

## SECTION **CCS** CRUISE CONTROL SYSTEM

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## PRECAUTION

### PRECAUTIONS

#### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000009727802

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

#### **WARNING:**

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

#### PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

#### **WARNING:**

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

#### Precautions For Harness Repair

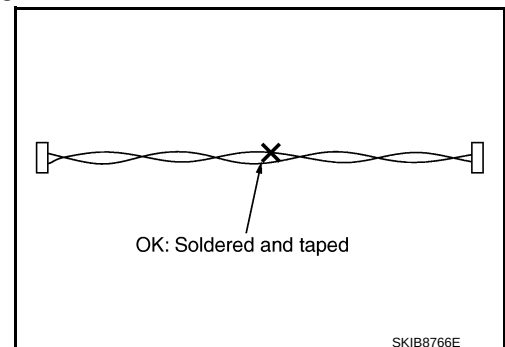
INFOID:000000009644190

ITS communication uses a twisted pair line. Be careful when repairing it.

- Solder the repaired area and wrap tape around the soldered area.

#### **NOTE:**

A fray of twisted lines must be within 110 mm (4.33 in).



## PRECAUTIONS

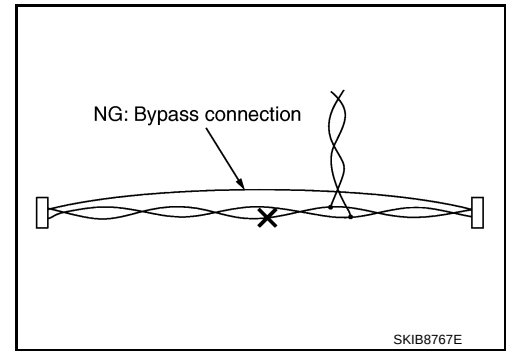
### < PRECAUTION >

[ICC]

- Bypass connection is never allowed at the repaired area.

**NOTE:**

Bypass connection may cause ITS communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.



### ICC System Service

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**CAUTION:**

- Turn the MAIN switch OFF in conditions similar to driving, such as free rollers or a chassis dynamometer.
- Never use the ICC sensor removed from vehicle. Never disassemble or remodel.
- Erase DTC when replacing parts of ICC system, then check the operation of ICC system after radar alignment if necessary.

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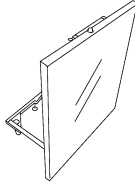
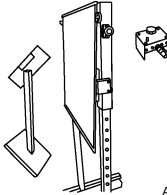
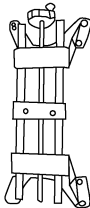
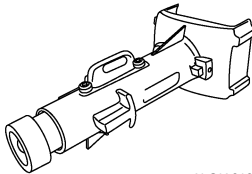
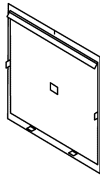
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## PREPARATION

### PREPARATION

#### Special Service Tools

INFOID:000000009644192

| Tool number<br>(Kent-Moore No.)<br>Tool name          |                                                                                                    | Description              |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------|
| KV99112700<br>(—)<br>ICC target board                 | <br>JSOIA1012ZZ   | Uses for radar alignment |
| —<br>(1-20-2722-1-IF)<br>ICC alignment kit*           | <br>AWOIA0016ZZ   | Uses for radar alignment |
| —<br>(1-20-2722-1-IF)<br>Wheel adaptor*               | <br>AWOIA0017ZZ | Uses for radar alignment |
| —<br>(J-51093)<br>ICC sensor cone alignment tool*     | <br>ALOIA0197ZZ | Uses for radar alignment |
| —<br>(J-50808)<br>ICC alignment kit attachment board* | <br>JSOIA1065ZZ | Uses for radar alignment |

#### NOTE:

For radar alignment, KV99112700 or a set of Kent-Moore No. SST are to be used.

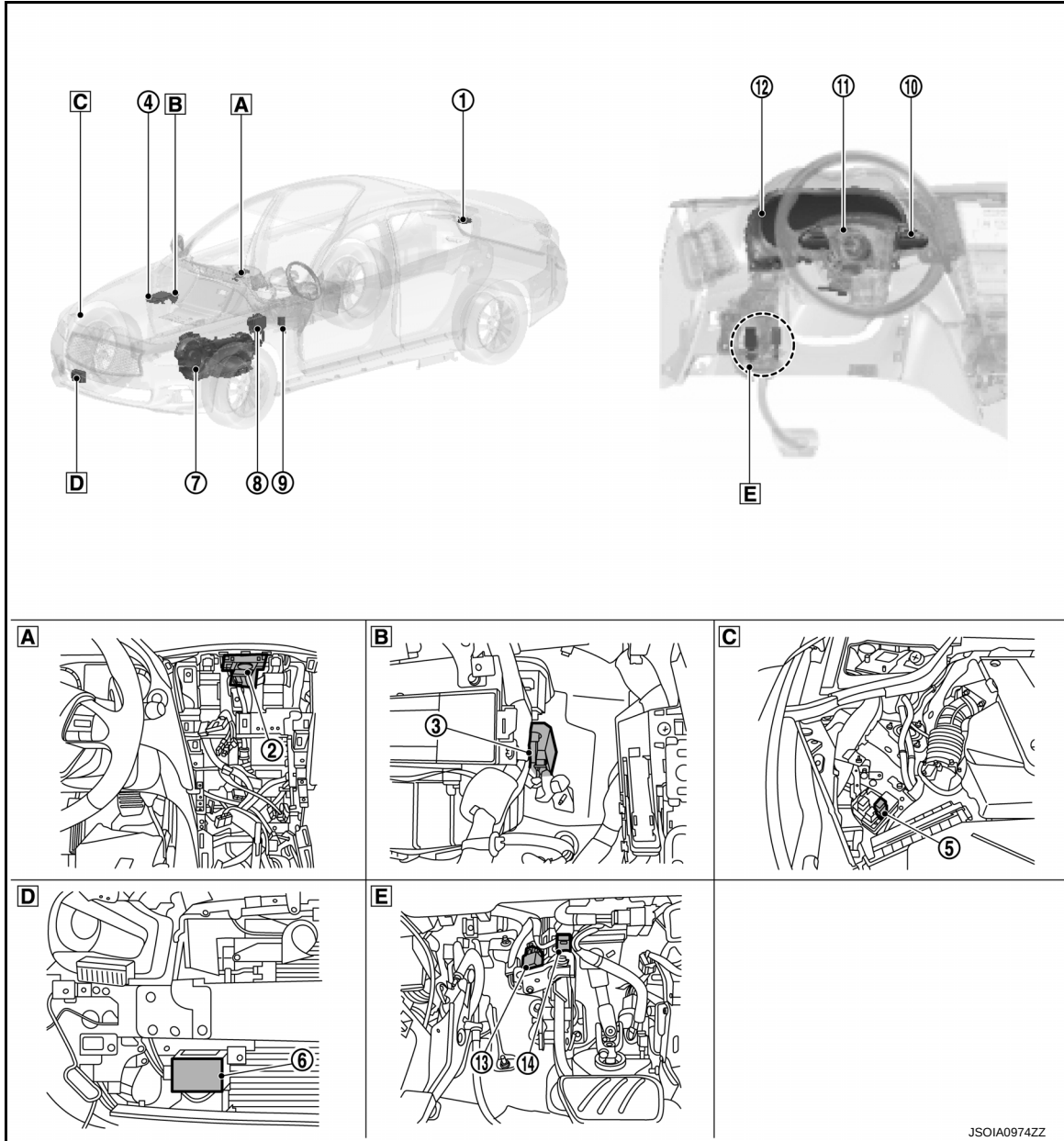
\*: This service manual does not apply when using special service tool 1-20-2722-1-IF, J-51093, and J-50808. For the radar alignment procedure with these tools, refer to the instructions included with the tool.

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000009644193



**A** Instrument panel (Center)

**B** Instrument lower panel (RH)

**C** Engine room (RH)

**D** Front bumper (RH)

**E** Upper side of brake pedal

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# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[ICC]

×: Applicable

| No. | Component                                     | Function                                 |                                                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----|-----------------------------------------------|------------------------------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                               | Vehicle-to-vehicle distance control mode | Conventional (fixed speed) cruise control mode |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| ①   | ADAS control unit                             | ×                                        | ×                                              | Refer to <a href="#">CCS-9, "ADAS Control Unit"</a><br>Refer to <a href="#">DAS-14, "Component Parts Location"</a> for detailed installation location                                                                                                                                                                                                                                                                                                                                         |
| ②   | Driver assistance buzzer                      | ×                                        | ×                                              | Refer to <a href="#">CCS-11, "Driver Assistance Buzzer"</a>                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| ③   | Driver assistance buzzer control module       | ×                                        | ×                                              | Refer to <a href="#">CCS-11, "Driver Assistance Buzzer Control Module"</a>                                                                                                                                                                                                                                                                                                                                                                                                                    |
| ④   | ECM                                           | ×                                        | ×                                              | <ul style="list-style-type: none"> <li>ECM transmits the accelerator pedal position signal, ICC brake switch signal, stop lamp switch signal, ICC steering switch etc. to ADAS control unit via CAN communication</li> <li>ECM controls the electric throttle control actuator based on the engine torque demand received from the ADAS control unit via CAN communication</li> </ul>                                                                                                         |
| ⑤   | ICC brake hold relay                          | ×                                        |                                                | Refer to <a href="#">CCS-10, "ICC Brake Hold Relay"</a>                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ⑥   | ICC sensor                                    | ×                                        | ×                                              | Refer to <a href="#">CCS-9, "ICC Sensor"</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| ⑦   | TCM                                           | ×                                        | ×                                              | TCM transmits the signal related to A/T control to ADAS control unit via CAN communication                                                                                                                                                                                                                                                                                                                                                                                                    |
| ⑧   | ABS actuator and electric unit (control unit) | ×                                        | ×                                              | <ul style="list-style-type: none"> <li>ABS actuator and electric unit (control unit) transmits the vehicle speed signal (wheel speed), stop lamp switch signal and VDC/TCS/ABS system operation condition to ADAS control unit via CAN communication</li> <li>ABS actuator and electric unit (control unit) controls the brake, based on a brake fluid pressure control signal received from the ADAS control unit via chassis control module</li> </ul>                                      |
| ⑨   | Chassis control module                        | ×                                        | ×                                              | Chassis control module transmits the drive mode signal to ADAS control unit via CAN communication                                                                                                                                                                                                                                                                                                                                                                                             |
| ⑩   | ICC steering switch                           | ×                                        | ×                                              | <ul style="list-style-type: none"> <li>Description: Refer to <a href="#">CCS-10, "ICC Steering Switch"</a></li> <li>Switch name and function: <a href="#">CCS-20, "VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION : Switch Name and Function"</a> (Vehicle to vehicle distance control mode)</li> <li>Switch name and function: <a href="#">CCS-24, "CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION : Switch Name and Function"</a> (Conventional cruise control mode)</li> </ul> |
| ⑪   | Steering angle sensor                         | ×                                        |                                                | Measures the rotation amount, rotation speed, and rotation direction of steering wheel, and then transmits them to ADAS control unit via CAN communication                                                                                                                                                                                                                                                                                                                                    |

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

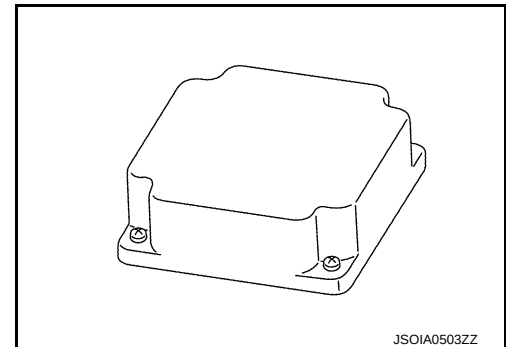
[ICC]

| No. | Component                   | Function                                 |                                                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----|-----------------------------|------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                             | Vehicle-to-vehicle distance control mode | Conventional (fixed speed) cruise control mode |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| ⑫   | Combination meter           | ×                                        | ×                                              | <p>Performs the following operations using the signals received from the ADAS control unit via the CAN communication</p> <ul style="list-style-type: none"> <li>Description: Refer to <a href="#">CCS-10. "Combination Meter"</a></li> <li>System display and warning: <a href="#">CCS-20. "VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION : Menu Displayed by Pressing Each Switch"</a> (Vehicle to vehicle distance control mode)</li> <li>System display and warning: <a href="#">CCS-24. "CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION : Menu Displayed by Pressing Each Switch"</a> (Conventional cruise control mode)</li> </ul> |
| ⑬   | Stop lamp switch            | ×                                        | ×                                              | Refer to <a href="#">CCS-10. "Brake Pedal Position Switch / Stop Lamp Switch"</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| ⑭   | Brake pedal position switch | ×                                        | ×                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## ADAS Control Unit

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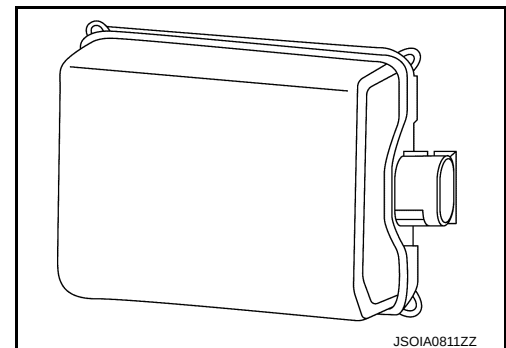
- ADAS control unit is installed at trunk side of the parcel shelf.
- Communicates with each control unit via CAN communication/ITS communication/Chassis communication.
- ADAS control unit included gateway function, and necessary for system control signals are transmitted to each control unit between CAN communication and ITS communication by the ADAS control unit.
- ADAS control unit controls the each system, based on ITS communication signal, CAN communication signal, and chassis communication signal from each control unit.



## ICC Sensor

INFOID:000000009644195

- ICC sensor is installed on the back of the front bumper and detects a vehicle ahead by using millimeter waves.
- ICC sensor detects radar reflected from a vehicle ahead by irradiating radar forward and calculates a distance from the vehicle ahead and relative speed, based on the detected signal.
- ICC sensor transmits the presence/absence of vehicle ahead and the distance from the vehicle to ADAS control unit via ITS communication.



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## ICC Steering Switch

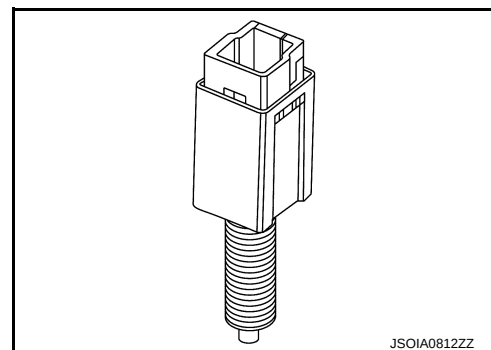
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- ICC steering switch is installed to the steering wheel and allows the driver to operate the ICC system by using this switch.
- ICC steering switch allows the ON/OFF of the Intelligent Cruise Control and the settings of a vehicle speed and distance between vehicles.
- ICC steering switch signal is transmitted to ECM. ECM transmits the signal to the ADAS control unit via CAN communication.

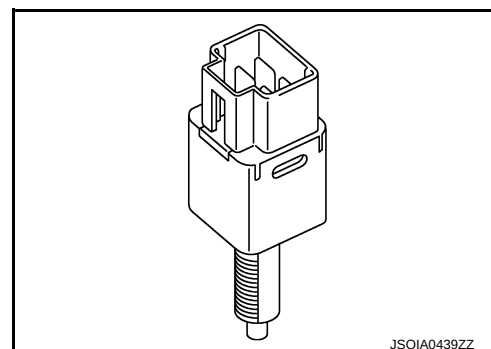
## Brake Pedal Position Switch / Stop Lamp Switch

INFOID:000000009644197

- Brake pedal position switch is installed at the upper part of the brake pedal and detects a brake operation performed by the driver.



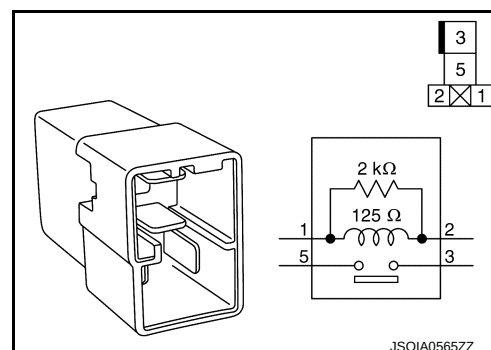
- Brake pedal position switch is turned OFF when depressing the brake pedal.
- Brake pedal position switch signal is input to ECM. Brake pedal position switch signal is transmitted from ECM to ADAS control unit via CAN communication.
- Stop lamp switch is installed at the upper part of the brake pedal and detects a brake operation performed by the driver.
- Stop lamp switch is turned ON, when depressing the brake pedal.
- Stop lamp switch signal is input to ECM and ABS actuator and electric unit (control unit). Stop lamp switch signals are transmitted from ECM and ABS actuator and electric unit (control unit) to ADAS control unit via CAN communication.



## ICC Brake Hold Relay

INFOID:000000009644198

- ICC brake hold relay is installed in the engine room (right side).
- When the brake is activated by the system, the ICC brake hold relay turns ON the stop lamp by bypassing the circuit of the stop lamp, according to a signal transmitted from the ADAS control unit.



## Combination Meter

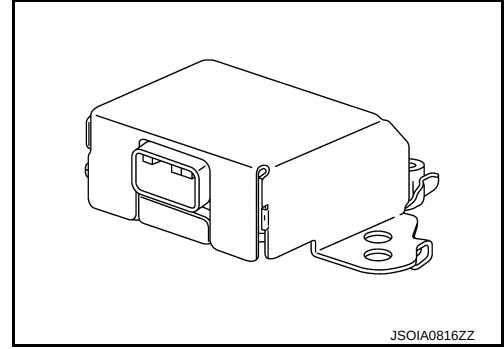
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- Receives meter display signal from ADAS control unit via CAN communication.
- Displays the system status according to a signal received from the ADAS control unit.

## Driver Assistance Buzzer Control Module

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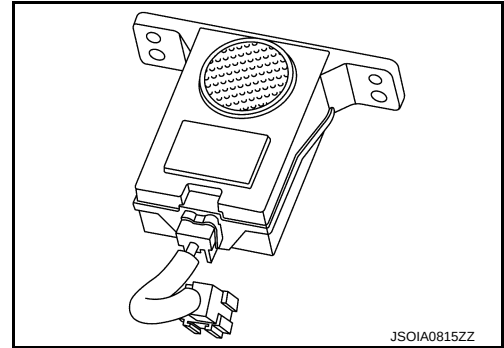
- Driver assistance buzzer control module is installed at the behind of glove box.
- When driver assistance buzzer signal is received from the ADAS control unit, the driver assistance buzzer control module transmits the warning buzzer signal to driver assistance buzzer.



## Driver Assistance Buzzer

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- Driver assistance buzzer is installed at the behind the display control unit.
- When a warning buzzer signal is received from the driver assistance buzzer control module, the driver assistance buzzer sounds a buzzer.



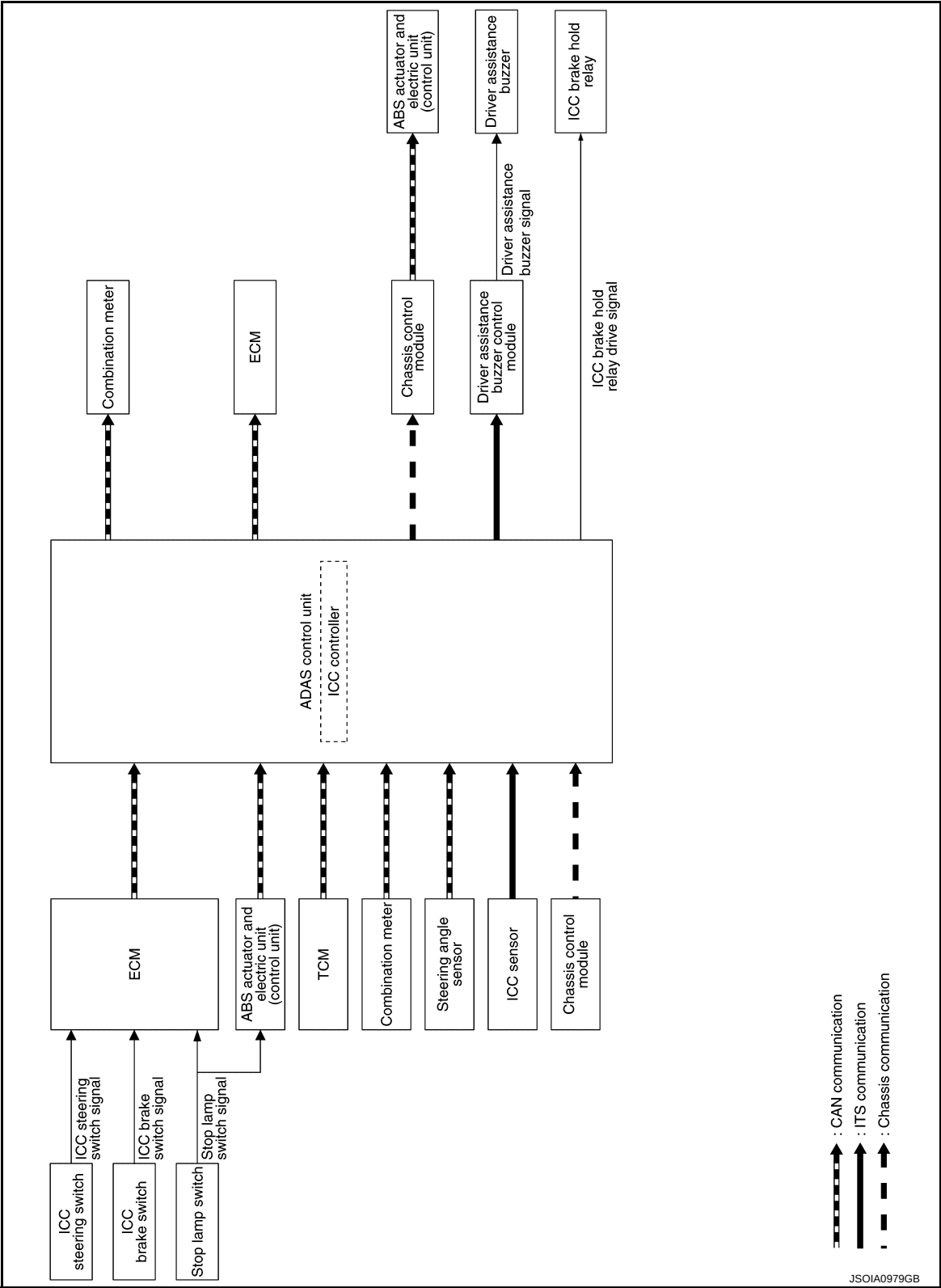
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SYSTEM

System Description

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SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

# SYSTEM

< SYSTEM DESCRIPTION >

[ICC]

| Transmit unit                                 | Signal name       |                                          | Description                                                                                                    |
|-----------------------------------------------|-------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| ECM                                           | CAN communication | Closed throttle position signal          | Receives idle position state (ON/OFF)                                                                          |
|                                               |                   | Accelerator pedal position signal        | Receives accelerator pedal position (angle)                                                                    |
|                                               |                   | ICC prohibition signal                   | Receives an operable/inoperable state of the ICC system                                                        |
|                                               |                   | Engine speed signal                      | Receives engine speed                                                                                          |
|                                               |                   | ICC steering switch signal               | Receives the operational state of the ICC steering switch                                                      |
|                                               |                   |                                          |                                                                                                                |
|                                               |                   |                                          |                                                                                                                |
|                                               |                   |                                          |                                                                                                                |
|                                               |                   |                                          |                                                                                                                |
|                                               |                   | Stop lamp switch signal                  | Receives an operational state of the brake pedal                                                               |
|                                               |                   | Brake pedal position switch signal       | Receives an operational state of the brake pedal                                                               |
| TCM                                           | CAN communication | Input speed signal                       | Receives the number of revolutions of input shaft                                                              |
|                                               |                   | Current gear position signal             | Receives a current gear position                                                                               |
|                                               |                   | Shift position signal                    | Receives a selector lever position                                                                             |
|                                               |                   | Output shaft revolution signal           | Receives the number of revolutions of output shaft                                                             |
| ABS actuator and electric unit (control unit) | CAN communication | ABS malfunction signal                   | Receives a malfunction state of ABS                                                                            |
|                                               |                   | ABS operation signal                     | Receives an operational state of ABS                                                                           |
|                                               |                   | ABS warning lamp signal                  | Receives an ON/OFF state of ABS warning lamp                                                                   |
|                                               |                   | TCS malfunction signal                   | Receives a malfunction state of TCS                                                                            |
|                                               |                   | TCS operation signal                     | Receives an operational state of TCS                                                                           |
|                                               |                   | VDC OFF switch signal                    | Receives an ON/OFF state of VDC                                                                                |
|                                               |                   | VDC malfunction signal                   | Receives a malfunction state of VDC                                                                            |
|                                               |                   | VDC operation signal                     | Receives an operational state of VDC                                                                           |
|                                               |                   | Vehicle speed signal (ABS)               | Receives wheel speeds of four wheels                                                                           |
|                                               |                   | Stop lamp switch signal                  | Receives an operational state of the brake pedal                                                               |
|                                               |                   | Yaw rate signal                          | Receives yaw rate acting on the vehicle                                                                        |
| Combination meter                             | CAN communication | Parking brake switch signal              | Receives an operational state of the parking brake                                                             |
| Steering angle sensor                         | CAN communication | Steering angle sensor malfunction signal | Receives a malfunction state of steering angle sensor                                                          |
|                                               |                   | Steering angle sensor signal             | Receives the number of revolutions, turning direction of the steering wheel                                    |
|                                               |                   | Steering angle speed signal              | Receives the turning angle speed of the steering wheel                                                         |
| Chassis control module                        | CAN communication | Drive mode signal                        | Snow mode                                                                                                      |
| ICC sensor                                    | ITS communication | ICC sensor signal                        | Receives detection results, such as the presence or absence of a leading vehicle and distance from the vehicle |

Output Signal Item

| Reception unit                                | Signal name                       |                                     | Description                                                                                       |
|-----------------------------------------------|-----------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------|
| ECM                                           | CAN communication                 | ICC operation signal                | Transmits an ICC operation signal necessary for intelligent cruise control                        |
| ABS actuator and electric unit (control unit) | CAN communication                 | Brake fluid pressure control signal | Transmits a brake fluid pressure control signal to activates the brake via chassis control module |
| Combination meter                             | CAN communication                 | Meter display signal                | Vehicle ahead detection indicator signal                                                          |
|                                               |                                   |                                     | Set vehicle speed indicator signal                                                                |
|                                               |                                   |                                     | Set distance indicator signal                                                                     |
|                                               |                                   |                                     | SET switch indicator signal                                                                       |
|                                               |                                   |                                     | MAIN switch indicator signal                                                                      |
|                                               |                                   |                                     | ICC malfunction signal                                                                            |
| ICC sensor                                    | ITS communication                 | Vehicle speed signal                | Transmits a vehicle speed calculated by the ADAS control unit                                     |
| Driver assistance buzzer control module       | ITS communication                 | Warning buzzer signal               | Transmits a warning buzzer signal to turn ON the buzzer                                           |
| ICC brake hold relay                          | ICC brake hold relay drive signal |                                     | Activates the brake hold relay and turns ON the stop lamp                                         |

### DESCRIPTION

#### Intelligent Cruise Control

The Intelligent Cruise Control (ICC) system maintains a selected distance from the vehicle ahead within set speeds.

The driver can select the set speeds.

The vehicle travels at a set speed when the road ahead is clear.

