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| **Title:** CRUISE CONTROL: LANE DEPARTURE ALERT SYSTEM: LANE DEPARTURE ALERT CONTROL; 2013 MY RAV4 [12/2012 - ] | | |

# LANE DEPARTURE ALERT CONTROL

## 1. FUNCTION OF MAIN COMPONENTS

| COMPONENT | | FUNCTION |
|---|---|---|
| Combination Meter Assembly | LDA Main Indicator Light | Illuminates or blinks to warn the driver in accordance with signals from the lane departure warning camera assembly. |
| Lane Departure Warning Camera | | • Captures the road view ahead of the vehicle, detects lane markers on the driving lane and calculates the radius to the center of the lane, lane width, lateral deviation and heading angle deviation.<br>• Receives signals from the ECU and from each sensor and controls the lane departure alert system.<br>• Transmits the LDA main indicator light illumination request signal to the combination meter assembly. |
| ECM | | Sends a shift position signal to the lane departure warning camera. |
| Skid Control ECU | | Sends a vehicle speed signal from the speed sensor to the lane departure warning camera. |
| LDA Main Switch | | Detects on/off status of the system and transmits a signal to the lane departure warning camera. |
| Headlight Dimmer Switch Assembly | | Transmits a turn signal command to the lane departure warning camera. |
| Yawrate Sensor | | Detects yaw rate and transmits a signal to the lane departure warning camera. |
| Speed Sensors | | Transmits a vehicle speed signal to the skid control ECU. |
| Skid Control Buzzer Assembly | | Sounds to warn the driver in accordance with signals from the lane departure warning camera. |

## 2. OPERATING CONDITION

(a) Operating Conditions of Lane Departure Alert System

| OPERATION | CONDITION |
|---|---|
| Start | The lane departure warning function is activated when all of the following conditions are met:<br>• The LDA main switch is on.<br>• The vehicle speed is between approx. 50 km/h (32 mph) and 220 km/h (138 mph).<br>• Lane markers are detected.<br>• No turn signal command is detected.<br>• The lane departure alert system is normal. |

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| Stand-by | The lane departure alert system is suspended when any one of the following conditions is met:<br>• The vehicle speed is not between approx. 50 km/h (32 mph) and 220 km/h (138 mph).<br>• A turn signal command is detected.<br>• No lane markers are detected.<br>• This function resumes when the conditions above are removed. |
| Stop | The lane departure alert system is stopped when any one of the following conditions is met:<br>• The LDA main switch is off.<br>• The lane departure alert system is malfunctioning.<br>The lane departure alert system resumes when the following conditions are met:<br>• The conditions of the start operation above are satisfied.<br>• The lane departure alert system condition is normal.<br>• The ignition switch is turned off and ON again to ensure normal operation, after the lane departure alert system has been stopped by a system malfunction. |

### 3. FUNCTION

(a) The lane departure warning camera calculates the estimated position which the front wheel will reach after a few seconds based on the information collected by the lane departure warning camera, vehicle speeds and front wheel positions. When the lane departure warning camera determines that the front wheel is about to cross the lane marker, the lane departure warning camera activates the lane departure alert system, blinks the LDA main indicator light and sounds the skid control buzzer assembly.

(b) The lane departure alert system does not operate if the vehicle approaches the lane marker (but does not cross it), as long as the vehicle remains parallel with the lane marker.