance, even when you release the accelerator pedal in SMART SPORT mode. It is because your vehicle remains to be in a lower gear over a certain period of time for next acceleration. Thus, it is a normal driving situation, not indicating any malfunction.
- The driving mode automatically changes to SMART SPORT mode only in harsh driving situations. In most of the normal driving situations, the driving mode sets to be either in SMART ECO mode or in SMART COMFORT mode.

Limitation of SMART mode

The SMART mode may be limited in following situations. (The OFF indi-

cator illuminates in those situations.)

- The driver manually moves the shift lever: It deactivates SMART mode. The vehicle moves, as the driver manually moves the shift lever.
- Smart Cruise Control is activated: The Cruise function may deactivate the SMART mode. When a higher system is set by Smart Cruise Control, it starts to control vehicle speed and deactivates SMART mode. (SMART mode is not deactivated just by activating Smart Cruise Control.)
- The transmission oil temperature is either extremely low or extremely high: The SMART mode can be active in most of the normal driving situations. However, an extremely high/ low transmission oil temperature may temporarily deactivate the SMART mode, because the transmission condition is out of normal operation condition.

SPORT mode

SPORT SPORT mode manages the driving dynamics by automatically adjusting the steering effort, and the engine and transmission control logic for enhanced driver performance.

- When SPORT mode is selected by turning the knob, the SPORT indicator (orange color) will illuminate.
- Whenever the engine is restarted, the Drive Mode will revert back to COMFORT mode. If SPORT mode is desired, re-select SPORT mode from the knob.
- When SPORT mode is activated:
 - The engine rpm will tend to remain raised over a certain length of time even after releasing the accelerator.
 - Upshifts are delayed when accelerating.

* NOTICE

In SPORT mode, the fuel efficiency may decrease.

ECO mode

ECO

When the Drive Mode is set to ECO mode, the engine and transmission control logic are changed to maximize fuel efficiency.

- When ECO mode is selected by turning the knob, the ECO indicator (green color) will illuminate.
- If the vehicle is set to ECO mode, when the engine is turned OFF and restarted the Drive Mode setting will remain in ECO mode.

* NOTICE

Fuel efficiency depends on the driver's driving habit and road condition.

When ECO mode is activated:

- The acceleration response may be slightly reduced if the accelerator pedal is engaged moderately.
- The shift pattern of the automatic transmission may change.

The above situations are normal conditions when ECO mode is activated to improve fuel efficiency.

Limitation of ECO mode operation:

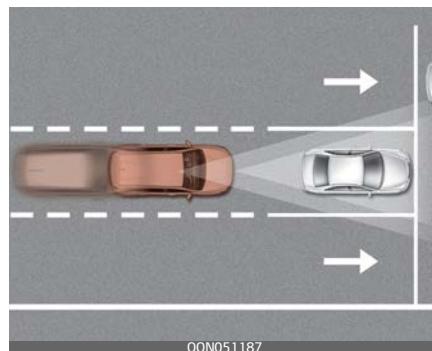
If the following conditions occur while ECO mode is operating, the system operation is limited even though there is no change in the ECO indicator.

- When driving the vehicle with the automatic transmission gear shift lever in Manual mode.

The system will be limited according to the shift location.

Forward Collision-Avoidance Assist (FCA) (Sensor fusion)

Forward Collision-Avoidance Assist is designed to help detect and monitor the vehicle ahead or help detect a pedestrian or cyclist in the roadway and warn the driver that a collision is imminent with a warning message and an audible warning, and if necessary, apply emergency braking.



* NOTICE

FCA stands for Forward Collision-Avoidance Assist.

Detecting sensor



[1]: Front view camera, [2]: Front radar

Refer to the picture above for the detailed location of the detecting sensors.

⚠ CAUTION

Take the following precautions to maintain optimal performance of the detecting sensor:

- Never disassemble the detecting sensor or sensor assembly, or apply any impact on it.

- If the detecting sensors have been replaced or repaired, have your vehicle inspected by an authorized Kia dealer.
- Never install any accessories or stickers on the front windshield, or tint the front windscreens.
- Pay extreme caution to keep the front view camera dry.
- Never place any reflective objects (i.e. white paper, mirror) over the dashboard. Any light reflection may prevent the function from functioning properly.
- Do not apply license plate frame or objects, such as a bumper sticker, film or a bumper guard, near the front radar cover.
- Always keep the front radar and cover clean and free of dirt and debris. Use only a soft cloth to wash the vehicle. Do not spray pressurized water directly on the sensor or sensor cover.
- If unnecessary force has been applied to the radar or around the radar, Forward Collision-Avoidance Assist may not properly operate even though a warning message does not appear on the cluster. In this case, have your vehicle inspected by an authorized Kia dealer.
- Use only genuine parts to repair or replace a damaged front radar cover. Do not apply paint to the front radar cover.

Forward Collision-Avoidance Assist Settings

Setting features

Forward Safety



With the ENGINE START/STOP button in the ON position, press MODE button (☰) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Forward Safety' from the setting menu to set whether or not to use each function.

- If 'Active Assist' is selected, the function will warn the driver with a warning message, an audible warning and steering wheel vibration depending on the collision risk levels. Braking assist will be applied depending on the collision risk.

- If 'Warning Only' is selected, the function will warn the driver with a warning message, an audible warning depending on the collision risk levels. Braking will not be assisted. The driver must apply the brake pedal or steer the vehicle if necessary.
- If 'Off' is selected, the function will off. The  warning light will illuminate on the cluster.

The driver can monitor Forward Collision-Avoidance Assist ON/OFF status from the settings menu. If the  warning light remains ON when the function is ON, have the function checked by an authorized Kia dealer.

WARNING

- When the engine is restarted, Forward Collision-Avoidance Assist will always turn on.
- If 'Off' is selected from the settings menu, the Forward Collision Assist will not operate so the driver should always be aware of the surroundings and drive safely.

CAUTION

If 'Warning Only' is selected, braking is not assisted.

* NOTICE //

Forward Collision-Avoidance Assist will turn off when ESC is turned off by pressing and holding the ESC OFF button and the  warning light will illuminate.

Warning Timing



With the ENGINE START/STOP button in the ON position, press MODE button () several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Warning Timing' to change the initial warning activation time for Forward Collision-Avoidance Assist.

When the vehicle is first delivered, Warning Timing is set to 'Normal'. If you change the Warning Timing, the warning time of other Driver Assistance system may change.

Warning Volume



With the ENGINE START/STOP button in the ON position, press MODE button () several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Warning Volume' to change the warning volume to 'High', 'Medium', 'Low' or 'Off' for Forward Collision-Avoidance Assist.

If you change the Warning volume, the Warning volume of other Driver Assistance functions may change.

⚠ CAUTION //

- The setting of the Warning timing and Warning volume applies to all functions of Forward Collision-Avoidance Assist.
- Even though 'Normal' is selected for Warning timing, if the front vehicle suddenly stops, the initial warning activation time may not seem late.

- Select 'Late' for Warning Timing when traffic is light and when driving speed is slow.

* NOTICE

If the engine is restarted, Warning timing and Warning volume will maintain the last setting.

Forward Collision-Avoidance Assist Operation

Warning and control

The basic function for Forward Collision-Avoidance Assist is to warn and control the vehicle depending on the collision level: 'Collision Warning', 'Emergency Braking'.

Collision Warning



- To warn the driver of a collision, the 'Collision Warning' warning message will appear on the cluster, an audible warning will sound

and the steering wheel will vibrate.

- If a vehicle is detected in front, the function will operate when your vehicle speed is between approximately 6~93 mph (10~150 km/h).
- If a pedestrian or cyclist is detected in front, the function will operate when your vehicle speed is between approximately 6~53 mph (10~85 km/h).

Emergency Braking



- To warn the driver that emergency braking will be assisted, the 'Emergency Braking' warning message will appear on the cluster, an audible warning will sound and the steering wheel will vibrate.
- If a vehicle is detected in front, the function will operate when your vehicle speed is between approximately 6~45 mph (10~75 km/h).

- If a pedestrian or cyclist is detected in front, the function will operate when your vehicle speed is between approximately 6~40 mph (10~65 km/h).
- In emergency braking situation, braking is assisted with strong braking power by the function to help prevent collision with the vehicle, pedestrian or cyclist ahead.

WARNING

- For your safety, change the settings after parking the vehicle at a safe location.
- With 'Active Assist' or 'Warning Only' selected, when ESC is turned off by pressing and holding the ESC OFF button, Forward Collision-Avoidance Assist will turn off automatically. In this case, the function cannot be set from the settings menu and the warning light will illuminate on the cluster which is normal. If ESC is turned on by pressing the ESC OFF button, Forward Collision-Avoidance Assist will maintain the last setting.
- Forward Collision-Avoidance Assist does not operate in all situations or cannot avoid all collisions.
- The driver should hold the responsibility to control the vehicle. Do not solely depend on For-

ward Collision-Avoidance Assist. Rather, maintain a safe braking distance, and if necessary, depress the brake pedal to reduce driving speed or to stop the vehicle.

- Never deliberately operate Forward Collision-Avoidance Assist on people, animal, objects, etc. It may cause serious injury or death.
- Forward Collision-Avoidance Assist may not operate if the driver depresses the brake pedal to avoid collision.
- Depending on the road and driving conditions, Forward Collision-Avoidance Assist may warn the driver late or may not warn the driver.
- During Forward Collision-Avoidance Assist operation, the vehicle may stop suddenly injuring passengers and shifting loose objects. Always have the seat belt on and keep loose objects secured.
- If any other function's warning message is displayed or audible warning is generated, Forward Collision-Avoidance Assist warning message may not be displayed and audible warning may not be generated.
- You may not hear the warning sound of Forward Collision-Avoidance Assist if the surrounding is noisy.

- Forward Collision-Avoidance Assist may turn off or may not operate properly or may operate unnecessarily depending on the road conditions and the surroundings.

WARNING

- Even if there is a problem with Forward Collision-Avoidance Assist, the vehicle's basic braking performance will operate normally.
- During emergency braking, braking control by the function will automatically cancel when the driver excessively depresses the accelerator pedal or sharply steers the vehicle.

CAUTION

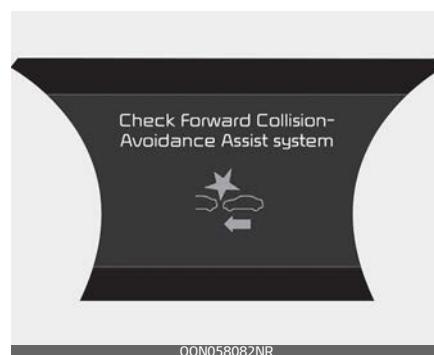
- Depending on the condition of the vehicle, pedestrian and cyclist in front and the surroundings, the speed range to operate Forward Collision-Avoidance Assist may reduce. The function may only warn the driver, or the function may not operate.
- It operates only under certain conditions by judging the danger according to a condition of the oncoming vehicle, driving direction, speed and the surrounding environment.

NOTICE

In a situation collision is imminent, braking may be assisted by Forward Collision-Avoidance Assist when braking is insufficient by the driver.

Forward Collision-Avoidance Assist Malfunction and Limitations

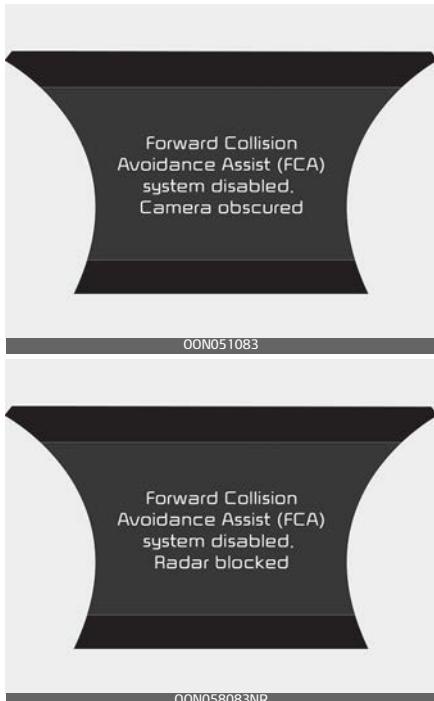
Forward Collision-Avoidance Assist malfunction



OON058082NR

When Forward Collision-Avoidance Assist is not working properly, the 'Check Forward Collision-Avoidance Assist system' warning message will appear (turns off after a certain time), and the  and  warning lights will illuminate on the cluster. In this case, have the vehicle inspected by an authorized Kia dealer.

Forward Collision-Avoidance Assist disabled



When the front windscreen where the front view camera is located, front radar cover or sensor is covered with foreign material such as snow or rain, it can reduce the detecting performance and temporarily limit or disable Forward Collision-Avoidance Assist. If this occurs the 'Forward Collision-Avoidance Assist (FCA) system disabled. Radar blocked' warning message will appear (turns off after a certain time), and the  and  warn-

ing lights will illuminate on the cluster.

The function will operate normally when snow, rain or foreign matter is removed. If the function does not operate normally after it is removed, have the vehicle inspected by an authorized Kia dealer.

WARNING

- Even though the warning message or warning light does not appear on the cluster, Forward Collision-Avoidance Assist may not properly operate.
- Forward Collision-Avoidance Assist may not properly operate in an area (e.g. open terrain), where any substance are not detected after turning ON the engine.

Limitations of Forward Collision-Avoidance Assist

Forward Collision-Avoidance Assist may not operate normally, or the function may operate unexpectedly under the following circumstances:

- The detecting sensor or the surroundings are contaminated or damaged
- The temperature around the front view camera is high or low due to the external environment
- The camera lens is contaminated due to tinted, filmed or coated

- windscreen, damaged glass, or stuck of foreign matters (sticker, bug, etc.) on the glass
- Moisture is not removed or frozen on the windscreen
 - Washer fluid is continuously sprayed, or the wiper is on
 - Driving in heavy rain or snow, or thick fog
 - The field of view of the front view camera is obstructed by sun glare
 - Street light or light from an oncoming vehicle is reflected on the wet road surface, such as a puddle on the road
 - An object is placed on the dashboard
 - Your vehicle is being towed
 - The surrounding is very bright
 - The surrounding is very dark, such as in a tunnel, etc.
 - The brightness changes suddenly, for example when entering or exiting a tunnel
 - The brightness outside is low, and the headlamps are not on or are not bright
 - Driving through steam, smoke or shadow
 - Only part of the vehicle, pedestrian or cyclist is detected
 - The vehicle in front is a bus, heavy truck, truck with a unusually shaped luggage, trailer, etc.
 - The vehicle in front has no tail lights, tail lights are located unusually, etc.

- The brightness outside is low, and the tail lamps are not on or are not bright
- The rear of the front vehicle is small or the vehicle does not look normal, such as when the vehicle is tilted, overturned, or the side of the vehicle is visible, etc.
- The front vehicle's ground clearance is low or high
- A vehicle, pedestrian or cyclist suddenly cuts in front
- The bumper around the front radar is impacted, damaged or the front radar is out of position
- The temperature around the front radar is high or low
- Driving through a tunnel or iron bridge
- Driving in large areas where there are few vehicles or structures (i.e. desert, meadow, suburb, etc.)
- Driving near areas containing metal substances, such as a construction zone, railroad, etc.
- A material is near that reflects very well on the front radar, such as a guardrail, nearby vehicle, etc.
- The cyclist in front is on a bicycle made of material that does not reflect on the front radar
- The vehicle in front is detected late
- The vehicle in front is suddenly blocked by a obstacle
- The vehicle in front suddenly changes lane or suddenly reduces speed

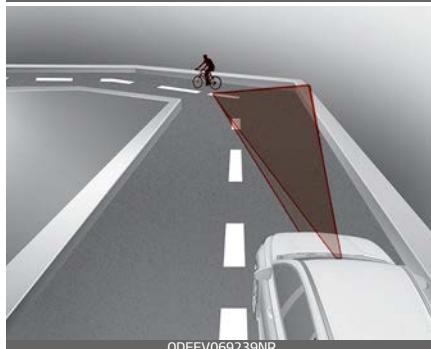
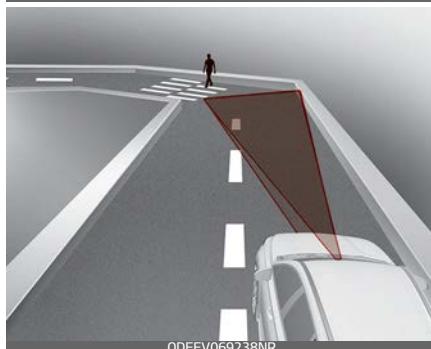
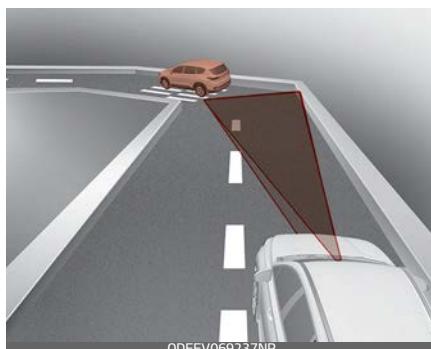
- The vehicle in front is bent out of shape
- The front vehicle's speed is fast or slow
- The vehicle in front steers in the opposite direction of your vehicle to avoid a collision
- With a vehicle in front, your vehicle changes lane at low speed
- The vehicle in front is covered with snow
- You are departing or returning to the lane
- You are driving unstably
- You are on a roundabout and the vehicle in front is not detected
- You are continuously driving in a circle
- The vehicle in front has an unusual shape
- The vehicle in front is driving uphill or downhill
- The pedestrian or cyclist is not fully detected, for example, if the pedestrian is leaning over or is not fully walking upright
- The pedestrian or cyclist is wearing clothing or equipment that makes it difficult to detect as a pedestrian or cyclist

Following image shows the image the sensor recognizes as vehicle, pedestrian, and cyclist.



- The pedestrian or cyclist in front is moving very quickly
- The pedestrian or cyclist in front is short or is posing a low posture
- The pedestrian or cyclist in front has impaired mobility
- The pedestrian or cyclist in front is moving intersected with the driving direction
- There is a group of pedestrians, cyclists or a large crowd in front
- The pedestrian or cyclist is wearing clothing that easily blends into the background, making it difficult to detect
- The pedestrian or cyclist is difficult to distinguish from the similar shaped structure in the surroundings
- You are driving by a pedestrian, cyclist traffic signs, structures, etc. near the intersection
- Driving in a parking lot

- Driving through a tollgate, construction area, unpaved road, partial paved road, uneven road, speed bumps, etc.
- Driving on an incline road, curved road, etc.
- Driving through a roadside with trees or streetlights
- The adverse road conditions cause excessive vehicle vibrations while driving
- Your vehicle height is low or high due to heavy loads, abnormal tire pressure, etc.
- Driving through a narrow road where trees or grass are overgrown
- There is interference by electromagnetic waves, such as driving in an area with strong radio waves or electrical noise

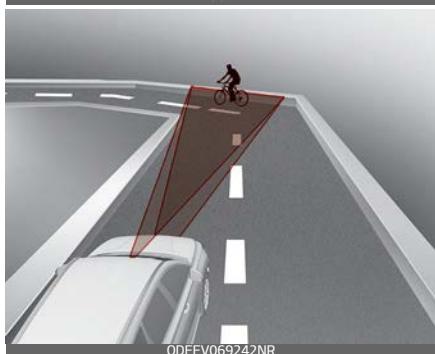
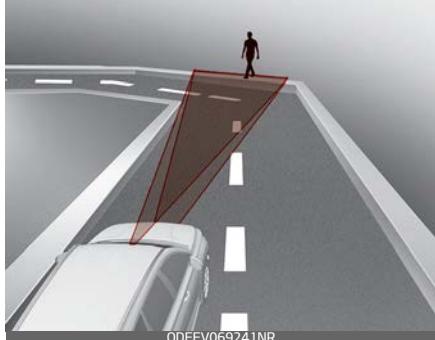
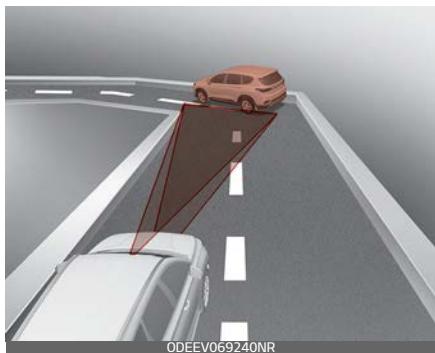
⚠ WARNING**• Driving on a curved road**

5

The front view camera or radar sensor recognition function may not detect the vehicle, pedestrian

or cyclist travelling in front on a curved road.

Always pay attention to road and driving conditions, and if necessary, depress the brake pedal to reduce your driving speed in order to maintain a safe distance.



Forward Collision-Avoidance Assist may detect a vehicle or pedestrian in the next lane or outside the lane when driving on a curved road. If this occurs, the unnecessarily alarm the driver and apply the brake. Always check the traffic conditions around the vehicle.

• Driving on a sloped road





ODEEV069245NR

Forward Collision-Avoidance Assist may not detect other vehicle, pedestrian or cyclist in front while driving uphill or downhill and this may result in no warning, braking assist when necessary. When the function suddenly recognizes the vehicle, pedestrian or cyclist in front while passing over a slope, you may experience sharp deceleration.

Always keep your eyes forward while driving upward or downward on a slope, and, if necessary, depress the brake pedal to reduce your driving speed in order to maintain distance.

- **Changing lanes**



OADAS030SDY

[A]: Your vehicle

[B]: Lane changing vehicle

When a vehicle changes lanes in front of you, Forward Collision-Avoidance Assist may not immediately detect the vehicle, especially if the vehicle changes lanes abruptly. In this case, you must maintain a safe braking distance, and if necessary, depress the brake pedal to reduce your driving speed in order to maintain a safe distance.



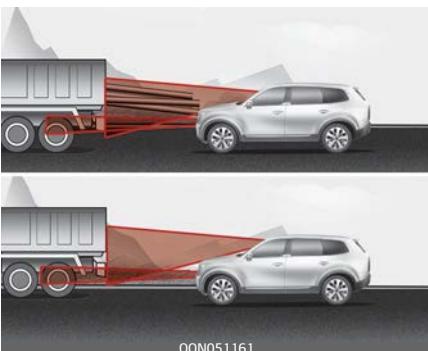
[A]: Your vehicle

[B]: Lane changing vehicle

[C]: Same lane vehicle

When driving in stop-and-go traffic, and a stopped vehicle in front of you merges out of the lane, Forward Collision-Avoidance Assist may not immediately detect the new vehicle that is now in front of you. In this case, you must maintain a safe braking distance, and if necessary, depress the brake pedal to reduce your driving speed in order to maintain a safe distance.

• Recognizing the vehicle



When the vehicle in front has heavy loading extended rearward, or when the vehicle in front has higher ground clearance, it may induce a hazardous situation.

Always pay attention to road and driving conditions, while driving and, if necessary, depress the brake pedal to reduce your driving speed in order to maintain distance.

⚠ WARNING

- When you are towing a trailer or another vehicle, we recommend that Forward Collision-Avoidance Assist is turned off due to safety reasons.
- Forward Collision-Avoidance Assist may operate if objects that are similar in shape or characteristics to vehicles, pedestrians or cyclists are detected.
- Forward Collision-Avoidance Assist does not operate on bicy-

- cles, motorcycles, or smaller wheeled objects, such as luggage bags, shopping carts, or strollers that are dragged by a pedestrian or a cyclist.
- Forward Collision-Avoidance Assist may not operate normally if interfered by strong electromagnetic waves.
 - Forward Collision-Avoidance Assist may not operate for 15 seconds after the vehicle is started, or the front view camera is initialized.

This device complies with Part 15 of the FCC rules.

5

Operation is subject to the following three conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.
3. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.

Radio frequency radiation exposure information:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed

and operated with minimum distance of 8 in (20 cm) between the radiator (antenna) and your body. This transmitter must not be collocated or operating in conjunction with any other antenna or transmitter.

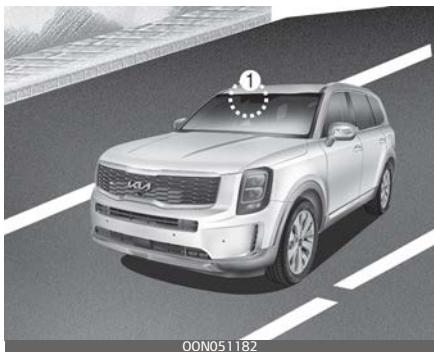
Lane Keeping Assist (LKA)

Lane Keeping Assist is designed to help detect the lane markers while driving over a certain speed. The function will warn the driver if the vehicle leaves the lane without using the turn signal, or will automatically assist the driver's steering to help prevent the vehicle from departing the lane.

* NOTICE

LKA stands for Lane Keeping Assist.

Detecting sensor



[1]: Front view camera

The front view camera is used as a detecting sensor to detect lane markings.

Refer to the picture above for the detailed location of the detecting sensor.

CAUTION

For more details on the precautions of the front view camera, refer to "Forward Collision-Avoidance Assist (FCA) (Sensor fusion)" on page 5-55.

Lane Keeping Assist Settings

Setting features

Lane Safety



With the ENGINE START/STOP button in the ON position, press MODE button (☰) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Lane Safety' from the setting menu to set whether or not to use each function.

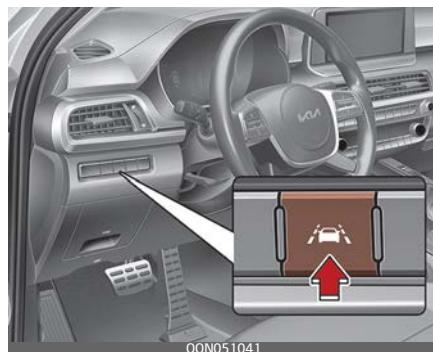
- If 'Lane Keeping Assist' is selected, the function will automatically assist the driver's steering when lane departure is

- detected to help prevent the vehicle from moving out of its lane.
- If 'Lane Departure Warning' is selected, the function will warn the driver with an audible warning when lane departure is detected. The driver must steer the vehicle.
 - If 'Off' is selected, the function will turn off. The indicator light () will turn off on the cluster.

WARNING

- If 'Lane Departure Warning' is selected, steering is not assisted.
- Lane Keeping Assist does not control the steering wheel when the vehicle is driven in the middle of the lane.
- The driver should always be aware of the surroundings and steer the vehicle if 'Off' is selected.

Turning Lane Keeping Assist On/Off



With the ENGINE START/STOP button in the ON position, press the Lane Safety button located on the instrument panel to turn on Lane Keeping Assist. The white indicator light () will illuminate on the cluster. Press the button again to turn off the function.

NOTICE

- If the engine is restarted, Lane Keeping Assist will maintain the last setting.
- When Lane Keeping Assist is turned off with the Lane Safety button, Lane Safety system settings will turn off.

Warning Volume

With the ENGINE START/STOP button in the ON position, press MODE button (☰) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Warning Volume' to change the warning volume to 'High', 'Medium', 'Low' or 'Off' for Lane Keeping Assist.

If you change the Warning Volume, the Warning Volume of other Driver Assistance system may be changed.

Lane Keeping Assist Operation***Warning and control***

Lane Keeping Assist will warn and control the vehicle with Lane Departure Warning and Lane Keeping Assist.

Lane Departure Warning

Left



Right

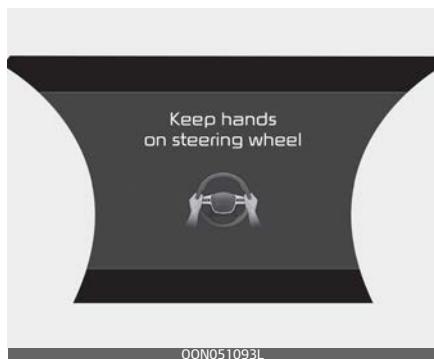


- To warn the driver that the vehicle is departing from the projected lane in front, the green (💡) indicator light will blink on the cluster, the lane line will blink on the cluster depending on which direction the vehicle is veering, and an audible warning will sound.
- The function will operate when your vehicle speed is between approximately 40~105 mph (64~169 km/h).

Lane Keeping Assist

- To warn the driver that the vehicle is departing from the projected lane in front, the green (💡) indicator light will blink on the cluster, and the steering wheel will make adjustments to keep vehicle inside the lane.
- The function will operate when your vehicle speed is between approximately 40~105 mph (64~169 km/h).

Hands-off warning



If the driver takes their hands off the steering wheel for several seconds, the 'Keep hands on steering wheel' warning message will appear on the cluster, and an audible warning will sound in stages.

⚠ WARNING

- The steering wheel may not be assisted if the steering wheel is held very tight or the steering

wheel is steered over a certain degree.

- Lane Keeping Assist does not operate at all times. It is the responsibility of the driver to safely steer the vehicle and to maintain the vehicle in its lane.
- The hands-off warning message may appear late depending on road conditions. Always have your hands on the steering wheel while driving.
- If the steering wheel is held very lightly, the hands off warning message may appear because the function may not recognize that the driver has their hands on the steering wheel.
- If you attach objects to the steering wheel, the hands-off warning may not work properly.

* NOTICE

- For more details on setting the functions in the infotainment function, refer to "LCD Display Modes" on page 4-78.
- When lane markings are detected, the lane lines on the cluster will change from gray to white and the green (💡) indicator light will illuminate if Lane Keeping Assist is operable.

Lane undetected



Lane detected



- Even though the steering is assisted by Lane Keeping Assist, the driver may control the steering wheel.
- The steering wheel may feel heavier or lighter when the steering wheel is assisted by Lane Keeping Assist than when it is not.

Lane Keeping Assist Malfunction and Limitations

Lane Keeping Assist malfunction



When Lane Keeping Assist is not working properly, the 'Check Lane Keeping Assist (LKA) system' warning message will appear and the yellow () indicator light will illuminate on the cluster. In this case, have the function checked by an authorized Kia dealer.

Limitations of Lane Keeping Assist

Lane Keeping Assist may not operate normally or may operate unexpectedly under the following circumstances:

- The lane is contaminated or difficult to distinguish because,
 - The lane markings is covered with rain, snow, dirt, oil, etc.
 - The color of the lane marking is not distinguishable from the road

- There are markings on the road near the lane or the markings on the road looks similar to the lane markings
- The lane marking is indistinct or damaged
- The shadow is on the lane marking by a median strip, trees, guardrail, noise barriers, etc.
- There are more than two lane markings on the road
- The lane number increases or decreases, or the lane markings are crossing
- The lane markings are complicated or a structure substitutes for the lines, such as a construction area
- There are road markings, such as zigzag lanes, crosswalk markings and road signs
- The lane suddenly disappears, such as at the intersection
- The lane is very wide or narrow
- There is a road edge without a lane
- There is a boundary structure in the roadway, such as a tollgate, sidewalk, curb, etc.
- The distance to the front vehicle is extremely short or the vehicle in front is covering the lane marking

CAUTION

For more details on the limitations of the front view camera, refer to "Forward Collision-Avoidance Assist (FCA) (Sensor fusion)" on page 5-55.

WARNING

Take the following precautions when using Lane Keeping Assist:

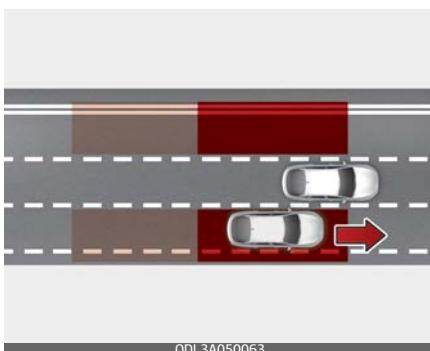
- The driver should hold the responsibility to safely drive and control the vehicle. Do not solely rely on the function and drive dangerously.
- The operation of Lane Keeping Assist can be cancelled or not work properly depending on road conditions and surroundings. Always be cautious while driving.
- Refer to "Limitations of Lane Keeping Assist" on page 5-74, if the lane is not detected properly.
- When you are towing a trailer or another vehicle, we recommend that Lane Keeping Assist is turned off due to safety reasons.
- If the vehicle is driven at high speed, the steering wheel will not be controlled. The driver must always follow the speed limit when using the function.
- If any other function's warning message is displayed or audible warning is generated, Lane Keeping Assist warning message may

- not be displayed and audible warning may not be generated.
- You may not hear the warning sound of Lane Keeping Assist if the surrounding is noisy.
 - If you attach objects to the steering wheel, steering may not be assisted properly.
 - Lane Keeping Assist may not operate for 15 seconds after the vehicle is started, or the front view camera is initialized.
 - Lane Keeping Assist will not operate when:
 - The turn signal or hazard warning flasher is turned on
 - The vehicle is not driven in the center of the lane when the function is turned on or right after changing a lane
 - ESC (Electronic Stability Control) or VSM (Vehicle Stability Management) is activated
 - The vehicle is driven on a sharp curve
 - Vehicle speed is below 35 mph (55 km/h) or above 130 mph (210 km/h)
 - The vehicle makes sharp lane changes
 - The vehicle is suddenly stopped

Blind-Spot Collision-Avoidance Assist (BCA)

Blind-Spot Collision-Avoidance Assist is designed to help detect and monitor approaching vehicles in the driver's blind spot area and warn the driver of a possible collision with a warning message and audible warning.

In addition, if there is a risk of collision when changing lanes or driving forward out of a parking space, Blind-Spot Collision-Avoidance Assist will help avoid collision by applying the brake.



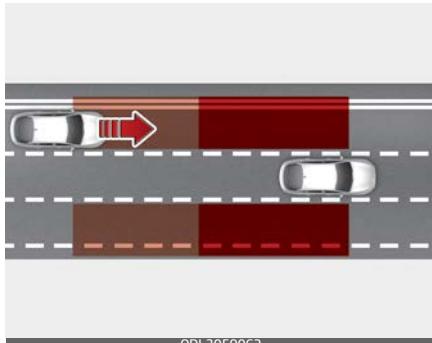
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Blind-Spot Collision-Avoidance Assist helps detect and informs the driver that a vehicle is in the blind spot.

CAUTION

The detecting range may vary depending on the speed of your vehicle. However, even if there is a vehicle in the blind spot, Blind-Spot

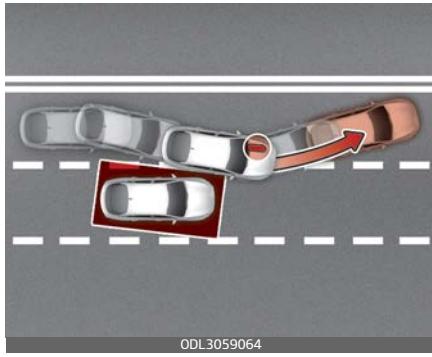
Collision-Avoidance Assist may not warn you when you pass by at high speeds.



Blind-Spot Collision-Avoidance Assist helps detect and inform the driver that a vehicle is approaching at high speed from the blind spot area.

⚠ CAUTION

Warning timing may vary depending on the speed of the vehicle approaching at high speed.

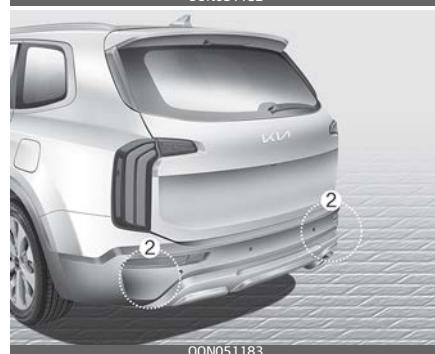
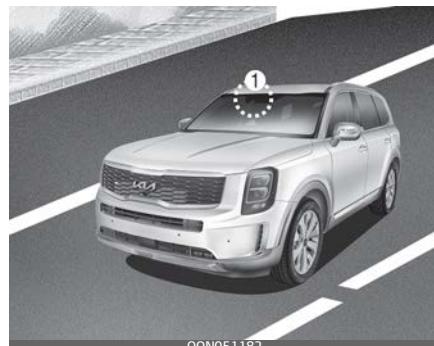


When changing lanes by detecting the lane ahead, if Blind-Spot Collision-Avoidance Assist judges that there is a collision risk with an approaching vehicle in the blind spot, it will help avoid collision by applying the differential brake.

* NOTICE

BCA stands for Blind-Spot Collision-Avoidance Assist.

Detecting sensor



[1] : Front view camera, [2] : Rear corner radar

Refer to the picture above for the detailed location of the detecting sensors.

⚠ CAUTION

Take the following precautions to maintain optimal performance of the detecting sensor:

- Never disassemble the rear corner radar or radar assembly, or apply any impact on it.
- If there is impact on the rear corner radar or near the radar, even though the warning message does not appear on the cluster, Blind-Spot Collision-Avoidance Assist may not operate properly. In this case, have your vehicle inspected by an authorized Kia dealer.
- If the rear corner radars have been replaced or repaired, have your vehicle inspected by an authorized Kia dealer.
- Use only genuine parts to repair the rear bumper where the rear corner radar is located.
- Do not apply license plate frame or objects, such as a bumper sticker, film or a bumper guard near the rear corner radar.
- The function may not work properly if the bumper has been replaced, or the surroundings of the rear corner radar has been damaged or paint has been applied.

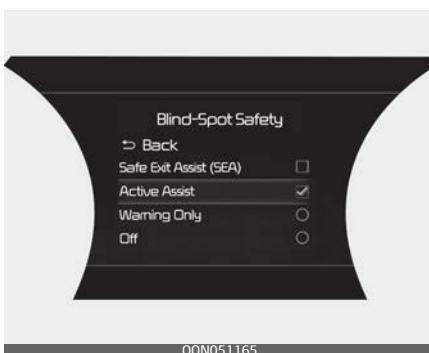
- If a trailer, carrier, etc. is installed, it may adversely affect the performance of the rear corner radar or the function may not operate.

For more details on the precautions of the front view camera, refer to "Forward Collision-Avoidance Assist (FCA) (Sensor fusion)" on page 5-55.

Blind-Spot Collision-Avoidance Assist Settings

Setting features

Blind-Spot Safety



With the ENGINE START/STOP button in the ON position, press MODE button (☰) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Blind-Spot Safety' from the setting menu to set whether or not to use each function.

- If 'Active Assist' is selected, Blind-Spot Collision-Avoidance Assist will warn the driver with a warning message, an audible warning and braking assist will be applied depending on the collision risk levels.
- If 'Warning Only' is selected, Blind-Spot Collision-Avoidance Assist will warn the driver with a warning message, an audible warning depending on the collision risk levels. Braking will not be assisted.
- If 'Off' is selected, Blind-Spot Collision-Avoidance Assist will turn off.

If you change the setting from 'Off' to 'Active Assist' or 'Warning Only', the warning light on the side view mirror (outside mirror) will blink for approximately 3 seconds.

In addition, if the engine is turned on, when the function is set to 'Active Assist' or 'Warning Only', the warning light on the side view mirror (outside mirror) will blink for approximately 3 seconds.

⚠ WARNING

- If 'Warning Only' is selected, braking is not assisted.
- If 'Off' is selected, the driver should always be aware of the surroundings and drive safely.

*** NOTICE**

If the engine is restarted, Blind-Spot Collision-Avoidance Assist will maintain the last setting.

Warning Timing



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With the ENGINE START/STOP button in the ON position, press MODE button (☰) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Warning Timing' to change the initial warning activation time for Blind-Spot Collision-Avoidance Assist.

When the vehicle is first delivered, Warning Timing is set to 'Normal'. If you change the Warning Timing, the warning time of other Driver Assistance system may change.

Warning Volume



With the ENGINE START/STOP button in the ON position, press MODE button (⌚) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Warning Volume' to change the warning volume to 'High', 'Medium', 'Low' or 'Off' for Blind-Spot Collision-Avoidance Assist.

If you change the Warning Volume, the warning volume of other Driver Assistance system may change.

⚠ CAUTION

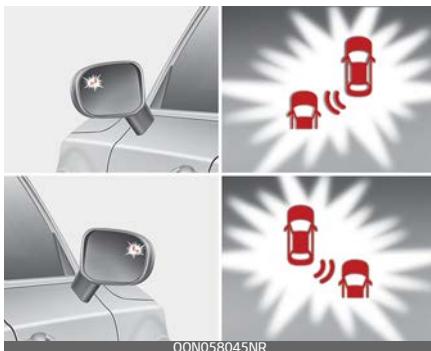
- The setting of the Warning Timing and Warning Volume applies to all functions of Blind-Spot Collision-Avoidance Assist.
- Even though 'Normal' is selected for Warning Timing, if the vehicles approaches at high speed, the initial warning activation time may seem late.

- Select 'Late' for Warning Timing when traffic is light and when driving speed is slow.

Blind-Spot Collision-Avoidance Assist Operation

Warning and control

Vehicle detection



- To warn the driver a vehicle is detected, the warning light on the side view mirror (outside mirror) and Head-up display (if equipped) will illuminate.
- Blind-Spot Collision-Avoidance Assist will operate when your vehicle speed is above 20 mph (30 km/h) and the speed of the vehicle in the blind spot area is above 7 mph (10 km/h).

Collision Warning

- Collision Warning will operate when the turn signal is turned on

in the direction of the detected vehicle.

- If 'Warning Only' is selected from the setting menu, the collision warning will operate when your vehicle approaches the lane the blind spot vehicle is detected.
- To warn the driver of a collision, the warning light on the side view mirror (outside mirror) and Head-up display (if equipped) will blink.
- When the turn signal is turned off or you move away from the lane, the collision warning will be canceled and Blind-Spot Collision-Avoidance Assist will return to vehicle detection state.

⚠ WARNING

- The detecting range of the rear corner radar is determined by a standard road width, therefore, on a narrow road, Blind-Spot Collision-Avoidance Assist may detect other vehicles in the second lane from your vehicle and warn you.
- In contrast, on a wide road, Blind-Spot Collision-Avoidance Assist may not be able to detect a vehicle driving in the next lane and may not warn you.
- When the hazard warning light is on, the collision warning by the turn signal will not operate.

Collision-Avoidance Assist



OON051167

- To warn the driver of a collision, the warning light on the side view mirror (outside mirror) will blink and a warning message will appear on the cluster. At the same time, an audible warning will sound, warning light on the head-up display (if equipped) will blink.
- Blind-Spot Collision-Avoidance Assist will operate when your vehicle speed is between 40~110 mph (60~180 km/h) and both lane markings of the driving lane are detected.
- Emergency Braking will be assisted to help prevent collision with the vehicle in the blind spot area.

⚠ WARNING

- Collision-Avoidance Assist will be canceled under the following circumstances:
 - Your vehicle enters the next lane by a certain distance

- Your vehicle is away from the collision risk
- The steering wheel is sharply steered
- The brake pedal is depressed
- Forward Collision-Avoidance Assist is operating
- After function operation or changing lane, you must drive to the center of the lane. The function will not operate if the vehicle is not driven in the center of the lane.

WARNING

- For your safety, change the Settings after parking the vehicle at a safe location.
- If any other function's warning message is displayed or audible warning is generated, Blind-Spot Collision-Avoidance Assist's warning message may not be displayed and audible warning may not be generated.
- You may not hear the warning sound of Blind-Spot Collision-Avoidance Assist if the surrounding is noisy.
- Blind-Spot Collision-Avoidance Assist may not operate if the driver applies the brake pedal to avoid collision.
- When Blind-Spot Collision-Avoidance Assist is operating, braking control by the function will automatically cancel when the

- driver excessively depresses the accelerator pedal or sharply steers the vehicle.
- During Blind-Spot Collision-Avoidance Assist operation, the vehicle may stop suddenly injuring passengers and shifting loose objects. Always have the seat belt on and keep loose objects secured.
- Even if there is a problem with Blind-Spot Collision-Avoidance Assist, the vehicle's basic braking performance will operate normally.
- Blind-Spot Collision-Avoidance Assist does not operate in all situations or cannot avoid all collisions.
- Blind-Spot Collision-Avoidance Assist may warn the driver late or may not warn the driver depending on the road and driving conditions.
- Driver should maintain control of the vehicle at all times. Do not depend on Blind-Spot Collision-Avoidance Assist. Maintain a safe braking distance, and if necessary, depress the brake pedal to reduce driving speed or to stop the vehicle.
- Never operate Blind-Spot Collision-Avoidance Assist on people, animal, objects, etc. It may cause serious injury or death.