The ICC system can be set to one of two cruise control modes:

#### **CAUTION:**

**Never set the cruise speed exceeding the posted speed limit.**

#### Vehicle-to-vehicle Distance Control Mode

For maintaining a selected distance between own vehicle and the vehicle in front of own vehicle up to the pre-set speed. Refer to [CCS-16, "VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION : System Description"](#).

#### Conventional (Fixed Speed) Cruise Control Mode

For cruising at a preset speed. Refer to [CCS-18, "CONVENTIONAL \(FIXED SPEED\) CRUISE CONTROL MODE FUNCTION : System Description"](#).

#### **NOTE:**

In the Conventional (Fixed Speed) Cruise Control Mode, a warning chime will not sound to warn driver if own vehicle are too close to the vehicle ahead.

#### **WARNING:**

**Always drive carefully and attentively when using either cruise control mode. To avoid serious injury or death, do not rely on the system to prevent accidents or to control the vehicle's speed in emergency situations. Do not use cruise control except in appropriate road and traffic conditions.**

#### Distance Control Assist (DCA) System

DCA share the systems and components with ICC system. Refer to [DAS-170, "DCA : System Description"](#).

#### Predictive Forward Collision Warning (PFCW) System

PFCW share the systems and components with ICC system. Refer to [DAS-174, "PFCW : System Description"](#).

# SYSTEM

## < SYSTEM DESCRIPTION >

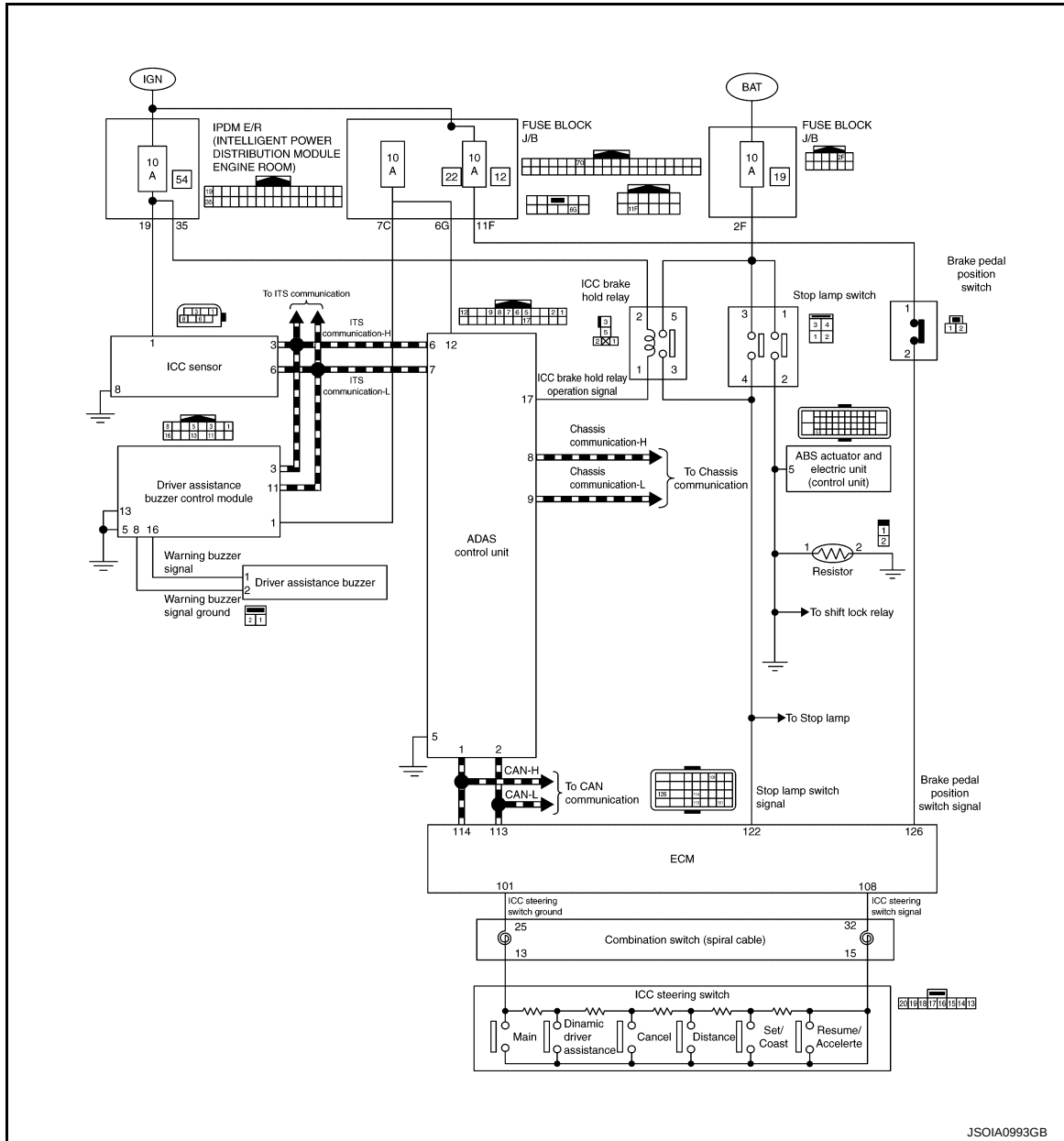
[ICC]

### Forward Emergency Brake (FEB) System

FEB system share the systems and components with ICC system. Refer to [BRC-187. "System Description"](#).

### Circuit Diagram

INFOID:000000009644203



### Fail-safe (ADAS Control Unit)

INFOID:000000009727812

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning or indicator lamp.

| System                                         | Buzzer            | Warning lamp/Warning display | Description |
|------------------------------------------------|-------------------|------------------------------|-------------|
| Vehicle-to-vehicle distance control mode       | High-pitched tone | ICC system warning           | Cancel      |
| Conventional (fixed speed) cruise control mode | High-pitched tone | ICC system warning           | Cancel      |

## SYSTEM

< SYSTEM DESCRIPTION >

[ICC]

| System                                      | Buzzer            | Warning lamp/Warning display                                                                                                  | Description |
|---------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------|
| Forward Emergency Braking (FEB)             | High-pitched tone | <ul style="list-style-type: none"><li>FEB warning lamp</li><li>Warning systems indicator (Forward position: Yellow)</li></ul> | Cancel      |
| Predictive Forward Collision Warning (PFCW) | High-pitched tone | Warning systems indicator (Forward position: Yellow)                                                                          | Cancel      |
| Distance Control Assist (DCA)               | High-pitched tone | Warning systems indicator (Forward position: Yellow)                                                                          | Cancel      |
| Blind Spot Warning (BSW)                    | —                 | Warning systems indicator (Blind spot position: Yellow)                                                                       | Cancel      |
| Back-up Collision Intervention (BCI)        | High-pitched tone | BCI system warning                                                                                                            | Cancel      |

### Fail-safe (ICC Sensor)

INFOID:000000009644205

If a malfunction occurs in the ICC sensor, ADAS control unit cancels control, sounds a beep, and turns ON the ICC system warning in the information display.

### VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

### VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION : System Description

INFOID:000000009644206

#### FUNCTION DESCRIPTION

In the vehicle-to-vehicle distance control mode, the Intelligent Cruise Control (ICC) system automatically maintains a selected distance from the vehicle traveling in front of own vehicle according to that vehicle's speed (up to the set speed), or at the set speed when the road ahead is clear.

With ICC system, the driver can maintain the same speed as other vehicles without the constant need to adjust the set speed as driver would with a normal cruise control system.

The following items are controlled in the vehicle-to-vehicle distance control mode

- When there are no vehicles traveling ahead, the vehicle-to-vehicle distance control mode maintains the speed set by the driver. The selectable speed ranges are as follows:
  - Between approximately 32 and 144 km/h (20 and 90 MPH).
- When there is a vehicle traveling ahead, the vehicle-to-vehicle distance control mode adjusts the speed to maintain the distance, selected by driver, from a vehicle ahead. The adjusting speed range is up to the set speed.
- When the vehicle traveling ahead has moved out from its lane of travel, the vehicle-to-vehicle distance control mode accelerates and maintains vehicle speed up to the set speed.

#### CAUTION:

- If the vehicle ahead comes to stop, the vehicle decelerates to a standstill within the limitations of the system. The system will cancel once it judges that the vehicle has come to a standstill and sound a warning chime.**
- To prevent the vehicle from moving, the driver must depress the brake pedal.**

#### NOTE:

When the accelerator pedal is depressed, the brake operation and the warning are not performed by the ICC system.

#### OPERATION DESCRIPTION

Quickly push (less than 1.5 seconds) and release the MAIN switch ON.

The MAIN switch indicator, set distance indicator, own vehicle indicator, and set vehicle speed indicator come on and ICC system is set to a standby state.

ADAS control unit performs the control as per the following:

# SYSTEM

## < SYSTEM DESCRIPTION >

[ICC]

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Constant speed | Comparing the set vehicle speed with the current vehicle speed, transmit the command to ECM via CAN communication to reach the set vehicle speed, and controls the electric throttle control actuator.                                                                                                                                                                                                                              |
| Deceleration   | When a vehicle ahead (slower than driver set vehicle speed) appears or when a vehicle ahead slows down, the system controls the electric throttle control actuator into the close direction and decelerates the vehicle. If greater deceleration is necessary, the system transmits the brake fluid pressure control signal to the ABS actuator and electric unit (control unit) via chassis control module and operates the brake. |
| Following      | The system controls electric throttle control actuator and the brake fluid pressure to keep the proper distance between the vehicles according to the vehicle speed change of the vehicle ahead.                                                                                                                                                                                                                                    |
| Acceleration   | When a vehicle ahead is not detected because of it changes lanes or own vehicle changes lanes during the following driving, the system controls the electric throttle control actuator in the open direction and accelerates the vehicle to the set vehicle speed slowly.                                                                                                                                                           |

### Set Condition

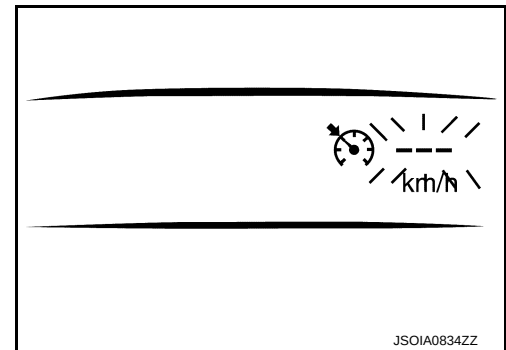
Under a standby state, pushing down the SET/COAST switch will start system control.

- When vehicle speed is between approximately 32 km/h and 144 km/h (20 MPH and 90 MPH).
- When vehicle speed is below approximately 32 km/h (20 MPH) if the vehicle ahead is detected. The set vehicle speed becomes 32 km/h (20 MPH).

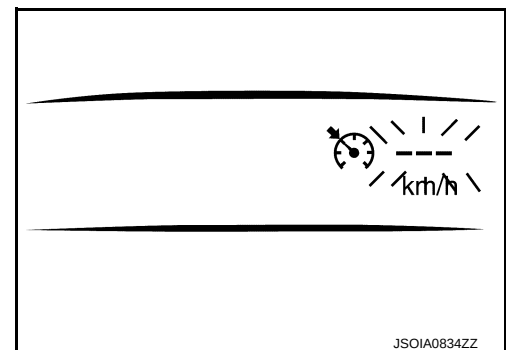
If the system is canceled by conditions 1–10 below, the system will resume control at the last set cruising speed by pushing up the RESUME/ACCELERATE switch.

### NOTE:

- When the SET/COAST switch is pushed under the following conditions, the system cannot be set and the set vehicle speed indicator will blink for approximately 2 seconds.



- When traveling below 32 km/h (20 MPH) and the vehicle ahead is not detected.
- When the selector lever is not in the "D" position or manual mode.
- When the parking brakes are applied.
- When the brakes are operated by the driver.
- When the SET/COAST switch is pushed under the following conditions, the system cannot be set. A warning chime will sound and the set speed indicator will blink.
- When the drive mode select switch is in SNOW position. (To use the ICC system, turn OFF the snow mode, push the MAIN switch to turn OFF the ICC system and reset the ICC system by pushing the MAIN switch again.)
- When the VDC is OFF. (To use the ICC system, turn ON the VDC system, push the MAIN switch to turn OFF the ICC system and reset the ICC system by pushing the MAIN switch again.)
- When ABS or VDC (including the TCS) operates.
- When the wheel is slipping. (To use the ICC system, make sure the wheels are no longer spinning, push the MAIN switch to turn OFF the ICC system and reset the ICC system by pushing the MAIN switch again.)



### Cancel Conditions

1. When CANCEL switch is pressed.
2. When brake pedal is depressed.
3. When the vehicle ahead is not detected below the speed of 24 km/h (15 MPH).
4. When the selector lever is not in the "D" position or manual mode.
5. When the parking brakes are applied.
6. When the system judges the vehicle is at standstill.
7. When the drive mode select switch is in SNOW position.
8. When ABS or VDC (including the TCS) operates.

## &lt; SYSTEM DESCRIPTION &gt;

9. When a wheel slips.
10. When the VDC is turned OFF.
11. When the MAIN switch is turned OFF.
12. When the system malfunction occurs.

## CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION

## CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION : System Description

INFOID:000000009644207

## FUNCTION DESCRIPTION

This mode allows driving at a speed between 40 to 144 km/h (25 to 90 MPH) without keeping foot on the accelerator pedal.

**NOTE:**

In the conventional (fixed speed) cruise control mode, a warning chime does not sound to warn driver if own vehicle are too close to the vehicle ahead, as neither the presence of the vehicle ahead nor the vehicle-to-vehicle distance is detected.

## OPERATION DESCRIPTION

To turn ON the conventional (fixed speed) cruise control mode, push and hold the MAIN switch for longer than approximately 1.5 seconds when ICC system is OFF.

When pushing the MAIN switch ON, the ICC system display and the MAIN switch indicator are displayed on the information display.

After hold the MAIN switch ON for longer than approximately 1.5 seconds, the ICC system display goes out. The MAIN switch indicator stays lit and brings the system to standby state.

**NOTE:**

- To turn on the vehicle-to-vehicle distance control mode again, turn OFF the system and quickly push (less than 1.5 seconds) the MAIN switch.
- When the DCA system is ON, the conventional (fixed speed) cruise control mode cannot be turned on even though the MAIN switch is pushed and held.
- To turn ON the conventional (fixed speed) cruise control mode, turn OFF the DCA system. Refer to [DAS-170, "DCA : System Description"](#).

ADAS control unit performs the control as per the following:

|                |                                                                                                                                                                                                       |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Constant speed | Comparing the set vehicle speed with the current vehicle speed, transmits the command to ECM via CAN communication to reach the set vehicle speed, and controls electronic throttle control actuator. |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Set Condition

When the system is under a standby state and the vehicle speed is between approximately 40 km/h (25 MPH) and 144 km/h (90 MPH), pushing the SET/COAST switch will start system control. If the system is canceled by conditions 1–7 below, the system will resume control at the last set cruising speed by pushing the RESUME/ACCELERATE switch.

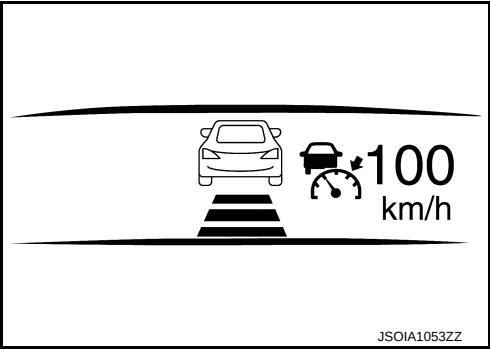
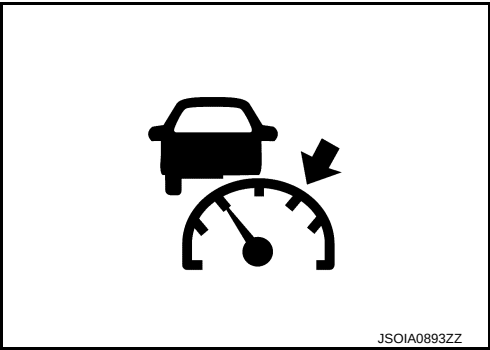
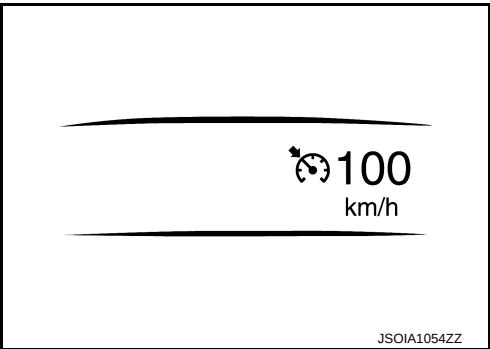
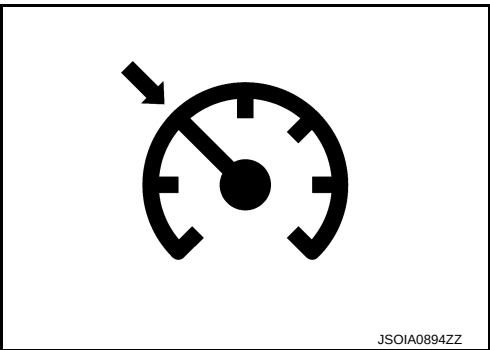
## Cancel conditions

1. When CANCEL switch is pressed.
2. When brake pedal depressed.
3. When the vehicle slows down more than 13 km/h (8 MPH) below the set speed.
4. When the selector lever is not in the "D" position or manual mode.
5. When the parking brakes are applied.
6. When VDC (including the TCS) operates.
7. When a wheel slips.
8. When the MAIN switch is turned OFF.
9. When the system malfunction occurs.

## WARNING/INDICATOR/CHIME LIST

## WARNING/INDICATOR/CHIME LIST : Warning/Indicator (On Information Display)

INFOID:000000009644209

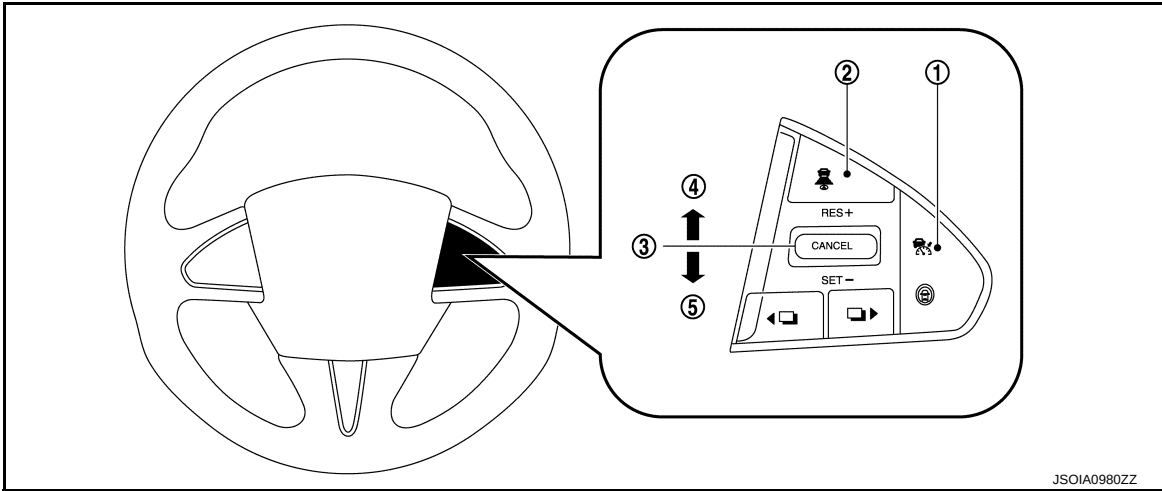
| Name                                                                         | Design                                                                                             | Function                                                                                                                   |
|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| ICC system display<br>(Vehicle-to-vehicle<br>distance control<br>mode)       | <br>JSOIA1053ZZ   | <a href="#">CCS-20. "VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION : Menu Displayed by Pressing Each Switch"</a>       |
| ICC system warning<br>(Vehicle-to-vehicle<br>distance control<br>mode)       | <br>JSOIA0893ZZ   |                                                                                                                            |
| ICC system display<br>(conventional (fixed<br>speed) cruise control<br>mode) | <br>JSOIA1054ZZ  | <a href="#">CCS-24. "CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION : Menu Displayed by Pressing Each Switch"</a> |
| ICC system warning<br>(conventional (fixed<br>speed) cruise control<br>mode) | <br>JSOIA0894ZZ |                                                                                                                            |

OPERATION

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION : Switch Name and Function

INFOID:000000009644210

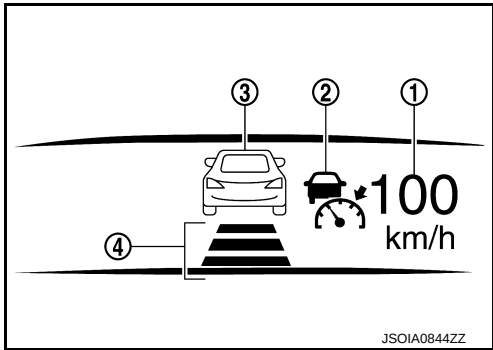


| No. | Switch name              | Description                                                                                                                                                                                                                                                                                                                          |
|-----|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ①   | MAIN switch              | Master switch to activate the system (Press for less than 1.5 seconds)                                                                                                                                                                                                                                                               |
| ②   | DISTANCE switch          | Changes the following distance from: Long, Middle, Short                                                                                                                                                                                                                                                                             |
| ③   | CANCEL switch            | Deactivates the system without erasing the set speed                                                                                                                                                                                                                                                                                 |
| ④   | RESUME/ACCELERATE switch | Resumes set speed or increases speed incrementally <ul style="list-style-type: none"><li>• Push and hold the switch to increase the set speed by 5 km/h (5 MPH)</li><li>• Push then quickly release the switch to increase the set speed by 1 km/h (1 MPH)</li></ul>                                                                 |
| ⑤   | SET/COAST switch         | Sets desired cruise speed or reduces speed incrementally <ul style="list-style-type: none"><li>• Push and hold the switch to decrease the set speed by 5 km/h (5 MPH)</li><li>• Push then quickly release the switch to decrease the set speed by 1 km/h (1 MPH)</li></ul> <b>NOTE:</b><br>The minimum set speed is 32 km/h (20 MPH) |

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION : Menu Displayed by Pressing Each Switch

INFOID:0000000009644211

ICC SYSTEM DISPLAY (ON THE INFORMATION DISPLAY)



| No. | Switch name                 | Description                                                                                                                                                    |
|-----|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ①   | Set vehicle speed indicator | <ul style="list-style-type: none"><li>• Indicates the set vehicle speed</li><li>• Indicates 32 km/h (20 MPH) when setting less than 32 km/h (20 MPH)</li></ul> |

| No. | Switch name                       | Description                                                                   |
|-----|-----------------------------------|-------------------------------------------------------------------------------|
| ②   | ICC system warning lamp (yellow)  | Indicates that a malfunction occurs in the ICC system                         |
|     | MAIN switch indicator (white)     | Indicates that the MAIN switch is ON (ICC system ON)                          |
|     | Set switch indicator (green)      | Indicates that the set vehicle to vehicle distance control mode is controlled |
| ③   | Vehicle ahead detection indicator | Indicates whether it detects a vehicle ahead                                  |
| ④   | Set distance indicator            | Indicates the selected distance between vehicles set with the DISTANCE switch |

SYSTEM CONTROL CONDITION DISPLAY

Quickly push (less than 1.5 seconds) and release the MAIN switch ON.  
The MAIN switch indicator (cruise indicator), set distance indicator, own vehicle indicator, and set vehicle speed indicator come on and ICC system is set to a standby state.

| Condition    |                         |                                              | Display on ICC system display                                                                        |
|--------------|-------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------|
| Standby mode |                         |                                              | <br>JSOIA0845ZZ   |
| Control mode | Without a vehicle ahead | Set vehicle distance (Long)                  | <br>JSOIA0846ZZ  |
|              |                         | Set vehicle distance (Middle)                | <br>JSOIA0847ZZ |
|              |                         | Set vehicle distance (Short)                 | <br>JSOIA0848ZZ |
|              |                         | When the vehicle speed exceeds the set speed | <br>JSOIA0849ZZ |

# OPERATION

< SYSTEM DESCRIPTION >

[ICC]

| Condition    |                      |                                              | Display on ICC system display                                                                        |
|--------------|----------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------|
| Control mode | With a vehicle ahead | Set vehicle distance (Long)                  | <br>JSOIA0850ZZ   |
|              |                      | Set vehicle distance (Middle)                | <br>JSOIA0851ZZ   |
|              |                      | Set vehicle distance (Short)                 | <br>JSOIA0852ZZ   |
|              |                      | When the vehicle speed exceeds the set speed | <br>JSOIA0853ZZ |

## NOTE:

The display of the DCA system is given priority when the DCA system is ON in a standby mode. (The set vehicle speed indicator, and set distance indicator, are not displayed).

## APPROACH WARNING DISPLAY

If own vehicle comes closer to a vehicle ahead due to rapid deceleration of that vehicle or if another vehicle cuts in, the system warns the driver with the chime and ICC system display. Decelerate by depressing the brake pedal to maintain a safe vehicle distance if:

- The chime sounds.
- The vehicle ahead detection indicator and set distance indicator blink.

The warning chime may not sound in some cases when there is a short distance between vehicles. Some examples are:

- When the vehicles are traveling at the same speed and the distance between vehicles is not changing.
- When the vehicle ahead is traveling faster and the distance between vehicles is increasing.
- When a vehicle cuts in at near own vehicle.

The warning chime will not sound when own vehicle approaches vehicles that are parked or moving slowly.

The warning chime will not sound when the accelerator pedal is depressed, overriding the system.

The approach warning chime may sound and the system display may blink when the ICC sensor detects some reflectors which are fitted on vehicles in other lanes or on the side of the road.

This may cause the ICC system to decelerate or accelerate the vehicle.

The ICC sensor may detect these object when the vehicle is driven on winding roads, hilly roads or when entering or exiting a curve.

The ICC sensor may also detect object on narrow roads or in road construction zones.

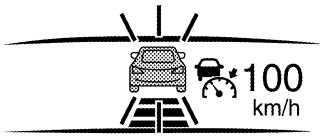
In these cases driver will have to manually control the proper distance ahead of own vehicle.

Also, the sensor sensitivity can be affected by vehicle operation (steering maneuver or driving position in the lane) or traffic or vehicle condition (for example, if a vehicle is being driven with some damage).

