Toyota Teammate Advanced Drive
OWNER'S MANUAL

MIRAI

TOYOTA

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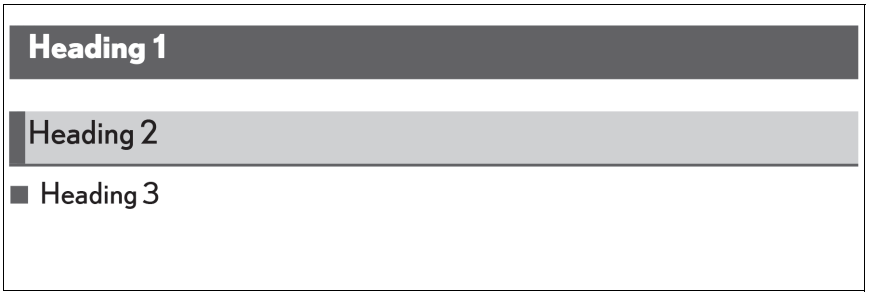
OWNER'S MANUAL version history

Reading the revision history

Heading 1 to 3 in the table correspond to the headings in the manual as follows.



Revision history

Software version: Ver. 05.00

Revision type	Revision location			
	Chapter/Section	Heading 1	Heading 2	Heading 3
Change	1-2	Advanced Drive	Description of functions	When a warning message is displayed
Change	1-2	Advanced Drive	Sensors used by Advanced Drive	Surrounding conditions
Change	1-2	Advanced Drive	Sensors used by Advanced Drive	Objects which may not be detected by the Advanced Drive
Change	1-2	Advanced Drive	Sensors used by Advanced Drive	⚠ Objects which cannot be detected by the Advanced Drive

Revision type	Revision location			
	Chapter/Section	Heading 1	Heading 2	Heading 3
Change	1-2	Advanced Drive	Sensors used by Advanced Drive	⚠ Precautions for the sensors for other systems
Change	1-2	Advanced driving support	Operating the advanced driving support (controlled driving)	Situations in which the advanced driving support may not operate
Change	1-2	Advanced driving support	Operating the advanced driving support (controlled driving)	Situations in which the advanced driving support will urge the driver to hold the steering wheel
Change	1-2	Advanced driving support	Operating the advanced driving support (controlled driving)	Advanced driving support control may automatically be cancelled when
Addition	1-2	Advanced driving support	Operating the advanced driving support (controlled driving)	When the vehicle is in a blind spot of another vehicle
Addition	1-2	Advanced driving support	Operating the advanced driving support (controlled driving)	When the vehicle is close to another vehicle
Change	1-2	Advanced driving support	Driving operations during controlled driving	Turn signal lever operation

Revision type	Revision location			
	Chapter/Section	Heading 1	Heading 2	Heading 3
Change	1-2	Advanced driving support	Controlled driving display	Vehicle/surrounding condition display area
Change	1-2	Emergency support brake	Function description	Operating conditions

Software version: Ver. 04.00

Revision type	Revision location			
	Chapter/Section	Heading 1	Heading 2	Heading 3
Change	1-2	Advanced driving support	Operating the advanced driving support (controlled driving)	Situations in which the advanced driving support may not operate
Change	1-2	Advanced driving support	Operating the advanced driving support (controlled driving)	Advanced driving support control may automatically be cancelled when
Change	1-2	EDSS (Emergency Driving Stop System)	Control phase	Conditions which the vehicle will not move to the shoulder of the road

Software version: Ver. 03.01

Revision type	Revision location			
	Chapter/Section	Heading 1	Heading 2	Heading 3
—	—	—	—	—

Reading this manual

Details of this manual

This manual only includes information on use of Advanced Drive.

For details on the Toyota Safety Sense (vehicles with Toyota Teammate Advanced Drive), refer to the “Toyota Teammate Advanced Drive OWNER’S MANUAL” included with the vehicle.

For warnings and information on use of other systems and functions, refer to the “OWNER’S MANUAL” and “MULTIMEDIA OWNER’S MANUAL <NAVIGATION AND MULTIMEDIA SYSTEM OWNER’S MANUAL>”.

Illustrations in this manual

Depending on the vehicle specifications or system software version, the content of the displays in this manual may differ from the actual vehicle.

Symbols in this manual

Symbols	Meanings
	Indicates the action (pushing, turning, etc.) used to operate switches and other devices.
1 2 3...	Indicates operating or working procedures. Follow the steps in numerical order.
	WARNING: Explains something that, if not obeyed, could cause death or serious injury to people.
	NOTICE: Explains something that, if not obeyed, could cause damage to or a malfunction in the vehicle or its equipment.
	Indicates the component or position being explained.
	Means **Do not**, **Do not do this**, or **Do not let this happen**.

Accessing an Owner's Manual which matches the system specifications

To access the appropriate Owner's Manual, it is necessary to check the software version of the system and then visit Toyota.com.

▶ Vehicles with the My Settings

1 Check the current software version by smartphone app.

The software version as of December 2022 is Ver. 05.00.

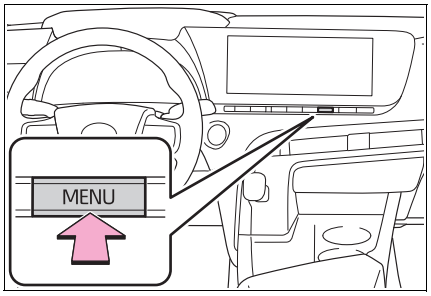
2 Access the following URL using a computer, smartphone, etc.:

https://www.toyota.com/owners/resources/warranty-owners-manuals/manual?om=om62u0301.mirai.22.2111.fcev.20TM

3 Select the file which includes the software version, as checked in step 1.

▶ Vehicles without the My Settings

1 Press the "MENU" button.



2 Select "Apps" on the multimedia display.

3 Select "SWUapl".

"SW Update Apl"* will start.

4 Check the current software version.

5 Access the following URL using a computer, smartphone, etc.:

https://www.toyota.com/owners/resources/warranty-owners-manuals/manual?om=om62u0301.mirai.22.2111.fcev.20TM

6 Select the file which includes the software version, as checked in step 4.

*: "SW Update Apl" is a Toyota App.

Toyota Teammate Advanced Drive

1

Before using Advanced Drive

In order to continuously use all functions of Advanced Drive, it is necessary to perform certain preparations and keep the software updated to the latest version.

Preparation before use

It is necessary to enter a subscription service contract, provided by Toyota, to use these functions. For details, contact your Toyota dealer.

■ Precautions for use

- Be aware that the system may temporarily be disabled if a regulatory or safety related issue occurs.
- If a subscription service contract has not been entered or the contract has not been renewed, Advanced Drive may not be used or some functions may not be available.

Software updates

Advanced Drive uses the Data Communication Module (DCM) to perform software updates when functions are changed/added or improvements are made to the system.

■ Software update procedure

▶ Vehicles with the My Settings

Software updates are performed by smartphone app.

When there is a software update notification, follow the instructions displayed.

▶ Vehicles without the My Settings

Software updates are performed by the “SW Update Apl”* installed to the navigation system.

If a software update is available, a notification will be displayed on the multimedia display. Follow the instructions displayed on the screen.

*: “SW Update Apl” is a Toyota App.

When the software is updated, the operating method of functions may change and functions may be added.

For details about changes or additions, check the Online Owner’s Manual at Toyota.com. (→P.7)

■ Software updates

- Once the software is updated, it cannot be reverted to a previous version.
- Depending on the communication environment and the content of an update, a software update may take several hours. Although an updates will be suspended when the power switch is turned off, it will resume when the power switch is changed back to ON mode.

● Advanced Drive can still be used while the software is being updated.

● When a message requesting that update be performed at a Toyota dealer is displayed, contact your Toyota dealer.

● In the following situations, the software may be updated automatically:

- When a possible system issue or other safety related issue is corrected*1
- When a regulatory issue has is corrected*1
- When small corrections which do not affect system operation or performance are made*2

*1: All available updates may be installed and the software updated to the most current version.

*2: A notification screen will not be displayed.

■ **"SW Update Apl" (vehicles without the My Settings)**

The following can be performed on the application menu screen.

● Display the software version/release notes (update details, precautions, use methods, etc.)

● Display the software update history

WARNING

■ **For safe use**

When the software is updated, the operating methods of functions may change. Using this system without knowing the correct operating methods may lead to an accident resulting in death or serious injury.

Make sure to read the Owner's Manual which corresponds to the software version of the system, before using this system.

Data handling

The Advanced Drive mainly records certain data, such as the following.

▶ Recorded for several seconds at certain times after the fuel cell system is started*

● Operation status of the system

● Sensor detection information

● Images from the cameras

● Location information

*: While driving, data is recorded for several seconds to approximately 1 minute before and after certain collision or collision-like situations.

▶ Constantly recorded while driving

● Distance driven

● Vehicle speed

● Accelerator status

Toyota uses the Data Communication Module (DCM) to obtain recorded data. Also, data can be obtained when your vehicle is brought to a Toyota dealer.

Collected data is used for research and development of autonomous driving, advanced safety systems, and map creation technology. Also, this data may be used for collision analysis or resolution, malfunction diagnosis, or to provide customer support.

■ Recorded data

● This system does not record conversations or other sounds.

● The system does not record personal information (example: name, gender, age, etc.).

■ Data usage

● Toyota will not disclose the recorded data to a third party except:

- With the consent of the vehicle owner or with the consent of the lessee if the vehicle is leased
- In response to an official request by the police, a court of law or a government agency
- When the data can be used for research and development of autonomous driving, advanced safety systems, and map creation technology and has been processed so that it is not tied to a specific vehicle or vehicle owner

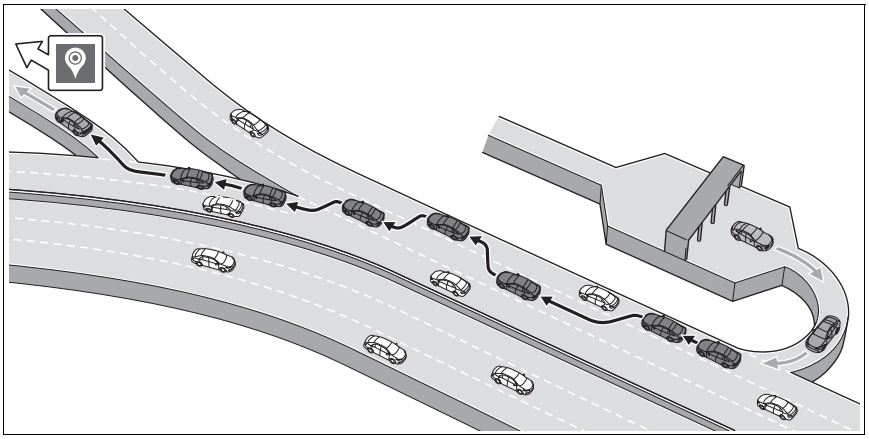
● Data recorded by this system may be used in combination with data collected through other means, which may identify a user, when performing collision analysis.

Advanced Drive

Description of functions

Advanced Drive is a system which uses high definition map data and detection information from various sensors to, through confirmation of the conditions by the driver, provide steering, acceleration, and deceleration support on highways and expressways.

Also, in an emergency, the system supports deceleration, moving to the shoulder of the road, and stopping, to help avoid a collision or help reduce the impact of a collision.



Advanced Drive is not an automated driving system. Driving safely is the sole responsibility of the driver.