⚠ WARNING

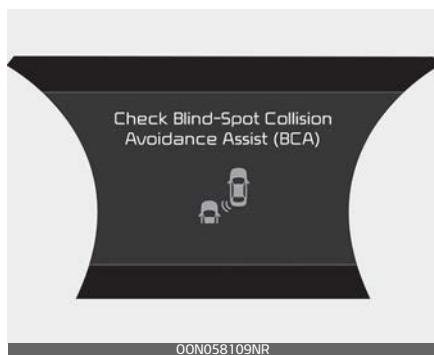
The brake control may not operate properly depending on the status of ESC (Electronic Stability Control).

There will only be a warning when:

- The ESC (Electronic Stability Control) warning light is on.
- ESC (Electronic Stability Control) is engaged in a different function.

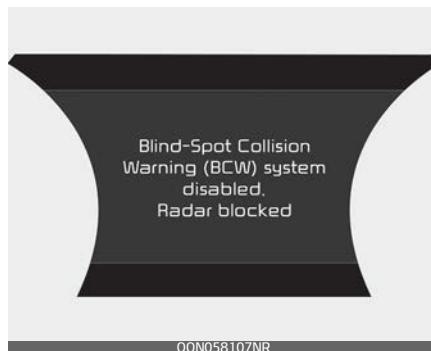
Blind-Spot Collision-Avoidance Assist Malfunction and Limitations

Blind-Spot Collision-Avoidance Assist malfunction



When Blind-Spot Collision-Avoidance Assist is not working properly, the 'Check Blind-Spot Collision Avoidance Assist (BCA)' warning message will appear (turns off after a certain time), and (⚠) warning light will illuminate on the cluster. In this case, have your vehicle inspected by an authorized Kia dealer.

Blind-Spot Collision-Avoidance Assist disabled



When the rear bumper around the rear corner radar or sensor is covered with foreign material, such as snow or rain, or installing a trailer or carrier, it can reduce the detecting performance and temporarily limit or disable Blind-Spot Collision-Avoidance Assist.

If this occurs, the 'Blind-Spot Collision Warning (BCW) system disabled. Radar blocked' warning message will appear on the cluster.

Blind-Spot Collision-Avoidance Assist will operate normally when such foreign material or trailer, etc. is removed, and then the engine is restarted.

If Blind-Spot Collision-Avoidance Assist does not operate normally after it is removed, have your vehicle inspected by an authorized Kia dealer.

⚠ WARNING

- Even though the warning message does not appear on the cluster, Blind-Spot Collision-Avoidance Assist may not properly operate.
- Blind-Spot Collision-Avoidance Assist may not properly operate in an area (e.g. open terrain), where any substance are not detected right after the engine is turned on, or when the detecting sensor is blocked with foreign material right after the engine is turned on.

⚠ CAUTION

Turn off Blind-Spot Collision-Avoidance Assist to install a trailer, carrier, etc., or remove the trailer, carrier, etc. to use Blind-Spot Collision-Avoidance Assist.

Limitations of Blind-Spot Collision-Avoidance Assist

Blind-Spot Collision-Avoidance Assist may not operate normally, or the function may operate unexpectedly under the following circumstances:

- There is inclement weather, such as heavy snow, heavy rain, etc.
- The rear corner radar is covered with snow, rain, dirt, etc.
- The temperature around the rear corner radar is high or low

- Driving on a highway (or motorway) ramp
- The road pavement (or the peripheral ground) abnormally contains metallic components (i.e. possibly due to subway construction).
- There is a fixed object near the vehicle, such as sound barriers, guardrails, central dividers, entry barriers, street lamps, signs, tunnels, walls, etc. (including double structures)
- Driving in large areas where there are few vehicles or structures (i.e. desert, meadow, suburb, etc.)
- Driving through a narrow road where trees or grass are overgrown
- Driving on a wet road surface, such as a puddle on the road
- The other vehicle drives very close behind your vehicle, or the other vehicle passes by your vehicle in close proximity
- The speed of the other vehicle is very fast that it passes by your vehicle in a short time
- Your vehicle passes by the other vehicle
- Your vehicle changes lanes
- Your vehicle has started at the same time as the vehicle next to you and has accelerated
- The vehicle in the next lane moves two lanes away from you, or when the vehicle two lanes away moves to the next lane from you

- A trailer or carrier is installed around the rear corner radar
- The bumper around the rear corner radar is covered with objects, such as a bumper sticker, bumper guard, bike rack, etc.
- The bumper around the rear corner radar is impacted, damaged or the radar is out of position
- Your vehicle height is low or high due to heavy loads, abnormal tire pressure, etc.

Blind-Spot Collision-Avoidance Assist may not operate normally, or the function may operate unexpectedly when the following objects are detected:

- A motorcycle or bicycle is detected
- A vehicle such as a flat trailer is detected
- A big vehicle such as a bus or truck is detected
- A moving obstacle such as a pedestrian, animal, shopping cart or a baby stroller is detected
- A vehicle with low height such as a sports car is detected

Braking control may not work, driver's attention is required in the following circumstances:

- The vehicle severely vibrates when driving on a bumpy, uneven or concrete road
- Driving on a slippery surface due to snow, water puddle, ice, etc.

- The tire pressure is low or a tire is damaged
- The brake is reworked
- The vehicle makes abrupt lane changes

CAUTION

For more details on the limitations of the front view camera, refer to "Forward Collision-Avoidance Assist (FCA) (Sensor fusion)" on page 5-55.

WARNING

Driving on a curved load



Blind-Spot Collision-Avoidance Assist may not operate properly when driving on a curved road. The function may not detect the vehicle in the next lane.

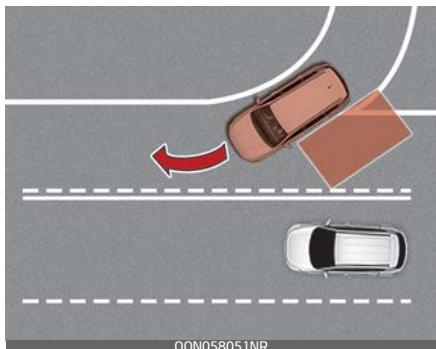
Always pay attention to road and driving conditions while driving.



Blind-Spot Collision-Avoidance Assist may not operate properly when driving on the curved road. The function may recognize the vehicle in the same lane.

Always pay attention to road and driving conditions while driving.

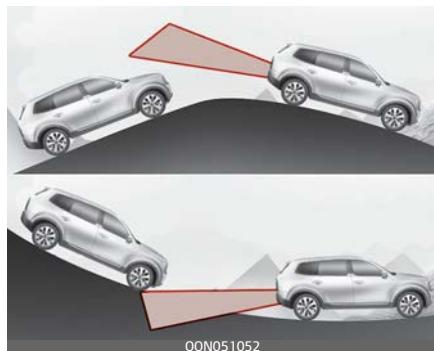
Driving where the road is merging/dividing



Blind-Spot Collision-Avoidance Assist may not operate properly when driving where the road merges or divides. The function may not detect the vehicle in the next lane.

Always pay attention to road and driving conditions while driving.

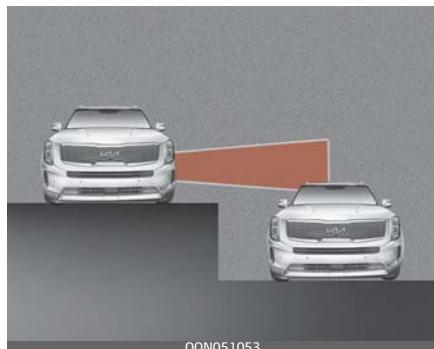
Driving on a sloped road



Blind-Spot Collision-Avoidance Assist may not operate properly when driving on a sloped road. The function may not detect the vehicle in the next lane or may incorrectly detect the ground or structure.

Always pay attention to road and driving conditions while driving.

Driving where the heights of the lanes are different



Blind-Spot Collision-Avoidance Assist may not operate properly when driving where the heights of

the lanes are different. The function may not detect the vehicle on a road with different lane heights (underpass joining section, grade separated intersections, etc.).

Always pay attention to road and driving conditions while driving.

responsible for compliance could void the user's authority to operate the equipment.

WARNING

- When you are towing a trailer or another vehicle, make sure that you turn off Blind-Spot Collision-Avoidance Assist.
- Blind-Spot Collision-Avoidance Assist may not operate normally if interfered by strong electromagnetic waves.
- Blind-Spot Collision-Avoidance Assist may not operate for 15 seconds after the vehicle is started, or the rear corner radars are initialized.

5

This device complies with Part 15 of the FCC rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

CAUTION TO USERS

Changes or modifications not expressly approved by the party

Driver Attention Warning (DAW)

Basic function

Driver Attention Warning will determine the driver's attention level by analyzing driving pattern, driving time, etc. while driving. Driver Attention Warning will recommend a break when the driver's attention level falls below a certain level to help drive safely.

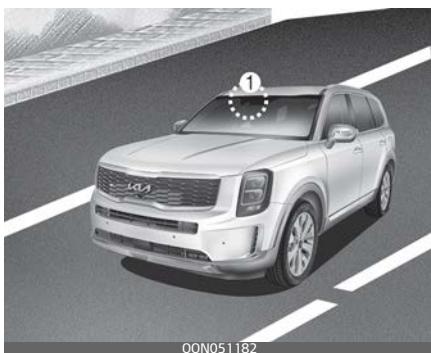
Leading vehicle departure alert

Leading vehicle departure alert will inform the driver when the front vehicle departs from a stop.

* NOTICE

DAW stands for Driver Attention Warning.

Detecting sensor



[1]: Front view camera

The front view camera is used as a detecting sensor to detect driving patterns and front vehicle departure while vehicle is being driven.

Refer to the picture above for the detailed location of the detecting sensor.

⚠ CAUTION

Always keep the front view camera in good condition to maintain optimal performance of Driver Attention Warning.

For more details on the precautions of the front view camera, refer to "Forward Collision-Avoidance Assist (FCA) (Sensor fusion)" on page 5-55.

Driver Attention Warning Settings

Setting features

Driver Attention Warning



- With the ENGINE START/STOP button in the ON position, press MODE button (☰) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Driver Attention Warning' from the setting menu to set whether or not to use each function.
- If 'Low Activity Warning' is selected, the function will inform the driver the driver's attention level and will recommend taking a break when the level falls below a certain level.

Leading vehicle departure alert



If 'Leading vehicle departure alert' is selected from 'Driver Assistance → Driving Assist', the function will inform the driver when the front vehicle departs from a stop.

5

Warning Timing



With the ENGINE START/STOP button in the ON position, press MODE button (☰) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Warning Timing' to change the initial warning

activation time for Driver Attention Warning.

When the vehicle is first delivered, warning timing is set to 'Normal'. If you change the warning timing, the warning time of other Driver Assistance system may change.

* NOTICE

If the engine is restarted, Driver Attention Warning will maintain the last setting.

Driver Attention Warning Operation

Basic function

Display and warning

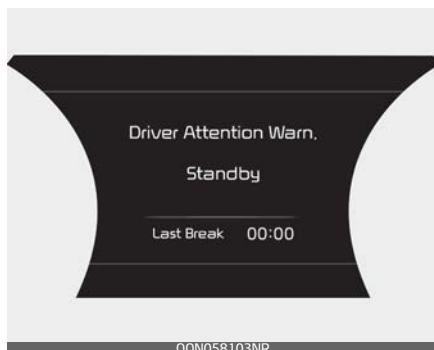
The basic function of Driver Attention Warning is to inform the driver the 'Attention Level' and to warn the driver 'Consider taking a break'.

Attention level

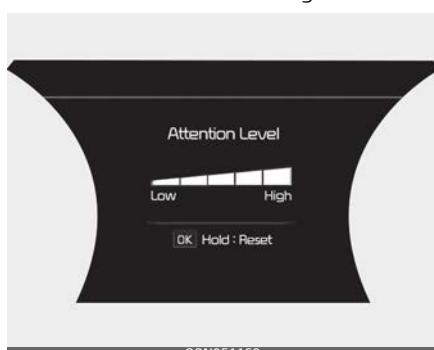
Off



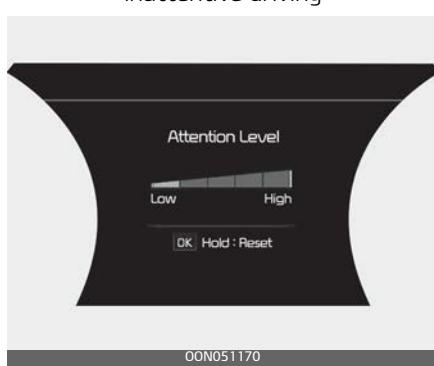
Standby



Attentive driving



Inattentive driving



- The driver can monitor his/her driving conditions on the cluster.

- When the 'Inattentive Driving Warning' is deselected from the setting menu, 'Off' is displayed.
- Driver Attention Warning will operate when vehicle speed is between 0~110 mph (0~180 km/h).
- When vehicle speed is not within the operating speed, the message 'Standby' will be displayed.
- The driver's attention level is displayed on the scale of 1 to 5. The lower the level is, the more inattentive the driver is.
- The level decreases when the driver does not take a break for a certain period of time.

Taking a break



OON058102NR

- The 'Consider taking a break' message will appear on the cluster and an audible warning will sound to suggest that the driver take a break, when the driver's attention level is below 1.

- Driver Attention Warning will not suggest a break when the total driving time is shorter than 10 minutes or 10 minutes has not passed after the last break was suggested.

⚠ WARNING

For your safety, change the Settings after parking the vehicle at a safe location.

⚠ CAUTION

- Driver Attention Warning may suggest a break depending on the driver's driving pattern or habits, even if the driver doesn't feel fatigue.
- Driver Attention Warning is a supplemental function and may not be able to determine whether the driver is inattentive.
- The driver who feels fatigued should take a break at a safe location, even though there is no break suggestion by Driver Attention Warning.

*** NOTICE**

- For more details on setting the functions in the infotainment system, refer to "Instrument cluster" on page 4-72.

- Driver Attention Warning will reset the last break time to 00:00 in the following situations:
 - The engine is turned off
 - The driver unfastens the seat belt and opens the driver's door.
 - The vehicle is stopped for more than 10 minutes.
- When the driver resets Driver Attention Warning, the last break time is set to 00:00 and the driver's attention level is set to High.

Leading vehicle departure alert



While Smart Cruise Control is in operation if your vehicle stops behind the vehicle in front, the vehicle in front depart from a stop, Leading vehicle departure alert will inform the driver by displaying the 'Leading vehicle is driving away' message on the cluster and an audible warning will sound.

⚠ WARNING

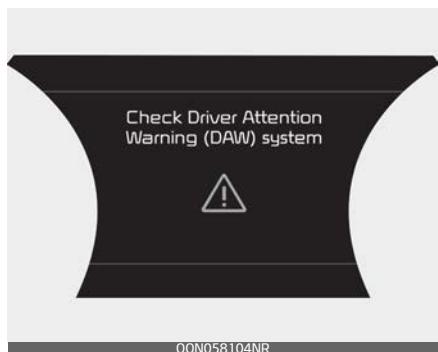
- If any other function's warning message is displayed or audible warning is generated, Leading vehicle departure alert Warning message may not be displayed and audible warning may not be generated.
- The driver should hold the responsibility to safely drive and control the vehicle.

⚠ CAUTION

- Leading vehicle departure alert is a supplemental function and may not warn the driver whenever the front vehicle departs from a stop.
- Always check the front of the vehicle and road conditions before departure.

Driver Attention Warning Malfunction and Limitations

Driver Attention Warning malfunction



When Driver Attention Warning is not working properly, the 'Check Driver Attention Warning (DAW) system' warning message will appear on the cluster (turns off after a certain time) and (⚠) warning light will illuminate. In this case, have your vehicle inspected by an authorized Kia dealer.

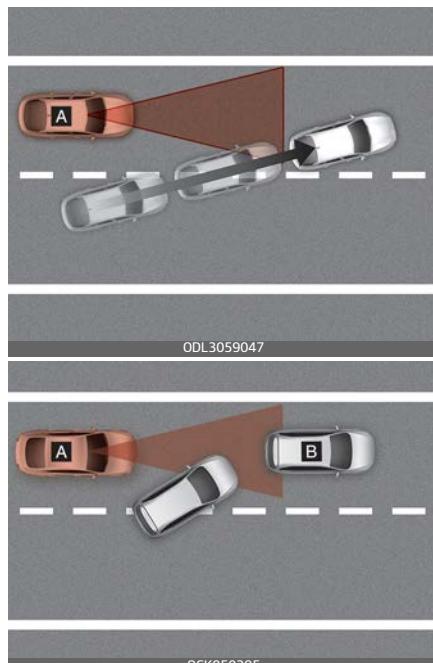
Limitations of Driver Attention Warning

Driver Attention Warning may not work properly in the following situations:

- The vehicle is driven aggressively
- The vehicle intentionally crosses over lanes frequently
- The vehicle is controlled by Driver Assistance system, such as Lane Keeping Assist.

Leading vehicle departure alert

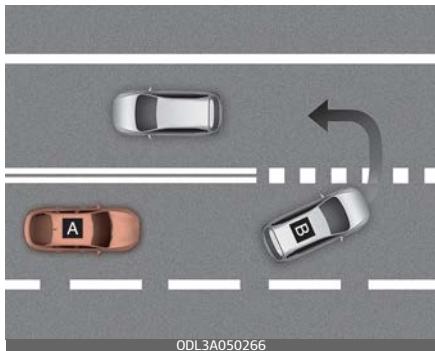
- When the vehicle cuts in



[A]: Your vehicle, [B]: Front vehicle

If a vehicle cuts in front of your vehicle, Leading vehicle departure alert may not operate properly.

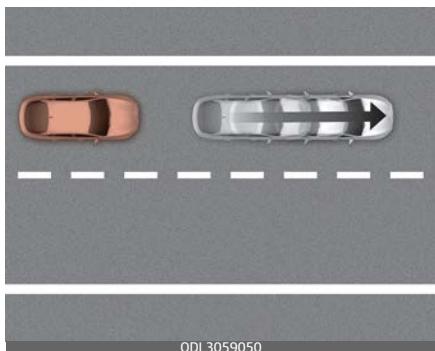
- When the vehicle ahead sharply steers



[A] : Your vehicle, [B] : Front vehicle

If the vehicle in front makes a sharp turn, such as to turn left or right or make a U- turn, etc., Leading vehicle departure alert may not operate properly.

- When the vehicle ahead abruptly departs



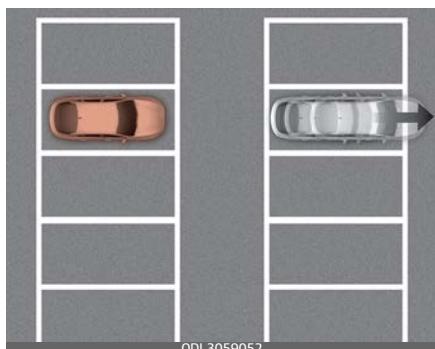
If the vehicle in front abruptly departs, Leading vehicle departure alert may not operate properly.

- When a pedestrian or cyclist is between you and the vehicle ahead



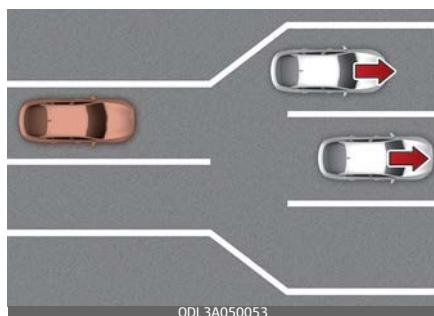
If there is a pedestrian or cyclist in between you and the vehicle in front, Leading vehicle departure alert may not operate properly.

- When in a parking lot



If a vehicle parked in front drives away from you, Leading vehicle departure alert may warn you that the parked vehicle is driving away.

- When driving at a tollgate or intersection, etc.



If you pass a tollgate or intersection with lots of vehicles or you drive where lanes are merged or divided frequently, Leading vehicle departure alert may not operate properly.

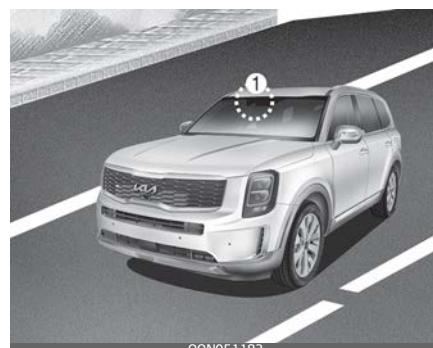
⚠ CAUTION

For more details on the precautions of the front view camera, refer to "Forward Collision-Avoidance Assist (FCA) (Sensor fusion)" on page 5-55.

Smart Cruise Control (SCC)

Smart Cruise Control allows you to program the vehicle to maintain constant speed and distance detecting the vehicle ahead without depressing the accelerator or brake pedal.

Detecting sensor



[1]: Front view camera, [2]: Front radar

The front view camera and front radar are used as a detecting sensor to detect front vehicles.

Refer to the picture above for the detailed location of the detecting sensor.

⚠ CAUTION

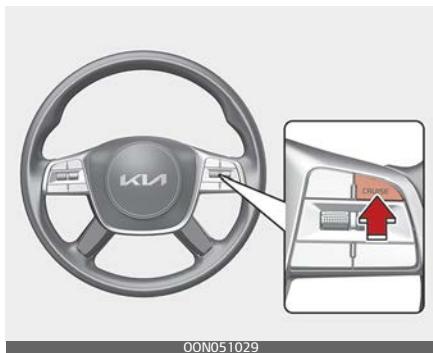
Always keep the front view camera and front radar in good condition to maintain optimal performance of Smart Cruise Control.

For more details on the precautions of the front view camera and front radar, refer to "Forward Collision-Avoidance Assist (FCA) (Sensor fusion)" on page 5-55.

Smart Cruise Control Settings

Setting features

To turn on Smart Cruise Control

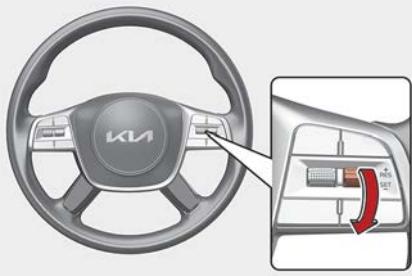


1. Press the Driving Assist button, to turn the function on. The CRUISE indicator in the instrument cluster will illuminate.

2. Accelerate to the desired speed. The set speed can be set as follows:

- 20 mph (30 km/h) ~ 100 mph (160 km/h)

3. Push the SET- switch down, and release it at the desired speed. The set speed and vehicle to vehicle distance on the LCD screen will illuminate.

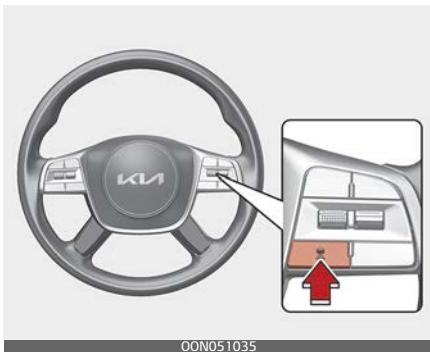


OON051030

4. Release the accelerator pedal. The desired speed will automatically be maintained. If there is a vehicle in front of you, the speed may decrease to maintain the distance to the vehicle ahead. On a steep grade, the vehicle may slow down or speed up slightly while going uphill or downhill.

* NOTICE

Vehicle speed may decrease on an upward slope and increase on a downward slope.

To set vehicle distance

Each time the vehicle distance button is pressed, the vehicle distance changes as follows:

Distance 4 → Distance 3 → Distance 2
 ↑
 Distance 1 ←

*** NOTICE**

- If you drive at 56 mph (90 km/h), the distance is maintained as follows:
 - Distance 4 – approximately 172 ft. (52.5 m)
 - Distance 3 – approximately 130 ft. (40 m)
 - Distance 2 – approximately 106 ft. (32.5 m)
 - Distance 1 – approximately 82 ft. (25 m)
- The distance is set to the last set distance when the engine is restarted, or when Smart Cruise Control was temporarily canceled.

To increase speed

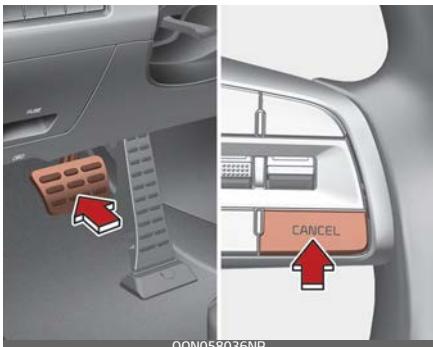
- Push the RES+ switch up, and release it immediately. The cruising speed will increase by 1 mph (1 km/h) each time the switch is operated in this manner.
- Push the RES+ switch up, and hold it while monitoring the set speed on the cluster. The cruising speed will increase by 5 mph or 10 km/h each time the switch is operated in this manner. Release the switch when the desired speed is shown, and the vehicle will accelerate to that speed. You can set the speed to 100 mph (160 km/h).

 WARNING

Check the driving condition before using the RES+ switch. Driving speed may sharply increase when you push up and hold the RES+ switch.

To decrease speed

- Push the SET- switch down, and release it immediately. The cruising speed will decrease by 1 mph (1 km/h) each time the switch is operated in this manner.
- Push the SET- switch down, and hold it while monitoring the set speed on the cluster. The cruising speed will decrease by 5 mph or 10 km/h each time the switch is operated in this manner.
- Release the switch at the speed you want to maintain. You can set the speed to 20 mph (30 km/h).

To temporarily cancel Smart Cruise Control

Press the CANCEL button or depress the brake pedal to temporarily cancel Smart Cruise Control.

To resume Smart Cruise Control

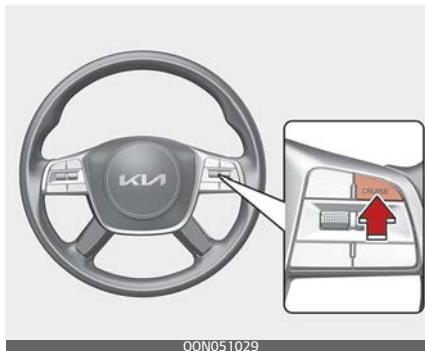
- If any method other than the RES+ or SET- switch was used to cancel cruising speed and Smart Cruise Control is still activated, the set speed will automatically resume when you push the RES+ or SET- switch up or down.
- If you push the RES+ switch up, the speed will resume to the recently set speed. However, if

vehicle speed drops below 5 mph (10 km/h), it will resume when there is a vehicle in front of your vehicle.

* NOTICE

Always check the road conditions when you push the switch up (to RES+) to resume speed.

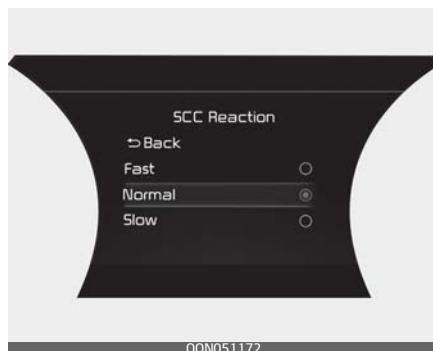
To turn off Smart Cruise Control



Press the Driving Assist button to turn Smart Cruise Control off.

To adjust the sensitivity of Smart Cruise Control

SCC Reaction

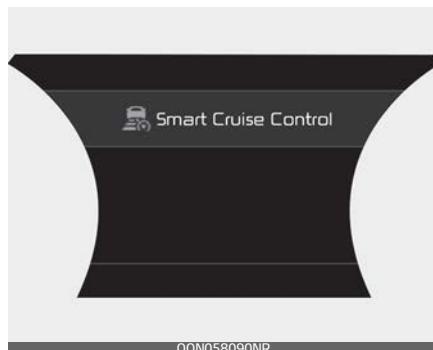


The sensitivity of vehicle speed when following the front vehicle to maintain the set distance can be adjusted. Go to the "User Settings → Driver Assistance → SCC Reaction → Fast/Normal/Slow". You may select one of the three stages you prefer.

5

Converting to Cruise Control mode

The driver may choose to only use the cruise control mode (speed control function) by doing as follows:





1. Turn Smart Cruise Control on (the cruise indicator light will be on but the function will not be activated).
2. Push and hold the vehicle distance button for more than 2 seconds.
3. Choose between "Smart Cruise Control" and "Cruise Control". When the function is canceled using the Driving Assist button or the Driving Assist button is used after the vehicle is turned on, the Smart Cruise Control will turn on.

Warning Volume



With the ENGINE START/STOP button in the ON position, press MODE button (☰) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Warning Volume' to change the warning volume to 'High', 'Medium', 'Low' or 'Off' for Smart Cruise Control.

If you change the Warning Volume, the Warning Volume of other Driver Assistance system may change.

* NOTICE

If the engine is restarted, Warning Volume will maintain the last setting.

Smart Cruise Control Operation

Operating conditions

Smart Cruise Control will operate when the following conditions are satisfied.

Basic function

- The gear is in D (Drive)
- The driver's door is closed
- EPB (Electronic Parking Brake) is not applied
- Your vehicle speed is within the operating speed range
5~110 mph (10~170 km/h): when there is no vehicle in front
0~110 mph (0~170 km/h): when there is a vehicle in front
- ESC (Electronic Stability Control), TCS (Traction Control System) or ABS is on
- ESC (Electronic Stability Control), TCS (Traction Control System) or ABS is not controlling the vehicle
- Engine rpm is not in the red zone
- Forward Collision-Avoidance Assist brake control is not operating
- ISG system is not operating

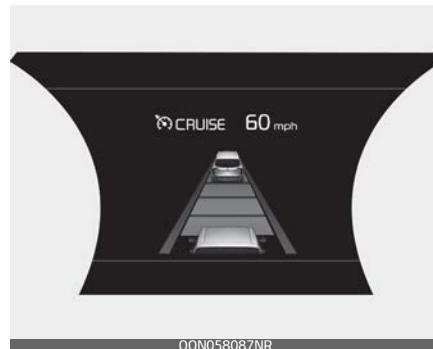
*** NOTICE**

At a stop, if there is vehicle in front of your vehicle, the function will turn on when the brake pedal is depressed.

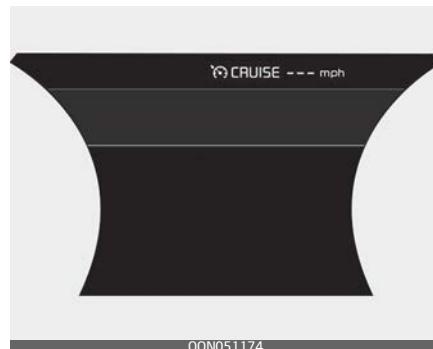
Smart Cruise Control Display and Control

Basic function

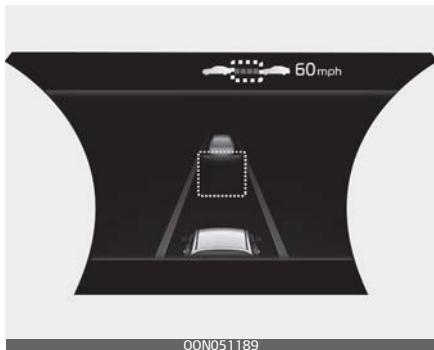
Operating



Temporarily canceled



You can see the status of the Smart Cruise Control operation in the Driving Assist view on the cluster. Refer to "Instrument cluster" on page 4-72.

To temporarily accelerate

If you want to speed up temporarily when Smart Cruise Control is on, depress the accelerator pedal for a certain amount. While depressing the accelerator pedal for a certain amount, the set speed will blink on the cluster. However, if the accelerator pedal is insufficiently depressed, the vehicle may slow down.

⚠ WARNING

Be careful when accelerating temporarily, because the speed is not controlled automatically even if there is a vehicle in front of you.

Smart Cruise Control temporarily canceled

Smart Cruise Control will be temporarily canceled automatically when:

- The vehicle speed is above 110 mph (170 km/h)
- The vehicle is stopped for a certain period of time
- The accelerator pedal is continuously depressed for a certain period of time
- The conditions for Smart Cruise Control to operate is not satisfied

If Smart Cruise Control is temporarily canceled, the 'Smart Cruise Control canceled' warning message will appear on the cluster, and an audible warning will sound to warn the driver.

⚠ WARNING

When Smart Cruise Control is temporarily canceled, distance with the front vehicle will not be maintained. Always have your eyes on the road while driving, and if necessary,

depress the brake pedal to reduce your driving speed in order to maintain a safe distance.

Smart Cruise Control conditions not satisfied



OON051175

If the Driving Assist button, RES+, SET- switch is pushed when Smart Cruise Control operating conditions are not satisfied, the 'Smart Cruise Control conditions not met' will appear on the cluster, and an audible warning will sound.

In traffic situation



OON058121NR

In traffic, your vehicle will stop if the vehicle ahead of you stops. Also, if the vehicle ahead of you starts moving, your vehicle will start as well. In addition, after the vehicle has stopped and a certain time have passed, the 'Use switch or pedal to accelerate' message will appear on the cluster. Depress the accelerator pedal or push the RES+ switch up or push the SET- switch down to start driving.

Warning road conditions ahead



OON058088NR

In the following situation, the 'Watch for surrounding vehicles' warning message will appear on the cluster, and an audible warning will sound to warn the driver of road conditions ahead.

The vehicle in front disappears when Smart Cruise Control is maintaining the distance with the vehicle ahead while driving in low speed.

⚠ WARNING

Always pay attention to vehicles or objects that may suddenly appear in front of you, and if necessary, depress the brake pedal to reduce your driving speed in order to maintain a safe distance.

Collision Warning



While Smart Cruise Control is operating, when the collision risk with the vehicle ahead is high, the 'Collision Warning' warning message will appear on the cluster, and an audible warning will sound to warn the driver. Always have your eyes on the road while driving, and if necessary, depress the brake pedal to reduce your driving speed in order to maintain a safe distance.

- The distance from the front vehicle is near, or the vehicle speed of the other vehicle is faster or similar with your vehicle
- The speed of the front vehicle is very slow or is at a standstill
- The accelerator pedal is depressed right after Smart Cruise Control is turned on

⚠ WARNING

Take the following precautions when using Smart Cruise Control :

- Smart Cruise Control does not substitute for proper and safe driving. It is the responsibility of the driver to always check the speed and distance to the vehicle ahead.
- Smart Cruise Control may not recognize unexpected and sudden situations or complex driving situations, so always pay attention to driving conditions and control your vehicle speed.
- Keep Smart Cruise Control off when the function is not in use to avoid inadvertently setting a speed.
- Do not open the door or leave the vehicle when Smart Cruise Control is operating, even if the vehicle is stopped.
- Always be aware of the selected speed and vehicle distance.

⚠ WARNING

- In the following situations, Smart Cruise Control may not warn the driver of a collision.

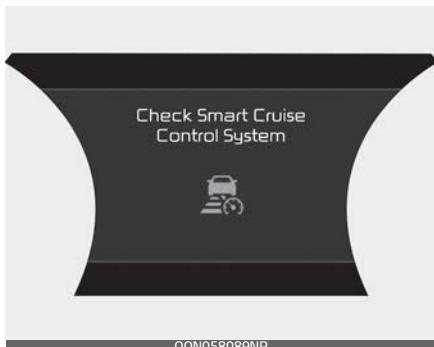
- Keep a safe distance according to road conditions and vehicle speed. If the vehicle distance is too close during high-speed driving, a serious collision may result.
- When maintaining distance with the vehicle ahead, if the front vehicle disappears, Smart Cruise Control may suddenly accelerate to the set speed. Always be aware of unexpected and sudden situations from occurring.
- Vehicle speed may decrease on an upward slope and increase on a downward slope.
- Always be aware of situations such as when a vehicle cuts in suddenly.
- When you are towing a trailer or another vehicle, we recommend that Smart Cruise Control is turned off due to safety reasons.
- Turn off Smart Cruise Control when your vehicle is being towed.
- Smart Cruise Control may not operate normally if interfered by strong electromagnetic waves.
- Smart Cruise Control may not detect an obstacle in front and lead to a collision. Always look ahead cautiously to prevent unexpected and sudden situations from occurring.
- Vehicles moving in front of you with a frequent lane change may cause a delay in the function's reaction or may cause the function to react to a vehicle actually in an adjacent lane. Always drive cautiously to prevent unexpected and sudden situations from occurring.
- Always be aware of the surroundings and drive safely, even though a warning message does not appear or an audible warning does not sound.
- If any other function's warning message is displayed or warning sound is generated, Smart Cruise Control warning message may not be displayed and warning sound may not be generated.
- You may not hear the warning sound of Forward Collision-Avoidance Assist if the surrounding is noisy.
- The vehicle manufacturer is not responsible for any traffic violation or accidents caused by the driver.
- Always set the vehicle speed under the speed limit in your state.

* NOTICE

- Smart Cruise Control may not operate in few seconds after the vehicle is started or the front view camera or front radar is initialized.
- You may hear a sound when the brake is controlled by Smart Cruise Control.

Smart Cruise Control Malfunction and Limitations

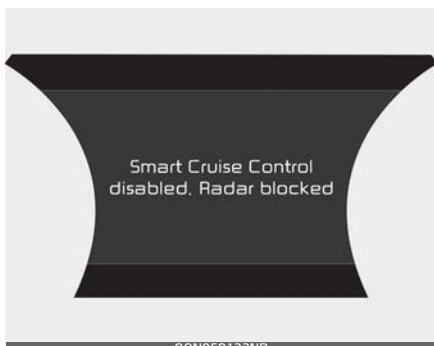
Smart Cruise Control malfunction



OON058089NR

The message will appear when Smart Cruise Control is not functioning normally. In this case, take your vehicle to an authorized Kia dealer and have the function checked.

Smart Cruise Control disabled



OON058123NR

When the front radar cover or sensor is covered with snow, rain, or foreign matters, it can reduce the detecting performance and tempo-

rarily limit or disable Smart Cruise Control.

If this occurs the 'Smart Cruise Control disabled. Radar blocked.' warning message, and warning lights will illuminate on the cluster.

Smart Cruise Control will operate normally when such snow, rain or foreign matter is removed.

⚠ WARNING

Even though the warning message does not appear on the cluster, Smart Cruise Control may not properly operate.

⚠ CAUTION

Smart Cruise Control may not properly operate in an area (e.g. open terrain), where any substance are not detected after turning ON the engine.

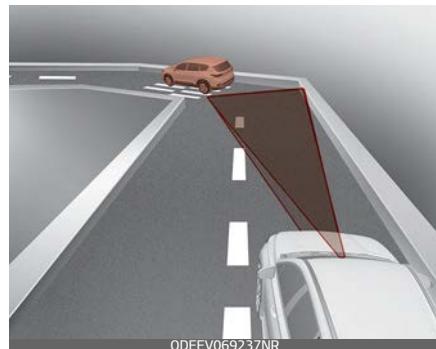
Limitations of Smart Cruise Control

Smart Cruise Control may not operate normally, or the function may operate unexpectedly under the following circumstances:

- The detecting sensor or the surroundings are contaminated or damaged
- Washer fluid is continuously sprayed, or the wiper is on

- The camera lens is contaminated due to tinted, filmed or coated windshield, damaged glass, or stuck of foreign matters (sticker, bug, etc.) on the glass
- Moisture is not removed or frozen on the windshield
- The field of view of the front view camera is obstructed by sun glare
- Street light or light from an oncoming vehicle is reflected on the wet road surface, such as a puddle on the road
- The temperature around the front view camera is high or low
- An object is placed on the dashboard
- The surrounding is very bright
- The surrounding is very dark, such as in a tunnel, etc.
- The brightness changes suddenly, for example when entering or exiting a tunnel
- The brightness outside is low, and the headlamps are not on or are not bright
- Driving in heavy rain or snow, or thick fog
- Driving through steam, smoke or shadow
- Only part of the vehicle is detected
- The vehicle in front has no tail lights, tail lights are located unusually, etc.
- The brightness outside is low, and the tail lamps are not on or are not bright
- The rear of the front vehicle is small or does not look normal (i.e. tilted, overturned, etc.)
- The front vehicle's ground clearance is low or high
- Your vehicle is being towed
- A vehicle suddenly cuts in front
- Driving through a tunnel or railroad bridge
- A material is near that reflects very well on the front radar, such as a guardrail, nearby vehicle, etc.
- The bumper around the front radar is impacted, damaged or the front radar is out of position
- The temperature around the front radar is high or low
- Driving in large areas where there are few vehicles or structures (i.e. desert, meadow, suburb, etc.)
- The vehicle in front is made of material that does not reflect on the front radar
- Driving near a highway (or motorway) interchange or tollgate
- Driving on a slippery surface due to snow, water puddle, ice, etc.
- Driving on a curved road
- The vehicle in front is detected late
- The vehicle in front is suddenly blocked by a obstacle
- The vehicle in front suddenly changes lane or suddenly reduces speed
- The vehicle in front is bent out of shape

- The front vehicle's speed is fast or slow
- With a vehicle in front, your vehicle changes lane at low speed
- The vehicle in front is covered with snow
- You are driving unstably
- You are on a roundabout and the vehicle in front is not detected
- You are continuously driving in a circle
- Driving in a parking lot
- Driving through a construction area, unpaved road, partial paved road, uneven road, speed bumps, etc.
- Driving on an incline road, curved road, etc.
- Driving through a roadside with trees or streetlights
- The adverse road conditions cause excessive vehicle vibrations while driving
- Your vehicle height is low or high due to heavy loads, abnormal tire pressure, etc.
- Driving through a narrow road where trees or grass are overgrown
- There is interference by electromagnetic waves, such as driving in an area with strong radio waves or electrical noise



- **Driving on a curved road**

On curves, Smart Cruise Control may not detect a vehicle in the same lane, and may accelerate to the set speed. Also, vehicle speed may rapidly decrease when the vehicle ahead is detected suddenly.

Select the appropriate set speed on curves and apply the brake pedal or accelerator pedal according to the road and driving conditions ahead.



Your vehicle speed can be reduced due to a vehicle in the adjacent lane.

Apply the accelerator pedal and select the appropriate set speed.

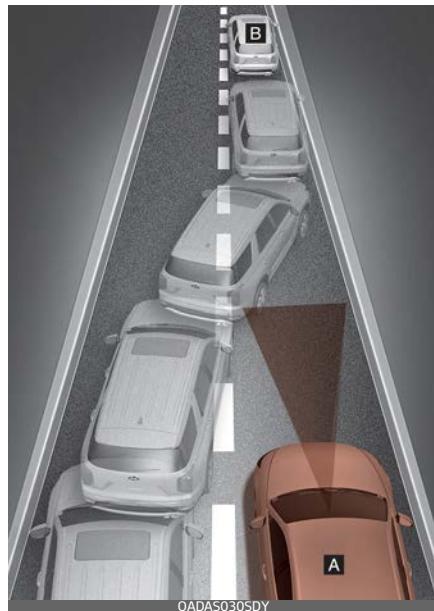
Check to be sure that the road conditions permit safe operation of Smart Cruise Control.



- **Driving on a sloped road**

During uphill or downhill driving, Smart Cruise Control may not detect a moving vehicle in your lane, and cause your vehicle to accelerate to the set speed. Also, vehicle speed will rapidly decrease when the vehicle ahead is detected suddenly.

Select the appropriate set speed on inclines and apply the brake pedal or accelerator pedal according to the road and driving conditions ahead.