# OPERATION

< SYSTEM DESCRIPTION >

[ICC]

| Condition                                                                                                                    | Display on ICC system display                                                                          |
|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| When own vehicle comes closer to the vehicle ahead and it is judged that the distance between the vehicles is not sufficient |  <p>JSOIA1047ZZ</p> |

## WARNING LAMP AND AUTOMATIC CANCELLATION DISPLAY

| Condition                                                                                                  | Description                                                                                                                                                                                                                                | Display on ICC system display                                                                            |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Warning display                                                                                            | <ul style="list-style-type: none"> <li>When the VDC is turned OFF</li> <li>When the VDC or ABS (including the TCS) operates</li> <li>When a wheel slips</li> <li>When the drive mode select switch is in SNOW mode</li> </ul>              | (Yellow)                                                                                                 |
|                                                                                                            |                                                                                                                                                                                                                                            |  <p>JSOIA1048ZZ</p>   |
|                                                                                                            |                                                                                                                                                                                                                                            |  <p>JSOIA0857ZZ</p>  |
|                                                                                                            | <p><b>NOTE:</b><br/>When the conditions listed above are no longer present, turn the system OFF using the MAIN switch.<br/>Turn the ICC system back on to use the system.</p>                                                              | Currently unavailable                                                                                    |
|                                                                                                            |                                                                                                                                                                                                                                            | (Yellow)                                                                                                 |
|                                                                                                            |                                                                                                                                                                                                                                            |  <p>JSOIA1048ZZ</p> |
| When the front bumper grille near the ICC sensor is dirty, making it impossible to detect a vehicle ahead. | <p>A chime sounds and the control is automatically canceled.</p> <p><b>NOTE:</b><br/>Park the vehicle in a safe place, turn the engine OFF.<br/>Clean the front bumper grille near the ICC sensor and then perform the settings again.</p> |  <p>JSOIA0857ZZ</p> |
|                                                                                                            |                                                                                                                                                                                                                                            | Unavailable Front Radar Obstruction                                                                      |

A  
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CCS

# OPERATION

## < SYSTEM DESCRIPTION >

[ICC]

| Condition                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Display on ICC system display                                                                                          |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Warning display                | <p>A chime sounds and the control is automatically canceled.</p> <p><b>NOTE:</b><br/>Turn the engine OFF and restart engine. If there is no malfunction, it is possible to set the system.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p>(Yellow)</p>  <p>JSOIA1049ZZ</p> |
| Automatic cancellation display | <ul style="list-style-type: none"> <li>When brake pedal is depressed</li> <li>When CANCEL switch is pressed</li> <li>When a vehicle ahead is not detected below the speed of 24 km/h (15 MPH)</li> <li>When the system judges the vehicle is at standstill</li> <li>When the selector lever is not in "D" position or manual mode</li> <li>When the parking brake are applied</li> </ul> <p>A chime sounds and the control is automatically canceled.</p> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>The system will be in a standby, after the control is automatically canceled.</li> <li>A chime sounds when the control is automatically canceled, except when brake pedal is depressed or when CANCEL switch is pressed.</li> </ul> |  <p>km/h</p> <p>JSOIA0845ZZ</p>     |

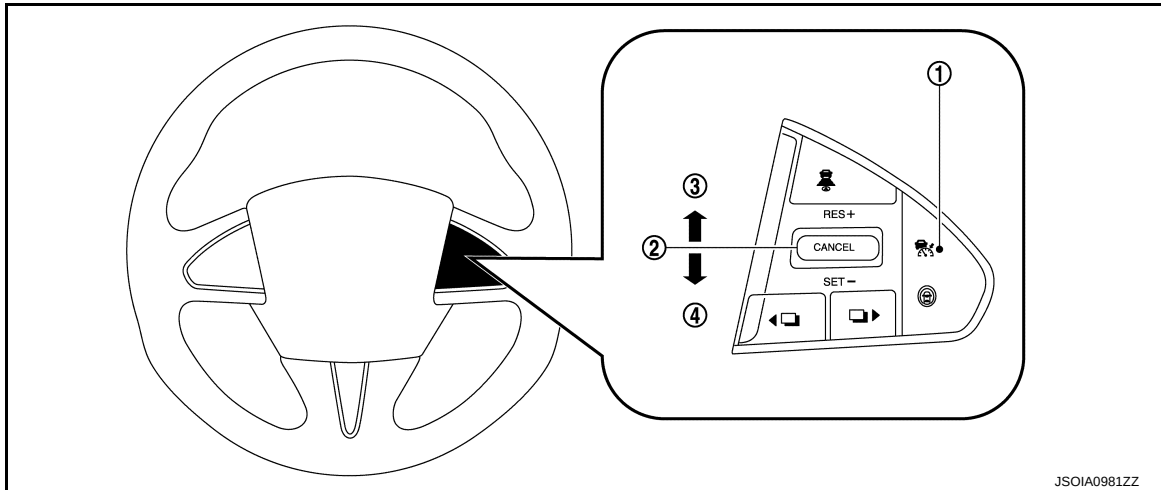
### NOTE:

When the ICC system is automatically canceled, the cancellation condition can be displayed on "WORK SUPPORT" of CONSULT (ICC/ADAS).

## CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION

### CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION : Switch Name and Function

INFOID:000000009644212



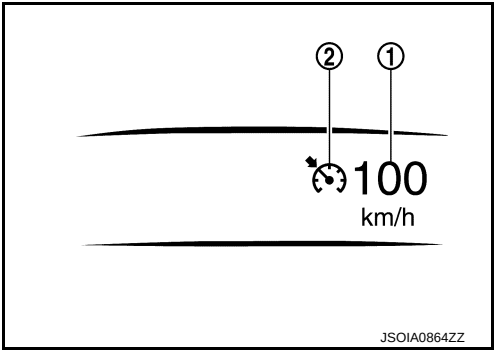
| No. | Description              | Function                                                               |
|-----|--------------------------|------------------------------------------------------------------------|
| ①   | MAIN switch              | Master switch to activate the system (Press for more than 1.5 seconds) |
| ②   | CANCEL switch            | Deactivates system without erasing set speed                           |
| ③   | RESUME/ACCELERATE switch | Resumes set speed or increases speed incrementally                     |
| ④   | SET/COAST switch         | Sets desired cruise speed or reduces speed incrementally               |

### CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION : Menu

Displayed by Pressing Each Switch

INFOID:000000009644213

ICC SYSTEM DISPLAY (ON THE INFORMATION DISPLAY)



| No. | Description                   | Function                                                                            |
|-----|-------------------------------|-------------------------------------------------------------------------------------|
| ①   | Set vehicle speed indicator   | Indicates the set vehicle speed                                                     |
| ②   | ICC system warning (yellow)   | Indicates that a malfunction occurs in the ICC system                               |
|     | MAIN switch indicator (white) | Indicates that the MAIN switch is ON (ICC system ON)                                |
|     | SET switch indicator (green)  | Indicates that the set conventional (fixed speed) cruise control mode is controlled |

SYSTEM CONTROL CONDITION DISPLAY

Push and hold the MAIN switch for longer than approximately 1.5 seconds. This mode will be in a standby state for setting.

| Condition    | Display on ICC system display |
|--------------|-------------------------------|
| Standby mode |                               |
| Control mode |                               |

WARNING AND AUTOMATIC CANCELLATION DISPLAY

| Condition             |                                                                                                                                                                                                                                                                                                                                                                                                            | Description                                                                                                                                                                                                                                                                                                                                                  | Display on ICC system display                                                                                          |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Warning display       | When the ICC system is malfunctioning                                                                                                                                                                                                                                                                                                                                                                      | <p>A chime sounds and the control is automatically canceled</p> <p><b>NOTE:</b><br/>Turn the engine OFF and restart engine. If there is no malfunction, it is possible to set the system</p>                                                                                                                                                                 | <p>(Yellow)</p>  <p>JSOIA0867ZZ</p> |
| System cancel display | <ul style="list-style-type: none"> <li>When brake pedal is depressed</li> <li>When pressing CANCEL switch</li> <li>When the vehicle slows down more than 13 km/h (8 MPH) below the set speed</li> <li>When the selector lever is not in the "D" position or manual mode</li> <li>When the parking brakes are applied</li> <li>When VDC (including the TCS) operates</li> <li>When a wheel slips</li> </ul> | <p>A chime sounds and the control is automatically canceled</p> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>The system will be in a standby, after the control is automatically canceled</li> <li>A chime sounds when the control is automatically canceled, except when brake pedal is depressed or when CANCEL switch is pressed</li> </ul> | <p>(White)</p>  <p>JSOIA0865ZZ</p>  |

**NOTE:**

When the ICC system is automatically canceled, the cancellation condition can be displayed on "WORK SUPPORT" of CONSULT (ICC/ADAS).

## HANDLING PRECAUTION

### Precautions for Vehicle-to-Vehicle Distance Control Mode

INFOID:000000009644216

- ICC system is only an aid to assist the driver and is not a collision warning or avoidance device. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- The system is primarily intended for use on straight, dry, open roads with light traffic. It is not advisable to use the system in city traffic or congested areas.
- This system will not adapt automatically to road conditions. This system should be used in evenly flowing traffic. Do not use the system on roads with sharp curves, or on icy roads, in heavy rain or in fog.
- The ICC sensor will not detect under most conditions.
  - Stationary and slow moving vehicles.
  - Pedestrians or objects in the roadway.
  - Oncoming vehicles in the same lane.
  - Motorcycles traveling offset in the travel lane.
- As there is a performance limit to the distance control function, never rely solely on the ICC system. This system does not correct careless, inattentive or absent-minded driving, or overcome poor visibility in rain, fog, or other bad weather. Decelerate the vehicle speed by depressing the brake pedal, depending on the distance to the vehicle ahead and the surrounding circumstances in order to maintain a safe distance between vehicles.
- If the vehicle ahead comes to a stop, the vehicle decelerates to a standstill within the limitations of the system. The system will cancel once it judges that the vehicle has come to a standstill and sound a warning chime. To prevent the vehicle from moving, the driver must depress the brake pedal.
- The system may not detect the vehicle in front of the driver in certain road or weather conditions. To avoid accidents, never use the ICC system under the following conditions:
  - On roads where the traffic is heavy or there are sharp curves.
  - On slippery road surfaces such as on ice or snow, etc.
  - During bad weather (rain, fog, snow, etc.)
  - When rain, snow or dirt adhere to the system sensor.
  - On steep downhill roads (the vehicle may go beyond the set vehicle speed and frequent braking may result in overheating the brakes).
  - On repeated uphill and downhill roads.
  - When traffic conditions make it difficult to keep a proper distance between vehicles because of frequent acceleration or deceleration.
- In some road or traffic conditions, a vehicle or object can unexpectedly come into the sensor detection zone and cause automatic braking. The driver may need to control the distance from other vehicles using the accelerator pedal. Always stay alert and avoid using the ICC system when it is not recommended in this section.
- The vehicle-to-vehicle distance control mode uses a sensor located behind the lower grille of the front bumper to detect vehicles traveling ahead. The sensor generally detects the signals returned from the vehicle ahead. Therefore, if the sensor cannot detect the reflection from the vehicle ahead, the ICC system may not maintain the selected distance.
  - The following are some conditions in which the sensor cannot detect the signals:
    - When the snow or road spray from traveling vehicles reduces the sensor's visibility.
    - When excessively heavy baggage is loaded in the rear seat or the trunk room of own vehicle.
- The ICC system is designed to automatically check the sensor's operation within the limitation of the system. When the sensor area of the front bumper is covered with dirt or is obstructed, the system will automatically be canceled. If the sensor is covered with ice, a transparent or translucent vinyl bag, etc., the ICC system may not detect them. In these instances, the vehicle-to-vehicle distance control mode may not cancel and may not be able to maintain the selected following distance from the vehicle ahead. Be sure to check and clean the sensor regularly.
- The ICC system does not control vehicle speed or warn the driver when own vehicle approaches stationary and slow moving vehicles. The driver must pay attention to vehicle operation to maintain proper distance from vehicles ahead when approaching toll gates or traffic congestion.

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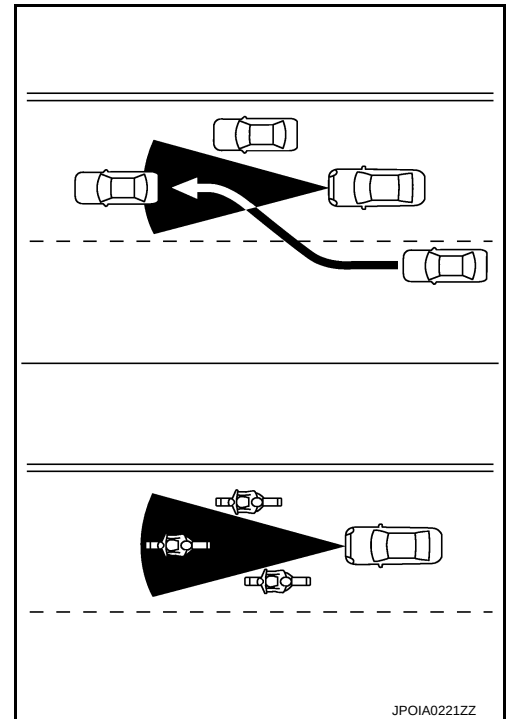
CCS

## HANDLING PRECAUTION

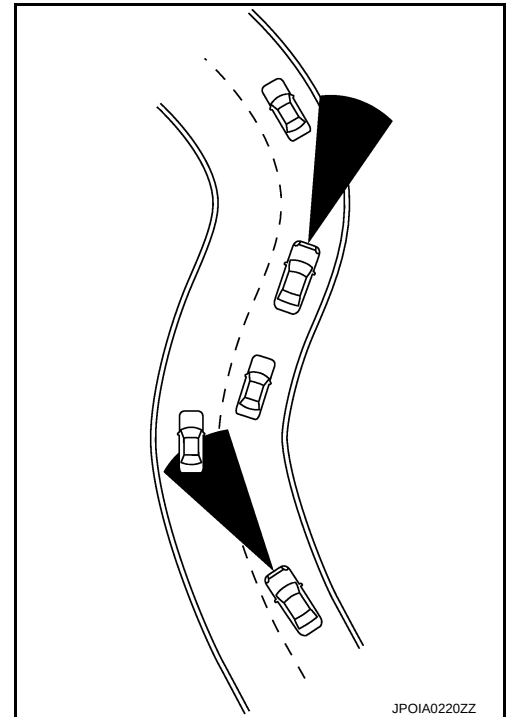
### < SYSTEM DESCRIPTION >

[ICC]

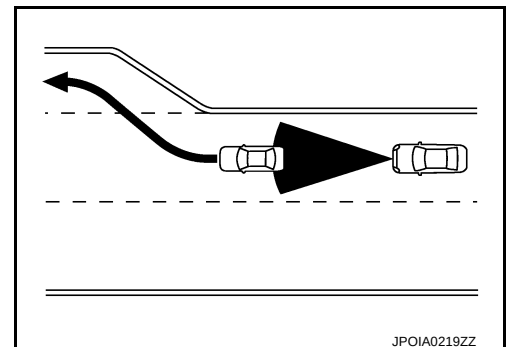
- The detection zone of the ICC sensor is limited. A vehicle ahead must be in the detection zone for the vehicle-to-vehicle distance detection mode to maintain the selected distance from the vehicle ahead. A vehicle ahead may move outside of the detection zone due to its position within the same lane of travel. Motorcycles may not be detected in the same lane ahead if they are traveling offset from the center line of the lane. A vehicle that is entering the lane ahead may not be detected until the vehicle has completely moved into the lane. If this occurs, the ICC system may warn the driver by blinking the system indicator and sounding the chime. The driver may have to manually control the proper distance away from vehicle traveling ahead.



- When driving on some roads, such as winding, hilly, curved, narrow roads, or roads which are under construction, the ICC sensor may detect vehicles in a different lane, or may temporarily not detect a vehicle traveling ahead. This may cause the ICC system to decelerate or accelerate the vehicle. The detection of vehicles may also be affected by vehicle operation (steering maneuver or traveling position in the lane, etc.) or vehicle condition. If this occurs, the ICC system may warn the driver by blinking the system indicator and sounding the chime unexpectedly. The driver will have to manually control the proper distance away from the vehicle traveling ahead.



- When driving on the freeway at a set speed and approaching a slower traveling vehicle ahead, the ICC will adjust the speed to maintain the distance, selected by the driver, from the vehicle ahead. If the vehicle ahead changes lanes or exits the freeway, the ICC system will accelerate and maintain the speed up to the set speed. Pay attention to the driving operation to maintain control of the vehicle as it accelerates to the set speed. The vehicle may not maintain the set speed on winding or hilly roads. If this occurs, the driver will have to manually control the vehicle speed.



- Normally when controlling the distance to a vehicle ahead, this system automatically accelerates or decelerates own vehicle according to the speed of the vehicle ahead. Depress the accelerator to properly accelerate own vehicle when acceleration is required for a lane change. Depress the brake pedal when deceleration is required to maintain a safe distance to the vehicle ahead due to its sudden braking or if a vehicle cuts in. Always stay alert when using the ICC system.

### Precautions for Conventional (Fixed Speed) Cruise Control Mode

INFOID:000000009644217

- In the conventional (fixed speed) cruise control mode, a warning chime does not sound to warn the driver if own vehicle is too close to the vehicle ahead, as neither the presence of the vehicle ahead nor the vehicle-to-vehicle distance is detected.
- Pay special attention to the distance between own vehicle and the vehicle ahead or a collision could occur.
- Always confirm the setting in the ICC system display.
- Do not use the conventional (fixed speed) cruise control mode when driving under the following conditions:
  - When it is not possible to keep the vehicle at a set speed.
  - In heavy traffic or in traffic that varies in speed.
  - On winding or hilly roads.
  - On slippery roads (rain, snow, ice, etc.).
  - In very windy areas.
  - Doing so could cause a loss of vehicle control and result in an accident.
  - To avoid accidentally engaging cruise control, make sure to turn the MAIN switch off when not using the ICC system.

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## DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

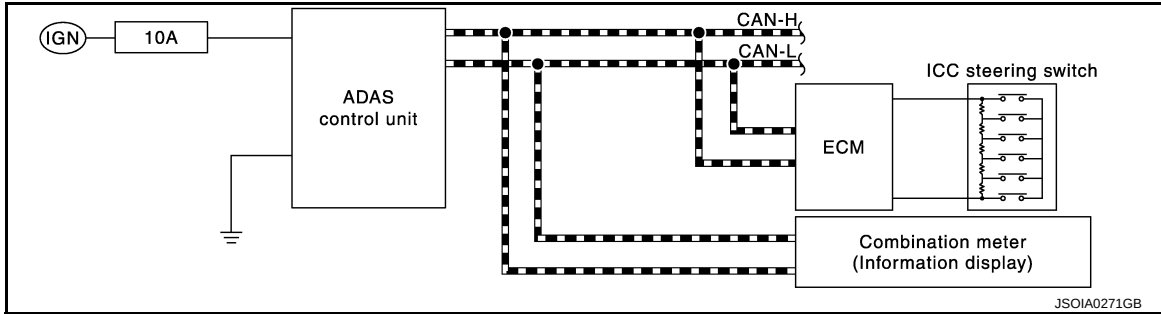
### On Board Diagnosis Function

INFOID:000000009676505

#### DESCRIPTION

The DTC is displayed on the information display by operating the ICC steering switch.

#### On Board Self-diagnosis System Diagram



#### METHOD OF STARTING

##### CAUTION:

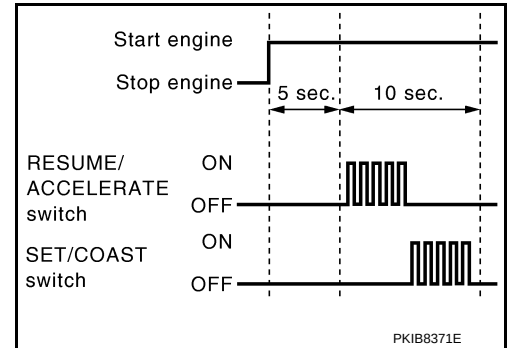
Start condition of on board self-diagnosis

- ICC system OFF
- DCA system OFF
- Vehicle speed 0 km/h (0 MPH)

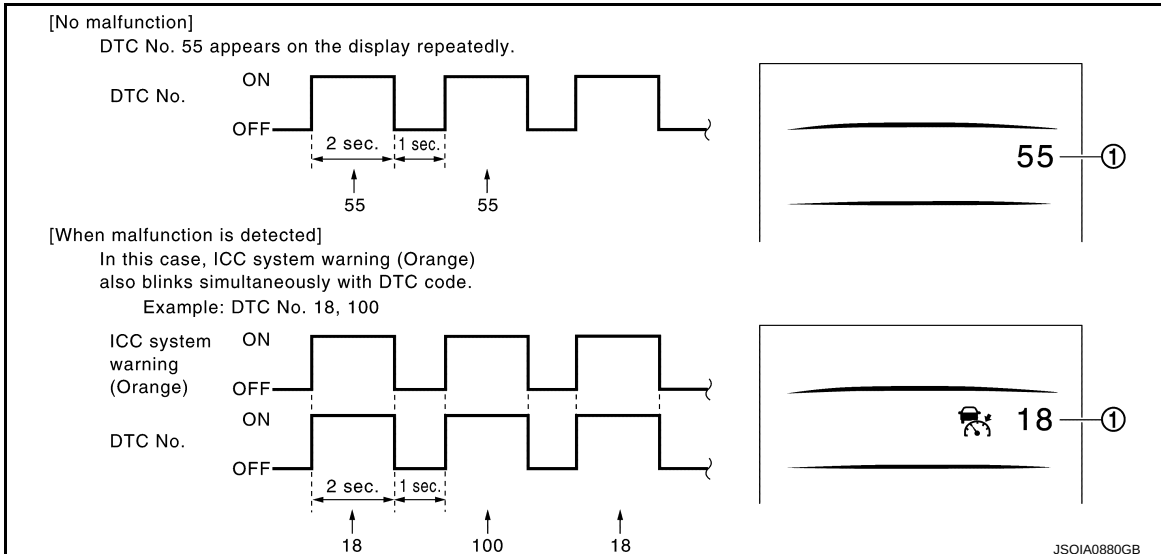
1. Turn the ignition switch OFF.
2. Start the engine.
3. Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.

##### NOTE:

If the above operation cannot be performed within 10 seconds after waiting for 5 seconds after starting the engine, repeat the procedure from step 1.



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to [DAS-44, "DTC Index"](#).



##### NOTE:

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[ICC]

## < SYSTEM DESCRIPTION >

- It displays for up to 5 minutes and then stops.
- If multiple malfunctions exist, up to 6 DTCs can be stored in memory at the most, and the most recent one is displayed first.

## WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

If the on board self-diagnosis does not start, check the following items.

| Assumed abnormal part                                   |                               | Inspection item                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Information display                                     | Combination meter malfunction | Check that the self-diagnosis function of the combination meter operates. Refer to <a href="#">MWI-62, "On Board Diagnosis Function"</a> .                                                                                                                                                                                  |
| ICC steering switch malfunction                         |                               | Perform the inspection for DTC "C1A06". Refer to <a href="#">DAS-80, "DTC Logic"</a> .                                                                                                                                                                                                                                      |
| Harness malfunction between ICC steering switch and ECM |                               |                                                                                                                                                                                                                                                                                                                             |
| ECM malfunction                                         |                               |                                                                                                                                                                                                                                                                                                                             |
| ADAS control unit malfunction                           |                               | <ul style="list-style-type: none"><li>• Check power supply and ground circuit of ADAS control unit. Refer to <a href="#">DAS-160, "Diagnosis Procedure"</a>.</li><li>• Perform SELF-DIAGNOSIS for "ICC/ADAS" with CONSULT, and then check the malfunctioning parts. Refer to <a href="#">DAS-44, "DTC Index"</a>.</li></ul> |

## HOW TO ERASE ON BOARD SELF-DIAGNOSIS

1. Turn the ignition switch OFF.
2. Start the engine, and then start the on board self-diagnosis.
3. Press the CANCEL switch 5 times, and then press the DISTANCE switch 5 times under the condition that the on board self-diagnosis starts.

### NOTE:

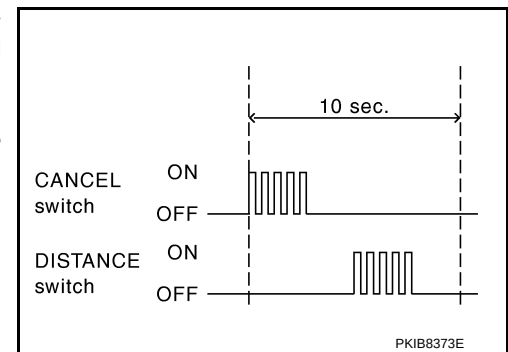
- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.

4. DTC 55 is displayed after erasing.

### NOTE:

DTCs for existing malfunction can not be erased.

5. Turn ignition switch OFF, and finish the diagnosis.



## CONSULT Function (ICC/ADAS)

INFOID:000000009676506

## APPLICATION ITEMS

CONSULT performs the following functions via CAN communication using ADAS control unit.

| Diagnosis mode           | Description                                                                                                                                                                                                                          |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Configuration            | <ul style="list-style-type: none"> <li>• The vehicle specification that is written in ADAS control unit can be displayed or stored</li> <li>• The vehicle specification can be written when ADAS control unit is replaced</li> </ul> |
| Work Support             | Displays causes of automatic system cancellation occurred during system control                                                                                                                                                      |
| Self Diagnostic Result   | Displays the name of a malfunctioning system stored in the ADAS control unit                                                                                                                                                         |
| Data Monitor             | Displays ADAS control unit input/output data in real time                                                                                                                                                                            |
| Active Test              | Enables an operational check of a load by transmitting a driving signal from the ADAS control unit to the load                                                                                                                       |
| ECU Identification       | Displays ADAS control unit part number                                                                                                                                                                                               |
| CAN Diag Support Monitor | Displays a reception/transmission state of CAN communication and ITS communication                                                                                                                                                   |

## CONFIGURATION

Configuration includes functions as follows.

