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<b>Model Year Start:</b> 2023	<b>Model:</b> Prius Prime	<b>Prod Date Range:</b> [03/2023 - ]
<b>Title:</b> ADVANCED DRIVER ASSISTANCE SYSTEM: FRONT CAMERA SYSTEM: PRECAUTION; 2023 - 2024 MY Prius Prime [03/2023 - ]		

## PRECAUTION

### HINT:

The front camera system mainly operates using the following systems.

- Pre-collision system
- Dynamic radar cruise control
- Lane tracing assist
- Lane change assist\*1
- Lane departure alert
- Road sign assist\*2
- Automatic high beam
- Proactive driving assist
- Emergency driving stop system
- Front cross traffic alert\*3
- Traffic jam assist\*4
  - \*1: w/ Lane Change Assist
  - \*2: w/ Road Sign Assist
  - \*3: w/ Front Cross Traffic Alert
  - \*4: w/ Traffic Jam Assist

## PRECAUTIONS FOR DISCONNECTING CABLE FROM NEGATIVE (-) AUXILIARY BATTERY TERMINAL

### NOTICE:

- After the ignition switch is turned off, there may be a waiting time before disconnecting the negative (-) auxiliary battery terminal.

[Click here](#) INFO

### HINT:

When disconnecting and reconnecting the auxiliary battery, there is an automatic learning function that completes learning when the respective system is used.

[Click here](#) INFO

- If the cable is disconnected/reconnected to the negative (-) auxiliary battery terminal or the auxiliary battery is fully depleted, perform steering sensor zero point calibration.

[Click here](#) INFO

## PRECAUTIONS FOR FRONT CAMERA SYSTEM

### (a) Features of forward recognition camera

- (1) The forward recognition camera has characteristics similar to those of human eyes. When the visibility is poor for the driver, the forward recognition camera may not properly detect lane markers or vehicles and objects on the road ahead.
- (2) Only the objects in the forward recognition camera detection area can be detected.
- (3) The forward recognition camera has a function to detect foreign matter in the area in front of the forward recognition camera.

### HINT:

The forward recognition camera may not always detect dirt in the area in front of the forward recognition camera.

- (b) The Toyota Safety Sense and Traffic Jam Assist is designed to operate under the assumption that the driver will drive safely, and is designed to help reduce the impact to the occupants and the vehicle in the case of a collision or assist the driver in normal driving conditions. As there is a limit to the degree of recognition accuracy and control performance that this system can provide, do not overly rely on this system. The driver is always responsible for paying attention to the vehicle's surroundings and driving safely.
- (c) Do not rely solely on the system, and drive safely by always paying careful attention to your surroundings. This system is not designed to operate under all circumstances, and its assistance may be limited. Entrusting your safety to or relying on the system while you are driving could lead to an unexpected accident, resulting in death or serious injury.
- (d) Warning messages and buzzers are used to indicate a system malfunction or to inform the driver of the need for caution while driving. If a warning message is shown on the multi-information display, read the message and follow the instructions.
- (e) The warning buzzer may be difficult to hear due to external noise, audio playback, etc. Also, it may be difficult to feel operation of the system due to the road conditions, etc.
- (f) In the following situations, the sensor does not operate properly, potentially causing the individual systems of the Toyota Safety Sense and Traffic Jam Assist to malfunction.
- (1) When the vehicle is modified to change its height or inclination
  - (2) When the windshield is dirty, fogged, cracked or broken
  - (3) When the outside air temperature is high or low
  - (4) When the sensor has dirt, rain drops, snow, an insect, dust or other foreign matter attached to its front
  - (5) When driving in inclement weather such as heavy rain, fog, snow or a sandstorm
  - (6) When there is a cloud of water, snow, dust, etc., water vapor or smoke ahead of the vehicle
  - (7) When the headlights are not illuminated while driving in the dark, such as at night or when in a tunnel
  - (8) When a headlight is dim due to its lens being dirty
  - (9) When the axis of the headlights is not adjusted properly
  - (10) When the headlights are malfunctioning
  - (11) When the headlights of an oncoming vehicle, sunlight, reflected light, etc. are shining directly into the forward recognition camera
  - (12) The surrounding brightness changes suddenly
  - (13) When driving near a TV tower, broadcasting station, electric power plant, radar equipped vehicles, etc., or other location where strong radio waves or electrical noise may be present
  - (14) When a wiper blade is obstructing the field of view of a sensor
  - (15) When in a location or near objects which strongly reflect radio waves, such as the following:
    - Tunnels
    - Truss bridges
    - Gravel roads
    - Rutted, snow-covered roads
    - Walls
    - Large trucks
    - Manhole covers
    - Guardrail
    - Metal plates
  - (16) When near a step or protrusion
  - (17) If a vehicle ahead is narrow, such as a personal mobility vehicle
  - (18) If a vehicle ahead has a small front or rear end, such as an unloaded truck

- (19) If a vehicle ahead has a low front or rear end, such as a low bed trailer
  - (20) If a vehicle ahead has extremely high ground clearance
  - (21) If a vehicle ahead is carrying a load which protrudes past its rear bumper
  - (22) If a vehicle ahead has only a few of its metallic parts exposed because it is partially covered with cloth or for some other reason
  - (23) If a vehicle ahead is irregularly shaped, such as a tractor or side car
  - (24) The distance to the preceding vehicle is extremely short
  - (25) If a vehicle ahead is out of alignment
  - (26) A large amount of snow or mud is attached to the target vehicle
  - (27) When driving on a road such as:
    - A sharply curved or winding road
    - A road whose inclination changes suddenly (steep uphill or downhill slope)
    - A road having an inclination on either side
    - A road with deep ruts
    - The vehicle is driven on an unpaved or rough road
    - A road with a rough, bumpy or uneven surface
  - (28) When steering wheel operation is unstable
  - (29) When the position of your vehicle in the lane is not constant
  - (30) If the parts of the system or the brakes and other related parts are extremely cold, extremely hot or wet
  - (31) If the wheels are misaligned
  - (32) When the vehicle is driving on a slippery road such as frozen roads, snowy roads and gravel roads
  - (33) When the vehicle is driving on a path whose shape is different from that of a curve
  - (34) When the vehicle is entering a curve at an excessively high speed
  - (35) When the vehicle is entering or exiting a parking lot, garage, car elevator, etc.
  - (36) When the vehicle is driving in a parking lot
  - (37) When driving through or under objects that may contact the vehicle, such as thick grass, tree branches, or a banner
  - (38) Strong wind is blowing
- (g) In the following situations, lanes may not be able to be detected and the system that uses lane information may not operate normally.
- (1) When lane markers are extremely narrow or extremely wide
  - (2) When the vehicle has just changed lanes or crossed an intersection
  - (3) When the vehicle is driven in a temporary lane or restricted lane due to construction work
  - (4) When there are lane markers or other similar structures, patterns or shades around the vehicle
  - (5) When lane markers are not clear or the vehicle is driving on a wet road
  - (6) When lane markers are on a curb, etc.
  - (7) When driving on a road surface brightened by reflected light, such as concrete
- (h) The forward recognition camera may not operate properly in any of the following conditions:
- (1) The forward recognition camera is misaligned or damaged due to a strong impact being applied to the camera or the area around it
  - (2) The temperature inside the vehicle is very hot or cold (for example, if left in blazing heat or freezing cold)
  - (3) Immediately after the hybrid system is started