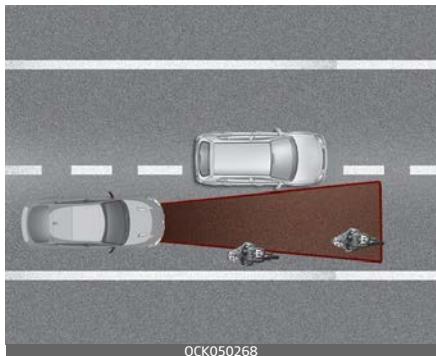
- **Changing lanes**

[A]: Your vehicle, [B]: Lane changing vehicle

When a vehicle moves into your lane from an adjacent lane, it cannot be detected by the sensor until it is in the sensor's detection range.

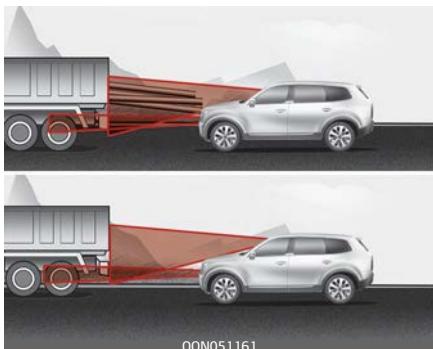
Smart Cruise Control may not immediately detect the vehicle when the vehicle changes lanes abruptly. In this case, you must maintain a safe braking distance, and if necessary, depress the brake pedal to reduce your driving speed in order to maintain a safe distance.

- Detecting vehicle**



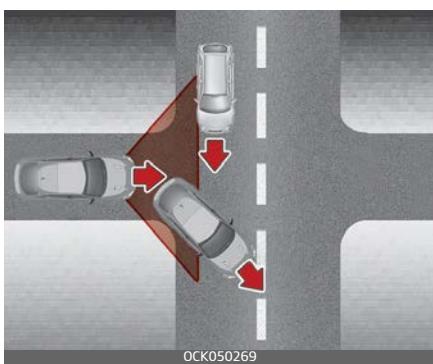
In the following cases, some vehicles in your lane cannot be detected by the sensor:

- Vehicles offset to one side
- Slow-moving vehicles or suddenly decelerating vehicles
- Oncoming vehicles
- Stopped vehicles
- Vehicles with small rear profile, such as trailers
- Narrow vehicles, such as motorcycles or bicycles
- Special vehicles
- Animals and pedestrians

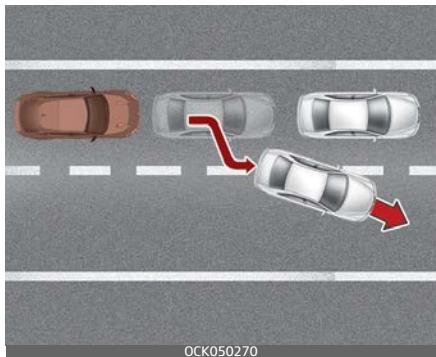


In the following cases, the vehicle in front cannot be detected by the sensor:

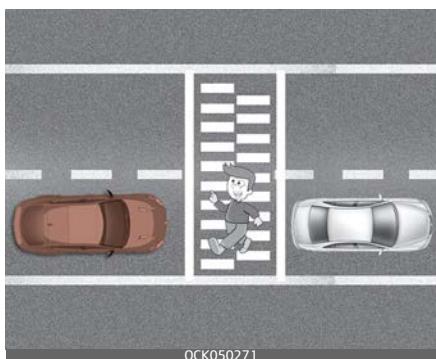
- Vehicles with higher clearance or vehicles carrying loads that stick out of the back of the vehicle
- Vehicles that have the front lifted due to heavy loads
- You are steering your vehicle
- Driving on narrow or sharply curved roads



When a vehicle ahead disappears at an intersection, your vehicle may accelerate. Always pay attention to road and driving conditions while driving.



When a vehicle in front of you merges out of the lane, Smart Cruise Control may not immediately detect the new vehicle that is now in front of you. Always pay attention to road and driving conditions while driving.



Always look out for pedestrian when your vehicle is maintaining a distance with the vehicle ahead.

This device complies with Part 15 of the FCC rules.

Operation is subject to the following three conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.
3. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.

Radio frequency radiation exposure information:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 8 in (20 cm) between the radiator (antenna) and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Navigation-based Smart Cruise Control (NSCC) (if equipped)

Navigation-based Smart Cruise Control will help automatically adjust vehicle speed when driving on highways (or motorways) with speed limits by using road information from the navigation system while Smart Cruise Control is operating.

* NOTICE

- Navigation-based Smart Cruise Control is available only on controlled access road of certain highways.
* Controlled access road indicates roads with limited entrances and exits that allow uninterrupted high speed traffic flow. Only passenger cars and motorcycles are allowed on controlled access roads.
- Additional highways may be expanded by future navigation updates.

* NOTICE

Navigation-based Smart Cruise Control operates on main roads of highways (or motorways), and does not operate on interchanges or junctions.

Highway Auto Curve Slowdown

If vehicle speed is high, Highway Auto Curve Slowdown function will temporarily decelerate your vehicle to help you drive safely on a curve, based on the curve information from the navigation.

Navigation-based Smart Cruise Control Settings

Setting features



Highway Auto Curve Slowdown

- With the ENGINE START/STOP button in the ON position, press MODE button (■) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Driving Assist → Highway Auto Curve Slowdown' from the setting menu to set whether or not to use each function.

* NOTICE

When there is a problem with Navigation-based Smart Cruise Control, the function cannot be set from the settings menu.

Navigation-based Smart Cruise Control Operation

Operating conditions

Navigation-based Smart Cruise Control is ready to operate if all of the following conditions are satisfied:

- Smart Cruise Control is operating
- Driving on main roads of highways (or motorways)

* NOTICE

For more details on how to operate Smart Cruise Control, refer to "Smart Cruise Control (SCC)" on page 5-95.

Display and control

When Navigation-based Smart Cruise Control operates, it will be displayed on the cluster as follows:

Navigation-based Smart Cruise Control standby



OON051176

If the operating conditions are satisfied, the white (AUTO) symbol will illuminate.

5

Navigation-based Smart Cruise Control operating



OON051177

If temporary deceleration is required in the standby state and Navigation-based Smart Cruise Control is operating, the green (AUTO) symbol will illuminate on the cluster.

⚠ WARNING

'Drive carefully' warning message will appear in the following circumstances:

- Navigation-based Smart Cruise Control is not able to slow down your vehicle to a safe speed.

*** NOTICE**

Highway Auto Curve Slowdown uses the same (**AUTO**) symbol.

Highway Auto Curve Slowdown

- Depending on the curve ahead on the highway (or motorway), the vehicle will decelerate, and after passing the curve, the vehicle will accelerate to Smart Cruise Control set speed.
- Vehicle deceleration time may differ depending on the vehicle speed and the degree of the curve on the road. The higher the driving speed, the faster the vehicle will decelerate.

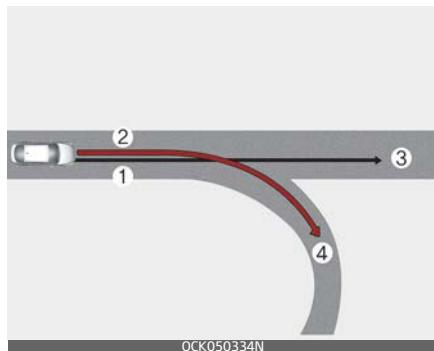
Limitations of Navigation-based Smart Cruise Control

Navigation-based Smart Cruise Control may not operate normally under the following circumstances:

- The navigation is not working properly.

- The navigation is not updated to include the latest information about road curvature and changes.
- Speed limit and road information in the navigation is not updated
- The map information and the actual road is different because of real-time GPS data or map information error
- The navigation searches for a route while driving
- GPS signals are blocked in areas such as a tunnel
- A road that divides into two or more roads and joins again
- The driver goes off course the route set in the navigation
- The route to the destination is changed or canceled by resetting the navigation (including TPEG change)
- The navigation cannot detect the current vehicle position (ex: elevated roads including overpass adjacent to general roads or nearby roads exist in a parallel way)
- The vehicle enters a service station or rest area
- The speed limit of some sections changes depending on the road situations
- Android Auto or Car Play is operating
- The navigation is being updated while driving

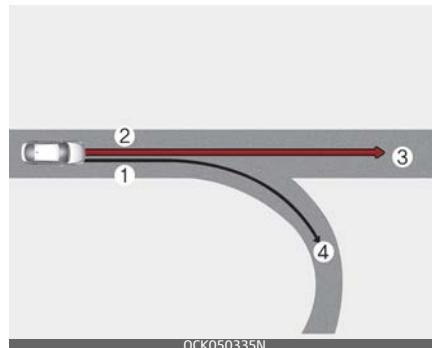
- The navigation is being restarted while driving



[1]: Driving route, [2]: Set route, [3]:

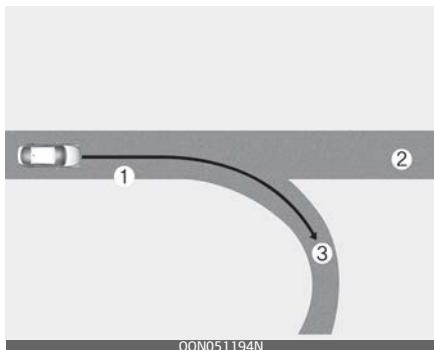
Main road, [4]: Branch line

- When there is a difference between the navigation set route (branch line) and the driving route (main road), Highway Auto Curve Slowdown function may not operate until the driving route is recognized as the main road.
- When the vehicle's driving route is recognized as the main road by maintaining the main road instead of the navigation set route, Highway Auto Curve Slowdown function will operate. Depending on the distance to the curve and the current vehicle speed, vehicle deceleration may not be sufficient or may decelerate rapidly.



[1]: Driving route, [2]: Main road, [3]: Set route, [4]: Branch line

- When there is a difference between the navigation route (main road) and the driving route (branch line), Highway Auto Curve Slowdown function may temporarily operate due to the navigation information of the highway curve section.
- When it is judged that you are driving out of the route by entering the highway interchange and junction, Highway Auto Curve Slowdown function will not operate.



[1]: Driving route, [2]: Main road, [3]: Branch line

- If there is no destination set on the navigation, Highway Auto Curve Slowdown function will operate based on the curve information on the main road.
- Even if you depart from the main road, Highway Auto Curve Slowdown function may temporarily operate due to navigation information of the highway curve section.

WARNING

- Navigation-based Smart Cruise Control is not a substitute for safe driving practices, but a convenience function. Always have your eyes on the road, and it is the responsibility of the driver to avoid violating traffic laws.
- The navigation's speed limit information may differ from the actual speed limit information on the road. It is the driver's responsibility to check the speed limit on the actual driving road or lane.
- Highway Auto Curve Slowdown will automatically cancel when you leave the main road of the highway. Always pay attention to road and driving conditions while driving.
- Navigation-based Smart Cruise Control may not operate due to the existence of leading vehicles and the driving conditions of the vehicle. Always pay attention to road and driving conditions while driving.
- When you are towing a trailer or another vehicle, we recommend that Navigation-based Smart Cruise Control is turned off due to safety reasons.
- After you pass through a tollgate on a highway, Navigation-based Smart Cruise Control operates based on the first lane. If you enter one of the other lanes, the function might not properly decelerate.
- The vehicle will accelerate if the driver depresses the accelerate pedal while Navigation-based Smart Cruise Control is operating, and function will not decelerate the vehicle. However, if the accelerator pedal is insufficiently depressed, the vehicle may slow down.
- If the driver accelerates and releases the accelerator pedal

while Navigation-based Smart Cruise Control is operating, the vehicle may not decelerate sufficiently or may rapidly decelerate to a safe speed.

- If the curve is too large or too small, Navigation-based Smart Cruise Control may not operate.

sufficient due to road conditions such as uneven road surfaces, narrow lanes, etc.

* NOTICE

- When the function is activated, the vehicle decelerates automatically before reaching the curved road according to its curvature, and the driving speed returns to the speed set by Smart Cruise Control after passing the curved section.
- The speed information on the cluster and navigation may differ.
- The time gap could occur between the navigation's guidance and when Navigation-based Smart Cruise Control operation starts and ends.
- Even if you are driving at a speed lower than Smart Cruise Control set speed, acceleration may be limited by curve sections ahead.
- If Navigation-based Smart Cruise Control is operating while leaving the main road to enter an interchange, junction, rest area, etc., the function may operate for a certain period of time.
- Deceleration by Navigation-based Smart Cruise Control may not be

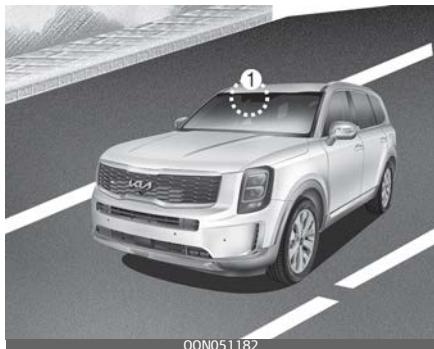
Lane Following Assist (LFA)

Lane Following Assist is designed to detect lane markings or vehicles on the road, and assists the driver's steering to help keep the vehicle between lanes.

* NOTICE

LFA stands for Lane Following Assist.

Detecting sensor



[1]: Front view camera

The front view camera is used as a detecting sensor to detect lane markings and front vehicles.

Refer to the picture above for the detailed location of the detecting sensor.

⚠ CAUTION

For more details on the precautions of the front view camera, refer to "Forward Collision-Avoid-

ance Assist (FCA) (Sensor fusion)" on page 5-55.

Lane Following Assist Settings

Setting features

Turning Lane Following Assist ON/OFF



With the ENGINE START/STOP button in the ON position, press MODE button (☰) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Driving Assist → Lane Following Assist' from the setting menu to set whether or not to use each function.

Warning Volume



With the ENGINE START/STOP button in the ON position, press MODE button (1) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Warning Volume' to change the warning volume to 'High', 'Medium', 'Low' or 'Off' for Lane Following Assist.

If you change the Warning Volume, the Warning Volume of other Driver Assistance system may change.

Lane Following Assist Operation

Warning and control

Lane Following Assist

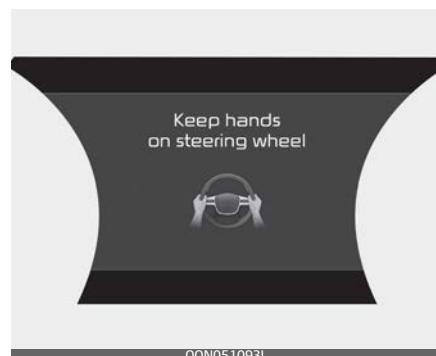
If the vehicle ahead or both lane markings are detected and your vehicle speed is below 95 mph (153 km/h), the green (2) indicator light

will illuminate on the cluster, and the function will help the vehicle stay in lane by controlling the steering wheel.

CAUTION

When the steering wheel is not controlled, the green (2) indicator light will blink and change to white.

Hands-off warning



If the driver takes their hands off the steering wheel for several seconds, the 'Keep hands on steering wheel' warning message will appear and an audible warning will sound in stages.



If the driver still does not have their hands on the steering wheel after the hands-off warning, the 'Driving Convenience systems canceled' warning message will appear and Lane Following Assist will be automatically canceled.

⚠ WARNING

- The steering wheel may not be assisted if the steering wheel is held very tight or the steering wheel is steered over a certain degree.
- Lane Following Assist does not operate at all times. It is the responsibility of the driver to safely steer the vehicle and to maintain the vehicle in its lane.
- The hands-off warning message may appear late depending on road conditions. Always have your hands on the steering wheel while driving.
- If the steering wheel is held very lightly the hands-off warning

message may appear because the function may not recognize that the driver has their hands on the steering wheel.

- If you attach objects to the steering wheel, the hands-off warning may not work properly.

* NOTICE

- For more details on setting the functions in the infotainment system, refer to "LCD Display Modes" on page 4-78.
- Refer to "Smart Cruise Control (SCC)" on page 5-95.
- When both lane markings are detected, the lane lines on the cluster will change from gray to white.

Lane undetected



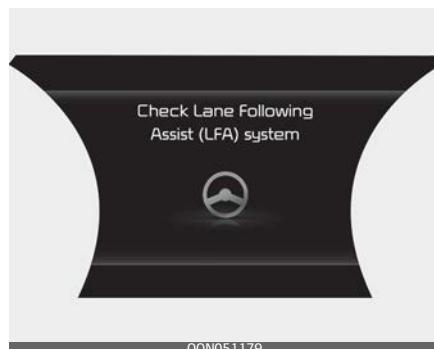
Lane detected



- If lane markings are not detected, steering wheel control by Lane Following Assist can be limited depending on whether a vehicle is in front or the driving conditions of the vehicle.
- Even though the steering is assisted by Lane Following Assist, the driver may control the steering wheel.
- The steering wheel may feel heavier or lighter when the steering wheel is assisted by the function than when it is not.

Lane Following Assist Malfunction and Limitations

Lane Following Assist malfunction



When Lane Following Assist is not working properly, the 'Check Lane Following Assist (LFA) system' warning message will appear on the cluster (turns off after a certain time) and (⚠) warning light will illuminate.

In this case, have the function checked by an authorized Kia dealer.

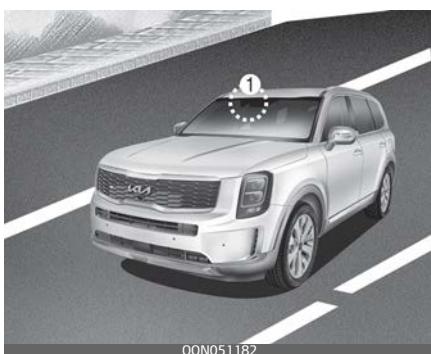
Highway Driving Assist (HDA) (if equipped)

Highway Driving Assist is designed to control the vehicle distance and speed when driving on the highway. The function assists drivers by receiving information about speed limit of the highway that the vehicle is on and automatically changing the set speed of Smart Cruise Control when it is needed.

⚠ WARNING

- Highway Driving Assist is not a substitute for safe driving practices, but a convenience function. It is the responsibility of the driver to always be aware of the surroundings and drive safely.
- Highway Driving Assist relies entirely on the road information provided by the Infotainment System. It is the responsibility of the driver to follow traffic laws and avoid accidents.
- For your safety, please read the owner's manual before using the function.

Detecting sensor



[1] : Front view camera, [2]: Front radar

Refer to the picture above for the detailed location of the detecting sensors.

⚠ CAUTION

For more details on the precautions of the detecting sensors, refer to "Forward Collision-Avoidance Assist (FCA) (Sensor fusion)" on page 5-55.

* NOTICE

- Highway Driving Assist is available only on controlled access road of certain highways.
- * Controlled access road indicates roads with limited entrances and exits that allow uninterrupted high speed traffic flow. Only passenger cars, truck and motorcycles are allowed on controlled access roads.

Available highway	
USA, CANADA	Controlled access road
<ul style="list-style-type: none"> Additional highways may be expanded by future navigation updates. 	

Highway Driving Assist Settings

Setting features



With the ENGINE START/STOP button in the ON position, press MODE button (☰) several times on the

steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Driving Assist → Highway Driving Assist' from the setting menu to set whether or not to use each function.

The set-up of Highway Driving Assist will be maintained, as selected, when the engine is re-started.

Operating conditions

If you activate Highway Driving Assist in the instrument cluster and the following conditions are met, Highway Driving Assist will be ready to operate, and the indicator light HDA will come on green in the cluster.

- When driving on the highway main line.
- When Smart Cruise Control is in operation (Vehicle deceleration and acceleration control)
 - Refer to "Smart Cruise Control (SCC)" on page 5-95.
 - If Smart Cruise Control is in standby mode (Smart Cruise Control is on but speed is not set), Highway Driving Assist will be in the same mode. The white indicator HDA light will be turned on.
- When the vehicle speed is below 95 mph (153 km/h)

Highway Driving Assist Operation

The speed is automatically set in accordance with the steering control and the highway speed limit when all the operating conditions are met.

Steering control



If both lanes are recognized properly (lane color: white), the steering wheel indicator (Ⓐ) lights up in green and then the steering control is initiated. When the function cannot provide temporary steering inputs, the indicator flashes green and then changes to white. Even

when Highway Driving Assist cannot provide temporary steering inputs, it still controls the distance from other vehicles. (For information on non-operating conditions of steering wheel control, please refer to "Lane Following Assist Malfunction and Limitations" on page 5-121.)

Warning related to steering wheel



The hands-off warning appears when the function detects that the driver's hands are not on the steering wheel while Highway Driving Assist is in operation.
(First warning: warning message, Second warning: warning message with warning sound)

⚠ CAUTION

- The hands-off warning may be delayed depending on road conditions. Always keep your hands on the steering wheel while driving.

- If you hold the steering wheel lightly, it may be perceived that the steering wheel is not held at all and trigger the hands-off warning.

When the hands-off warning lasts for a certain period of time



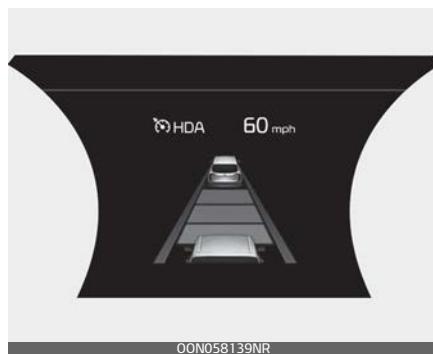
If you keep your hands off the steering wheel even with the hands-off warning on, the steering assist and Smart Cruise Control will be temporarily released automatically.

If you activate Smart Cruise Control with Highway Driving Assist released, the steering assist will restart.

Automatic speed setting



In the automatic speed setting mode, the set speed is automatically adjusted to the changing speed limits of highway sections.



If the driver directly changes the speed, it enters the manual speed setting mode and the set speed is displayed in white and the "AUTO" symbol will disappear.

Highway Driving Assist malfunction



This message shows that there is a problem with Highway Driving Assist, so have your vehicle inspected by an authorized Kia dealer.

⚠ CAUTION

- In all situations, the driver's behavior/judgment has the priority.
- Highway Driving Assist operates only when the driver has set it through the user settings in the instrument cluster.
- Highway Driving Assist is limited in other countries.
- Highway Driving Assist only operates based on the speed limits of the highway but it does not work with the speed cameras.
- The time gap could occur between the navigation speed warning and function operation.
- If the speed limits of speed cameras exceed the highway speed limits during the automatic speed setting mode, the navigation displays its own warning.
- The function is not designed to work on expressways, national highways and public roads. The function automatically cancels when you leave the highway.
- Highway Driving Assist is deactivated on the user settings in the instrument cluster when it is not in operable condition.
- When the vehicle is at resting area or interchanges or junctions away from the main line of the highway, Highway Driving Assist is automatically turned off so it requires caution to the driver.
- When you are 0.3 mile (500 m) before/after an open-type toll gate while driving on the highway, Highway Driving Assist is automatically turned off so it requires caution to the driver. It automatically switches to Smart Cruise Control and a pop-up window will appear to inform you of the change.
- When the automatic speed setting is in operation, the set speed may automatically change on the highway in accordance with changes in speed limit, leading to automatic acceleration/deceleration of the vehicle.

⚠ WARNING

- Regardless of whether Highway Driving Assist is on or off, you must keep eyes on the road while driving and must obey all traffic laws.
- Highway Driving Assist depends entirely on road information provided by the Infotainment System, and the car manufacturer is not responsible for the driver's violation of road traffic laws or accidents.

⚠ WARNING

Highway Driving Assist may not function properly in the following situations:

- The navigation is not working properly.
- The navigation is not updated.
- The real-time GPS or map information provided has errors.
- The navigation is overloaded by performing functions, such as route search, video play-back, voice recognition, etc, that are performing simultaneously.
- GPS signals are blocked in areas such as a tunnel.
- The driver goes off course or the route to the destination is changed or canceled by resetting the navigation.
- The vehicle enters a service station or resting area.

- Android Auto or Car Play is operating.
- The navigation cannot detect the current vehicle position (ex: elevated roads including overpass adjacent to general roads or nearby roads exist in a parallel way).
- The navigation is being updated while driving.
- The navigation is being reset while driving.
- The road is slippery due to bad weather such as rain or snow.

* Refer to "Smart Cruise Control (SCC)" on page 5-95 for cautions and warnings about Vehicle Distance control and front radar.

* Refer to "Lane Keeping Assist (LKA)" on page 5-70 for cautions and warnings about steering control and front view camera.

This device complies with Part 15 of the FCC rules.

Operation is subject to the following three conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.
3. Changes or modifications not expressly approved by the party responsible for compliance could

void the user's authority to operate the device.

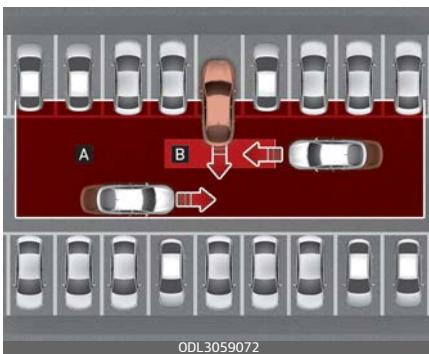
Radio frequency radiation exposure information:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 8 in (20 cm) between the radiator (antenna) and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Rear Cross-Traffic Collision-Avoidance Assist (RCCA)

Rear Cross-Traffic Collision-Avoidance Assist is designed to detect vehicles approaching from the left and right side while your vehicle is reversing, and warning the driver that a collision is imminent with a warning message and an audible warning. Also, to help prevent collision braking assist is applied.



[A]: Rear Cross-Traffic Collision Warning operating range

[B]: Rear Cross-Traffic Collision-Avoidance Assist operating range

CAUTION

The time of warning may vary depending on vehicle speed of the approaching vehicle.

Detecting sensor



[1]: Rear corner radar

Refer to the picture above for the detailed location of the detecting sensor.

⚠ CAUTION

For more details on the precautions of the rear corner radar, refer to "Blind-Spot Collision-Avoidance Assist (BCA)" on page 5-76.

Rear Cross-Traffic Collision-Avoidance Assist Settings

Setting features

Rear Cross-Traffic Safety



5

With the ENGINE START/STOP button in the ON position, press MODE button (☰) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Parking Safety → Rear Cross-Traffic Safety' from the setting menu to set whether or not to use each function.

⚠ WARNING

When the engine is restarted, Rear Cross-Traffic Collision-Avoidance Assist will always turn on. However, if 'Off' is selected after the engine is restarted, the driver should always be aware of the surroundings and drive safely.

*** NOTICE**

Settings for Rear Cross-Traffic Safety system include Rear Cross-Traffic Collision Warning and Rear Cross-Traffic Collision-Avoidance Assist.

*** NOTICE**

If the engine is restarted, Warning Timing and Warning Volume will maintain the last setting.

Warning Timing

With the ENGINE START/STOP button in the ON position, press MODE button (游戏操作杆) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Warning Timing' to change the initial warning activation time for Rear Cross-Traffic Collision-Avoidance Assist.

When the vehicle is first delivered, warning timing is set to Normal. If you change the warning timing, the warning time of other Driver Assistance system may change.

Always be aware before changing the warning timing.

Warning Volume

With the ENGINE START/STOP button in the ON position, press MODE button (游戏操作杆) several times on the steering wheel until 'User Settings' menu appears on the LCD display. Select 'Driver Assistance → Warning Volume' to change the warning volume to 'High', 'Medium', 'Low' or 'Off' for Rear Cross-Traffic Collision-Avoidance Assist.

If you change the Warning Volume, the Warning Volume of other Driver Assistance system may change.

⚠ CAUTION

- The setting of the Warning Timing and Warning Volume applies to all functions of Rear Cross-Traffic Collision-Avoidance Assist.
- Even though 'Normal' is selected for Warning Timing, if the vehicles from the left and right side approaches at high speed, the initial warning activation time may seem late.
- Select 'Late' for Warning Timing when traffic is light and when driving speed is slow.

Rear Cross-Traffic Collision-Avoidance Assist Operation

Warning and control

Rear Cross-Traffic Collision-Avoidance Assist will warning and control the vehicle depending on collision level: 'Collision Warning', 'Emergency Braking'.

Collision Warning

Left



Right





- To warn the driver of an approaching vehicle from the rear left/right side of your vehicle, the warning light on the side view mirror (outside mirror) will blink and a warning will appear on the cluster. At the same time, an audible warning will sound.
- The function will operate when the following conditions are satisfied:
 - Your vehicle gear is shifted to R (Reverse)
 - Your vehicle speed is below 7 mph (10 km/h)
 - The approaching vehicle is within approximately 82 ft. (25 m) from the left and right side of your vehicle
 - The speed of the vehicle approaching from the left and right is above 3 mph (5 km/h)

the left or right side even though your vehicle speed is 0 mph (0 km/h).

Emergency Braking

Left

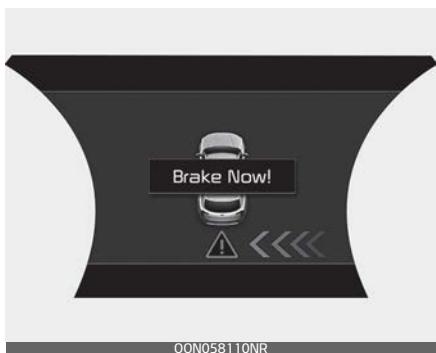


*** NOTICE**



If the operating conditions are satisfied, there will be a warning whenever the vehicle approaches from

Right



- Your vehicle, the warning light on the side view mirror (outside mirror) will blink and a warning message will appear on the cluster. At the same time, an audible warning will sound.
- The function will operate when the following conditions are satisfied:
 - Your vehicle gear is shifted to R (Reverse)
 - Your vehicle speed is below 7 mph (10 km/h)
 - The approaching vehicle is within approximately 5 ft. (1.5

m) from the left and right side of your vehicle

- The speed of the vehicle approaching from the left and right is above 3 mph (5 km/h)
- Emergency Braking will be assisted to help prevent collision with approaching vehicles from the left and right.

⚠ WARNING

- Brake control will end when:
 - The approaching vehicle is out of the detecting range
 - The approaching vehicle passes behind your vehicle
 - The approaching vehicle does not drive toward your vehicle
 - The approaching vehicle speed slows down
 - The driver depresses the brake pedal with sufficient power

Stopping vehicle and ending brake control

- For your safety, the driver should depress the brake pedal immediately and check the surroundings.
- Brake control will end after the vehicle is stopped by emergency braking for approximately 2 seconds.
- During emergency braking, braking control by Rear Cross-Traffic Collision-Avoidance Assist will automatically cancel when the

driver excessively depresses the brake pedal.

⚠ WARNING

- For your safety, change the settings after parking the vehicle at a safe location.
- If any other function's warning message is displayed or audible warning is generated, Rear Cross-Traffic Collision-Avoidance Assist warning message may not be displayed and audible warning may not be generated.
- You may not hear the warning sound of Rear Cross-Traffic Collision-Avoidance Assist if the surrounding is noisy.
- Rear Cross-Traffic Collision-Avoidance Assist may not operate if the driver applies the brake pedal to avoid collision.
- During Rear Cross-Traffic Collision-Avoidance Assist operation, the vehicle may stop suddenly injuring passengers and shifting loose objects. Always have the seat belt on and keep loose objects secured.
- Even if there is a problem with Rear Cross-Traffic Collision-Avoidance Assist, the vehicle's basic braking performance will operate normally.

⚠ WARNING

- During emergency braking, braking control by the function will automatically cancel when the driver excessively depresses the accelerator pedal.
- Rear Cross-Traffic Collision-Avoidance Assist does not operate in all situations or cannot avoid all collisions.
- Rear Cross-Traffic Collision-Avoidance Assist may warn the driver late or may not warn the driver depending on the road and driving conditions.
- The driver should hold the responsibility to control the vehicle. Do not solely depend on Rear Cross-Traffic Collision-Avoidance Assist. Rather, maintain a safe braking distance, and if necessary, depress the brake pedal to reduce driving speed or to stop the vehicle.
- Never deliberately operate Rear Cross-Traffic Collision-Avoidance Assist on people, animal, objects, etc. It may cause serious injury or death.

⚠ CAUTION

The brake control may not operate properly depending on the status of ESC (Electronic Stability Control). There will only be a warning when:

- The ESC (Electronic Stability Control) warning light is on
- ESC (Electronic Stability Control) is engaged in a different function

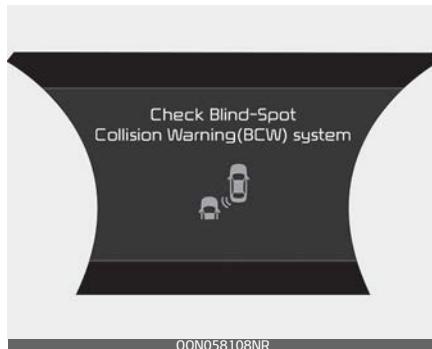
* NOTICE

The driver must immediately depress the brake pedal and check vehicle surroundings.

- Brake control will end when the driver depresses the brake pedal with sufficient power.
- After shifting the gear to R (Reverse), braking control will operate once for left and right vehicle approach.

Rear Cross-Traffic Collision-Avoidance Assist Malfunction and Limitations

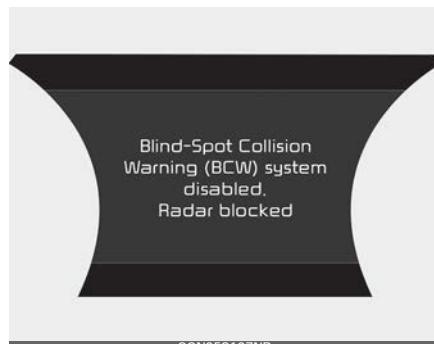
Rear Cross-Traffic Collision-Avoidance Assist malfunction



When Rear Cross-Traffic Collision-Avoidance Assist is not working

properly, the 'Check Blind-Spot Collision Warning (BCW) system' warning message will appear on the cluster, and the function will turn off automatically or the function will be limited. In this case, have your vehicle inspected by an authorized Kia dealer.

Rear Cross-Traffic Collision-Avoidance Assist disabled



When the rear bumper around the rear corner radar or sensor is covered with foreign matters, such as snow or rain, or installing a trailer or carrier, it can reduce the detecting performance and temporarily limit or disable Rear Cross-Traffic Collision-Avoidance Assist.

If this occurs, the 'Blind-Spot Collision Warning (BCW) system disabled. Radar blocked' warning message will appear on the cluster. It is not a malfunction.

The function will operate normally when such foreign matters or trailer, etc. is removed.

Always keep the rear view camera and rear ultrasonic sensors clean.

If Rear Cross-Traffic Collision-Avoidance Assist does not operate normally after it is removed, have the vehicle inspected by an authorized Kia dealer.

WARNING

- Even though the warning message does not appear on the cluster, Rear Cross-Traffic Collision-Avoidance Assist may not properly operate.
- Rear Cross-Traffic Collision-Avoidance Assist may not properly operate in an area (e.g. open terrain), where any substance are not detected after turning ON the engine.

CAUTION

Turn off Rear Cross-Traffic Collision-Avoidance Assist to install a trailer, carrier, etc., and remove the trailer, carrier, etc. to use Rear Cross-Traffic Collision-Avoidance Assist.

Limitations of Rear Cross-Traffic Collision-Avoidance Assist

Rear Cross-Traffic Collision-Avoidance Assist may not operate normally, or the function may operate unexpectedly under the following circumstances:

- Departing from where trees or grass is overgrown
- Departing from where roads are wet
- Speed of the approaching vehicle is fast or slow

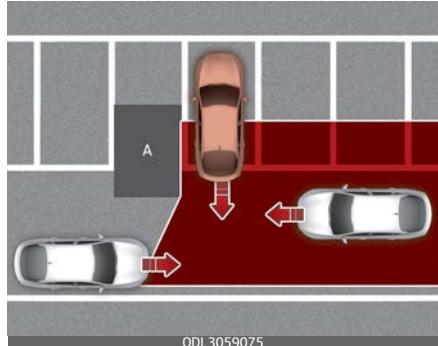
Braking control may not work, driver's attention is required in the following circumstances:

- The vehicle severely vibrates while driving over a bumpy road, uneven road or concrete patch
- Driving on a slippery surface due to snow, water puddle, ice, etc.
- The tire pressure is low or a tire is damaged
- The brake is modified

CAUTION

For more details on the limitations of the rear corner radar, refer to "Blind-Spot Collision-Avoidance Assist (BCA)" on page 5-76.

⚠ WARNING

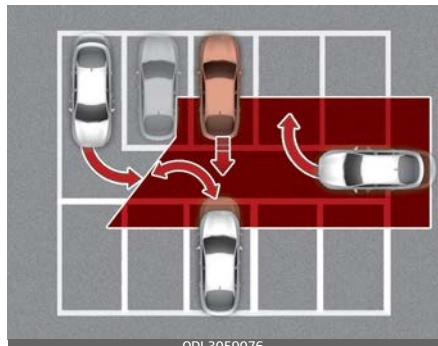


[A]: Structure

- Driving near a vehicle or structure

Rear Cross-Traffic Collision-Avoidance Assist may be limited when driving near a vehicle or structure, and may not detect the vehicle approaching from the left or right. If this occurs, the function may not warn the driver or control the brakes when necessary.

Always check your surroundings while backing up.



- When the vehicle is in a complex parking environment

Rear Cross-Traffic Collision-Avoidance Assist may detect vehicles which are parking or pulling out near your vehicle (e.g. a vehicle leaving beside your vehicle, a vehicle parking or pulling out in the rear area, a vehicle approaching your vehicle making a turn, etc.). If this occurs, the function may unnecessarily warn the driver and control the brake.

Always check your surroundings while backing up.

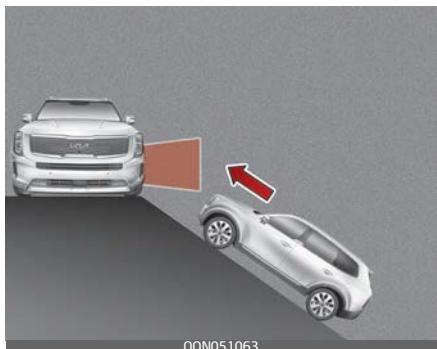


[A]: Vehicle

- When the vehicle is parked diagonally

Rear Cross-Traffic Collision-Avoidance Assist may be limited when backing up diagonally, and may not detect the vehicle approaching from the left or right. If this occurs, the function may not warn the driver or control the brakes when necessary.

Always check your surroundings while backing up.



- When the vehicle is on or near a slope

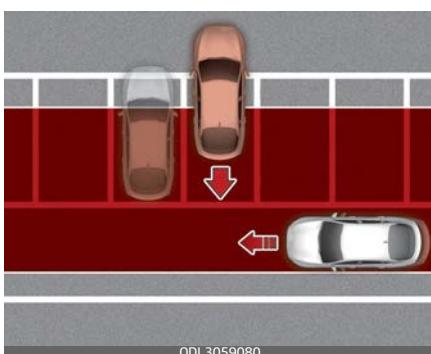
Rear Cross-Traffic Collision-Avoidance Assist may be limited when the vehicle is on a uphill or downhill slope, or near it, and may not detect the vehicle approaching from the left or right. If this occurs, the function may not warn the driver or control the brakes when necessary.

Always check your surroundings while backing up.

[A]: Structure, [B]: Wall

- Pulling into the parking space where there is a structure

Rear Cross-Traffic Collision-Avoidance Assist may detect vehicles passing by in front of you when parking backwards into a parking space with a wall or structure in the rear or side area. If this occurs, the function may unnecessarily warn the driver and control the brake. Always check your surroundings while backing up.

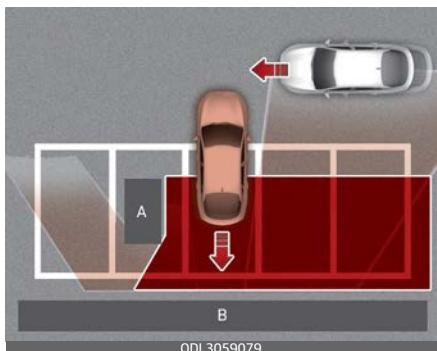


- When the vehicle is parked rearward

Rear Cross-Traffic Collision-Avoidance Assist may detect vehicles passing by behind you when parking backwards into a parking space. If this occurs, the function may unnecessarily warn the driver and control the brake.

Always check your surroundings while backing up.

WARNING



⚠ WARNING

- When you are towing a trailer or another vehicle, we recommend that Rear Cross-Traffic Collision-Avoidance Assist is turned off due to safety reasons.
- Rear Cross-Traffic Collision-Avoidance Assist may not operate normally if interfered by strong electromagnetic waves.
- Rear Cross-Traffic Collision-Avoidance Assist may not operate for 3 seconds after the vehicle is started, or the rear corner radars are initialized.

This device complies with Part 15 of the FCC rules.

Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

Declaration of conformity (if equipped)

The radio frequency components (Front radar) complies:

For Korea



기자재의 명칭 : 특정소출력 무선기기(차량충돌
방지용 레이더 무선기기)
모델명 : MRR-20
인증번호 : R-CMM-MF3-MRR-20
상호 : 주식회사 만도
제조년월일 : 2019. XX. YY
제조자 : 주식회사 만도
제조국 : 대한민국

0SP2061031L

For United States and American territories, Micronesia, Dominican Republic, Honduras



OYB060040L

FCC ID

: 2ACDX-MRR-20

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION TO USERS

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

OSP2061032L

Europe and countries subject to CE certification

Model : MRR-20

Hereby MRR-20 has been so constructed that it can be operated in at least one Member State without infringing applicable requirements of use of radio spectrum. (RED article 10.2)

Hereby, Mando Corp declares that the radio equipment type MRR-20 is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address:
<https://www.mando.com/rnd/rnd04.jsp>

OSP2061033L



OJA060067L

For Canada

Model: MRR-20
IC: 11988A-MRR20

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:
 (1) this device may not cause interference, and
 (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
 (1) l'appareil ne doit pas produire de brouillage, et
 (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

OSP2061034L

For Taiwan



OCK060060L

CCAI9LP0490T6

(1) Without permission granted by NCC, any company, enterprise, or user is not allowed to change frequency, enhance transmitting power or alter original characteristic as well as performance to a approved low power radio-frequency devices.
 (2) The low power radio-frequency devices shall not influence aircraft security and interfere legal communications; If found, the user shall cease operating immediately until no interference is achieved.

The said legal communications means radio communications is operated in compliance with the Telecommunications Act.

The low power radio-frequency devices must be susceptible with the interference from legal communications or ISM radio wave radiated devices.

OSP2061035L

For Australia



OCK060062L

For Serbia



OSP2061036L

For Oman

OMAN - TRA
TRA/TA-R/5429/18
D080320

OSP2061037L

For Moldova



OCK060065L

For Ukraine



ODL3059228L

26. Manufacturers should ensure that radio equipment is accompanied by instructions and safety information in accordance with the law on the use of languages.

Instructions should include the information necessary to use the radio equipment according to its purpose. Such information contains, in the presence of a description of the components and accessories, including software that allows the radio equipment to work for its intended purpose. Such instructions and safety instructions, as well as any labeling, must be clear, understandable and legible.

An instruction for radio equipment intended to emit radio waves must additionally contain:

band (band) of radio frequencies, in which (in which) the radio equipment operates;
 the maximum radiation power in the band (s) of radio frequencies, in which (in which) radio equipment is operating.

OCK060066L

For United Arab Emirates



TRA – United Arab Emirates

Dealer ID : _____
 TA RTTE : _____
 Model: _____
 Type: _____



REGISTERED No: ER63065/18
 DEALER No.: DA58500/16

OSP2061038L

For Brazil



XXXXX-XX-XXXXX

03849-18-09644

OSP2061039L

For Singapore

Complies with
IMDA Standards
[Dealer's Licence No.]