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

| Function                 |                    | Description                                                                                                     |
|--------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------|
| Read/Write Configuration | Before Replace ECU | Allows the reading of vehicle specification written in ADAS control unit to store the specification in CONSULT. |
|                          | After Replace ECU  | Allows the writing of the vehicle information stored in CONSULT into the ADAS control unit.                     |
| Manual Configuration     |                    | Allows the writing of the vehicle specification into the ADAS control unit by hand.                             |

## WORK SUPPORT

| Work support items     | Description                                                                                                                                                                                                                                                                                                          |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CAUSE OF AUTO-CANCEL 1 | Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> <li>Vehicle-to-vehicle control mode</li> <li>Conventional (fixed speed) control mode</li> <li>Distance Control Assist (DCA)</li> <li>Forward Emergency Braking (FEB)</li> </ul> |
| CAUSE OF AUTO-CANCEL 2 | <b>NOTE:</b><br>The item is displayed, but it is not monitored                                                                                                                                                                                                                                                       |
| CAUSE OF AUTO-CANCEL 3 | Displays causes of automatic system cancellation occurred during control of the Back-up Collision Intervention (BCI)                                                                                                                                                                                                 |

### NOTE:

- Causes of the maximum five cancellations (system cancel) are displayed.
- The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

### Display Items for The Cause of Automatic Cancellation 1

| Cause of cancellation | Vehicle-to-vehicle distance control mode | Conventional (fixed speed) cruise control mode | Distance Control Assist | Forward Emergency Braking | Description                                                                                                                                                                                                                              |
|-----------------------|------------------------------------------|------------------------------------------------|-------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OPERATING ABS         | ×                                        |                                                | ×                       | ×                         | ABS function was operated                                                                                                                                                                                                                |
| OPERATING TCS         | ×                                        | ×                                              | ×                       |                           | TCS function was operated                                                                                                                                                                                                                |
| OPERATING VDC         | ×                                        | ×                                              | ×                       | ×                         | VDC function was operated                                                                                                                                                                                                                |
| ECM CIRCUIT           | ×                                        | ×                                              |                         |                           | ECM did not permit ICC operation                                                                                                                                                                                                         |
| OPE SW VOLT CIRC      | ×                                        | ×                                              | ×                       |                           | The ICC steering switch input voltage is not within standard range                                                                                                                                                                       |
| SNOW MODE SW          | ×                                        |                                                | ×                       |                           | Shifting of the drive mode selector to SNOW position                                                                                                                                                                                     |
| OP SW DOUBLE TOUCH    | ×                                        | ×                                              |                         |                           | ICC steering switches were pressed at the same time                                                                                                                                                                                      |
| VHCL SPD DOWN         | ×                                        | ×                                              | ×                       |                           | Vehicle speed lower than the speed as follows <ul style="list-style-type: none"> <li>Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH)</li> <li>Conventional (fixed speed) cruise control mode is 32 km/h (20 MPH)</li> </ul> |

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

## < SYSTEM DESCRIPTION >

[ICC]

|                         |   |   |   |   |                                                                                                                               |     |
|-------------------------|---|---|---|---|-------------------------------------------------------------------------------------------------------------------------------|-----|
| WHL SPD ELEC NOISE      | × | × | × |   | Wheel speed sensor signal caught electromagnetic noise                                                                        | A   |
| VDC/TCS OFF SW          | × |   | × | × | VDC OFF switch was pressed                                                                                                    | B   |
| VHCL SPD UNMATCH        | × | × | × |   | Wheel speed became different from A/T vehicle speed                                                                           | C   |
| TIRE SLIP               | × | × |   |   | Wheel slipped                                                                                                                 | D   |
| IGN LOW VOLT            | × | × | × | × | Decrease in ADAS control unit ignition voltage                                                                                | E   |
| PARKING BRAKE ON        | × | × |   |   | The parking brake is operating                                                                                                | F   |
| WHEEL SPD UNMATCH       | × | × | × |   | The wheel speeds of 4 wheels are out of the specified values                                                                  | G   |
| INCHING LOST            | × |   |   |   | A vehicle ahead is not detected during the following driving when the vehicle speed is approximately 24 km/h (15 MPH) or less | H   |
| CAN COMM ERROR          | × | × | × | × | ADAS control unit received an abnormal signal with CAN communication                                                          | I   |
| ABS/TCS/VDC CIRC        | × | × | × | × | An abnormal condition occurs in VDC/TCS/ABS system                                                                            | J   |
| ECD CIRCUIT             | × | × | × | × | An abnormal condition occurs in ECD system                                                                                    | K   |
| ENG SPEED DOWN          | × | × |   |   | Engine speed became extremely low while controlling ICC system                                                                | L   |
| ASCD VHCL SPD DTAC      |   | × |   |   | Vehicle speed is detached from set vehicle speed                                                                              | M   |
| ASCD DOUBLE COMD        |   | × |   |   | Cancel switch and operation switch are detected simultaneously                                                                | N   |
| APA HI TEMP             |   |   | × |   | The accelerator pedal actuator integrated motor temperature is high                                                           | CCS |
| ICC SENSOR CAN COMM ERR | × |   | × | × | Communication error between ADAS control unit and the ICC sensor                                                              | P   |
| ABS WARNING LAMP        | × |   | × |   | ABS warning lamp ON                                                                                                           |     |
| FR RADAR BLOCKED        | × |   | × | × | Inclusion of dirt or stains on the ICC sensor area of the front bumper                                                        |     |
| FEB) CURVATURE          |   |   |   | × | Road curve was more than the specified value                                                                                  |     |
| FEB) YAW RATE           |   |   |   | × | Detected yawing speed was more than the specified value                                                                       |     |
| FEB) LTRL ACCELERATION  |   |   |   | × | Detected lateral speed is the specified value or more                                                                         |     |
| RADAR INTERFERENCE      | × |   | × | × | ICC sensor receives electromagnetic interference                                                                              |     |
| NO RECORD               | × | × | × |   | —                                                                                                                             |     |

## Display Items for The Cause of Automatic Cancellation 3

| Cause of cancellation | Back-up Collision Intervention | Description                                                          |
|-----------------------|--------------------------------|----------------------------------------------------------------------|
| CAN COMM ERROR (CAN)  | ×                              | ADAS control unit received an abnormal signal with CAN communication |
| CAN COMM ERROR (ECD)  | ×                              | ADAS control unit received an abnormal signal with CAN communication |
| IGN LOW VOLT          | ×                              | Decrease in ADAS control unit ignition voltage                       |
| VEHICLE SPEED UP      | ×                              | Vehicle speed higher than 8 km/h (5 MPH)                             |
| ACCEL IS OPERATED     | ×                              | Accelerator pedal was depressed                                      |
| BRAKE IS OPERATED     | ×                              | Brake pedal was operated                                             |
| APA HI TEMP           | ×                              | The accelerator pedal actuator integrated motor temperature is high  |

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

| Cause of cancellation | Back-up Collision Intervention | Description                                                        |
|-----------------------|--------------------------------|--------------------------------------------------------------------|
| APA POWER             | ×                              | Decrease in accelerator pedal actuator ignition or battery voltage |
| NO RECORD             | ×                              | —                                                                  |

## SELF DIAGNOSTIC RESULT

Refer to [DAS-44, "DTC Index"](#).

## DATA MONITOR

### NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

| Monitored item<br>[Unit]          | ALL SIG<br>(ICC) | MAIN SIG<br>(ICC) | MAIN SIG<br>(LDW/LDP) | MAIN SIG<br>(BSW/BSI) | MAIN SIG<br>(BCI) | Description                                                                                                                                            |
|-----------------------------------|------------------|-------------------|-----------------------|-----------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| MAIN SW<br>[On/Off]               | ×                | ×                 | ×                     | ×                     |                   | Indicates [On/Off] status as judged from ICC steering switch                                                                                           |
| SET/COAST SW<br>[On/Off]          | ×                | ×                 |                       |                       |                   | Indicates [On/Off] status as judged from ICC steering switch                                                                                           |
| CANCEL SW<br>[On/Off]             | ×                | ×                 |                       |                       |                   | Indicates [On/Off] status as judged from ICC steering switch                                                                                           |
| RESUME/ACC SW<br>[On/Off]         | ×                | ×                 |                       |                       |                   | Indicates [On/Off] status as judged from ICC steering switch                                                                                           |
| DISTANCE SW<br>[On/Off]           | ×                |                   |                       |                       |                   | Indicates [On/Off] status as judged from ICC steering switch                                                                                           |
| CRUISE OPE<br>[On/Off]            | ×                | ×                 |                       |                       |                   | Indicates whether controlling or not (ON means "controlling")                                                                                          |
| ON ROOT GUID-<br>ANCE<br>[On/Off] | ×                |                   |                       |                       |                   | <b>NOTE:</b><br>The item is displayed, but it is not monitored                                                                                         |
| BRAKE SW<br>[On/Off]              | ×                | ×                 | ×                     | ×                     | ×                 | Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication)                     |
| STOP LAMP SW<br>[On/Off]          | ×                | ×                 | ×                     | ×                     | ×                 | Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication)                     |
| CLUTCH SW SIG<br>[On/Off]         | ×                | ×                 | ×                     | ×                     |                   | Indicates [On/Off] status as judged from clutch pedal position signal (ECM transmits ICC clutch switch signal through CAN communication)               |
| IDLE SW<br>[On/Off]               | ×                |                   |                       |                       | ×                 | Indicates [On/Off] status of idle switch read from ADAS control unit through CAN communication (ECM transmits On/Off status through CAN communication) |
| SET DISTANCE<br>[Short/Mid/Long]  | ×                | ×                 |                       |                       |                   | Indicates set distance memorized in ADAS control unit                                                                                                  |
| CRUISE LAMP<br>[On/Off]           | ×                | ×                 |                       |                       |                   | Indicates [On/Off] status of MAIN switch indicator output                                                                                              |
| OWN VHCL<br>[On/Off]              | ×                |                   |                       |                       |                   | Indicates [On/Off] status of own vehicle indicator output                                                                                              |

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

| Monitored item<br>[Unit]         | ALL SIG<br>(ICC) | MAIN SIG<br>(ICC) | MAIN SIG<br>(LDW/LDP) | MAIN SIG<br>(BSW/BSI) | MAIN SIG<br>(BCI) | Description                                                                                                                                                                                                                            |
|----------------------------------|------------------|-------------------|-----------------------|-----------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VHCL AHEAD<br>[On/Off]           | ×                |                   |                       |                       |                   | Indicates [On/Off] status of vehicle ahead detection indicator output                                                                                                                                                                  |
| ICC WARNING<br>[On/Off]          | ×                |                   |                       |                       |                   | Indicates [On/Off] status of ICC system warning lamp output                                                                                                                                                                            |
| VHCL SPEED SE<br>[km/h] or [mph] | ×                | ×                 | ×                     | ×                     | ×                 | Indicates vehicle speed calculated from ADAS control unit through CAN communication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication]                             |
| SET VHCL SPD<br>[km/h] or [mph]  | ×                | ×                 |                       |                       |                   | Indicates set vehicle speed memorized in ADAS control unit                                                                                                                                                                             |
| BUZZER O/P<br>[On/Off]           | ×                |                   |                       |                       | ×                 | Indicates [On/Off] status of ICC warning chime output                                                                                                                                                                                  |
| THRTL SENSOR<br>[deg]            | ×                | ×                 |                       |                       |                   | <b>NOTE:</b><br>The item is displayed, but it is not monitored                                                                                                                                                                         |
| ENGINE RPM<br>[rpm]              | ×                |                   |                       |                       |                   | Indicates engine speed read from ADAS control unit through CAN communication (ECM transmits engine speed signal through CAN communication)                                                                                             |
| WIPER SW<br>[OFF/LOW/HIGH]       | ×                |                   |                       |                       |                   | Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication)                                                                                                                             |
| YAW RATE<br>[deg/s]              | ×                |                   |                       |                       |                   | <b>NOTE:</b><br>The item is displayed, but it is not monitored                                                                                                                                                                         |
| BA WARNING<br>[On/Off]           | ×                |                   |                       |                       |                   | Indicates [On/Off] status of FEB indicator lamp output                                                                                                                                                                                 |
| STP LMP DRIVE<br>[On/Off]        | ×                | ×                 |                       |                       | ×                 | Indicates [On/Off] status of ICC brake hold relay drive output                                                                                                                                                                         |
| D RANGE SW<br>[On/Off]           | ×                |                   |                       |                       |                   | Indicates [On/Off] status of "D" or "M" positions read from ADAS control unit through CAN communication; ON when position "D" or "M" (TCM transmits shift position signal through CAN communication).                                  |
| NP RANGE SW<br>[On/Off]          | ×                |                   |                       |                       |                   | Indicates shift position signal read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)                                                                                  |
| PKB SW<br>[On/Off]               | ×                |                   |                       |                       |                   | Parking brake switch status [On/Off] judged from the parking brake switch signal that ADAS control unit readout via CAN communication is displayed (combination meter transmits the parking brake switch signal via CAN communication) |
| PWR SUP MONI<br>[V]              | ×                | ×                 |                       |                       |                   | Indicates IGN voltage input by ADAS control unit                                                                                                                                                                                       |
| VHCL SPD AT<br>[km/h] or [mph]   | ×                |                   |                       |                       |                   | Indicates vehicle speed calculated from A/T vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits A/T vehicle speed sensor signal through CAN communication)                                       |
| THRTL OPENING<br>[%]             | ×                | ×                 |                       |                       | ×                 | Indicates throttle position read from ADAS control unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).                                                                         |
| GEAR<br>[1, 2, 3, 4, 5, 6, 7]    | ×                |                   |                       |                       |                   | Indicates A/T gear position read from ADAS control unit through CAN communication (TCM transmits current gear position signal through CAN communication)                                                                               |
| NP SW SIG<br>[On/Off]            | ×                |                   |                       |                       |                   | Indicates [On/Off] status as judged from park/neutral position switch signal (ECM transmits park/neutral position switch signal through CAN communication).                                                                            |
| MODE SIG<br>[OFF, ICC, ASCD]     | ×                |                   |                       |                       |                   | Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode]                                                                                                                                            |
| SET DISP IND<br>[On/Off]         | ×                |                   |                       |                       |                   | Indicates [On/Off] status of SET switch indicator output                                                                                                                                                                               |

A

B

C

D

E

F

G

H

I

J

K

L

M

N

CCS

P

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

## < SYSTEM DESCRIPTION >

[ICC]

| Monitored item<br>[Unit]                         | ALL SIG<br>(ICC) | MAIN SIG<br>(ICC) | MAIN SIG<br>(LDW/LDP) | MAIN SIG<br>(BSW/BSI) | MAIN SIG<br>(BCI) | Description                                                                                                                                                                                                                                                |
|--------------------------------------------------|------------------|-------------------|-----------------------|-----------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DISTANCE<br>[m]                                  | ×                |                   |                       |                       |                   | Indicates the distance from the vehicle ahead                                                                                                                                                                                                              |
| RELATIVE SPD<br>[m/s]                            | ×                |                   |                       |                       |                   | Indicates the relative speed of the vehicle ahead                                                                                                                                                                                                          |
| DYNA ASIST SW<br>[On/Off]                        | ×                | ×                 |                       | ×                     |                   | Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)                                                                                                                   |
| DCA ON IND<br>[On/Off]                           | ×                |                   |                       |                       |                   | The status [ON/OFF] of DCA system switch indicator output is displayed                                                                                                                                                                                     |
| DCA VHL AHED<br>[On/Off]                         | ×                |                   |                       |                       |                   | The status [ON/OFF] of vehicle ahead detection indicator output in DCA system is displayed                                                                                                                                                                 |
| IBA SW<br>[On/Off]                               | ×                | ×                 |                       |                       |                   | <b>NOTE:</b><br>The item is displayed, but it is not monitored                                                                                                                                                                                             |
| FCW SYSTEM ON<br>[On/Off]                        | ×                | ×                 |                       |                       |                   | Indicates [On/Off] status of PFCW system                                                                                                                                                                                                                   |
| APA TEMP<br>[°C]                                 | ×                |                   |                       |                       | ×                 | Accelerator pedal actuator integrated motor temperature that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the integrated motor temperature via ITS communication)                                |
| APA PWR<br>[V]                                   | ×                |                   |                       |                       | ×                 | Accelerator pedal actuator power supply voltage that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication)                                                |
| LDW SYSTEM ON<br>[On/Off]                        |                  |                   | ×                     |                       |                   | Indicates [On/Off] status of LDW system                                                                                                                                                                                                                    |
| LDW ON LAMP<br>[On/Off]                          |                  |                   | ×                     |                       |                   | Indicates [On/Off] status of LDW system display output                                                                                                                                                                                                     |
| LDP ON IND<br>[On/Off]                           |                  |                   | ×                     |                       |                   | Indicates [On/Off] status of LDP system display output                                                                                                                                                                                                     |
| LANE DPRT W/L<br>[On/Off]                        |                  |                   | ×                     |                       |                   | Indicates [On/Off] status of LDW/LDP warning display (Yellow) output                                                                                                                                                                                       |
| LDW BUZER OUT-<br>PUT<br>[On/Off]                |                  |                   | ×                     |                       |                   | Indicates [On/Off] status of warning buzzer output                                                                                                                                                                                                         |
| LDP SYSTEM ON<br>[On/Off]                        |                  |                   | ×                     |                       |                   | Indicates [On/Off] status of LDP system                                                                                                                                                                                                                    |
| WARN REQ<br>[On/Off]                             |                  |                   | ×                     |                       |                   | Indicates an ADAS control unit judged warning state (ON/OFF) of LDP system                                                                                                                                                                                 |
| READY signal<br>[On/Off]                         |                  |                   | ×                     |                       |                   | Indicates LDP system settings                                                                                                                                                                                                                              |
| Camera lost<br>[Detect/Deviate/Both]             |                  |                   | ×                     | ×                     |                   | Indicates a lane marker detection state judged from a lane marker detection signal read by the ADAS control unit via ITS communication (Lane camera unit transmits a lane marker signal via ITS communication)                                             |
| Shift position<br>[Off, P, R, N, D, M/T1 -<br>7] |                  |                   | ×                     | ×                     | ×                 | Indicates shift position read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)                                                                                                             |
| Turn signal<br>[OFF/LH/RH/LH&RH]                 |                  |                   | ×                     | ×                     |                   | Indicates turn signal operation status read from ADAS control unit through CAN communication (BCM transmits turn indicator signal through CAN communication)                                                                                               |
| SIDE G<br>[G]                                    |                  |                   | ×                     | ×                     |                   | Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication) |

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

| Monitored item<br>[Unit]                               | ALL SIG<br>(ICC) | MAIN SIG<br>(ICC) | MAIN SIG<br>(LDW/LDP) | MAIN SIG<br>(BSW/BSI) | MAIN SIG<br>(BCI) | Description                                                                                                                                                                                                                                                                                |     |
|--------------------------------------------------------|------------------|-------------------|-----------------------|-----------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| STATUS signal<br>[Stnby/Warn/Cancl/<br>Off]            |                  |                   | ×                     |                       |                   | Indicates a control state of LDP system                                                                                                                                                                                                                                                    | A   |
| Lane unclear<br>[On/Off]                               |                  |                   | ×                     | ×                     |                   | Indicates an ON/OFF state of the lane marker. The ON/OFF state is judged from a detected lane condition signal read by the ADAS control unit via ITS communication<br>(The lane camera unit transmits a detected lane condition signal via ITS communication)                              | B   |
| FUNC ITEM (FCW)<br>[On/Off]                            | ×                | ×                 | ×                     | ×                     |                   | Indicates systems which can be set to ON/OFF by selecting "Driver Aids" ⇒ "Emergency Assist" of the integral switch<br>Forward Emergency Braking                                                                                                                                           | C   |
| FUNC ITEM (LDW)<br>[On/Off]                            | ×                | ×                 | ×                     | ×                     |                   | Indicates systems which can be set to ON/OFF by selecting "Driver Aids" ⇒ "Lane" of the integral switch<br>Lane Departure Warning                                                                                                                                                          | D   |
| FUNC ITEM (BSW)<br>[On/Off]                            | ×                | ×                 | ×                     | ×                     |                   | Indicates systems which can be set to ON/OFF by selecting "Driver Aids" ⇒ "Blind spot" of the integral switch<br>Blind Spot Warning                                                                                                                                                        | E   |
| FUNC ITEM (NV-ICC)<br>[Off]                            | ×                | ×                 | ×                     | ×                     |                   | <b>NOTE:</b><br>The item is displayed, but it is not monitored                                                                                                                                                                                                                             | F   |
| FUNC ITEM (NV-DCA)<br>[Off]                            | ×                | ×                 | ×                     | ×                     |                   | <b>NOTE:</b><br>The item is displayed, but it is not monitored                                                                                                                                                                                                                             | G   |
| DCA SELECT<br>[On/Off]                                 | ×                | ×                 | ×                     | ×                     |                   | Indicates an ON/OFF state of the DCA system. The DCA system can be set to ON/OFF by selecting "Driving Aids" ⇒ "Front assist" of the integral switch                                                                                                                                       | H   |
| LDP SELECT<br>[On/Off]                                 | ×                | ×                 | ×                     | ×                     |                   | Indicates an ON/OFF state of LDP system. LDP system can be set to ON/OFF by selecting "Driving Aids" ⇒ "Lane" of the integral switch                                                                                                                                                       | I   |
| BSI SELECT<br>[On/Off]                                 | ×                | ×                 | ×                     | ×                     |                   | Indicates an ON/OFF state of Blind Spot Intervention system. Blind Spot Intervention system can be set to ON/OFF by selecting "Driving Aids" ⇒ "Blind Spot" of the integral switch                                                                                                         | J   |
| FCW SELECT<br>[On/Off]                                 | ×                | ×                 | ×                     | ×                     |                   | Indicates an ON/OFF state of the PFCW system. The PFCW system can be set to ON/OFF by selecting "Driving Aids" ⇒ "Emergency Assist" of the integral switch                                                                                                                                 | K   |
| LDW SELECT<br>[On/Off]                                 | ×                | ×                 | ×                     | ×                     |                   | Indicates an ON/OFF state of the LDW system. The LDW system can be set to ON/OFF by selecting "Driving Aids" ⇒ "Lane" of the integral switch                                                                                                                                               | L   |
| BSW SELECT<br>[On/Off]                                 | ×                | ×                 | ×                     | ×                     |                   | Indicates an ON/OFF state of the BSW system. The BSW system can be set to ON/OFF by selecting "Driving Aids" ⇒ "Blind spot" of the integral switch                                                                                                                                         | M   |
| NAVI ICC SELECT<br>[Off]                               | ×                | ×                 | ×                     | ×                     |                   | <b>NOTE:</b><br>The item is displayed, but it is not monitored                                                                                                                                                                                                                             | N   |
| NAVI DCA SELECT<br>[Off]                               | ×                | ×                 | ×                     | ×                     |                   | <b>NOTE:</b><br>The item is displayed, but it is not monitored                                                                                                                                                                                                                             |     |
| SYS SELECTABILITY<br>[On/Off]                          | ×                | ×                 | ×                     | ×                     |                   | Indicates the availability of ON/OFF switching for "Driving Aids" items received from the integral switch via CAN communication                                                                                                                                                            | CCS |
| DRIVE MODE STATS<br>[STD/SPORT/ECO/<br>SNOW/MID/ERROR] | ×                | ×                 | ×                     | ×                     |                   | Indicates a drive mode selector select position judged from a drive mode select switch position signal read by the ADAS control unit via CAN communication<br>(The chassis control module transmits a switch position signal of the drive mode select switch signal via CAN communication) | P   |
| WARN SYS SW<br>[On/Off]                                | ×                | ×                 | ×                     | ×                     |                   | <b>NOTE:</b><br>The item is displayed, but it is not monitored                                                                                                                                                                                                                             |     |
| BSW/BSI WARN LMP<br>[On/Off]                           |                  |                   |                       | ×                     |                   | Indicates [On/Off] status of Blind Spot warning malfunction                                                                                                                                                                                                                                |     |

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

| Monitored item<br>[Unit]                                     | ALL SIG<br>(ICC) | MAIN SIG<br>(ICC) | MAIN SIG<br>(LDW/LDP) | MAIN SIG<br>(BSW/BSI) | MAIN SIG<br>(BCI) | Description                                                                            |
|--------------------------------------------------------------|------------------|-------------------|-----------------------|-----------------------|-------------------|----------------------------------------------------------------------------------------|
| BSI ON IND<br>[On/Off]                                       |                  |                   |                       | ×                     |                   | Indicates [On/Off] status of Blind Spot Intervention system display                    |
| BSW SYSTEM ON<br>[On/Off]                                    |                  |                   |                       | ×                     |                   | Indicates [On/Off] status of BSW system                                                |
| BSI SYSTEM ON<br>[On/Off]                                    |                  |                   |                       | ×                     |                   | Indicates [On/Off] status of Blind Spot Intervention system                            |
| BCI SYSTEM ON<br>[On/Off]                                    |                  |                   |                       |                       | ×                 | Indicates [On/Off] status of BCI system                                                |
| BATTERY CIRCUIT<br>OFF<br>[On/Off]                           | ×                |                   |                       |                       |                   | <b>NOTE:</b><br>The item is displayed, but it is not used                              |
| LDP WARNING INDI-<br>CATOR<br>[On/Off]                       |                  |                   | ×                     |                       |                   | Indicates [On/Off] status of LDP warning display (Yellow) output                       |
| LDW ON INDICATOR<br>[On/Off]                                 |                  |                   | ×                     |                       |                   | Indicates [On/Off] status of LDW system ON display output                              |
| LDW WARNING INDI-<br>CATOR<br>[On/Off]                       |                  |                   | ×                     |                       |                   | Indicates [On/Off] status of LDW system warning display output                         |
| SYSTEM CANCEL<br>MESSAGE<br>[NOREQ/SLIP/<br>SNOW/VDC OFF]    | ×                | ×                 | ×                     | ×                     |                   | Indicates [On/Off] status of system cancel display output                              |
| CAMERA HI TEMP<br>MSG<br>[On/Off]                            |                  |                   | ×                     | ×                     |                   | Indicates [On/Off] status of lane camera unit high temperature warning display output  |
| ITS SETTING<br>ITEM(DCA)<br>[On/Off]                         | ×                | ×                 | ×                     | ×                     |                   | Indicates the presence or absence of DCA system.                                       |
| ITS SETTING<br>ITEM(LDP)<br>[On/Off]                         | ×                | ×                 | ×                     | ×                     |                   | Indicates the presence or absence of LDP system.                                       |
| ITS SETTING<br>ITEM(BSI)<br>[On/Off]                         | ×                | ×                 | ×                     | ×                     |                   | Indicates the presence or absence of Blind Spot Intervention system.                   |
| BSI WARNING INDI-<br>CATOR<br>[On/Off]                       |                  |                   |                       | ×                     |                   | Indicates [On/Off] status of Blind Spot Intervention warning display output            |
| BSW ON INDICATOR<br>[On/Off]                                 |                  |                   |                       | ×                     |                   | Indicates [On/Off] status of BSW system ON display output                              |
| SIDE RADAR BLOCK<br>COND<br>[On/Off]                         |                  |                   |                       | ×                     |                   | Indicates [On/Off] status of side radar with dirt or foreign materials                 |
| LDW WARNING<br>ALERT TIMING<br>[Nothing/Early/Late]          |                  |                   | ×                     |                       |                   | <b>NOTE:</b><br>The item is displayed, but it is not monitored                         |
| BSW IND BRIGHT-<br>NESS<br>[Nothing/Bright/Nor-<br>mal/Dark] |                  |                   |                       | ×                     |                   | Indicates status of brightness of Blind Spot Warning/Blind Spot Intervention indicator |
| SL MAIN SW<br>[On/Off]                                       |                  | ×                 |                       |                       |                   | Indicates [On/Off] status as judged from steering switch                               |

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

| Monitored item<br>[Unit]                 | ALL SIG<br>(ICC) | MAIN SIG<br>(ICC) | MAIN SIG<br>(LDW/LDP) | MAIN SIG<br>(BSW/BSI) | MAIN SIG<br>(BCI) | Description                                                                                                                                                                                                                   |
|------------------------------------------|------------------|-------------------|-----------------------|-----------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FUNC ITEM(FEB)<br>[On/Off]               | ×                |                   |                       |                       |                   | Indicates systems which can be set to ON/OFF by selecting "Driver Aids"<br>⇒ "Emergency Assist" of the integral switch<br>Forward Emergency Braking                                                                           |
| FEB SELECT<br>[On/Off]                   | ×                |                   |                       |                       |                   | Indicates an ON/OFF state of the FEB system. The FEB system can be<br>set to ON/OFF by selecting "Driving Aids" ⇒ "Emergency Assist" of the in-<br>tegral switch                                                              |
| FEB SW<br>[On/Off]                       | ×                |                   |                       |                       |                   | Indicates [On/Off] status of FEB system                                                                                                                                                                                       |
| SL TARGET VEHI-<br>CLE SPEED<br>[km/h]   | ×                |                   |                       |                       |                   | Indicates set vehicle speed memorized in ADAS control unit                                                                                                                                                                    |
| SL SET LAMP<br>[On/Off]                  | ×                |                   |                       |                       |                   | Indicates [On/Off] status of speed limiter SET display output                                                                                                                                                                 |
| SL LIMIT LAMP<br>[On/Off]                | ×                |                   |                       |                       |                   | Indicates [On/Off] status of speed limiter MAIN switch display output                                                                                                                                                         |
| ASCD CANCEL<br>(LOW SPEED)<br>[NON/CUT]  | ×                |                   |                       |                       |                   | Indicates the vehicle cruise condition.<br>• NON: Vehicle speed is maintained at the ASCD set speed.<br>• CUT: Vehicle speed decreased to excessively low, and ASCD operation<br>is cut off.                                  |
| ASCD CANCEL<br>(SPEED DIFF)<br>[NON/CUT] | ×                |                   |                       |                       |                   | Indicates the vehicle cruise condition.<br>• NON: Vehicle speed is maintained at the ASCD set speed.<br>• CUT: Vehicle speed decreased to excessively low compared with the<br>ASCD set speed, and ASCD operation is cut off. |
| KICK DOWN<br>[On/Off]                    | ×                |                   |                       |                       |                   | Display Kick Down decision state.<br>• On: Accelerator pedal is depressed<br>• Off: Accelerator pedal is fully released                                                                                                       |