(i) In the following situations, some or all of the individual systems of the Toyota Safety Sense do not operate.

- (1) If an abnormality is detected in the system or a related system such as the brake or steering wheel
- (2) When a safety system, such as the VSC or TRAC, is operating
- (3) When a safety system, such as the VSC or TRAC, is off

## PRECAUTION BEFORE SERVICING

(a) When to disable the Toyota Safety Sense

In the following situations, disable the system, as it may not operate properly, possibly leading to an accident resulting in death or serious injury:

- When the vehicle is tilted due to overloading or a flat tire
- When the vehicle is being driven at extremely high speeds
- When the vehicle is being towed
- When transporting the vehicle via truck, boat, train or similar means of transportation
- When the vehicle is raised on a lift with the hybrid system on and the tires are allowed to rotate freely
- When inspecting the vehicle using a drum tester such as a chassis dynamometer or speedometer tester, or when using an on vehicle wheel balancer
- When a strong impact is applied to the front bumper or front grille, due to an accident or other reasons
- When the vehicle cannot be driven in a stable manner, such as when the vehicle has been in an accident or is malfunctioning
- When the vehicle is driven in a sporty manner or off-road
- When using an automatic car wash
- When the tires are not properly inflated
- When the tires are very worn
- When tires of a size other than specified are installed
- When tire chains are installed
- When a compact spare tire or an emergency tire puncture repair kit is used
- When equipment (snow plow, etc.) that may obstruct the millimeter wave radar sensor assembly or forward recognition camera is temporarily installed to the vehicle

(b) Before using a chassis dynamometer, cover the area in front of the forward recognition camera to prevent it from operating.

### NOTICE:

If "System Stopped Front Camera Low Visibility See Owner's Manual" is displayed on the multi-information display, after performing repairs, make sure to clear the Vehicle Control History of the following system:

Click here [INFO](#)

### HINT:

- The front camera system captures the image ahead of the vehicle using the monocular camera and learns the direction of traffic while driving. When the actual driving situation is different from what is determined by the forward recognition camera, such as when running the vehicle on a chassis dynamometer, the front camera system may learn incorrect information.
- When the forward recognition camera is covered, the message "System Stopped Front Camera Low Visibility See Owner's Manual" is displayed on the multi-information display. The message will disappear and the operation of the front camera system will return to normal after the cover is removed.

## PRECAUTIONS FOR COMPONENTS SURROUNDING FORWARD RECOGNITION CAMERA

(a) Be sure to use Toyota genuine front wiper blades.

### HINT:

If non-Toyota genuine parts are used, the forward recognition camera view may be blocked, affecting the operation of systems that use the forward recognition camera.

(b) Be sure to replace the wiper rubbers before they wear out.

**HINT:**

If streaks are left on the windshield glass, the forward recognition camera may not operate properly, affecting the operation of systems that use the forward recognition camera.

(c) Do not install any accessories to the front of the vehicle such as the hood or front grille.

**HINT:**

The forward recognition camera view may be blocked, affecting the operation of systems that use the forward recognition camera.

(d) Do not allow any objects mounted on the roof rack to obstruct the area in front of the forward recognition camera.

**HINT:**

The forward recognition camera view may be blocked, affecting the operation of systems that use the forward recognition camera.

(e) Keep the windshield glass clean.

**HINT:**

If the windshield glass is dirty, fogged up or has an oily film, the forward recognition camera may not operate properly, affecting the operation of systems that use the forward recognition camera.

(f) Do not attach any stickers or install any accessories to the area of the windshield glass in front of the forward recognition camera.

**HINT:**

- If it is necessary to attach a sticker or install an accessory to the windshield glass, do not attach it to the area in front of the forward recognition camera.
- If a sticker or accessory is installed to the windshield glass, the forward recognition camera view may be blocked, affecting the operation of systems that use the forward recognition camera.

(g) Even if a water repellent glass coating is applied to the windshield glass, it is still necessary to use the wipers if the area in front of the forward recognition camera is covered with water droplets.

(h) If the windshield glass is chipped or cracked, replace it.

(i) If the part of the windshield in front of the forward recognition camera is fogged up or covered with condensation, or ice, use the windshield defogger to remove the fog, condensation, or ice.

(j) Do not attach window tinting to the windshield.

(k) When cleaning the inside of the windshield, do not allow glass cleaner to contact the lens. Also, do not touch the lens.

(l) Do not modify any components of the vehicle around the forward recognition camera (inside rear view mirror, etc.) or ceiling.

(m) Do not modify the headlights or other lights.

**PRECAUTION FOR PRE-COLLISION SYSTEM**

(a) Conditions under which the system may operate even if there is no possibility of a collision.

In some situations such as the following, the system may determine that there is a possibility of a frontal collision and operate.