For safe use: →P.16

■ Functions

Advanced driving support: →P.24

Emergency support brake: →P.46

EDSS (Emergency Driving Stop System): →P.51

■ Hands-free driving

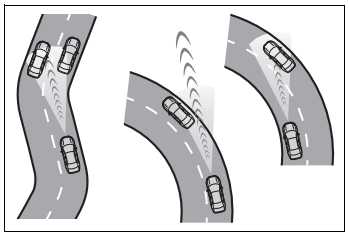
Depending on local laws and regulations, driving without hands on the steering wheel may be prohibited. Use this system in accordance with applicable federal and state laws.

■ Situations in which Advanced Drive may not operate properly

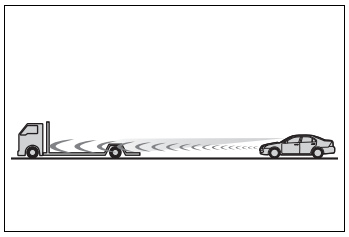
In situations such as the following, Advanced Drive may not operate properly.

Manually operate the vehicle as necessary.

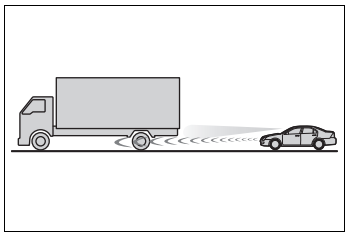
- When a sensor is splashed by water
- When water, snow, dust, etc. is thrown up around the vehicle
- When a very bright light, such as the sun or the headlights of another vehicle, shines into a camera
- When the ambient temperature is high or low
- When a vehicle cuts in front of your vehicle
- When a vehicle approaches your vehicle
- When there is a significant difference in speed between your vehicle and another vehicle
- When a vehicle is stopped in your lane
- When a vehicle is stopped in an adjacent lane
- When the lane to which your vehicle is changing is congested
- When another lane merges into the lane in the same traveling direction as your vehicle
- When driving near a TV tower, broadcasting station, electric power plant, airport, radar equipped vehicles, etc., or other location where strong radio waves or electrical noise may be present
- When driving on a place where old white lanes remain
- When driving in an area where the surfaces the tires contact vary greatly between the left and right side
- When driving in a place where the surrounding brightness changes, such as at the entrance or exit of a tunnel
- When driving on a road with wide or narrow lanes
- When driving around a curve



- When driving on a road with a grade that changes
- When driving on a low visibility road
- When the preceding vehicle is driving at a low speed
- When part of a preceding vehicle is not visible or is dirty
- When the rear end of a preceding vehicle is small, such as an unloaded trailer, etc.

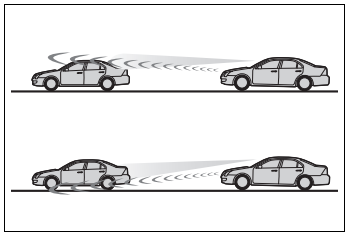


- When the width of a preceding vehicle is narrow, such as a small mobility vehicle
- When a preceding vehicle has high ground clearance



- When a preceding vehicle has low ground clearance
- When a preceding vehicle is carrying a load which protrudes from its cargo area
- When a preceding vehicle is irregularly shaped, such as a tractor or

side car
- When a vehicle in an adjacent lane is driving at a low speed
- When part of a vehicle driving in an adjacent lane is not visible or is dirty
- When the rear end of a vehicle driving in an adjacent lane is small, such as an unloaded trailer, etc.
- When the width of a vehicle driving in an adjacent lane is narrow, such as a small mobility vehicle
- When a vehicle driving in an adjacent lane has high ground clearance
- When a vehicle driving in an adjacent lane has low ground clearance
- When a vehicle driving in an adjacent lane is carrying a load which protrudes from its cargo area
- When a vehicle driving in an adjacent lane is irregularly shaped, such as a tractor or side car
- When the vehicle posture is changing



- When the headlights are not illuminated while driving at night or when in a tunnel
- When a wiper blade is blocking a camera
- When it is difficult to detect a white lane line, such as when it is worn or dirty, or being obscured by shadow, fog, or rain
- When using a wireless communication device
- Immediately after the fuel cell system is started
- Immediately after a destination has been set on the navigation system
- Immediately after a destination has been changed or deleted on the navigation system
- When the navigation system is searching for a route again

■ Possible impact of the LiDAR sensors

The LiDAR sensors (→P.18) may affect the operation of other equipment that uses infrared sensors. (For example, some automated parking systems may prevent the vehicle from being parked properly.)

For details, contact your Toyota dealer.

■ When a warning message is displayed

If the Advanced Drive warning light ( ) illuminates and any of the following messages are displayed, perform the appropriate corrective procedure.

If the message continues to be displayed even though the corrective procedure has been performed, contact your Toyota dealer.

- “Advanced Drive Unavailable Vehicle System Issue”
  - The system cannot be used as a camera has become too hot, such as after the vehicle has been parked in the sun. Use the air conditioning system to decrease the temperature inside the vehicle.
  - The system cannot be used as a camera has become too cold, such as after the vehicle has been parked in an extremely cold area. Use the air conditioning system to increase the temperature inside the vehicle.
  - The system cannot be used as a camera is obstructed. Check for any foreign matter, etc. that may be obstructing the camera.
  - The system cannot be used as the surrounding area cannot be detected due to it being too dark

or bright, or inclement weather (rain, fog, snow, sandstorm, etc.) Attempt to use the system after conditions become suitable for system operation.

- The system temporarily cannot be used due to the malfunction of a related part. Wait for a while before attempting to use the system.

● "Driver Inattention Advanced Drive Unavailable"

- The system temporarily cannot be used as the EDSS (Emergency Driving Stop System) (→P.51) has operated. To enable use, turn the power switch off and then back to ON mode.

● "LiDAR Unavailable", "Sensor Unavailable", "Sensor Unavailable Clean Sensor"

- Dirt, water, snow, ice, etc. may be attached to the displayed sensor or its surrounding area. Remove the foreign matter and drive the vehicle for a while before attempting to use the system.

● "Camera Unavailable"

- The system cannot be used as a camera has become too hot, such as after the vehicle has been parked in the sun. Use the air conditioning system to decrease the temperature inside the vehicle.
- The system cannot be used as a camera has become too cold, such as after the vehicle has been parked in an extremely cold area. Use the air conditioning system to increase the temperature inside the vehicle.
- The system cannot be used as a camera is obstructed. Check for any foreign matter, etc. that may be obstructing the camera.
- The system cannot be used as the surrounding area cannot be detected due to it being too dark or bright, or inclement weather (rain, fog, snow, sandstorm, etc.) Attempt to use the system after conditions become suitable for system operation.

If any other message is displayed, follow the instructions displayed.

■ Disabling Advanced Drive

Advanced Drive can be disabled on ⚙ of the multi-information display. (→P.55)

⚠ WARNING

■ For safe use

Driving safely is the sole responsibility of the driver. Do not overly rely on this system, and pay careful attention to the surrounding conditions in order to ensure safe driving.

● Advanced Drive is not an automated driving system.

This system provides the driver with information and driving assistance according to the road shape and conditions, traffic conditions, and the condition of the driver themself. Always pay careful attention to the surrounding conditions as use of the system is the responsibility of the driver.

● Depending on the condition of the surrounding area, the road, or the driver, Advanced Drive may not operate or operation may be suspended. Also, it may not always be able to achieve the same level of performance. Read the operating conditions of each function carefully. Do not overly rely on this system and always drive carefully.

● As the recognition performance and control performance of Advanced Drive are limited, driver operation is necessary to ensure safety while the system is operating.

It is the driver's responsibility to pay careful attention to their surroundings and be ready to take over driving at any moment.

WARNING

- Even if Advanced Drive is operating properly, the surrounding conditions as recognized by the driver and detected by the system may differ. Therefore, it is necessary for the driver to pay attention, assess risks, and ensure safety. Over-reliance on this system to drive the vehicle safely may lead to an accident resulting in death or serious injury.
- As Advanced Drive system control uses map information, the system may not operate correctly if the actual road conditions differ from the map information, such as when there is road construction, etc. Do not overly rely on this system, and pay careful attention to the surrounding conditions as use of the system is the responsibility of the driver.
- While Advanced Drive is operating, as driver operation may become necessary, the driver must ensure they have clear visibility of their surroundings.

Use the following to ensure visibility:

- Headlights
- Windshield wipers
- Windshield defogger, rear window defogger and outside rear view mirror defoggers

- In certain situations, a message urging the driver to hold the steering wheel may be displayed by Advanced Drive. In this case, hold the steering wheel and drive the vehicle manually to ensure safety.
- Always observe the legal speed limit when driving on public roads.

■ Situations in which Advanced Drive should not be used

Do not use Advanced Drive in situations such as the following.

As the system will not be able to provide appropriate control, using it may lead to an accident resulting in death or serious injury.

- Vehicle conditions

- When the vehicle may be affected by the turbulence of other nearby vehicles
- When water, snow, dirt or other foreign matter is attached to the windshield
- When the windshield is fogged up, or covered with condensation or ice
- When the windshield is cracked or damaged
- When the lens of a camera is dirty or fogged
- When water, snow, dirt or other foreign matter is attached to a sensor or its surrounding area
- When the carried load has caused the vehicle height to change significantly or the vehicle to be tilted
- When driving in an emergency lane
- When driving in a flex lane
- When tire chains are installed
- When the tire inflation pressure is not correct
- When the installed tires are significantly worn
- When tires other than the manufacturer specified size are installed

WARNING

- When a compact spare tire is installed to the vehicle or an emergency tire puncture repair kit has been used
- When the wheels are misaligned
- When the vehicle has been subjected to a strong impact, such as in a collision
- When the vehicle cannot be driven stably, due to a collision, malfunction, etc.
- When towing with the vehicle
- When the vehicle is being towed

●Road/traffic conditions

- When driving on a road with sharp curves
- When the road surface is slick, such as when it is covered with ice or snow
- When driving on a steep slope
- When driving on a road with a steep grade that changes sharply
- When driving in heavy traffic
- When in traffic that is constantly accelerating/decelerating

●Weather

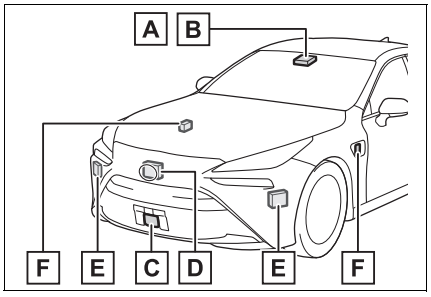
- When driving in strong wind
- When driving in inclement weather (rain, fog, snow, sandstorm, etc.)

Sensors used by Advanced Drive

Advanced Drive uses various sensors to obtain necessary information.

■ Surrounding conditions

▶ Front



A Advanced Drive camera

B Front camera*

C Front LiDAR sensor

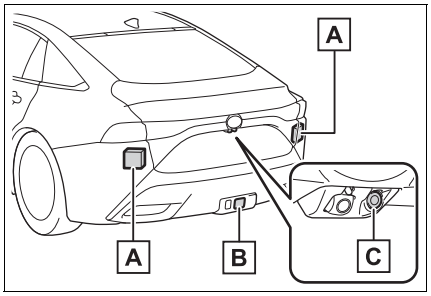
D Front radar sensor*

E Front side radar sensors*

F Side LiDAR sensor

*: For details, refer to the “Toyota Safety Sense” in the “Toyota Teammate Advanced Drive OWNER’S MANUAL” included with the vehicle.

▶ Rear



A Rear side radar sensors

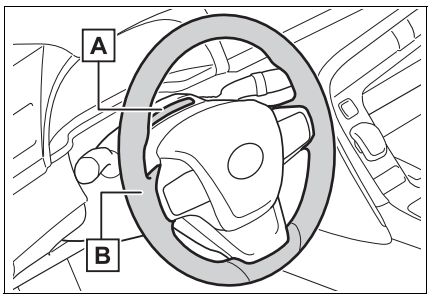
For details, refer to “BSM (Blind Spot Monitor)” in the “OWNER’S MANUAL”.

