
REAR VEHICLE MONITORING SYSTEM

id092200029800

Outline

- The rear vehicle monitoring system detects vehicles approaching from behind and notifies the driver using a warning indication and warning sound if the driver tries to change lanes to the side of the approaching vehicle.
- The rear vehicle monitoring control module performs rear vehicle monitoring system fail-safe. (See REAR VEHICLE MONITORING CONTROL MODULE.)

Warning

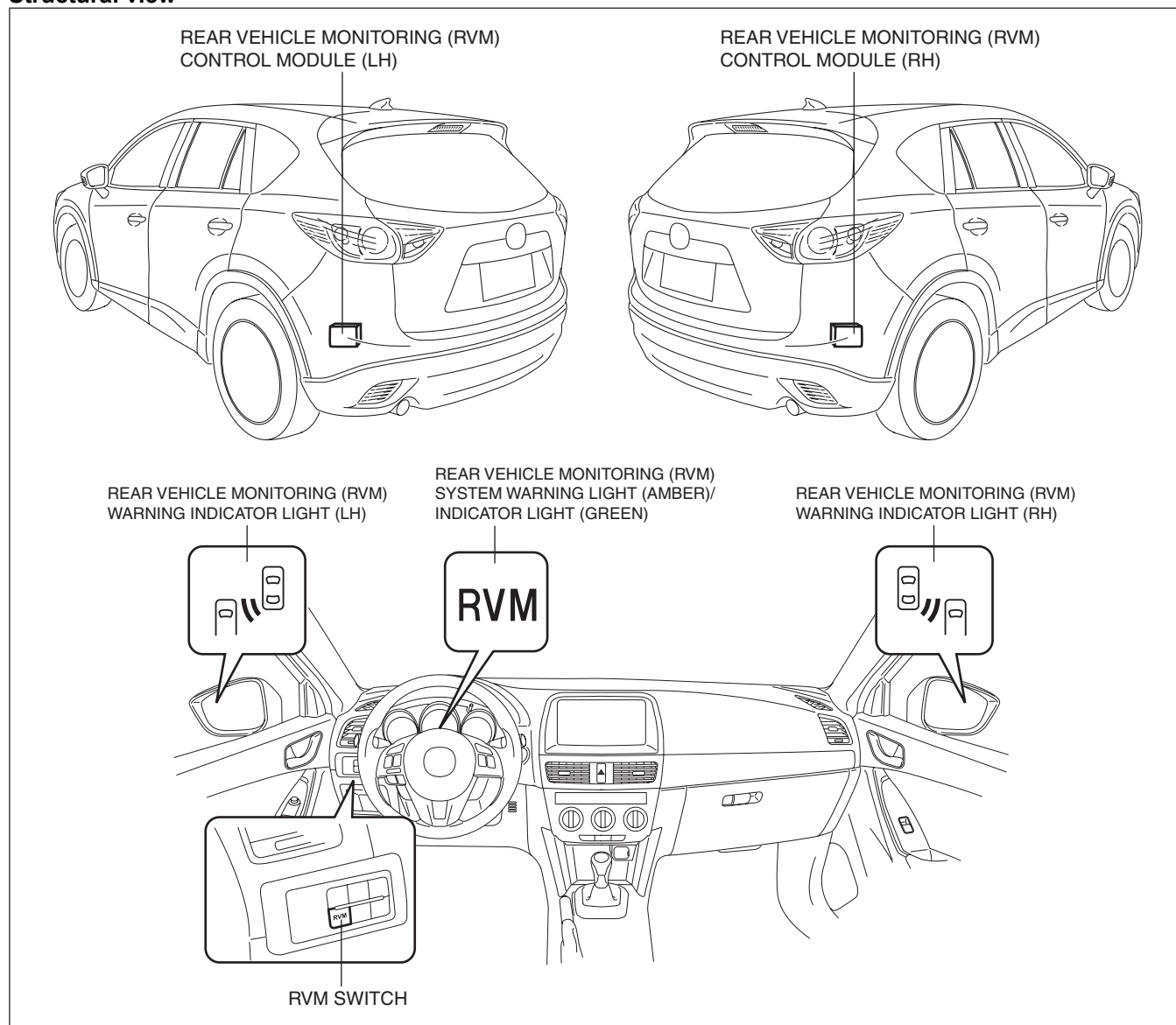
- The rear vehicle monitoring system is not a substitute for the driver in confirming safety. The driver is responsible for assuring the safety of lane changes and other maneuvers. Do not rely completely on the rear vehicle monitoring system, and always confirm the safety around the vehicle visually before changing lanes.
- Due to various restrictions in the operation of the rear vehicle monitoring system, the RVM warning indicator light might not illuminate or it may be delayed even if there is a vehicle traveling in the adjacent lane.
- If there is mud, water, or snow adhering to the areas near the rear vehicle monitoring control modules, obstruction of the radar could result in the system not appropriately detecting a target vehicle, or complete non-detection of the target vehicle. Always pay attention to the direction of vehicle travel and the area around the vehicle.
- Do not block the area around the rear vehicle monitoring control modules on the rear bumper with foreign material (such as bumper stickers) so as not to affect the rear vehicle monitoring system functions.
- Perform radar aiming for the rear vehicle monitoring control modules if the rear bumper has received an impact.
- The rear vehicle monitoring system may not operate normally under the following conditions:
 - Dirt, ice or snow is adhering to rear bumper surface