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

- When there are patterns or paint in front of your vehicle that may be mistaken for a detectable object
- When overtaking a detectable object that is changing lanes or making a right/left turn
- When passing a detectable object in an oncoming lane that is stopped to make a right/left turn
- When a detectable object approaches very close and then stops before entering the path 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, parking area barrier, or other barrier that opens and closes
- When turning left/right and an oncoming vehicle or pedestrian crosses in front of the vehicle
- When attempting to turn left/right in front of an oncoming vehicle or pedestrian
- When turning left/right and an oncoming vehicle or pedestrian stops immediately before entering the path of the vehicle
- While making a right/left turn, when an oncoming vehicle turns right/left in front of your vehicle
- While steering into the direction of oncoming traffic

(b) Situations in which the system may not operate properly

In some situations such as the following, an object may not be detected by the millimeter wave radar sensor assembly and forward recognition camera, preventing the system from operating properly:

- When a detectable object is approaching your vehicle
- When your vehicle or a detectable object is wobbling
- If a detectable object makes an abrupt maneuver (such as sudden swerving, acceleration or deceleration)
- When your vehicle approaches a detectable object rapidly
- When a detectable object is near a wall, fence, guardrail, manhole cover, vehicle, steel plate on the road, etc.
- When a detectable object is under a structure
- When part of a detectable object is hidden by an object, such as large baggage, an umbrella, or guardrail
- When multiple detectable objects are close together
- If the sun or other light is shining directly on a detectable object
- When a detectable object is a shade of white and looks extremely bright
- When a detectable object appears to be nearly the same color or brightness as its surroundings
- If a detectable object cuts or suddenly emerges in front of your vehicle
- When approaching a vehicle ahead which is at an angle to the vehicle
- If a vehicle ahead is a child sized bicycle, a bicycle that is carrying a large load, a bicycle ridden by more than one person, or a uniquely shaped bicycle (bicycle with a child seat, tandem bicycle, etc.)
- If a pedestrian/or the riding height of a bicyclist ahead is shorter than approximately 1 m (3.2 ft.) or taller than approximately 2 m (6.5 ft.)
- If a pedestrian/bicyclist is wearing oversized clothing (a rain coat, long skirt, etc.), making their silhouette obscure
- If a pedestrian is bending forward or squatting or bicyclist is bending forward
- If a pedestrian/bicyclist is moving fast
- If a pedestrian is pushing a stroller, wheelchair, bicycle or other vehicle
- When the surrounding area is dim, such as at dawn or dusk, or while at night or in a tunnel, making a detectable object appear to be nearly the same color as its surroundings
- After the hybrid system has started the vehicle has not been driven for a certain amount of time
- While making a left/right turn and for a few seconds after making a left/right turn
- While driving on a curve and for a few seconds after driving on a curve
- When turning right and an oncoming vehicle is driving in a lane 3 or more lanes from the vehicle
- When largely out of place with the opposite facing targeted oncoming vehicle during a right turn
- While attempting to make a right/left turn, when a pedestrian approaches from behind or side of your vehicle

(c) In addition to the above, the emergency steering assist may not operate under the following conditions:

- When the target is too close
- There is not enough space to avoid the obstacle, or there is an obstacle around the obstacle
- When there is an oncoming vehicle

(d) If VSC is disabled:

- If VSC is disabled, the pre-collision brake assist and pre-collision braking functions are also disabled.
- Turns on the PCS warning light.

The PCS warning light will turn on and "VSC Turned OFF Pre-Collision Brake System Unavailable" will be displayed on the multi-information display.

## PRECAUTION FOR DYNAMIC RADAR CRUISE CONTROL

Keep in mind the following points when servicing vehicles equipped with the dynamic radar cruise control.

(a) The dynamic radar cruise control is designed to be used when driving on highways and freeways. As the system may not operate correctly when driving on roads used by pedestrians and bicycles, do not use dynamic radar cruise control on roads used by pedestrians and bicycles as an accident may result.

(b) Do not overly rely on the dynamic radar cruise control.

- The dynamic radar cruise control is designed to assist in maintaining an appropriate distance with the preceding vehicle, however, the system alone is not sufficient. Pay constant attention to the vehicle-to-vehicle distance and the traffic conditions when using the dynamic radar cruise control and decelerate with the brake pedal or accelerate with the accelerator pedal according to the situation to keep an appropriate distance with the preceding vehicle.
- The dynamic radar cruise control applies brakes as necessary, however, there is a limitation on the deceleration control capability. When the preceding vehicle decelerates rapidly or another vehicle moves in front of the vehicle, decelerating in time to avoid a collision may not be possible without additional braking.
- The dynamic radar cruise control judges whether the distance between the vehicle and the preceding vehicle is appropriate. It makes no other judgments. It is necessary for the driver to judge risks for safety.

(c) Set the speed appropriately according to the speed limit, traffic flow, road conditions, weather conditions, etc.

(d) The dynamic radar cruise control may not operate or give a vehicle approach warning for vehicles which are stopped or driving in front at significantly slower speeds.

(e) When following another vehicle with vehicle-to-vehicle distance control mode controlling vehicle speed, the vehicle will not accelerate if the +RES switch is pushed, as the speed is controlled in accordance with the speed of the preceding vehicle.

### NOTICE:

If the set vehicle speed is increased by pushing the +RES switch, the vehicle will accelerate to the newly set speed when the preceding vehicle moves out of the lane.

### HINT:

The set vehicle speed can be confirmed on the multi-information display.

(f) The actual vehicle-to-vehicle distance may be shorter than the set vehicle-to-vehicle distance when driving on a downhill road.

(g) When a system malfunction is detected, a warning message is displayed on the multi-information display in the combination meter assembly and the buzzer sounds.

(h) Do not place any objects on top of the instrument panel.

### HINT:

If an object is reflecting off of the windshield glass, the performance of the forward recognition camera may decrease.

- (i) The vehicle approach warning buzzer does not sound when constant speed control mode is controlling vehicle speed because the presence of and distance to the preceding vehicle is not calculated.
- (j) As the controls performed by constant speed control mode and vehicle-to-vehicle distance control mode are different, always confirm which mode is selected before operating the dynamic radar cruise control.
- (k) When operating the turn signal when in vehicle-to-vehicle distance control mode, the distance to the preceding vehicle may reduce as part of preparation to change lanes.
- (l) Do not use the dynamic radar cruise control in the following situations, as proper control may not be performed, resulting in an unexpected accident that may cause serious injury or death.
  - Highway/expressway exit/entrance
  - When the vehicle approach warning sounds frequently
  - When the sensor may not operate correctly
  - When the system needs to be turned off
- (m) If the engine speed becomes too high or too low, control may be canceled automatically. Select the shift position according to the vehicle speed.
- (n) In the following situations, vehicle-to-vehicle distance control mode is automatically canceled.
  - Brake control or output restriction by the driving assist system is operating
    - (Including pre-collision system)
  - When the parking brake is applied
  - When the vehicle is stopped on a steep slope
  - When the following conditions are detected while the vehicle is stopped by control:
    - The driver seat belt is unfastened
    - The driver door is opened
    - Approximately 3 minutes have elapsed since the vehicle stopped
  - When part or all of the system does not operate
- (o) In the following situations, the sensor may not detect the vehicle correctly and the vehicle approach warning may not operate. Depress the brake pedal when deceleration by the system is insufficient, and depress the accelerator pedal when acceleration is necessary according to the circumstances.
  - When a vehicle cuts in front of your vehicle or changes lanes away from your vehicle extremely slowly or quickly
  - When the vehicle is changing lanes
  - When a preceding vehicle is driving at a low speed
  - There is a vehicle stopped in the same lane
  - When a motorcycle is driving in the same lane
- (p) In the following situations, the sensor may not be able to detect vehicles normally and the system may not operate correctly. Therefore, depress the brake pedal for deceleration (or operate the accelerator pedal) as necessary.
  - When a preceding vehicle suddenly brakes
  - When changing lanes at low speed due to heavy traffic, etc.
- (q) Even if the distance between vehicles is short, a warning may not be given in the following situations:
  - A preceding vehicle is driving at the same speed as or faster than the vehicle
  - A preceding vehicle is driving at extremely low speed
  - Immediately after setting the speed
  - When the accelerator pedal is depressed