Dealer number : DA105282

OSP2061040L

For Russia



ODL3059224L

For Malaysia



HIDF16000136

OSP2061041L

For Jordan

Model : MRR-20

OSP2061042L

For Mexico

IFETEL : RCPMAMR18-1560

"La operación de este equipo está sujeta a las siguientes dos condiciones:
 (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y
 (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada."

and RCPMAMR18-1560

OSP2061043L

For Israel

Ministry of Communication permit number :
 51-63909

OSP2061044L

**The radio frequency components
(Rear Corner radar) complies :**

For United States and American territories, Micronesia, Dominican Republic, Honduras



OYB060040L

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION TO USERS

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

OYB060041L

For Canada

Model: RS4
IC: 2694A – RS4

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.;

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps. Ce transmetteur ne doit pas être placé au même endroit ou utilisé simultanément avec un autre transmetteur ou antenne.

OYB060042L

For Taiwan

電信法第 48 條，低功率電波輻射性電機管理辦法

第十二條

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Article 12

Without permission, any company, firm or user shall not alter the frequency, increase the power, or change the characteristics and functions of the original design of the certified lower power frequency electric machinery.

Article 14

The application of low power frequency electric machineries shall not affect the navigation safety nor interface a legal communication, if an interference is found, the service will be suspended until improvement is made and the interference no longer exist.

OYB060043L

For Indonesia

54473/SDPPI/2018
6051

OYB060044L

For Malaysia



OYB060045L

For Singapore

Complies with
IMDA Standards

DA 103238

OYB060046L

For Vietnam

Suntech VietNam Technology
Company Limited
C0173191017AF04A2



OYB060047L

For Brazil



OYB060048L

Este equipamento não tem direito à proteção contra interferência prejudicial enão pode causar interferência em sistemas devidamente autorizados

OYB060049L

For Mexico

Radar de corto alcance
RS4
Hella KGaA Hueck & Co
IFETEL: RLVHERS17-0286

“La operación de este equipo está sujeta a las siguientes dos condiciones:
(1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.”

OYB060050L

For Japan

This device is granted pursuant to the Japanese Radio Law under the grant ID n° : 204-750001
This device should not be modified (otherwise the granted designation number will become invalid)

本製品は、電波法に基づく特定無線設備の技術基準適合証明などを受けております。認証番号: 204-750001
本製品の改造は禁止されています。(適合証明番号などが無効となります。)

OYB060051L

For Ukraine



UA RF: 1HELLARS4

OYB060052L

Цим HELLA GmbH & Co. KGaA заявляє, що радіотехнічне обладнання типу RS4 відповідає Технічному регламенту радіотехнічного обладнання та Директиві 2014/53/ЄС.

Повний текст декларації про відповідність доступний за адресою: www.hella.com/hyundai

Частотний діапазон: 24,05 – 24,25 ГГц
Потужність передачі: 20 дБм (макс.) EIRP

OYB060053L

For Jordan

TRC No. TRC/LPD/2017/63

OYB060054L

For Oman

OMAN - TRA
TRA/TA-R/3957/17
D080134

OYB060055L

For United Arab Emirates

TRA
Registered No:
ER53878/17
Dealer No:
DA44932/15

OYB060056L

For Botswana

BTA
REGISTERED No :

BOCRA/TA/2018/3372

OYB060057L

For Ghana

NCA Approved: 1R3-1M-7E1-0B7

OYB060058L

For Zambia



OYB060059L

For Jamaica

This product contains a Type Approved Module by Jamaica: SMA – "RS4"

OYB060060L

For Paraguay



NR:2017-07-1-0000220

OYB060061L

For Uzbekistan



ODL3059239L

For Mozambique

Approval No: N 1/R/SRA/2017
HELLA RS4

OYB060062L

Europe and countries subject to CE certification

In the user manual:

Hereby, Hella KGaA Hueck & Co. Declares that the radio equipment type RS4 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:
www.hella.com/hyundai

Technical information:
Frequency range: 24.05 ... 24.25 GHz
Transmission power: 20 dBm (maximum) EIRP

Manufacturer and Address:
Hella KGaA Hueck & Co.
Rixbecker Straße 75, 59552 Lippstadt, Germany

OYB060063L

Economical operation

Your vehicle's fuel economy depends mainly on your style of driving, where you drive and when you drive.

Each of these factors affects how many miles (kilometers) you can get from a gallon (liter) of fuel. To operate your vehicle as economically as possible, use the following driving suggestions to help save money in both fuel and repairs:

- Drive smoothly. Accelerate at a moderate rate. Don't make "jack-rabbit" starts or full-throttle shifts and maintain a steady cruising speed. Don't race between stoplights. Try to adjust your speed to the traffic so you don't have to change speeds unnecessarily. Avoid heavy traffic whenever possible. Always maintain a safe distance from other vehicles so you can avoid unnecessary braking. This also reduces brake wear.
- Drive at a moderate speed. The faster you drive, the more fuel your vehicle uses. Driving at a moderate speed, especially on the highway, is one of the most effective ways to reduce fuel consumption.
- Don't "ride" the brake pedal. This can increase fuel consumption and also increase wear on these components. In addition, driving with your foot resting on the

- brake pedal may cause the brakes to overheat, which reduces their effectiveness and may lead to more serious consequences.
- Take care of your tires. Keep them inflated to the recommended pressure. Incorrect inflation, either too much or too little, results in unnecessary tire wear. Check the tire pressures at least once a month.
 - Be sure that the wheels are aligned correctly. Improper alignment can result from hitting curbs or driving too fast over irregular surfaces. Poor alignment causes faster tire wear and may also result in other problems as well as greater fuel consumption.
 - Keep your vehicle in good condition. For better fuel economy and reduced maintenance costs, maintain your vehicle in accordance with "Scheduled maintenance service" on page 7-9. If you drive your vehicle in severe conditions, more frequent maintenance is required (Refer to "Maintenance Under Severe Usage Conditions - Non Turbo Models" on page 7-14 for details).
 - Keep your vehicle clean. For maximum service, your vehicle should be kept clean and free of corrosive materials. It is especially important that mud, dirt, ice, etc. not be allowed to accumulate on the underside of the vehicle. This extra weight can result in increased fuel consumption and also contribute to corrosion.
- Travel lightly. Don't carry unnecessary weight in your vehicle. Weight reduces fuel economy.
 - Don't let the engine idle longer than necessary. If you are waiting (and not in traffic), turn off your engine and restart only when you're ready to go.
 - Remember, your vehicle does not require extended warm-up. After the engine has started, allow the engine to run for 10 to 20 seconds prior to placing the vehicle in gear. In very cold weather, however, give your engine a slightly longer warm-up period.
 - Don't "lug" or "over-rev" the engine. Lugging is driving too slowly in a very high gear resulting in engine bucking. If this happens, shift to a lower gear. Over-revving is racing the engine beyond its safe limit. This can be avoided by shifting at the recommended speed.
 - Use your air conditioning sparingly. The air conditioning system is operated by engine power so your fuel economy is reduced when you use it.
 - Open windows at high speeds can reduce fuel economy.
 - Fuel economy is less in cross-winds and headwinds. To help off-

set some of this loss, slow down when driving in these conditions.

Keeping a vehicle in good operating condition is important both for economy and safety. Therefore, have an authorized Kia dealer perform scheduled inspections and maintenance.

WARNING

Engine off during motion

Never turn the engine off to coast down hills or anytime the vehicle is in motion. The power steering and power brakes will not function properly without the engine running. In addition, turning off the ignition while driving could engage the steering wheel lock resulting in loss of vehicle steering. Keep the engine on and downshift to an appropriate gear for engine braking effect.

Special driving conditions

If driving conditions deteriorate due to poor weather or road conditions, you should pay even more attention than usual to your driving.

Hazardous driving conditions

When hazardous driving conditions are encountered such as water, snow, ice, mud, sand, or similar hazards, follow these suggestions:

- Drive cautiously and allow extra distance for braking.
- Avoid sudden braking or steering.
- When braking with non-ABS brakes pump the brake pedal with a light up-and-down motion until the vehicle is stopped.
- Do not pump the brake pedal on a vehicle equipped with ABS.
- If stalled in snow, mud, or sand, use the second gear. Accelerate slowly to avoid spinning the drive wheels.
- Use sand, rock salt, or other non-slip material under the drive wheels to provide traction when stalled in ice, snow, or mud.

Reducing the risk of a rollover

This multi-purpose passenger vehicle is defined as a Sports Utility Vehicle (SUV). Utility vehicles have a significantly higher rollover rate than other types of vehicles. SUV's have higher ground clearance and a

narrower track to make them capable of performing in a wide variety of offroad applications.

Specific design characteristics give them a higher center of gravity than ordinary vehicles. An advantage of the higher ground clearance is a better view of the road, which allows you to anticipate problems.

They are not designed for cornering at the same speeds as conventional passenger vehicles, any more than low-slung sports vehicles are designed to perform satisfactorily in off-road conditions. Due to this risk, driver and passengers are strongly recommended to buckle their seat belts.

In a rollover crash, an unbelted person is significantly more likely to die than a person wearing a seat belt. There are steps that a driver can make to reduce the risk of a rollover.

If at all possible, avoid sharp turns or abrupt maneuvers, do not load your roof rack with heavy cargo, and never modify your vehicle in any way.

WARNING

Rollover

As with other Sports Utility Vehicle (SUV), failure to operate this vehicle correctly may result in loss of control, an accident or vehicle rollover.

- Utility vehicles have a significantly higher rollover rate than other types of vehicles.
- Specific design characteristics (higher ground clearance, narrower track, etc.) give this vehicle a higher center of gravity than ordinary vehicles.
- A SUV is not designed for cornering at the same speeds as conventional vehicles.
- Avoid sharp turns or abrupt maneuvers.
- In a rollover crash, an unbelted person is significantly more likely to die than a person wearing a seat belt. Make sure everyone in the vehicle is properly buckled up.

WARNING

Your vehicle is equipped with tires designed to provide safe ride and handling capability. Do not use tires and wheels that are different in size and type from the originally installed ones. It can affect the safety and performance of your vehicle, which could lead to steering failure or rollover and serious injury. When replacing the tires, be sure to equip all four tires with the tire and wheel of the same size, type, tread, brand and load-carrying capacity.

Rocking the vehicle

If it is necessary to rock the vehicle to free it from snow, sand, or mud, first turn the steering wheel right and left to clear the area around your front wheels. Then, shift back and forth between R (Reverse) and any forward gear.

Do not race the vehicle, and spin the wheels as little as possible. If you are still stuck after a few tries, have the vehicle pulled out by a tow vehicle to avoid vehicle overheating and possible damage to the reduction gear.

WARNING

Sudden Vehicle Movement

Do not attempt to rock the vehicle if people or objects are nearby. The vehicle may suddenly move forward or backwards as it becomes unstuck.

CAUTION

Vehicle rocking

Prolonged rocking may cause vehicle overheating, reduction gear damage or failure, and tire damage.

CAUTION

Spinning tires

Do not spin the wheels, especially at speeds more than 35 mph (56 km/

h). Spinning the wheels at high speeds when the vehicle is stationary could overheat and damage tires, and the rotating wheels may fly away and injure bystanders.

The Electronic Stability Control (ESC) should be turned OFF prior to rocking the vehicle.

Smooth cornering

Avoid braking or gear changing in corners, especially when roads are wet. Ideally, corners should always be taken under gentle acceleration. If you follow these suggestions, tire wear will be held to a minimum.

Driving at night

Because night driving presents more hazards than driving in the daylight, here are some important tips to remember:

- Slow down and keep more distance between you and other vehicles, as it may be more difficult to see at night, especially in areas where there may not be any street lights.
- Adjust your mirrors to reduce the glare from other driver's headlights.
- Keep your headlights clean and properly aimed. (On vehicles not equipped with the automatic headlight aiming feature.) Dirty or improperly aimed headlights will

- make it much more difficult to see at night.
- Avoid staring directly at the headlights of oncoming vehicles. You could be temporarily blinded, and it will take several seconds for your eyes to readjust to the darkness.

Driving in the rain

Rain and wet roads can make driving dangerous, especially if you're not prepared for the slick pavement.

Here are a few things to consider when driving in the rain:

- A heavy rainfall will make it harder to see and will increase the distance needed to stop your vehicle, so slow down.
- Keep your windshield wiping equipment in good shape. Replace your windshield wiper blades when they show signs of streaking or missing areas on the windshield.
- If your tires are not in good condition, making a quick stop on wet pavement can cause a skid and possibly lead to an accident. Be sure your tires are in good shape.
- Turn on your headlights to make it easier for others to see you.
- Driving too fast through large puddles can affect your brakes. If you must go through puddles, try to drive through them slowly.

- If you believe you may have gotten your brakes wet, apply them lightly while driving until normal braking operation returns.

Driving in flooded areas

Avoid driving through flooded areas unless you are sure the water is no higher than the bottom of the wheel hub. Drive through any water slowly. Allow adequate stopping distance because brake performance may be affected.

After driving through water, dry the brakes by gently applying them several times while the vehicle is moving slowly.

5

Driving on unpaved roads

Drive carefully on unpaved roads because your vehicle may be damaged by rocks or roots of trees. Become familiar with the on unpaved roads conditions where you are going to drive before you begin driving.

Highway driving

Tires

Adjust the tire inflation pressures to specification. Low tire inflation pressures will result in overheating and possible failure of the tires.

Avoid using worn or damaged tires which may result in reduced traction or tire failure.

Never exceed the maximum tire inflation pressure shown on the tires.

WARNING

Under/over inflated tires

Always check the tires for proper inflation before driving. Underinflated or overinflated tires can cause poor handling, loss of vehicle control, and sudden tire failure leading to accidents, injuries, and even death. For proper tire pressures, refer to "Tires and wheels" on page 8-5.

WARNING

Tire tread

Always check the tire tread before driving your vehicle. Worn-out tires can result in loss of vehicle control. Worn-out tires should be replaced as soon as possible. For further information and tread limits, refer to "Tires and wheels" on page 8-5.

Fuel, engine coolant and engine oil

High speed travel consumes more fuel than urban motoring. Do not forget to check both the engine coolant and engine oil.

Drive belt

A loose or damaged drive belt may result in overheating of the engine.

Winter driving

Severe weather conditions in the winter result in greater wear and other problems.

To minimize the problems of winter driving, you should follow these suggestions:

Snowy or icy conditions

To drive your vehicle in deep snow, it may be necessary to use snow tires or to install tire chains on your tires.

If snow tires are needed, it is necessary to select tires equivalent in size and type of the original equipment tires. Failure to do so may adversely affect the safety and handling of your vehicle. Furthermore, speeding, rapid acceleration, sudden brake applications, and sharp turns are potentially very hazardous practices.

During deceleration, use vehicle braking to the fullest extent. Sudden brake applications on snowy or icy roads may cause skids to occur. You need to keep sufficient distance between the vehicle in operation in front of your vehicle. Also, apply the brake gently. It should be noted that installing tire chains on the tire will provide a greater driving force, but will not prevent side skids.

Tire chains are not legal in all states. Check state laws before fitting tire chains.

Snow tires

If you mount snow tires on your vehicle, make sure they are radial tires of the same size and load range as the original tires. Mount snow tires on all four wheels to balance your vehicle's handling in all weather conditions. Keep in mind that the traction provided by snow tires on dry roads may not be as high as your vehicle's original equipment tires. You should drive cautiously even when the roads are clear. Check with the tire dealer for maximum speed recommendations.

Do not install studded tires without first checking local, state and municipal regulations for possible restrictions against their use.

WARNING

Snow tire size

Snow tires should be equivalent in size and type to the vehicle's standard tires. Otherwise, the safety and handling of your vehicle may be adversely affected.

Tire chains



Since the sidewalls on some radial tires are thinner than other types of tires, they may be damaged by mounting certain types of tire chains on them. Therefore, the use of snow tires is recommended instead of tire chains. Do not mount tire chains on vehicles equipped with aluminum wheels; if unavoidable, use AutoSock (fabric snow chain). Install the tire chain after reviewing the instructions provided with the tire chains.

Damage to your vehicle caused by improper tire chain use is not covered by your vehicle manufacturer's warranty.

NOTICE

- Install AutoSock (fabric snow chain) on the front tires for FWD vehicles or for AWD vehicles. It should be noted that installing AutoSock (fabric snow chain) on the tires will provide a greater

driving force, but will not prevent side skids.

- Do not install studded tires without first checking local and municipal regulations for possible restrictions against their use.

⚠ CAUTION

When using AutoSock (fabric snow chain):

- Wrong size chains or improperly installed chains can damage your vehicle's brake lines, suspension, body and wheels.
- If you hear noise caused by chains contacting the body, retighten the chain to prevent contact with the vehicle body.
- To prevent body damage, retighten the chains after driving 0.3~0.6 miles (0.5~1.0 km).

Chain installation

When using tire chains, chains should be installed on the front wheels. This also applied All four wheels vehicle.

When installing AutoSock (fabric snow chain), follow the manufacturer's instructions and mount them as tightly possible. Drive slowly (less than 20 mph (30 km/h)) with chains installed. If you hear the chains contacting the body or chassis, stop and tighten them. If they still make contact, slow down until the noise stops.

Remove the AutoSock (fabric snow chain) as soon as you begin driving on cleared roads.

⚠ WARNING

Mounting chains

When mounting snow chains, park the vehicle on level ground away from traffic. Turn on the vehicle Hazard Warning flashers and place a triangular emergency warning device behind the vehicle if available. Always place the vehicle in P (Park), apply the parking brake and turn off the engine before installing snow chains.

⚠ WARNING

Tire chains

- The use of chains may adversely affect vehicle handling.
- Do not exceed 20 mph (30 km/h) or the chain manufacturer's recommended speed limit, whichever is lower.
- Drive carefully and avoid bumps, holes, sharp turns, and other road hazards, which may cause the vehicle to bounce.
- Avoid sharp turns or lockedwheel braking.

⚠ CAUTION

- Chains that are the wrong size or improperly installed can damage

- your vehicle's brake lines, suspension, body and wheels.
- Stop driving and retighten the chains any time you hear them hitting the vehicle.

Use high quality ethylene glycol coolant

Your vehicle is delivered with high quality ethylene glycol coolant in the cooling system. It is the only type of coolant that should be used because it helps prevent corrosion in the cooling system, lubricates the water pump and prevents freezing. Be sure to replace or replenish your coolant refer to "Normal maintenance schedule - Non Turbo Models" on page 7-11. Before winter, have your coolant tested to assure that its freezing point is sufficient for the temperatures anticipated during the winter.

Check battery and cables

Winter puts additional burdens on the battery system. Visually inspect the battery and cables (refer to "For best battery service" on page 7-32). The level of charge in your battery can be checked by an authorized Kia dealer or a service station.

Change to "winter weight" oil if necessary

In some climates it is recommended that a lower viscosity "winter weight" oil be used during cold weather. Refer to "Recommended lubricants and capacities" on page 8-6 for recommendations. If you aren't sure what weight oil you should use, consult an authorized Kia dealer.

Check spark plugs and ignition system

Inspect your spark plugs as described in "Scheduled maintenance service" on page 7-9 and replace them if necessary. Also check all ignition wiring and components to be sure they are not cracked, worn or damaged in any way.

To keep locks from freezing

To keep the locks from freezing, squirt an approved de-icer fluid or glycerine into the key opening. If a lock is covered with ice, squirt it with an approved de-icing fluid to remove the ice. If the lock is frozen internally, you may be able to thaw it out by using a heated key. Handle the heated key with care to avoid injury.

Use approved window washer anti-freeze in system

To keep the water in the window washer system from freezing, add an approved window washer anti-freeze solution in accordance with instructions on the container. Window washer anti-freeze is available from an authorized Kia dealer and most auto parts outlets. Do not use vehicle coolant or other types of anti-freeze as these may damage the paint finish.

Don't let your parking brake freeze

Under some conditions your parking brake can freeze in the engaged position. This is most likely to happen when there is an accumulation of snow or ice around or near the rear brakes or if the brakes are wet. If there is a risk the parking brake may freeze, apply it only temporarily while you put the gear shift dial in P (Park) and block the rear wheels so the vehicle cannot roll. Then release the parking brake.

Don't let ice and snow accumulate underneath

Under some conditions, snow and ice can build up under the fenders and interfere with the steering. In severe winter conditions you should periodically check underneath the vehicle to be sure the movement of

the front wheels and the steering components are not obstructed.

Carry emergency equipment

Depending on the severity of the weather, you should carry appropriate emergency equipment. Some of the items you may want to carry include tow straps or chains, flashlight, emergency flares, sand, shovel, jumper cables, window scraper, gloves, ground cloth, coveralls, blanket, etc.

Drive your vehicle when water vapor condenses and accumulates inside the exhaust pipes

When the vehicle is stopped for a long time in winter while the engine is running, water vapor may condense and accumulate inside the exhaust pipes. Water in the exhaust pipes may cause noise, etc., but it is drained driving at medium to high speed.

Trailer towing

If you are considering towing with your vehicle, you should first check with your country's Department of Motor Vehicles to determine their legal requirements.

Since laws vary the requirements for towing trailers, cars, or other types of vehicles or apparatus may differ. Ask an authorized Kia dealer for further details before towing.

⚠ WARNING

Towing a trailer

Always check your towing equipment to confirm correct equipment size and installation before use. Using incompatible or incorrectly installed trailer equipment can effect the vehicle operation and endanger you and your passengers.

You may require an additional wiring harness connector to install a trailer hitch. Please contact an authorized Kia dealer for more details.

⚠ WARNING

Weight limits

Before towing, make sure the total trailer weight, GCW (Gross Combination Weight), GVW (Gross Vehicle Weight), GAW (Gross Axle Weight) and trailer tongue load are all within the limits.

⚠ CAUTION

Trailer installation

Follow instructions in this section when pulling a trailer. Pulling a trailer improperly can damage your vehicle and result in costly repairs not covered by your warranty.

Your vehicle can tow a trailer. To identify what the vehicle trailering capacity is for your vehicle, you should read the information in "Weight of the trailer" on page 5-166.

Remember that trailering is different than just driving your vehicle by itself. Trailering means changes in handling, durability, and fuel economy. Successful, safe trailering requires correct equipment, and it has to be used properly.

This section contains many time-tested, important trailering tips and safety rules. Many of these are important for your safety and that of your passengers. Please read this section carefully before you pull a trailer.

Load-pulling components such as the engine, transmission, wheel assemblies, and tires are forced to work harder against the load of the added weight. The engine is required to operate at relatively higher speeds and under greater

loads. This additional burden generates extra heat. The trailer also adds considerably to wind resistance, increasing the pulling requirements.

Hitches

It's important to have the correct hitch equipment. Crosswinds, large trucks going by, and rough roads are a few reasons why you'll need the right hitch. Here are some rules to follow:

- Will you have to make any holes in the body of your vehicle when you install a trailer hitch? If you do, then be sure to seal the holes later when you remove the hitch. If you don't seal them, deadly carbon monoxide (CO) from your exhaust can get into your vehicle, as well as dirt and water.
- The bumpers on your vehicle are not intended for hitches. Do not attach rental hitches or other bumper-type hitches to them. Use only a frame-mounted hitch that does not attach to the bumper.
- Kia trailer hitch accessory is available at an authorized Kia dealer.

Safety chains

You should always attach chains between your vehicle and your trailer. Cross the safety chains under the tongue of the trailer so

that the tongue will not drop to the road if it becomes separated from the hitch.

Instructions about safety chains may be provided by the hitch manufacturer or by the trailer manufacturer. Follow the manufacturer's recommendation for attaching safety chains. Always leave just enough slack so you can turn with your trailer. And, never allow safety chains to drag on the ground.

Trailer brakes

If your trailer is equipped with a braking system, make sure it conforms to your state's regulations and that it is properly installed and operating correctly.

If your trailer weight exceeds the maximum allowed weight without trailer brakes, then the trailer will also require its own brakes as well. Be sure to read and follow the instructions for the trailer brakes so you'll be able to install, adjust and maintain them properly.

- Don't tap into or modify your vehicle's brake system.

WARNING

Trailer brakes

Do not use a trailer with its own brakes unless you are absolutely certain that you have properly set

up the brake system. This is not a task for amateurs. Use an experienced, competent trailer shop for this work.

Driving with a trailer

Towing a trailer requires a certain amount of experience. Before setting out for the open road, you must get to know your trailer. Acquaint yourself with the feel of handling and braking with the added weight of the trailer. And always keep in mind that the vehicle you are driving is now a good deal longer and not nearly so responsive as your vehicle is by itself.

Before you start, check the trailer hitch and platform, safety chains, electrical connector(s), lights, tires and mirror adjustment. If the trailer has electric brakes, start your vehicle and trailer moving and then apply the trailer brake controller by hand to be sure the brakes are working. This lets you check your electrical connection at the same time.

During your trip, check occasionally to be sure that the load is secure, and that the lights and any trailer brakes are still working.

Following distance

Stay at least twice as far behind the vehicle ahead as you would when driving your vehicle without a trailer. This can help you avoid situations that require heavy braking and sudden turns.

Passing

You'll need more passing distance up ahead when you're towing a trailer. And, because of the increased vehicle length, you'll need to go much farther beyond the passed vehicle before you can return to your lane. Due to the added load to the engine when going uphill the vehicle may also take longer to pass than it would on flat ground.

Backing up

Hold the bottom of the steering wheel with one hand. Then, to move the trailer to the left, just move your hand to the left. To move the trailer to the right, move your hand to the right. Always back up slowly and, if possible, have someone guide you.

Making turns

When you're turning with a trailer, make wider turns than normal. Do this so your trailer won't strike soft shoulders, curbs, road signs, trees, or other objects near the edge of

the road. Avoid jerky or sudden maneuvers. Signal well in advance before turning or lane changes.

Turn signals when towing a trailer

When you tow a trailer, your vehicle has to have a different turn signal flasher and extra wiring. The green arrows on your instrument panel will flash whenever you signal a turn or lane change. Properly connected, the trailer lights will also flash to alert other drivers you're about to turn, change lanes, or stop.

When towing a trailer, the green arrows on your instrument panel will flash for turns even if the bulbs on the trailer are burned out. Thus, you may think drivers behind you are seeing your signals when, in fact, they are not. It's important to check occasionally to be sure the trailer bulbs are still working. You must also check the lights every time you disconnect and then reconnect the wires.

Do not connect a trailer lighting system directly to your vehicle's lighting system. Use only an approved trailer wiring harness.

An authorized Kia dealer can assist you in installing the wiring harness.

CAUTION

Always use an approved trailer wiring harness. Failure to use an approved trailer wiring harness could result in damage to the vehicle electrical system.

Driving on grades

Reduce speed and shift to a lower gear before you start down a long or steep downgrade. If you don't shift down, you might have to use your brakes so much that they would get hot and no longer operate efficiently. On a long uphill grade, shift down and reduce your speed to around 45 mph (70 km/h) to reduce the possibility of engine and transmission overheating.

If your trailer weighs more than the maximum trailer weight without trailer brakes and you have an automatic transmission, you should drive in D (Drive) when towing a trailer.

Operating your vehicle in D (Drive) when towing a trailer will minimize heat build up and extend the life of your transmission.

Towing uphill

When towing a trailer on steep grades (in excess of 6%) pay close attention to the engine coolant

temperature gauge to ensure the engine does not overheat.

If the needle of the coolant temperature gauge moves across the dial towards "H" (HOT), pull over and stop as soon as it is safe to do so, and allow the engine to idle until it cools down. You may proceed once the engine has cooled sufficiently.

You must decide driving speed depending on trailer weight and uphill grade to reduce the possibility of engine and transmission overheating.

Parking on hills

Generally, if you have a trailer attached to your vehicle, you should not park your vehicle on a hill. People can be seriously or fatally injured, and both your vehicle and the trailer can be damaged if they unexpectedly roll downhill.

However, if you ever have to park your trailer on a hill, here's how to do it:

1. Pull the vehicle into the parking space. Turn the steering wheel in the direction of the curb (right if headed downhill, left if headed up hill).
2. If the vehicle has an automatic transmission, place the vehicle in P (Park).
3. Set the parking brake and shut off the engine.

4. Place chocks under the trailer wheels on the down hill side of the wheels.
5. Start the vehicle, hold the brakes, shift to neutral, release the parking brake and slowly release the brakes until the trailer chocks absorb the load.
6. Reapply the brakes, reapply the parking brake and shift the vehicle to P (Park) for automatic transmission.
7. Shut off the vehicle and release the vehicle brakes but leave the parking brake set.

When you are ready to leave after parking on a hill

1. With the automatic transmission in P (Park), apply your brakes and hold the brake pedal down while you:
 - Start your engine;
 - Shift into gear; and
 - Release the parking brake.
2. Slowly remove your foot from the brake pedal.
3. Drive slowly until the trailer is clear of the chocks.
4. Stop and have someone pick up and store the chocks.

Maintenance when trailer towing

Your vehicle will need service more often when you regularly pull a trailer. Important items to pay particular attention to include engine oil, automatic transmission fluid, axle lubricant and cooling system

fluid. Brake condition is another important item to frequently check. Each item is covered in this manual, and the Index will help you find them quickly. If you're trailering, it's a good idea to review these sections before you start your trip.

Don't forget to also maintain your trailer and hitch. Follow the maintenance schedule that accompanied your trailer and check it periodically. Preferably, conduct the check at the start of each day's driving. Most importantly, all hitch nuts and bolts should be tight.

CAUTION

Air conditioning (A/C)

Do not use the air conditioning while using your vehicle to tow uphill. Due to higher load during trailer usage, overheating might occur on hot days or during uphill driving.

- When towing check transmission fluid more frequently.

If you do decide to pull a trailer

Here are some important points if you decide to pull a trailer:

- Consider using a sway control. You can ask a hitch dealer about sway control.
- Do not do any towing with your vehicle during its first 1,200 miles (2,000 km) in order to allow the

engine to properly break in. Failure to heed this caution may result in serious engine or transmission damage.

- When towing a trailer, be sure to consult an authorized Kia dealer for further information on additional requirements such as a towing kit, etc.
- Always drive your vehicle at a moderate speed (less than 60 mph (100 km/h)).
- On a long uphill grade, do not exceed 45 mph (70 km/h) or the posted towing speed limit, whichever is lower.
- The chart contains important considerations that have to do with weight:

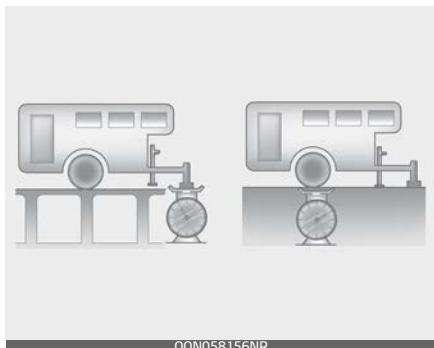
Item	(Gasoline) 3.8 GDi
	lbs. (kg)
Maximum trailer weight	Without brake system
	With brake system
Maximum tongue weight	500 (227)

To identify what the vehicle trailering capacity is for your vehicle, you should read the information in "Weight of the trailer" on page 5-166.

Weight of the trailer

Tongue Load

Total Trailer Weight

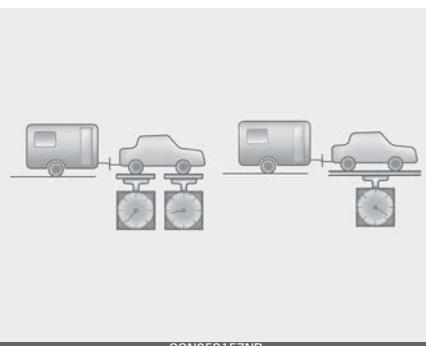


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What is the maximum safe weight of a trailer? It should never weigh more than the maximum trailer weight with trailer brakes. But even that can be too heavy.

It depends on how you plan to use your trailer. For example, speed, altitude, road grades, outside temperature and how often your vehicle is used to pull a trailer are all important. The ideal trailer weight can also depend on any special equipment that you have on your vehicle.

Gross Axle Weight Gross Vehicle Weight



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The tongue load of any trailer is an important weight to measure because it affects the total Gross Vehicle Weight (GVW) of your vehicle. This weight includes the curb weight of the vehicle, any cargo you may carry in it, and the people who will be riding in the vehicle. And if you will tow a trailer, you must add the tongue load to the GVW because your vehicle will also be carrying that weight.

After you've loaded your trailer, weigh the trailer and then the tongue, separately, to see if the weights are proper. If they aren't, you may be able to correct them simply by moving some items around in the trailer.

WARNING

Trailer

Always follow the loading instructions provided with your trailer. Improper loading can effect vehicle operation and result in an accident.

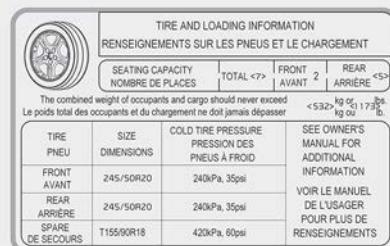
Vehicle load limit

The vehicle load limit is displayed on the tire and loading information label on the driver's door.

Tire and loading information label



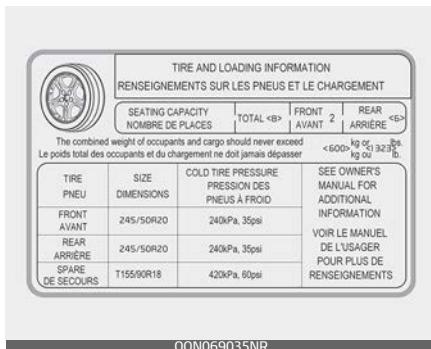
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The label located on the driver's door sill gives the original tire size, cold tire pressures recommended for your vehicle, the number of people that can be in your vehicle and vehicle capacity weight.

Vehicle capacity weight:

- 7 persons: 1,173 lbs. (532 kg)
- 8 persons: 1,323 lbs. (600 kg)

Vehicle capacity weight is the maximum combined weight of occupants and cargo. If your vehicle is equipped with a trailer, the combined weight includes the tongue load.

Seating capacity:

Total

- 7 persons (Front seat: 2 persons, Rear seat: 5 persons)
- 8 persons (Front seat: 2 persons, Rear seat: 6 persons)

Seating capacity is the maximum number of occupants including a driver, your vehicle may carry. How-

ever, the seating capacity may be reduced based upon the weight of all of the occupants, and the weight of the cargo being carried or towed. Do not overload the vehicle as there is a limit to the total weight, or load limit including occupants and cargo, the vehicle can carry.

Towing capacity:

- (Gasoline) 3.8 GDi Without trailer brakes: 1,650 lbs. (750 kg)
- With trailer brakes: 5,000 lbs. (2,267 kg)

Towing capacity is the maximum trailer weight including its cargo weight, your vehicle can tow

Cargo capacity:

The cargo capacity of your vehicle will increase or decrease depending on the weight and the number of occupants.

Steps for Determining Correct Load Limit -

- (1) Locate the statement "The combined weight of occupants and cargo should never exceed XXX lbs. or XXX kg" on your vehicle's placard.
- (2) Determine the combined weight of the driver and passengers that will be riding in your vehicle.

(3) Subtract the combined weight of the driver and passengers from XXX lbs. or XXX kg.

(4) The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the "XXX" amount equals 1400 lbs. (635 kg) and there will be five 150 lbs. (68 kg) passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs. (295 kg). $(1400 - 750) (5 \times 150) = 650$ lbs. or $635 - 340 (5 \times 68) = 295$ kg)

(5) Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.

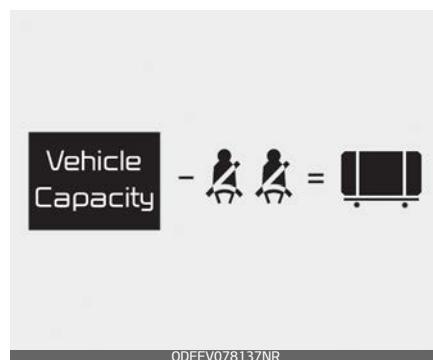
(6) If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle.

WARNING

Loose cargo

Do not travel with unsecured blunt objects in the passenger compartment of your vehicle (e.g. suit cases or unsecured child seats). These items may strike an occupant during a sudden stop or crash.

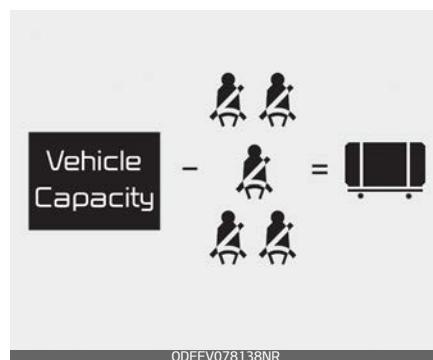
Example 1



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Item	Description	Total
A	Vehicle Capacity Weight	849 lbs. (385 kg)
B	Subtract Occupant Weight 150 lbs. (68 kg) × 2	300 lbs. (136 kg)
C	Available Cargo and Luggage weight	549 lbs. (249 kg)

Example 2

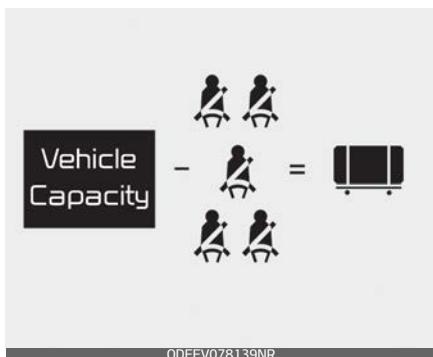


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Item	Description	Total
A	Vehicle Capacity Weight	849 lbs. (385 kg)
B	Subtract Occupant Weight 150 lbs. (68 kg) × 5	750 lbs. (340 kg)

Item	Description	Total
C	Available Cargo and Luggage weight	99 lbs. (45 kg)

Example 3

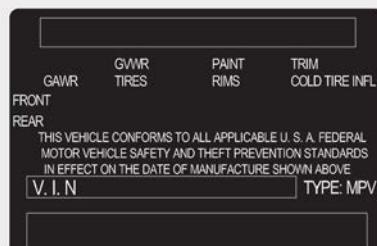


Item	Description	Total
A	Vehicle Capacity Weight	849 lbs. (385 kg)
B	Subtract Occupant Weight 161 lbs. (73 kg) × 5	805 lbs. (365 kg)
C	Available Cargo and Luggage weight	44 lbs. (20 kg)

Refer to your vehicle's tire and loading information label for specific information about your vehicle's capacity weight and seating positions. The combined weight of the driver, passengers and cargo should never exceed your vehicle's capacity weight.

Certification label

The certification label is located on the driver's door sill at the center pillar.



This label shows the maximum allowable weight of the fully loaded vehicle. This is called the GVWR (Gross Vehicle Weight Rating). The GVWR includes the weight of the vehicle, all occupants and cargo.

This label also tells you the maximum weight that can be supported by the front and rear axles, called Gross Axle Weight Rating (GAWR).

To find out the actual loads on your front and rear axles, you need to go to a weigh station and weigh your vehicle. Your dealer can help you with this. Be sure to spread out your load equally on both sides of the centerline.

WARNING

Over loading

Never exceed the GVWR for your vehicle, the GAWR for either the front or rear axle and vehicle capacity weight. Exceeding these ratings

can affect your vehicle's handling and braking ability.

The label will help you decide how much cargo and installed equipment your vehicle can carry.

If you carry items inside your vehicle - like suitcases, tools, packages, or anything else - they are moving as fast as the vehicle. If you have to stop or turn quickly, or if there is a crash, the items will keep going and can cause an injury if they strike the driver or a passenger.

WARNING

Over loading

Do not overload your vehicle. Overloading your vehicle can cause heat buildup in your vehicle's tires and possible tire failure, increased stopping distances and poor vehicle handling-all of which may result in a crash.

NOTICE

Overloading your vehicle may cause damage. Repairs would not be covered by your warranty. Do not overload your vehicle.

Vehicle weight

This chapter will guide you in the proper loading of your vehicle or trailer, to keep your loaded vehicle weight within its design rating capability, with or without a trailer.

Properly loading your vehicle will provide maximum return of the vehicle design performance. Before loading your vehicle, familiarize yourself with the following terms for determining your vehicle's weight ratings, with or without a trailer, from the vehicle's specifications and the compliance label:

Base curb weight This is the weight of the vehicle including a full tank of fuel and all standard equipment. It does not include passengers, cargo, or optional equipment.

Vehicle curb weight This is the weight of your new vehicle when you picked it up from your dealer plus any aftermarket equipment.

Cargo weight This figure includes all weight added to the Base Curb Weight, including cargo and optional equipment.

GAW (Gross Axle Weight) This is the total weight placed on each axle (front and rear) - including vehicle curb weight and all payload.

GAWR (Gross Axle Weight Rating) This is the maximum allowable

weight that can be carried by a single axle (front or rear). These numbers are shown on the compliance label. The total load on each axle must never exceed its GAWR.

GVW (Gross Vehicle Weight) This is the Base Curb Weight plus actual Cargo Weight plus passengers.

GVWR (Gross Vehicle Weight Rating)

This is the maximum allowable weight of the fully loaded vehicle (including all options, equipment, passengers and cargo). The GVWR is shown on the certification label located on the driver's door sill.

 **CAUTION**

Do not use replacement tires with lower load carrying capacities than the original tires because they may lower your vehicle's GVWR and GAWR limitations. Replacement tires with a higher limit than the original tires do not increase the GVWR and GAWR limitations.

What to do in an emergency

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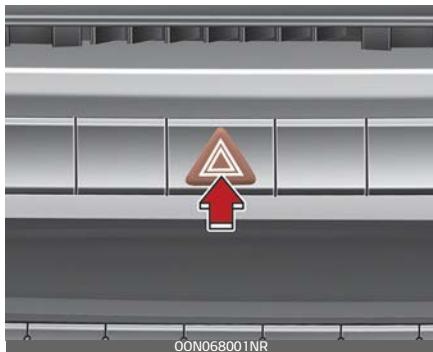
What to do in an emergency

Road warning

When in an emergency situation occurs while driving or when you park by the edge of the roadway, you must alert approaching or passing vehicles to be careful as they pass. For this, you should use the hazard warning flasher.

Hazard warning flasher

The hazard warning flasher serves as a warning to other drivers to exercise extreme caution when approaching, overtaking, or passing your vehicle.



It should be used whenever emergency repairs are being made or when the vehicle is stopped near the edge of a roadway.

Depress the flasher switch with the ENGINE START/STOP button in any position. The flasher switch is located in the center fascia panel. All

turn signal lights will flash simultaneously.

- The hazard warning flasher operates whether your vehicle is running or not.
- The turn signals do not work when the hazard flasher is on.
- Care must be taken when using the hazard warning flasher while the vehicle is being towed.

In case of an emergency while driving

If an emergency situation occurs while driving, stay calm and take the following steps.

If the vehicle stalls while driving

1. Reduce your speed gradually, keeping a straight line.
2. Move cautiously off the road to a safe place.
3. Turn on your hazard warning flasher.
4. Try to start the vehicle again. If your vehicle will not start, contact an authorized Kia dealer or seek other qualified assistance.

If the engine stalls at a crossroad or crossing

- If the engine stalls at a crossroad or crossing, set the shift lever in the N (Neutral) position and then push the vehicle to a safe place.
- If your vehicle has a manual transmission not equipped with a ignition lock switch, the vehicle can move forward by shifting to the 2 (second) or 3 (third) gear and then turning the starter without depressing the clutch pedal.