## ACTIVE TEST

### CAUTION:

- **Never perform "Active Test" while driving the vehicle.**
- **The "Active Test" cannot be performed when the following systems malfunction is displayed.**
  - ICC system
  - DCA
  - LDW
  - LDP
  - Blind Spot Warning
  - Blind Spot Intervention
  - BCI
- **The "Active Test" cannot be performed when the FEB warning lamp is illuminated.**
- **Shift the selector lever to "P" position, and then perform the test.**

| Test item      | Description                                                                                                                                                                                                                                                                                              |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| METER LAMP     | The MAIN switch indicator and FEB warning lamp can be illuminated by ON/OFF operations as necessary                                                                                                                                                                                                      |
| STOP LAMP      | The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated                                                                                                                                                                                         |
| ICC BUZZER     | Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> <li>• Intelligent Cruise Control (ICC)</li> <li>• Distance Control Assist (DCA)</li> <li>• Predictive Forward Collision Warning (PFCW)</li> <li>• Forward Emergency Brake (FEB)</li> </ul> |
| BRAKE ACTUATOR | Activates the brake by an arbitrary operation                                                                                                                                                                                                                                                            |
| ACTIVE PEDAL   | The accelerator pedal actuator can be operated as necessary                                                                                                                                                                                                                                              |
| DCA INDICATOR  | The DCA system display can be illuminated by ON/OFF operations as necessary                                                                                                                                                                                                                              |

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

| Test item             | Description                                                                                                                                                                                                                                                                   |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LDP BUZZER            | Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> <li>• Lane Departure Warning (LDW)</li> <li>• Lane Departure Prevention (LDP)</li> <li>• Blind Spot Warning (BSW)</li> <li>• Blind Spot Intervention</li> </ul> |
| LDP ON IND            | The LDP system display can be illuminated by ON/OFF operations as necessary                                                                                                                                                                                                   |
| LANE DEPARTURE W/L    | The LDW/LDP warning can be illuminated by ON/OFF operations as necessary                                                                                                                                                                                                      |
| BSW ON INDICATOR      | The Blind Spot Warning system display can be illuminated by ON/OFF operations as necessary                                                                                                                                                                                    |
| BSI ON INDICATOR      | The Blind Spot Intervention system display can be illuminated by ON/OFF operations as necessary                                                                                                                                                                               |
| LDW ON INDICATOR      | The LDW system display can be illuminated by ON/OFF operations as necessary                                                                                                                                                                                                   |
| LDP WARNING INDICATOR | The LDP malfunction can be illuminated by ON/OFF operations as necessary                                                                                                                                                                                                      |
| LDW WARNING INDICATOR | The LDW malfunction can be illuminated by ON/OFF operations as necessary                                                                                                                                                                                                      |
| BSW WARNING INDICATOR | The BSW malfunction can be illuminated by ON/OFF operations as necessary                                                                                                                                                                                                      |
| BSI WARNING INDICATOR | The Blind Spot Intervention malfunction can be illuminated by ON/OFF operations as necessary                                                                                                                                                                                  |

## METER LAMP

### NOTE:

The test can be performed only when the engine is running.

| Test item  | Operation | Description                                                                                                                                                                                | <ul style="list-style-type: none"> <li>• MAIN switch indicator</li> <li>• ICC system warning</li> <li>• FEB warning lamp</li> </ul> |
|------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| METER LAMP | Off       | Stops sending the following signals to exit from the test <ul style="list-style-type: none"> <li>• Meter display signal</li> <li>• FEB warning lamp signal</li> </ul>                      | OFF                                                                                                                                 |
|            | On        | Transmits the following signals to the combination meter via CAN communication <ul style="list-style-type: none"> <li>• Meter display signal</li> <li>• FEB warning lamp signal</li> </ul> | ON                                                                                                                                  |

## STOP LAMP

| Test item | Operation | Description                                                                    | Stop lamp |
|-----------|-----------|--------------------------------------------------------------------------------|-----------|
| STOP LAMP | Off       | Stops transmitting the ICC brake hold relay drive signal below to end the test | OFF       |
|           | On        | Transmits the ICC brake hold relay drive signal                                | ON        |

## ICC BUZZER

| Test item  | Operation  | Description                                                                                              | Operation sound         |
|------------|------------|----------------------------------------------------------------------------------------------------------|-------------------------|
| ICC BUZZER | MODE1      | Transmits the buzzer output signals to the driver assistance buzzer control module via ITS communication | Intermittent beep sound |
|            | Test start | Starts the tests of "MODE1"                                                                              | —                       |
|            | Reset      | Stops transmitting the buzzer output signal below to end the test                                        | —                       |
|            | End        | Returns to the "SELECT TEST ITEM" screen                                                                 | —                       |

## BRAKE ACTUATOR

### NOTE:

The test can be performed only when the engine is running.

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

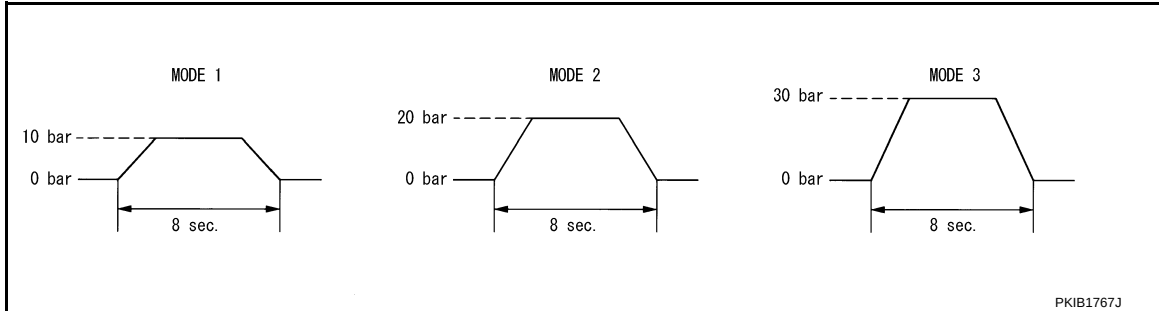
< SYSTEM DESCRIPTION >

[ICC]

| Test item      | Operation  | Description                                                                                                                       | "PRESS SENS" value |
|----------------|------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------|
| BRAKE ACTUATOR | MODE1      | Transmits the brake fluid pressure control signal to the ABS actuator and electric unit (control unit) via chassis control module | 10 bar             |
|                | MODE2      |                                                                                                                                   | 20 bar             |
|                | MODE3      |                                                                                                                                   | 30 bar             |
|                | Test start | Starts the tests of "MODE1", "MODE2" and "MODE3"                                                                                  | —                  |
|                | Reset      | Stops transmitting the brake fluid pressure control signal below to end the test                                                  | —                  |
|                | End        | Returns to the "SELECT TEST ITEM" screen                                                                                          | —                  |

## NOTE:

The test is finished in 10 seconds after starting



Active Pedal

## CAUTION:

- Shift the selector lever to "P" position, and then perform the test.
- Never depress the accelerator pedal excessively. (The engine speed may rise unexpectedly when finishing the test.)

## NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can be performed only when the engine is running.

| Test item    | Operation  | Description                                                                                                           | Accelerator pedal operation                 |
|--------------|------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| ACTIVE PEDAL | MODE1      | Transmit the accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication. | Constant with a force of 25 N for 8 seconds |
|              | MODE2      |                                                                                                                       | Constant with a force of 15 N for 8 seconds |
|              | MODE3      |                                                                                                                       | Change up to a force of 25 N for 8 seconds  |
|              | MODE4      |                                                                                                                       | Change up to a force of 15 N for 8 seconds  |
|              | Test start | Starts the tests of "MODE1", "MODE2", "MODE3" and "MODE4"                                                             | —                                           |
|              | Reset      | Stops transmitting the accelerator pedal feedback force control signal below to end the test.                         | —                                           |
|              | End        | Returns to the "SELECT TEST ITEM" screen                                                                              | —                                           |

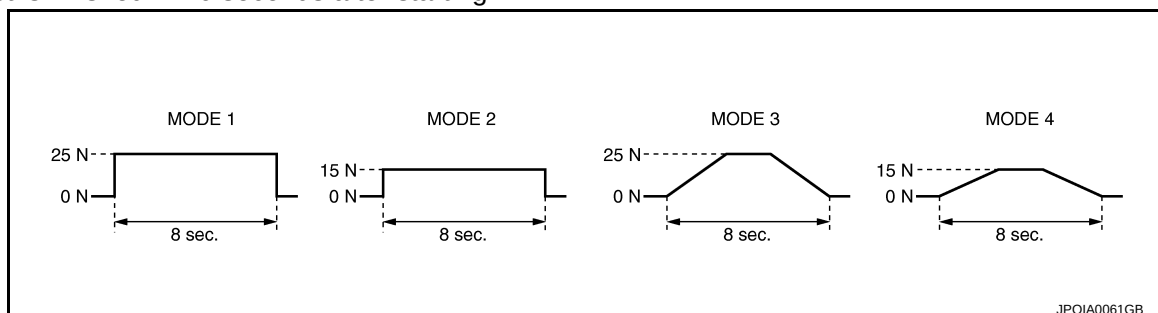
## NOTE:

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

The test is finished in 10 seconds after starting



## DCA INDICATOR

### NOTE:

The test can be performed only when the engine is running.

| Test item     | Operation | Description                                                                       | DCA system display |
|---------------|-----------|-----------------------------------------------------------------------------------|--------------------|
| DCA INDICATOR | Off       | Stops transmitting the meter display signal below to end the test                 | —                  |
|               | On        | Transmits the meter display signal to the combination meter via CAN communication | ON                 |

## LDP BUZZER

| Test item  | Operation | Description                                                        | Warning buzzer |
|------------|-----------|--------------------------------------------------------------------|----------------|
| LDP BUZZER | Off       | Stops transmitting the warning buzzer signal below to end the test | —              |
|            | On        | Transmits the warning buzzer signal to the warning buzzer          | ON             |

## LDP ON IND

| Test item  | Operation | Description                                                                       | LDP system display (Green) |
|------------|-----------|-----------------------------------------------------------------------------------|----------------------------|
| LDP ON IND | Off       | Stops transmitting the meter display signal below to end the test                 | —                          |
|            | On        | Transmits the meter display signal to the combination meter via CAN communication | ON                         |

## LANE DEPARTURE W/L

| Test item          | Operation | Description                                                                       | Lane departure system display (Yellow) |
|--------------------|-----------|-----------------------------------------------------------------------------------|----------------------------------------|
| LANE DEPARTURE W/L | Off       | Stops transmitting the meter display signal below to end the test                 | —                                      |
|                    | On        | Transmits the meter display signal to the combination meter via CAN communication | ON                                     |

## BSW ON INDICATOR

| Test item        | Operation | Description                                                                       | Blind Spot Warning system display (Yellow) |
|------------------|-----------|-----------------------------------------------------------------------------------|--------------------------------------------|
| BSW ON INDICATOR | Off       | Stops transmitting the meter display signal below to end the test                 | —                                          |
|                  | On        | Transmits the meter display signal to the combination meter via CAN communication | ON                                         |

## BSI ON INDICATOR

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

| Test item        | Operation | Description                                                                       | Blind Spot Intervention system display (Green) |
|------------------|-----------|-----------------------------------------------------------------------------------|------------------------------------------------|
| BSI ON INDICATOR | Off       | Stops transmitting the meter display signal below to end the test                 | —                                              |
|                  | On        | Transmits the meter display signal to the combination meter via CAN communication | ON                                             |

## LDW ON INDICATOR

| Test item        | Operation | Description                                                                       | LDW system display (White) |
|------------------|-----------|-----------------------------------------------------------------------------------|----------------------------|
| LDW ON INDICATOR | Off       | Stops transmitting the meter display signal below to end the test                 | —                          |
|                  | On        | Transmits the meter display signal to the combination meter via CAN communication | ON                         |

## LDP WARNING INDICATOR

| Test item             | Operation | Description                                                                       | LDP malfunction (Yellow) |
|-----------------------|-----------|-----------------------------------------------------------------------------------|--------------------------|
| LDP WARNING INDICATOR | Off       | Stops transmitting the meter display signal below to end the test                 | —                        |
|                       | On        | Transmits the meter display signal to the combination meter via CAN communication | ON                       |

## LDW WARNING INDICATOR

| Test item             | Operation | Description                                                                       | LDW malfunction (Yellow) |
|-----------------------|-----------|-----------------------------------------------------------------------------------|--------------------------|
| LDW WARNING INDICATOR | Off       | Stops transmitting the meter display signal below to end the test                 | —                        |
|                       | On        | Transmits the meter display signal to the combination meter via CAN communication | ON                       |

## BSW WARNING INDICATOR

| Test item             | Operation | Description                                                                       | BSW malfunction (Yellow) |
|-----------------------|-----------|-----------------------------------------------------------------------------------|--------------------------|
| BSW WARNING INDICATOR | Off       | Stops transmitting the meter display signal below to end the test                 | —                        |
|                       | On        | Transmits the meter display signal to the combination meter via CAN communication | ON                       |

## BSI WARNING INDICATOR

| Test item             | Operation | Description                                                                       | Blind Spot Intervention malfunction (Yellow) |
|-----------------------|-----------|-----------------------------------------------------------------------------------|----------------------------------------------|
| BSI WARNING INDICATOR | Off       | Stops transmitting the meter display signal below to end the test                 | —                                            |
|                       | On        | Transmits the meter display signal to the combination meter via CAN communication | ON                                           |

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## DIAGNOSIS SYSTEM (ICC SENSOR)

### CONSULT Function (LASER/RADAR)

INFOID:000000009644220

#### APPLICATION ITEMS

CONSULT performs the following functions via CAN communication with ADAS control unit and the communication with ICC sensor.

| Diagnosis mode           | Description                                                                                                   |
|--------------------------|---------------------------------------------------------------------------------------------------------------|
| Work Support             | It can monitor the adjustment direction indication in order to perform the radar alignment operation smoothly |
| Self Diagnostic Result   | Displays malfunctioning system memorized in ICC sensor                                                        |
| Data Monitor             | Displays real-time input/output data of ICC sensor                                                            |
| ECU Identification       | Displays ICC sensor part number                                                                               |
| CAN Diag Support Monitor | The results of transmit/receive diagnosis of ITS communication can be read                                    |

#### WORK SUPPORT

| Work support items      | Description                                                                                                  |
|-------------------------|--------------------------------------------------------------------------------------------------------------|
| MILLI WAVE RADAR ADJUST | Outputs millimeter waves, calculates dislocation of the millimeter waves, and indicates adjustment direction |

#### Radar Alignment

Refer to [CCS-83, "TYPE 1 : Description"](#).

#### SELF DIAGNOSTIC RESULT

Refer to [CCS-63, "DTC Index"](#).

#### DATA MONITOR

##### NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

| Monitored item<br>[Unit]         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VHCL SPEED SE<br>[km/h] or [mph] | Vehicle speed judged from a vehicle speed signal read by the ICC sensor via ITS communication is displayed [ADAS control unit receives a vehicle speed signal from ABS actuator and electric unit (control unit) via CAN communication and transmits the calculated vehicle speed to ICC sensor via ITS communication]                                                                                                                                                                                                                                      |
| YAW RATE<br>[deg/s]              | Indicates yaw rate read from ADAS control unit through ITS communication (ADAS control unit receives yaw rate signal from ABS actuator and electric unit (control unit) via CAN communication and transmits yaw rate calculated by the ADAS control unit)<br>Yaw rate judged from a yaw rate signal read by ICC sensor via ITS communication is displayed [ADAS control unit receives a yaw rate signal from ABS actuator and electric unit (control unit) via CAN communication and transmits the calculated yaw rate to ICC sensor via ITS communication] |
| PWR SUP MONI<br>[V]              | Indicates IGN voltage input by ICC sensor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| DISTANCE<br>[m]                  | Indicates the distance from the vehicle ahead                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| RELATIVE SPD<br>[m/s]            | Indicates the relative speed of the vehicle ahead                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| RADAR OFFSET<br>[m]              | <b>NOTE:</b><br>The item is indicated, but not used                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| RADAR HEIGHT<br>[m]              | <b>NOTE:</b><br>The item is indicated, but not used                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| STEERING ANGLE<br>[deg]          | The steering angle is displayed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

## DIAGNOSIS SYSTEM (ICC SENSOR)

< SYSTEM DESCRIPTION >

[ICC]

| Monitored item<br>[Unit]    | Description                                               |
|-----------------------------|-----------------------------------------------------------|
| STRG ANGLE SPEED<br>[deg/s] | The steering angle speed is displayed                     |
| L/R ADJUST                  | The horizontal correction value of the radar is displayed |
| U/D ADJUST                  | The vertical correction value of the radar is displayed   |

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# DIAGNOSIS SYSTEM (DRIVER ASSISTANCE BUZZER CONTROL MODULE)

< SYSTEM DESCRIPTION >

[ICC]

## DIAGNOSIS SYSTEM (DRIVER ASSISTANCE BUZZER CONTROL MODULE)

### CONSULT Function (BSW/BUZZER)

INFOID:000000009791211

#### DESCRIPTION

CONSULT performs the following functions via CAN communication with ADAS control unit and the communication with driver assistance buzzer control module.

| Test mode              | Function                                                                                                                                                                                                    |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Self Diagnostic Result | <ul style="list-style-type: none"><li>Displays malfunctioning system memorized in driver assistance buzzer control module</li><li>Displays the Freeze Frame Data when the malfunction is detected</li></ul> |
| DATA MONITOR           | Displays real-time input/output data of driver assistance buzzer control module                                                                                                                             |
| ACTIVE TEST            | Enables operation check of electrical loads by sending driving signal to them                                                                                                                               |
| ECU Identification     | Displays driver assistance buzzer control module parts number                                                                                                                                               |

#### SELF DIAGNOSTIC RESULT

##### Self Diagnostic Result

Refer to [DAS-280, "DTC Index"](#).

##### FFD (Freeze Frame Data)

The drive assistance buzzer control module records the following data when the malfunction is detected.

| Freeze Frame Data item<br>[Unit] | Description                                                                      |
|----------------------------------|----------------------------------------------------------------------------------|
| IGN Counter <sup>Note</sup>      | It displays number of ignition switch OFF → ON after the malfunction is detected |

#### NOTE:

- The number is 0 when is detected now.
- The number increases like 1 → 2 ... 38 → 39 after returning to the normal condition whenever IGN OFF → ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

#### DATA MONITOR

##### NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

| Monitor item [Unit]                                | FUNCTION DESCRIPTION                                                                                                                                                                           |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Buzzer 1 request (ADAS)<br>[Off/TYPE 1 - 3/Cancel] | Indicates buzzer request type status as judged from ADAS control unit through ITS communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via ITS communication) |
| Buzzer 1 volume (ADAS)<br>[Vol. 1- 16]             | Indicates buzzer volume status as judged from ADAS control unit through ITS communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via ITS communication)       |
| Buzzer 1 stop (ADAS)<br>[CYCLE/IMEDIAT]            | Indicates buzzer stop status as judged from ADAS control unit through ITS communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via ITS communication)         |
| Buzzer 2 request (ADAS)<br>[Off/TYPE 1 - 3/Cancel] | Indicates buzzer request type status as judged from ADAS control unit through ITS communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via ITS communication) |
| Buzzer 2 volume (ADAS)<br>[Vol. 1- 16]             | Indicates buzzer volume status as judged from ADAS control unit through ITS communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via ITS communication)       |
| Buzzer 2 stop (ADAS)<br>[CYCLE/IMEDIAT]            | Indicates buzzer stop status as judged from ADAS control unit through ITS communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via ITS communication)         |
| Buzzer 3 request (ADAS)<br>[Off/TYPE 1/Cancel]     | Indicates buzzer request type status as judged from ADAS control unit through ITS communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via ITS communication) |
| Buzzer 3 volume (ADAS)<br>[Vol. 1- 16]             | Indicates buzzer volume status as judged from ADAS control unit through ITS communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via ITS communication)       |

# DIAGNOSIS SYSTEM (DRIVER ASSISTANCE BUZZER CONTROL MODULE)

< SYSTEM DESCRIPTION >

[ICC]

| Monitor item [Unit]                                | FUNCTION DESCRIPTION                                                                                                                                                                                        |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Buzzer 3 stop (ADAS)<br>[CYCLE/IMEDIAT]            | Indicates buzzer stop status as judged from ADAS control unit through ITS communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via ITS communication)                      |
| Buzzer 4 request (ADAS)<br>[Off/TYPE 1 - 7/Cancel] | Indicates buzzer request type status as judged from ADAS control unit through ITS communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via ITS communication)              |
| Buzzer 4 volume (ADAS)<br>[Vol. 1- 16]             | Indicates buzzer volume status as judged from ADAS control unit through ITS communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via ITS communication)                    |
| Buzzer 4 stop (ADAS)<br>[CYCLE/IMEDIAT]            | Indicates buzzer stop status as judged from ADAS control unit through ITS communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via ITS communication)                      |
| Buzzer 1 request (CCM)<br>[Off/TYPE 1 - 3/Cancel]  | Indicates buzzer request type status as judged from chassis control module through chassis communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via chassis communication) |
| Buzzer 1 volume (CCM)<br>[Vol. 1- 16]              | Indicates buzzer volume status as judged from chassis control module through chassis communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via chassis communication)       |
| Buzzer 1 stop (CCM)<br>[CYCLE/IMEDIAT]             | Indicates buzzer stop status as judged from chassis control module through chassis communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via chassis communication)         |
| Buzzer 2 request (CCM)<br>[Off/TYPE 1 - 3/Cancel]  | Indicates buzzer request type status as judged from chassis control module through chassis communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via chassis communication) |
| Buzzer 2 volume (CCM)<br>[Vol. 1- 16]              | Indicates buzzer volume status as judged from chassis control module through chassis communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via chassis communication)       |
| Buzzer 2 stop (CCM)<br>[CYCLE/IMEDIAT]             | Indicates buzzer stop status as judged from chassis control module through chassis communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via chassis communication)         |
| Buzzer 3 request (CCM)<br>[Off/TYPE 1/Cancel]      | Indicates buzzer request type status as judged from chassis control module through chassis communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via chassis communication) |
| Buzzer 3 volume (CCM)<br>[Vol. 1- 16]              | Indicates buzzer volume status as judged from chassis control module through chassis communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via chassis communication)       |
| Buzzer 3 stop (CCM)<br>[CYCLE/IMEDIAT]             | Indicates buzzer stop status as judged from chassis control module through chassis communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via chassis communication)         |
| Buzzer 4 request (CCM)<br>[Off/TYPE 1 - 7/Cancel]  | Indicates buzzer request type status as judged from chassis control module through chassis communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via chassis communication) |
| Buzzer 4 volume (CCM)<br>[Vol. 1- 16]              | Indicates buzzer volume status as judged from chassis control module through chassis communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via chassis communication)       |
| Buzzer 4 stop (CCM)<br>[CYCLE/IMEDIAT]             | Indicates buzzer stop status as judged from chassis control module through chassis communication<br>(The ADAS control unit transmits the driver assistance buzzer signal via chassis communication)         |
| ADAS MALFUNCTION<br>[Off/On]                       | Indicates ADAS control unit status                                                                                                                                                                          |
| CCM MALFUNCTION<br>[Off/On]                        | Indicates chassis control module status                                                                                                                                                                     |
| DR ASSIST BUZZ MALF<br>[Off/On]                    | Indicates driver assistance control buzzer module status                                                                                                                                                    |
| DR ASSIST BUZZ STATUS<br>[1/2/3/1, 2/2, 4/1, 4/4]  | Indicates driver assistance control buzzer sound status                                                                                                                                                     |

## ACTIVE TEST

### CAUTION:

**Never perform ACTIVE TEST while driving the vehicle.**

Item list

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# DIAGNOSIS SYSTEM (DRIVER ASSISTANCE BUZZER CONTROL MODULE)

< SYSTEM DESCRIPTION >

[ICC]

| Active test item | Description                                                                                                                                                                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BUZZER 1 (ADAS)  | Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"><li>• Lane Departure Warning (LDW)</li><li>• Blind Spot Warning (BSW)</li><li>• Blind Spot Intervention</li></ul>                              |
| BUZZER 2 (ADAS)  | Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"><li>• Intelligent Cruise Control (ICC)</li><li>• Predictive Forward Collision Warning (PFCW)</li><li>• Distance Control Assist (DCA)</li></ul> |
| BUZZER 3 (ADAS)  | Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"><li>• Forward Emergency Braking (FEB)</li></ul>                                                                                                |
| BUZZER 4 (ADAS)  | Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"><li>• Predictive Forward Collision Warning (PFCW)</li></ul>                                                                                    |
| BUZZER 1 (CCM)   | Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"><li>• Lane Departure Warning (LDW)</li><li>• Blind Spot Warning (BSW)</li><li>• Blind Spot Intervention</li></ul>                              |
| BUZZER 2 (CCM)   | Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"><li>• Intelligent Cruise Control (ICC)</li><li>• Predictive Forward Collision Warning (PFCW)</li><li>• Distance Control Assist (DCA)</li></ul> |
| BUZZER 3 (CCM)   | Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"><li>• Forward Emergency Braking (FEB)</li></ul>                                                                                                |
| BUZZER 4 (CCM)   | Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"><li>• Predictive Forward Collision Warning (PFCW)</li></ul>                                                                                    |

## BUZZER 1 (ADAS)

| Active test item | Operation | Description                                                           |
|------------------|-----------|-----------------------------------------------------------------------|
| BUZZER 1 (ADAS)  | Off       | Stops transmitting the warning buzzer signal below to end of the test |
|                  | On        | Transmits the warning buzzer signal to the warning buzzer             |

## BUZZER 2 (ADAS)

| Active test item | Operation | Description                                                           |
|------------------|-----------|-----------------------------------------------------------------------|
| BUZZER 2 (ADAS)  | Off       | Stops transmitting the warning buzzer signal below to end of the test |
|                  | On        | Transmits the warning buzzer signal to the warning buzzer             |

## BUZZER 3 (ADAS)

| Active test item | Operation | Description                                                           |
|------------------|-----------|-----------------------------------------------------------------------|
| BUZZER 3 (ADAS)  | Off       | Stops transmitting the warning buzzer signal below to end of the test |
|                  | On        | Transmits the warning buzzer signal to the warning buzzer             |

## BUZZER 4 (ADAS)

| Active test item | Operation | Description                                                           |
|------------------|-----------|-----------------------------------------------------------------------|
| BUZZER 4 (ADAS)  | Off       | Stops transmitting the warning buzzer signal below to end of the test |
|                  | On        | Transmits the warning buzzer signal to the warning buzzer             |

## BUZZER 1 (CCM)

| Active test item | Operation | Description                                                           |
|------------------|-----------|-----------------------------------------------------------------------|
| BUZZER 1 (CCM)   | Off       | Stops transmitting the warning buzzer signal below to end of the test |
|                  | On        | Transmits the warning buzzer signal to the warning buzzer             |

# DIAGNOSIS SYSTEM (DRIVER ASSISTANCE BUZZER CONTROL MODULE)

< SYSTEM DESCRIPTION >

[ICC]

## BUZZER 2 (CCM)

| Active test item | Operation | Description                                                           |
|------------------|-----------|-----------------------------------------------------------------------|
| BUZZER 2 (CCM)   | Off       | Stops transmitting the warning buzzer signal below to end of the test |
|                  | On        | Transmits the warning buzzer signal to the warning buzzer             |

## BUZZER 3 (CCM)

| Active test item | Operation | Description                                                           |
|------------------|-----------|-----------------------------------------------------------------------|
| BUZZER 3 (CCM)   | Off       | Stops transmitting the warning buzzer signal below to end of the test |
|                  | On        | Transmits the warning buzzer signal to the warning buzzer             |

## BUZZER 4 (CCM)

| Active test item | Operation | Description                                                           |
|------------------|-----------|-----------------------------------------------------------------------|
| BUZZER 4 (CCM)   | Off       | Stops transmitting the warning buzzer signal below to end of the test |
|                  | On        | Transmits the warning buzzer signal to the warning buzzer             |

## ECU IDENTIFICATION

Displays driver assistance buzzer control module parts number.