(r) The curve speed control function may not operate in the following situations:

- When driving on a gentle curve
- When the vehicle is accelerating with the accelerator pedal depressed
- When driving on an extremely short curve

(s) Take the following precautions concerning the dynamic radar cruise control.

1. Be careful as the vehicle speed may increase beyond the set vehicle speed when driving downhill even when the dynamic radar cruise control is controlling vehicle speed.
2. If cruise control operation was canceled, and if the vehicle speed is within the settable speed range, pushing the +RES switch restores the vehicle speed memorized at the time of cancellation, and constant speed control resumes. If the vehicle is being driven at a constant speed, pushing the +RES switch accelerates the vehicle.
3. When the vehicle is being driven and the cruise control indicator (amber) illuminates and a fail notification is displayed on the multi-information display while the cruise control is operating, turn the radar cruise control off and restart it again. If the system cannot be set again or control is canceled shortly after being set, it is suspected that the system is malfunctioning.
4. Do not use the dynamic radar cruise control where the road conditions are as follows:
  - a. Heavy traffic
  - b. Steep downhill roads
  - c. Roads with sharp turns
  - d. Icy or snowy roads
  - e. Slippery roads
5. Do not use the dynamic radar cruise control while towing.

## **PRECAUTIONS FOR LANE TRACING ASSIST**

(a) Precautions for Using the Lane Tracing Assist

- (1) The lane tracing assist provides information to the driver and performs steering assistance according to the road and driving conditions. The driver must keep their hands on the steering wheel when the system is operating. The driver must not overly rely on the system, and is always responsible for paying attention to the vehicle's surroundings and driving safely.
- (2) When driving on a well maintained road with the dynamic radar cruise control operating, lane lines and preceding and surrounding vehicles are detected using the forward recognition camera and millimeter wave radar sensor assembly, and necessary steering wheel operation assistance is provided to keep the vehicle within the lane. Therefore, the system does not operate when lane lines or preceding vehicles are not detected. Additionally, if lane lines and preceding and surrounding vehicles cannot be detected correctly, steering assist force may be applied or a warning buzzer may sound unnecessarily. Be sure to control the vehicle using the steering wheel in a responsible manner under all circumstances even when the system is operating. However, only a light amount of steering assist force that will not interfere with driving will be applied.
- (3) The lane tracing assist is designed for use on highways and freeways. Do not use the lane tracing assist on other roads.
- (4) The lane centering function uses the path of the preceding vehicle to help the driver stay within the lane, when traffic, etc. makes it difficult or impossible to detect lane markers. If the preceding vehicle is being driven extremely close to the left or right side of the lane, or changes lanes, the vehicle may follow, possibly departing the lane. If the preceding vehicle is swaying, the vehicle may also begin swaying or depart from the lane.
- (5) If a malfunction is detected, the system notifies the driver using buzzer and warning message and cancels operation. However, the vehicle can continue to be driven normally.
- (6) In order to prevent unintended operation, when not using the lane tracing assist, turn it off with the LTA main switch.

- (7) Even if the lane departure alert is set to vibrate, the buzzer warns the driver when the lane tracing assist is operating.
- (8) When a steering operation equivalent to a lane change is detected, the system does not determine that the vehicle has deviated from the lane and the warning system does not operate.
- (9) The lane tracing assist will not operate if Steering Sensor Zero Point Calibration has not been completed.
- (10) In the following situations, the function may not operate correctly and the vehicle may deviate from the lane.
  - When a preceding vehicle or a surrounding vehicle changes lanes (Your vehicle may also change lanes in accordance with the movement of the preceding or surrounding vehicle.)
  - When a preceding/nearby vehicle is swaying (Due to the sway, the vehicle may also sway and deviate from the driving lane.)
  - When a preceding vehicle or a surrounding vehicle deviates from the lane (The vehicle may also deviate from the lane in accordance with the movement of the preceding or surrounding vehicle.)
  - When a preceding vehicle or a surrounding vehicle is driving to the right or left in the lane (There is a risk that the vehicle may also shift and deviate from the lane in accordance with the movement of the preceding or surrounding vehicle.)
  - When there are moving objects or structures around the vehicle, the vehicle may travel unsteadily depending on its location and the location of the moving objects
  - The vehicle is being affected by the wind generated by surrounding vehicles, such as a side wind.
  - When the sensor may not operate correctly
  - Situations in which the lane may not be detected
  - When the system needs to be turned off

### **PRECAUTIONS FOR TRAFFIC CONGESTION DRIVING SUPPORT FUNCTION (w/ Traffic Jam Assist)**

#### (a) Handling precautions for traffic congestion driving support function

- (1) The driver is responsible for safe operation of the vehicle. The driver must always be aware of the surroundings to ensure safe driving, and not overly rely on the system.
- (2) The traffic congestion support function is not an automatic driving system. The system provides information to the driver and performs driving assistance according to the road shape and conditions, traffic conditions and driver conditions. The driver is responsible for using the system while always being aware of the surroundings.
- (3) Depending on the surrounding conditions, road conditions and driver conditions, the traffic congestion support function may not operate or operation may be canceled. Furthermore, maintaining the same level of performance at all times may not be possible. The driver must read about the operation conditions of the function before use to ensure safe driving, and not overly rely on the system.
- (4) There is a limit to the recognition performance and control performance of the traffic congestion support function. Therefore, the driver must ensure safety with the driver's own operations even while the system is operating. Also, the steering assist of this system is limited to gentle steering in traffic congestion, and the lane departure restraint function of LDA does not operate while this function is operating. If there is a possibility of the vehicle departing a lane for some reason, the driver is responsible for the driving operation.
- (5) Even when the system is operating normally, the surrounding conditions recognized by the driver and the conditions detected by the system may be different. Therefore, the driver must pay attention, determine the danger and ensure safety. Driving that relies on the system or leaves responsibility for safety to the system may result in an unforeseen accident causing major injury or, in the worst case, death.
- (6) Some conditions require operation by the driver even while the traffic congestion support function is operating. Therefore, the driver is responsible for ensuring the driver's own visual field.
- (7) The traffic congestion support function may prompt the driver to hold the steering wheel with a screen display, depending on the conditions. The driver must hold the steering wheel and ensure safety with the

driver's own operations.