If you have a flat tire while driving

1. Take your foot off the accelerator pedal and let the vehicle slow down while driving straight ahead. Do not apply the brakes immediately or attempt to pull off the road as this may cause a loss of control.
2. When the vehicle has slowed to such a speed that it is safe to do so, brake carefully and pull off the road.
3. Drive off the road as far as possible and park on firm level ground. If you are on a divided highway, do not park in the median area between the two traffic lanes.
4. When the vehicle is stopped, turn on your emergency hazard flashers, set the parking brake and put the transmission in P.
5. Have all passengers get out of the vehicle. Be sure they all get out on the side of the vehicle that is away from traffic.
6. When changing a flat tire, follow the instruction provided later in this section.

If the engine will not start

When the engine doesn't start, first check to see how much fuel there is and whether the battery is discharged.

If engine doesn't turn over or turns over slowly

1. Be sure the shift lever is in N (Neutral) or P (Park) and the emergency brake is set.
2. Check the battery connections to be sure they are clean and tight.
3. Turn on the interior light. If the light dims or goes out when you operate the starter, the battery is discharged.
4. Check the starter connections to be sure they are securely tightened.

Do not push or pull the vehicle to start it. This could cause damage to your vehicle. Refer to "Jump-starting" on page 6-5.

WARNING

Push/pull start

Do not push or pull the vehicle to start it. Push or pull starting may cause the catalytic converter to overload and create a fire hazard.

If engine turns over normally but does not start

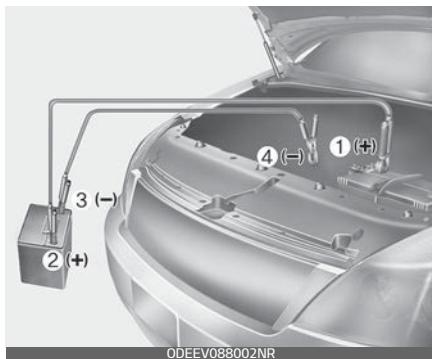
1. Check the fuel level.
2. With the ENGINE START/STOP button in the OFF position, check all connectors at the ignition coils and spark plugs. Reconnect any that may be disconnected or loose.
3. Check the fuel line in the engine compartment.
4. If the engine still does not start, call an authorized Kia dealer or seek other qualified assistance.

Emergency starting

When the vehicle will not start because of low battery power, you may need to jump start the vehicle.

Jump-starting

Connect cables in numerical order and disconnect in reverse order.



Jump-starting can be dangerous if done incorrectly. Therefore, to avoid harm to yourself or damage to your vehicle or battery, follow these jump-starting procedures. If in doubt, we strongly recommend that you have a competent technician or towing service jump-start your vehicle.

WARNING

Battery

Never attempt to check the electrolyte level of the battery as this may cause the battery to rupture or explode.

WARNING

Frozen batteries

Do not attempt to jump start the vehicle if the discharged battery is frozen as the battery may rupture or explode.

WARNING

Battery

Keep all flames or sparks away from the battery. The battery produces hydrogen gas which will explode if exposed to flame or sparks.

WARNING

Battery cables

Do not connect the jumper cable from the negative terminal of the booster battery to the negative terminal of the discharged battery, directly. This can cause the discharged battery to overheat and crack, degradation.

Make sure to connect one end of the jumper cable to the negative terminal of the booster battery, and the other end to a metallic point, far away from the battery.

WARNING

Sulfuric acid risk

Automobile batteries contain sulfuric acid. When jump starting your

vehicle, be careful not to get sulfuric acid on yourself, your clothing, or on the vehicle. This acid is poisonous and highly corrosive.

Jump-starting

1. Make sure the booster battery is 12-volt and that its negative terminal is grounded.
If the booster battery is in another vehicle, do not allow the vehicles to come in contact.
2. Turn off all unnecessary electrical loads.
3. Connect the jumper cables in the exact sequence shown in the illustration.
 - 1) Connect one end of a jumper cable to the positive terminal of the discharged battery (1).
 - 2) Connect the other end to the positive terminal of the booster battery (2).
 - 3) Proceed to connect one end of the other jumper cable to the negative terminal of the booster battery (3), then the other end to a solid, stationary, metallic point away from the battery (4).
Do not allow the jumper cables to contact anything except the correct battery terminals or the correct ground. Do not lean over the battery when making connections.
 4. Start vehicle with the booster battery and let it run at 2,000

rpm, then start the vehicle with the discharged battery.

If the cause of your battery discharging is not apparent, you should have your vehicle checked by an authorized Kia dealer.

* NOTICE

Make sure to connect one end of the jumper cable to the negative terminal of the booster battery, and the other end to a metallic point, far away from the battery.

Push-starting

Vehicles equipped with automatic transmission cannot be push-started, and only jump starting can be applied. Follow the directions in this page for jump-starting.

⚠ WARNING

Tow starting vehicle

Never tow a vehicle to start it. When the engine starts, the vehicle can suddenly surge forward and could cause a collision with the tow vehicle.

If the engine overheats

If your temperature gauge indicates overheating, you experience a loss of power, or hear loud pinging or knocking, the engine will probably be too hot.

If this happens, you should:

1. Pull off the road and stop as soon as it is safe to do so.
2. Place the shift lever in P and set the parking brake.
3. If the air conditioning is on, turn it off.
4. If engine coolant is running out under the vehicle or steam is coming out from underneath the hood, stop the engine. Do not open the hood until the coolant has stopped running or the steaming has stopped.
5. If there is no visible loss of engine coolant and no steam, leave the engine running and check to be sure the engine cooling fan is operating.
 - 1) If the fan is not running, turn the engine off.

6. Check to see if the water pump drive belt is missing.
 - 1) If it is not missing, check to see that it is tight.
 - 2) If the drive belt seems to be satisfactory, check for coolant leaking from the radiator, hoses or under the vehicle. (If the air conditioning had been in use, it is normal for cold water to be draining from it when you stop).

WARNING

Under the hood

-  While the engine is running, keep hair, hands and clothing away from moving parts such as the fan and drive belts to prevent injury.

7. If the water pump drive belt is broken or engine coolant is leaking out, stop the engine immediately and call the nearest authorized Kia dealer for assistance.
8. If you cannot find the cause of the overheating, wait until the engine temperature has returned to normal. If coolant has been lost, carefully add coolant to the reservoir to bring the fluid level in the reservoir up to the halfway mark.
9. Proceed with caution, keeping alert for further signs of overheating. If overheating happens again, call an authorized Kia dealer for assistance.

⚠ WARNING

Radiator cap

 Do not remove the radiator cap when the engine is hot. This may result in coolant being blown out of the opening and cause serious burns.

Serious loss of coolant indicates there is a leak in the cooling system and this should be checked as soon as possible by an authorized Kia dealer.

Tire Pressure Monitoring System (TPMS)

The Tire Pressure Monitoring System (TPMS) detects the pressure of vehicle's tires and displays it on the LCD display.



1. Low tire pressure telltale / TPMS malfunction indicator
2. Low tire pressure position telltale
(Shown on the LCD display)

Tire Pressure Indicator

- You can check the tire pressure in the assist mode on the cluster.
 - Refer to "User Settings mode" on page 4-80.
- Tire pressure is displayed 1~2 minutes later after driving.
- If tire pressure is not displayed when the vehicle is stopped, "Drive to display" message displays. After driving, check the tire pressure.
- You can change the tire pressure unit in the user settings mode on the cluster.
 - psi, kPa, bar (Refer to "User Settings mode" on page 4-80).

* NOTICE

- The tire pressure may change due to factors such as parking condition, driving style, and altitude above sea level.
- The tire pressure shown on the dashboard may differ from the tire pressure measured by tire pressure gauge.

Effective use of the TPMS

⚠ WARNING

Over-inflation or under-inflation can reduce tire life, adversely affect vehicle handling, and lead to sudden tire failure that may cause loss of

vehicle control resulting in an accident

Each tire, including the spare (if provided), should be checked monthly when cold and inflated to the inflation pressure recommended by the vehicle manufacturer on the vehicle placard or tire inflation pressure label.

(If your vehicle has tires of a different size than the size indicated on the vehicle placard or tire inflation pressure label, you should determine the proper tire inflation pressure for those tires.)

As an added safety feature, your vehicle has been equipped with a TPMS that illuminates a low tire pressure telltale when one or more of your tires is significantly under-inflated. Accordingly, when the low tire pressure telltale illuminates, you should stop and check your tires as soon as possible, and inflate them to the proper pressure. Driving on a significantly under-inflated tire causes the tire to overheat and can lead to tire failure. Under-inflation also reduces fuel efficiency and tire tread life, and may affect the vehicle's handling and stopping ability.

Please note that the TPMS is not a substitute for proper tire maintenance, and it is the driver's responsibility to maintain correct tire

pressure, even if under-inflation has not reached the level to trigger illumination of the TPMS low tire pressure telltale.

Your vehicle has also been equipped with a TPMS malfunction indicator to indicate when the system is not operating properly. The TPMS malfunction indicator is combined with the low tire pressure telltale. When the system detects a malfunction, the telltale will flash for approximately one minute and then remain continuously illuminated. This sequence will continue upon subsequent vehicle start-ups as long as the malfunction exists. When the malfunction indicator is illuminated, the system may not be able to detect or signal low tire pressure as intended. TPMS malfunctions may occur for a variety of reasons, including the installation of replacement or alternate tires or wheels on the vehicle that prevent the TPMS from functioning properly.

Always check the TPMS malfunction telltale after replacing one or more tires or wheels on your vehicle to ensure that the replacement or alternate tires and wheels allow the TPMS to continue to function properly.

* NOTICE

If any of the below happens, have the system checked by an authorized Kia dealer.

1. The low tire pressure telltale / TPMS malfunction indicator does not illuminate for 3 seconds when the ENGINE START/STOP button is turned to the ON position or engine is running.
2. The TPMS malfunction indicator remains illuminated after blinking for approximately 1 minute.
3. The Low tire pressure position telltale remains illuminated.

Low tire pressure telltale (!)

Low tire pressure position telltale

When the TPMS warning indicators are illuminated, one or more of your tires is significantly under-inflated.



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If the telltale illuminates, immediately reduce your speed, avoid hard cornering and anticipate increased

stopping distances. You should stop and check your tires as soon as possible.

Inflate the tires to the proper pressure as indicated on the vehicle's placard or tire inflation pressure label located on the driver's side center pillar outer panel. If you cannot reach a service station or if the tire cannot hold the newly added air, replace the low pressure tire with the spare tire.

Then the TPMS malfunction indicator and the Low Tire Pressure telltale may turn on and illuminate after restarting and about 20 minutes of continuous driving before you have the low pressure tire repaired and replaced on the vehicle.

In winter or cold weather, the low tire pressure telltale may be illuminated if the tire pressure was adjusted to the recommended tire inflation pressure in warm weather. It does not mean your TPMS is malfunctioning because the decreased temperature leads to a proportional lowering of tire pressure.

You should check the tire inflation pressure and adjust the tires to the recommended tire inflation pressure when driving your vehicle in the following conditions.

- from a warm area to a cold area
- from a cold area to a warm area

- the outside temperature is extremely high or low

When filling tires with more air, conditions to turn off the low tire pressure telltale may not be met. This is because a tire inflator has a margin of error in performance. The low tire pressure telltale will be turned off if the tire pressure is above the recommended tire inflation pressure.

WARNING

Low pressure damage

Do not drive on low pressure tires. Significantly low tire pressure can cause the tires to overheat and fail making the vehicle unstable resulting in increased braking distances and a loss of vehicle control.

6

TPMS malfunction indicator (!)

The low tire pressure telltale will illuminate after it blinks for approximately one minute when there is a problem with the TPMS.

If the system is able to correctly detect an underinflation warning at the same time as system failure, it will illuminate both the TPMS malfunction and the low tire pressure position telltales. For example, if the Front Left sensor fails, the TPMS malfunction indicator illuminates, but if the Front Right, Rear Left, or

Rear Right tire is underinflated, the low tire pressure position telltales may illuminate together with the TPMS malfunction indicator.

Have the system checked by an authorized Kia dealer as soon as possible to determine the cause of the problem.

- The TPMS malfunction indicator may be illuminated if the vehicle is moving around electric power supply cables or radios transmitters such as at police stations, government and public offices, broadcasting stations, military installations, airports, or transmitting towers, etc. This can interfere with normal operation of the TPMS.
- The TPMS malfunction indicator may illuminate if the vehicle is equipped with snow chains or some personal electronic devices (such as a laptop computer, mobile charger, remote starter or navigation) are being used in the vehicle. This can interfere with normal operation of the TPMS.

Tire replacement with TPMS

If you have a flat tire, the Low Tire Pressure telltale will come on. Have the flat tire repaired by an authorized Kia dealer as soon as possible or replace the flat tire with the spare tire.

⚠ CAUTION

Repair Agents

Never use a puncture-repairing agent not approved by Kia to repair and/or inflate a low pressure tire. The sealant not approved by Kia may damage the tire pressure sensor.

Each wheel is equipped with a tire pressure sensor mounted inside the tire behind the valve stem. You must use TPMS specific wheels. It is recommended that you always have your tires serviced by an authorized Kia dealer.

Even if you replace the low pressure tire with the spare tire, the Low Tire Pressure telltale will remain on until the low pressure tire is repaired and placed on the vehicle.

After you replace the low pressure tire with the spare tire, the TPMS malfunction indicator may illuminate after a few minutes. This is because the TPMS sensor mounted on the spare wheel is not yet activated.

Once the low pressure tire is inflated again to the recommended pressure and installed on the vehicle or the TPMS sensor mounted on the replaced spare wheel is initiated by an authorized Kia dealer, the TPMS malfunction indicator and the low

tire pressure telltale will turn off within a few minutes of driving.

If the indicator has not disappeared after a few minutes of driving, please visit an authorized Kia dealer.

If an original mounted tire is replaced with the spare tire, the TPMS sensor on the replaced spare wheel should be initiated and the TPMS sensor on the original mounted wheel should be deactivated. If the TPMS sensor on the original mounted wheel located in the spare tire carrier still activates, the Tire Pressure Monitoring System may not operate properly. Have the tire with TPMS serviced or replaced by an authorized Kia dealer.

You may not be able to identify a low tire by simply looking at it. Always use a good quality tire pressure gauge to measure the tire's inflation pressure. Please note that a tire that is hot (from being driven) will have a higher pressure measurement than a tire that is cold (from sitting stationary for at least 3 hours and driven less than 1 mile (1.6 km) during that 3 hour period).

Allow the tire to cool before measuring the inflation pressure. Always be sure the tire is cold before inflating to the recommended pressure.

A cold tire means the vehicle has been sitting for 3 hours and driven

for less than 1 mile (1.6 km) in that 3 hour period.

Never use tire sealant if your vehicle is equipped with a TPMS. The liquid sealant can damage the tire pressure sensors.

- The TPMS cannot alert you to severe and sudden tire damage caused by external factors such as nails or road debris.
- If you feel any vehicle instability, immediately take your foot off the accelerator, apply the brakes gradually and with light force, and slowly move to a safe position off the road.

* NOTICE //

Protecting TPMS

Tampering with, modifying, or disabling the Tire Pressure Monitoring System (TPMS) components may interfere with the system's ability to warn the driver of low tire pressure conditions and/or TPMS malfunctions. Tampering with, modifying, or disabling the Tire Pressure Monitoring System (TPMS) components may void the warranty for that portion of the vehicle.

This device complies with Part 15 of the FCC rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.
3. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.

If you have a flat tire (with spare tire)

If you have a flat tire, you can change the flat tire to a spare tire using tools.

WARNING

Driving on a flat tire will cause permanent damage to the tire. Re-inflating a tire after it has been driven on while severely underinflated or flat may cause a blowout and a serious crash. Never attempt to re-inflate a tire that has been driven on while severely underinflated or flat. In this case, repair or replace the flat tire as soon as possible.

WARNING

Changing a tire can be dangerous. Follow the instructions in this section when changing a tire to reduce the risk of serious injury or death.

CAUTION

Be careful as you use the jack handle to stay clear of the flat end. The flat end has sharp edges that could cause cuts.

Jack and tools



1. Jack handle
2. Wheel nut wrench
3. Driver
4. Socket
5. Jack

The jack and tools are stored in the luggage side trim.

Remove the tray cover indicated in the illustration.

Jacking instructions

The jack is provided for emergency tire changing only.

- To prevent the jack from "rattling" while the vehicle is in motion, store it properly.
- Follow jacking instructions to reduce the possibility of personal injury.

⚠ WARNING

Changing tires

- Never attempt vehicle repairs in the traffic lanes of a public road or highway.
- Always move the vehicle completely off the road and onto the shoulder before trying to change a tire. The jack should be used on firm level ground. If you cannot find a firm level place off the road, call a towing service company for assistance.
- Be sure to use the correct front and rear jacking positions on the vehicle; never use the bumpers or any other part of the vehicle for jacking support.
- The vehicle can roll off the jack causing serious injury or death.
- Do not get under a vehicle that is supported by a jack.
- Do not start or run the engine while the vehicle is on the jack.
- Do not allow anyone to remain in the vehicle while it is on the jack.
- Make sure any children present are in a secure place away from the road and from the vehicle to be raised with the jack.

⚠ WARNING

Tire jack

Do not place any portion of your body under a vehicle that is only supported by a jack since the vehicle

can easily roll off the jack. Use vehicle support stands.

⚠ WARNING

Changing tires

Never attempt vehicle repairs in the traffic lanes of a public road or highway.

- Always move the vehicle completely off the road and onto the shoulder before trying to change a tire. The jack should be used on a firm level ground. If you cannot find a firm, level place off the road, call a towing service company for assistance.
- Be sure to use the correct front and rear jacking positions on the vehicle; never use the bumpers or any other part of the vehicle for jack support.
- Do not allow anyone to remain in the vehicle while it is on the jack.
- Make sure any children present are in a secure place away from the road and from the vehicle to be raised with the jack.

⚠ WARNING

Running vehicle on jack

Do not start or run the engine of the vehicle while the vehicle is on the jack as this may cause the vehicle to fall off the jack.

To prevent the jack from "rattling" while the vehicle is in motion, store it properly.

*** NOTICE**

Retreaded tires

Possibly substantial variations in the design and age of the tire casing structures can limit service life and have a negative impact on road safety.

Removing the spare tire

Your spare tire is stored underneath the back of your vehicle, directly below the right sliding door.

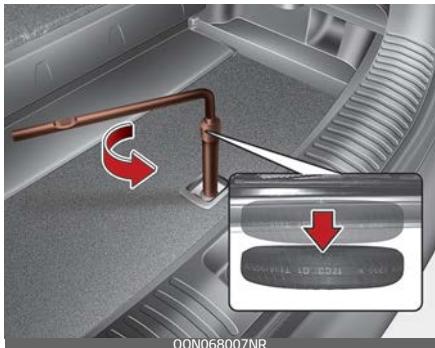
To remove the spare tire:

1. Open the luggage floor cover and find the plastic hex bolt cover on the floor.



2. Remove the cover.
3. Use the tool to loosen the bolt enough to lower the spare tire.

Turn the tool counterclockwise until the spare tire reaches the ground.

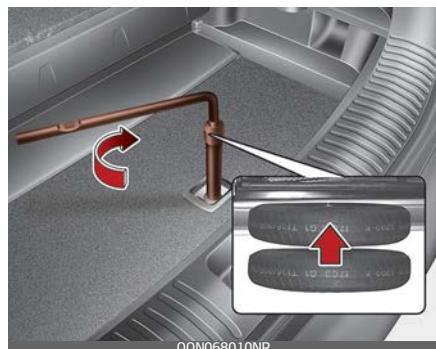


- After the spare tire reaches the ground, continue to turn the tool counterclockwise, and draw the spare tire outside. Never rotate the tool excessively, otherwise the spare tire carrier may be damaged.



- Remove the retainer from the center of the spare tire.

Storing the spare tire



- Place the wheel under the vehicle and install the retainer through the wheel center.
- Turn the tool clockwise until it clicks.

Ensure the spare tire retainer is properly aligned with the center of the spare tire to prevent the spare tire from "rattling".

Otherwise, it may cause the spare tire to fall off the carrier and lead to an accident.

6

Changing tires

WARNING

A vehicle can slip or roll off of a jack causing serious injury or death to you or those nearby. Take the following safety precautions:

- Never place any portion of your body under a vehicle that is supported by a jack.
- NEVER attempt to change a tire in the lane of traffic. ALWAYS move

- the vehicle completely off the road on level, firm ground away from traffic before trying to change a tire. If you cannot find a level, firm place off the road, call a towing service for assistance.
- Be sure to use the jack provided with the vehicle.
 - ALWAYS place the jack on the designated jacking positions on the vehicle and NEVER on the bumpers or any other part of the vehicle for jacking support.
 - Do not start or run the engine while the vehicle is on the jack.
 - Do not allow anyone to remain in the vehicle while it is on the jack.
 - Keep children away from the road and the vehicle.

-
1. Park on a level surface and apply the parking brake firmly.
 2. Place the transmission shift lever in P (Park).
 3. Activate the hazard warning flashers.



4. Remove the wheel lug nut wrench, jack and spare tire from the vehicle.



5. Block both the front and rear of the wheel that is diagonally opposite from the jack position.

⚠ WARNING

Jack location

To reduce the possibility of injury, be sure to use only the jack provided with the vehicle in the correct jack position; never use any other part of the vehicle for jack support.

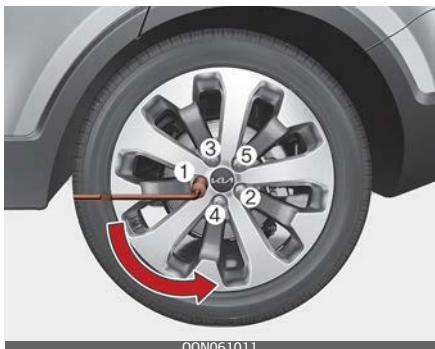
⚠ WARNING

Changing a tire

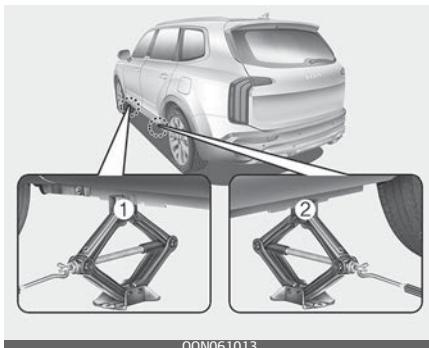
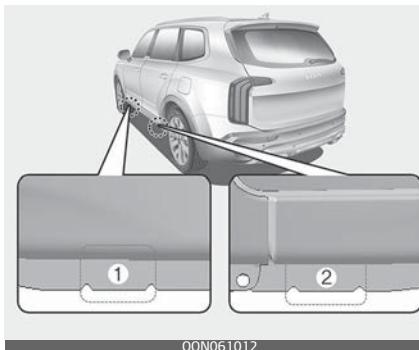
- To prevent vehicle movement while changing a tire, always set the parking brake fully, and always block the wheel diagonally opposite the wheel being changed.
- We recommend that the wheels of the vehicle be blocked, and that

no person remain in a vehicle that is being jacked.

- Loosen the wheel lug nuts counterclockwise one turn each, but do not remove any nut until the tire has been raised off the ground.



- Place the jack at the front (1) or rear (2) jacking position closest to the tire you are changing. Place the jack at the designated locations under the frame. The jacking positions are plates welded to the frame with two tabs and a raised dot to line up with the jack.



- Insert the wheel lug nut wrench into the jack and turn it clockwise, raising the vehicle until the tire just clears the ground. This measurement is approximately 1 in (30 mm).



6

Before removing the wheel lug nuts, make sure the vehicle is stable and that there is no chance for movement or slippage.

- Loosen the wheel nuts and remove them with your fingers.
- Slide the wheel off the studs and lay it flat so it cannot roll away.
- To put the wheel on the hub, pick up the spare tire, line up the holes with the studs and slide the wheel onto them. If this is difficult, tip

the wheel slightly and get the top hole in the wheel lined up with the top stud.

- 12.Jiggle the wheel back and forth until the wheel can slide over the other studs.

Wheels may have sharp edges. Handle them carefully to avoid possible severe injury. Before putting the wheel into place, be sure that there is nothing on the hub or wheel (such as mud, tar, gravel, etc.) that prevents the wheel from fitting solidly against the hub.

WARNING

Installing a wheel

- When you install a wheel, always remove any corrosion, dirt or foreign materials present on the mounting surfaces of the wheel or the surface of the wheel hub, brake drum or brake disc that contacts the wheel. Make sure to secure any fasteners that attach the rotor to the hub so they do not interfere with the mounting surfaces of the wheel. Installing wheels without correct metal-to-metal contact at the wheel mounting surfaces can cause the wheel nuts to loosen and the wheel to come off while your vehicle is in motion, resulting in loss of vehicle control, personal injury or death.

- Make sure the wheel makes good contact with the hub when installed. If the contact of the mounting surface between the wheel and hub is not good, the wheel nuts could come loose and cause the loss of a wheel. Loss of a wheel may result in loss of control of the vehicle.

WARNING

Wheel covers will not fit on the vehicle's compact spare. If you try to put a wheel cover on the compact spare, the cover or the spare could be damaged.

- 13.To install the wheel, hold it on the studs, put the wheel nuts on the studs and tighten them finger tight.
- 14.Jiggle the tire to be sure it is completely seated, then tighten the nuts as much as possible with your fingers again.
- 15.Insert the wrench into the jack and lower the vehicle to the ground by turning the wheel nut wrench counterclockwise.
- 16.Position the wrench as shown in the drawing and tighten the wheel nuts. Be sure the socket is seated completely over the nut. Do not stand on the wrench handle or use an extension pipe over the wrench handle.
- 17.Go around the wheel, tightening every nut following the numerical

sequence shown in the image until they are all tight. Double-check each nut for tightness.



18. After changing wheels, have an authorized Kia dealer tighten the wheel nuts to their proper torque as soon as possible.
19. To prevent the jack, wheel lug nut wrench and spare tire from rattling while the vehicle is in motion, store them properly.
20. Check the inflation pressures as soon as possible after installing the spare tire. Adjust it to the specified pressure, if necessary. Refer to "Tires and wheels" on page 8-5.

Wheel nut tightening torque:

79~94 lbf·ft (11~13 kgf·m)

If you have a tire gauge, remove the valve cap and check the air pressure. If the pressure is lower than recommended, drive slowly to the nearest service station and inflate to the correct pressure. If it is too high, adjust it until it is correct. Always reinstall the valve cap after checking

or adjusting the tire pressure. If the cap is not replaced, dust and dirt may get into the tire valve and air may leak from the tire. If you lose a valve cap, buy another and install it as soon as possible.

After you have changed the wheels, always secure the flat tire in its place and return the jack and tools to their proper storage locations.

CAUTION

Reusing lug nuts

Make certain during wheel removal that the same nuts that were removed are reinstalled - or, if replaced, that nuts with metric threads and the same chamfer configuration are used. Your vehicle has metric threads on the wheel studs and nuts. Installation of a non-metric thread nut on a metric stud will not secure the wheel to the hub properly and will damage the stud so that it must be replaced.

Note that most lug nuts do not have metric threads. Be sure to use extreme care in checking for thread style before installing aftermarket lug nuts or wheels. If in doubt, consult an authorized Kia dealer.

⚠ WARNING

Wheel studs

If the studs are damaged, they may lose their ability to retain the wheel. This could lead to the loss of the wheel and a collision resulting in serious injuries.

⚠ WARNING

Never use oil or grease on bolts or nuts because the nuts might come loose. The vehicle's wheel could fall off, causing a crash.

Important – use of compact spare tire

Your vehicle is equipped with a compact spare tire. This compact spare tire takes up less space than a regular-size tire. This tire is smaller than a conventional tire and is designed for temporary use only.

- You should drive carefully when the compact spare is in use. The compact spare should be replaced by the proper conventional tire and rim at the first opportunity.
- The operation of this vehicle is not recommended with more than one compact spare tire in use at the same time.

⚠ WARNING

Spare tire

The compact spare tire is for emergency use only. Do not operate your vehicle on this compact spare at speeds over 50 mph (80 km/h). The original tire should be repaired or replaced as soon as possible to avoid failure of the spare possibly leading to bodily injury or death.

The compact spare should be inflated to 60 psi (420 kPa).

* NOTICE

Check the inflation pressure after-installing the spare tire. Adjust it to the specified pressure, as necessary.

When using a compact spare tire, observe the following precautions:

- Under no circumstances should you exceed 50 mph (80 km/h); a higher speed could damage the tire.
- Ensure that you drive slowly enough for the road conditions to avoid all hazards. Any road hazard, such as a pothole or debris, could seriously damage the compact spare.
- Any continuous road use of this tire could result in tire failure, loss of vehicle control, and possible personal injury.

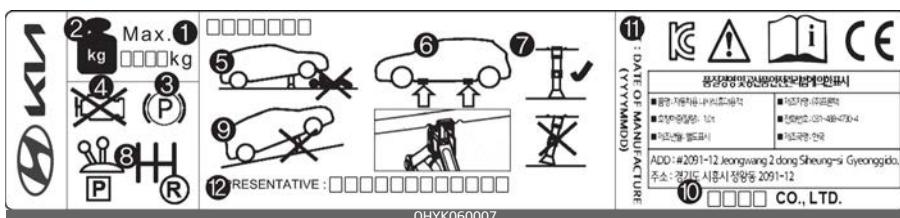
- Do not exceed the vehicle's maximum load rating or the load-carrying capacity shown on the sidewall of the compact spare tire.
- Avoid driving over obstacles. The compact spare tire diameter is smaller than the diameter of a conventional tire and reduces the ground clearance approximately 1 inch (25 mm), which could result in damage to the vehicle.
- Do not take this vehicle through an automatic vehicle wash while the compact spare tire is installed.
- Do not use tire chains on the compact spare tire. Because of the smaller size, a tire chain will not fit properly. This could damage the vehicle and result in loss of the chain.
- Do not use the compact spare tire on any other vehicle because this tire has been designed especially for your vehicle.
- The compact spare tire's tread life is shorter than a regular tire.
Inspect your compact spare tire regularly and replace worn compact spare tires with the same size and design, mounted on the same wheel.
- The compact spare tire should not be used on any other wheels, nor should standard tires, snow tires, wheel covers or trim rings be used with the compact spare wheel. If such use is attempted, damage to these items or other vehicle components may occur.
- Do not use more than one compact spare tire at a time.
- Do not tow a trailer while the compact spare tire is installed.
- Do not suddenly accelerate or decelerate ($0 \leftrightarrow 25$ mph) in any driving mode. It may cause leakage of transfer oil.

Jack label

Type A



Type B



Type C



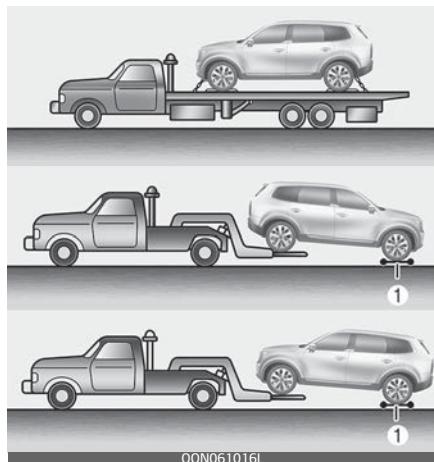
* The actual jack label in the vehicle may differ from the illustration. For more detailed specifications, refer to the label attached to the jack.

1. Model Name
2. Maximum allowable load
3. When using the jack, set your parking brake.
4. When using the jack, stop the engine.
5. Do not get under a vehicle that is supported by a jack.
6. The designated locations under the frame
7. When supporting the vehicle, the base plate of jack must be vertical under the lifting point.
8. Move the shift lever to the P position on vehicles with intelligent variable transmission.
9. The jack should be used on firm level ground.
10. Jack manufacturer
11. Production date
12. Representative company and address

Towing

If emergency towing is necessary, we recommend having it done by an authorized Kia dealer or a commercial tow-truck service.

Towing service



Proper lifting and towing procedures are necessary to prevent damage to the vehicle. The use of wheel dollies (1) or flatbed is recommended.

On Front Wheel Drive (FWD) vehicles, it is acceptable to tow the vehicle with the rear wheel on the ground (without dollies) and the front wheels off the ground. If any of the loaded wheels or suspension components are damaged or the vehicle is being towed with the front wheels on the ground, use a towing dolly under the front wheels. When

being towed by a commercial tow truck and wheel dollies are not used, the front of the vehicle should always be lifted, not the rear.

On All Wheel Drive (AWD) vehicles, your vehicle must be towed with a wheel lift and dollies or flatbed equipment with all the wheels off the ground.

⚠ WARNING

Side and curtain Air bag

If your vehicle is equipped with side and curtain air bag, set the ENGINE START/STOP button to ACC position when the vehicle is being towed.

The side and curtain air bag may deploy when the ENGINE START/STOP button to ON position and the rollover sensor detects the situation as a rollover.

*** NOTICE**

If the EPB does not release normally, take your vehicle to an authorized Kia dealer by loading the vehicle on a flatbed tow truck and have the system checked.

⚠ CAUTION

Towing



- Do not tow the vehicle backwards with the front wheels on the ground as this may cause damage to the transmission.
- Do not tow with sling-type equipment. Use wheel lift or flatbed equipment.

Towing without wheel dollies when using a towing service

When towing your vehicle in an emergency without wheel dollies:

1. Set the ENGINE START/STOP button to ACC position.
2. Place the transmission shift lever in N (Neutral).
3. Release the parking brake.

⚠ CAUTION

Towing gear position

Failure to shift to N (Neutral) may cause internal damage to the vehicle.

⚠ WARNING

- If you tow the vehicle while the front wheels are touching the ground, the vehicle motor may generate electricity and the motor components may be damaged or a fire may occur.
- When a vehicle fire occurs due to the battery, there is a risk of a second fire. Contact the fire department when towing the vehicle.

Maintenance

7

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7 Maintenance

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Maintenance

7

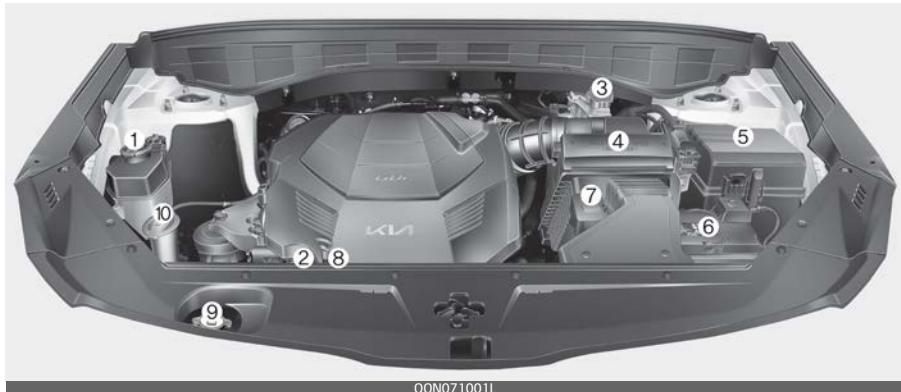
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Maintenance

Engine compartment

Open the hood to see the engine compartment.

(Gasoline) 3.8 GDi



OON071001L

* The actual engine cover in the vehicle may differ from the illustration.

1. Engine coolant reservoir
2. Engine oil filler cap
3. Brake fluid reservoir
4. Air cleaner
5. Fuse box
6. Negative battery terminal
7. Positive battery terminal
8. Engine oil dipstick
9. Radiator cap
10. Windshield washer fluid reservoir

Maintenance services

You should exercise the utmost care to prevent damage to your vehicle and injury to yourself whenever performing any maintenance or inspection procedures.

Should you have any doubts concerning the inspection or servicing of your vehicle, we strongly recommend that you have an authorized Kia dealer perform this work.

An authorized Kia dealer has factory-trained technicians and genuine Kia parts to service your vehicle properly. For expert advice and quality service, see an authorized Kia dealer.

Inadequate, incomplete or insufficient servicing may result in operational problems with your vehicle that could lead to vehicle damage, an accident, or personal injury.

Owner's responsibility

* NOTICE

Maintenance Service and Record Retention are the owner's responsibility.

You should retain documents that show proper maintenance has been performed on your vehicle in accordance with the scheduled maintenance service charts shown on the following pages. You need this

information to establish your compliance with the servicing and maintenance requirements of your vehicle warranties.

Detailed warranty information is provided in your Warranty & Consumer Information manual.

Repairs and adjustments required as a result of improper maintenance or a lack of required maintenance are not covered.

We recommend you have your vehicle maintained and repaired by an authorized Kia dealer. Authorized Kia dealers meet Kia's high service quality standards and receive technical support from Kia in order to provide you with a high level of service satisfaction.

* NOTICE

NHTSA Safety Corrosion Alert

The National Highway Traffic Safety Administration (NHTSA) has issued a general warning to all vehicle owners of all brands regarding the risks associated with vehicle underbody corrosion. From your initial purchase, take the following steps to prevent unsafe corrosion damage to your vehicle:

- Wash the undercarriage of your vehicle regularly during the winter and whenever your vehicle has

been exposed to such salts or chemicals.

- Do a thorough washing of the undercarriage at the end of the winter.
- Use professional service technicians or governmental inspection stations to annually inspect for corrosion.
- Immediately seek an inspection of your vehicle if you become visually aware of corrosion flaking or scaling or if you become aware of a change in vehicle performance, such as soft or spongy brakes, fluids leaking, impairment of directional control, suspension noises or rattling metal straps.
- NHTSA further advises that after a vehicle is 7 years old, it is essential that you take these indicated maintenance steps to ensure that you protect yourself from unsafe corrosion conditions.

Owner maintenance precautions

Improper or incomplete service may result in problems. This section gives instructions only for the maintenance items that are easy to perform.

As explained earlier in this section, several procedures can be done only by an authorized Kia dealer with special tools.

* NOTICE

Improper owner maintenance during the warranty period may affect warranty coverage. For details, read the separate Warranty & Consumer Information manual provided with the vehicle. If you're unsure about any servicing or maintenance procedure, have it done by an authorized Kia dealer.

⚠ WARNING

Maintenance work

Do not wear jewelry or loose clothing while working under the hood of your vehicle with the engine running. These items can become entangled in moving parts, if you must run the engine while working under the hood, make certain that you remove all jewelry (especially rings, bracelets, watches, and necklaces) and all neckties, scarves, and

similar loose clothing before getting near cooling fans.

WARNING

Touching metal parts

Do not touch metal parts (including strut bars) while the vehicle is operating or hot. Doing so could result in serious bodily injury. Turn the vehicle off and wait until the metal parts cool down to perform maintenance work on the vehicle.

Owner maintenance

The following lists detail the vehicle checks and inspections that should be performed by the owner or an authorized Kia dealer. They should be performed at the indicated frequencies to help ensure the safe and dependable operation of your vehicle.

Any adverse conditions should be brought to the attention of your dealer as soon as possible.

These owner maintenance checks are generally not covered by warranties and you may be charged for labor, parts and lubricants used.

When you stop for fuel:

- Check the coolant level in coolant reservoir.
- Check the windshield washer fluid level.
- Look for low or under-inflated tires. Check if the front of the radiator and condenser are clean and not blocked with leaves, dirt or insects etc. If any of the above parts are extremely dirty or you are not sure of their condition, take your vehicle to an authorized Kia dealer.

WARNING

Hot coolant

Be careful when checking your engine coolant level when the engine is hot. Scalding hot coolant and steam may blow out under pressure.

While operating your vehicle:

- Check for vibrations in the steering wheel. Notice any increased steering effort or looseness in the steering wheel, or change in its straight-ahead position.
- Notice if your vehicle constantly turns slightly or "pulls" to one side when traveling on smooth, level road.
- When stopping, listen and check for unusual sounds, pulling to one side, increased brake pedal travel or "hard-to-push" brake pedal.
- If any slipping or changes in the operation of your transmission occurs, take your vehicle to an authorized Kia dealer.
- Check the automatic transmission P (Park) function.
- Check the parking brake.
- Check for fluid leaks under your vehicle (water dripping from the air conditioning system during or after use is normal).

At least monthly:

- Check the coolant level in the coolant reservoir.
- Check the operation of all exterior lights, including the stoplights, turn signals and hazard warning flashers.
- Check the inflation pressures of all tires including the spare for tires that are worn, show uneven wear, or are damaged.
- Check for loose wheel lug nuts.

At least twice a year (i.e., every Spring and Fall):

- Check the radiator, heater and air conditioning hoses for leaks or damage.
- Check the windshield washer spray and wiper operation. Clean the wiper blades with clean cloth dampened with washer fluid.
- Check the headlight alignment.
- Check the lap/shoulder belts for wear and function.

At least once a year:

- Clean the body and door drain holes.
- Lubricate the door hinges and check the hood hinges.
- Lubricate the door and hood locks and latches.
- Lubricate the door rubber weatherstrips.
- Check the air conditioning system.

- Inspect and lubricate automatic transmission linkage and controls.
- Clean the battery and terminals.
- Check the brake fluid level.
- Visually inspect steering, suspension, and chassis components for damaged, loose, or missing parts or signs of wear.

Scheduled maintenance service

Follow the Normal Maintenance Schedule if the vehicle is usually operated where none of the following conditions apply.

Follow the Maintenance Under Severe Usage Conditions if any of the following conditions apply.

- Repeated driving short distance of less than 5 miles (8 km) in normal temperature or less than 10 miles (16 km) in freezing temperature.
- Extensive engine idling or low speed driving for long distances.
- Driving on rough, dusty, muddy, unpaved, graveled or salt-spread roads.
- Driving in areas using salt or other corrosive materials or in very cold weather.
- Driving in heavy dust condition.
- Driving in heavy traffic area.
- Driving on uphill, downhill, or mountain road repeatedly.
- Using for towing or camping and driving with loading on the roof
- Vehicle towing, driving for patrol car, taxi, or other commercial use.
- Frequently driving under high speed or rapid acceleration/deceleration
- Frequently driving in stop-and-go condition

If your vehicle is operated in any of the prior listed conditions, you

should inspect, replace or refill more frequently, using the severe usage maintenance schedule instead of the normal usage maintenance schedule.

*** NOTICE**

After 10 years or 100,000 miles (150,000 km), we recommend to use severe maintenance schedule.

Normal maintenance schedule - Non Turbo Models

The following maintenance services must be performed to ensure good emission control and performance. Keep receipts for all vehicle services to protect your warranty. Where both mileage and date are shown, the frequency of service is determined by whichever occurs first.

R: Replace or change

I: Inspect and if necessary, adjust, correct, clean or replace.