 - Vehicle is driven in heavy rain or snowfall, or under conditions where water on road is sprayed by vehicle
 - Vehicle is towing trailer
 - Vehicle accelerates from standing-start with target vehicle alongside
 - Target vehicle moves laterally from lane two lanes over to adjacent lane
 - Difference in vehicle speed between vehicle and target vehicle is higher with target vehicle passing through detection area in very short period
 - On steep incline, or if there is difference in height between lanes
- The system may detect guardrails or vehicles on a road shoulder and activate the warning light/beep.
- The rear vehicle monitoring control modules may not detect all types of vehicles. In particular, detection of the following types of vehicles may not occur:
 - A vehicle driving at a low speed
 - Small vehicles such as motorcycles
 - Vehicles with body shapes that may not reflect radar such as unloaded trailers
 - Vehicles with low vehicle height
 - The difference in vehicle speed between the vehicle and a target vehicle is extremely high.
 - A target vehicle accelerates suddenly from the rear of the vehicle and changes to the adjacent lane.
 - Target vehicles which are traveling in the vehicle's blind spot at nearly the same speed for long periods
- The RVM warning indicator light may be difficult to view under the following conditions:
 - Sunlight at sunrise and sunset is reflected in and around the RVM warning indicator light
 - A lighting device with strong illumination is used in the vehicle
- On a road with a narrower lane width, the system could detect vehicles on a lane next to the adjacent lane and cause the warning light/beep to operate. Conversely, on a road with a wider lane width, the system may not detect vehicles on the adjacent lane and may not operate the warning light/beep.