- (8) The traffic congestion support function will not detect the following. The driver must operate the steering wheel, accelerator, brake, etc., as necessary to avoid the hazard. Failure to do this may result in an unforeseen accident causing major injury or, in the worst case, death.
- An object fallen onto the road
  - A vehicle outside the lane (shoulder, etc.)
  - A damaged road with dents, depressions, cracks, etc.
  - A road under construction
  - An adjacent wall or parallel driving vehicle
  - An animal
- (9) The driver is responsible for driving operations when entering locations such as a service area, parking area and tollgate.
- (10) In the following situations, do not use the traffic congestion support function. Appropriate control will not be performed, which may result in an unforeseen accident causing major injury or, in the worst case, death.
- When Toyota Safety Sense must be turned off
  - When a sensor may not operate normally
  - When detecting the lanes may not be possible
- (11) In the following situations, the traffic congestion support function may not operate normally. The driver must perform own operations as necessary.
- When water is sprayed
  - When the ambient temperature is high or low
  - When another vehicle cuts in front of the vehicle
  - When there is a merging lane ahead
  - When driving on a low-visibility road
  - When the vehicle stability changes
  - When driving in a location where the tire ground contact differs significantly between left and right
  - When driving in a temporary traffic control zone where the median strip is separated by poles, etc., or a controlled-access road without a median strip
  - When a parallel vehicle is driving on an adjacent lane at a relatively high vehicle speed compared to the vehicle
  - When the map information has not been updated correctly (The navigation contract must be renewed)

## **PRECAUTIONS FOR LANE CHANGE ASSIST (w/ Lane Change Assist)**

### (a) Precautions for Using the Lane Change Assist

- (1) Lane tracing assist is a system that provides information and steering assistance to the driver in accordance with the shape of the road and the driving conditions. As it is not possible to drive with hands not on the steering wheel when the system is operating, the driver should make sure to control the vehicle by operating the steering wheel to correct the path of the vehicle while always paying attention to their surroundings and the road ahead and not overly relying on the system. Drive the vehicle in a responsible manner under all circumstances.
- (2) The lane change assist recognizes the surrounding conditions of the vehicle and assists the driver in changing lanes, with the on-vehicle forward recognition camera, millimeter wave radar sensor assembly, front side radar sensor, and blind spot monitor sensor. Depending on the road environment and surrounding vehicle environment, surrounding vehicles may not be recognized correctly. Therefore, always change lanes in accordance with the surrounding environment.
- (3) The lane change assist can be started while the lane tracing assist is operating.

- (4) The lane change assist is intended for use on highways and expressways (excluding certain roads). Do not use on normal roads.
- (5) If a rapidly approaching vehicle is detected after the system starts, a vehicle approach warning is displayed on the multi-information display, the buzzer sounds and the system is stopped.
- (6) If the system detects any abnormality, it warns the driver using the buzzer and multi-information display, and the system is stopped. However, this does not affect normal driving.
- (7) When changing lanes with the turn signal lever held midway without using the lane change assist, turn off the customize settings of the lane change assist.
- (8) The lane change assist will not operate if Steering Sensor Zero Point Calibration has not been completed.
- (9) The lane change assist may not operate under the following conditions. In this case, always check surrounding conditions and change lanes in the same manner as driving normally.
  - When the system detects the presence of nearby vehicles
  - When the broken white line between the current lane and the destination lane of the lane change is not detected
  - The vehicle is being driven at a speed other than the system operating speed
  - When driving on a sharp curve
  - When the vehicle is traveling on a diverging or merging lane
  - When the steering wheel is being operated with a large steering force
  - The system has not detected a moving object behind the vehicle outside a certain distance at least once since the hybrid system was started.
- (10) The lane change assist may be canceled during operation in the following situations:
  - The operating conditions are no longer met
  - When the system cannot recognize a lane
  - When the turn signal lever is turned to the left or right
  - When the system detects that the driver has operated the steering wheel, brakes, accelerator, etc.
  - The hands off steering wheel warning is operating
- (11) Do not use the lane change assist in the following situations: If the system does not operate properly, an unexpected accident may occur.
  - When driving on a 1-lane (each side) road
  - There is no white dashed line between the current lane of the vehicle and the lane toward which the turn signal is operated
- (12) When detection by the millimeter wave radar sensor assembly, blind spot monitor sensor and front side radar sensor is incorrect and the lane change assist is started even if there is a vehicle approaching, a vehicle approach warning may not be issued.

Precautions about the front radar sensor system:

Click here [INFO](#)

Precautions about the blind spot monitor system:

Click here [INFO](#)

Precautions about the front side radar sensor system:

Click here [INFO](#)
- (13) If the lane change assist cannot be started due to unnecessary detection by the millimeter wave radar sensor assembly, blind spot monitor sensor and front side radar sensor, the vehicle may stop during control.

Precautions about the front radar sensor system:

Click here [INFO](#)

Precautions about the blind spot monitor system:

Click here [INFO](#)

Precautions about the front side radar sensor system:

Click here [INFO](#)

## HANDLING PRECAUTIONS FOR SRS AIRBAG SYSTEM

- (a) This vehicle is equipped with a Supplemental Restraint System (SRS) which includes components such as airbags. Before servicing (including removal or installation of parts), be sure to read Precaution for Supplemental Restraint System.