Number of months or driving distance, whichever comes first												
Months	12	24	36	48	60	72	84	96	108	120	132	144
Miles×1,000	8	16	24	32	40	48	56	64	72	80	88	96
Km×1,000	13	26	39	52	65	78	91	104	117	130	143	156
Tire rotation	Rotate every 8,000 miles (13,000 km)											
Fuel additives *1	Add every 8,000 miles (13,000 km) or 12 months											
Engine oil and engine oil filter *2 (Gasoline) 3.8 GDi	R	R	R	R	R	R	R	R	R	R	R	R
Climate control air filter	I	R	I	R	I	R	I	R	I	R	I	R
Air cleaner filter	I	I	R	I	I	R	I	I	R	I	I	R
Brake fluid	Inspect every 8,000 miles (13,000 km) or 12 months, Replace every 48,000 miles (78,000 km) or 48 months											
Spark plugs	Replace every 96,000 miles (156,000 km)											
Coolant (Engine)	At first, replace at 120,000 miles (195,000 km) or 120 months After that, replace every 24,000 miles (39,000 km) or 24 months											
Vacuum hose	I											
Air conditioner compressor/ refrigerant												
Bolt and nuts on chassis and body												
Brake lines, hoses and connec- tions												
Parking brake												
Brake discs and pads												
Suspension ball joints and mountingbolts												
Steering gear rack, linkage and boots												
Tire (pressure & tread wear)												

Number of months or driving distance, whichever comes first												
Months	12	24	36	48	60	72	84	96	108	120	132	144
Miles×1,000	8	16	24	32	40	48	56	64	72	80	88	96
Km×1,000	13	26	39	52	65	78	91	104	117	130	143	156
Drive shaft and boots	-	-	-	-	-	-	-	-	-	-	-	-
Propeller shaft	-	-	-	-	-	-	-	-	-	-	-	-
Fuel tank and fuel cap	-	-	-	-	-	-	-	-	-	-	-	-
Fuel lines, hoses and connections	-	-	-	-	-	-	-	-	-	-	-	-
Fuel tank air filter ^{*3}	-	-	-	-	-	-	-	-	-	-	-	-
Cooling system	-	-	-	-	-	-	-	-	-	-	-	-
Rear axle oil (AWD) ^{*4}	-	-	-	-	-	-	-	-	-	-	-	-
Transfer case oil (AWD) ^{*4}	-	-	-	-	-	-	-	-	-	-	-	-
Drive belts ^{*5}	-	-	-	-	-	-	-	-	-	-	-	-
Valve clearance ^{*6}	Inspect every 60,000 miles (96,000 km) or 72 months											
Automatic transmission fluid	No service required											

- * 1. If TOP TIER Detergent Gasoline is not available, one bottle of additive is recommended. Additives are available from your authorized Kia dealer along with information on how to use them. Do not mix other additives.
- * 2. As it is normal for engine oil to be consumed during driving, the engine oil level should be checked on regular basis. The engine oil change interval for normal operating conditions is based on the use of the recommended engine specification. If the recommended engine oil specification is not used, then replace the engine oil according to the maintenance schedule under severe operating conditions.
- * 3. Fuel tank air filter is considered to be maintenance free but periodic inspection is recommended as the level of maintenance will be dependent upon the quality fuel used in the vehicle.
- * 4. If the vehicle has been submerged in water or in a flooded area, the fluids should be changed as a precaution.
- * 5. The drive belt should be replaced when cracks occur or tension is reduced.
- * 6. Inspect for excessive valve noise and/or engine vibration and adjust if necessary. Have an authorized Kia dealer perform the operation.
- Fuel filter (gasoline engine): The fuel filter is considered to be maintenance free but periodic inspection is recommended for this maintenance schedule depends on fuel quality.

- If there are some important safety matters like fuel flow restriction, surging, loss of power, hard starting problem etc., replace the fuel filter immediately regardless of maintenance schedule and consult an authorized Kia dealer for details.

Maintenance Under Severe Usage Conditions – Non Turbo Models

The following items must be serviced more frequently on cars mainly used under severe driving conditions. Refer to the chart below for the appropriate maintenance intervals.

R: Replace

I: Inspect and if necessary, adjust, correct, clean or replace

Maintenance item	Maintenance operation	Maintenance intervals	Driving condition
Engine oil and engine oil filter	R	Every 5,000 miles (8,000 km) or 6 months	A, B, C, D, E, F, G, H, I, J, K
Automatic transmission fluid	R	Every 56,000 miles (91,000 km)	A, C, F, G, H, I, J, K
Transfer case oil (AWD)	R	Every 75,000 miles (120,000 km)	C, E, G, H, I, J
Rear axle oil (AWD)	R	Every 75,000 miles (120,000 km)	C, E, G, H, I, J
Air cleaner filter	R	More frequently	C, E
Spark plugs	R	More frequently	A, B, F, G, H, I, K
Climate control air filter	I	More frequently	C, E, G
Parking brake	I	More frequently	C, D, G, H
Brake discs, pads and calipers	I	More frequently	C, D, E, G, H, I, J, K
Suspension ball joints and mounting bolts	I	More frequently	C, D, E, F, G
Steering gear rack, linkage and boots	I	More frequently	C, D, E, F, G
Drive shafts and boots	I	More frequently	C, D, E, F, G, H, I, J
Propeller shaft	I	More frequently	C, D, E, F, G, H, I, J

Severe Driving Conditions

- A: Repeatedly driving short distance of less than 5 miles (8 km) in normal temperature or less than 10 miles (16 km) in freezing temperature.
- B: Extensive low speed driving for long distances.
- C: Driving on rough, dusty, muddy, unpaved, graveled or salt-spread roads.
- D: Driving in areas using salt or other corrosive materials or in very cold weather.
- E: Driving in heavy dust condition.
- F: Driving in heavy traffic area.
- G: Driving on uphill, downhill, or mountain roads.
- H: Using for towing or camping and driving with loading on the roof
- I: Vehicle towing, driving for patrol car, taxi, or other commercial use.
- J: Frequently driving under high speed or rapid acceleration/deceleration.
- K: Frequently driving in stop-and-go conditions

Explanation of scheduled maintenance items

The following parts require scheduled maintenance.

Engine oil and filter

The engine oil and filter should be changed at the intervals specified in the maintenance schedule. If the vehicle is being driven in severe conditions, more frequent oil and filter changes are required.

Drive belts

Inspect all drive belts for evidence of cuts, cracks, excessive wear or oil saturation and replace if necessary. Drive belts should be checked periodically for proper tension and adjusted as necessary.

Fuel filter

Kia gasoline vehicles are equipped with a lifetime fuel filter that is integrated with the fuel tank. Regular maintenance or replacement is generally not needed. This may vary depending on fuel quality. If you experience any of the following: fuel flow restriction, surging, loss of power, or a hard starting issue, inspection and, if necessary, replacement may be needed. Have the fuel filter inspected or replaced by an authorized Kia dealer.

Fuel lines, fuel hoses and connections

Check the fuel lines, fuel hoses and connections for leakage and damage. Have an authorized Kia dealer replace any damaged or leaking parts immediately.

Fuel tank and fuel cap

The fuel tank and fuel cap should be inspected at those intervals specified in the maintenance schedule. Make sure that a new fuel tank or fuel cap is correctly replaced.

Vacuum crankcase ventilation hoses

Inspect the surface of hoses for evidence of heat and/or mechanical damage. Hard and brittle rubber, cracking, tears, cuts, abrasions, and excessive swelling indicate deterioration. Particular attention should be paid to examine those hose surfaces nearest to high heat sources, such as the exhaust manifold.

Inspect the hose routing to assure that the hoses do not come in contact with any heat source, sharp edges or moving components which might cause heat damage or mechanical wear. Inspect all hose connections, such as clamps and couplings, to make sure they are secure, and that no leaks are present. Hoses should be replaced

immediately if there is any evidence of deterioration or damage.

Air cleaner filter

A Genuine Kia air cleaner filter is recommended when the filter is replaced.

Spark plugs

Make sure to install new spark plugs of the correct heat range.

When assembling parts, be sure to wipe the inside and outside of the boot bottom of the ignition coil and the insulator of the spark plug with a soft cloth to prevent contamination of the spark plug insulator.

Valve clearance (if equipped)

Inspect for excessive valve noise and/or engine vibration and adjust if necessary. An authorized Kia dealer should perform the operation.

Cooling system

Check the cooling system components, such as the radiator, coolant reservoir, hoses and connections for leakage and damage. Replace any damaged parts.

Coolant

The coolant should be changed at the intervals specified in the maintenance schedule.

Automatic transmission fluid

Automatic transmission fluid should not be checked under normal usage conditions. But in severe conditions, the fluid should be changed at an authorized Kia dealer in accordance to the scheduled maintenance at the beginning of this section.

* NOTICE

Automatic transmission fluid color is usually red. As the vehicle is driven, the automatic transmission fluid will begin to look darker.

It is the normal condition and you should not judge the need to replace the fluid based upon the changed color.

⚠ CAUTION

Transmission fluids

The use of a non-specified fluid could result in transmission malfunction and failure. Use only specified automatic transmission fluid. (Refer to "Recommended lubricants and capacities" on page 8-6.)

Brake hoses and lines

Visually check for proper installation, chafing, cracks, deterioration and any leakage. Replace any deteriorated or damaged parts immediately.

* NOTICE

NHTSA Safety Corrosion Alert

NHTSA has warned all vehicle owners of all brands that they must maintain their vehicles in a manner which will prevent brake hose and brake line failures due to corrosion when such vehicles are exposed to winter road salt and related chemicals. While serious corrosion conditions typically only manifest themselves as safety issues after 7 years of vehicle use, the corrosion process starts immediately and thus underbody cleaning maintenance must commence from your vehicle's first exposure to road salts and chemicals. NHTSA urges vehicle owners to take the following steps to prevent corrosion:

1. Wash the undercarriage of your vehicle regularly throughout the winter and do a thorough washing in the spring to remove road salt and other de-icing chemicals.
2. Monitor the brake system for signs of corrosion by having regular professional inspections and watching for signs of problems, including loss of brake fluid,

- unusual leaks and soft or spongy feel in the brake pedal.
3. Replace the entire brake pipe assembly if you find severe corrosion that causes scaling or flaking of brake components.

Brake fluid

Check the brake fluid level in the brake fluid reservoir. The level should be between "MIN" and "MAX" marks on the side of the reservoir. Use only hydraulic brake fluid conforming to DOT 4 specification.

Parking brake

Inspect the parking brake system including the parking brake lever (or pedal) and cables.

Exhaust pipe and muffler

Visually inspect the exhaust pipes, muffler and hangers for cracks, deterioration, or damage. Start the engine and listen carefully for any exhaust gas leakage. Tighten connections or replace parts as necessary.

Brake discs, pads and calipers

Check the pads for excessive wear, discs for run out and wear, and calipers for fluid leakage.

Suspension mounting bolts

Check the suspension connections for looseness or damage. Retighten to the specified torque.

Steering gear box, linkage & boots/ lower arm ball joint

With the vehicle stopped and off, check for excessive free-play in the steering wheel.

Check the linkage for bends or damage. Check the dust boots and ball joints for deterioration, cracks, or damage. Replace any damaged parts.

Drive shafts and boots

Check the drive shafts, boots and clamps for cracks, deterioration, or damage. Replace any damaged parts and, if necessary, repack the grease.

Propeller shaft

Check the propeller shaft, boots, clamps, rubber coupling and center bearing rubber for cracks, deterioration, or damage. Replace any damaged parts and if necessary, repack the grease.

Air conditioning refrigerant

Check the air conditioning lines and connections for leakage and damage.

Checking fluid levels

When checking engine oil, engine coolant, brake fluid, and washer fluid, always be sure to clean the area around any filler plug, drain plug, or dipstick before checking or draining any lubricant or fluid. This is especially important in dusty or sandy areas and when the vehicle is used on unpaved roads. Cleaning the plug and dipstick areas will prevent dirt and grit from entering the engine and other mechanisms that could be damaged.

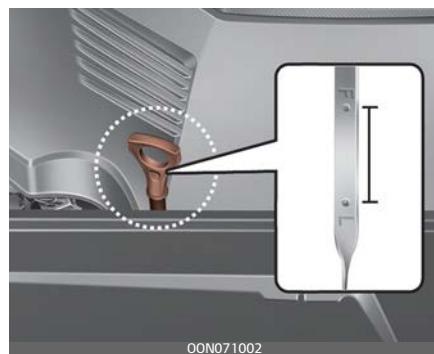
Engine oil and filter

Checking the engine oil level

Engine oil is used for lubricating, cooling, and operating various hydraulic components in the engine. Engine oil consumption while driving is normal, and it is necessary to check and refill the engine oil regularly. Also, check and refill the oil level within the recommended maintenance schedule to prevent deterioration of oil performance.

Check the engine oil following the below procedure.

(Gasoline) 3.8 GDi



1. Be sure the vehicle is on level ground.
2. Start the engine and allow it to reach normal operating temperature.
3. Turn the engine off, remove the oil filler cap and pull the dipstick out. Wait for 15 minutes for the oil to return to the oil pan.
4. Wipe the dipstick clean and reinsert it fully.

5. Pull the dipstick out again and check the level. Check if the oil level is between the F-L line, and if it is below the L line, add enough oil to bring the level to F line.

⚠ WARNING

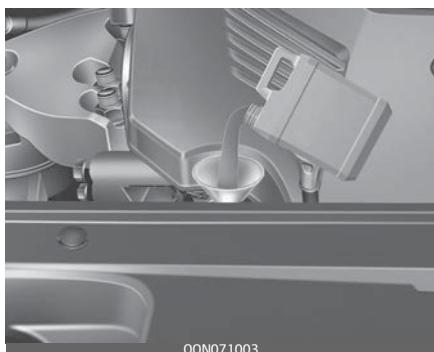
Radiator hose

Be very careful not to touch the radiator hose when checking or adding the engine oil as it may be hot enough to burn you.

⚠ CAUTION

When you wipe the oil level gauge, you should wipe it with a clean cloth. When mixed with debris, it can cause engine damage.

(Gasoline) 3.8 GDi



**Use a funnel to help prevent oil from being spilled on engine components.
Use only the specified engine oil.**

(Refer to "Recommended lubricants and capacities" on page 8-6.)

- Do not spill engine oil when adding or changing engine oil. Wipe off spilled oil immediately.
- The engine oil consumption may increase while you break in a new vehicle and it will be stabilized after driving 4,000 miles (6,000 km).
- The engine oil consumption can be affected by driving habits, climate conditions, traffic conditions, oil quality, etc. Therefore, it is recommended that you inspect the engine oil level regularly and refill it if necessary.

Changing the engine oil and filter

Have engine oil and filter changed by an authorized Kia dealer according to the Maintenance Schedule at the beginning of this chapter.

- If the maintenance schedule to replace engine oil is exceeded, the engine oil performance may deteriorate, and the engine condition may be affected. Therefore, replace the engine oil according to the maintenance schedule.
- To keep the engine in optimal condition, use the recommended engine oil and filter. If the recommended engine oil and filter are not used replace it according to the maintenance schedule under severe usage conditions.
- The purpose of the maintenance schedule for engine oil replace-

ment is to prevent oil deterioration and it is irrelevant to oil consumption. Check and refill engine oil regularly.

WARNING

Used engine oil may cause irritation or cancer of the skin if left in contact with the skin for prolonged periods of time. Used engine oil contains chemicals that have caused cancer in laboratory animals. Always protect your skin by washing your hands thoroughly with soap and warm water as soon as possible after handling used oil.

Do not leave used engine oil within the reach of children.

CAUTION

The engine oil is very hot immediately after the vehicle has been driven and can cause burns during replacement. Replace the engine oil after the engine oil has cooled down.

Engine coolant

The high-pressure cooling system has a reservoir filled with year round antifreeze coolant. The reservoir is filled at the factory.

Check the antifreeze protection and coolant level at least once a year, at the beginning of the winter season, and before traveling to a colder climate.

WARNING

Radiator/inverter cap

Never attempt to remove the radiator or inverter cap while the engine is operating or hot. Doing so might lead to cooling system and engine damage and could result in serious bodily injury from escaping hot coolant or steam.

Recommended coolant

When adding coolant, use only deionized water or soft water for your vehicle and never mix hard water in the coolant filled at the factory. An improper coolant mixture can result in serious malfunction or damage.

- Do not use alcohol or methanol coolant or mix them with the specified coolant.
- Do not use a solution that contains more than 60% antifreeze or less than 35% antifreeze,

which would reduce the effectiveness of the solution.

- The cooling circuit of a vehicle equipped with a heat pump system may freeze in extremely low temperature when the concentration of the antifreezing liquid is below 45%.

For mixture percentage, refer to the following table.

Ambient Temperature	Mixture Percentage (volume)	
	Antifreeze	Water
5 °F (-15 °C)	35	65
-13 °F (-25 °C)	40	60
-31 °F (-35 °C)	50	50
-49 °F (-45 °C)	60	40

⚠ WARNING

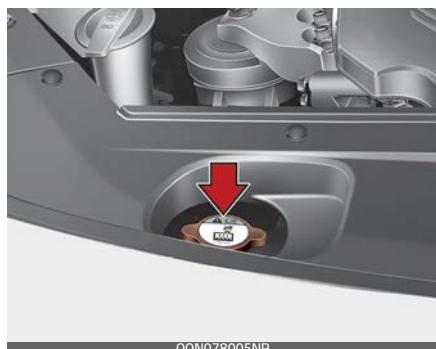
Radiator cap



Do not remove the radiator cap when the engine and radiator are hot. Scalding hot coolant and steam

may blow out under pressure which may result in serious injury.

Engine room rear view



Checking the coolant level

⚠ WARNING



Removing radiator cap

Never attempt to remove the radiator cap while the engine is operating or hot. Doing so might lead to cooling system damage and could result in serious personal injury from escaping hot coolant or steam.

- Turn the vehicle off and wait until it cools down.
- Use extreme care when removing the radiator cap. Wrap a thick towel around it, and turn it counterclockwise slowly to the first stop.
- Step back while the pressure is released from the cooling system.

- When you are sure all the pressure has been released, press down on the cap, using a thick towel, and continue turning counterclockwise to remove it.

⚠ WARNING



Cooling fan

Use caution when working near the blade of the cooling fan. The electric motor (cooling fan) is controlled by coolant temperature, refrigerant pressure and vehicle speed. It may sometimes operate even when the vehicle is not running.

- Check the condition and connections of all cooling system hoses and heater hoses.
- Replace any swollen or deteriorated hoses.
- Check the coolant level. The coolant level should be filled between F and L marks on the side of the coolant reservoir when the engine room is cool.
- If the coolant level is low, add enough specified coolant to provide protection against freezing and corrosion. Bring the level to F, but do not overfill.

If frequent additions are required, see an authorized Kia dealer for a cooling system inspection.

Changing the coolant

Have the coolant changed by an authorized Kia dealer according to the Maintenance Schedule at the beginning of this chapter.

⚠ CAUTION

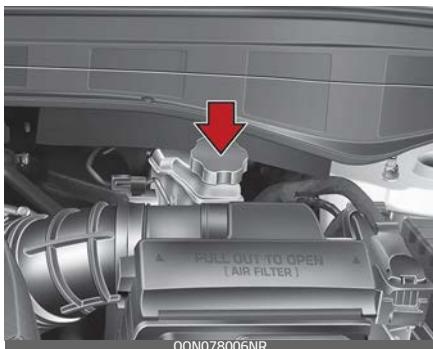
Put a thick cloth or fabric around the radiator cap before refilling the coolant in order to prevent the coolant from overflowing into engine parts such as the alternator.

Brake fluid

The brake fluid acts to transmit force to the brake when the driver depresses the brake pedal. Brake fluid must be maintained periodically to ensure that the brakes operate smoothly.

Checking the brake fluid level

Check the fluid level in the reservoir periodically. The fluid level should be between MAX and MIN marks on the side of the reservoir.



1. Before removing the reservoir cap and adding brake fluid, clean the area around the reservoir cap thoroughly to prevent brake fluid contamination.

CAUTION

Proper fluid

Only use brake fluid in the brake system. Small amounts of improper fluids can cause damage to the brake system.

2. Periodically check that the fluid level in the brake fluid reservoir is between MIN and MAX. The level will fall with accumulated mileage. This is a normal condition associated with the wear of the brake linings. If the fluid level is excessively low, have the brake system checked by an authorized Kia dealer.

Use only the specified brake fluid. (Refer to "Recommended lubricants and capacities" on page 8-6.)

Never mix different types of fluid.

In the event the brake system requires frequent additions of fluid, the vehicle should be inspected by an authorized Kia dealer.

When changing and adding brake fluid, handle it carefully. Do not let it come in contact with your eyes. If brake fluid should come in contact with your eyes, immediately flush them with a large quantity of fresh tap water. Have your eyes examined by a doctor as soon as possible.

CAUTION

Brake fluid

Do not allow brake fluid to contact the vehicle's body paint, as paint damage will result.

Brake fluid, which has been exposed to open air for an extended time should never be used as its quality

cannot be guaranteed. It should be disposed of properly.

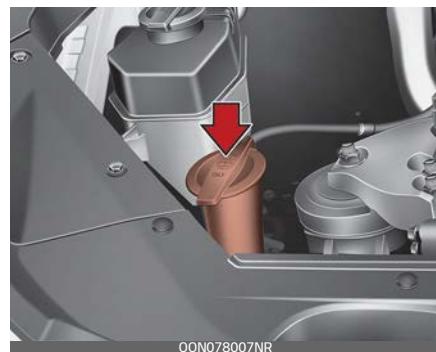
CAUTION

To maintain your vehicle's best brake and ABS/ESC performance, use Kia genuine brake fluid as in the specification. (Classification : SAE J1704 DOT4 LV, ISO4925 CLASS-6, FMVSS116 DOT-4)

Washer fluid

Washer fluid is used when wiping the windshield of the vehicle with a windshield wiper. You should check and refill washer fluid periodically to make sure that it doesn't run out.

Checking the washer fluid level



The reservoir is translucent so that you can check the level with a quick visual inspection.

- Check the fluid level in the washer fluid reservoir and add fluid if necessary. Plain water may be used if washer fluid is not available. However, use washer solvent with antifreeze characteristics in cold climates to prevent freezing.

WARNING

Flammable Fluid

Do not allow the washer fluid to come in contact with open flames or sparks. The windshield washer fluid reservoir is flammable under certain

circumstances. This can result in a fire.

⚠ WARNING

Coolant

- Do not use radiator coolant or antifreeze in the washer fluid reservoir.
- Radiator coolant can severely obscure visibility when sprayed on the windshield and may cause loss of vehicle control.

⚠ WARNING

Windshield fluid

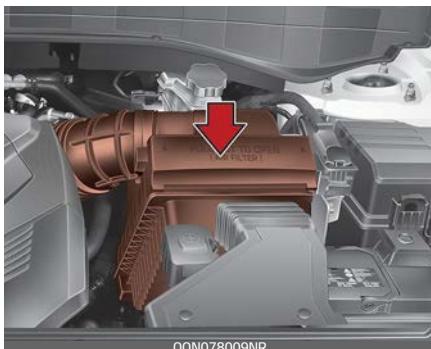
Do not drink the windshield washer fluid. The windshield washer fluid is poisonous to humans and animals.

Air cleaner filter

A Genuine Kia air cleaner filter is recommended when the filter is replaced.

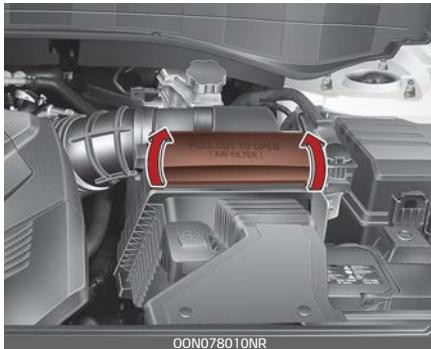
Replacing air cleaner filter

Air cleaner filter must be replaced when necessary, and should not be washed.



You can clean the filter when inspecting the air cleaner compartment. Clean the filter by using compressed air.

1. Pull out the air cleaner cover.



2. Unlock by turning the locking lever downward.



3. Pull the air cleaner filter to replace.



4. Lock the cover with the reverse order.

Replace the filter according to the Maintenance Schedule.

If the vehicle is operated in extremely dusty or sandy areas, replace the element more often than the usual recommended intervals. (Refer to "Maintenance Under Severe Usage Conditions - Non Turbo Models" on page 7-14.)

⚠ CAUTION //

Air filter maintenance

- Do not drive with the air cleaner removed; this will result in excessive engine wear.
- When removing the air cleaner filter, be careful that dust or dirt does not enter the air intake, or damage may result.
- Use a Kia genuine part. Use of a non-genuine part could damage the air flow sensor.

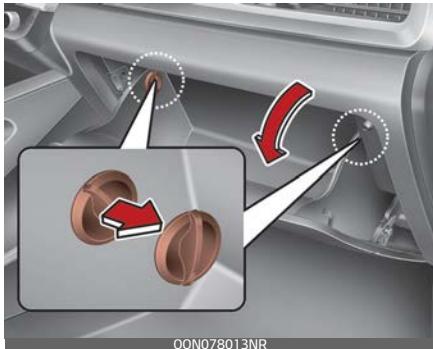
Climate control air filter

The climate control air filter should be replaced according to the maintenance schedule. If the vehicle is operated in severely air-polluted cities or on dusty rough roads for a long period, it should be inspected more frequently and replaced earlier.

Inspecting and replacing climate control air filter

When you replace the climate control air filter, replace it performing the following procedure. Be careful to avoid damaging other components.

1. Open the glove box and remove the stoppers on both sides.



2. With the glove box open, pull the pin and the support strap (1).



3. Remove the climate control air filter cover while pressing the lock on the upper side of the cover.



4. Replace the climate control air filter.



5. Reassemble in the reverse order of disassembly.

When replacing the climate control air filter install it properly. Otherwise, the system may produce noise and the effectiveness of the filter may be reduced.

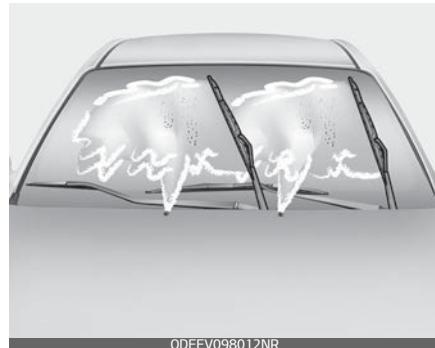
Wiper blades

When the wipers no longer clean adequately, the blades may be worn or cracked, and require replacement.

To prevent damage to the wiper arms or other components, do not attempt to move the wipers manually.

The use of a non-specified wiper blade could result in wiper malfunction and failure.

Blade inspection



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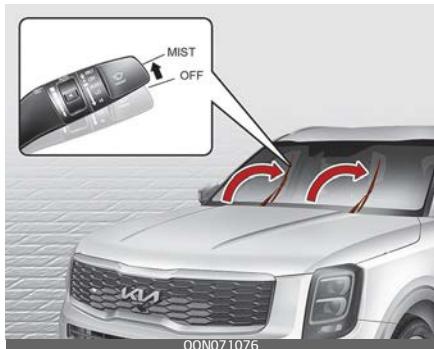
7

Commercial hot waxes applied by automatic vehicle washes have been known to make the windshield difficult to clean.

Contamination of either the windshield or the wiper blades with foreign matter can reduce the effectiveness of the windshield wipers. Common sources of contamination are insects, tree sap, and hot wax treatments used by some commercial vehicle washes. If the blades

are not wiping properly, clean both the window and the blades with a good cleaner or mild detergent, and rinse thoroughly with clean water.

Front windshield wiper blade



To inspect or replace the windshield wiper blades and to prevent damaging the hood, move the windshield wiper blades to the service position as follows;

- After turning off the engine, move the wiper switch to the single wiping (MIST) position within 20 seconds and hold the switch more than 2 seconds until the wiper blade is in the fully up position

Replacing front windshield wiper blade

Type A

1. Raise the wiper arm and turn the wiper blade assembly to expose the plastic locking clip.

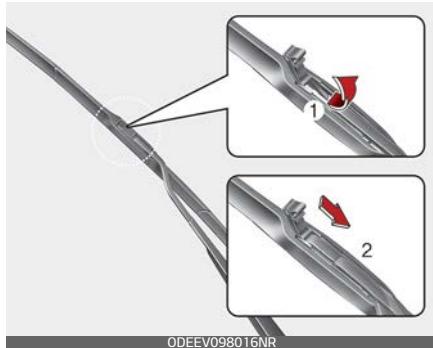


CAUTION

Wiper arms

- Do not allow the wiper arm to fall against the windshield, since it may chip or crack the windshield.
- Do not pull wiper arm forward, since arm could chip hood paint.

2. Compress the clip and slide the blade assembly downward.



3. Lift it off the arm.



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3. Install the new blade assembly.

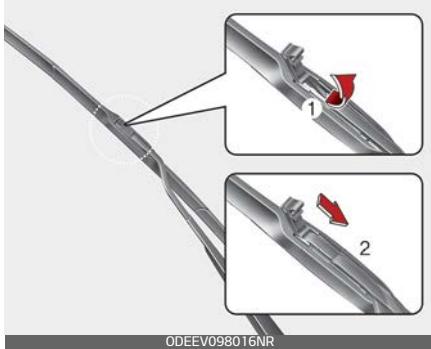


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4. Install the blade assembly in the reverse order of removal.

Type B

1. Raise the wiper arm.
2. Lift up the wiper blade clip. Then pull down the blade assembly and remove it.



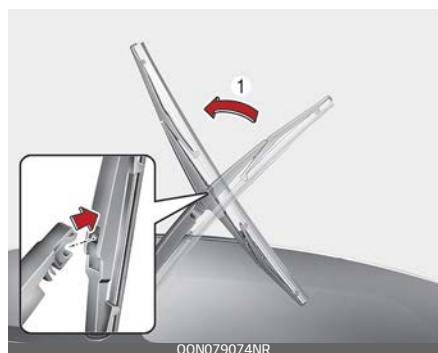
ODEEV098016NR

4. Return the wiper arm on the windshield.

5. Turn ignition to the ON position and wiper arms will return to the normal operating position.

Replacing rear window wiper blade

1. Raise the wiper arm and pull out the wiper blade assembly.



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2. Install the new blade assembly by inserting the center part into the slot in the wiper arm until it clicks into place.



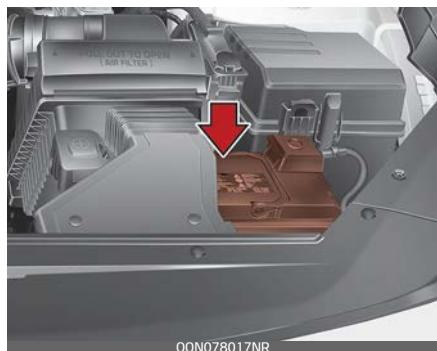
3. Make sure the blade assembly is installed firmly by trying to pull it slightly.

To prevent damage to the wiper arms or other components, have an authorized Kia dealer replace the wiper blade.

Battery

The battery powers the engine in order to move the vehicle as well as supplying power to the various devices installed in the vehicle.

For best battery service



- Keep the battery securely mounted.
- Keep the battery top clean and dry.
- Keep the terminals and connections clean, tight, and coated with petroleum jelly or terminal grease.
- Rinse any spilled electrolyte from the battery immediately with a solution of water and baking soda.
- If the vehicle is not going to be used for an extended time, disconnect the battery cables.

WARNING

Risk of explosion



Keep lit cigarettes and all other flames or sparks away from the battery.



The battery contains hydrogen -- a highly combustible gas which will explode if it comes in contact with a flame or spark.



Keep batteries out of the reach of children because batteries contain highly corrosive SULFURIC ACID and electrolytes. Do not allow battery acid to contact your skin, eyes, clothing or paint finish.



Wear eye protection when charging or working near a battery. Always provide ventilation when working in an enclosed space.



Always read the following instructions carefully when handling a battery.



If any electrolyte gets into your eyes, flush your eyes with clean water for at least 15 minutes and get immediate medical attention. If electrolyte gets on your skin, thoroughly wash the contacted area. If you feel pain or burning sensation, get medical attention immediately.



An inappropriately disposed battery can be harmful to the environment and human health.

Dispose the battery according to your local law(s) or regulation.



The battery contains lead. Do not dispose of it after use. Please return the battery to an authorized Kia dealer to be recycled.

Never attempt to recharge the battery when the battery cables are connected.

WARNING

Risk of electrocution

Never touch the electrical ignition system while the vehicle is running. This system works with high voltage which can "zap" you.

7

NOTICE

If you connect unauthorized electronic devices to the battery, the battery may be discharged. Never use unauthorized devices.

WARNING

Recharging battery

Never attempt to recharge the battery when the battery cables are connected.

⚠ WARNING

Battery lead compound

Battery posts, terminals, and related accessories contain lead and lead compounds. Wash hands after handling.

Battery recharging

Your vehicle has a maintenance-free, calcium-based battery

- If the battery becomes discharged in a short time (because, for example, the headlights or interior lights were left on while the vehicle was not in use), recharge it by slow charging (trickle) for 10 hours.
- If the battery gradually discharges because of high electric load while the vehicle is being used, recharge it at 20~30 A for two hours.

When recharging the battery, observe the following precautions:

- The battery must be removed from the vehicle and placed in an area with good ventilation.
- Do not allow cigarettes, sparks, or flame near the battery.
- Watch the battery during charging, and stop or reduce the charging rate in following cases:
 1. the battery cells begin gassing (boiling) violently

2. the electrolyte temperature of any cell exceeds 120 °F (49 °C).

- Wear eye protection when checking the battery during charging.
- Disconnect the battery charger in the following order.
 1. Turn off the battery charger main switch.
 2. Unhook the negative clamp from the negative battery terminal.
 3. Unhook the positive clamp from the positive battery terminal.
- Before performing maintenance or recharging the battery, turn off all accessories and stop the vehicle.
- The negative battery cable must be removed first and installed last when the battery is disconnected.

⚠ CAUTION

AGM battery

- Absorbent Glass Mat (AGM) batteries are maintenance free and have the AGM battery serviced by a professional workshop. Kia recommends to visit an authorized Kia dealer.

For charging your AGM battery, use only fully automatic battery chargers that are specially developed for AGM batteries.

- When replacing the AGM battery, use parts for replacement from a professional workshop. Kia rec-

- ommends to visit an authorized Kia dealer.
- Do not open or remove the cap on top of the battery. This may cause leaks of internal electrolyte that could result in severe injury.

Reset items

The following items should be reset after the battery has been discharged or the battery has been disconnected.

- Auto up/down window (Refer to "Window opening and closing" on page 4-39)
- Trip computer (Refer to "Trip information (trip computer)" on page 4-87)
- Climate control system (Refer to "Automatic climate control system" on page 4-139)

Tires and wheels

For proper maintenance, safety, and maximum fuel economy, you must always maintain the recommended tire inflation pressures and stay within the load limits and weight distribution recommended for your vehicle.

Recommended cold tire inflation pressures

All tire pressures should be checked when the tires are cold. "Cold Tires" means the vehicle has not been driven for at least three hours or driven less than 1 mile (1.6 km).

Recommended pressures must be maintained for the best ride, vehicle handling, and minimum tire wear.

For recommended inflation pressure, refer to "Tires and wheels" on page 8-5.

All specifications (sizes and pressures) can be found on a label attached to the driver's side center pillar.



⚠ WARNING

Tire underinflation

Inflate your tires consistent with the instructions provided in this manual. Regularly check the tire inflation pressure, and correct it as needed: at least twice a month and before any long trips on the road. If you fail to observe this precaution, you may be driving on underinflated tires, which may not only compromise your vehicle's driving stability, but also lead to tire damage and the risk of an accident. This risk is much higher on hot days and when driving for long periods at high speeds.

Failure to maintain specified pressure may result in excessive wear, poor handling, reduced fuel economy, deformation of tire and/or wheel, harsh ride conditions, possibility for additional damage from road hazards, or result in tire failure.

Tire pressure

Always observe the following:

- Check tire pressure when the tires are cold. (After vehicle has been parked for at least three hours or hasn't been driven more than 1 mile (1.6 km) since startup.)
- Check the pressure of your spare tire each time you check the pressure of other tires.
- Never overload your vehicle. Be careful not to overload a vehicle luggage rack if your vehicle is equipped with one.
- Warm tires normally exceed recommended cold tire pressures by 4~6 psi (28~41 kPa). Do not release air from warm tires to adjust the pressure or the tires will be underinflated.

⚠ WARNING

Tire Inflation

Overinflation or underinflation can reduce tire life, adversely affect vehicle handling, and lead to sudden tire failure. This could result in loss of vehicle control and potential injury.

Checking tire inflation pressure

Check your tires once a month or more.

Use a good quality gauge to check tire pressure. You cannot tell if your

tires are properly inflated simply by looking at them. Radial tires may look properly inflated even when they're underinflated.

Check the tire's inflation pressure when the tires are cold. "Cold" means your vehicle has been sitting or at least three hours or driven no more than 1 mile (1.6 km).

1. Remove the valve cap from the tire valve stem.
2. Press the tire gauge firmly onto the valve to get a pressure measurement. If the cold tire inflation pressure matches the recommended pressure on the tire and loading information label, no further adjustment is necessary.
3. If the pressure is low, add air until you reach the recommended amount.
4. If you overfill the tire, release air by pushing on the metal stem in the center of the tire valve.
5. Recheck the tire pressure with the tire gauge.
6. Be sure to put the valve caps back on the valve stems. They help prevent leaks by keeping out dirt and moisture.

Inspect your tires frequently for proper inflation as well as wear and damage. Always use a tire pressure gauge.

Tires with too much or too little pressure wear unevenly. This could result in poor handling, loss of vehicle control, and sudden tire failure

leading to accidents, injuries, and even death. The recommended cold tire pressure for your vehicle can be found in this manual and on the tire label located on the driver's side center pillar.

Tire rotation

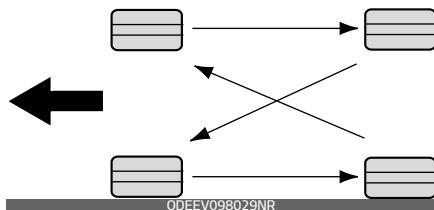
To equalize tread wear, it is recommended that the tires be rotated every 8,000 miles (13,000 km) or sooner if irregular wear develops.

During rotation, check the tires for correct balance.

When rotating tires, check for uneven wear and damage. Abnormal wear is usually caused by incorrect tire pressure, improper wheel alignment, out of-balance wheels, severe braking or severe cornering. Look for bumps or bulges in the tread or side of tire. Replace the tire if you find either of these conditions. Replace the tire if fabric or cord is visible. After rotation, be sure to bring the front and rear tire pressures to specification and check lug nut tightness. (proper torque is 79~94 lbf·ft [11~13 kgf·m])

Refer to "Tires and wheels" on page 8-5.

Disc brake pads should be inspected for wear whenever tires are rotated.



Rotate radial tires that have an asymmetric tread pattern only from front to rear and not from right to left.

⚠ WARNING

Mixing tires

Do not mix bias ply and radial ply tires under any circumstances. This may cause unusual handling characteristics.

Wheel alignment and tire balance

The wheels on your vehicle were aligned and balanced carefully at the factory to give you the longest tire life and best overall performance.

In most cases, you will not need to have your wheels aligned again. However, if you notice unusual tire wear or your vehicle pulling one way or the other, the alignment may need to be reset.

If you notice your vehicle vibrating when driving on a smooth road, your wheels may need to be rebalanced.

⚠ CAUTION

Wheel weight

Improper wheel weights can damage your vehicle's aluminum wheels. Use only approved wheel weights.

Tire replacement

If the tire is worn evenly, a tread wear indicator will appear as a solid band across the tread.



This shows there is less than 1/16 inch (1.6 mm) of tread left on the tire. Replace the tire when this happens.

Do not wait for the band to appear across the entire tread before replacing the tire.

The Anti-lock Brake System (ABS) works by comparing the speed of the wheels. The tire size affects wheel speed. When replacing tires, all 4 tires must use the same size originally supplied with the vehicle. Using tires of a different size can

cause the ABS and Electronic Stability Control (ESC) to work irregularly.

It is best to replace all four tires at the same time. If that is not possible, or necessary, then replace the two front or two rear tires as a pair. Replacing just one tire can seriously affect your vehicle's handling.

* NOTICE

We recommend that when replacing tires, use the same originally supplied with the vehicles. If not, that affects driving performance.

Wheel replacement

When replacing the metal wheels for any reason, make sure the new wheels are equivalent to the original factory units in diameter, rim width and offset.

A wheel with an incorrect size may adversely affect many things: wheel and bearing life, braking and stopping abilities, handling characteristics, ground clearance, body-to-tire clearance, snow chain clearance, speedometer and odometer calibration, headlight aiming and bumper height.

CAUTION

Wheels

Wheels that do not meet Kia specifications may fit poorly and result in damage to the vehicle or unusual handling and poor vehicle control.

Tire traction

Tire traction can be reduced if you drive on worn tires, tires that are improperly inflated or on slippery road surfaces.

Tires should be replaced when tread wear indicators appear. Slow down whenever there is rain, snow or ice on the road to reduce the possibility of losing control of the vehicle.

Tire maintenance

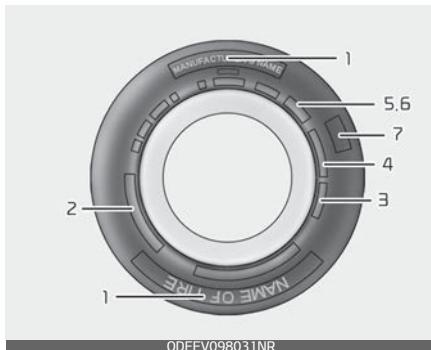
In addition to proper inflation, correct wheel alignment helps to decrease tire wear.

If you find a tire is worn unevenly, have your dealer check the wheel alignment.

When you have new tires installed, make sure they are balanced. This will increase vehicle ride comfort and tire life. Additionally, a tire should always be rebalanced if it is removed from the wheel.

Tire sidewall labeling

This information identifies and describes the fundamental characteristics of the tire and also provides the Tire Identification Number (TIN) for safety standard certification.



The TIN can be used to identify the tire in case of a recall.

1. Manufacturer or brand name

Manufacturer or Brand name is shown.

2. Tire size designation

A tire's sidewall is marked with a tire size designation. You will need this information when selecting replacement tires for your vehicle. The following explains what the letters and numbers in the tire size designation mean.

Example tire size designation:

(These numbers are provided as an example only; your tire size desig-

nator could vary depending on your vehicle.)

P235/65R17 108T

- P: Applicable vehicle type (tires marked with the prefix "P" are intended for use on passenger vehicles or light trucks; however, not all tires have this marking).
- 235: Tire width in millimeters.
- 65: Aspect ratio. The tire's section height as a percentage of its width.
- R: Tire construction code (Radial).
- 17: Rim diameter in inches.
- 108: Load Index, a numerical code associated with the maximum load the tire can carry.
- T: Speed Rating Symbol. See the speed rating chart in this section for additional information.

Wheel size designation

Wheels are also marked with important information that you need if you ever have to replace one. The following explains what the letters and numbers in the wheel size designation mean.

Example wheel size designation:

7.0JX17

- 7.0: Rim width in inches.
- J: Rim contour designation.
- 17: Rim diameter in inches.

Tire speed ratings

The chart below lists many of the different speed ratings currently being used for passenger vehicle

tires. The speed rating is part of the tire size designation on the sidewall of the tire. This symbol corresponds to that tire's designed maximum safe operating speed.

Speed Rating Symbol	Maximum Speed
S	112 mph (180 km/h)
T	118 mph (190 km/h)
H	130 mph (210 km/h)
V	149 mph (240 km/h)
W	168 mph (270 km/h)
Y	186 mph (300 km/h)

3. Checking tire life

Any tires that are over 6 years old, based on the manufacturing date, should be replaced by new ones. You can find the manufacturing date on the tire sidewall (possibly on the inside of the wheel), displaying the DOT code. The DOT code is a series of numbers on a tire consisting of numbers and English letters. The manufacturing date is designated by the last four digits (characters) of the DOT code.

DOT: XXXX XXXX 0000

The front part of the DOT means a plant code number, tire size and tread pattern and the last four numbers indicate week and year manufactured.

For example:

DOT XXXX XXXX 1621 represents that the tire was produced in the 16th week of 2021.

WARNING

Tire age

Replace tires within the recommended time frame. Failure to replace tires as recommended can result in sudden tire failure, which could lead to a loss of control and an accident.

4. Tire ply composition and material

The number of layers or plies of rubber-coated fabric in the tire. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others. The letter "R" means radial ply construction; the letter "D" means diagonal or bias ply construction; and the letter "B" means belted-bias ply construction.

5. Maximum permissible inflation pressure

This number is the greatest amount of air pressure that should be put in the tire. Do not exceed the maximum permissible inflation pressure. Refer to "Tire and loading information label" on page 5-167 for recommended inflation pressure.

6. Maximum load rating

This number indicates the maximum load in kilograms and pounds that can be carried by the tire. When replacing the tires on the vehicle, always use a tire that has the same load rating as the factory installed tire.