B Rear LiDAR sensor

C Rear camera (Digital Rear View Mirror)

For details, refer to “Digital Rear View Mirror” in the “OWNER’S MANUAL”.

■ Driver condition



A Driver monitor camera

B Steering wheel sensor

■ Sensor automatic cleaning function

If the system determines that a front LiDAR sensor has dirt, water, snow, or ice attached, it will spray washer fluid on the sensor to clean it.

If the foreign matter has not been removed from the sensor, a message will be displayed. Manually remove the foreign matter as necessary.

The sensor automatic cleaning function can be enabled/disabled on ⚙ of the multi-information display. (→P.55)

■ Objects which may not be detected by the Advanced Drive

The following objects may not be detected by Advanced Drive. Manually operate the vehicle as necessary.

- Two-wheeled vehicles
- Vehicles on the edge of a lane
- Vehicles straddling a white lane line
- Vehicles on the lane to which your vehicle is changing
- Vehicles with bright color
- Vehicles with color or brightness that blends in with the surroundings
- Vehicles reflecting a very bright light, such as the sun or the headlights of another vehicle
- Deformed vehicles, such as those involved in an accident
- Traffic cones, cushion drums, and delineator posts

⚠ WARNING

■ Objects which cannot be detected by the Advanced Drive

The following objects cannot be detected by Advanced Drive. As the system will not be able to provide appropriate control, using it may lead to an accident resulting in death or serious injury.

Always pay careful attention to the surrounding conditions, as ensuring safety is the responsibility of the driver.

- Fallen objects on roads
- Objects installed on roads, such as barriers, barricades, etc.
- Vehicles outside of a lane (such as on the shoulder of the road)
- Vehicles facing a lateral side or toward your vehicle
- Potholes, cracks, ruts, or other road damage
- Road construction zones
- Drawbridges

WARNING

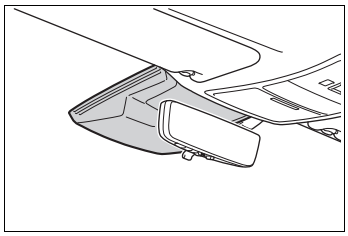
- Traffic lanes other than normal lanes, such as bus lanes, weigh stations, etc.
- Rest areas
- Pedestrian crossings
- Railroad crossings

■ Precautions for the Advanced Drive camera

Observe the following precautions.

Failure to do so may lead to malfunction of the Advanced Drive camera and Advanced Drive not operating properly, possibly leading to an accident resulting in death or serious injury.

- Do not modify the ceiling or any parts around the Advanced Drive camera cover.
- Be careful around the Advanced Drive camera cover.



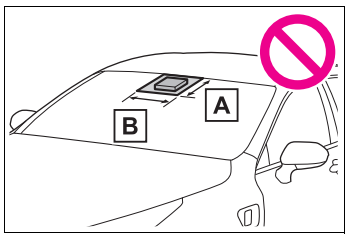
- Do not remove or disassemble the cover.
- Do not subject the cover or its surrounding area to strong impact.

If subjected to a strong impact, the Advanced Drive camera may move out of alignment and objects may no longer be detected correctly. In this case, have the vehicle inspected by your Toyota dealer.

- Do not allow the cover or its surrounding area to get wet.
- Always keep the windshield clean.
- If the windshield is dirty or covered with an oily film, water droplets, snow, etc., clean the windshield.
- As some glass coating agents may affect the detection performance of the Advanced Drive camera, consult your Toyota dealer when using a glass coating agent.
- Even if a glass coating agent is applied to the windshield, it will still be necessary to use the windshield wipers to remove water droplets, etc. from the area of the windshield in front of the Advanced Drive camera.
- If water droplets cannot be properly removed from the area of the windshield in front of the Advanced Drive camera by the windshield wipers, replace the wiper insert or wiper blade.
- Only use Toyota genuine wiper inserts and wiper blades.
- If the area of the windshield in front of the Advanced Drive camera is fogged up or covered with condensation or ice, use the air conditioning system to remove the fog, condensation, or ice.
- Do not attach window tint to the windshield.

WARNING

- Do not attach stickers (including transparent stickers) or other items to the area of the windshield in front of the Advanced Drive camera (shaded area in the illustration).



A From the top of the windshield to approximately 0.4 in. (1 cm) below the bottom of the Advanced Drive camera

B Approximately 14.2 in. (36 cm) (Approximately 7.1 in. [18 cm] to the right and left from the center of the Advanced Drive camera)

- Do not attach accessories which may obstruct the Advanced Drive camera to the hood, front grille, or front bumper.
- If a surfboard or other long object is to be mounted on the roof, make sure that it will not obstruct the Advanced Drive camera.

■ Precautions for the LiDAR sensors

- Observe the following precautions.

Failure to do so may lead to malfunction of a LiDAR sensor and Advanced Drive not operating properly, possibly leading to an accident resulting in death or serious injury.

- Do not subject a LiDAR sensor or its surrounding area to strong impact.

If subjected to a strong impact, the LiDAR sensor may move out of alignment and objects may no longer be detected correctly. In this case, have the vehicle inspected by your Toyota dealer.

- Do not disassemble or modify the LiDAR sensors.
- Do not change the position of the LiDAR sensors or remove them.
- Do not attach accessories, stickers (including transparent stickers), etc. to the LiDAR sensors.
- Do not install accessories such as license plate covers or frames
- Do not attach accessories to the front bumper, front grille, rear bumper, or front fenders near the LiDAR sensors.
- Do not modify the front bumper, front grille, rear bumper, or front fenders near the LiDAR sensors.
- Do not apply wax, coatings, surfactants, abrasive compounds, etc. to the LiDAR sensors.

WARNING

- Keep the LiDAR sensors and their surrounding area clean at all times.

When cleaning, make sure that the surface of the LiDAR sensors and their surrounding area are cool, and use a damp, soft cloth to remove dirt so as to not mark or damage it.

- Take care as the LiDAR sensors or their surrounding area may be extremely hot and possibly cause burns.

- The LiDAR sensors use lasers[*1].

- If a LiDAR sensor has been scratched or cracked[*2], have the vehicle inspected by your Toyota dealer.

If a LiDAR sensor that has been scratched or cracked is looked into, the laser may cause serious eye injury or, in the worst case, blindness.

- Do not disassemble or modify[*2] the LiDAR sensors.

The laser may cause serious eye injury or, in the worst case, blindness.

[*1]: The LiDAR sensor is classified as class 1 laser product according to the IEC60825-1 standard.

[*2]: In this case, the LiDAR sensor may no longer qualify as a class 1 laser product according to the IEC60825-1 standard.

- If the front bumper, front grille, rear bumper, a front fender, or LiDAR sensor needs to be removed/installed or replaced, contact your Toyota dealer.

- Do not use anything other than Toyota genuine paint when repairing the paint of a part near a LiDAR sensor.

Precautions for the driver monitor camera

Observe the following precautions.

Failure to do so may lead to malfunction of the driver monitor camera and Advanced Drive not operating properly, possibly leading to an accident resulting in death or serious injury.

- Do not subject the driver monitor camera or its surrounding area to strong impact.

If subjected to a strong impact, the driver monitor camera may move out of alignment and the driver may no longer be detected correctly. In this case, have the vehicle inspected by your Toyota dealer.

- Do not disassemble or modify the driver monitor camera.

- Do not attach accessories, stickers (including transparent stickers), etc. to the driver monitor camera or its surrounding area.

- Do not allow the driver monitor camera or its surrounding area to get wet.

- Do not cover the driver monitor camera or place anything in front of it.

- Keep the lens of the driver monitor camera free from damage.

WARNING

- Do not touch the lens of the driver monitor camera or allow it to become dirty.

When there is dirt or fingerprints on the camera lens, clean it with a dry, soft cloth so as to not mark or damage it.

- When cleaning the lens, do not use detergents or organic solvents that may damage plastic.

■ Precautions for the steering wheel sensor

Observe the following precautions.

Failure to do so may lead to the system not being able to correctly detect the condition of the steering wheel, possibly leading to an accident resulting in death or serious injury.

- Do not install a steering wheel cover or spinner knob to the steering wheel.
- Keep the steering wheel free of foreign matter.
- Do not touch the steering wheel with anything other than your hands.
- Do not hold a wide object or your arms in front of the steering wheel.
- Do not wear gloves when driving.
- Do not hold the steering wheel at the wood parts, leather seams or spokes.

■ Precautions for the sensors for other systems

- Front camera

→Refer to the “Toyota Safety Sense” in the “Toyota Teammate Advanced Drive OWNER’S MANUAL” included with the vehicle.

- Front radar sensor

→Refer to the “Toyota Safety Sense” in the “Toyota Teammate Advanced Drive OWNER’S MANUAL” included with the vehicle.

- Front side radar sensors

→Refer to the “Toyota Safety Sense” in the “Toyota Teammate Advanced Drive OWNER’S MANUAL” included with the vehicle.

- Rear side radar sensors

→Refer to “BSM (Blind Spot Monitor)” in the “OWNER’S MANUAL”.

- Rear camera (Digital Rear View Mirror)

→Refer to “Digital Rear View Mirror” in the “OWNER’S MANUAL”.

Advanced driving support

The advanced driving support is a system which, through confirmation of the situation by the driver, provides support with lane maintenance, acceleration, deceleration, stopping, starting off, and lane changing while driving on a highway or expressway.

Also, when a destination has been set on the navigation system, support for some of the driving operations necessary to reach the destination will be provided.

Contents

WARNING

■ For safe use

Driving safely is the sole responsibility of the driver. Do not overly rely on this system, and pay careful attention to the surrounding conditions in order to ensure safe driving.

- The advanced driving support is designed for use on roads such as highways and expressways. Do not use it in any other areas, as it may not operate correctly.

Also, do not use this system on roads which are shared with pedestrians and bicyclists.

- Advanced driving support is not a system which allows for inattentive driving or the driver to not watch the road.

Always pay careful attention to the surrounding conditions, as ensuring safety is the responsibility of the driver.

- As the advanced driving support cannot detect intersections, traffic lights, or stop lines, if any of these are encountered, the system will not be able to provide appropriate control, possibly leading to an accident resulting in death or serious injury.

Always pay careful attention to the surrounding conditions, as ensuring safety is the responsibility of the driver.

WARNING

- While the advanced driving support is operating, various information, such as the system operating state, will be displayed. Maintain a driving posture which allows the entire display to be viewed.

Controlled driving display: →P.35

Basic operations

■ Setting a destination on the navigation system

When using Cloud Navigation <Dynamic Navigation>*, it will be linked with route guidance and provide support for some of the driving operations necessary to reach the destination.

The advanced driving support can be used even if Cloud Navigation <Dynamic Navigation> is not being used. (The vehicle will continue along the current road.)

*: Refer to the “MULTIMEDIA OWNER’S MANUAL <NAVIGATION AND MULTIMEDIA SYSTEM OWNER’S MANUAL>”.

■ Meeting the use conditions

→P.26

■ Operating the advanced driving support (controlled driving)

→P.27

■ Adjusting the set vehicle speed

→P.31

■ Changing the vehicle-to-vehicle distance

→P.32

■ Cancelling controlled driving

→P.45

■ Link to the navigation system

- The advanced driving support is linked only to the route guidance of the Cloud Navigation <Dynamic Navigation>. It is not linked to Apple CarPlay / Android Auto* map or navigation apps.