Click here [INFO](#)

## PRECAUTION FOR LANE DEPARTURE ALERT

- (a) Precautions when handling the lane departure alert

- (1) The lane departure alert provides the driver with information and steering assist in accordance with the shape of the road and the driving conditions of the driver. When the system is operating, hands-off driving is not possible. Do not rely on the system, and always pay attention to the surrounding conditions and the direction the vehicle is heading. It is the responsibility of the driver to operate the vehicle under any circumstances.
- (2) The lane departure alert operates by recognizing lane lines and a course using the forward recognition camera. If lane lines or a course cannot be recognized, the system will not operate. Additionally, if lane lines and a course cannot be detected correctly, unnecessary steering assist force or a warning buzzer may be applied. Be sure to control the vehicle using the steering wheel in a responsible manner under all circumstances even when the system is operating. However, only a light amount of steering assist force that will not interfere with driving will be applied.
- (3) The lane departure warning and lane departure prevention functions operate when the LDA customization is turned on and when lane lines or a course are detected while the vehicle speed is at or above the system operating speed. However, depending on road conditions and the driving conditions of the driver, the system may not operate or operation may be canceled.
- (4) Depending on the vehicle speed, road surface conditions, lane departure angle, etc., the lane departure alert or the prevention function may not operate or it may be difficult to recognize that it has operated.
- (5) If the system detects any abnormality, it warns the driver using the buzzer and multi-information display, and the system is stopped. However, this does not affect normal driving.
- (6) Depending on the situation, the warning buzzer may sound even if steering wheel vibration is selected.
- (7) If the lane is not clearly visible, or if the lane is not straight, the lane departure warning and lane departure prevention functions may not operate.
- (8) The lane departure alert will not operate if Steering Sensor Zero Point Calibration has not been completed.
- (9) If it is judged that a pedestrian or a parked vehicle is intentionally avoided, the lane departure warning and lane departure prevention functions may not operate.
- (10) In some instances, it is not possible to determine the possibility of a collision with a vehicle driving in the lane next to the vehicle.
- (11) In the following situations, each function may not operate correctly and the vehicle may deviate from the lane. The driver is always responsible for monitoring the surrounding conditions and not relying on this function to correct the path by operating the steering wheel.
  - The boundary between asphalt and grass, soil, etc., or structures, such as, curbs, guardrails, etc. is not clear or straight
  - The vehicle is being affected by the wind generated by surrounding vehicles, such as a side wind.

- Situations in which the lane may not be detected
- When the sensor may not operate correctly
- When part or all of the system does not operate
- When the system needs to be turned off

### **PRECAUTION FOR ROAD SIGN ASSIST (w/ Road Sign Assist)**

(a) Do not use the road sign assist in the following situations:

- When the system needs to be turned off

(b) The function may not operate correctly in the following situations:

- When the sensor may not operate correctly

(c) In the following situations, the system may not recognize road signs correctly and the correct signs may not be displayed.

- The road sign is dirty, faded or tilted.
- The contrast of an electronic sign is low.
- Whole or part of the sign is blocked by an object.
- The vehicle passes the sign too quickly after the sign comes into view.
- When driving conditions (turning, changing lanes, etc.) are determined incorrectly
- A sign is on an adjacent lane or side road, or immediately after traffic lanes merge or diverge.
- A sticker is on the rear of a preceding vehicle.
- A road sign similar to the one supported by the system is recognized
- A speed sign on a side road enters the recognition range of the forward recognition camera
- When driving on a rotary (roundabout)
- When a sign for certain kinds of vehicles, such as trucks, is detected.
- The map information of the navigation system is old\*
- When the navigation system cannot be used\*

\*: w/ Navigation System

(d) In addition to the above, the notification function may not operate in the following situations:

- Road signs cannot be detected due to a right or left turn, etc.
- An arrow signal is indicated on the traffic signal
- When a traffic light is flashing
- When a part of the light emitted from a traffic light is hidden behind the hood
- When the light emitting part of a louvered traffic light is difficult to see
- When paint on a road surface such as a stop line is obscured by a preceding vehicle, etc.
- Paint on the road surface such as a stop line is faded
- The stop line is far from a traffic signal.
- When the distance between intersections is short

(e) The notification function may operate in the following situations:

- The size of a road sign is unusual
- When there are many road signs and traffic lights
- When a road sign or traffic light for a side road, a turning point etc. other than the lane the vehicle is traveling in is detected
- There is a pattern, light source, or paint that is difficult to distinguish from detectable road signs, traffic lights, or road paint
- When a traffic light is yellow
- An arrow signal is indicated on the traffic signal
- A notification traffic signal is detected

(f) Road signs that are not standard or newly introduced may not be displayed.

### **PRECAUTION FOR AUTOMATIC HIGH BEAM**

- (a) In the following situations, the automatic high beam may not operate normally, and high beam may not automatically switch to low beam.
- When a vehicle cuts in front of the vehicle
  - When a vehicle crosses in front
  - When a preceding vehicle is seen and hidden due to a series of curves, medians, roadside trees, etc.
  - A preceding vehicle is approaching from a lane away from the vehicle
  - A preceding vehicle is driving far away
  - When a preceding vehicle is not illuminated
  - The illumination of a preceding vehicle's lights is low
  - When a preceding vehicle is reflecting strong light, such as the headlights of the vehicle
  - When the sensor may not operate correctly
- (b) Depending on the fog lights of the preceding vehicle, the system may change from high beam to low beam.
- (c) When the automatic high beam is used, depending on lights such as street lights and traffic lights, as well as reflective objects such as road signs and advertising signs, the system may switch from high beam to low beam, or the state of low beam may continue.
- (d) When the automatic high beam is used, the timing of switching between high beam and low beam may change for the following reasons:
- The brightness of the lights of a preceding vehicle
  - The movement and direction of a preceding vehicle
  - Distance between the vehicle and a preceding vehicle
  - Only one side of the lights of a preceding vehicle is illuminated
  - If a vehicle ahead is a motorcycle
  - Road conditions (slopes, curves, road conditions, etc.)
  - The number of passengers, and the amount of luggage
- (e) When the automatic high beam is used, shifting between high beam and low beam occurs, which may not match the feeling of the driver.
- (f) Light vehicles such as bicycles may not be detected.

In the following situations, the brightness of the surrounding area may not be detected correctly by the automatic high beam, which may disturb pedestrians and vehicles in front of the vehicle, or low beam may continue. In this case, manually switch between high beam and low beam.