7. Uniform tire quality grading

Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width.

For example:

- TREADWEAR 200
- TRACTION AA
- TEMPERATURE A

Tires degrade over time, even when they are not being used. Regardless of the remaining tread, we recommend that tires be replaced after approximately six (6) years of normal service. Heat caused by hot climate or frequent high loading conditions can accelerate the aging process.

Tread wear

The tread wear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one-and-a-half times ($1\frac{1}{2}$) as well

on the government course as a tire graded 100.

The relative performance of tires depends upon the actual conditions of their use. Performance may depart significantly from the norm due to variations in driving habits, service practices and differences in road characteristics and climate.

These grades are molded on the side-walls of passenger vehicle tires. The tires available as standard or optional equipment on your vehicle may vary with respect to grade.

Traction – AA, A, B & C

The traction grades, from highest to lowest, are AA, A, B and C. Those grades represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance.

The traction grade assigned to this tire is based on straight-ahead braking traction tests, and does not include acceleration, cornering, hydroplaning, or peak traction characteristics.

Temperature -A, B & C

The temperature grades are A (the highest), B and C representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel.

Sustained high temperature can cause the material of the tire to degrade and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance which all passenger vehicle tires must meet under the Federal Motor Vehicle Safety Standard No. 109. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law.

Tire terminology and definitions

Refer to the following for detailed definitions of the terms that are found in the tire description.

Air Pressure The amount of air inside the tire pressing outward on the tire. Air pressure is expressed in pounds per square inch (psi) or kilopascal (kPa).

Accessory Weight The combined weight of optional accessories. Some examples of optional accessories are automatic transmission, power seats, and air conditioning.

Aspect Ratio The relationship of a tire's height to its width.

Belt A rubber coated layer of cords that is located between the plies and the tread. Cords may be made from steel or other reinforcing materials.

Bead The tire bead contains steel wires wrapped by steel cords that hold the tire onto the rim.

Bias Ply Tire A pneumatic tire in which the plies are laid at alternate angles less than 90 degrees to the centerline of the tread.

Cold Tire Pressure The amount of air pressure in a tire, measured in pounds per square inch (psi) or kilopascals (kPa) before a tire has built up heat from driving.

Curb Weight The weight of a motor vehicle with standard and optional equipment (including the maximum capacity of fuel, oil and coolant), but without passengers and cargo.

DOT Markings A code molded into the sidewall of a tire signifying that the tire is in compliance with the U.S. Department of Transportation motor vehicle safety standards. The DOT code includes the Tire Identification Number (TIN), an alphanumeric designator which can also identify the tire manufacturer, production plant, brand and date of production.

GVWR Gross Vehicle Weight Rating

GAWR FRT Gross Axle Weight Rating for the Front axle.

GAWR RR Gross Axle Weight Rating for the Rear axle.

Intended Outboard Sidewall The side of an asymmetrical tire that must always face outward when mounted on a vehicle.

Kilopascal (kPa) The metric unit for air pressure.

Light truck (LT) tire A tire designated by its manufacturer as primarily intended for use on lightweight trucks or multipurpose passenger vehicles.

Load ratings The maximum load that a tire is rated to carry for a given inflation pressure.

Load Index An assigned number ranging from 1 to 279 that corresponds to the load carrying capacity of a tire.

Maximum Inflation Pressure The maximum air pressure to which a cold tire may be inflated. The maximum air pressure is molded onto the sidewall.

Maximum Load Rating The load rating for a tire at the maximum permissible inflation pressure for that tire.

Maximum Loaded Vehicle Weight The sum of curb weight; accessory weight; vehicle capacity weight; and production options weight.

Normal Occupant Weight The number of occupants a vehicle is

designed to seat multiplied by 150 lbs. (68 kg).

Occupant Distribution Designated seating positions.

Outward Facing Sidewall The side of a asymmetrical tire that has a particular side that faces outward when mounted on a vehicle. The outward facing sidewall bears white lettering or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same moldings on the inner facing sidewall.

Passenger (P-Metric) Tire A tire used on passenger cars and some light duty trucks and multipurpose vehicles.

Ply A layer of rubber-coated parallel cords.

Pneumatic tire A mechanical device made of rubber, chemicals, fabric and steel or other materials, that, when mounted on an automotive wheel, provides the traction and contains the gas or fluid that sustains the load.

Production options weight The combined weight of installed regular production options weighing over 5 lb. (2.3 kg) in excess of the standard items which they replace, not previously considered in curb weight or accessory weight. Examples include heavy duty brakes, ride levelers,

roof rack, heavy duty battery, and special trim.

Recommended Inflation Pressure

Vehicle manufacturer's recommended tire inflation pressure and shown on the tire placard.

Radial Ply Tire A pneumatic tire in which the ply cords that extend to the beads are laid at 90 degrees to the centerline of the tread.

Rim A metal support for a tire and upon which the tire beads are seated.

Sidewall The portion of a tire between the tread and the bead.

Speed Rating An alphanumeric code assigned to a tire indicating the maximum speed at which a tire can operate.

Traction The friction between the tire and the road surface. The amount of grip provided.

Tread The portion of a tire that comes into contact with the road.

Treadwear Indicators Narrow bands, sometimes called "wear bars," that show across the tread of a tire when only 1/16 inch (1.6 mm) of tread remains.

UTQGS Uniform Tire Quality Grading Standards, a tire information system that provides consumers with ratings for a tire's traction, temperature and treadwear. Ratings are

determined by tire manufacturers using government testing procedures. The ratings are molded into the sidewall of the tire.

Vehicle Capacity Weight The weight of designated seating positions multiplied by 150 lbs. (68 kg) plus the rated cargo and luggage load.

Vehicle Maximum Load on the Tire Load on an individual tire due to curb and accessory weight plus maximum occupant and cargo weight.

Vehicle Normal Load on the Tire

Load on an individual tire that is determined by distributing to each axle its share of the curb weight, accessory weight, and normal occupant weight.

Vehicle Placard A label permanently attached to a vehicle showing the original equipment tire size and recommended inflation pressure.

All season tires

Kia specifies all season tires on some models to provide good performance for use all year round, including snowy and icy road conditions.

All season tires are identified by ALL SEASON and/or M+S (Mud and Snow) on the tire sidewall. Snow tires have better snow traction than all season tires and may be more appropriate in some areas.

Summer tires

Kia specifies summer tires on some models to provide superior performance on dry roads.

Summer tire performance is substantially reduced in snow and ice. Summer tires do not have the tire traction rating M+S (Mud and Snow) on the tire side wall. If you plan to operate your vehicle in snowy or icy conditions, Kia recommends the use of snow tires or all season tires on all four wheels.

Snow tires

If you equip your vehicle with snow tires, they should be the same size and have the same load capacity as the original tires.

Snow tires should be installed on all four wheels; otherwise, poor handling may result.

Snow tires should carry 4 psi (28 kPa) more air pressure than the pressure recommended for the standard tires on the tire label on the driver's side of the center pillar, or up to the maximum pressure shown on the tire sidewall, whichever is less.

Do not drive faster than 75 mph (120 km/h) when your vehicle is equipped with snow tires.

WARNING

Do not use summer tires at temperatures below 45 °F (7 °C) or when driving on snow or ice. At temperatures below 45 °F (7 °C), summer tires can lose elasticity, and therefore traction and braking power as well. Change the tires on your vehicle to winter or all-weather tires of the same size as the standard tires of the vehicle. Both types of tires are identified by the M+S (Mud and Snow) marking. Using summer tires at very cold temperatures could cause cracks to form, thereby damaging the tires permanently.

Tire chains

Tire chains, if necessary, should be installed on the front wheels.

Be sure that the chains are installed in accordance with the manufacturer's instructions.

To minimize tire and chain wear, do not continue to use tire chains when they are no longer needed.

- When driving on roads covered with snow or ice, drive at less than 20 mph (30 km/h).
- Use the SAE "S" class or wire chains.
- If you hear noise caused by chains contacting the body, retighten the

chain to avoid contact with the vehicle body.

- To prevent body damage, retighten the chains after driving 0.3~0.6 miles (0.5~1.0 km).
- Do not use tire chains on vehicles equipped with aluminum wheels. In unavoidable circumstance, use a wire type chain.
- Use wire chains less than 0.47 inches (12 mm) to prevent damage to the chain's connection.

Radial-ply tires

Radial-ply tires provide improved tread life, road hazard resistance and smoother high speed ride.

The radial-ply tires used on this vehicle are of belted construction, and are selected to complement the ride and handling characteristics of your vehicle. Radial-ply tires have the same load carrying capacity, as bias-ply or bias belted tires of the same size, and use the same recommended inflation pressure.

Mixing of radial-ply tires with bias-ply or bias belted tires is not recommended. Any combinations of radial-ply and bias-ply or bias belted tires when used on the same vehicle will seriously deteriorate vehicle handling. The best rule to follow is: Identical radial-ply tires should always be used as a set of four.

Longer wearing tires can be more susceptible to irregular tread wear. It is very important to follow the tire rotation interval shown in this section to achieve the tread life potential of these tires. Cuts and punctures in radial-ply tires are repairable only in the tread area, because of sidewall flexing. Consult your tire dealer for radial-ply tire repairs.

Low aspect ratio tire (if equipped)

Low aspect ratio tires, whose aspect ratio is lower than 50, are provided for sporty looks.

Because the low aspect ratio tires are optimized for handling and braking, it may be more uncomfortable to ride in and there is more noise compare with normal tires.

CAUTION

Because the sidewall of the low aspect ratio tire is shorter than the normal, the wheel and tire of the low aspect ratio tire is easier to be damaged. So, follow the instructions below.

- When driving on a rough road or off road, drive cautiously because tires and wheels may be damaged. And after driving, inspect tires and wheels.
- When passing over a pothole, speed bump, manhole, or curb

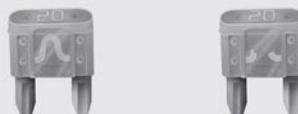
stone, drive slowly so that the tires and wheels are not damaged.

- If the tire is impacted, we recommend that you inspect the tire condition or contact an authorized Kia dealer.
- To prevent damage to the tire, inspect the tire condition and pressure every 1,900 miles (3,000 km).
- It is not easy to recognize the tire damage with your own eyes. But if there is the slightest hint of tire damage, even though you cannot see the tire damage with your own eyes, have the tire checked or replaced because the tire damage may cause air leakage from the tire.
- If the tire is damaged by driving on a rough road, off road, pothole, manhole, or curb stone, it will not be covered by the warranty.
- You can find out the tire information on the tire sidewall.

Fuses

A vehicle's electrical system is protected from electrical overload damage by fuses.

Blade type



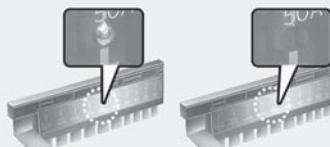
ODEEV098032NR

Cartridge type



ODEEV098077NR

Multi fuse



ODEEV098078NR

BFT



ODEEV098079NR

* Left side: Normal, Right side:
Blown

This vehicle has 2 (or 3) fuse panels, one located in the driver's side panel bolster, the other in the engine compartment near the battery.

If any of your vehicle's lights, accessories, or controls do not work, check the appropriate circuit fuse. If a fuse has blown, the element inside the fuse will melt.

If the electrical system does not work, first check the driver's side fuse panel.

If the replacement fuse blows, this indicates an electrical problem.

Avoid using the system involved and immediately consult an authorized Kia dealer.

Three kinds of fuses are used: blade type for lower amperage rating, cartridge type, and multi fuse for higher amperage ratings.

WARNING

Fuse replacement

- Never replace a fuse with anything but another fuse of the same rating.
- A higher capacity fuse could cause damage and possibly a fire.
- Never install a wire or aluminum foil instead of the proper fuse - even as a temporary repair. It may cause extensive wiring damage and a possible fire.

- Do not arbitrarily modify or add-on electric wiring to the vehicle.

*** NOTICE**

- When replacing a fuse, Turn ENGINE START/STOP button to the OFF position and turn off switches of all electrical devices then remove battery (-) terminal.
- The actual fuse/relay panel label may differ from equipped items.

WARNING

Electrical Fire

Always ensure replacements fuses and relays are securely fastened when installed. Failure to do so can result in a vehicle fire.

Do not remove fuses, relays and terminals fastened with bolts or nuts. The fuses, relays and terminals may be fastened incompletely, and it may cause a possible fire. If fuses, relays and terminals fastened with bolts or nuts are blown, we recommend that you consult with an authorized Kia dealer.

CAUTION

When replacing a blown fuse or relay, make sure the new fuse or relay fits tightly into the clips. Failure to tightly install the fuse or

relay may cause damage to the wiring and electric systems.

⚠ CAUTION

- Do not input any other objects except fuses or relays into fuse/relay terminals such as a screwdriver or wiring. It may cause contact failure and system malfunction.
- Do not plug in screwdrivers or aftermarket wiring into the terminal originally designed for fuse and relays only. The electrical system and wiring of the vehicle interior may be damaged or burned due to contact failure.
- If you directly connect the wire on the taillight or replace the bulb which is over the regulated capacity to install trailers etc., the inner junction block can get burned.

⚠ WARNING

Electrical wiring repairs

All electrical repairs should be performed by authorized Kia dealerships using approved Kia parts. Using other wiring components, especially when retrofitting multi-media or theft alarm system, car phone or radio may cause vehicle damage and increase the risk of a vehicle fire.

* NOTICE

Remodeling Prohibited

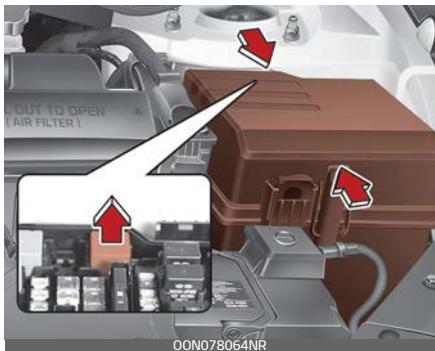
Do not rewire your vehicle in any way as doing so may affect the performance of several safety features in your vehicle. Rewiring your vehicle may also void your warranty and cause you to be responsible for any subsequent vehicle damage which may result.

Replacing inner panel fuse

1. Turn the ENGINE START/STOP button to the OFF position and all other switches off.
2. Open the fuse panel cover.



3. Pull the suspected fuse straight out. Use the removal tool provided on the engine fuse panel cover.



- Check the removed fuse; replace it if it is blown.

Spare fuses are provided in the engine compartment fuse panel.
5. Push in a new fuse of the same rating, and make sure it fits tightly in the clips.

If it fits loosely, consult an authorized Kia dealer.

If you do not have a spare, use a fuse of the same rating from a circuit you may not need for operating the vehicle, such as the power outlet fuse.

If the head lamp, turn signal lamp, stop signal lamp, fog lamp, DRL, tail lamp or High Mounted Stop Lamp (HMSL) do not work and the fuses are OK, check the fuse panel in the engine compartment. If a fuse is blown, it must be replaced.

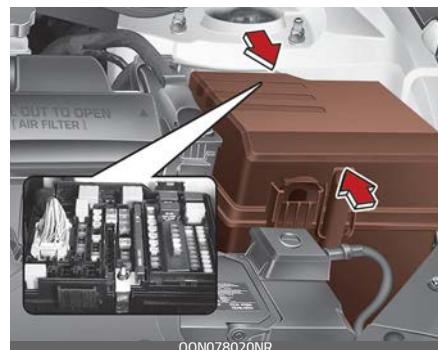
* NOTICE

If the headlamp, fog lamp, turn signal lamp, or tail lamp malfunction even without any problem to the

lamps, have the vehicle checked by an authorized Kia dealer for assistance.

Replacing engine compartment fuse

- Turn the ENGINE START/STOP button to the OFF position and all other switches off.
- Remove the fuse panel cover by pressing the tab and pulling the cover up.



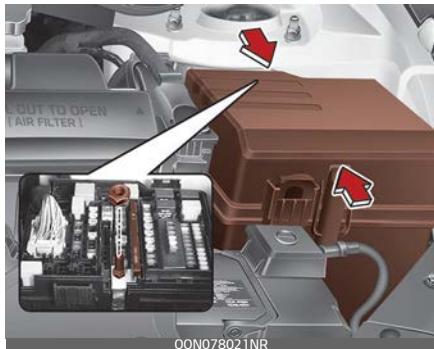
- Check the removed fuse; replace it if it is blown. To remove or insert the fuse, use the fuse puller in the engine compartment fuse panel.
- Push in a new fuse of the same rating, and make sure it fits tightly in the clips. If it fits loosely, consult an authorized Kia dealer.

CAUTION

Always securely install the fuse panel cover in the engine compartment to protect against electrical failure which may occur from water contact. Listen for the audible click-

ing sound to ensure fuse panel cover is securely fastened.

Multi fuse



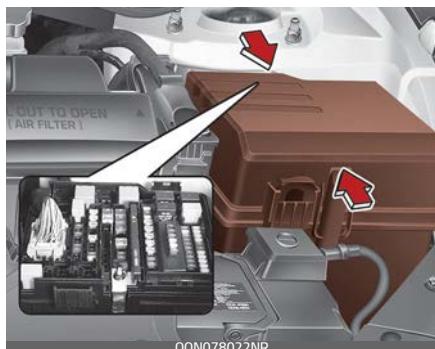
If the multi fuse is blown, it must be removed as follows:

1. Turn the ENGINE START/STOP button to the OFF position and all other switches off.
2. Disconnect the negative battery cable.
3. Remove the nuts shown in the picture above.
4. Replace the fuse with a new one of the same rating.
5. Reverse these steps to reinstall the multi fuse.

*** NOTICE**

Do not disassemble or assemble the multi fuse when it is secured with nuts and bolts. Incorrect or partial assembly torque may cause a fire. Have the vehicle checked by an authorized Kia dealer.

Main fuse



If the main fuse is blown, it must be removed as follows:

1. Turn the ENGINE START/STOP button to the OFF position and all other switches off.
2. Disconnect the negative battery cable.
3. Remove the nuts shown in the picture above.
4. Replace the fuse with a new one of the same rating.
5. Reverse these steps to reinstall the multi fuse.

*** NOTICE**

The electronic system may not function correctly even when the engine compartment and internal fuse box's individual fuses are not disconnected. In such case the cause of the problem may be disconnection of the main fuse (BFT type), which is located inside the positive battery terminal (+) cap.

Since the main fuse is designed more intricately than other parts,

have the vehicle checked by an authorized Kia dealer.

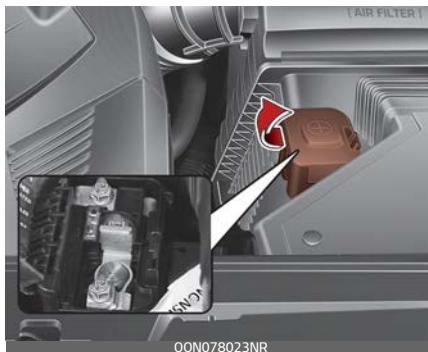
* NOTICE

Do not disassemble or assemble the multi fuse when it is secured with nuts and bolts. Incorrect or partial assembly torque may cause a fire. Have the vehicle checked by an authorized Kia dealer.

Battery fuse

If the battery fuse is blown, it must be removed as follows:

1. Disconnect the negative battery cable.
2. Remove the nuts shown in the picture below.



3. Replace the fuse with a new one of the same rating.
4. Reinstall in the reverse order of removal.

* NOTICE

If the battery fuse is blown, have the vehicle checked by an authorized Kia dealer.

⚠ CAUTION

Visually inspect the battery cap to ensure it is securely closed. If the battery cap is not securely closed, moisture may enter the system and damage the electrical components.

Fuse/relay panel description

Inside the fuse/relay panel covers, you can find the fuse/relay label describing fuse/relay name and capacity.

Driver's side fuse panel*** NOTICE**

Not all fuse panel descriptions in this manual may be applicable to your vehicle. It is accurate at the time of printing. When you inspect the fuse panel in your vehicle, refer to the fuse panel label on the inside of the fuse cover. This diagram will provide you with the specific information for your vehicle.

4 MODULE 75A	1 AIR BAG 15A			BRAKE SWITCH 75A				9 MODULE 15A	12 MODULE 75A		10 MODULE 10A
7 MODULE 10A		A/BAG IND 10A		1 IBU 75A	2 MODULE 75A	8 MODULE 75A	S/HEATER (FRONT) 20A	2 AIR BAG 15A			
	5 MODULE 75A		2 IBU 75A	2 SUNROOF 20A	1 MODULE 75A		P/WINDOW RH 20A		RR SEAT (LH) 20A		
CLUSTER 75A	MOPS 10A	A/C 75A	CHILD LOCK 15A	DOOR LOCK 20A		1 SUNROOF 20A		11 MODULE 10A	P/WINDOW LH 20A		
3 MODULE 75A	6 MODULE 75A	WASHER 15A	REAR A/C 15A	RR SEAT (R-H) 20A	WIPER RR 15A	AMP 25A	ACC 75A	P/SEAT (PASS) 30A	P/SEAT (DRV) 30A		

USE THE DESIGNATED FUSE ONLY
.UTILISEZ SEULEMENT LE FUSIBLE DÉSIGNÉS

91990-S9630

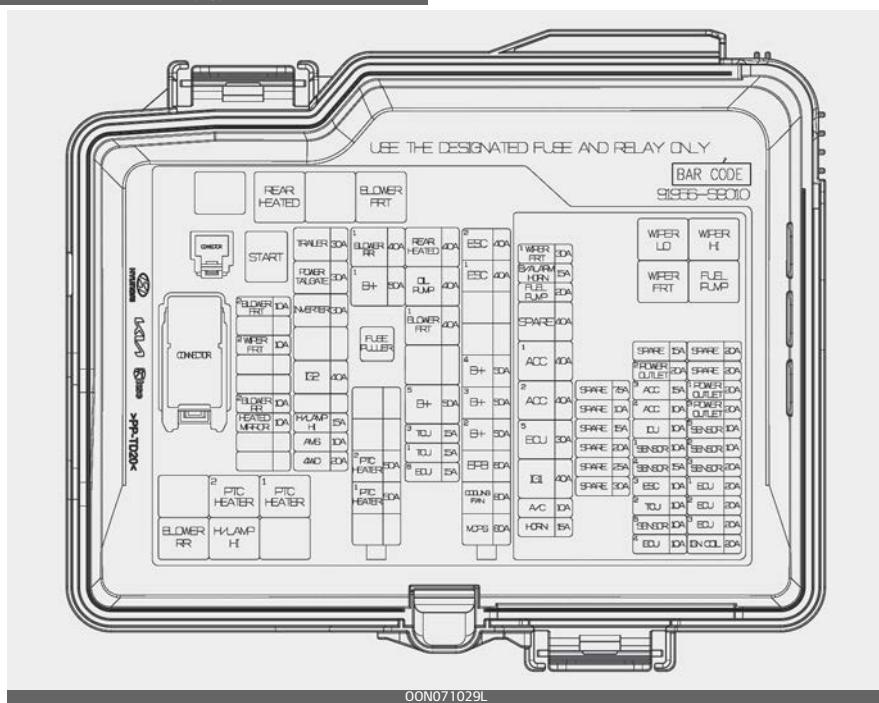
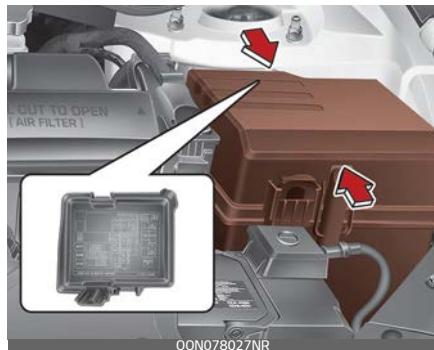
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Refer to the following table for a description of the fuse.

Description	Fuse rating	Protected component
MODULE 4	7.5 A	ATM (Auto Transmission) Shift Lever Switch, Stop Lamp Switch, Driver Door Module
AIR BAG 1	15 A	SRS (Supplemental Restraint System) Control Module, Passenger Occupant Detection Sensor
BRAKE SWITCH	7.5 A	IBU (Integrated Body Control Unit), Stop Lamp Switch
MODULE 9	15 A	Front A/C Control Module, Low DC-DC Converter (Audio), Power Tail Gate Module, Driver IMS Control Module, Driver Door Module, Driver/Passenger Power Outside Mirror, Rear A/C Control Module
MODULE 12	7.5 A	Head-Up Display
MODULE 10	10 A	Rear Corner Radar LH/RH, Electro Chromic Mirror, Console Switch
AIR BAG IND	10 A	Front A/C Control Module, Instrument Cluster
IBU 1	7.5 A	IBU (Integrated Body Control Unit)
MODULE 2	7.5 A	Surround View Monitor Unit, AC Inverter Outlet, AC Inverter Unit, Front Air Ventilation Seat Control Module, Front Seat Warmer Control Module, 2ND Air Ventilation Seat Control Module LH/RH, 2ND Seat Warmer Control Module LH/RH
MODULE 8	7.5 A	Hazard Switch, Rain Sensor, Driver/Passenger Smart Key Outside Handle, Mood Lamp Control Unit, Driver/Passenger Mood Lamp, Driver/Passenger Door Mood Lamp, Rear Door Mood Lamp LH/RH
S/HEATER (FRT)	20 A	Front Air Ventilation Control Module, Front Seat Warmer Control Module, Data Link Connector
AIR BAG 2	15 A	SRS (Supplemental Restraint System) Control Module
MODULE 5	7.5 A	Front View Camera, Crash Pad Switch, IBU (Integrated Body Control Unit), Front Radar, ATM (Auto Transmission) Shift Lever Indicator, 4WD ECM (Engine Control Module), Console Switch, Electronic Parking Brake Switch
IBU 2	15 A	IBU (Integrated Body Control Unit)
SUNROOF 2	20 A	Rear Sunroof Controller
MODULE 1	7.5 A	IBU (Integrated Body Control Unit)
P/WINDOW RH	25 A	Passenger Safety Power Window Module, Rear Safety Power Window Module RH
RR SEAT (LH)	25 A	2ND Air Ventilation Seat Control Module LH, 2ND Seat Warmer Control Module LH, 2ND Seat LH Reclining Folding Actuator
CLUSTER	7.5 A	Instrument Cluster, Head-Up Display
MDPS	10 A	MDPS (Motor Driven Power Steering) Unit

Description	Fuse rating	Protected component
A/C	7.5 A	E/R Junction Block (Blower FRT Relay, Blower RR Relay, PTC Heater 1/2 Relay), Front A/C Control Module, Rear A/C Control Module
CHILD LOCK	15 A	ICM (Integrated Circuit Module) Relay Box (Child Lock/Unlock Relay)
DOOR LOCK	20 A	Door Lock Relay, Door Unlock Relay, Tail Gate Relay, T/Turn Unlock Relay
SUNROOF 1	20 A	Front Sunroof Controller
MODULE 11	10 A	Rear Occupant Detection Sensor
P/WINDOW LH	25 A	Driver Safety Power Window Module, Rear Safety Power Window Module LH
MODULE 3	7.5 A	IBU (Integrated Body Control Unit)
MODULE 6	7.5 A	Audio, A/V & Navigation Head Unit, Low DC-DC Converter (Audio/AMP), Front A/C Control Module, Electro Chromic Mirror, Center fascia Keyboard, Driver/Passenger Seat Warmer Switch, Driver/Passenger Seat Warmer LIN Switch, Driver IMS Control Module, Front Air Ventilation Control Module, Front Seat Warmer Control Module, 2ND Air Ventilation Seat Control Module LH/RH, 2ND Seat Warmer Control Module LH/RH
WASHER	15 A	Multifunction Switch, Front Washer Motor, Rear Washer Motor, Washer Level Sensor
RR SEAT (RH)	25 A	2ND Air Ventilation Seat Control Module RH, 2ND Seat Warmer Control Module RH, 2ND Seat RH Reclining Folding Actuator
WIPER RR	15 A	Rear Wiper Relay, Rear Wiper Motor
AMP	25 A	Low DC-DC Converter (AMP)
ACC	7.5 A	IBU (Integrated Body Control Unit), Low DC-DC Converter (Audio/AMP)
P/SEAT (PASS)	30 A	Passenger Seat Manual Switch
P/SEAT (DRV)	30 A	Driver IMS Control Module, Driver Seat Manual Switch

Engine compartment fuse panel



Refer to the following table for a description of the fuse.

Fuse Name	Fuse rating	Circuit Protected
MDPS	80 A	MDPS (Motor Driven Power Steering) Unit
COOLING FAN	80 A	Cooling Fan Controller
EPB	60 A	ESC (Electronic Stability Control) Module
B+2	50 A	ICU Junction Block (IPS 8/IPS 10/IPS 11/IPS 12/IPS 13/IPS 14/IPS 15)
B+3	50 A	ICU Junction Block (Fuse - P/WINDOW LH, RR SEAT (LH), P/SEAT (DRV), P/SEAT (PASS), MODULE 11)
B+4	50 A	ICU Junction Block (Fuse - MODULE 8, S/HEATER (FRT), P/WINDOW RH, AMP, SUNROOF 1)
ESC 1	40 A	ESC (Electronic Stability Control) Module
ESC 2	40 A	ESC (Electronic Stability Control) Module
PTC HEATER 1	50 A	PTC Heater 1 Relay
PTC HEATER 2	50 A	PTC Heater 2 Relay
ECU 6	15 A	ECM (Engine Control Module)
TCU 1	15 A	TCM (Transmission Control Module)
TCU 3	15 A	TCM (Transmission Control Module)
B+5	50 A	ICU Junction Block (Fuse - DOOR LOCK, IBU (Integrated Body Control Unit) 1, IBU (Integrated Body Control Unit) 2, BRAKE SWITCH, CHILD LOCK, RR SEAT (RH), SUNROOF 2)
TRAILER 3	30A	Trailer Connector
BLOWER FRT 1	40 A	Blower FRT Relay
OIL PUMP	40 A	Electric Oil Pump Inverter
REAR HEATED	40 A	Rear Heated Relay
B+1	50 A	ICU Junction Block (IPS 1/IPS 2/IPS 3/IPS 5/IPS 6/IPS 7, Long/Short Term Load Latch Relay)
BLOWER RR 1	40 A	Blower RR Relay
4WD	20 A	4WD ECM (Engine Control Module)
AMS	10 A	Battery Sensor
H/LAMP HI	15 A	H/Lamp HI Relay
IG2	40 A	Start Relay, PCB Block (IG2 Relay)
TRAILER 2	30A	Trailer Connector
INVERTER	30 A	AC Inverter Unit
POWER TAIL GATE	30 A	Power Tail Gate Module
TRAILER 1	30 A	Trailer Connector
HEATED MIRROR	10 A	Driver/Passenger Power Outside Mirror, Front A/C Control Module

Fuse Name	Fuse rating	Circuit Protected
BLOWER RR 2	10 A	Rear A/C Control Module
WIPER FRT 2	10 A	IBU (Integrated Body Control Unit)
BLOWER FRT 2	10 A	Front A/C Control Module
WIPER FRT 1	30 A	Wiper FRT Relay
B/ALARM HORN	15 A	B/Alarm Horn Relay
FUEL PUMP	20 A	Fuel Pump Relay
ACC 1	40 A	ACC 1 Relay
ACC 2	40 A	ACC 2 Relay
ECU 5	30 A	Engine Control Relay
IG1	40 A	IG1 Relay
A/C	10 A	A/C Relay
HORN	15 A	Horn Relay
POWER OUTLET 2	20 A	Front Power Outlet
ACC 3	15 A	Rear USB Charger, Luggage USB Charger, Driver/Passenger Seat Cushion USB Charger
ACC 4	10 A	Front USB Charger, Rear USB Charger RH
ICU	10 A	ICU Junction Block (Fuse - ACC)
SENSOR 1	10 A	Fuel Pump Relay
SENSOR 4	15 A	Canister Close Valve, Oxygen Sensor #1/#2/#3/#4
ESC 3	10 A	Data Link Connector, ESC (Electronic Stability Control) Module
TCU 2	10 A	TCM (Transmission Control Module), Transaxle Range Switch
SENSOR 6	10 A	Electric Oil Pump Inverter
ECU 4	10 A	ECM (Engine Control Module)
POWER OUTLET 1	20 A	Luggage Power Outlet
POWER OUTLET 3	20 A	Rear Power Outlet
SENSOR 5	10 A	Oil Pump Solenoid
SENSOR 2	10 A	A/C Relay, Purge Control Solenoid Valve, Oil Control Valve #1/#2/#3/#4 (Intake/Exhaust), Variable Intake Solenoid Valve #1/#2, Electronic Thermostat
SENSOR 3	20 A	Cooling Fan Controller
ECU 1	20 A	ECM (Engine Control Module)
ECU 2	20 A	ECM (Engine Control Module)
ECU 3	20 A	ECM (Engine Control Module)
IGN COIL	20 A	Ignition Coil #1/#2/#3/#4/#5/#6

Refer to the following table for the relay type.

Relay Name	Type
Blower FRT Relay	MINI
Rear Heated Relay	MINI
Start Relay	MICRO
PTC Heater 1 Relay	MICRO
PTC Heater 2 Relay	MICRO
H/LAMP HI Relay	MICRO
Blower RR Relay	MICRO
Wiper Lo Relay	MICRO
Wiper Hi Relay	MICRO
Wiper FRT Relay	MICRO
FUEL PUMP Relay	MICRO

Battery terminal cover*** NOTICE**

7

Not all fuse panel descriptions in this manual may be applicable to your vehicle. It is accurate at the time of printing. When you inspect the fuse panel in your vehicle, refer to the fuse panel label.

Light bulbs

Light bulbs are installed in various parts of the vehicle to provide lighting inside and outside the vehicle as well as to alert other vehicles.

Bulb replacement precaution

Please keep extra bulbs on hand with appropriate wattage ratings in case of emergencies.

Refer to "Bulb wattage" on page 8-4.

When changing lamps, first turn off the vehicle at a safe place, firmly apply the parking brake and detach the battery's negative (-) terminal.

⚠ WARNING

Working on the lights

Prior to working on the light, firmly apply the parking brake, ensure that the vehicle start/stop button is in OFF position and turn off the lights to avoid sudden movement of the vehicle and burning your fingers or receiving an electric shock.

Use only bulbs of the specified wattage.

⚠ CAUTION

Light replacement

Be sure to replace the burned-out bulb with one of the same wattage

rating. Otherwise, it may cause damage to the fuse or electric wiring system.

Fully install light bulbs and any parts used to secure them. Failure to do so may result in heat damage, fire, or water entering the headlight unit. This may damage the headlights or cause condensation to build up on the lens. To prevent damage or fire, make sure bulbs are fully seated and locked.

⚠ CAUTION

Headlamp Lens

To prevent damage, do not clean the headlamp lens with chemical solvents or strong detergents.

* NOTICE

- If the light bulb or lamp connector is removed while the lamp is still on, the fuse box's electronic system may log it as a malfunction. Therefore, a lamp malfunction incident may be recorded as a Diagnostic Trouble Code (DTC) in the fuse box.
- It is normal for an operating lamp to flicker momentarily. This is due to a stabilization function of the vehicle's electronic control device. If the lamp lights up normally after momentarily blinking, then it is functioning as normal.

However, if the lamp continues to flicker several times or turns off completely, there may be an error in the vehicle's electronic control device. Please have the vehicle checked by an authorized Kia dealer immediately.

* NOTICE

We recommend that the headlight aiming be adjusted by an authorized Kia dealer after an accident or after the headlight assembly is reinstalled.

* NOTICE

You can find moisture inside the lens of lamps after a car wash or driving in the rain. It is a natural event caused by the temperature difference between the inside and the outside of the lamp and does not mean a problem with its functions. The moisture inside the lamp would disappear if you drive the vehicle with the headlamp turned on, however, the level at which the moisture is removed may differ depending on the size/location/condition of the lamp. If the moisture continues to stay inside the lamp, we recommend that you have the vehicle checked by an authorized Kia dealer.

If you don't have the necessary tools, the correct bulbs and the expertise, consult an authorized Kia dealer. In many cases, it is difficult to replace vehicle light bulbs because other parts of the vehicle must be removed before you can get to the bulb. This is especially true if you have to remove the headlamp assembly to get to the bulb(s).

Removing/installing the headlamp assembly can result in damage to the vehicle. If non-genuine parts or substandard bulbs are used, it may lead to blowing a fuse or other wiring damages.

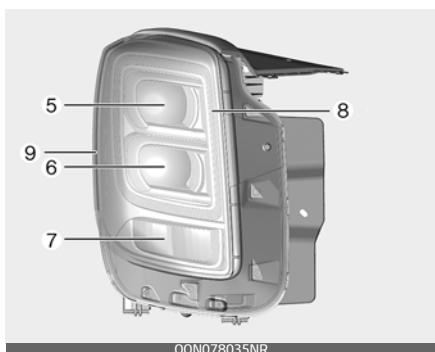
Do not install extra lamps or LEDs to the vehicle. If additional lights are installed, it may lead to lamp malfunctions and flickering. Additionally, the fuse box and other wiring may be damaged.

Light bulb position (Front)

Headlamp Type A



Headlamp Type B



Fog lamp

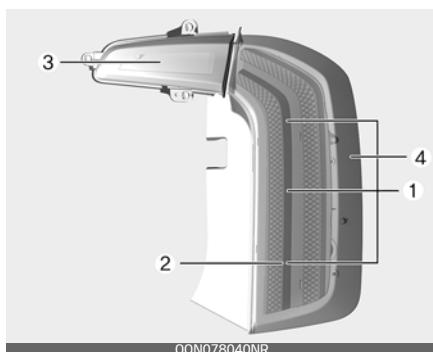


1. Headlamp (Bulb Type) (Low/High)

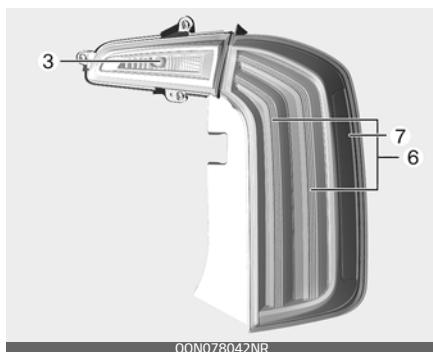
2. Position lamp / Daytime running lamp (LED Type)
3. Front turn signal lamp (Bulb Type)
4. Side marker (Bulb Type)
5. Headlamp (LED Type) (Low)
6. Headlamp (LED Type) (Sub Low)
7. Headlamp (LED Type) (High)
8. Position lamp / Daytime running lamp / Turn signal lamp (LED Type)
9. Side marker (LED Type)
10. Front fog lamp (LED Type)

Light bulb position (Rear)

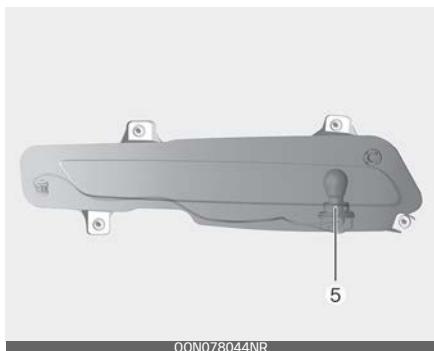
Rear combination lamp - Type A



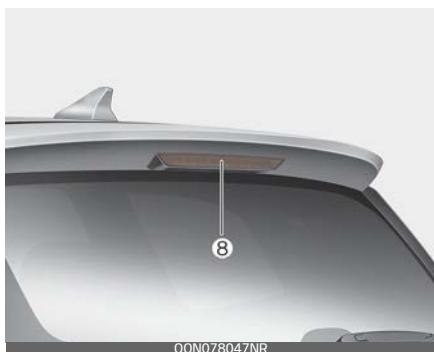
Rear combination lamp - Type B



Rear turn signal lamp



High Mounted Stop Lamp (HMSL)



License plate lamp



1. Tail lamp (Bulb Type)
2. Stop lamp (Bulb Type)
3. Back up lamp (Bulb Type)
4. Side marker (Bulb Type)
5. Rear turn signal lamp (Bulb Type)

6. Tail lamp/Stop lamp/Rear turn signal lamp (LED Type)
7. Side marker (LED Type)
8. High Mounted Stop Lamp (LED Type)
9. License plate lamp (Bulb Type)

Light bulb position (Side)



1. Side repeater lamp (LED type)

Headlamp bulb

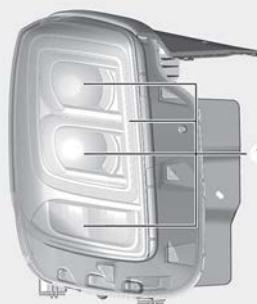


⚠ WARNING

Halogen bulbs

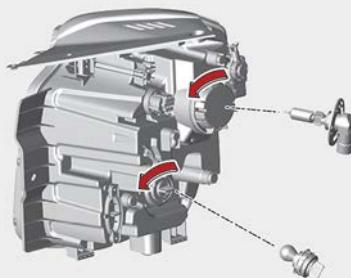
Handle halogen bulbs with care.

- Halogen bulbs contain pressurized gas that will produce flying pieces of glass if broken.
- Always handle them carefully, and avoid scratches and abrasions. If the bulbs are lit, avoid contact with liquids. Never touch the glass with bare hands. Residual oil may cause the bulb to overheat and burst when lit. A bulb should be operated only when installed in a headlamp.
- If a bulb becomes damaged or cracked, replace it immediately and carefully dispose of it.
- Wear eye protection when changing a bulb. Allow the bulb to cool down before handling it.



OON078051NR

Replacing Headlamp (Low/High) / Front turn signal lamp bulb (Headlamp Type A)



OON078052NR

Replacing Headlamp (Low/High) / Position lamp / Daytime running lamp / Turn signal lamp (LED Type) bulb (Headlamp Type B)

If the Headlamp (Low/High)/ Position lamp/Daytime running lamp/ Turn signal lamp (1) does not operate, have the vehicle checked by an authorized Kia dealer.

1. Open the hood.
2. Remove the bulb socket-connector by turning it counterclockwise.
3. Remove the bulb from the lamp assembly.
4. Install a new bulb.
5. Connect the bulb socket-connector.

Replacing Position lamp + DRL (LED type) bulb (Headlamp Type A)

If the position lamp + DRL (LED) (1) does not operate, have the vehicle checked by an authorized Kia dealer.



The LED lamps cannot be replaced as a single component because it is an integrated unit. The LED lamps have to be replaced with the unit. A skilled technician should check or repair the position lamp + DRL (LED), for it may damage related parts of the vehicle.

Replacing front fog lamp bulb (if equipped)

If the front fog lamp (1) does not operate, have the vehicle checked by an authorized Kia dealer.



Replacing side repeater lamp (LED Type) bulb

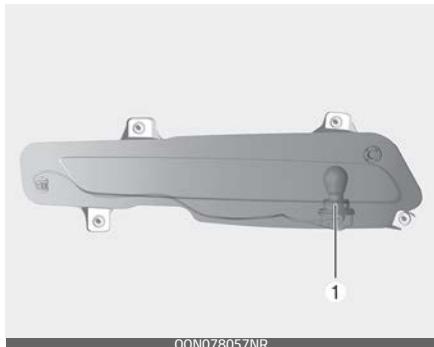
If the side repeater lamp (LED), does not operate, have the vehicle checked by an authorized Kia dealer.



The LED lamps cannot be replaced as a single component because it is an integrated unit. The LED lamps have to be replaced with the unit.

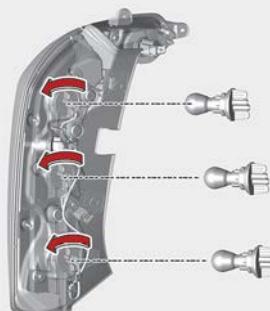
A skilled technician should check or repair the side repeater lamp (LED), for it may damage related parts of the vehicle.