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## ECU DIAGNOSIS INFORMATION

### ADAS CONTROL UNIT

#### Reference Value

INFOID:000000009676507

#### VALUES ON THE DIAGNOSIS TOOL

##### NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

| Monitor item  | Condition                                                                                                                                                                          |                                                                              | Value/Status |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------|
| MAIN SW       | Ignition switch ON                                                                                                                                                                 | When MAIN switch is pressed                                                  | On           |
|               |                                                                                                                                                                                    | When MAIN switch is not pressed                                              | Off          |
| SET/COAST SW  | Ignition switch ON                                                                                                                                                                 | When SET/COAST switch is pressed                                             | On           |
|               |                                                                                                                                                                                    | When SET/COAST switch is not pressed                                         | Off          |
| CANCEL SW     | Ignition switch ON                                                                                                                                                                 | When CANCEL switch is pressed                                                | On           |
|               |                                                                                                                                                                                    | When CANCEL switch is not pressed                                            | Off          |
| RESUME/ACC SW | Ignition switch ON                                                                                                                                                                 | When RESUME/ACCELERATE switch is pressed                                     | On           |
|               |                                                                                                                                                                                    | When RESUME/ACCELERATE switch is not pressed                                 | Off          |
| DISTANCE SW   | Ignition switch ON                                                                                                                                                                 | When DISTANCE switch is pressed                                              | On           |
|               |                                                                                                                                                                                    | When DISTANCE switch is not pressed                                          | Off          |
| CRUISE OPE    | Drive the vehicle and activate the vehicle-to-vehicle distance control mode                                                                                                        | When ICC system is controlling                                               | On           |
|               |                                                                                                                                                                                    | When ICC system is not controlling                                           | Off          |
| BRAKE SW      | Ignition switch ON                                                                                                                                                                 | When brake or clutch pedal is depressed                                      | Off          |
|               |                                                                                                                                                                                    | When brake or clutch pedal is not depressed                                  | On           |
| STOP LAMP SW  | Ignition switch ON                                                                                                                                                                 | When brake pedal is depressed                                                | On           |
|               |                                                                                                                                                                                    | When brake pedal is not depressed                                            | Off          |
| IDLE SW       | Engine running                                                                                                                                                                     | Idling                                                                       | On           |
|               |                                                                                                                                                                                    | Except idling (depress accelerator pedal)                                    | Off          |
| SET DISTANCE  | <ul style="list-style-type: none"> <li>Start the engine and turn the ICC system ON</li> <li>Press the DISTANCE switch to change the vehicle-to-vehicle distance setting</li> </ul> | When set to "long"                                                           | Long         |
|               |                                                                                                                                                                                    | When set to "middle"                                                         | Mid          |
|               |                                                                                                                                                                                    | When set to "short"                                                          | Short        |
| CRUISE LAMP   | Start the engine and press MAIN switch                                                                                                                                             | ICC system ON (MAIN switch indicator ON)                                     | On           |
|               |                                                                                                                                                                                    | ICC system OFF (MAIN switch indicator OFF)                                   | Off          |
| OWN VHCL      | <b>NOTE:</b><br>The item is indicated, but not monitored                                                                                                                           |                                                                              | Off          |
| VHCL AHEAD    | Drive the vehicle and activate the vehicle-to-vehicle distance control mode                                                                                                        | When a vehicle ahead is detected (vehicle ahead detection indicator ON)      | On           |
|               |                                                                                                                                                                                    | When a vehicle ahead is not detected (vehicle ahead detection indicator OFF) | Off          |
| ICC WARNING   | Start the engine and press MAIN switch                                                                                                                                             | When ICC system is malfunctioning (ICC system malfunction ON)                | On           |
|               |                                                                                                                                                                                    | When ICC system is normal (ICC system malfunction OFF)                       | Off          |

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

| Monitor item  | Condition                                                                   |                                                                                                                                                                                                              | Value/Status                                               |
|---------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| VHCL SPEED SE | While driving                                                               |                                                                                                                                                                                                              | Displays the vehicle speed calculated by ADAS control unit |
| SET VHCL SPD  | While driving                                                               | When vehicle speed is set                                                                                                                                                                                    | Displays the set vehicle speed                             |
| BUZZER O/P    | Engine running                                                              | When the buzzer of the following system operates <ul style="list-style-type: none"> <li>Vehicle-to-vehicle distance control mode</li> <li>DCA system</li> <li>PFCW system</li> <li>FEB system</li> </ul>     | On                                                         |
|               |                                                                             | When the buzzer of the following system not operates <ul style="list-style-type: none"> <li>Vehicle-to-vehicle distance control mode</li> <li>DCA system</li> <li>PFCW system</li> <li>FEB system</li> </ul> | Off                                                        |
| THRTL SENSOR  | <b>NOTE:</b><br>The item is indicated, but not monitored                    |                                                                                                                                                                                                              | 0.0                                                        |
| ENGINE RPM    | Engine running                                                              |                                                                                                                                                                                                              | Equivalent to tachometer reading                           |
| WIPER SW      | Ignition switch ON                                                          | Wiper not operating                                                                                                                                                                                          | Off                                                        |
|               |                                                                             | Wiper LO operation                                                                                                                                                                                           | Low                                                        |
|               |                                                                             | Wiper HI operation                                                                                                                                                                                           | High                                                       |
| YAW RATE      | <b>NOTE:</b><br>The item is indicated, but not monitored                    |                                                                                                                                                                                                              | 0.0                                                        |
| BA WARNING    | Engine running                                                              | FEB OFF indicator lamp ON <ul style="list-style-type: none"> <li>When FEB system is malfunctioning</li> <li>When FEB system is turned to OFF</li> </ul>                                                      | On                                                         |
|               |                                                                             | FEB OFF indicator lamp OFF <ul style="list-style-type: none"> <li>When FEB system is normal</li> <li>When FEB system is turned to ON</li> </ul>                                                              | Off                                                        |
| STP LMP DRIVE | Drive the vehicle and activate the vehicle-to-vehicle distance control mode | When ICC brake hold relay is activated                                                                                                                                                                       | On                                                         |
|               |                                                                             | When ICC brake hold relay is not activated                                                                                                                                                                   | Off                                                        |
| D RANGE SW    | Engine running                                                              | When the selector lever is in "D" position or manual mode                                                                                                                                                    | On                                                         |
|               |                                                                             | When the selector lever is in any position other than "D" or manual mode                                                                                                                                     | Off                                                        |
| NP RANGE SW   | Engine running                                                              | When the selector lever is in "N", "P" position                                                                                                                                                              | On                                                         |
|               |                                                                             | When the selector lever is in any position other than "N", "P"                                                                                                                                               | Off                                                        |
| PKB SW        | Ignition switch ON                                                          | When the parking brake is applied                                                                                                                                                                            | On                                                         |
|               |                                                                             | When the parking brake is released                                                                                                                                                                           | Off                                                        |
| PWR SUP MONI  | Engine running                                                              |                                                                                                                                                                                                              | Power supply voltage value of ADAS control unit            |
| VHCL SPD AT   | While driving                                                               |                                                                                                                                                                                                              | Value of A/T vehicle speed sensor signal                   |
| THRTL OPENING | Engine running                                                              | Depress accelerator pedal                                                                                                                                                                                    | Displays the throttle position                             |

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# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

| Monitor item  | Condition                                                                                                                                                           |                                                                              | Value/Status                                                        |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------|
| GEAR          | While driving                                                                                                                                                       |                                                                              | Displays the gear position                                          |
| CLUTCH SW SIG | Ignition switch ON                                                                                                                                                  | When clutch or brake pedal is depressed                                      | On                                                                  |
|               |                                                                                                                                                                     | When clutch or brake pedal is not depressed                                  | Off                                                                 |
| NP SW SIG     | Ignition switch ON                                                                                                                                                  | When the shift lever is in neutral position                                  | On                                                                  |
|               |                                                                                                                                                                     | When the shift lever is in any position other than neutral                   | Off                                                                 |
| MODE SIG      | Start the engine and press MAIN switch                                                                                                                              | When ICC system is deactivated                                               | Off                                                                 |
|               |                                                                                                                                                                     | When vehicle-to-vehicle distance control mode is activated                   | ICC                                                                 |
|               |                                                                                                                                                                     | When conventional (fixed speed) cruise control mode is activated             | ASCD                                                                |
| SET DISP IND  | <ul style="list-style-type: none"> <li>Drive the vehicle and activate the conventional (fixed speed) cruise control mode</li> <li>Press SET/COAST switch</li> </ul> | SET switch indicator ON                                                      | On                                                                  |
|               |                                                                                                                                                                     | SET switch indicator OFF                                                     | Off                                                                 |
| DISTANCE      | Drive the vehicle and activate the vehicle-to-vehicle distance control mode                                                                                         | When a vehicle ahead is detected                                             | Displays the distance from the preceding vehicle                    |
|               |                                                                                                                                                                     | When a vehicle ahead is not detected                                         | 0.0                                                                 |
| RELATIVE SPD  | Drive the vehicle and activate the vehicle-to-vehicle distance control mode                                                                                         | When a vehicle ahead is detected                                             | Displays the relative speed.                                        |
|               |                                                                                                                                                                     | When a vehicle ahead is not detected                                         | 0.0                                                                 |
| DYNA ASIST SW | Ignition switch ON                                                                                                                                                  | When dynamic driver assistance switch is pressed                             | On                                                                  |
|               |                                                                                                                                                                     | When dynamic driver assistance switch is not pressed                         | Off                                                                 |
| DCA ON IND    | Start the engine and press dynamic driver assistance switch (When DCA setting is ON)                                                                                | DCA system OFF                                                               | Off                                                                 |
|               |                                                                                                                                                                     | DCA system ON                                                                | On                                                                  |
| DCA VHL AHED  | Drive the vehicle and activate the DCA system                                                                                                                       | When a vehicle ahead is not detected (vehicle ahead detection indicator OFF) | Off                                                                 |
|               |                                                                                                                                                                     | When a vehicle ahead is detected (vehicle ahead detection indicator ON)      | On                                                                  |
| IBA SW        | <b>NOTE:</b><br>The item is indicated, but not monitored                                                                                                            |                                                                              | Off                                                                 |
| FCW SYSTEM ON | Ignition switch ON                                                                                                                                                  | When the PFCW system is ON                                                   | On                                                                  |
|               |                                                                                                                                                                     | When the PFCW system is OFF                                                  | Off                                                                 |
| APA TEMP      | Engine running                                                                                                                                                      |                                                                              | Display the accelerator pedal actuator integrated motor temperature |
| APA PWR       | Ignition switch ON                                                                                                                                                  |                                                                              | Power supply voltage value of accelerator pedal actuator            |
| LDW SYSTEM ON | Ignition switch ON                                                                                                                                                  | When the LDW system is ON                                                    | On                                                                  |
|               |                                                                                                                                                                     | When the LDW system is OFF                                                   | Off                                                                 |
| LDW ON LAMP   | Ignition switch ON                                                                                                                                                  | When the LDW system is ON                                                    | On                                                                  |
|               |                                                                                                                                                                     | When the LDW system is OFF                                                   | Off                                                                 |

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

| Monitor item       | Condition                                                                                              |                                                                                                                                     | Value/Status                |
|--------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| LDP ON IND         | Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)            | LDP ON indicator lamp ON                                                                                                            | On                          |
|                    |                                                                                                        | LDP ON indicator lamp OFF                                                                                                           | Off                         |
| LANE DPRT W/L      | Drive the vehicle and activate the LDW system or LDP system                                            | Lane departure warning lamp ON                                                                                                      | On                          |
|                    |                                                                                                        | Lane departure warning lamp OFF                                                                                                     | Off                         |
| LDW BUZER OUT-PUT  | Drive the vehicle and activate the LDW/LDP system or Blind Spot Warning/Blind Spot Intervention system | When the buzzer of the following system operates<br>• LDW/LDP system<br>• Blind Spot Warning/Blind Spot Intervention system         | On                          |
|                    |                                                                                                        | When the buzzer of the following system does not operate<br>• LDW/LDP system<br>• Blind Spot Warning/Blind Spot Intervention system | Off                         |
| LDP SYSTEM ON      | Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)            | When the LDP system is ON                                                                                                           | On                          |
|                    |                                                                                                        | When the LDP system is OFF                                                                                                          | Off                         |
| READY signal       | Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)            | When the LDP system is ON                                                                                                           | On                          |
|                    |                                                                                                        | When the LDP system is OFF                                                                                                          | Off                         |
| Camera lost        | Drive the vehicle and activate the LDW system, LDP system or Blind Spot Intervention system            | Both side lane markers are detected                                                                                                 | Detect                      |
|                    |                                                                                                        | Deviate side lane marker is lost                                                                                                    | Deviate                     |
|                    |                                                                                                        | Both side lane markers are lost                                                                                                     | Both                        |
| Shift position     | <ul style="list-style-type: none"> <li>• Engine running</li> <li>• While driving</li> </ul>            |                                                                                                                                     | Displays the shift position |
| Turn signal        | Turn signal lamps OFF                                                                                  |                                                                                                                                     | Off                         |
|                    | Turn signal lamp LH blinking                                                                           |                                                                                                                                     | LH                          |
|                    | Turn signal lamp RH blinking                                                                           |                                                                                                                                     | RH                          |
|                    | Turn signal lamp LH and RH blinking                                                                    |                                                                                                                                     | LH&RH                       |
| SIDE G             | While driving                                                                                          | Vehicle turning right                                                                                                               | Negative value              |
|                    |                                                                                                        | Vehicle turning left                                                                                                                | Positive value              |
| WARN REQ           | Drive the vehicle and activate the LDP system                                                          | Lane departure warning is operating                                                                                                 | On                          |
|                    |                                                                                                        | Lane departure warning is not operating                                                                                             | Off                         |
| STATUS signal      | Drive the vehicle and activate the LDP system                                                          | When the LDP system is ON                                                                                                           | Stnby                       |
|                    |                                                                                                        | When the LDP system is operating                                                                                                    | Warn                        |
|                    |                                                                                                        | When the LDP system is canceled                                                                                                     | Cancel                      |
|                    |                                                                                                        | When the LDP system is OFF                                                                                                          | Off                         |
| Lane unclear       | While driving                                                                                          | Lane marker is unclear                                                                                                              | On                          |
|                    |                                                                                                        | Lane marker is clear                                                                                                                | Off                         |
| FUNC ITEM          | Ignition switch ON                                                                                     |                                                                                                                                     | FUNC3                       |
| FUNC ITEM (NV-ICC) | <b>NOTE:</b><br>The item is indicated, but not monitored                                               |                                                                                                                                     | Off                         |
| FUNC ITEM (NV-DCA) | <b>NOTE:</b><br>The item is indicated, but not monitored                                               |                                                                                                                                     | Off                         |
| DCA SELECT         | Ignition switch ON                                                                                     | "Distance Control Assist" set with the integral switch is ON                                                                        | On                          |
|                    |                                                                                                        | "Distance Control Assist" set with the integral switch is OFF                                                                       | Off                         |

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# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

| Monitor item      | Condition                                                                                                       |                                                                   | Value/Status |
|-------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|--------------|
| LDP SELECT        | Ignition switch ON                                                                                              | "Lane Departure Intervention" set with the integral switch is ON  | On           |
|                   |                                                                                                                 | "Lane Departure Intervention" set with the integral switch is OFF | Off          |
| BSI SELECT        | Ignition switch ON                                                                                              | "Blind Spot Intervention" set with the integral switch is ON      | On           |
|                   |                                                                                                                 | "Blind Spot Intervention" set with the integral switch is OFF     | Off          |
| FCW SELECT        | Ignition switch ON                                                                                              | "Forward Emergency Braking" set with the integral switch is ON    | On           |
|                   |                                                                                                                 | "Forward Emergency Braking" set with the integral switch is OFF   | Off          |
| LDW SELECT        | Ignition switch ON                                                                                              | "Lane Departure Warning" set with the integral switch is ON       | On           |
|                   |                                                                                                                 | "Lane Departure Warning" set with the integral switch is OFF      | Off          |
| BSW SELECT        | Ignition switch ON                                                                                              | "Blind Spot Warning" set with the integral switch is ON           | On           |
|                   |                                                                                                                 | "Blind Spot Warning" set with the integral switch is OFF          | Off          |
| NAVI ICC SELECT   | <b>NOTE:</b><br>The item is indicated, but not monitored                                                        |                                                                   | Off          |
| NAVI DCA SELECT   | <b>NOTE:</b><br>The item is indicated, but not monitored                                                        |                                                                   | Off          |
| SYS SELECTABILITY | Ignition switch ON                                                                                              | Items set with the integral switch can be switched normally       | On           |
|                   |                                                                                                                 | Items set with the integral switch cannot be switched normally    | Off          |
| DRIVE MODE STATS  | Ignition switch ON                                                                                              | When drive mode select switch position is STANDARD                | STD          |
|                   |                                                                                                                 | When drive mode select switch position is in SPORT                | SPORT        |
|                   |                                                                                                                 | When drive mode select switch position is in ECO                  | ECO          |
|                   |                                                                                                                 | When drive mode select switch position is in SNOW                 | SNOW         |
|                   |                                                                                                                 | When drive mode select switch position is in PERSONAL             | STD          |
|                   |                                                                                                                 | A signal other than those above is input                          | ERROR        |
| WARN SYS SW       | <b>NOTE:</b><br>The item is indicated, but not monitored                                                        |                                                                   | Off          |
| BSW/BSI WARN LMP  | Ignition switch ON                                                                                              | When the BSW system is malfunctioning                             | On           |
|                   |                                                                                                                 | When the BSW system is normal                                     | Off          |
| BSI ON IND        | Ignition switch ON                                                                                              | Blind Spot Intervention warning ON                                | On           |
|                   |                                                                                                                 | Blind Spot Intervention warning OFF                               | Off          |
| BSW SYSTEM ON     | Ignition switch ON                                                                                              | When the BSW system is ON                                         | On           |
|                   |                                                                                                                 | When the BSW system is OFF                                        | Off          |
| BSI SYSTEM ON     | Start the engine and press dynamic driver assistance switch (When Blind Spot Intervention system setting is ON) | When the Blind Spot Intervention system is ON                     | On           |
|                   |                                                                                                                 | When the Blind Spot Intervention system is OFF                    | Off          |
| BCI SYSTEM ON     | Engine running                                                                                                  | When the BCI system is ON                                         | On           |
|                   |                                                                                                                 | When the BCI system is OFF                                        | Off          |
| BCI SWITCH        | <b>NOTE:</b><br>The item is indicated, but not monitored                                                        |                                                                   | Off          |

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

| Monitor item             | Condition                                           |                                                                        | Value/Status |
|--------------------------|-----------------------------------------------------|------------------------------------------------------------------------|--------------|
| BATTERY CIRCUIT OFF      | <b>NOTE:</b><br>The item is indicated, but not used |                                                                        | Off          |
| LDP WARNING INDICATOR    | Engine running                                      | When the LDP system is malfunctioning                                  | On           |
|                          |                                                     | When the LDP system is normal                                          | Off          |
| LDW ON INDICATOR         | Ignition switch ON                                  | LDW system display ON                                                  | On           |
|                          |                                                     | LDW system display OFF                                                 | Off          |
| LDW WARNING INDICATOR    | Ignition switch ON                                  | When the LDW system is malfunctioning                                  | On           |
|                          |                                                     | When the LDW system is normal                                          | Off          |
| SYSTEM CANCEL MESSAGE    | Ignition switch ON                                  | System cancel display ON                                               | On           |
|                          |                                                     | System cancel display OFF                                              | Off          |
| CAMERA HI TEMP MSG       | Ignition switch ON                                  | Lane camera unit high temperature warning display ON                   | On           |
|                          |                                                     | Lane camera unit high temperature warning display OFF                  | Off          |
| ITS SETTING ITEM(DCA)    | Ignition switch ON                                  |                                                                        | On           |
| ITS SETTING ITEM(LDP)    | Ignition switch ON                                  |                                                                        | On           |
| ITS SETTING ITEM(BSI)    | Ignition switch ON                                  |                                                                        | On           |
| BSI WARNING INDICATOR    | Engine running                                      | When the Blind Spot Intervention is malfunctioning                     | On           |
|                          |                                                     | When the Blind Spot Intervention is normal                             | Off          |
| BSW ON INDICATOR         | Ignition switch ON                                  | BSW system display ON                                                  | On           |
|                          |                                                     | BSW system display OFF                                                 | Off          |
| SIDE RADAR BLOCK COND    | Ignition switch ON                                  | Front bumper or side radar is dirty                                    | On           |
|                          |                                                     | Front bumper and side radar is clean                                   | Off          |
| LDW WARNING ALERT TIMING | Ignition switch ON                                  | LDW system OFF                                                         | Nothing      |
|                          |                                                     | Lane departure warning timing is early setting                         | Early        |
|                          |                                                     | Lane departure warning timing is late setting                          | Late         |
| BSW IND BRIGHTNESS       | Ignition switch ON                                  | BSW system OFF                                                         | Nothing      |
|                          |                                                     | Blind Spot Warning/Blind Spot Intervention indicator brightness bright | Bright       |
|                          |                                                     | Blind Spot Warning/Blind Spot Intervention indicator brightness normal | Normal       |
|                          |                                                     | Blind Spot Warning/Blind Spot Intervention indicator brightness dark   | Dark         |
| FUNC ITEM (FEB)          | Engine running                                      | "Forward Emergency Braking" set with the integral switch is ON         | On           |
|                          |                                                     | "Forward Emergency Braking" set with the integral switch is OFF        | Off          |
| FEB SELECT               | Ignition switch ON                                  | "Forward Emergency Braking" set with the integral switch is ON         | On           |
|                          |                                                     | "Forward Emergency Braking" set with the integral switch is OFF        | Off          |
| FEB SW                   | Engine running                                      | FEB system ON                                                          | On           |
|                          |                                                     | FEB system OFF                                                         | Off          |
| SL MAIN SW               | Engine running                                      | When speed limiter MAIN switch is pressed                              | On           |
|                          |                                                     | When speed limiter MAIN switch is not pressed                          | Off          |

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# ADAS CONTROL UNIT

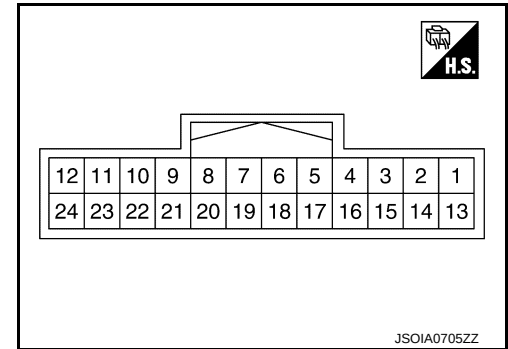
< ECU DIAGNOSIS INFORMATION >

[ICC]

| Monitor item                 | Condition                                                                                                                                   |                                                                  | Value/Status                   |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|--------------------------------|
| SL TARGET VEHI-<br>CLE SPEED | While driving                                                                                                                               | When vehicle speed is set                                        | Displays the set vehicle speed |
| SL SET LAMP                  | <ul style="list-style-type: none"> <li>Drive the vehicle and activate the speed limiter</li> <li>Press speed limiter MAIN switch</li> </ul> | Speed limiter SET indicator ON                                   | On                             |
|                              |                                                                                                                                             | Speed limiter SET indicator OFF                                  | Off                            |
| SL LIMIT LAMP                | <ul style="list-style-type: none"> <li>Drive the vehicle and activate the speed limiter</li> <li>Press speed limiter MAIN switch</li> </ul> | Speed limiter system ON                                          | On                             |
|                              |                                                                                                                                             | Speed limiter system OFF                                         | Off                            |
| ASCD CANCEL<br>(LOW SPEED)   | Drive the vehicle and activate the ASCD                                                                                                     | ASCD cancelled by low vehicle speed                              | On                             |
|                              |                                                                                                                                             | Other than above                                                 | Off                            |
| ASCD CANCEL<br>(SPEED DIFF)  | Drive the vehicle and activate the ASCD                                                                                                     | ASCD cancelled by difference between set speed and vehicle speed | On                             |
|                              |                                                                                                                                             | Other than above                                                 | Off                            |
| KICK DOWN                    | Drive the vehicle and activate the speed limiter                                                                                            | When accelerator pedal is full depressed                         | On                             |
|                              |                                                                                                                                             | Other than above                                                 | Off                            |

## TERMINAL LAYOUT

## PHYSICAL VALUES



| Terminal No.<br>(Wire color) |                                         | Description                          |                  | Condition                |           | Standard value | Reference value |
|------------------------------|-----------------------------------------|--------------------------------------|------------------|--------------------------|-----------|----------------|-----------------|
| +                            | —                                       | Signal name                          | Input/<br>Output |                          |           |                |                 |
| 1<br>(L)                     | Ground                                  | CAN -H                               | —                | —                        |           | —              | —               |
| 2<br>(R)                     |                                         | CAN -L                               | —                | —                        |           | —              | —               |
| 5<br>(B)                     |                                         | Ground                               | —                | Ignition switch ON       |           | 0 - 0.1 V      | Approx. 0 V     |
| 6<br>(L)                     |                                         | ITS communication-H                  | —                | —                        |           | —              | —               |
| 7<br>(P)                     |                                         | ITS communication-L                  | —                | —                        |           | —              | —               |
| 8<br>(L)                     |                                         | Chassis communica-<br>tion-H         | —                | —                        |           | —              | —               |
| 9<br>(V)                     |                                         | Chassis communica-<br>tion-L         | —                | —                        |           | —              | —               |
| 12<br>(GR)                   |                                         | Ignition power supply                | Input            | Ignition<br>switch<br>ON | —         | 10 - 16 V      | Battery voltage |
| 17<br>(V)                    |                                         | ICC brake hold relay<br>drive signal | Output           | Ignition<br>switch<br>ON | —         | 10 - 16 V      | Approx. 12 V    |
|                              | At “STOP LAMP” test of<br>“Active test” |                                      |                  |                          | 0 - 0.1 V | Approx. 0 V    |                 |

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

## Fail-safe (ADAS Control Unit)

INFOID:000000009676508

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning or indicator lamp.

| System                                         | Buzzer            | Warning lamp/Warning display                                                                                                     | Description |
|------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------|
| Vehicle-to-vehicle distance control mode       | High-pitched tone | ICC system warning                                                                                                               | Cancel      |
| Conventional (fixed speed) cruise control mode | High-pitched tone | ICC system warning                                                                                                               | Cancel      |
| Forward Emergency Braking (FEB)                | High-pitched tone | <ul style="list-style-type: none"> <li>FEB warning lamp</li> <li>Warning systems indicator (Forward position: Yellow)</li> </ul> | Cancel      |
| Predictive Forward Collision Warning (PFCW)    | High-pitched tone | Warning systems indicator (Forward position: Yellow)                                                                             | Cancel      |
| Distance Control Assist (DCA)                  | High-pitched tone | Warning systems indicator (Forward position: Yellow)                                                                             | Cancel      |
| Blind Spot Warning (BSW)                       | —                 | Warning systems indicator (Blind spot position: Yellow)                                                                          | Cancel      |
| Back-up Collision Intervention (BCI)           | High-pitched tone | BCI system warning                                                                                                               | Cancel      |

## DTC Inspection Priority Chart

INFOID:000000009676509

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

| Priority | Detected items (DTC)                                                                                                                                                       |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | <ul style="list-style-type: none"> <li>U1507: LOST COMM (SIDE RDR R)</li> <li>U1508: LOST COMM (SIDE RDR L)</li> </ul>                                                     |
| 2        | <ul style="list-style-type: none"> <li>1CA0A: CONFIG UNFINISHED</li> <li>U1000: CAN COMM CIRCUIT</li> <li>U1010: CONTROL UNIT (CAN)</li> </ul>                             |
| 3        | <ul style="list-style-type: none"> <li>C1F02: APA C/U MALF</li> <li>C1B53: SIDE RDR R MALF</li> <li>C1B54: SIDE RDR L MALF</li> <li>C1B84: DIST SEN MALFUNCTION</li> </ul> |