*: For details about Apple CarPlay / Android Auto, refer to the “MULTIMEDIA OWNER’S MANUAL <NAVIGATION AND MULTIMEDIA SYSTEM OWNER’S MANUAL>”.

- If the advanced driving support is operated immediately after a destination has been set on the navigation system, it may not be linked to the navigation system.

■ If a destination has been set on the navigation system and “No Route Information Advanced Drive Activated Driving Along the Road” is displayed

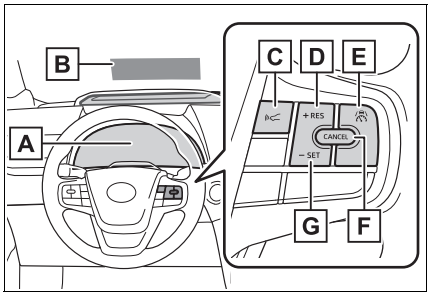
Display of the message may have been caused by the following:

- The map data has not been updated
- Vehicles with the My Settings: The usage conditions of Cloud Navigation are not met
- Vehicles without the My Settings: The usage conditions of Dynamic Navigation are not met or it is not enabled
- Communication is not possible with the server (poor communication environment, call center congestion, etc.)

- The route is being searched for again
- Route guidance has been started using an Apple CarPlay or Android Auto map or navigation app
- A certain amount of time has not elapsed since the fuel cell system was started
- The fuel cell system has not been started for a long time

If the message remains displayed even though the normal operating conditions are met, the system may be malfunctioning. Have the vehicle inspected by your Toyota dealer.

System components



A Instrument cluster

B Head-up display

C Vehicle-to-vehicle distance switch

D "+RES" switch

E Advanced Drive main switch

F Cancel switch

G "-SET" switch

Advanced driving support use conditions

This system can be operated when in an area where use is possible and all of the operating conditions are met.

The Advanced Drive indicator ( ) is illuminated and "Advanced Drive READY" is displayed when the system can be operated.

■ Areas where use is possible

Highways or expressways where high definition map data is available

For details, refer to the following URL.

http://www.toyota.com/mirai/teammate

■ Operating conditions

- High definition map data is being received correctly.
- The vehicle position can be identified.
- White lane lines are detected on both the left and right side
- The D shift position is selected.
- The steering wheel is being held.
- The driver's seat belt is fastened.
- The driver's door is closed.

■ **Locations which the system cannot be used even though they are within an area where use is possible**

In the following locations, even though they are in within an area where use is possible, the advanced driving support may not be able to be used.

- Roads not included in the map data
- Roads which do not match the map data (number of lanes has changed, extensions to the road, etc.)
- Certain highways or expressways, or certain segments of highways or expressways
- Intersections
- Immediately behind a stop line
- Toll booths
- Immediately before roads with extremely wide or narrow lanes
- Roads with extremely wide or narrow lanes
- Roads without lane lines
- Rest areas/service areas
- Immediately before a merging lane
- Merging lanes
- Immediately before a lane reduction
- Areas which, according to traffic information, are closed
- Steep grades
- Sharp curves
- Long slopes

■ **Displays when the system can be operated**

Depending on the operating condition of other systems, "Available" or "Advanced Drive Available" may be displayed instead of "Advanced Drive READY".

Operating the advanced driving support (controlled driving)

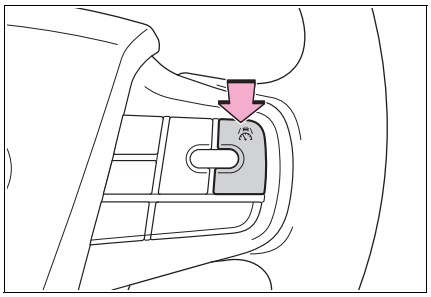
Press the Advanced Drive main switch.

If the use conditions are met, the system will be enabled and controlled driving will start. When the switch is pressed, the current vehicle speed will become the set vehicle speed and be displayed.

If the use conditions are not met, the LTA (Lane Tracing Assist) and dynamic radar cruise control with full-speed range will operate.

Use conditions: →P.26

Situations in which the advanced driving support will not operate: →P.28



■ **Other operating methods**

- Controlled driving can be started by pressing the "-SET" switch when "Advanced Drive READY" is displayed.
- If advanced driving support operation becomes possible while the dynamic radar cruise control with full-speed range and LTA (Lane Tracing Assist) are operating, a suggestion display asking if you would like to change to advanced driving support operation will be displayed.

Using the meter control switches, select “Yes” to start controlled driving.

- When using the dynamic radar cruise control with full-speed range with LTA (Lane Tracing Assist) off, if you want to change to advanced driving support, turn LTA on. If advanced driving support operation becomes possible, a suggestion display asking if you would like to change to advanced driving support operation will be displayed. Using the meter control switches, select “Yes” to start controlled driving.
- If controlled driving has been cancelled (→P.45), it can be restarted at the vehicle speed set prior to the cancellation by pressing the “+RES” switch.

■ Time before the system starts operating

Depending on the conditions and location when a switch to activate the advanced driving support is pressed, it may take time before the system starts operating.

■ Situations in which the advanced driving support may not operate

In situations such as the following, the advanced driving support may not operate:

- When the vehicle has not been driven for a certain amount of time after the fuel cell system was started
- When the system determines that the driver is not paying attention to the road or their eyes are closed
- When the driver’s face cannot be detected or the system determines that the driver has poor driving posture
- When the vehicle speed is higher than approximately 85 mph (136 km/h)
- When Drive-Start Control is operating
- When the wipers are operating at high speed
- When the PCS (Pre-Collision System) is operating
- When the following functions of the LTA (Lane Tracing Assist) are operating
  - Steering assist function
  - Lane change assist function
- When the vehicle is being decelerated by the dynamic radar cruise control with full-speed range while in vehicle-to-vehicle distance control mode
- When the Parking Support Brake function (static objects) is operating
- When the TRAC, VSC, or ABS is operating
- When driving on a curve
- When driving on a slope
- When the vehicle is moving backwards
- When driving between lanes
- When a vehicle cuts in front of your vehicle
- When the steering wheel is being operated
- When the brake pedal is being depressed
- When “ Advanced Drive” is set to “OFF” in of the multi-information display. (→P.55)
- When snow mode has been turned on
- When the PCS (Pre-Collision System) has been turned off
- When TRAC or VSC has been turned off
- When the vehicle is stopped on a slope
- When the parking brake is engaged

- After a terminal of the 12-volt battery has been disconnected and reconnected and the vehicle has not been driven for a certain amount of time

If the system does not operate even though the operating conditions are met, the system may be malfunctioning. Have the vehicle inspected by your Toyota dealer.

■ Situations in which the advanced driving support will urge the driver to hold the steering wheel

While the advanced driving support is operating, a buzzer will sound and a message urging the driver to hold the steering wheel will be displayed periodically.

Also, in situations such as the following, a buzzer may sound and a message urging the driver to hold the steering wheel may be displayed.

If the steering wheel is held, controlled driving will continue. (If the system does not respond when the steering wheel is held, grip the steering wheel again.)

- When the accelerator pedal is operated during controlled driving
- When the vehicle speed exceeds the speed limit stored in the map data by a certain amount
- When the lane change assist is about to operate
- When the sensor automatic cleaning function (→P.19) operates
- When the warning function of the driver monitor (→P.39) is operating
- When the driver monitor camera cannot detect the driver's face (→P.39)
- When attempting to use the advanced driving support after the stop phase of the EDSS (Emergency Driving Stop System) (→P.54) has been cancelled
- When the tire pressure warning light is illuminated
- When lane closure information is received
- When object in the road or inclement weather information is received
- When a traffic cone, cushion drum, or delineator post is detected
- When a sensor cannot detect the area around the vehicle due to inclement weather or a bright light being shined into the sensor
- When the system determines that the steering wheel needs to be held in situations other than above

■ Advanced driving support control may be restricted when

In the following situations, some functions may be restricted:

- When lane closure information is received
- When a sensor cannot detect the area around the vehicle due to inclement weather or a bright light being shined into the sensor

■ Advanced driving support control may automatically be cancelled when

- In the following situations, the system may determine that the driver needs to drive the vehicle manually and will inform the driver through voice guidance[*1], a buzzer[*2], and display.

Drive the vehicle manually.

If a driving operations has not been taken, a buzzer will sound, the seat belt will vibrate[*3] and a message will be displayed urging the driver to take control of the vehicle.

As controlled driving will be cancelled, immediately drive the vehicle manually.

- When approaching the end of an area where use is possible

(→P.26, 27)
- When approaching a diverging junction
- When approaching an exit lane
- When an exit lane is entered
- When the shoulder of the road has been driven on
- When the wipers are operating at high speed
- When the LTA (Lane Tracing Assist) switch has been pressed
- When certain traffic regulation information is received
- When the system determines that the driver needs to drive the vehicle manually in situations other than above

*1: Can be enabled/disabled. For details, refer to the "MULTIMEDIA OWNER'S MANUAL <NAVIGATION AND MULTIMEDIA SYSTEM OWNER'S MANUAL>".

*2: Vehicles without the My Settings: Linked to the volume setting of the navigation system.

*3: The seat belt vibration function can be enabled/disabled on ⚙ of the multi-information display. (→P.55)

● In the following situations, the system may determine that the driver needs to drive the vehicle manually and will sound a buzzer, vibrate the seat belt*, and display a message urging the driver to take control of the vehicle.

As controlled driving will be cancelled, immediately drive the vehicle manually.
- When the accelerator pedal is depressed and the vehicle speed has exceeded approximately 85 mph (136 km/h)
- When the power switch has been turned off
- When snow mode has been turned on
- When the parking brake has been engaged
- When the PCS (Pre-Collision System) has been turned off
- When TRAC or VSC has been turned off
- When the driver's seat belt has been unfastened
- When the driver's door has been opened
- When the vehicle speed is excessively high when entering a curve
- When the steering wheel is operated to attempt to cross a lane line without using the turn signal lights
- When approaching a vehicle on the lane to which your vehicle is changing
- When driving in an area without white lane lines
- When Drive-Start Control has operated
- When the PCS (Pre-Collision System) has operated
- When the Parking Support Brake function (static objects) has operated
- When the TRAC, VSC or ABS has operated
- When acceleration has been restricted by operation of another system
- When a vehicle cuts in front of your vehicle
- When a vehicle approaches while the lane change assist is operating
- When the emergency support brake (→P.46) has operated
- When braking performance is insufficient (the brake parts are extremely hot, cold, wet, etc.)
- When driving on a slick road surface
- When there are deep ruts in the road
- When driving on a slope
- When driving on a road which is sloped to the left or right
- When "Advanced Drive" has been changed to "OFF" in ⚙ on the multi-information display. (→P.55)

- When a sensor cannot detect the area around the vehicle due to inclement weather or a bright light being shined into the sensor
- When the system determines that the driver needs to drive the vehicle manually in situations other than above

*: The seat belt vibration function can be enabled/disabled on ⚙ of the multi-information display. (→P.55)

- If the steering wheel is operated heavily or suddenly, the advanced driving support operation will be cancelled.
- If the vehicle is stopped by system control for approximately 3 minutes or more, advanced driving support operation will be cancelled, and the parking brake will automatically be engaged.

■ Driving location within your lane

When driving next to another vehicle, the vehicle may drive with a lateral interval.

■ When the vehicle is in a blind spot of another vehicle

When the system determines that the vehicle is in a blind spot of a vehicle driving in an adjacent lane, the vehicle may decelerate.

■ When the vehicle is close to another vehicle

In situations such as the following, a buzzer will sound and a message will be displayed to urge the driver to be careful.