Replacing turn signal lamp (bulb Type) bulb (if equipped)



If the rear turn signal lamp (Bulb Type) does not operate, have the vehicle checked by an authorized Kia dealer.

Replacing Stop and tail lamp bulb (Rear combination lamp Type A)



OON078054NR

1. Open the liftgate.
2. Loosen the lamp assembly retaining screws with a screwdriver.
3. Remove the rear combination lamp assembly from the body of the vehicle.
4. Remove the socket from the assembly by turning the socket counterclockwise until the tabs on the socket align with the slots on the assembly.
5. Remove the bulb from the socket by pressing it in and rotating it counterclockwise until the tabs on the bulb align with the slots in the socket.
6. Insert a new bulb by inserting it into the socket and rotating it until it locks into place.
7. Install the socket in the assembly by aligning the tabs on the socket with the slots in the assembly and turning the socket clockwise.
8. Reinstall the lamp assembly to the body of the vehicle.

Replacing Tail lamp/Stop lamp/Rear turn signal lamp bulb (Rear combination lamp Type B)



If the Tail lamp/Stop lamp/Rear turn signal lamp (LED Type) does not operate, have your vehicle checked by an authorized Kia dealer.

Replacing Back Up lamp bulb (Rear combination lamp Type A/B)



If the Back Up lamp bulb (Bulb Type) (1) does not operate, have your vehicle checked by an authorized Kia dealer.

Replacing High Mounted Stop Lamp (LED type) bulb

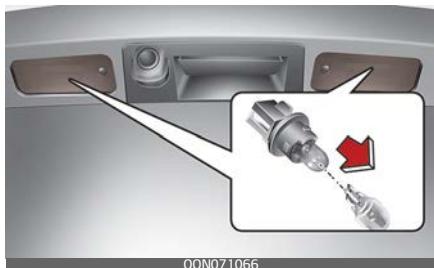
If the High Mounted Stop Lamp (LED) (1), does not operate, have the vehicle checked by an authorized Kia dealer.



The LED lamps cannot be replaced as a single component because it is an integrated unit. The LED lamps have to be replaced with the unit.

A skilled technician should check or repair the High Mounted Stop Lamp (LED), for it may damage related parts of the vehicle.

Replacing license plate lamp bulb



1. Using a flat-blade screwdriver, gently pry the lamp assembly from interior.
2. Remove the bulb by pulling it straight out.
3. Install a new bulb in the socket.
4. Install the lamp assembly to interior.

Replacing map lamp (bulb type) bulb



1. Using a flat-blade screwdriver, gently pry the lens cover from lamp housing.
2. Remove the bulb by pulling it straight out.
3. Install a new bulb in the socket.

4. Align the lens cover tabs with the lamp housing notches and snap the lens into place.

* NOTICE

Be careful not to damage the lens, lens tab, and plastic housings or get them dirty.

Replacing map lamp (LED type) bulb

If the map lamp (LED) does not operate, have the vehicle checked by an authorized Kia dealer.



The LED lamps cannot be replaced as a single component because they are part of an integrated unit. The LED lamps have to be replaced with the unit.

A skilled technician should check or repair the map lamp (LED), for it may damage related parts of the vehicle.

Replacing vanity mirror lamp bulb



⚠ WARNING

Interior lamps

Prior to working on the Interior lamps, ensure that the "OFF" button is depressed to avoid burning your fingers or receiving an electric shock.

If the map lamp (LED type) does not operate, have your vehicle checked by an authorized Kia dealer.

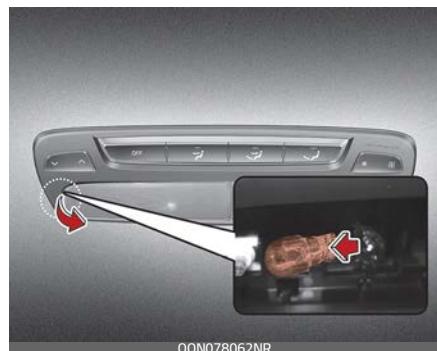
The LED lamps cannot be replaced as a single unit because it is an integrated unit. The LED lamps have to be replaced with the unit.

A skilled technician should check or repair the map lamp (LED), for it may damage related parts of the vehicle.

* NOTICE

Be careful not to damage the lens, lens tab, and plastic housings or get them dirty.

Replacing room lamp (bulb type) bulb



1. Using a flat-blade screwdriver, gently pry the lens cover from lamp housing.
2. Remove the bulb by pulling it straight out.
3. Install a new bulb in the socket.
4. Align the lens cover tabs with the lamp housing notches and snap the lens into place.

* NOTICE

Be careful not to damage the lens, lens tab, and plastic housings or get them dirty.

Replacing room lamp (LED type) bulb

If the Room lamp (LED) does not operate, have the vehicle checked by an authorized Kia dealer.



The LED lamps cannot be replaced as a single component because they are part of an integrated unit. The LED lamps have to be replaced with the unit.

A skilled technician should check or repair the Room lamp (LED), for it may damage related parts of the vehicle.

Replacing personal lamp (LED Type) bulb



If the personal lamp (LED) does not operate, have the vehicle checked by an authorized Kia dealer.

The LED lamps cannot be replaced as a single unit because it is an integrated unit. The LED lamps have to be replaced with the unit.

A skilled technician should check or repair the personal lamp (LED), for it may damage related parts of the vehicle.

Replacing glove box lamp

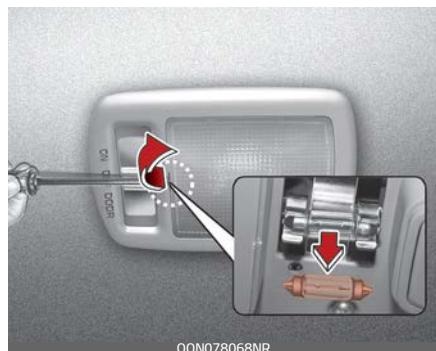


1. Using a flat-blade screwdriver, gently pry the lamp assembly from interior.
2. Remove the bulb by pulling it straight out.
3. Install a new bulb in the socket.
4. Install the lamp assembly to interior.

CAUTION

Be careful not to damage the lens, lens tab, and plastic housings or get them dirty.

Replacing luggage lamp bulb



1. Using a flat-blade screwdriver, gently pry the lens cover from lamp housing.
2. Remove the bulb by pulling it straight out.
3. Install a new bulb in the socket.
4. Align the lens cover tabs with the lamp housing notches and snap the lens into place.

Replacing luggage lamp (LED Type) bulb



If the luggage lamp (LED) (1) does not operate, have the vehicle checked by an authorized Kia dealer.

The LED lamps cannot be replaced as a single component because they are part of an integrated unit. The LED lamps have to be replaced with the unit.

A skilled technician should check or repair the Liftgate room lamp (LED), for it may damage related parts of the vehicle.

* NOTICE

Be careful not to damage the lens, lens tab, and plastic housings or get them dirty.

Appearance care

Use the information in the following sections to keep the exterior and interior of your vehicle clean.

Exterior care

Use the information in the following sections to maintain the exterior of your vehicle. Keeping the exterior clean is not only aesthetically pleasing, but it also helps to prolong the life of the vehicle.

* NOTICE

If you park the vehicle around a stainless signboard or windshield building etc., the plastic exterior trim (bumper, spoiler, garnish, lamp, outside mirror etc.) may be damaged by reflected sunlight from the external structure. To avoid damaging the plastic exterior trim, park the vehicle away from the areas where the reflected light may occur or use a vehicle cover (Depending on the vehicle, the type of exterior trim applied such as spoiler may differ).

Exterior general caution

It is very important to follow the label directions when using any chemical cleaner or polish. Read all warning and caution statements that appear on the label.

Finish maintenance

Washing

To help protect your vehicle's finish from rust and deterioration, wash it thoroughly and frequently at least once a month with lukewarm or cold water.

If you use your vehicle for off-road driving, you should wash it after each off-road trip. Pay special attention to the removal of any accumulation of salt, dirt, mud, and other foreign materials. Make sure the drain holes in the lower edges of the doors and rocker panels are kept clear and clean.

Insects, tar, tree sap, bird droppings, industrial pollution and similar deposits can damage your vehicle's finish if not removed immediately. Even prompt washing with plain water may not completely remove all these deposits. A mild soap, safe for use on painted surfaces, may be used.

After washing, rinse the vehicle thoroughly with lukewarm or cold water. Do not allow soap to dry on the finish.

After washing the vehicle, test the brakes while driving slowly to see if they have been affected by water. If braking performance is impaired, dry the brakes by applying them lightly while maintaining a slow forward speed.

CAUTION

- Do not use strong soap, chemical detergents or hot water, and do not wash the vehicle in direct sunlight or when the body of the vehicle is warm.
- Be careful when washing the side windows of your vehicle, especially with high-pressure water. Water may leak through the windows and wet the interior.
- To prevent damage to the plastic parts and lamps, do not clean with chemical solvents or strong detergents.

High-pressure washing

When using high-pressure washers, make sure to maintain sufficient distance from the vehicle.

Insufficient clearance or excessive pressure can lead to component damage or water penetration.

Do not spray the camera, sensors or its surrounding area directly with a high pressure washer. Shock applied from high pressure water may cause the device to not operate normally.

Do not bring the nozzle tip close to boots (rubber or plastic covers) or connectors as they may be damaged if they come into contact with high pressure water.

⚠ WARNING

After washing the vehicle, test the brakes while driving slowly to see if they have been affected by water. If braking performance is impaired, dry the brakes by applying them lightly while maintaining a slow forward speed.

⚠ CAUTION

Wetting engine compartment



- Water washing in the engine compartment including high pressure water washing may cause the failure of electrical circuits located in the engine compartment.
- Never allow water or other liquids to come in contact with electrical/electronic components inside the vehicle as this may damage them.
- After the vehicle has been washed, brake carefully while paying attention to the traffic

conditions until the braking effect has been fully restored.

Waxing

Wax the vehicle when water will no longer bead on the paint.

Always wash and dry the vehicle before waxing. Use a good quality liquid or paste wax, and follow the manufacturer's instructions. Wax all metal trim to protect it and to maintain its luster.

Removing oil, tar, and similar materials with a spot remover will usually strip the wax from the finish. Be sure to re-wax these areas even if the rest of the vehicle does not yet need waxing.

Be careful not to touch the lens when waxing the lamps.

⚠ CAUTION

Drying vehicle

- Wiping dust or dirt off the body with a dry cloth will scratch the finish.
- Do not use steel wool, abrasive cleaners, acid detergents or strong detergents containing high alkaline or caustic agents on chrome-plated or anodized aluminum parts. This may result in damage to the protective coating and cause discoloration or paint deterioration.

Finish damage repair

Deep scratches or stone chips in the painted surface must be repaired promptly. Exposed metal will quickly rust and may develop into a major repair expense.

*** NOTICE**

If your vehicle is damaged and requires any metal repair or replacement, be sure the body shop applies anti-corrosion materials to the parts repaired or replaced.

Bright-metal maintenance

To remove road tar and insects, use a tar remover, not a scraper or other sharp object.

To protect the surfaces of bright metal parts from corrosion, apply a coating of wax or chrome preservative and rub to a high luster.

During winter weather or in coastal areas, cover the bright metal parts with a heavier coating of wax or preservative. If necessary, coat the parts with non-corrosive petroleum jelly or other protective compound.

Underbody maintenance

Road salt and other corrosive chemicals are used in cold weather states to melt snow and prevent ice accumulation. If these chemicals are not

regularly removed, they will corrode the vehicle underbody and, over time, damage many parts: the fuel lines, the fuel tank retention system, the vehicle's suspension, the exhaust system, and even the body frame.

The National Highway Traffic Safety Administration has warned all vehicle owners of all brands of the need to take the following steps:

- Wash the undercarriage of your vehicle regularly during the winter and whenever your vehicle has been exposed to such salts or chemicals.
- Do a thorough washing of the undercarriage at the end of the winter.
- Use professional service technicians or governmental inspection stations to annually inspect for corrosion.
- Immediately seek an inspection of your vehicle if you become visually aware of corrosion flaking or scaling or if you become aware of a change in vehicle performance, such as soft or spongy brakes, fluids leaking, impairment of directional control, suspension noises or rattling metal straps.

Aluminum wheel maintenance

The aluminum wheels are coated with a clear protective finish.

- Do not use any abrasive cleaner, polishing compound, solvent, or wire brushes on aluminum wheels. They may scratch or damage the finish.
 - Clean the wheel when it has cooled.
 - Use only a mild soap or neutral detergent, and rinse thoroughly with water. Also, be sure to clean the wheels after driving on salted roads. This helps prevent corrosion.
 - Avoid washing the wheels with high speed vehicle wash brushes.
 - Do not use any alkaline or acid detergents. They may damage and corrode the aluminum wheels coated with a clear protective finish.
- Road salt, dirt and moisture that is allowed to accumulate underneath the vehicle.
 - Removal of paint or protective coatings by stones, gravel, abrasion or minor scrapes and dents which leave unprotected metal exposed to corrosion.

Exposure to corrosive environments

If you live in an area where your vehicle is regularly exposed to corrosive materials, corrosion protection is particularly important. Some of the common causes of accelerated corrosion are road salts, dust control chemicals, ocean air and industrial pollution.

Moisture breeds corrosion

Moisture creates the conditions in which corrosion is most likely to occur. For example, corrosion is accelerated by high humidity, particularly when temperatures are just above freezing. In such conditions, the corrosive material is kept in contact with the vehicle's surface by moisture that evaporates slowly. Mud is particularly corrosive because it dries slowly and holds moisture in contact with the vehicle. Although the mud appears to be dry, it can still retain the moisture and promote corrosion.

High temperatures can also accelerate corrosion of parts that are not properly ventilated so the moisture can be dispersed. For all these rea-

Corrosion protection

Protecting your vehicle from corrosion

By using the most advanced design and construction practices to combat corrosion, we produce vehicles of the highest quality. However, this is only part of the job. To achieve the long-term corrosion resistance your vehicle can deliver, the owner's cooperation and assistance is also required.

Common causes of corrosion

The most common causes of corrosion on your vehicle are:

sons, it is particularly important to keep your vehicle clean and free of mud or accumulations of other materials. This applies not only to the visible surfaces but particularly to the underside of the vehicle.

To help prevent corrosion

You can help prevent corrosion from beginning by observing the following:

Keep your vehicle clean

The best way to prevent corrosion is to keep your vehicle clean and free of corrosive materials. Attention to the underside of the vehicle is particularly important.

If you live in a corrosion-prone area — where road salts are used, near the ocean, areas with industrial pollution, acid rain, etc.—, you should take extra care to prevent corrosion. In winter, hose off the underside of your vehicle at least once a month and be sure to clean the underside thoroughly when winter is over.

When cleaning underneath the vehicle, give particular attention to the components under the fenders and other areas that are hidden from view. Do a thorough job; just dampening the accumulated mud rather than washing it away will accelerate corrosion rather than prevent it. Water under high pressure and steam are particularly effective in

removing accumulated mud and corrosive materials.

When cleaning lower door panels, rocker panels and frame members, be sure that drain holes are kept open so that moisture can escape and not be trapped inside to accelerate corrosion.

Keep your garage dry

Don't park your vehicle in a damp, poorly ventilated garage. This creates a favorable environment for corrosion. This is particularly true if you wash your vehicle in the garage or drive it into the garage when it is still wet or covered with snow, ice or mud. Even a heated garage can contribute to corrosion unless it is well ventilated so moisture is dispersed.

Keep paint and trim in good condition

Scratches or chips in the finish should be covered with "touch-up" paint as soon as possible to reduce the possibility of corrosion. If bare metal is showing through, the attention of a qualified body and paint shop is recommended.

Bird droppings: Bird droppings are highly corrosive and may damage painted surfaces in just a few hours. Always remove bird droppings as soon as possible.

Don't neglect the interior

Moisture can collect under the floor mats and carpeting and cause corrosion. Check under the mats periodically to be sure the carpeting is dry. Use particular care if you carry fertilizers, cleaning materials or chemicals in the vehicle.

These should be carried only in proper containers and any spills or leaks should be cleaned up, flushed with clean water and thoroughly dried.

Interior care

Use the information in the following sections to maintain the interior of your vehicle.

Interior general precautions

Prevent chemicals such as perfume, cosmetic oil, sun cream, hand cleaner, and air freshener from contacting the interior parts because they may cause damage or discoloration. If they do contact the interior parts, wipe them off immediately. If necessary, use a vinyl cleaner, see product instructions for correct usage.

CAUTION

Electrical components

Never allow water or other liquids to come in contact with electrical/elect-

tronic components inside the vehicle as this may damage them.

CAUTION

Leather

When cleaning leather products (steering wheel, seats etc.), use neutral detergents or low alcohol content solutions. If you use high alcohol content solutions or acid/alkaline detergents, the color of the leather may fade or the surface may get stripped off.

Taking care of leather seats

- Vacuum the seat periodically to remove dust and sand on the seat. It will prevent abrasion or damage of the leather and maintain its quality.
- Wipe the natural leather seat cover often with dry or soft cloth.
- Sufficient use of a leather protective may prevent abrasion of the cover and helps maintain the color. Be sure to read the instructions and consult a specialist when using leather coating or protective agents.
- Leather with bright colors (beige, cream beige) is easily contaminated. Clean the seats frequently.
- Avoid wiping with wet cloth. It may cause the surface to crack.

Cleaning the leather seats

Remove all contaminations instantly. Refer to instructions below for removal of each contaminant.

- Cosmetic products (sunscreen, foundation, etc.)
 - Apply cleansing cream on a cloth and wipe the contaminated point. Wipe off the cream with a wet cloth and remove water with a dry cloth.
- Beverages (coffee, soft drink, etc.)
 - Apply a small amount of neutral detergent and wipe until contaminations do not smear.
- Oil
 - Remove oil instantly with absorbable cloth and wipe with stain remover for natural leather only.
- Chewing gum
 - Harden the gum with ice and remove gradually.

Fabric seat cover (if equipped)

Please clean the fabric seats regularly with a vacuum cleaner in consideration of fabric material characteristics. If they are heavily soiled with beverage stains, etc., use a suitable interior cleaner. To prevent damage to seat covers, wipe off the seat covers down to the seams with a large wiping motion

and moderate pressure using a soft sponge or microfiber cloth.

Velcro closures on clothing or sharp objects may cause snagging or scratches on the surface of the seats.

Make sure not to rub such objects against the surface.

Cleaning the upholstery and interior trim

Vinyl

Remove dust and loose dirt from vinyl with a whisk broom or vacuum cleaner. Clean vinyl surfaces with a vinyl cleaner.

Fabric

Remove dust and loose dirt from fabric with a whisk broom or vacuum cleaner. Clean with a mild soap solution recommended for upholstery or carpets. Remove fresh spots immediately with a fabric spot cleaner. If fresh spots do not receive immediate attention, the fabric can be stained and its color can be affected. Also, its fire-resistant properties can be reduced if the material is not properly maintained. Using anything but recommended cleaners and procedures may affect the fabric's appearance and fire-resistant properties.

Cleaning the lap/shoulder belt webbing

Clean the belt webbing with any mild soap solution recommended for cleaning upholstery or carpet. Follow the instructions provided with the soap. Do not bleach or re-dye the webbing because this may weaken it.

Cleaning the interior window glass

If the interior glass surfaces of the vehicle become fogged (that is, covered with an oily, greasy or waxy film), they should be cleaned with a glass cleaner. Follow the directions on the glass cleaner container.

CAUTION

Rear window

Do not scrape or scratch the inside of the rear window. This may result in damage of the rear window defroster grid.

Emission control system

The emission control system of your vehicle is covered by a written limited warranty. Please see the warranty information contained in the Warranty & Consumer Information manual in your vehicle.

Your vehicle is equipped with an emission control system to meet all applicable emission regulations. There are three emission control systems, as follows.

1. Crankcase emission control system
2. Evaporative emission control system
3. Exhaust emission control system

In order to assure the proper function of the emission control systems, it is recommended that you have your vehicle inspected and maintained by an authorized Kia dealer in accordance with the maintenance schedule in this manual.

Caution for the Inspection and Maintenance Test (With Electronic Stability Control (ESC) system)

- To prevent the vehicle from misfiring during dynamometer testing, turn the ESC off by pressing the ESC switch.
- After dynamometer testing is completed, turn the ESC back on by pressing the ESC switch again.

1. Crankcase emission control system

The Positive Crankcase Ventilation system is employed to prevent air pollution caused by blow-by gases being emitted from the crankcase. This system supplies fresh filtered air to the crankcase through the air intake hose. Inside the crankcase, the fresh air mixes with blow-by gases, which then pass through the Positive Crankcase Ventilation (PCV) valve into the induction system.

2. Evaporative emission control (including Onboard Refueling Vapor Recovery (ORVR)) system

The evaporative emission control system is designed to prevent fuel vapors from escaping into the atmosphere. (The ORVR system is designed to allow the vapors from the fuel tank to be loaded into a canister while refueling at the gas station, preventing the escape of fuel vapors into the atmosphere.)

Canister

Fuel vapors generated inside the fuel tank are absorbed and stored in the onboard canister. When the engine is running, the fuel vapors absorbed in the canister are drawn into the surge tank through the Purge Control Solenoid Valve.

Purge Control Solenoid Valve (PCSV)

The Purge Control Solenoid Valve (PCSV) is controlled by the Engine Control Module (ECM); when the engine coolant temperature is low during idling, the PCSV closes so that evaporated fuel is not taken into the engine. After the engine warms up during ordinary driving, the PCSV opens to introduce evaporated fuel to the engine.

3. Exhaust emission control system

The exhaust emission control system is a highly effective system which controls exhaust emissions while maintaining good vehicle performance.

Engine exhaust gas precautions (carbon monoxide)

- Carbon monoxide can be present with other exhaust fumes. Therefore, if you smell exhaust fumes of any kind inside your vehicle, have it inspected and repaired immediately. If you ever suspect exhaust fumes are coming into your vehicle, drive it only with all the windows fully open. Have your vehicle checked and repaired immediately.

WARNING

Exhaust

Engine exhaust gases contain carbon monoxide (CO). It is a colorless, odorless and dangerous gas which is

dangerous and could be lethal if inhaled. Follow the instructions on this page to avoid CO poisoning.

- Do not operate the engine in confined or closed areas (such as garages) any more than what is necessary to move the vehicle in or out of the area.
- When the vehicle is stopped in an open area for more than a short time with the engine running, adjust the ventilation system (as needed) to draw outside air into the vehicle.
- Never sit in a parked or stopped vehicle for any extended time with the engine running.
- When the engine stalls or fails to start, excessive attempts to restart the engine may cause damage to the emission control system.

Operating precautions for catalytic converters

⚠ WARNING

Catalytic converter

Keep away from the catalytic converter and exhaust system while the vehicle is running or immediately thereafter. The exhaust and catalytic systems are very hot and may burn you.

⚠ WARNING

Fire

- Do not park, idle or drive the vehicle over or near flammable objects, such as grass, vegetation, paper, leaves, etc. A hot exhaust system can ignite flammable items under your vehicle.
- Also, do not remove the heat sink around the exhaust system, do not seal the bottom of the vehicle or do not coat the vehicle for corrosion control. It may present a fire risk under certain conditions.

Your vehicle is equipped with a catalytic converter emission control device.

Therefore, the following precautions must be observed:

- Use only UNLEADED FUEL for gasoline engines.
- Do not operate the vehicle when there are signs of engine malfunction, such as misfire or a noticeable loss of performance.
- Do not misuse or abuse the engine. Examples of misuse are coasting with the ignition off and descending steep grades in gear with the ignition off.
- Do not operate the engine at high idle speed for extended periods (5 minutes or more).
- Do not modify or tamper with any part of the engine or emission control system. All inspections

and adjustments must be made by an authorized Kia dealer.

- Avoid driving with an extremely low fuel level. Running out of fuel could cause the engine to misfire, damaging the catalytic converter. Failure to observe these precautions could result in damage to the catalytic converter and to your vehicle. Additionally, such actions could void your warranties.

California perchlorate notice

Perchlorate Material—special handling may apply. See

<https://dtsc.ca.gov/perchlorate>

Notice to California Vehicle Dismantlers: Perchlorate containing materials, such as air bag inflators, seatbelt pre-tensioners and keyless remote entry batteries, must be disposed of according to Title 22 California Code of Regulations Section 67384.10 (a).

Specifications, Consumer information and Reporting safety defects

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Specifications, Consumer information and Reporting safety defects

Dimensions

Item		7 Seater	8 Seater
Overall length		196.8 in (5,000 mm)	—
Overall width		78.3 in (1,990 mm)	—
Overall height	Without Roof rack	68.9 in (1,750 mm)	—
	With Roof rack	70.9 in (1,800 mm)	—
Tread	Front	245/60 R18	67.2 in (1,708 mm)
		245/50 R20	67.2 in (1,708 mm)
	Rear	245/60 R18	67.6 in (1,716 mm)
		245/50 R20	67.6 in (1,716 mm)
Wheelbase		114.1 in (2,900 mm)	—

Engine

Item	(Gasoline) 3.8 GDi
Displacement: cu in (cc)	230.55 (3,778)
Bore x Stroke: in (mm)	3.78 X 3.43 (96 X 87)
Firing order	1-2-3-4-5-6
No. of cylinders	6, V-type

Gross Vehicle Weight

lbs. (kg)

ITEM	FWD		AWD	
	7 Seater	8 Seater	7 Seater	8 Seater
(Gasoline) 3.8 GDi	5,776 (2,620)	5,776 (2,620)	5,917 (2,684)	5,917 (2,684)

Luggage volume

cu ft (L)

SAE	ITEM	7 Seater	8 Seater
	MIN.	21.2 (601)	21.2 (601)
	MAX.	86.8 (2,457)	86.8 (2,457)

- Min: Behind 3rd row.
- Max: Behind front seat to roof.

Air conditioning system

oz (g)

ITEM	Weight of volume	Classification
Refrigerant	33.5±0.9 (950±25)	R-1234yf
Compressor lubricant	7.4±0.35 (210±10)	FD46XG (IDEMITUS)

Contact an authorized Kia dealer for more details.

Bulb wattage

		Light Bulb		Bulb Type	Wattage (W)	
Front	Headlamp	Bulb type	Low	HB3	60	
			High	HB3	60	
		LED type	Low	LED	LED	
			High	LED	LED	
	Turn signal lamp	Bulb type	27/8W 1157NA		27	
			LED type		LED	
	Day time running lamp/Position lamp			LED	LED	
	Side marker	Bulb type	W5W	5		
		LED type	LED	LED		
Fog lamp*				LED	LED	
Side repeater lamp (outside mirror)				LED	LED	
Rear	Rear combination lamp	Bulb type	Stop lamp	P21/5W	21/5	
			Tail lamp	P21/5W	21/5	
			Side marker	W5W	5	
		LED type	Stop lamp	LED	LED	
			Tail lamp	LED	LED	
			Side marker	LED	LED	
			Turn signal lamp	LED	LED	
			Back up lamp	W16W	16	
	Turn signal lamp (Bulb type only)			28/8W LL	28	
	High Mounted Stop Lamp			LED	LED	
	License plate lamp			W5W	5	
Interior	Map lamp	Bulb type	FESTOON	10		
		LED type	LED	LED		
	Room lamp	Bulb type	FESTOON	10		
		LED type	LED	LED		
	Vanity mirror lamp	Bulb type	FESTOON	5		
		LED type	LED	LED		
	Personal lamp*			LED	LED	
	Glove box lamp*			FESTOON	5	
	Cargo lamp	Bulb type	FESTOON	10		
		LED type	LED	LED		

*: if equipped

Tires and wheels

Item	Tire size	Wheel size	Supplier	Load Capacity		Speed capacity		Inflation pressure [psi (kPa)]				Wheel lug nut torque lbf·ft (kgf·m, N·m)
				LI ^{*2}	kg	SS ^{*3}	km/h	Front	Rear	Front	Rear	
Full size tire	245/60 R18	7.5JX 18	Michelin Pirelli	105	925	H	210	35 (240)	35 (240)	35 (240)	35 (240)	79 ~ 94 (11~13, 107 ~ 127)
	245/50 R20	7.5JX 20	Michelin Pirelli	102	850	V	240	35 (240)	35 (240)	35 (240)	35 (240)	
Compact Spare tire	T155/90 R18	4.00 BX18	Kumho	113	1,150	M	130	60 (420)	60 (420)	60 (420)	60 (420)	

*1. Normal load - Up to 3 persons

*2. Load Index

*3. Speed Symbol

* NOTICE

- We recommend that when replacing tires, use the same tires as the originally supplied ones. If not, that affects driving performance.
- When driving in high altitude grades, it is natural for the atmospheric pressure to decrease. Therefore, please check the tire pressure and add more air when necessary. Additionally required tire air pressure per km above sea level: 1.5 psi(10.5 kPa)/km

⚠ CAUTION

When replacing tires, use the same size originally supplied with the vehicle.

Using tires of a different size can damage the related parts or make it work irregularly.

Recommended lubricants and capacities

To help achieve proper engine and powertrain performance and durability, use only lubricants of the proper quality.

Using the right lubricants help reduce engine friction and improve fuel efficiency.

These lubricants and fluids are recommended for use in your vehicle.

Lubricant	Volume	Classification
Engine oil ^{*1*2} (drain and refill)  	(Gasoline) 3.8 GDi 6.87 US qt. (6.5 L)	Full synthetic SAE 5W-30, ACEA A5/B5 ^{*3}
Automatic transmission fluid	(Gasoline) 3.8 GDi 7.4 US qt. (7.0 L)	ATF SP-IV(M1) (Recommended: SK ATF SP4M-1, MICHANG ATF SP4M-1, S-OIL ATF SP4M-1) ^{*4}
Coolant	(Gasoline) 3.8 GDi Approx. 12.9 US. qt. (12.2 L)	Mixture of antifreeze and distilled water (Ethylene glycol base coolant for aluminum radiator)
Brake fluid ^{*5}	0.47~0.51 US. qt. (0.44~0.48 L)	SAE J1704 DOT-4 LV, ISO4925 CLASS-6, FMVSS 116 DOT-4
Rear differential oil (AWD)	0.74 US qt. (0.7 L)	HYPOID GEAR OIL API GL-5, SAE 75W/85 (SK HCT-5 GEAR OIL 75W/85 or equivalent)
Transfer case oil (AWD)	(Gasoline) 3.8 GDi 0.74 US qt. (0.7 L)	HYPOID GEAR OIL API GL-5, SAE 75W/85 (Recommended: SK HCT-5 GEAR OIL 75W/85 or equivalent)
Fuel	18.75 US gal. (71 L)	Refer to "Fuel requirements" on page 1-2

*1. Refer to "Recommended SAE viscosity number" on page 8-7.

*2. Engine oils labeled Energy Conserving Oil are now available. Along with other additional benefits, they contribute to fuel economy by reducing the amount of fuel necessary to overcome engine friction. Often, these improvements are difficult to measure in everyday driving, but in a year's time, they can offer significant cost and energy savings.

*3. Requires <API Latest(or ILSAC Latest) or ACEA A5/B5 Full synthetic> grade engine oil.

- *4. Use only specified genuine Automatic transmission fluid. The use of non-specified fluid (even marked as compatible with genuine) could result in shift quality deterioration and vibrations, eventually, the transmission failure. (Refer to "Explanation of scheduled maintenance items" on page 7-15.)
- *5. To maintain your vehicle's best brake and ABS/ESC performance, use Kia genuine brake fluid as in the specification.

Recommended SAE viscosity number

CAUTION

Always be sure to clean the area around any filler plug, drain plug, or dipstick before checking or draining any lubricant. This is especially important in dusty or sandy areas and when the vehicle is used on unpaved roads. Cleaning the plug and dipstick areas will prevent dirt and grit from entering the engine and other mechanisms that could be damaged.

Engine oil viscosity (thickness) has an effect on fuel economy and cold weather operating (engine start and engine oil flowability). Lower viscosity engine oils can provide better fuel economy and cold weather performance, however, higher viscosity engine oils are required for satisfactory lubrication in hot weather. Using oils of any viscosity other than those recommended could result in engine damage. When choosing an oil, consider the range of temperature your vehicle will be operated in before the next oil change. Proceed to select the recommended oil viscosity from the chart.

Temperature Range for SAE Viscosity Numbers										
Temperature	°C	-30	-20	-10	0	10	20	30	40	50
	(°F)	-10	0	20	40	60	80	100	120	
(Gasoline) 3.8 GDi										5W-30

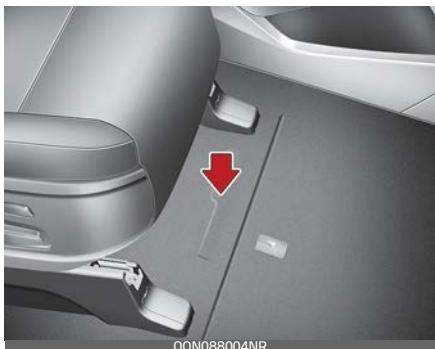


An engine oil displaying this American Petroleum Institute (API) Certification Mark conforms to the international Lubricant Specification Advisory Committee (ILSAC). It is recommended to only use engine oils that uphold this API Certification Mark.

Vehicle Identification Number (VIN)

The Vehicle Identification Number (VIN) is the number used in registering your vehicle and in all legal matters pertaining to its ownership, etc.

Frame number



The number is punched on the floor under the passenger seat. To check the number, open the cover.

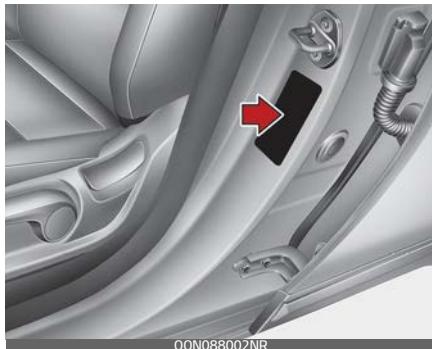
VIN label (if equipped)



The VIN is also on a plate attached to the top of the dashboard. The number on the plate can easily be seen through the windshield from outside.

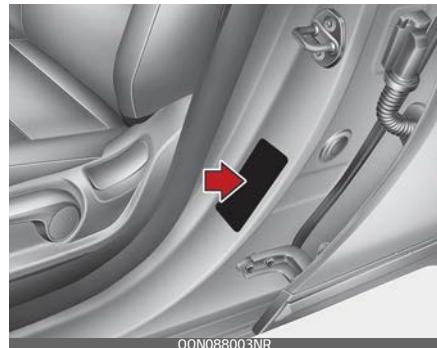
Vehicle certification

The vehicle certification label attached on the driver's (or front passenger's) side center pillar gives the Vehicle Identification Number (VIN).



Tire specification and pressure label

The tires supplied on your new vehicle are chosen to provide the best performance for normal driving.

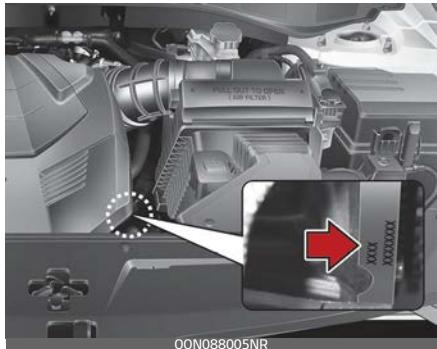


The tire label located on the driver's side center pillar gives the tire pressures recommended for your vehicle.

Engine Number

The engine number is stamped on the engine block as shown in the drawing.

(Gasoline) 3.8 GDI



Refrigerant label

The refrigerant label is located on the underside of the hood.



Consumer Assistance (U.S. only)

Roadside Assistance is provided on all new current model year Kia Vehicles from the date the vehicle is delivered to the first retail buyer or otherwise put into use (inservice date), whichever is earlier, for a period of 60 months or 60,000 miles, whichever is earlier, subject to the terms, conditions and exclusions set forth in the Kia Warranty and Consumer Information Manual applicable to your model year vehicle.

Kia America, Inc. reserves the right to limit or deny services or other benefits to any owner or driver when, in Kia America, Inc.'s judgment, the claims and/or service requests are excessive in frequency or type of occurrence.

Toll free consumer assistance

from 5:00 AM to 6:00 PM PST, Monday through Friday and is accessible by dialing 1-800-333-4Kia (4542).

For more information regarding assistance available, please refer to your Kia Warranty & Consumer Information Manual.

Emergency roadside assistance

24 hours a day, 365 days a year and is accessible by dialing 1-800-333-4Kia (4542).

Please note that you must provide your Vehicle Identification Number (VIN) to verify coverage at the time of your call. The VIN can be found on the dash of your vehicle on the driver's side, on the door jamb of the driver's door, your vehicle's registration or proof of insurance card.

Kia utilizes a network of over 30,000 roadside assistance providers. Should you accidentally run out of fuel, require a battery jump, or need help changing a tire, a Kia Roadside Assistance Representative will dispatch someone to deliver a small quantity of gas, change a flat tire with your inflated spare, or arrange a battery jump to allow you to proceed to your destination. We have access to a network of over 10,000 locksmiths to help you should you become locked out of your Kia.

In the event that mechanical difficulty renders your vehicle undrivable due to a warranty-related concern, Kia's Roadside Assistance Representative will arrange to transport your vehicle to the nearest Kia dealer or to an authorized Kia alternative service location.

Your vehicle must be accessible to our dispatch transport vehicle, as determined by our driver, to receive this service.

* NOTICE

Roadside Assistance benefits are not available for any Kia vehicle that has ever been or should be issued a "salvage" title or similar "branded" title under any state's law or has been declared a "total loss" or equivalent by a financial institution or insurance company.

Trip interruption

Trip interruption expense benefits are provided in the event that a warranty-related disablement occurs more than 150 miles from your home, and the repairs require more than 24 hours to complete. Reasonable reimbursement is included for meals, lodging, or rental vehicle expenses. Trip interruption coverage is limited to \$100 per day subject to a three day maximum limit per incident. You must contact the Kia Roadside Assistance Center to obtain pre-authorization of expenses. Once the Kia Roadside Assistance Center gives authorization for trip interruption benefits, they will assist you in making the necessary arrangements. Insurance deductibles, expenses, and claims paid by your insurance company or other providers are not eligible for reimbursement.

Fleet vehicles are excluded from reimbursement under Kia's Trip Interruption Policy.

Registering your vehicle in a foreign country

If you plan to register your vehicle in a foreign country, you should confirm that it conforms to the regulations in that country. Even if you successfully register the vehicle in a foreign country, you may experience the following problems and should therefore consider the possibility of having to deal with them:

1. The fuel specified for your vehicle may be unavailable. If other than the specified fuel is used, it could cause damage to the engine, the fuel injection system, and other fuel-related parts which may not be covered under your New Vehicle Emissions Limited Warranty.
2. We must, therefore, clearly state that when you leave the country in which you purchased your Kia new and register it in another country, problems arising from the use of fuel other than the specified fuel are not subject to manufacturer's warranty. Because vehicles like yours may not be marketed in the new country of registration, parts, servicing techniques and tools necessary to maintain and repair your vehicle may be unavailable.

Even if vehicles like yours are sold there, mechanical specifications required by the government may vary enough from the country of purchase to cause additional problems.

3. There may not be an Authorized Kia Dealer in the area in which you plan to register your vehicle. You may additionally experience difficulty in obtaining services in a foreign country for any number of reasons.

Further, we cannot assume any responsibility for problems that result from unsatisfactory service or lack of service outside of the United States.

Electrical Equipment (U.S. only)

The electrical system of your vehicle is designed to perform under all reasonably expected operating conditions.

However, before any additional electrical equipment is installed in your vehicle, consult an Authorized Kia Dealer, in order to ensure that you do not void your warranty.

Certain electrical equipment, or the way in which it is installed, may adversely affect the operation of your vehicle, including such systems as the engine control system, the audio system and the electrical charging system and thus potentially void all or part of your warranty.

We assume no responsibility for any expense you may incur or for any malfunction of your vehicle or any of its components or systems that may result from the installation of additional electrical equipment that is not supplied, or recommended for installation by Kia.

Installation of a mobile two-way radio system

If a mobile two-way radio system is installed improperly, or if an excessively powerful type of system is used, other electronic systems may be adversely affected. To avoid

damage to your vehicle, consult an Authorized Kia Dealer concerning the proper equipment and installation.

Kia vehicles are designed and manufactured to meet or exceed all applicable safety standards.

For your safety, however, we strongly urge you to read and follow all directions in this Owner's Manual, particularly the information under the headings "NOTICE", "CAUTION" and "WARNING".

If, after reading this manual, you have any questions regarding the operation of your vehicle, safety issues and defects please contact your Kia's toll-free Consumer Assistance hot line as below:

National Consumer Affairs Manager
Kia America, Inc.
P.O. Box 52410
Irvine, CA 92619-2410
1-800-333-4Kia (4542)

Reporting Safety Defects (U.S. only)

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Kia America, Inc..

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Kia America, Inc..

To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to <http://www.safercar.gov>; download the SaferCar mobile application; or write to: Administrator, NHTSA, 1200 New Jersey Ave. SE., Washington, DC 20590.

You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

Online factory authorized manuals (U.S. only)

The following publications are available on www.KiaTechinfo.com.

Service manual

This manual covers maintenance and recommended procedures for repair to engine and chassis components. It is written for the Journeyman mechanic, but is simple enough for most mechanically inclined owners to understand.

Electrical troubleshooting manual

This manual complements the Service Manual by providing indepth troubleshooting information for each electrical circuit in your vehicle.

Owner's manual

This manual describes the overall features and operating procedures for the vehicle.

Abbreviation A

Abbreviation.....A-2

Abbreviation**Abbreviation****A/C**

Air conditioning

ABS

Anti-lock Brake System

ADS

Auto Defogging System

AGM

Absorbent Glass Mat

AWD

All Wheel Drive

BCA

Blind-Spot Collision-Avoidance Assist

BCW

Blind-Spot Collision Warning

BVM

Bind-spot View Monitor

CRS

Child Restraint System

DAW

Driver Attention Warning

DRL

Daytime Running Light

EBD

Electronic Brake force Distribution

ECM

Electric Chromic Mirror

EDR

Event Data Recorder

EPB

Electronic Parking Brake

EPS

Electric Power Steering

ESC

Electronic Stability Control

FCA

Forward Collision-Avoidance Assist

FCC

Federal Communications Commission

FMVSS

Federal Motor Vehicle Safety Standards

FWD

Front Wheel Drive

GAW

Gross Axle Weight

GAWR

Gross Axle Weight Rating

GVW

Gross Vehicle Weight

GVWR

Gross Vehicle Weight Rating

HAC

Hill-start Assist Control

HBA

High Beam Assist

Abbreviation	Abbreviation
HDA	RCCW
Highway Driving Assist	Rear Cross-Traffic Collision Warning
HUD	ROA
Head-Up Display	Rear Occupant Alert
ISG	SCC
Idle Stop and Go	Smart Cruise Control
LATCH	SEA
Lower Anchors and Tether for Children	Safe Exit Assist
LDW	SRS
Lane Departure Warning	Supplemental Restraint System
LFA	SRSCM
Lane Following Assist	SRS Control Module
LKA	SUV
Lane Keeping Assist	Sports Utility Vehicle
MIL	SVM
Malfunction Indicator Lamp	Surround View Monitoring
NHTSA	TIN
National Highway Traffic Safety Administration	Tire Identification Number
ODS	TPMS
Occupant Detection System	Tire Pressure Monitoring System
ORVR	VIN
Onboard Refueling Vapor Recovery	Vehicle Identification Number
PCSV	VSM
Purge Control Solenoid Valve	Vehicle Stability Management
RCCA	
Rear Cross-Traffic Collision-Avoidance Assist	

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