- When there is light similar to a headlight or taillight
- When the light of a preceding vehicle is not illuminated, is dirty or discolored, or the optical axis is misaligned
- Frequent switch between high beam and low beam
- When high beam illumination seems inappropriate, or is likely to be a nuisance to other drivers or nearby pedestrians
- When the system needs to be turned off
- When the sensor may not operate correctly

### **PRECAUTION FOR PROACTIVE DRIVING ASSIST**

- (a) The proactive driving assist is a system that assists part of daily brake and steering operations so that the vehicle does not approach too close to the target. However, the range of assistance is limited. The driver needs to perform brake and steering operations as needed. Do not rely on the system to drive safely.
- (b) Even if the proactive driving assist is functioning normally, the surrounding conditions recognized by the driver may differ from those detected by the system. Relying on the system for safety may lead to an unexpected accident, serious injury or, in the worst case, death.
- (c) Turn off the proactive driving assist in the following situations:
- When the sensor may not operate correctly

- When the system needs to be turned off

(d) The proactive driving assist stops in the following situations:

- When the dynamic radar cruise control is set
- When the PCS is off
- When part or all of the system does not operate
- When the shift position is in P, R, or N
- When the vehicle speed becomes approximately 15 km/h (9 mph) or less, or when a certain vehicle target speed, as judged by the system according to the surrounding conditions, has been reached

(e) The proactive driving assist may stop operating in the following situations:

- When brake control or output restriction is performed by the driving assist system (for example, pre-collision system or drive start control).
- When the system determines that the detected object has moved away

(f) The proactive driving assist may not operate correctly in the following situations:

- Situations in which the lane may not be detected
- When a traffic light is yellow
- When a traffic light is a single light, or 2-light type
- When a detected object stops before entering the vehicle path
- When the vehicle passes by a detected object that is located behind a guard rail, fence, or other object
- When the vehicle changes lanes and overtakes a detected object, etc.
- When overtaking a detected object, etc. that is changing lanes or turning left or right
- Objects (guardrails, power poles, trees, walls, fences, poles, construction cones, posts, etc.) are in the surrounding area
- There is a pattern or paint that is difficult to distinguish from a detected object in front of the vehicle
- When passing through a location with a structure above the road (low-height tunnel, traffic sign, billboard, etc.)
- When driving on snowy roads, rutted roads or icy roads
- When a detected object approaches the vehicle
- When the vehicle or a detected object is unstable
- When the movement of a detected object changes (turning, sudden acceleration, sudden deceleration, etc.)
- Suddenly approaching a detected object
- When a preceding vehicle or motorcycle is not directly in front of your vehicle
- A detected object is under a structure
- When a part of a detected object is covered by another object (such as large luggage, an umbrella, or a guardrail)
- When multiple detected objects overlap
- A detected object is reflecting sunlight or strong light from other vehicles, such as headlights
- When the color of a detected object is white and appears to be extremely bright
- When the color tone or brightness of a detected object is compatible with the background
- When a detected object cuts in front of the vehicle or pops out
- When the vehicle is approaching a vehicle that is facing sideways, facing in a diagonal direction, or facing to the vehicle
- When a parked vehicle is facing sideways or facing in a diagonal direction
- Bicycles for children, with large luggage, with 2 or more people, of special shape (such as those with a child seat, tandems)
- When a pedestrian or a cyclist is approximately shorter than about 1 m or taller than about 2 m
- When the outline of a pedestrian or a cyclist is unclear (for example, when wearing a raincoat or long skirt)
- When a pedestrian or a cyclist is leaning forward or crouching
- When a pedestrian or a cyclist is moving at high speed



- When a pedestrian is pushing a stroller, a wheelchair, a bicycle, etc.
- When a detected object is operating in a dark environment (morning, evening, etc.) or dark surroundings (nighttime, in a tunnel, etc.)
- Lane width is approximately 4 m or wider
- Lane width is approximately 2.5 m or narrower
- After the hybrid system has started the vehicle has not been driven for a certain amount of time
- During a right or left turn and for a few seconds after turning right or left
- During a course change and for a few seconds after a course change
- A detected object exists before entering a curve, when the vehicle is being driven on a curve, or within a few seconds of turning a curve

(g) The proactive driving assist may stop assisting in the following situations:

- When lanes cannot be detected
- When the brake pedal is operated
- When the accelerator pedal is operated
- When the steering wheel is operated with a certain amount of steering force or more
- When the turn signal lever is turned to the left or right

### **PRECAUTION FOR EMERGENCY DRIVING STOP SYSTEM**

(a) The emergency driving stop system is used when it is difficult for the driver to continue driving due to sudden illness, etc., but not used when the driver is sleepy, lacks attention, or is in poor physical condition.

(b) As the effectiveness of the emergency driving stop system varies depending on various conditions, the same performance cannot always be achieved. There are certain conditions to operate the system. If the operating conditions are not met, the system will not operate.

(c) This system judges something abnormal about the driver based on the steering wheel operation status. If a normal driver intentionally discontinues operating, the system may operate. Also, even if the driver is in an abnormal condition, the system may not operate if the system cannot judge that the driver's hands are off the steering wheel when the driver is leaning against it.

(d) The system is disabled in any of the following situations:

- When the lane tracing assist control is canceled (for example, when the LTA switch is pressed)
- When the dynamic radar cruise control is canceled
- When driver operation is detected (holding the steering wheel, operating the brake pedal/accelerator, operating the hazard switch / turn signal lever, etc.)
- When the driving assist switch is pressed while in the stop and hold phase with the shift status park (P)
- When the ignition switch has been turned from ON to off
- When part or all of the system does not operate

(e) When the system is deactivated, the LTA control and ACC control may be canceled.

(f) After the emergency driving stop system enters the deceleration stop phase, the following functions will not be available even if the emergency driving stop system is canceled. After the hybrid system is restarted, they will become available.

- Lane tracing assist
- Lane change assist (w/ Lane Change Assist)
- Traffic jam assist (w/ Traffic Jam Assist)
- Emergency driving stop system

### **PRECAUTION FOR FRONT CROSS TRAFFIC ALERT (w/ Front Cross Traffic Alert)**

(a) The warning message displayed by the system may differ from actual traffic conditions. Over-trusting the system may lead to an unexpected accident, serious injury or, in the worst case, death. Always monitor the surrounding conditions and drive safely.

(b) The warning disappears after a certain amount of time, but this does not mean that there are no vehicles or pedestrians in the surrounding area.

(c) In the following situations, the system may operate even if there is no vehicle to be detected.

- When approaching structures (guardrails, road signs, power poles, streetlights, trees, grass, walls, etc.) on the side of the road
- Passing by a vehicle parked on the street
- When a vehicle or a pedestrian crosses at a distance
- When a vehicle or pedestrian is moving near the driving lane, such as in a parking lot.
- When a bicycle or a pedestrian is walking on the sidewalk
- When a vehicle or a pedestrian moves away from the vehicle
- A crossing vehicle decelerates and stops
- When a crossing vehicle turns right or left just in front of the vehicle
- When a pedestrian approaches the vehicle
- When an oncoming vehicle turns left or right
- When the vehicle passes an intersection ahead of a crossing vehicle
- A crossing vehicle is approaching when waiting for a traffic light
- When there is a crossing vehicle when turning, such as turning right or left
- When a vehicle approaches from the front and passes by
- When a vehicle approaches from behind and overtakes the vehicle
- When the vehicle is driving in parallel with a vehicle or a pedestrian
- When a vehicle or a pedestrian approaches the side of the vehicle

(d) In the following situations, the front and side sensors may not detect a target vehicle, and the system may not operate correctly.