Caution

- If the rear bumper installation position is changed or individual differences (coating film/thickness) occur, the radar angle will deviate and the rear vehicle monitoring system may not operate properly. Perform the radar aiming using the SSTs (Service Special Tools) and Mazda Modular Diagnostic System (M-MDS) when any of the following items have been performed.
 - Rear vehicle monitoring control modules are replaced
 - Rear vehicle monitoring brackets are replaced
 - Rear bumper is repaired or replaced
 - Vehicle's rear area is repaired due to collision

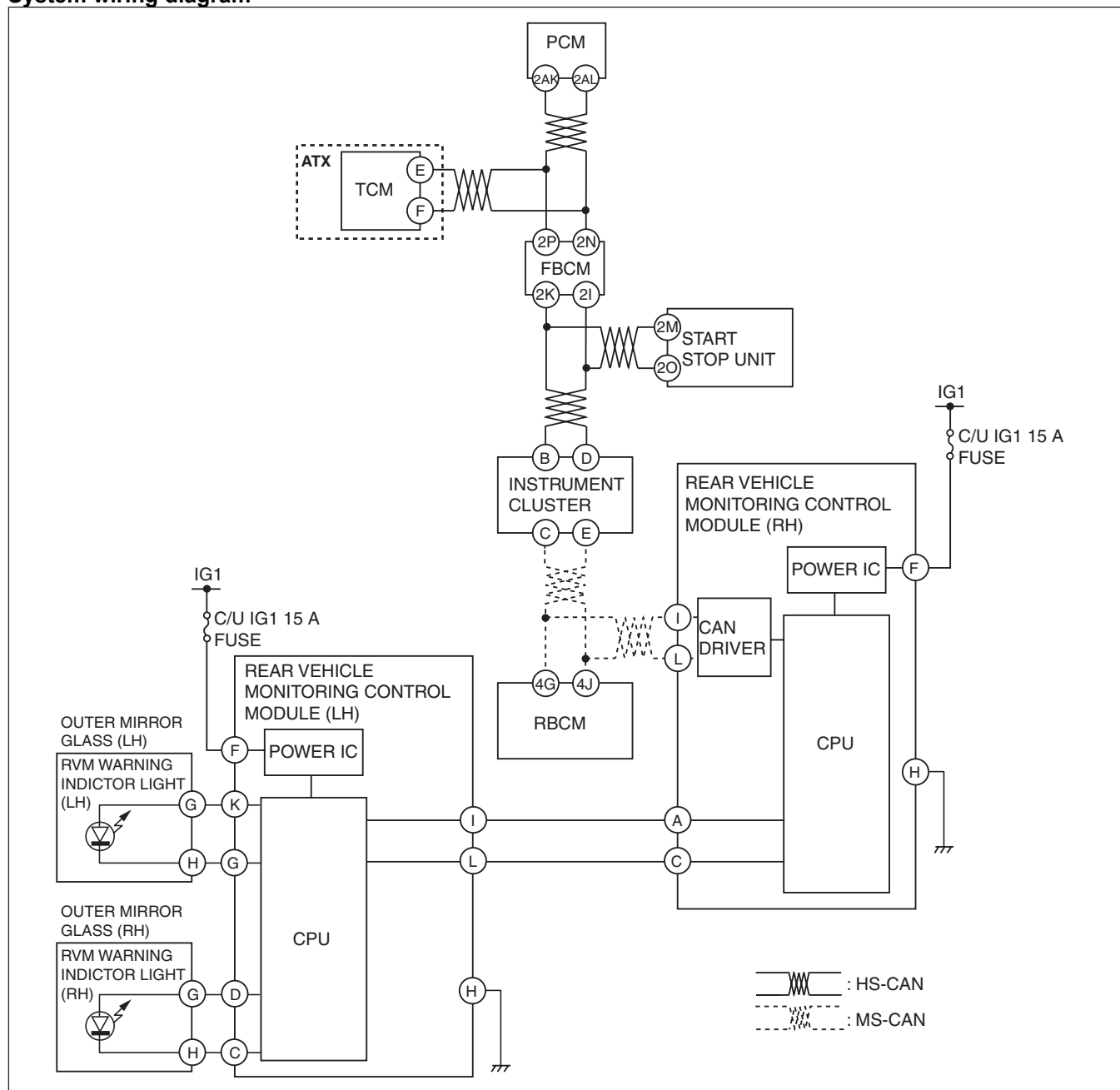
- Refer to the Workshop Manual for the radar aiming procedure.