CCS

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

| Priority | Detected items (DTC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4        | <ul style="list-style-type: none"> <li>• C1A01: POWER SUPPLY CIR</li> <li>• C1A02: POWER SUPPLY CIR 2</li> <li>• C1A04: ABS/TCS/VDC CIRC</li> <li>• C1A05: BRAKE SW/STOP L SW</li> <li>• C1A06: OPERATION SW CIRC</li> <li>• C1A13: STOP LAMP RLY FIX</li> <li>• C1A14: ECM CIRCUIT</li> <li>• C1A24: NP RANGE</li> <li>• C1A26: ECD MODE MALF</li> <li>• C1A27: ECD PWR SUPPLY CIR</li> <li>• C1A33: CAN TRANSMISSION ERR</li> <li>• C1A34: COMMAND ERROR</li> <li>• C1A35: APA CIR</li> <li>• C1A36: APA CAN COMM CIR</li> <li>• C1A37: APA CAN CIR 2</li> <li>• C1A38: APA CAN CIR 1</li> <li>• C1A39: STRG SEN CIR</li> <li>• C1B5D: FEB OPE COUNT LIMIT</li> <li>• C1B56: SONAR CIRCUIT</li> <li>• C1B57: AVM CIRCUIT</li> <li>• C1B59: CCM CIRCUIT</li> <li>• C1B82: DIST SEN OFF-CENTER</li> <li>• C1B85: DIST SEN ABNORMAL TEMP</li> <li>• C1B86: DIST SEN PWR SUP CIR</li> <li>• C1F01: APA MOTOR MALF</li> <li>• C1F05: APA PWR SUPPLY CIR</li> </ul> | <ul style="list-style-type: none"> <li>• U0121: VDC CAN CIR 2</li> <li>• U0126: STRG SEN CAN CIR 1</li> <li>• U0235: ICC SENSOR CAN CIRC 1</li> <li>• U0401: ECM CAN CIR 1</li> <li>• U0402: TCM CAN CIR 1</li> <li>• U0415: VDC CAN CIR 1</li> <li>• U0424: HVAC CAN CIR 1</li> <li>• U0428: STRG SEN CAN CIR 2</li> <li>• U1502: ICC SEN CAN COMM CIR</li> <li>• U1503: SIDE RDR L CAN CIR 2</li> <li>• U1504: SIDE RDR L CAN CIR 1</li> <li>• U1505: SIDE RDR R CAN CIR 2</li> <li>• U1506: SIDE RDR R CAN CIR 1</li> <li>• U150B: ECM CAN CIRC 3</li> <li>• U150C: VDC CAN CIRC 3</li> <li>• U150D: TCM CAN CIRC 3</li> <li>• U150E: BCM CAN CIRC 3</li> <li>• U150F: AV CAN CIRC 3</li> <li>• U1512: HVAC CAN CIRC3</li> <li>• U1513: METER CAN CIRC 3</li> <li>• U1514: STRG SEN CAN CIRC 3</li> <li>• U1515: ICC SENSOR CAN CIRC 3</li> <li>• U1517: APA CAN CIRC 3</li> <li>• U1518: SIDE RDR L CAN CIRC 3</li> <li>• U1519: SIDE RDR R CAN CIRC 3</li> <li>• U1521: SONAR CAN COMMUNICATION 3</li> <li>• U1522: SONAR CAN COMMUNICATION 3</li> <li>• U1523: SONAR CAN COMMUNICATION 2</li> <li>• U1524: AVM CAN COMMUNICATION 1</li> <li>• U1525: AVM CAN COMMUNICATION 3</li> <li>• U1527: CCM CAN CIR 1</li> <li>• U153F: CCM CAN CIR 2</li> <li>• U1530: DR ASSIST BUZZER CAN CIR 1</li> <li>• U1540: DAST 3 CAN CIR 1</li> <li>• U1541: DAST 3 CAN CIR 2</li> </ul> |
| 5        | • C1A03: VHCL SPEED SE CIRC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 6        | • C1A15: GEAR POSITION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 7        | • C1A00: CONTROL UNIT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## DTC Index

INFOID:000000009676510

### NOTE:

- The details of time display are as per the following.
  - CRNT: A malfunction is detected now
  - PAST: A malfunction was detected in the past
- IGN counter is displayed on FFD (Freeze Frame Data).
  - 0: The malfunctions that are detected now  
CAN communication system (U1000, U1010)
  - 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
  - If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.
  - Other than CAN communication system (Other than U1000, U1010)
  - 1 - 49: It increases like 0 → 1 → 2 ... 38 → 49 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
  - If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Distance Control Assist (DCA)
- D: Forward Emergency Braking (FEB)
- E: Predictive Forward Collision Warning (PFCW)
- F: Blind Spot Warning (BSW)
- G: Back-up Collision Intervention (BCI)

| DTC                                                 |                  | CONSULT display                                     | Fail-safe           | Reference               |
|-----------------------------------------------------|------------------|-----------------------------------------------------|---------------------|-------------------------|
| CONSULT                                             | On board display |                                                     | System              |                         |
| NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED | 55               | NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED | —                   | —                       |
| C1A0A                                               | 41               | CONFIG UNFINISHED                                   | A, B, C, D, E, F, G | <a href="#">DAS-69</a>  |
| C1A00                                               | 0                | CONTROL UNIT                                        | A, B, C, D, E, F, G | <a href="#">DAS-70</a>  |
| C1A01                                               | 1                | POWER SUPPLY CIR                                    | A, B, C, D, E, F, G | <a href="#">DAS-71</a>  |
| C1A02                                               | 2                | POWER SUPPLY CIR 2                                  | A, B, C, D, E, F, G | <a href="#">DAS-71</a>  |
| C1A03                                               | 3                | VHCL SPEED SE CIRC                                  | A, B, C, D, E, F, G | <a href="#">DAS-72</a>  |
| C1A04                                               | 4                | ABS/TCS/VDC CIRC                                    | A, B, C, D, E, F, G | <a href="#">DAS-74</a>  |
| C1A05                                               | 5                | BRAKE SW/STOP L SW                                  | A, B, C, D, G       | <a href="#">DAS-75</a>  |
| C1A06                                               | 6                | OPERATION SW CIRC                                   | A, B, C, D, E       | <a href="#">DAS-80</a>  |
| C1A13                                               | 13               | STOP LAMP RLY FIX                                   | A, B, C, D, E, G    | <a href="#">DAS-83</a>  |
| C1A14                                               | 14               | ECM CIRCUIT                                         | A, B, C, D, E       | <a href="#">DAS-89</a>  |
| C1A15                                               | 15               | GEAR POSITION                                       | A, B, C, D, E       | <a href="#">DAS-91</a>  |
| C1A24                                               | 24               | NP RANGE                                            | A, B, C, D, E, F, G | <a href="#">DAS-93</a>  |
| C1A26                                               | 26               | ECD MODE MALF                                       | A, B, C, D, G       | <a href="#">DAS-95</a>  |
| C1A27                                               | 27               | ECD PWR SUPPLY CIR                                  | A, B, C, D, G       | <a href="#">DAS-97</a>  |
| C1A33                                               | 33               | CAN TRANSMISSION ERR                                | A, B, C, D, E       | <a href="#">DAS-99</a>  |
| C1A34                                               | 34               | COMMAND ERROR                                       | A, B, C, D, E       | <a href="#">DAS-100</a> |
| C1A35                                               | 35               | APA CIR                                             | A, C, D, E          | <a href="#">DAS-101</a> |
| C1A36                                               | 36               | APA CAN COMM CIR                                    | A, C, D, E          | <a href="#">DAS-102</a> |
| C1A37                                               | 133              | APA CAN CIR 2                                       | A, C, D, E          | <a href="#">DAS-103</a> |
| C1A38                                               | 132              | APA CAN CIR 1                                       | A, C, D, E          | <a href="#">DAS-104</a> |
| C1A39                                               | 39               | STRG SEN CIR                                        | A, B, C, D, E, F, G | <a href="#">DAS-105</a> |
| C1B5D                                               | 198              | FEB OPE COUNT LIMIT                                 | C, D, E             | <a href="#">DAS-106</a> |
| C1B53                                               | 84               | SIDE RDR R MALF                                     | F, G                | <a href="#">DAS-107</a> |
| C1B54                                               | 85               | SIDE RDR L MALF                                     | F, G                | <a href="#">DAS-108</a> |
| C1B56                                               | 86               | SONAR CIRCUIT                                       | G                   | <a href="#">DAS-109</a> |
| C1B57                                               | 87               | AVM CIRCUIT                                         | G                   | <a href="#">DAS-110</a> |
| C1B59                                               | 184              | CCM CIRCUIT                                         | A, B, C, F, G       | <a href="#">DAS-111</a> |
| C1B82                                               | 12               | DIST SEN OFF-CENTER                                 | A, C, D, E          | <a href="#">DAS-112</a> |
| C1B84                                               | 17               | DIST SEN MALFUNCTION                                | A, C, D, E          | <a href="#">DAS-113</a> |
| C1B85                                               | 21               | DIST SEN ABNORMAL TEMP                              | A, C, D, E          | <a href="#">DAS-114</a> |
| C1B86                                               | 80               | DIST SEN PWR SUP CIR                                | A, C, D, E          | <a href="#">DAS-115</a> |
| C1F01                                               | 91               | APA MOTOR MALF                                      | A, C, D, E          | <a href="#">DAS-117</a> |
| C1F02                                               | 92               | APA C/U MALF                                        | A, C, D, E          | <a href="#">DAS-118</a> |

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Distance Control Assist (DCA)
- D: Forward Emergency Braking (FEB)
- E: Predictive Forward Collision Warning (PFCW)
- F: Blind Spot Warning (BSW)
- G: Back-up Collision Intervention (BCI)

| DTC                   |                  | CONSULT display           | Fail-safe           | Reference               |
|-----------------------|------------------|---------------------------|---------------------|-------------------------|
| CONSULT               | On board display |                           | System              |                         |
| C1F05                 | 95               | APA PWR SUPPLY CIR        | A, C, D, E          | <a href="#">DAS-119</a> |
| U0121                 | 127              | VDC CAN CIR 2             | A, B, C, D, E, F, G | <a href="#">DAS-120</a> |
| U0126                 | 130              | STRG SEN CAN CIR 1        | A, B, C, D, E, F, G | <a href="#">DAS-121</a> |
| U0235                 | 144              | ICC SENSOR CAN CIRC 1     | A, C, D, E          | <a href="#">DAS-122</a> |
| U0401                 | 120              | ECM CAN CIR 1             | A, B, C, D, E, F, G | <a href="#">DAS-123</a> |
| U0402                 | 122              | TCM CAN CIR 1             | A, B, C, D, E, F, G | <a href="#">DAS-124</a> |
| U0415                 | 126              | VDC CAN CIR 1             | A, B, C, D, E, F, G | <a href="#">DAS-125</a> |
| U0424                 | 156              | HVAC CAN CIR 1            |                     | <a href="#">DAS-126</a> |
| U0428                 | 131              | STRG SEN CAN CIR 2        | A, B, C, D, E, F, G | <a href="#">DAS-127</a> |
| U1000 <sup>NOTE</sup> | 100              | CAN COMM CIRCUIT          | A, B, C, D, E, F, G | <a href="#">DAS-128</a> |
| U1010                 | 110              | CONTROL UNIT (CAN)        | A, B, C, D, E, F, G | <a href="#">DAS-130</a> |
| U150B                 | 157              | ECM CAN CIRC 3            | A, B, C, D, E, F, G | <a href="#">DAS-131</a> |
| U150C                 | 158              | VDC CAN CIRC 3            | A, B, C, D, E, F, G | <a href="#">DAS-132</a> |
| U150D                 | 159              | TCM CAN CIRC 3            | A, B, C, D, E, F, G | <a href="#">DAS-133</a> |
| U150E                 | 160              | BCM CAN CIRC 3            | A, B, C, D, F, G    | <a href="#">DAS-134</a> |
| U150F                 | 161              | AV CAN CIRC 3             |                     | <a href="#">DAS-135</a> |
| U1502                 | 147              | ICC SEN CAN COMM CIR      | A, C, D, E          | <a href="#">DAS-136</a> |
| U1503                 | 150              | SIDE RDR L CAN CIR 2      | F, G                | <a href="#">DAS-137</a> |
| U1504                 | 151              | SIDE RDR L CAN CIR 1      | F, G                | <a href="#">DAS-138</a> |
| U1505                 | 152              | SIDE RDR R CAN CIR 2      | F, G                | <a href="#">DAS-139</a> |
| U1506                 | 153              | SIDE RDR R CAN CIR 1      | F, G                | <a href="#">DAS-140</a> |
| U1507                 | 154              | LOST COMM (SIDE RDR R)    | F, G                | <a href="#">DAS-141</a> |
| U1508                 | 155              | LOST COMM (SIDE RDR L)    | F, G                | <a href="#">DAS-142</a> |
| U1512                 | 162              | HVAC CAN CIRC3            |                     | <a href="#">DAS-143</a> |
| U1513                 | 163              | METER CAN CIRC 3          | A, B, C, D, E, F, G | <a href="#">DAS-144</a> |
| U1514                 | 164              | STRG SEN CAN CIRC 3       | A, B, C, D, E, F, G | <a href="#">DAS-145</a> |
| U1515                 | 165              | ICC SENSOR CAN CIRC 3     | A, C, D, E          | <a href="#">DAS-146</a> |
| U1517                 | 167              | APA CAN CIRC 3            | A, C, D, E          | <a href="#">DAS-147</a> |
| U1518                 | 168              | SIDE RDR L CAN CIRC 3     | F, G                | <a href="#">DAS-148</a> |
| U1519                 | 169              | SIDE RDR R CAN CIRC 3     | F, G                | <a href="#">DAS-149</a> |
| U1521                 | 177              | SONAR CAN COMMUNICATION 2 | G                   | <a href="#">DAS-150</a> |
| U1522                 | 178              | SONAR CAN COMMUNICATION 1 | G                   | <a href="#">DAS-151</a> |
| U1523                 | 179              | SONAR CAN COMMUNICATION 3 | G                   | <a href="#">DAS-152</a> |
| U1524                 | 180              | AVM CAN COMMUNICATION 1   | G                   | <a href="#">DAS-153</a> |
| U1525                 | 181              | AVM CAN COMMUNICATION 3   | G                   | <a href="#">DAS-154</a> |
| U1527                 | 185              | CCM CAN CIR1              | A, B, C, F, G       | <a href="#">DAS-155</a> |
| U153F                 | 186              | CCM CAN CIR2              | A, B, C, F, G       | <a href="#">DAS-156</a> |

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Distance Control Assist (DCA)
- D: Forward Emergency Braking (FEB)
- E: Predictive Forward Collision Warning (PFCW)
- F: Blind Spot Warning (BSW)
- G: Back-up Collision Intervention (BCI)

| DTC     |                  | CONSULT display           | Fail-safe | Reference               |
|---------|------------------|---------------------------|-----------|-------------------------|
| CONSULT | On board display |                           | System    |                         |
| U1530   | 183              | DR ASSIST BUZZER CAN CIR1 |           | <a href="#">DAS-157</a> |
| U1540   | 200              | DAST CAN CIR 1            | C, D, E   | <a href="#">DAS-158</a> |
| U1541   | 201              | DAST CAN CIR 2            | C, D, E   | <a href="#">DAS-159</a> |

## NOTE:

With the detection of “U1000” some systems do not perform the fail-safe operation.

A system controlling based on a signal received from the control unit performs fail-safe operation when the communication with the ADAS control unit becomes inoperable.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
P

CCS

## ICC SENSOR

## Reference Value

INFOID:000000009644225

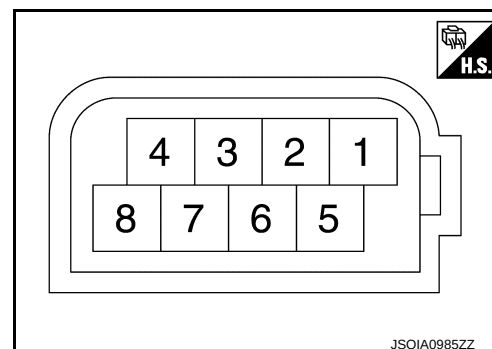
## VALUES ON THE DIAGNOSIS TOOL

**NOTE:**

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

| Monitor item     | Condition                                                                   |                                                            | Value/Status                                     |
|------------------|-----------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------|
| VHCL SPEED SE    | While driving                                                               |                                                            | Value of vehicle speed signal (wheel speed)      |
| YAW RATE         | While driving                                                               | Vehicle stopped                                            | 0.0                                              |
|                  |                                                                             | Vehicle turning right                                      | Positive value                                   |
|                  |                                                                             | Vehicle turning left                                       | Negative value                                   |
| PWR SUP MONI     | Ignition switch ON                                                          |                                                            | Power supply voltage value of ICC sensor         |
| DISTANCE         | Drive the vehicle and activate the vehicle-to-vehicle distance control mode | When a vehicle ahead is detected                           | Displays the distance from the preceding vehicle |
|                  |                                                                             | When a vehicle ahead is not detected                       | 0.0                                              |
| RELATIVE SPD     | Drive the vehicle and activate the vehicle-to-vehicle distance control mode | When a vehicle ahead is detected                           | Displays the relative speed                      |
|                  |                                                                             | When a vehicle ahead is not detected                       | 0.0                                              |
| RADAR OFFSET     | <b>NOTE:</b><br>The item is indicated, but not used                         |                                                            | —                                                |
| RADAR HEIGHT     | <b>NOTE:</b><br>The item is indicated, but not used                         |                                                            | —                                                |
| STEERING ANGLE   | Ignition switch ON                                                          | When setting the steering wheel in straight-ahead position | 0.0                                              |
|                  |                                                                             | When turning the steering wheel 90° rightward              | +90                                              |
|                  |                                                                             | When turning the steering wheel 90° leftward               | -90                                              |
| STRG ANGLE SPEED | Ignition switch ON                                                          | At the time of turning the steering wheel                  | Steering wheel turning speed is displayed        |
| L/R ADJUST       | Ignition switch ON                                                          | At the completion of radar alignment adjustment            | Horizontal correction value is displayed         |
| U/D ADJUST       | Ignition switch ON                                                          | At the completion of radar alignment adjustment            | Vertical correction value is displayed           |

## TERMINAL LAYOUT



## PHYSICAL VALUES

| Terminal No.<br>(Wire color) |        | Description           |                  | Condition          | Standard value | Reference value |
|------------------------------|--------|-----------------------|------------------|--------------------|----------------|-----------------|
| +                            | –      | Signal name           | Input/<br>Output |                    |                |                 |
| 1<br>(R)                     | Ground | Ignition power supply | Input            | Ignition switch ON | 10 - 16 V      | Battery voltage |
| 3<br>(L)                     |        | ITS communication-H   | —                | —                  | —              | —               |
| 6<br>(Y)                     |        | ITS communication-L   | —                | —                  | —              | —               |
| 8<br>(B)                     |        | Ground                | —                | Ignition switch ON | 0 - 0.1 V      | Approx. 0 V     |

## Fail-safe (ICC Sensor)

INFOID:0000000009644226

If a malfunction occurs in the ICC sensor, ADAS control unit cancels control, sounds a beep, and turns ON the ICC system warning in the information display.

## DTC Inspection Priority Chart

INFOID:0000000009644227

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

| Priority | Detected items (DTC)                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | <ul style="list-style-type: none"> <li>U1000: CAN COMM CIRCUIT</li> <li>U1010: CONTROL UNIT (CAN)</li> </ul>                                                                                                                                                                                                                                                                                                                                                    |
| 2        | <ul style="list-style-type: none"> <li>C1A50: ADAS MALFUNCTION</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                       |
| 3        | <ul style="list-style-type: none"> <li>C1A01: POWER SUPPLY CIR</li> <li>C1A02: POWER SUPPLY CIR 2</li> <li>C1A12: RADAR OFF-CENTER</li> <li>C1A16: RADAR BLOCKED</li> <li>C1A21: UNIT HIGH TEMP</li> <li>C1A23: UNIT LOW TEMP</li> <li>C1A39: STRG SEN CIR</li> <li>U0104: ADAS CAN CIR1</li> <li>U0121: VDC CAN CIR2</li> <li>U0126: STRG SEN CAN CIR1</li> <li>U0405: ADAS CAN CIR2</li> <li>U0415: VDC CAN CIR1</li> <li>U0428: STRG SEN CAN CIR2</li> </ul> |
| 4        | <ul style="list-style-type: none"> <li>C1A00: CONTROL UNIT</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                           |

## DTC Index

INFOID:0000000009644228

**NOTE:**

- The details of time display are as per the following.
- 0: The malfunctions that are detected now  
CAN communication system (U1000, U1010)
- 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.  
Other than CAN communication system (Other than U1000, U1010)
- 1 - 49: It increases like 0 → 1 → 2 ... 38 → 49 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

x: Applicable

# ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[ICC]

| DTC     |                    | Fail-safe                                |                                                |                               |                                                                               | Reference               |
|---------|--------------------|------------------------------------------|------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------|-------------------------|
|         |                    | Vehicle-to-vehicle distance control mode | Conventional (fixed speed) cruise control mode | Distance Control Assist (DCA) | Forward Emergency Braking (FEB) / Predictive Forward Collision Warning (PFCW) |                         |
| CONSULT | CONSULT display    |                                          |                                                |                               |                                                                               |                         |
| C1A00   | CONTROL UNIT       | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-101</a> |
| C1A01   | POWER SUPPLY CIR   | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-102</a> |
| C1A02   | POWER SUPPLY CIR2  | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-102</a> |
| C1A12   | RADAR OFF-CENTER   | ×                                        |                                                | ×                             | ×                                                                             | <a href="#">CCS-103</a> |
| C1A16   | RADAR BLOCKED      | ×                                        |                                                | ×                             | ×                                                                             | <a href="#">CCS-104</a> |
| C1A21   | UNIT HIGH TEMP     | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-106</a> |
| C1A23   | UNIT LOW TEMP      | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-107</a> |
| C1A39   | STRG SEN CIR       | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-108</a> |
| C1A50   | ADAS MALFUNCTION   | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-109</a> |
| U0104   | ADAS CAN CIR1      | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-110</a> |
| U0121   | VDC CAN CIR2       | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-111</a> |
| U0126   | STRG SEN CAN CIR1  | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-112</a> |
| U0405   | ADAS CAN CIR2      | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-113</a> |
| U0415   | VDC CAN CIR1       | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-114</a> |
| U0428   | STRG SEN CAN CIR2  | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-115</a> |
| U1000   | CAN COMM CIRCUIT   | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-116</a> |
| U1010   | CONTROL UNIT (CAN) | ×                                        | ×                                              | ×                             | ×                                                                             | <a href="#">CCS-117</a> |

# DRIVER ASSISTANCE BUZZER CONTROL MODULE

< ECU DIAGNOSIS INFORMATION >

[ICC]

## DRIVER ASSISTANCE BUZZER CONTROL MODULE

### Reference Value

INFOID:000000009759620

### VALUES ON THE DIAGNOSIS TOOL

#### NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

| Monitor item            | Condition                                 |                                                                                     | Value/Status                                       |
|-------------------------|-------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------|
| Buzzer 1 request (ADAS) | Drive the vehicle and operate each system | Except for the LDW/LDP/Blind Spot Warning/Blind Spot Intervention warning condition | Off                                                |
|                         |                                           | When the LDW warning condition                                                      | TYPE 1                                             |
|                         |                                           | When the BSW warning condition                                                      | TYPE 2                                             |
|                         |                                           | When the Blind Spot Intervention warning condition                                  | TYPE 3                                             |
|                         |                                           | When the warning condition cancel                                                   | Cancel                                             |
| Buzzer 1 volume (ADAS)  | Ignition switch ON                        | When the buzzer sound                                                               | It changes according to the sound volume of buzzer |
| Buzzer 1 stop (ADAS)    | Ignition switch ON                        | When the buzzer cancel immediate                                                    | IMEDIAT                                            |
|                         |                                           | When the buzzer cancel other than above                                             | CYCLE                                              |
| Buzzer 2 request (ADAS) | Drive the vehicle and operate each system | Except for the ICC/PFCW/DCA warning condition                                       | Off                                                |
|                         |                                           | When the approach warning condition                                                 | TYPE 1                                             |
|                         |                                           | When the PFCW warning condition                                                     | TYPE 2                                             |
|                         |                                           | When the DCA condition                                                              | TYPE 3                                             |
|                         |                                           | When the warning condition cancel                                                   | Cancel                                             |
| Buzzer 2 volume (ADAS)  | Ignition switch ON                        | When the buzzer sound                                                               | It changes according to the sound volume of buzzer |
| Buzzer 2 stop (ADAS)    | Ignition switch ON                        | When the buzzer cancel immediate                                                    | IMEDIAT                                            |
|                         |                                           | When the buzzer cancel other than above                                             | CYCLE                                              |
| Buzzer 3 request (ADAS) | Drive the vehicle and operate each system | Except for the FEB warning condition                                                | Off                                                |
|                         |                                           | When the FEB warning condition                                                      | TYPE 1                                             |
|                         |                                           | When the warning condition cancel                                                   | Cancel                                             |
| Buzzer 3 volume (ADAS)  | Ignition switch ON                        | When the buzzer sound                                                               | It changes according to the sound volume of buzzer |
| Buzzer 3 stop (ADAS)    | Ignition switch ON                        | When the buzzer cancel immediate                                                    | IMEDIAT                                            |
|                         |                                           | When the buzzer cancel other than above                                             | CYCLE                                              |
| Buzzer 4 request (ADAS) | Drive the vehicle and operate each system | Except for the PFCW warning condition                                               | Off                                                |
|                         |                                           | When the PFCW warning condition                                                     | TYPE 1                                             |
|                         |                                           | When the warning condition cancel                                                   | Cancel                                             |
| Buzzer 4 volume (ADAS)  | Ignition switch ON                        | When the buzzer sound                                                               | It changes according to the sound volume of buzzer |
| Buzzer 4 stop (ADAS)    | Ignition switch ON                        | When the buzzer cancel immediate                                                    | IMEDIAT                                            |
|                         |                                           | When the buzzer cancel other than above                                             | CYCLE                                              |