- When approaching a preceding vehicle
- When a vehicle approaches your vehicle while driving near a merging lane

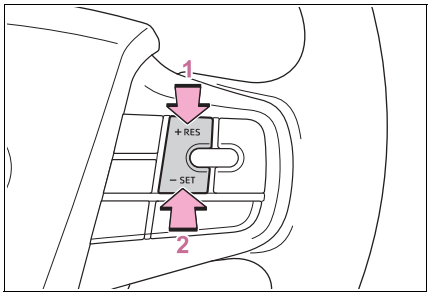
■ Special lanes

- The advanced driving support will drive the vehicle in HOV (High-Occupancy Vehicle) lanes without determining if doing so is allowable. Use this system in accordance with applicable federal and state laws.
- The advanced driving support will drive the vehicle in express lanes without determining if doing so is allowable. It is the driver's responsibility to judge if the express lane should be used.
- The advanced driving support cannot detect if a lane is a reversible lane. According to the surrounding conditions, manually drive the vehicle as necessary.

Adjusting the set vehicle speed

▶ Adjusting the set vehicle speed using the switches

Press the "+RES" or "-SET" switch until the desired speed is displayed.



1 Increase set vehicle speed

2 Decrease set vehicle speed

Fine adjustment: Press the switch. (The set vehicle speed changes by 1 mph [1.6 km/h]*1 or 1 km/h [0.6 mph]*2 each time the switch is pressed.)

Large adjustment: Press and hold

the switch until the desired set vehicle speed is reached. (The set vehicle speed changes in 1 mph [1.6 km/h][*1] or 1 km/h [0.6 mph][*2] increments.)

[*1]: When the set vehicle speed is shown in “MPH”

[*2]: When the set vehicle speed is shown in “km/h”

▶ Increasing the set vehicle speed using the accelerator pedal

1 Depress the accelerator pedal to accelerate the vehicle to the desired vehicle speed.

2 Press the “-SET” switch.

WARNING

■For safe use

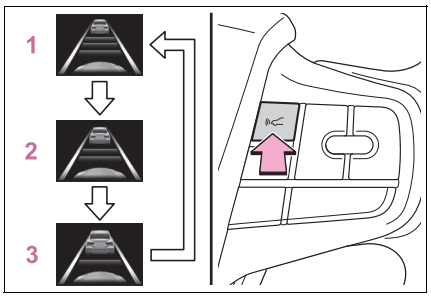
Set the speed appropriately according to the speed limit, traffic flow, road conditions, weather conditions, etc. The driver is responsible for confirming the set vehicle speed.

Changing the vehicle-to-vehicle distance

Press the vehicle-to-vehicle distance switch.

Pressing the switch changes the setting as follows.

Select a distance which is appropriate for the surrounding conditions.



1 Long

2 Medium

3 Short

■Approximate vehicle-to-vehicle distances

The actual distance of a selected vehicle-to-vehicle distance will vary depending on the vehicle speed.

When driving at 50 mph (80 km/h), the approximate vehicle-to-vehicle distance for each setting is as follows:

- Long: Approx. 160 ft. (50 m)
- Medium: Approx. 130 ft. (40 m)
- Short: Approx. 100 ft. (30 m)

If the vehicle speed is lower, the vehicle-to-vehicle distance will be shorter. If the vehicle speed is higher, the vehicle-to-vehicle distance will be longer.

■When driving down a slope

The vehicle-to-vehicle distance may become short.

Driving operations during controlled driving

The driver can perform certain operations even when the vehicle is being driven by advanced driving support controlled driving.

■ Accelerator pedal

As with normal driving, acceleration can be performed by depressing the accelerator pedal. The vehicle will return to the set vehicle speed when the accelerator pedal is released.

Hold the steering wheel when operating the accelerator pedal and until the vehicle returns to the set vehicle speed.

■ Brake pedal

As with normal driving, deceleration can be performed by depressing the brake pedal. However, controlled driving will be cancelled.

■ Steering wheel

- As with normal driving, the steering wheel can be operated.

If the steering wheel is operated more than a certain amount, controlled driving will be cancelled.

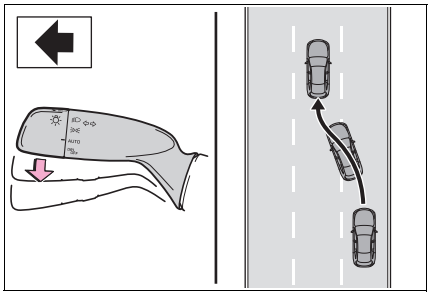
- The steering wheel can be operated to enter a rest area/service area.

When approaching the rest area/service area, controlled driving may be cancelled.

■ Turn signal lever

- If the turn signal lever is held in the lane change position for approximately 1 second or more and according to the traffic conditions, the lane can be changed into, the system will change lanes. (Lane change assist)

It is necessary for the driver to hold the steering wheel and check the safety of their surroundings when the lane change assist operates.



- If a lane change suggestion or passing suggestion is displayed and the turn signal lever is held in the lane change position toward an adjacent lane, the lane change assist will operate. →P.40

■ Steering wheel operation

When lanes are changed by operating the steering wheel, the vehicle may accelerate or decelerate depending on the situation or location.

■ Turn signal lever operation

- In situations such as the following, even if the turn signal lever is operated, the lane change assist may not operate:
  - When the vehicle speed is approximately 30 mph (49 km/h) or less.
  - When the system determines that the driver is not checking their surroundings
  - When the system determines that the driver has poor driving posture
  - When changing lanes may cause the vehicle to deviate from the route to the destination

- When the lane is wide
- When attempting to change lanes toward a solid white line
- When there are a line of vehicles traveling in the lane to which your vehicle is changing
- When lane closure information is received
- When a traffic cone, cushion drum, or delineator post is detected
- When another lane merges into the lane in the same traveling direction as your vehicle
- When driving in an area where the lane cannot be changed
- When driving around a curve
- When driving in a HOV (High-Occupancy Vehicle) lane
- When attempting to change lanes toward a lane that is ending
- When attempting to change lanes into a lane for a diverging junction
- When attempting to change lanes into a HOV (High-Occupancy Vehicle) lane

● When the lane change assist is operating, the vehicle may accelerate or decelerate depending on the situation or location.

● In situations such as the following, lane change assist operation may be cancelled. (In some situations, the vehicle may return to the previous lane.)

- When the system determines that the driver is not checking their surroundings
- When the system determines that the driver has poor driving posture
- When the white lane line in the direction of a lane change changes to a solid line
- When lane closure information is received
- When another lane merges into the lane in the same traveling direction as your vehicle
- When a vehicle approaches your vehicle*
- When the vehicle speed is low
- When, even after driving for a while, it is not possible to change lanes due to traffic conditions
- When the system determines that the lane change assist can no longer be operated due to surrounding conditions
- When approaching a curve
- When the lane that is attempted to change into ends
- When the steering wheel is operated in the opposite direction to a lane change
- When the turn signal lever is operated in the opposite direction to a lane change

*: In some situations, such as when another vehicle changes lanes at the same time, lane change assist operation may not be cancelled.

WARNING

■ For safe use

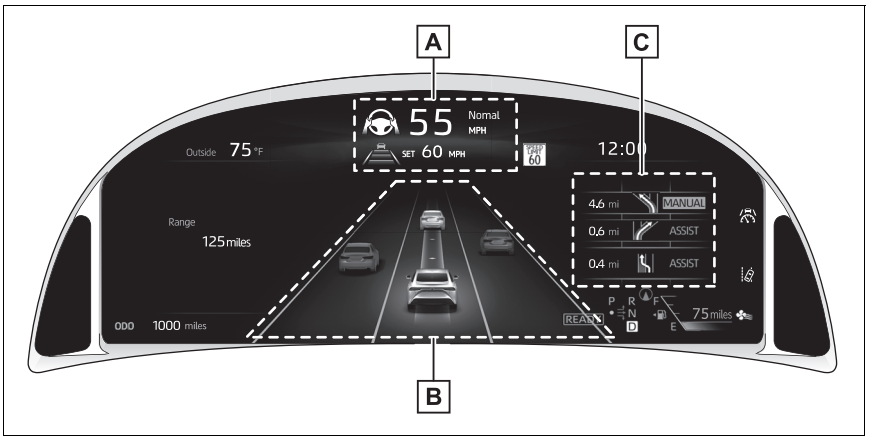
Driving safely is the sole responsibility of the driver. Even if the lane is being changed by system control, it is necessary for the driver to pay attention to their surroundings.

Controlled driving display

When controlled driving starts, the displays of the instrument cluster and head-up display are changed, and various information is displayed, such as the vehicle condition, surrounding conditions, and driving plan.

■ Display layout

▶ Instrument cluster



This illustration is for explanation only and may differ from the actual vehicle.

A Vehicle status display area

Displays the following items:

- Speedometer
- Set vehicle speed
- Vehicle-to-vehicle distance
- Hold the steering wheel display (→P.38)

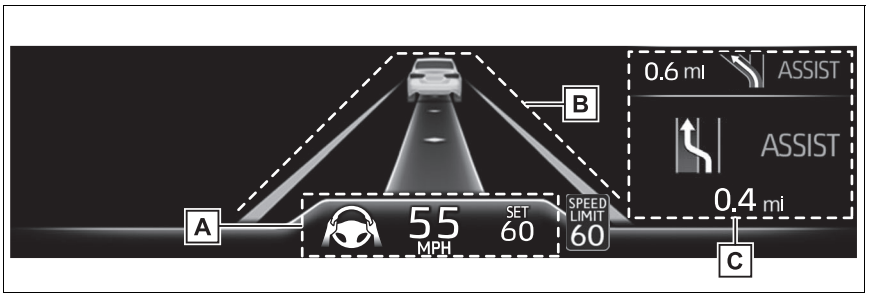
B Vehicle/surrounding condition display area

Displays the condition of your current lane and adjacent lanes and the movement of the vehicle.

C Driving plan display area

Displays upcoming lane changes, etc.

▶ Head-up display



This illustration is for explanation only and may differ from the actual vehicle.

A Vehicle status display area

Displays the following items:
- Speedometer
- Set vehicle speed
- Hold the steering wheel display (→P.38)

B Vehicle/surrounding condition display area

Displays the condition of your current lane and the movement of the vehicle.

When the lane change assist is operating, the condition of the adjacent lane will also be displayed.

C Driving plan display area

Displays upcoming lane changes, etc.

■ Indicators

Indicators are used to inform of the operating state of each control.

	The advanced driving support is operating
	The lane centering function is operating

■ Pop-up displays

In certain situations, pop-up displays with various information, such as vehicle condition, operation advice, and warnings will be displayed.

■ Icons

Depending on the situation, the following icons will be displayed in the respective areas:

▶ Vehicle/surrounding condition display area

Icon	Meaning
 	The lane change assist is operating
 	Speed reduction control is operating
 (amber)	Vehicle which requires caution (vehicles which may merge into your lane, cut in front of your vehicle, etc.)

▶ Driving plan display area

Icon	Meaning
	A system controlled lane change is approaching
	A lane change that requires driver operation is approaching
	A driving operation that requires driver operation is approaching

■ Controlled driving state

The state of controlled driving and the timing of driving operations are indicated through the display color, icons, etc.

Display color	Icon	Condition
Blue	—	During controlled driving (It is possible to take your hands off of the steering wheel)
Grey	 (white)	During controlled driving (Holding the steering wheel is necessary)
Amber	 (amber)	Immediately before controlled driving is canceled (Driving operations by the driver are necessary)

■ Vehicle/surrounding condition display area

- When the vehicle speed is low or certain functions are restricted, adjacent lanes may not be displayed.
- When traffic cones, cushion drums, or delineator posts installed in the adjacent lane are detected, a traffic cone icon will be displayed.