Structural view



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System wiring diagram



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Operation

Operation condition

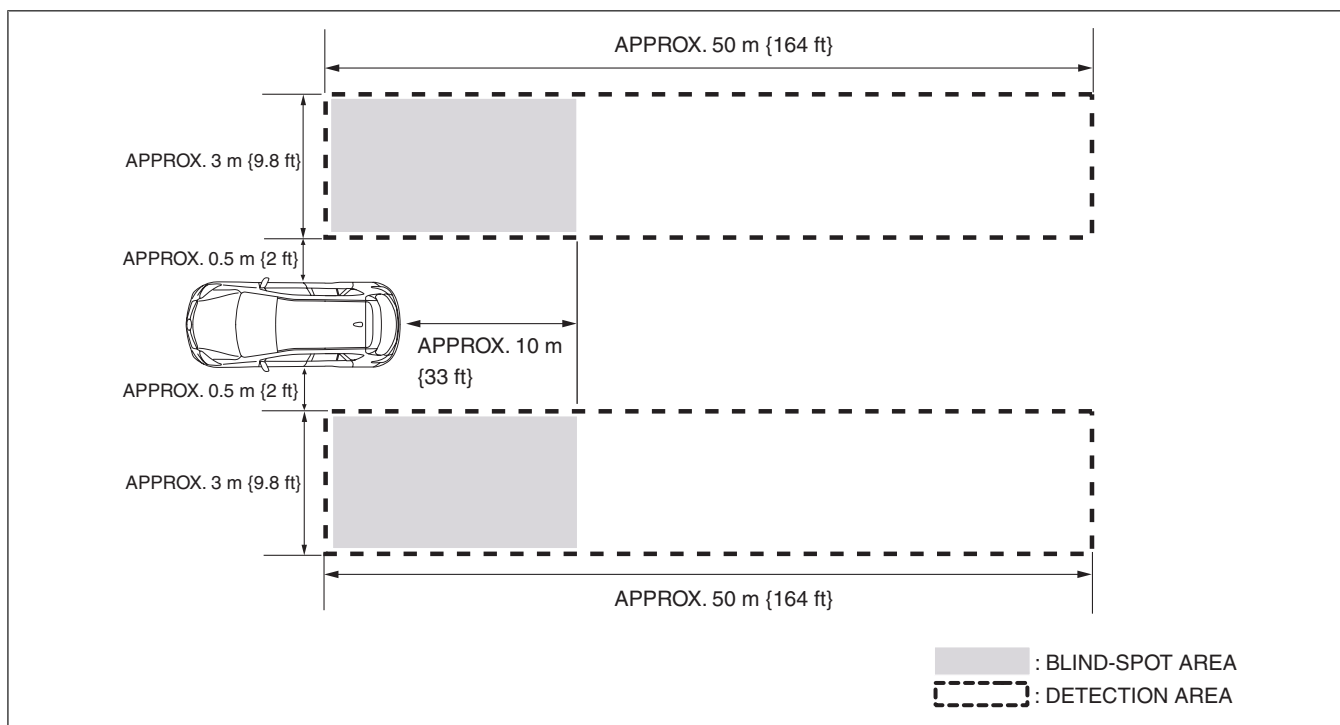
- When all of the following conditions are met, the system operates and the RVM indicator light (green) illuminates.
 - RVM switch is on (system on)
 - Vehicle speed is **approx. 30 km/h {19 mph} or more**
- When the vehicle speed is **approx. 30 km/h {19 mph} or less**, the vehicle detection is cancelled and the RVM indicator light (green) remains illuminated.

Cancel conditions

- When the following condition is met, the system is cancelled and the RVM indicator light (green) turns off.
 - RVM switch is off (system off)