- When a crossing vehicle moves suddenly (sudden steering wheel operation, sudden acceleration, sudden deceleration, etc.)
- A crossing vehicle diagonally approaches the vehicle
- A crossing vehicle crosses at distance
- When there is an obstacle between the vehicle and a crossing vehicle
- When several vehicles are approaching with little space between them.
- When the sensor may not operate correctly
- When part or all of the system does not operate

## PRECAUTIONS FOR RECORDED DATA

(a) The Toyota Safety Sense records data related to vehicle control and operation. Make sure to clear the data if requested by the customer.

Click here [INFO](#)

(b) w/ Traffic Jam Assist:

The Toyota Safety Sense stores data relating to the driver monitor camera system. The data in question shall be deleted when the customer requests that it be deleted.

Click here [INFO](#)

## TROUBLESHOOTING PRECAUTIONS

(a) If a terminal contact point malfunction or part installation problem occurs, removal and reinstallation of the suspected part may return the system to normal. However, be aware that the normal condition may only be temporary.

(b) Before disconnecting connectors or removing/installing parts, determine the malfunctioning area by checking and writing down the vehicle condition at the time the malfunction occurred (DTC outputs etc.).

(c) Be sure to check for DTCs related to other systems. The Toyota Safety Sense may be influenced by malfunctions in other systems.

## HANDLING PRECAUTIONS

- (a) When removing or installing any ECUs or sensors, make sure that the ignition switch is off unless otherwise specified in the procedure.
- (b) After removing and installing any ECUs or sensor, make sure to check for DTCs and confirm that no DTCs are output.
- (c) The forward recognition camera is a precision part. Be sure to observe the following precautions when handling it.
  - (1) Do not apply excessive force to the forward recognition camera or subject it to a strong impact.
  - (2) Do not disassemble the forward recognition camera.
  - (3) Do not change the installation position of the forward recognition camera or modify the surrounding components.
  - (4) Do not get the forward recognition camera wet or apply any liquids to it.
  - (5) Do not shine bright lights into the forward recognition camera.
  - (6) Do not touch the forward recognition camera lens when replacing the forward recognition camera.

### NOTICE:

If the forward recognition camera lens is touched, replace the forward recognition camera with a new one.

## REPLACEMENT PRECAUTIONS

- (a) Millimeter wave radar sensor assembly:
  - (1) When replacing the millimeter wave radar sensor assembly, always replace it with a new one. If a millimeter wave radar sensor assembly which was installed to another vehicle is used, the information stored in the millimeter wave radar sensor assembly will not match the information from the vehicle and a DTC may be stored.
  - (2) When the millimeter wave radar sensor assembly has been replaced with a new one, it is necessary to perform millimeter wave radar sensor assembly beam axis alignment and to clear the vehicle control history. Before performing the Driving Adjustment, make sure to read Before Starting Driving Adjustment.

### HINT:

Beam axis alignment of the millimeter wave radar sensor assembly can be performed using either Triangle Target, Flat Surface Target or Driving Adjustment.

Triangle Target: [Click here](#) 

Flat Surface Target: [Click here](#) 

Driving Adjustment: [Click here](#) 

- (b) Forward recognition camera:
  - (1) When replacing the forward recognition camera, always replace it with a new one. If a forward recognition camera which was installed to another vehicle is used, the information stored in the forward recognition camera will not match the information from the vehicle and a DTC may be stored.
  - (2) When the forward recognition camera has been replaced with a new one, make sure to clear all stored vehicle control history of each system and the forward recognition camera beam axis alignment data.

### HINT:

Forward recognition camera beam axis alignment can be performed by using "One Time Recognition", "Driving Adjustment" or "Camera Axis Adjustment Value Write".

One Time Recognition: [Click here](#) 

Driving Adjustment: [Click here](#) 

Camera Axis Adjustment Value Write: [Click here](#) 


(3) Do not damage the forward recognition camera lens or allow it to become dirty.

#### NOTICE:

If the forward recognition camera lens has been touched, replace it with a new forward recognition camera.

(4) Do not reuse a forward recognition camera that has been dropped or subjected to a strong impact.

(5) When replacing the forward recognition camera, always check that ECU security key is registered.

[Click here](#) 

(6) If the forward recognition camera has been replaced with a new one, make sure to perform Software Version Confirmation.

[Click here](#) 

(c) Windshield glass:

(1) When replacing the windshield glass of a vehicle equipped with a forward recognition camera, make sure to use a Toyota genuine part. If a non-Toyota genuine part is used, the forward recognition camera may not be able to be installed due to a missing bracket or some systems using the forward recognition camera may not operate properly due to a difference in the transmissivity or black ceramic border.

(d) Steering Wheel Assembly:

(1) When replacing the steering wheel assembly of a vehicle with a lane tracing assist, make sure to use a genuine steering wheel assembly with a lane tracing assist.

(e) No. 2 skid control ECU (brake actuator assembly):

(1) After replacing the No. 2 skid control ECU (brake actuator assembly), perform zero point calibration and store system information.

[Click here](#) 

(2) When the No. 2 skid control ECU (brake actuator assembly) is replaced, update the ECU security key.

[Click here](#) 

(f) Hybrid vehicle control ECU:

(1) It is necessary to perform initialization after replacing the hybrid vehicle control ECU.

(2) Before replacing the hybrid vehicle control ECU, refer to Registration.

[Click here](#) 

(3) When the hybrid vehicle control ECU is replaced, update the ECU security key.

[Click here](#) 

#### SENSOR EXPRESSIONS

(a) The descriptions for the blind spot monitor sensors differ depending on the system. The expressions listed in the table below are used in this Repair Manual.

PART NAME	ACTUAL PART NAME
Front side radar sensor (A)	Front side radar sensor (LH)
Front side radar sensor (B)	Front side radar sensor (RH)
Blind spot monitor sensor LH (B)	Blind spot monitor sensor LH
Blind spot monitor sensor RH (A)	Blind spot monitor sensor RH