■ Driving plan display area

Depending on the shape of road or surrounding conditions, the driving plan icon may change.

⚠ WARNING

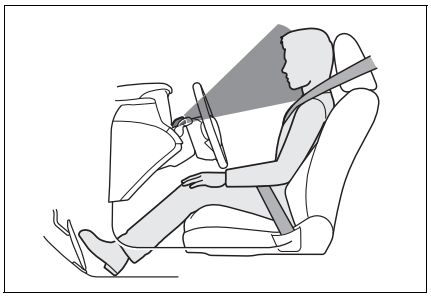
■ For safe use

Advanced Drive is not an automated driving system. Do not overly rely on this system. It is the driver's responsibility to always pay careful attention to their surroundings and be ready to take over driving at any moment.

Driver monitor

During controlled driving, the driver monitor camera detects the position and direction the driver is facing, and whether their eyes are opened or closed. Through this, the system determines if the driver is checking their surroundings and if the driver can perform driving operations.

Also, the steering wheel sensor detects if the steering wheel is being held.



■ Warning function

In situations such as the following, a buzzer will sound once and a message will be displayed to warn the driver.

- When the system determines that the driver is not paying attention to the road or their eyes are closed
- When the driver's face cannot be detected or the system determines that the driver has poor driving posture
- When the steering wheel is not held when the system urges the driver to do so

If corrective action is not taken in a certain amount of time, a buzzer will sound intermittently and a message will be displayed to warn the driver.

If corrective action is not taken and driving operations, such as holding the steering wheel, are not performed, the EDSS (Emergency Driving Stop System) may operate. (→P.51)

■ Drowsiness detection function

If Advanced Drive determines that the driver is drowsy, this function will display a message and vibrate the seat belt to urge the driver to take a break.

The drowsiness detection function can be enabled/disabled on ⚙ of the multi-information display. (→P.51)

■ Situations in which the driver monitor may not operate properly

In situations such as the following, the driver monitor camera may not be able to detect the driver's face, and the function may not operate properly:

- When the inside of the vehicle is hot, such as after the vehicle has been parked in the sun
- When a very bright light, such as the sun or the headlights of following vehicle, shines onto the driver monitor camera
- When the brightness inside the vehicle changes frequently due to the shadows of surrounding struc-

tures, etc.

- When a very bright light, such as the sun or the headlights of an oncoming vehicle, is shining onto the driver's face
- When light is being reflected from the lenses of eyeglasses or sunglasses
- When there are multiple faces in the detection range of the driver monitor camera, such as when a front or rear passenger is leaning toward the driver's seat
- When the driver's face is outside of the detection range of the driver monitor camera, such as when leaned forward or when their head is outside of the window
- When the driver monitor camera is being blocked by the steering wheel, a hand holding the steering wheel, an arm, etc.
- When the driver is wearing a hat low over their face
- When the driver is wearing an eyepatch
- When the driver is wearing eyeglasses
- When the driver is wearing sunglasses that do not easily transmit infrared
- When the driver is wearing contact lenses
- When the driver is wearing a face mask
- When the driver's is laughing or their eyes are only slightly open
- When the driver's eyes, nose, mouth, or shape of their face is blocked
- When the driver is wearing makeup which makes it difficult to detect their eyes, nose, mouth, or shape of their face
- When the driver's eyes are blocked by the frame of eyeglasses, sunglasses, hair, etc.
- When there is a device inside the vehicle that radiates near infrared rays, such as a non-genuine driver monitoring system.

■ Warning function/drowsiness detection function

These functions may not operate when the vehicle speed is low.

⚠ WARNING

■ For safe use

- The driver monitor is not designed to prevent the driver from driving carelessly or having a poor driving posture. Pay careful attention to the surrounding conditions in order to ensure safe driving.
- The driver monitor cannot reduce drowsiness. If you feel unable to concentrate or drowsy, take a break and sleep as necessary in order to ensure safe driving.

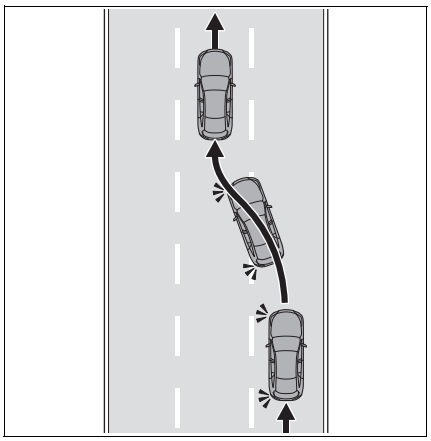
Changing lanes

During controlled driving, in situations such as the following, the lane change assist will operate.

It is necessary for the driver to hold the steering wheel and check the safety of their surroundings when the lane change assist operates.

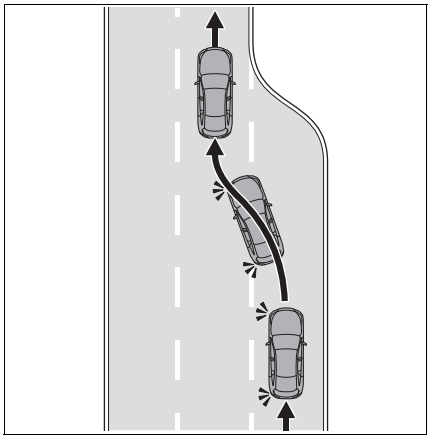
- When linked to the navigation system (→P.25), the system will change lanes as necessary.

If the lane change assist cannot operate, such as if there is a another vehicle next to your vehicle, a message will be displayed and the driver must operate the vehicle to change lanes when possible.



- If the current lane is ending, the system will change lanes.

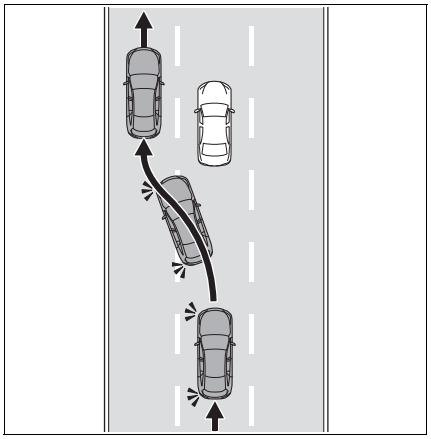
If the lane change assist cannot operate, such as if there is another vehicle next to your vehicle, a message will be displayed and the driver must operate the vehicle to change lanes when possible.



- If a preceding vehicle is traveling at a speed slower than the set vehicle speed, a passing suggestion message may be displayed.

If “Yes” is selected using the meter control switches and, according to the traffic conditions, the lane can be changed into, the system will change to the adjacent lane.

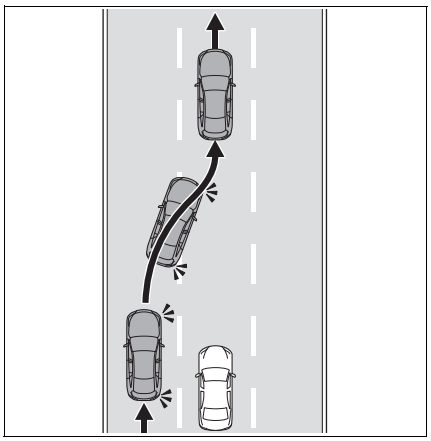
Operation can also be performed by holding the turn signal lever in the lane change position toward the lane.



- If the system determines that your vehicle can return to the previous lane after passing, a lane change suggestion message will be displayed.

If “Yes” is selected using the meter control switches and, according to the traffic conditions, the lane can be changed into, the system will change to the previous lane.

Operation can also be performed by holding the turn signal lever in the lane change position toward the lane.

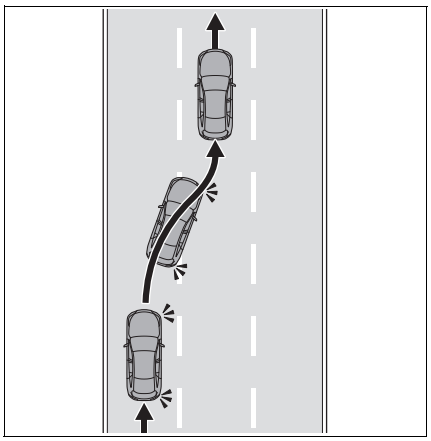


Display of the passing suggestion message can be enabled/disabled on ⚙ of the multi-information display. (→P.55)

- When linked to the navigation system (→P.25), if the vehicle is driven in the passing lane for some time, a lane change suggestion message will be displayed.

If “Yes” is selected using the meter control switches and, according to the traffic conditions, the lane can be changed into, the system will change to the adjacent lane.

Operation can also be performed by holding the turn signal lever in the lane change position toward the lane.



■ Vehicle speed during the lane change assist

Depending on the situation or location, the vehicle may accelerate or decelerate.

■ The lane change assist may be cancelled when

In situations such as the following, lane change assist operation may be cancelled.
(In some situations, the vehicle may return to the previous lane.)

- When the system determines that the driver is not checking their surroundings
- When the system determines that the driver has poor driving posture
- When the lane widens
- When the white lane line in the direction of a lane change changes to a solid line
- When lane closure information is received
- When another lane merges into the lane in the same traveling direction as your vehicle
- When a vehicle approaches your vehicle*
- When the vehicle speed is low
- When, even after driving for a while, it is not possible to change

lanes due to traffic conditions

- When the system determines that the lane change assist can no longer be operated due to surrounding conditions
- When approaching a sharp curve
- When the steering wheel is operated in the opposite direction to a lane change
- When the turn signal lever is operated in the opposite direction to a lane change

*: In some situations, such as when another vehicle changes lanes at the same time, lane change assist operation may not be cancelled.

■ Passing suggestion message

In situations such as the following, the passing suggestion message will not be displayed:

- When changing lanes may cause the vehicle to deviate from the route to the destination
- When driving in an area where passing is prohibited
- When the turn signal lights are flashing

⚠ WARNING

■ For safe use

Driving safely is the sole responsibility of the driver. Even if the lane is being changed by system control, it is necessary for the driver to pay attention to their surroundings.

When a preceding vehicle stops

If a preceding vehicle stops, due to traffic, etc., the vehicle will also stop. (Controlled stop)

If the system determines that the preceding vehicle has started off, a buzzer will sound and a message will be displayed to inform the driver, and then the vehicle will start following the preceding vehicle. (Controlled start)

Your vehicle will also start off if "+RES" switch is pressed or the accelerator pedal is depressed.

■ Controlled stop

If the vehicle is stopped by system control for approximately 3 minutes or more, the parking brake will automatically be engaged and advanced driving support operation will be cancelled.

■ Controlled start operating conditions

This control operates when all of the following conditions are met:

- A preceding vehicle exists and the system can detect it.
- No other vehicle is cutting in between your vehicle and the preceding vehicle.
- The preceding vehicle has not changed since the controlled stop
- The intuitive parking assist does not detect any static objects in front of the vehicle
- The driver monitor has determined that the driver is looking forward. (→P.39)
- The steering wheel is not being operated.
- The brake pedal is not depressed.

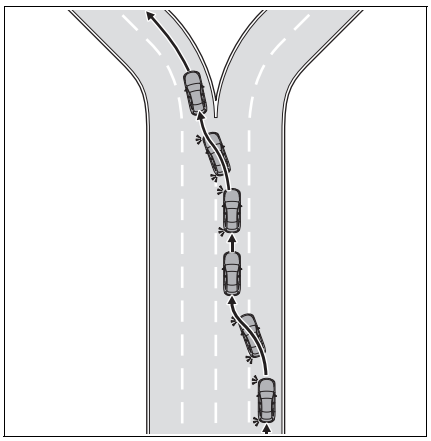
When approaching a diverging junction

If the vehicle approaches a diverging junction during controlled driving, it will proceed as follows:

- When linked to the navigation system (→P.25), if the vehicle approaches a diverging junction, if necessary, the lane change assist will operate so that the vehicle can continue toward the destination.