Monitor operation

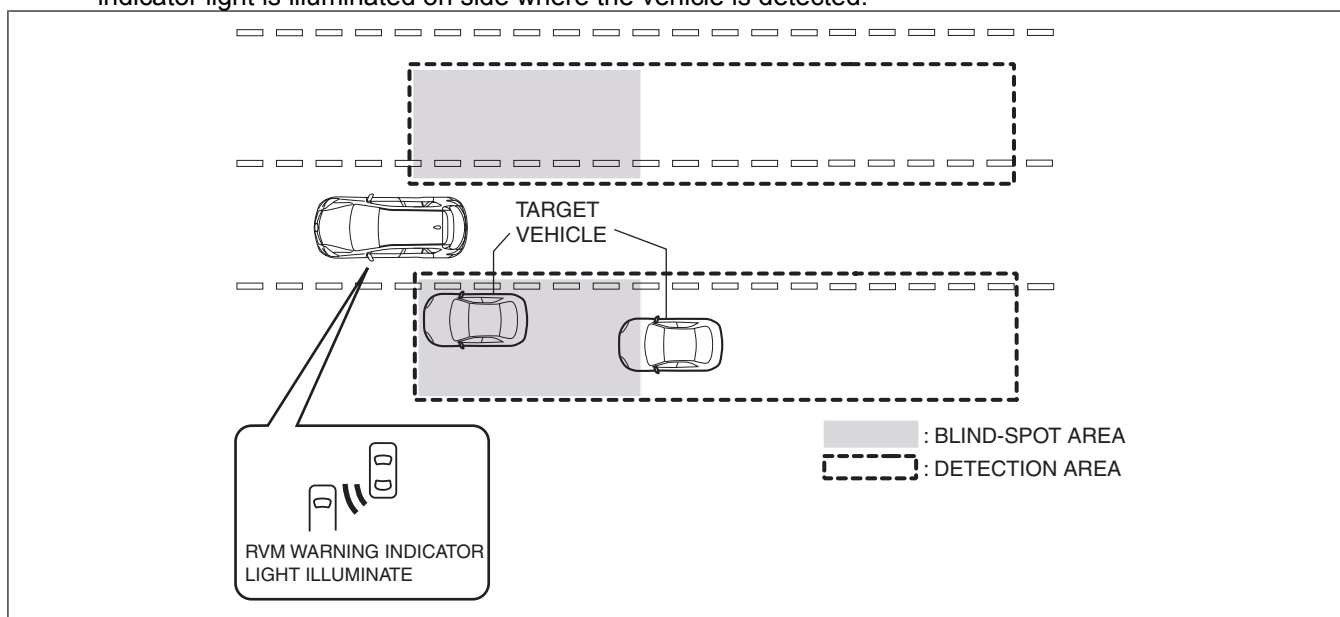
- The monitored areas are called the detection area and the blind-spot area, and the rear vehicle monitoring system control modules monitor the following ranges:
 - Detection area: From B-pillar towards vehicle rear at area to a distance of **approx. 50 m {164 ft}**
 - Blind-spot area: Area to a distance of **approx. 10 m {33 ft}** from vehicle rear



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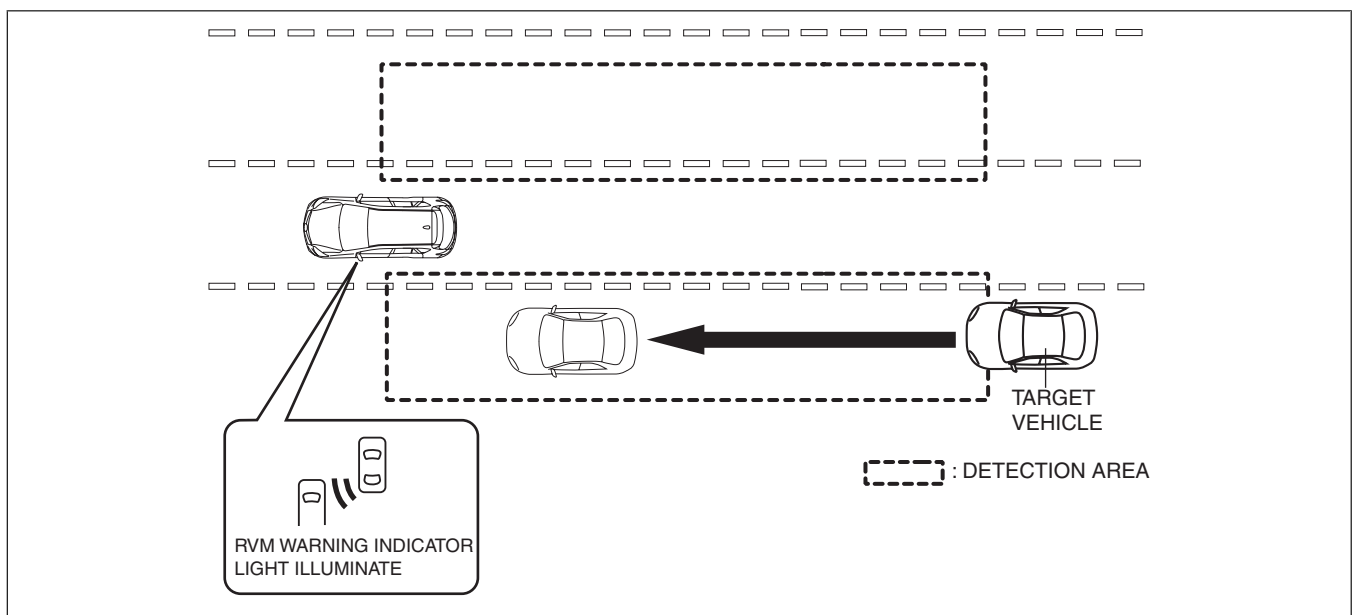
Vehicle detection operation

