

Last Modified: 12-04-2024	6.11:8.1.0	Doc ID: RM10000002917U
Model Year Start: 2023	Model: Prius Prime	Prod Date Range: [12/2022 -]
Title: PARK ASSIST / MONITORING: PANORAMIC VIEW MONITOR SYSTEM: PRECAUTION; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

PRECAUTION

PRECAUTION 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.

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HINT:

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

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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
Blind spot monitor sensor LH (B)	Blind spot monitor sensor LH
Blind spot monitor sensor RH (A)	Blind spot monitor sensor RH

POINTS TO NOTE WHEN SERVICING

- (a) Pay attention to the following points when servicing.
- (1) Depending on the parts that are replaced or operations that are performed during vehicle inspection or maintenance, calibration of other systems as well as the panoramic view monitor system may be needed.

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HINT:

Each adjusted value for the calibration of the panoramic view monitor system will be stored in the parking assist ECU.

- (2) When the lens of the television camera assembly is dirty, wash the lens with water and wipe it off with a soft cloth to obtain clear images. For heavy dirt, use neutral detergent to clean the lens.

PRECAUTIONS FOR PANORAMIC VIEW MONITOR SYSTEM

- (a) In the following situations, the panoramic view monitor system may not operate correctly:

- (1) When driving on icy, slippery or snowy roads
- (2) When using tire chains or a spare tire
- (3) When a door is not fully closed
- (4) When driving on a slope or rough roads
- (5) When using tires other than specified
- (6) When the suspension of the vehicle has been modified

- (b) As the panoramic view monitor system generates the panoramic image by combining images received from the front television camera assembly, rear television camera assembly and side camera assemblies, the following phenomenon may occur:
- (1) A three dimensional object may appear tilted
 - (2) An object above the road surface may appear farther away than it actually is, or may not be displayed at all
 - (3) A tall object may look as if it is coming out from between 2 combined images
 - (4) Depending on the brightness of the area surrounding each camera, there may be a significant difference in the brightness of the images that are used to generate the panoramic image.
- (c) The image quality at the four corners of the panoramic image may be low as this is where the individual images are combined.
- (d) Objects a certain height above the camera assemblies will not be displayed.
- (e) Objects extremely close to the vehicle may not be displayed on the panoramic view monitor.
- (f) The panoramic image may not be displayed correctly if a front door, rear door or the back door is open.
- (g) The panoramic image may not be displayed correctly if the height or inclination of the vehicle changes due to loading from passengers, luggage, etc.
- (h) As the size and shape of the vehicle icon may differ from that of the actual vehicle, the position of an object relative to the vehicle icon may appear different to its actual position.

PRECAUTION FOR MOVING OBJECT DETECTION (w/ Advanced Park)

- (a) In the following situations, the camera may not be able to correctly detect moving objects.
- (1) Pedestrians who are running.
 - (2) Pedestrians who suddenly appear from the shadow of the vehicle or a building.
 - (3) Pedestrians who are riding moving objects such as a skateboard.
 - (4) Pedestrians whose clothing appears to be nearly the same color or brightness as their surroundings.
 - (5) Pedestrians behind an object such as a cart or luggage that hides part of their body.
 - (6) At night (after sunset).
 - (7) During bad weather (rain, snow, fog, etc.).
 - (8) When the lens is damaged or dirty (dirt, snow-melting agent, etc.).
 - (9) When water drops are moving over the camera lens.
 - (10) When a very bright light is shining directly into the camera sensor.
 - (11) When there is a difference in brightness (near open shutters in a garage or underground parking area, etc.).
- (b) When objects such as the following are detected, the system may operate even without possibility of collision.
- (1) Moving objects (such as flags, exhaust gas, large drops of rain, large snowflakes, rainwater on roads, etc.).
 - (2) When there are patterns on the road (white lines, pedestrian crossings, stones, streetcar rails, repaired areas, fallen leaves, gravel, standing water, etc.).
 - (3) A metal cover (grating) or drainage ditch.
 - (4) When there is a shoulder or an uneven surface.
 - (5) Objects reflected off puddles or wet road surfaces.
 - (6) Shadows.
 - (7) Elongated structures (columns, triangular cones, fire hydrants, etc.).