It is necessary for the driver to hold the steering wheel and check the safety of their surroundings when the lane change assist operates.

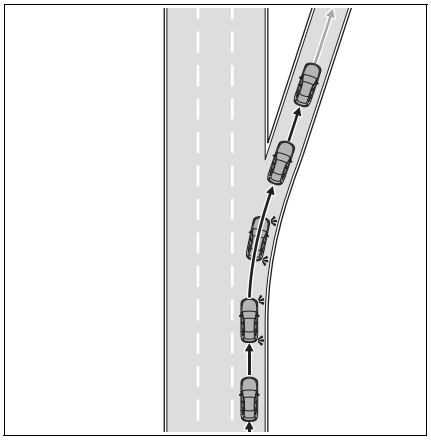
If the lane change assist cannot operate, such as if the adjacent lane is congested, a message will be displayed and the driver must operate the vehicle to change lanes when possible.



- When the navigation system has not been linked, the vehicle will continue following the current lane.
- When linked to the navigation system (→P.25), the lane change assist will operate toward an exit lane as necessary.

It is necessary for the driver to hold the steering wheel and check the safety of their surroundings when the lane change assist operates.

Depending on the situation or location, lane change assist may not operate and the driver may be urged to take control of the vehicle immediately before an exit lane. (→P.29)



Vehicle speed during the lane change assist

Depending on the situation or location, the vehicle may accelerate or decelerate.

The lane change assist may be cancelled when

In situations such as the following, lane change assist operation may be cancelled.
(In some situations, the vehicle may return to the previous lane.)

- When the system determines that the driver is not checking their surroundings
- When the system determines that the driver has poor driving posture
- When the white lane line in the direction of a lane change changes to a solid line
- When lane closure information is received
- When a vehicle approaches your vehicle*
- When the vehicle speed is low
- When near a diverging junction
- When, even after driving for a while, it is not possible to change lanes due to traffic conditions
- When the system determines that the lane change assist can no longer be operated due to surrounding conditions
- When the steering wheel is operated in the opposite direction to a lane change
- When the turn signal lever is operated in the opposite direction to a lane change

*: In some situations, such as when another vehicle changes lanes at the same time, lane change assist operation may not be cancelled.

WARNING

■For safe use

Driving safely is the sole responsibility of the driver. Even if the lane is being changed by system control, it is necessary for the driver to pay attention to their surroundings.

Cancelling controlled driving

While the advanced driving support is operating, if any of the following are performed, controlled driving will be cancelled:

- The Advanced Drive main switch is pressed.
- The cancel switch is pressed.
- The shift position is changed to a position other than D.
- The brake pedal is depressed while the vehicle is moving.

Emergency support brake

While the advanced driving support is operating, if the system determines that the possibility of a rear-end collision with a preceding vehicle is high, a warning urging the driver to take evasive maneuvers is output and the brakes are applied to help avoid the collision or help reduce the impact of the collision.

Function description

If the system determines that the possibility of a collision is high, a buzzer will sound, the seat belt will vibrate, and message urging the driver to brake will be displayed, and then the brakes will be operated.

After the vehicle has been stopped, it will remain stopped by system control.

■ Operating conditions

This function can be operated when all of the following conditions are met:

- The advanced driving support is operating normally. (→P.26)
- The vehicle is being driven by controlled driving.
- The vehicle speed is between approximately 3 mph (5 km/h) and 85 mph (136 km/h).
- The relative speed between your vehicle and the detected vehicle ahead is 3 mph (5 km/h) or more.

However, in situations such as the following, this function may not operate or operation may be delayed:

- When a message urging the driver to hold the steering wheel is displayed (→P.29)
- When a message urging the driver to take control of the vehicle is displayed (→P.29)
- When the accelerator pedal is being depressed
- When the brake pedal is being depressed
- When the steering wheel is being operated

Also, this function will not operate in the following situations:

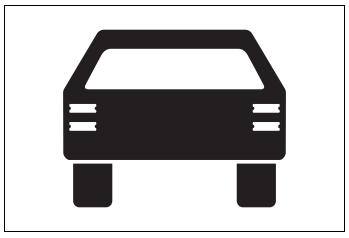
- When the vehicle has not been driven a certain amount after a terminal of the 12-volt battery has been disconnected and reconnected
- When the VSC OFF indicator is illuminated

■ Detectable objects

The system detects an object as a vehicle (preceding or parked vehicle) based on its size, shape, and movement.

Depending on the ambient brightness, movement, posture and direction of an object, it may not be detected and the system may not operate properly. (→P.48)

The system detects shapes, such as the following, as a vehicle.



■ **Cancelling emergency support brake operation**

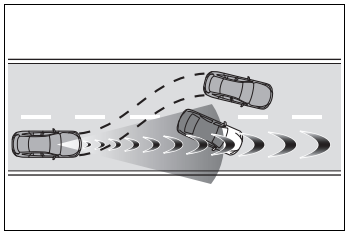
While this function is operating, if any of the following are performed, operation may be cancelled:

- The accelerator pedal is strongly depressed
- The steering wheel is operated heavily or suddenly

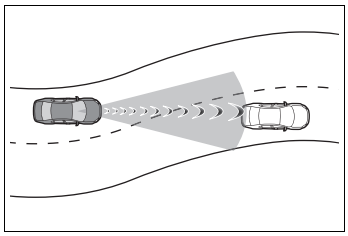
■ **Situations in which the emergency support brake may operate even though the possibility of a collision is not high**

In certain situations, such as the following, the system may determine that the possibility of a collision is high and operate:

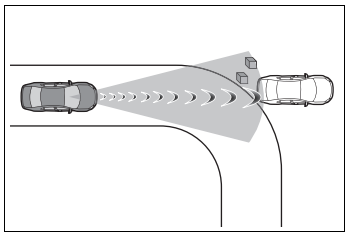
- When passing a detectable object
- When changing lanes and overtaking a detectable object
- When passing a detectable object that is changing lanes



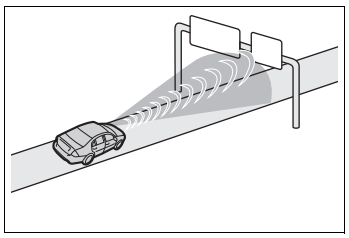
- When changing lanes or driving on a winding road and there is a detectable object in an adjacent lane or on the roadside



- When rapidly closing on a detectable object
- When approaching a detectable object or other object on the roadside, such as guardrails, utility poles, trees, walls, snowbanks, etc.
- When there is a detectable object or other object by the roadside at the entrance of a curve



- When there are patterns or a painting ahead of the vehicle that may be mistaken for a detectable object
- When water, snow, dust, etc. is thrown up in front of the vehicle
- When the vehicle posture is continuously changing, such as if the road surface is uneven or undulating
- When driving on a road surrounded by a structure, such as in a tunnel or on an iron bridge
- When there is a metal object (manhole cover, steel plate, etc.), steps, or a protrusion in front of your vehicle
- When passing through a location with a structure above the road (traffic sign, billboard, etc.)



- When approaching an electric toll gate barrier, or other barrier that opens and closes
- When driving through steam or smoke
- When driving near an object that reflects radio waves, such as a

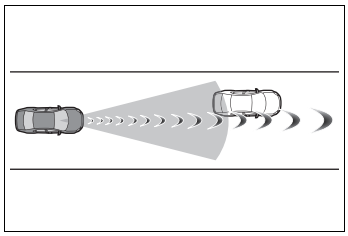
large truck or guardrail

- When driving near a TV tower, broadcasting station, electric power plant, airport, radar equipped vehicles, etc., or other location where strong radio waves or electrical noise may be present

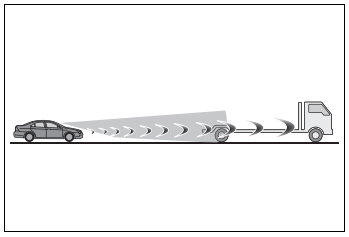
Situations in which the emergency support brake may not operate properly

- In some situations, such as the following, a detectable object may not be detected by the sensors, and this function may not operate properly:

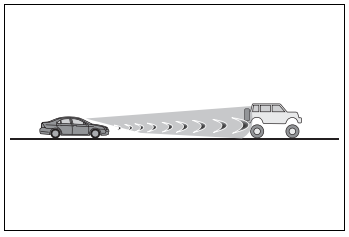
• When a detectable object is approaching your vehicle
• When your vehicle or a detectable object is wandering
• If a detectable object makes an abrupt maneuver (such as sudden swerving, acceleration or deceleration)
• When suddenly approaching a detectable object
• When a detectable object is not directly in front of your vehicle



• When the detectable object is near a wall, fence, guardrail, manhole cover, steel plate on the road surface, or another vehicle
• When there is a structure above a detectable object
• When part of a detectable object is hidden by another object (guardrail, etc.)
• When multiple detectable objects are overlapping
• When a bright light, such as the sun, is reflecting off of the detectable object
• When the detectable object is white and looks extremely bright
• When the color or brightness of the detectable object causes it to blend in with its surroundings
• When a detectable object cuts in front of or emerges from beside a vehicle
• When water, snow, dust, etc. is thrown up in front of the vehicle
• When a very bright light in front of the vehicle, such as the sun or the headlights of an oncoming vehicle, shines directly into a camera or sensor
• When the headlights are not illuminated while driving at night or when in a tunnel
• When approaching the side or front of a detectable object
• When a vehicle ahead is a motorcycle
• If a detectable object is narrow, such as a small mobility vehicle
• If a detectable object has a small rear end, such as an unloaded truck
• If a detectable object has a low rear end, such as a low bed trailer

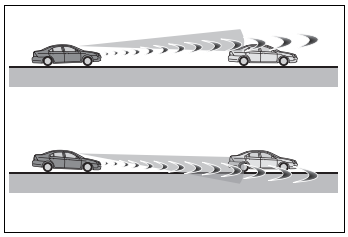


• If a detectable object has extremely high ground clearance



• If a detectable object is carrying a load which protrudes from its cargo area
• If a detectable object is irregularly shaped, such as a sidecar
• When driving in inclement weather

(rain, fog, snow, sandstorm, etc.)
- When driving through steam or smoke
- When a detectable object blends in with the surrounding area, such as when it is dim (at dawn or dusk) or dark (at night or in a tunnel)
- When driving in a place where the surrounding brightness changes suddenly, such as at the entrance or exit of a tunnel
- When the vehicle has not been driven for a certain amount of time after the fuel cell system was started
- While driving around a curve and a few seconds after driving around a curve
- If your vehicle is skidding
- If the front of the vehicle is raised or lowered



- When the wheels are misaligned
- When a wiper blade is blocking a camera
- When driving at extremely high speeds
- When driving on a slope
- When a sensor is misaligned
- When the headlights are misaligned
- When a sensor is being cleaned and a few seconds after a sensor is cleaned
- When the reflectors on a detectable object are not visible or are dirty
- When the windshield is dirty
- If a detectable object is deformed (vehicles which have been in a collision, etc.)
- When a white lane line cannot be detected, such as when it is worn or dirty, or being obscured by shadow, fog, or rain

● In certain situations, such as the following, sufficient braking force may not be obtained, and the system may not operate properly:
- When braking performance is insufficient (the brake parts are extremely hot, cold, wet, etc.)
- When the vehicle has not been properly maintained (brake parts or tires are worn out, tire pressure is low, etc.).
- When driving on a slick road surface

■ Operation of other systems

When the emergency support brake operates, the PCS (Pre-Collision System)* may also operate.