- If the following vehicles are detected, the rear vehicle monitoring control module illuminates the RVM warning indicator light.
 - When a vehicle is detected in the blind-spot area (**approx. 10 m {33 ft}** from vehicle rear), the RVM warning indicator light is illuminated on side where the vehicle is detected.



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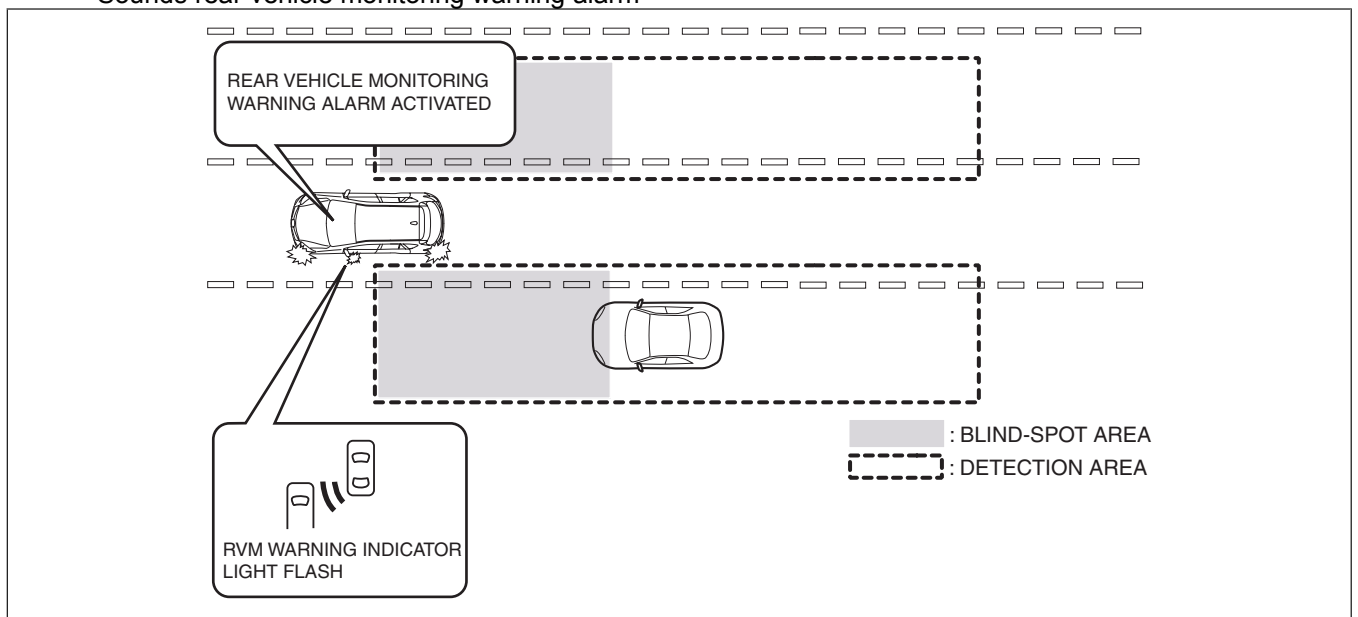
- When a vehicle is detected in the detection area (**approx. 50 m {164 ft}** from vehicle rear) and the vehicle which can enter the blind-spot area within approx. 5 s from when it enters the detection area, the RVM warning indicator light is illuminated on side where the vehicle is detected.



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Warning operation

- When a turn switch ON signal is received on the side where the vehicle is detected during the vehicle detection operation, the rear vehicle monitoring control module warns as follows:
 - Flashes RVM warning indicator light
 - Sounds rear vehicle monitoring warning alarm



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