- (8) Stationary pedestrians, motorcycles, vehicles.
- (c) In conditions such as the following, the system may operate even without possibility of collision.
 - (1) When driving over an uneven surface.
 - (2) When the vehicle is extremely tilted (loaded, suddenly braking, etc.).
 - (3) When there are changes in gradient.
 - (4) A lowered suspension or tire with a different diameter than a genuine tire, etc. is installed.
 - (5) When there is an extreme change in vehicle height (nose up, nose down, etc.).
 - (6) When an aftermarket accessory (backlit license plate, fog light, etc.) is installed near the rear camera.
 - (7) When an aftermarket protective part is installed to the rear bumper (bumper trim, etc.).
 - (8) When an arm is held outside of a window.
 - (9) When a camera is mispositioned or misaligned.
 - (10) When a tow hook is installed to the vehicle.
 - (11) When the camera lens is dirty (mud, snow-melting agent, etc.).
 - (12) When water drops are moving over the camera lens.
 - (13) When there is a flashing light source (hazard lights, etc.).

NOTES FOR EACH TELEVISION CAMERA ASSEMBLY

- (a) Notes for each television camera assembly
 - (1) The panoramic view monitor system may not function properly if subjected to a severe blow by any hard object.
 - (2) Do not scrub the cover part of the camera (resin made). Scrubbing may scratch the cover and affect the image. Prevent organic solvents, waxes, bond removing solvents or glass coating from adhering to the cover. If such material adheres to the cover, clean it off immediately and wash it with water.
 - (3) Exposing the camera to a sudden temperature change may affect proper functioning of the camera.
 - (4) A clear image may not appear if the camera is dirty with snow, mud, etc. In that case, wash it with water and wipe off the lens. Use a detergent to remove dirt if necessary.
 - (5) When washing the vehicle with a high-pressure washer, do not spray water on the television camera assembly or surrounding area. High-pressure water can damage the camera.
- (b) Images may be unclear even in normal conditions if:
 - (1) The outer mirror switch assembly is operated (noise may occur in the image).
 - (2) Electrical devices are used in the cabin (noise may occur in the image).
 - (3) Accessories that generate radio waves have been installed (noise may occur in the image).
 - (4) The camera lens is frosted over (the image immediately after turning the ignition switch to ON may be blurred or darker than normal).
 - (5) The camera lens is dirty with snow, mud, etc.
 - (6) The lens of a camera is covered with foreign matter.
 - (7) A strong beam of light, such as a sunbeam or headlight, hits the camera.
 - (8) It is too dark around the camera (at night, etc.).
 - (9) The ambient temperature around the camera is either too high or too low.
 - (10) The vehicle is tilted at a steep angle.
 - (11) The area around the vehicle is not sufficiently bright.
 - (12) The television camera assembly lens is scratched.

- (13) The television camera assembly lens has drops of water on it or the humidity is high.
- (14) When the camera is used under fluorescent lights, sodium lights or mercury lights, etc., the lights and the illuminated area may appear to flicker.
- (15) The side outer mirror is equipped with a parking assist light and the side camera reacts even to infrared rays. Therefore, the camera image may differ from how objects look under visible light, because the infrared rays in sunlight or halogen lights, or the light emitted from the parking assist light may lighten the color of the camera image or change the color shade.

PRECAUTIONS FOR USING REAR CAMERA DETECTION FUNCTION (w/ Rear Camera Detection Function)