*: For details, refer to the “PCS (Pre-Collision System)” in the “Toyota Teammate Advanced Drive OWNER’S MANUAL” included with the vehicle.

WARNING

■For safe use

●Driving safely is the sole responsibility of the driver. Do not overly rely on this system, and pay careful attention to the surrounding conditions in order to ensure safe driving.

- Never use the emergency support brake in place of normal braking operations. The emergency support brake cannot help avoid a collision or reduce the impact of a collision in every situation. Over-reliance on this system to drive the vehicle safely may lead to an accident resulting in death or serious injury.
- Although the emergency support brake is designed to help avoid a collision or help reduce the impact of a collision, its effectiveness may change according to various conditions. Therefore, it may not always be able to achieve the same level of performance.

Read the following items carefully. Do not overly rely on the emergency support brake and always drive carefully.

Situations in which the emergency support brake may operate even though the possibility of a collision is not high: →P.47

Situations in which the emergency support brake may not operate properly: →P.48

- Do not attempt to test the operation of the emergency support brake. Depending on the object used to test the system (such as a cardboard prop representing a detectable object, etc.) or situation, the emergency support brake may not operate properly, possibly leading to an accident.

●When the emergency support brake operates, a large amount of braking force will be generated.

●The emergency support brake may not operate if certain operations are performed by the driver. If the accelerator pedal is being depressed strongly or the steering wheel is being turned, the system may determine that the driver is taking evasive action and possibly prevent the emergency support brake from operating.

●While the emergency support brake is operating, if the accelerator pedal is depressed strongly or the steering wheel is turned, the system may determine that the driver is taking evasive action and collision damage avoidance support operation may be cancelled.

EDSS (Emergency Driving Stop System)

While the advanced driving support is operating, if the system determines there is something wrong with the driver, it will support deceleration and stopping of the vehicle to help avoid a collision or reduce the impact of a collision.

Function description

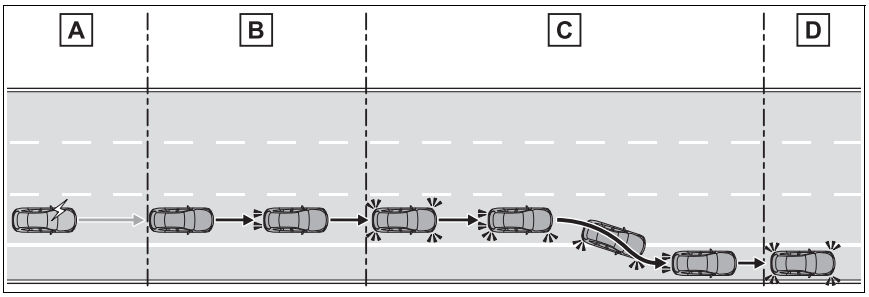
Operation of this function is separated into 3 phases.

In the warning phase, the system determines if something is wrong with the driver or not while outputting a warning and decelerating.

If the system determines there is something wrong with the driver, it will change to the control phase, decelerate and move the vehicle to the shoulder of the road*.

After the vehicle has been stopped on the shoulder of the road or within its lane, it will remain stopped.

*: If the vehicle is unable to reach the shoulder of the road, it will be stopped within its lane.



A Warning function of the driver monitor (→P.39)

B Warning phase (→P.52)

C Control phase (→P.53)

D Stop phase (→P.54)

■ Operating conditions

This function can be operated when all of the following conditions are met:

- The advanced driving support is operating normally. (→P.26)
- The vehicle is being driven.

WARNING

For safe use

Driving safely is the sole responsibility of the driver. Do not overly rely on this system, and pay careful attention to the surrounding conditions in order to ensure safe driving.

- The EDSS is designed to provide support in an emergency where it is difficult for the driver to continue driving. It is not designed to support driving while drowsy or in poor physical health, or inattentive driving.
- Although the EDSS is designed to provide support in stopping the vehicle to avoid or help reduce the impact of a collision, its effectiveness may change according to various conditions. Therefore, it may not always be able to achieve the same level of performance. Also, if the operating conditions are not met, this function will not operate.
- Do not attempt to test the operation of EDSS, as it may not operate properly, possibly leading to an accident.
- After the EDSS operates, if driving becomes possible again, immediately begin driving again or, if necessary, park the vehicle on the shoulder of the road and operate the emergency flashers to warn other drivers of your stopped vehicle.
- The EDSS detects the driver's condition based on manual driving operations. This function may operate if the driver intentionally does not operate the vehicle.

Also, if there is something wrong with the driver but they are leaning on the steering wheel, this function may determine that the steering wheel is being held and may not operate.

Warning phase

If the warning function of the driver monitor operates (→P.39) and corrective actions are not taken and driving operations such as holding the steering wheel, are not performed, the system will enter the warning phase.

A buzzer will sound intermittently, a message urging the driver to hold the steering wheel will be displayed, and the vehicle will maintain its lane position while gradually decelerating to approximately 30 mph (48 km/h).

If no manual driving operations are detected within a certain amount of time, the system will judge there is something wrong with the driver and change to the control phase (→P.53).

Warning phase operation

- While the brakes are being operated by the system, the stop lights may illuminate.

- When the vehicle has decelerated a certain amount, the emergency flashers may begin flashing automatically (except when the stop lights are illuminated). The emergency flashers can be turned off by pressing the emergency flasher switch 2 times.
- When the buzzer is sounding, the audio system will be muted.

■ Cancelling the warning phase

If any of the following are performed, the warning phase will be canceled:

- The steering wheel is held
- The accelerator pedal is depressed
- The brake pedal is depressed
- The LTA (Lane Tracing Assist) switch is pressed
- The Advanced Drive main switch is pressed
- The cancel switch is pressed

Control phase

A buzzer will sound in short intervals, the seat belt will vibrate, and a message informing the driver of the situation will be displayed.

When approaching a suitable road shoulder, the turn signal lights will blink and the vehicle will decelerate to approximately 6 mph (10 km/h) while moving toward the shoulder within the current lane.

After this, with the turn signal lights blinking, the vehicle will move to the shoulder of the road and the system will change to the stop phase (→P.54).

Depending on the conditions, the vehicle may stop within its lane instead of on the shoulder of the road.

Conditions which the vehicle will not move to the shoulder of the road: →P.53

■ Control phase operation

- During the control phase, the emergency flashers may flash to warn other drivers of the emergency.
- During the control phase, the vehicle will not accelerate the first time the accelerator pedal is depressed. If the accelerator pedal is depressed 2 or more times, the EDSS will be cancelled and acceleration will be possible.
- While the brakes are being operated by the system, the stop lights may illuminate.
- While the stop lights are illuminated or turn signal lights are blinking, the emergency flashers will not operate.
- The emergency flashers can be turned off by pressing the emergency flasher switch 2 times.
- When the buzzer is sounding, the audio system will be muted.

■ Conditions which the vehicle will not move to the shoulder of the road

In the following situations, the vehicle will not automatically move to the shoulder of the road, but will decelerate and stop within its lane:

- When there is no shoulder on the right side of the current lane
- When the system cannot find a suitable road shoulder
- When the system determines that an object is on the shoulder of the road

- When the system determines that an object is in the path of the vehicle
- When a vehicle is detected while moving toward the shoulder of the road
- When approaching the end of an area where use is possible (→P.26, 27)
- When approximately 3 minutes have elapsed since the control phase was entered
- When a vehicle cuts in front of your vehicle
- When the emergency support brake (→P.46) has operated
- When the brake pedal is being depressed
- When the cancel switch has been pressed
- When the turn signal lever is operated in the opposite direction to a lane change
- When the shift position has been changed to N

■ Cancelling the control phase

If any of the following are performed, the control phase will be canceled:

- The steering wheel is held
- The accelerator pedal is depressed 2 times or more
- The brake pedal is depressed 2 times or more
- The LTA (Lane Tracing Assist) switch is pressed
- The Advanced Drive main switch is pressed

■ When control phase has been entered

Even if the control phase is canceled, the advanced driving support temporarily cannot be used.

To enable use, turn the power switch off and then back to ON.

Stop phase

After the vehicle is stopped, a buzzer will sound in short intervals and the parking brake will be engaged automatically.

■ Stop phase operation

- The emergency flashers flash continuously to warn other drivers of the emergency.
- The emergency flashers can be turned off by pressing the emergency flasher switch 2 times.
- When the buzzer is sounding, the audio system will be muted.

■ Cancelling the stop phase

If any of the following are performed, the stop phase will be canceled:

- The LTA (Lane Tracing Assist) switch is pressed with the P shift position selected
- The Advanced Drive main switch is pressed with the P shift position selected
- After the P shift position is selected, the shift position is changed to any position other than P
- The power switch is turned off

■ When stop phase has been entered

Even if the stop phase is canceled, the advanced driving support temporarily cannot be used.

To enable use, turn the power switch off and then back to ON mode.

Also, it may be necessary to hold the steering wheel for a certain amount of time while the advanced driving support is operating.

Changing Settings of Advanced Drive

Settings of Advanced Drive functions can be changed on the multi-information display.

To change settings

1 Stop the vehicle in a safe place, engage the parking brake, and change the shift position to P.

2 Press the 〈 or 〉 meter control switch to select ⚙.

Perform this procedure with the fuel cell system operating.

3 Press the ∧ or ∨ meter control switch to select “Advanced Drive”.

4 Press the ∧ or ∨ meter control switch to select the setting to be changed.

5 According to the display, select the desired setting and then press OK.

■ Voice guidance setting

For details, refer to the “MULTIMEDIA OWNER’S MANUAL <NAVIGATION AND MULTIMEDIA SYSTEM OWNER’S MANUAL>”.

NOTICE

■ When changing settings

Ensure that the fuel cell system is operating, otherwise the 12-volt battery may become discharged.

Setting items

■ “Overtaking Settings” (→P.40)

The passing suggestion message can be enabled/disabled.

ON: Enabled

OFF: Disabled

■ “ Advanced Drive” (→P.13)

Advanced Drive can be enabled/disabled.

ON: Enabled

OFF: Disabled

■ “Drowsiness Alert” (→P.39)

The drowsiness detection function can be enabled/disabled.

ON: Enabled

OFF: Disabled

■ “ Vibrate Alert” (→P.29)

The seat belt vibration function when the driver is urged to take control of the vehicle can be enabled/disabled.

ON: Enabled

OFF: Disabled

■ **“Sensor Auto Clean” (→P.19)**

The sensor automatic cleaning function can be enabled/disabled.

ON: Enabled

OFF: Disabled

■ **“Audio Mute”**

Muting of the audio system when any of the following buzzers sound, can be enabled/disabled.

- Warning function (→P.39) buzzer (intermittent)
- Lane change assist buzzer
- Controlled start buzzer

ON: The audio system will be muted

OFF: The audio system will not be muted

Certification information

▶ Open source software

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Parson (https://github.com/kgabis/parson)

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▶ High definition map data

▶ “QR Code”

Product label

▶ Front LiDAR sensor

Laser explanatory label

Max average power: 54mW
Pulse duration: 25ns
Wavelength: 870nm

Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

Laser emission data

Maximum average power: 54 mW

Pulse duration: 25 ns

Wave length: 870 nm

Divergence (horizontal x vertical): 110° x 9.6°

▶ Side and rear LiDAR sensors

Laser explanatory label

Max average power: 91mW
Pulse duration: 4ns
Wavelength: 1064nm

Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

Laser emission data

Maximum average power: 91 mW

Pulse duration: 4 ns

Wave length: 1064 nm

Divergence (horizontal x vertical): 120° x 27.5°