- (a) a. The rear camera detection function may not be able to detect pedestrians correctly in the following situations:
 - (1) Pedestrians who are bending forward or squatting
 - (2) Pedestrians who are laying down
 - (3) Pedestrians who are running
 - (4) Pedestrians who suddenly appear from the shadow of the vehicle or a building
 - (5) Pedestrians who are riding moving objects such as a bicycle, skateboard, etc.
 - (6) Pedestrians wearing oversized clothing such as a rain coat, long skirt, etc., making their silhouette obscure
 - (7) Pedestrians at night or whose clothing appears to be nearly the same color or brightness as their surroundings.
 - (8) Pedestrians behind an object such as a cart or luggage that hides part of their body
 - (9) At night (after sunset)
 - (10) During bad weather (rain, snow, fog, etc.)
 - (11) Damaged or dirty lens (dirt, snow-melting agent, etc.)
 - (12) Backlight (direct sunlight, sunlight reflected off the road surface, headlights of other vehicles, etc.)
 - (13) Difference in brightness (near open shutters in a garage or underground parking area)
- (b) The rear camera detection function may not perform valid detection in the following conditions:
 - (1) Solid objects (pillars, pylons, fences, parked vehicles, etc.)
 - (2) Moving objects (passing vehicle, motorcycle, etc.)
 - (3) Moving objects (such as flags, exhaust gas, large drops of rain, large snowflakes, rainwater on roads, etc.)
 - (4) Patterns on roads (white lines, pedestrian crossings, stones, streetcar rails, repaired areas, fallen leaves, gravel, etc.)
 - (5) A metal cover (grating) or drainage ditch
 - (6) Shoulders and ridges
 - (7) Surrounding objects reflected off puddles or wet road surfaces
 - (8) Shadows
 - (9) When driving over an uneven surface
 - (10) The vehicle is extremely tilted (loaded, suddenly braking, etc.)
 - (11) There are changes in gradient
 - (12) A lowered suspension or tire with a different diameter than a genuine tire, etc. is installed
 - (13) An extreme change in vehicle height (such as nose up, nose down, etc.)
 - (14) An aftermarket accessory (backlit license plate, fog light, etc.) is installed near the rear camera

- (15) An aftermarket protective part is installed to the rear bumper (bumper trim, etc.)
 - (16) The axis of the camera is misaligned (due to reinstallation, collision, etc.)
 - (17) A towing hook is installed
 - (18) The camera lens is dirty (mud, snow-melting agent, etc.)
 - (19) Water drops are moving over the camera lens
 - (20) There is a flashing light source (hazard lights, etc.)
- (c) Regarding the visibility of the radio and display receiver assembly
- (1) When the temperature inside the vehicle is extremely high or extremely low, the radio and display receiver assembly may not correctly display detection.
- (d) Regarding the audibility of the buzzer sound
- (1) If the volume setting of the audio system is high, it may be difficult to hear the buzzer.

PRECAUTION FOR PARKING ASSIST LIGHT

(a) Precautions

- Do not apply excessive force to the camera lens of the parking assist lights or subject them to a strong impact as it may affect proper functioning of the parking assist lights.
- Do not scrub the camera lens of the parking assist lights as scrubbing may scratch the lens and affect the quality of the image.
- The cover parts of the parking assist lights are made of resin. If any organic solvent, degreaser, wax or glass coating contacts a cover, immediately wipe it off and wash the cover with water or cracks may develop.
- Do not expose the parking assist lights to sudden temperature changes (such as pouring hot water in cold weather) as it may affect proper functioning of the panoramic view monitor system.
- If there is foreign matter such as water drops, snow or mud on the camera lenses of the parking assist lights, wash the cameras with a large amount of water and then wipe the lenses with a soft wet cloth. Do not scrub the camera lenses as scrubbing may scratch them and may adversely affect operation.
- When washing the vehicle with a high-pressure washer, do not spray water on the parking assist lights or surrounding area. High-pressure water can damage the parking assist lights.

(b) If the quality of the image is poor even when the system is operating normally.

- (1) A foreign object is attached to a camera lens
- (2) A camera lens is covered with foreign matter, etc.
- (3) The temperature around a camera lens is excessively high or low
- (4) The vehicle or road is on an incline
- (5) A camera lens is scratched
- (6) A camera lens has water droplets on it or the humidity is high

PRECAUTIONS FOR RECORDED DATA

- (a) The panoramic view monitor system records data related to vehicle control and operation. Make sure to clear the data if requested by the customer.

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PRECAUTIONS FOR REPLACEMENT OF COMPONENTS

- (a) After replacing certain components, it may be necessary to send the vehicle information.

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