# DRIVER ASSISTANCE BUZZER CONTROL MODULE

< ECU DIAGNOSIS INFORMATION >

[ICC]

| Monitor item           | Condition                                 |                                                                                     | Value/Status                                       |
|------------------------|-------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------|
| Buzzer 1 request (CCM) | Drive the vehicle and operate each system | Except for the LDW/LDP/Blind Spot Warning/Blind Spot Intervention warning condition | Off                                                |
|                        |                                           | When the LDW warning condition                                                      | TYPE 1                                             |
|                        |                                           | When the BSW warning condition                                                      | TYPE 2                                             |
|                        |                                           | When the Blind Spot Intervention warning condition                                  | TYPE 3                                             |
|                        |                                           | When the warning condition cancel                                                   | Cancel                                             |
| Buzzer 1 volume (CCM)  | Ignition switch ON                        | When the buzzer sound                                                               | It changes according to the sound volume of buzzer |
| Buzzer 1 stop (CCM)    | Ignition switch ON                        | When the buzzer cancel immediate                                                    | IMEDIAT                                            |
|                        |                                           | When the buzzer cancel other than above                                             | CYCLE                                              |
| Buzzer 2 request (CCM) | Drive the vehicle and operate each system | Except for the ICC/PFCW/DCA warning condition                                       | Off                                                |
|                        |                                           | When the approach warning condition                                                 | TYPE 1                                             |
|                        |                                           | When the PFCW warning condition                                                     | TYPE 2                                             |
|                        |                                           | When the DCA condition                                                              | TYPE 3                                             |
|                        |                                           | When the warning condition cancel                                                   | Cancel                                             |
| Buzzer 2 volume (CCM)  | Ignition switch ON                        | When the buzzer sound                                                               | It changes according to the sound volume of buzzer |
| Buzzer 2 stop (CCM)    | Ignition switch ON                        | When the buzzer cancel immediate                                                    | IMEDIAT                                            |
|                        |                                           | When the buzzer cancel other than above                                             | CYCLE                                              |
| Buzzer 3 request (CCM) | Drive the vehicle and operate each system | Except for the FEB warning condition                                                | Off                                                |
|                        |                                           | When the FEB warning condition                                                      | TYPE 1                                             |
|                        |                                           | When the warning condition cancel                                                   | Cancel                                             |
| Buzzer 3 volume (CCM)  | Ignition switch ON                        | When the buzzer sound                                                               | It changes according to the sound volume of buzzer |
| Buzzer 3 stop (CCM)    | Ignition switch ON                        | When the buzzer cancel immediate                                                    | IMEDIAT                                            |
|                        |                                           | When the buzzer cancel other than above                                             | CYCLE                                              |
| Buzzer 4 request (CCM) | Drive the vehicle and operate each system | Except for the PFCW warning condition                                               | Off                                                |
|                        |                                           | When the PFCW warning condition                                                     | TYPE 1                                             |
|                        |                                           | When the warning condition cancel                                                   | Cancel                                             |
| Buzzer 4 volume (CCM)  | Ignition switch ON                        | When the buzzer sound                                                               | It changes according to the sound volume of buzzer |
| Buzzer 4 stop (CCM)    | Ignition switch ON                        | When the buzzer cancel immediate                                                    | IMEDIAT                                            |
|                        |                                           | When the buzzer cancel other than above                                             | CYCLE                                              |
| ADAS MALFUNCTION       | Ignition switch ON                        | When the ADAS control unit malfunction                                              | On                                                 |
|                        |                                           | When the ADAS control unit normal                                                   | Off                                                |
| CCM MALFUNCTION        | Ignition switch ON                        | When the chassis control module malfunction                                         | On                                                 |
|                        |                                           | When the chassis control module normal                                              | Off                                                |
| DR ASSIST BUZZ MALF    | Ignition switch ON                        | When the driver assistance control module malfunction                               | On                                                 |
|                        |                                           | When the driver assistance control module normal                                    | Off                                                |

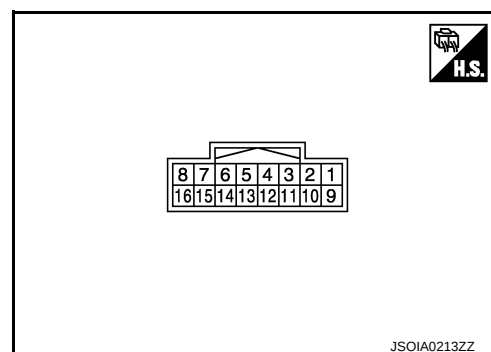
# DRIVER ASSISTANCE BUZZER CONTROL MODULE

< ECU DIAGNOSIS INFORMATION >

[ICC]

| Monitor item          | Condition                                 |                                                                                             | Value/Status |
|-----------------------|-------------------------------------------|---------------------------------------------------------------------------------------------|--------------|
| DR ASSIST BUZZ STATUS | Drive the vehicle and operate each system | Except for the warning condition                                                            | Off          |
|                       |                                           | LDW/LDP//Blind Spot Warning/Blind Spot Intervention system warning in progress              | 1            |
|                       |                                           | ICC/PFCW/DCA system warning in progress                                                     | 2            |
|                       |                                           | FEB system warning in progress                                                              | 3            |
|                       |                                           | LDW/LDP//Blind Spot Warning/Blind Spot Intervention/ICC/PFCW/DCA system warning in progress | 1, 2         |
|                       |                                           | ICC/PFCW/DCA system warning in progress.                                                    | 2, 4         |
|                       |                                           | LDW/LDP//Blind Spot Warning/Blind Spot Intervention/PFCW system warning in progress         | 1, 4         |
|                       |                                           | PFCW system                                                                                 | 4            |

## TERMINAL LAYOUT



## PHYSICAL VALUES

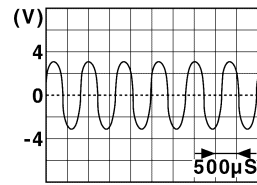
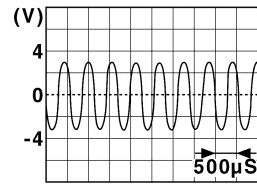
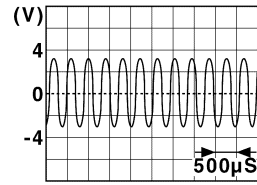
| Terminal No.<br>(Wire color) |          | Description           |              | Condition          |   | Standard value | Reference value |
|------------------------------|----------|-----------------------|--------------|--------------------|---|----------------|-----------------|
| +                            | —        | Signal name           | Input/Output |                    |   |                |                 |
| 1<br>(G)                     | 5<br>(B) | Ignition power supply | Input        | Ignition switch ON | — | 10 - 16 V      | Battery voltage |
| 3<br>(L)                     | —        | ITS communication-H   | —            | —                  | — | —              | —               |
| 5<br>(B)                     | Ground   | Ground                | —            | Ignition switch ON | — | 0 - 0.1 V      | Approx. 0 V     |

CCS

# DRIVER ASSISTANCE BUZZER CONTROL MODULE

< ECU DIAGNOSIS INFORMATION >

[ICC]

| Terminal No.<br>(Wire color) |           | Description                  |              | Condition          |                                     | Standard value                                                                                      | Reference value |
|------------------------------|-----------|------------------------------|--------------|--------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------|
| +                            | —         | Signal name                  | Input/Output |                    |                                     |                                                                                                     |                 |
| 8<br>(R)                     | 16<br>(G) | Warning buzzer signal        | Output       | Ignition switch ON | Driver assistance buzzer OFF        | 0 - 0.1 V                                                                                           | Approx. 0 V     |
|                              |           |                              |              |                    | At "BUZZER 1" test of "Active test" | <br>JSOIA0949ZZ  |                 |
|                              |           |                              |              |                    | At "BUZZER 2" test of "Active test" | <br>JSOIA0950ZZ  |                 |
|                              |           |                              |              |                    | At "BUZZER 3" test of "Active test" | <br>JSOIA0951ZZ |                 |
| 11<br>(Y)                    | —         | ITS communication-L          | —            | —                  | —                                   | —                                                                                                   | —               |
| 13<br>(B)                    | Ground    | Ground                       | —            | Ignition switch ON | —                                   | 0 - 0.1 V                                                                                           | Approx. 0 V     |
| 16<br>(G)                    | 5<br>(B)  | Warning buzzer signal ground | Output       | Ignition switch ON | —                                   | 0 - 0.1 V                                                                                           | Approx. 0 V     |

## DTC Inspection Priority Chart

INFOID:000000009759621

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

| Priority | Detected items (DTC)                                                                                         |
|----------|--------------------------------------------------------------------------------------------------------------|
| 1        | <ul style="list-style-type: none"> <li>U1000: CAN COMM CIRCUIT</li> <li>U1010: CONTROL UNIT (CAN)</li> </ul> |
| 2        | <ul style="list-style-type: none"> <li>U0104: ADAS CAN CIR2</li> <li>U1527: CCM CAN CIRCUIT 1</li> </ul>     |
| 3        | <ul style="list-style-type: none"> <li>C1B20: CONTROL MODULE</li> </ul>                                      |

## DTC Index

INFOID:000000009759622

### NOTE:

- The details of time display are as per the following.
- CRNT: A malfunction is detected now
- PAST: A malfunction was detected in the past
- IGN counter is displayed in FFD (Freeze Frame Data).
- 0: The malfunctions that are detected now

# DRIVER ASSISTANCE BUZZER CONTROL MODULE

## < ECU DIAGNOSIS INFORMATION >

[ICC]

- 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.

×: Applicable

| DTC   |                    | Reference               |
|-------|--------------------|-------------------------|
| C1B20 | CONTROL MODULE     | <a href="#">DAS-332</a> |
| U0104 | ADAS CAN CIR2      | <a href="#">DAS-348</a> |
| U1527 | CCM CAN CIRCUIT 1  | <a href="#">DAS-358</a> |
| U1000 | CAN COMM CIRCUIT   | <a href="#">DAS-353</a> |
| U1010 | CONTROL UNIT (CAN) | <a href="#">DAS-356</a> |

A

B

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J

K

L

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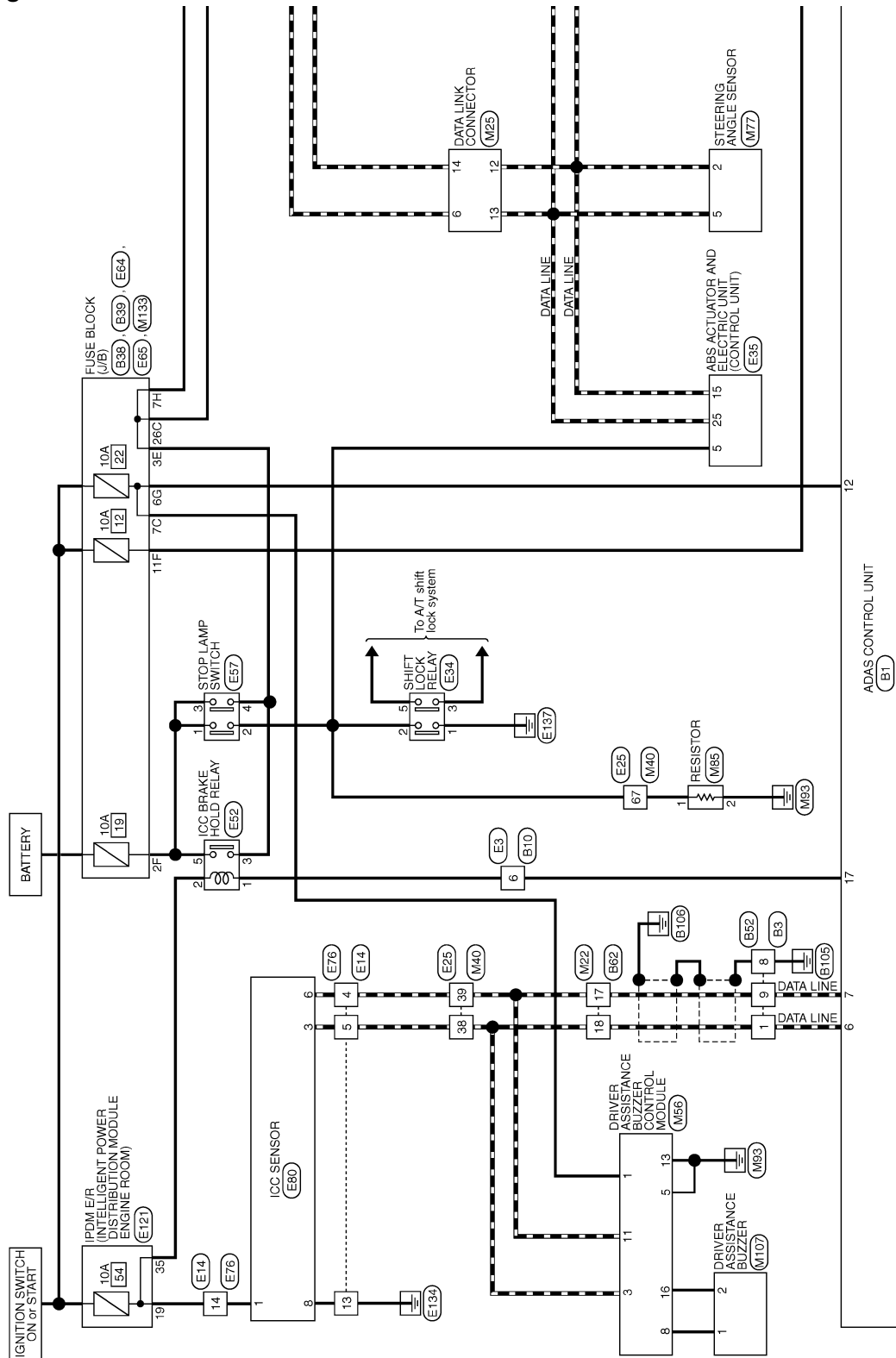
CCS

P

**[ICC]**

## Wiring Diagram

INTELLIGENT CRUISE CONTROL



★: This connector is not shown in "Harness Layout".

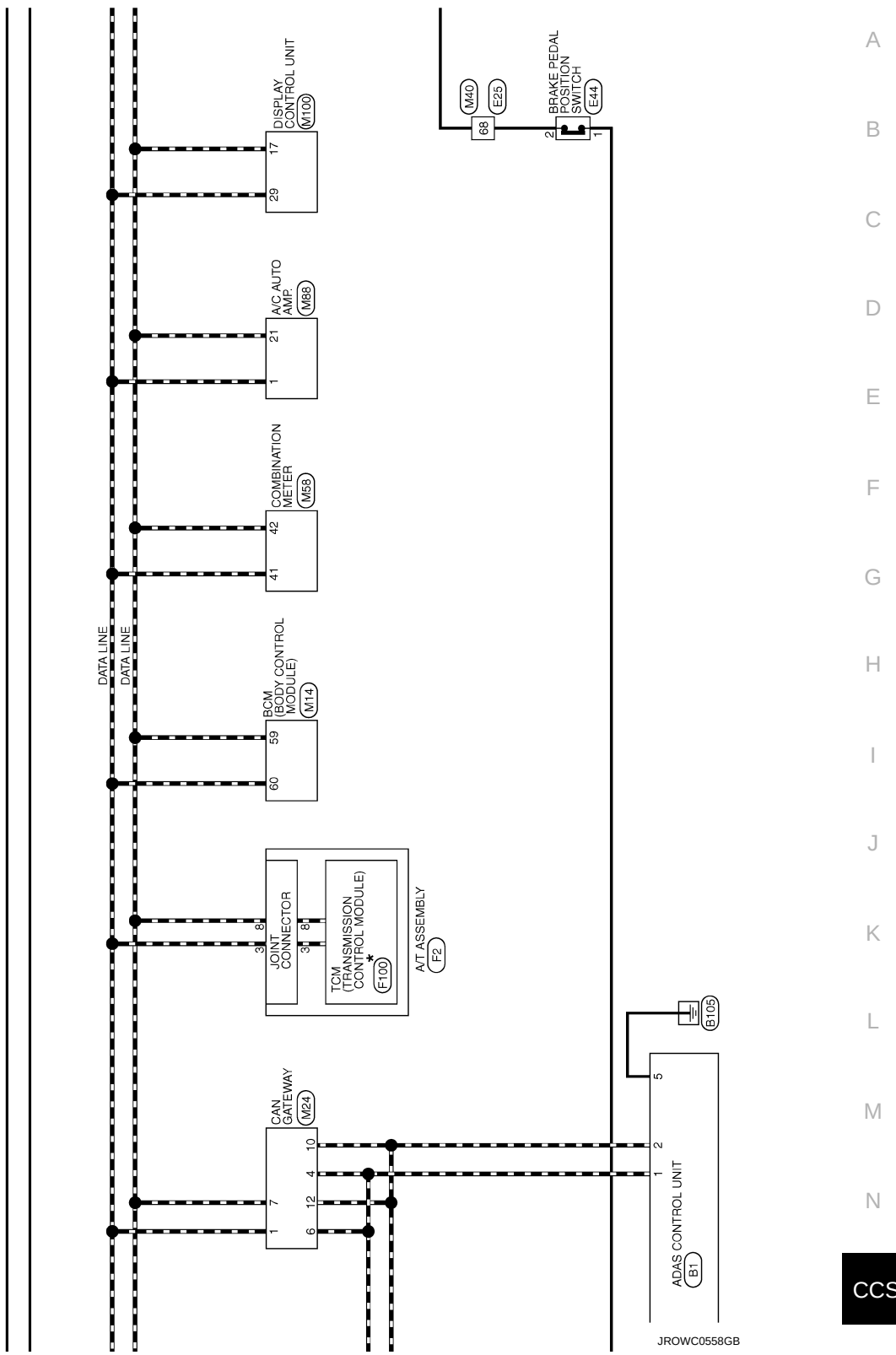
2013/05/17

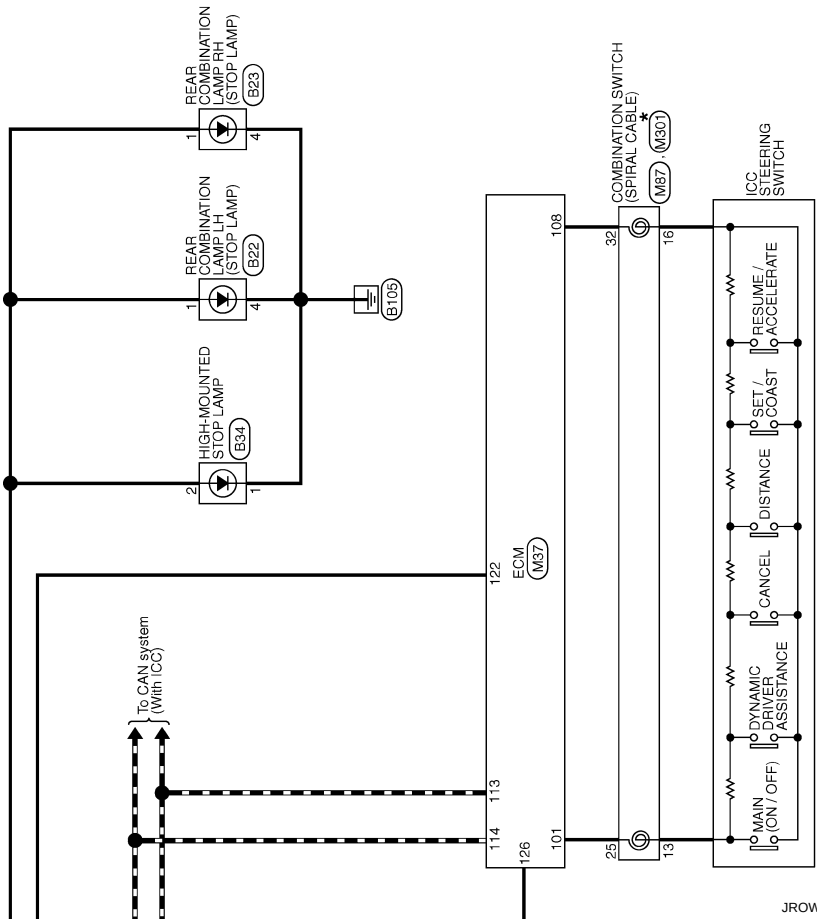
JROWC0557GB

INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]





JROWC0559GB

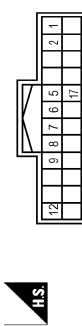
# INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]

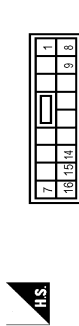
## INTELLIGENT CRUISE CONTROL

|                |                   |
|----------------|-------------------|
| Connector No.  | B1                |
| Connector Name | ADAS CONTROL UNIT |
| Connector Type | 1124FW-NH         |



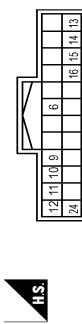
| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | L             | GM-H                        |
| 2            | B             | GM-H                        |
| 3            | B             | GROUND                      |
| 5            | L             | ITS COMM-H                  |
| 7            | P             | ITS COMM-L                  |
| 8            | L             | CHASSIS COMM-H              |
| 9            | V             | CHASSIS COMM-L              |
| 12           | GR            | IGNITION                    |
| 17           | V             | BRAKE HOLD RLY DRIVE SIGNAL |

|                |              |
|----------------|--------------|
| Connector No.  | B3           |
| Connector Name | WIRE TO WIRE |
| Connector Type | NS10PW-CS    |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | L             | -                           |
| 7            | R             | -                           |
| 8            | B             | -                           |
| 9            | P             | -                           |
| 14           | B             | -                           |
| 15           | V             | -                           |
| 16           | BR            | -                           |

|                |              |
|----------------|--------------|
| Connector No.  | B10          |
| Connector Name | WIRE TO WIRE |
| Connector Type | 1124FW-NH    |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 6            | V             | -                           |
| 8            | V             | -                           |
| 10           | B             | -                           |
| 11           | G             | -                           |
| 12           | R             | -                           |
| 13           | GR            | -                           |
| 14           | BG            | -                           |
| 15           | BR            | -                           |
| 16           | LG            | -                           |
| 24           | SHIELD        | -                           |

|                |                                      |
|----------------|--------------------------------------|
| Connector No.  | B22                                  |
| Connector Name | REAR COMBINATION LAMP LH (BODY SIDE) |
| Connector Type | NS54MMW-CS                           |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | LG            | -                           |
| 2            | P             | -                           |
| 3            | SB            | -                           |
| 4            | B             | -                           |

|                |                                      |
|----------------|--------------------------------------|
| Connector No.  | B23                                  |
| Connector Name | REAR COMBINATION LAMP RH (BODY SIDE) |
| Connector Type | NS54MMW-CS                           |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | LG            | -                           |
| 2            | V             | -                           |
| 3            | BR            | -                           |
| 4            | B             | -                           |

|                |                        |
|----------------|------------------------|
| Connector No.  | B34                    |
| Connector Name | HIGH-MOUNTED STOP LAMP |
| Connector Type | TK02MBR-P              |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | B             | -                           |
| 2            | LG            | -                           |

|                |                  |
|----------------|------------------|
| Connector No.  | B38              |
| Connector Name | FUSE BLOCK (J.B) |
| Connector Type | NS10PW-CS        |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | GR            | -                           |
| 2            | GR            | -                           |
| 3            | GR            | -                           |
| 4            | BR            | -                           |
| 5            | W             | -                           |
| 6            | G             | -                           |

|                |                  |
|----------------|------------------|
| Connector No.  | B39              |
| Connector Name | FUSE BLOCK (J.B) |
| Connector Type | TH10PB-NH        |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 10H          | P             | -                           |
| 3H           | L             | -                           |
| 4H           | R             | -                           |
| 6H           | L             | -                           |
| 7H           | LG            | -                           |
| 8H           | P             | -                           |

JROWC0560GB

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L  
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P

CCS

## INTELLIGENT CRUISE CONTROL

|                |              |
|----------------|--------------|
| Connector No.  | B52          |
| Connector Name | WIRE TO WIRE |
| Connector Type | NS16MW-OS    |



|   |   |  |  |  |  |          |
|---|---|--|--|--|--|----------|
| 1 |   |  |  |  |  | 7        |
| 8 | 9 |  |  |  |  | 14 15 16 |

| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | L             | -                           |
| 7            | R             | -                           |
| 8            | SHIELD        | -                           |
| 9            | P             | -                           |
| 14           | B             | -                           |
| 15           | W             | -                           |
| 16           | RE            | -                           |

|                |                 |
|----------------|-----------------|
| Connector No.  | B62             |
| Connector Name | WIRE TO WIRE    |
| Connector Type | TH80FW-CS16-TM4 |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | R             | —                           |
| 2            | Y             | —                           |
| 3            | R             | — (With BOSE system)        |
| 3            | W             | — (Without BOSE system)     |
| 4            | SHEILD        | —                           |
| 5            | G             | —                           |
| 6            | W             | —                           |
| 7            | BR            | — (Without BOSE system)     |
| 7            | W             | — (With BOSE system)        |
| 8            | B             | — (With BOSE system)        |
| 8            | Y             | — (Without BOSE system)     |
| 9            | SHEILD        | —                           |

[illegible]

|     |    |   |
|-----|----|---|
| 93  | R  | - |
| 94  | R  | - |
| 95  | Y  | - |
| 96  | W  | - |
| 97  | L  | - |
| 99  | BR | - |
| 100 | BR | - |

[illegible]

|                |              |
|----------------|--------------|
| Connector No.  | E3           |
| Connector Name | WIRE TO WIRE |
| Connector Type | TH24MW-NH    |

| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 6            | Y             | -                           |
| 9            | W             | -                           |
| 10           | B             | -                           |
| 11           | G             | -                           |
| 12           | R             | -                           |
| 13           | GR            | -                           |
| 14           | G             | -                           |
| 15           | V             | -                           |
| 16           | Y             | -                           |
| 24           | SHIELD        | -                           |



|                |                 |
|----------------|-----------------|
| Connector No.  | E25             |
| Connector Name | WIRE TO WIRE    |
| Connector Type | TH80PW-CS16-TM4 |

| Terminal No. | Color Of Wire | Signal Name (Specification) |
|--------------|---------------|-----------------------------|
| 1            | W             | -                           |
| 2            | W             | -                           |
| 3            | LG            | -                           |
| 4            | BR            | -                           |
| 5            | V             | -                           |
| 6            | L             | -                           |
| 10           | BR            | -                           |
| 11           | B             | -                           |
| 12           | GR            | -                           |
| 13           | W             | -                           |
| 14           | B             | -                           |



|  |  |    |    |    |    |    |    |
|--|--|----|----|----|----|----|----|
|  |  | 4  | 5  | 6  | 7  | 8  | 9  |
|  |  | 11 | 12 | 13 | 14 | 15 | 16 |
|  |  |    |    | 21 | 22 | 23 | 24 |
|  |  |    |    | 26 | 27 | 28 |    |

# INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]

## INTELLIGENT CRUISE CONTROL

|    |        |   |
|----|--------|---|
| 15 | SP     | - |
| 16 | GR     | - |
| 17 | BR     | - |
| 18 | P      | - |
| 19 | SHIELD | - |
| 20 | Y      | - |
| 21 | Y      | - |
| 22 | GR     | - |
| 23 | GR     | - |
| 24 | GR     | - |
| 25 | R      | - |
| 26 | V      | - |
| 27 | L      | - |
| 28 | Y      | - |
| 29 | SB     | - |
| 30 | LG     | - |
| 31 | Y      | - |
| 32 | Y      | - |
| 33 | W      | - |
| 34 | W      | - |
| 35 | B      | - |
| 36 | SHIELD | - |
| 37 | R      | - |
| 38 | BR     | - |
| 39 | L      | - |
| 40 | W      | - |
| 41 | LG     | - |
| 42 | Y      | - |
| 43 | W      | - |
| 44 | B      | - |
| 45 | SHIELD | - |
| 46 | R      | - |
| 47 | BR     | - |
| 48 | L      | - |
| 49 | W      | - |
| 50 | BR     | - |
| 51 | L      | - |
| 52 | W      | - |
| 53 | V      | - |
| 54 | P      | - |
| 55 | W      | - |
| 56 | SB     | - |
| 57 | EG     | - |
| 58 | B      | - |
| 59 | W      | - |
| 60 | R      | - |
| 61 | Y      | - |
| 62 | SB     | - |
| 63 | GR     | - |
| 64 | LG     | - |
| 65 | BR     | - |
| 66 | BR     | - |
| 67 | LG     | - |
| 68 | BR     | - |
| 69 | LG     | - |
| 70 | V      | - |
| 71 | LG     | - |
| 72 | V      | - |
| 73 | G      | - |
| 74 | BR     | - |
| 75 | V      | - |
| 76 | P      | - |
| 77 | SB     | - |
| 78 | P      | - |
| 79 | SB     | - |
| 80 | R      | - |
| 81 | EG     | - |
| 82 | Y      | - |
| 83 | GR     | - |
| 84 | GR     | - |
| 85 | EG     | - |
| 86 | W      | - |
| 87 | W      | - |
| 88 | LG     | - |

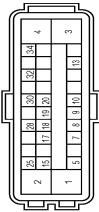
|    |        |   |
|----|--------|---|
| 15 | L      | - |
| 16 | P      | - |
| 17 | SHIELD | - |

|                |                  |
|----------------|------------------|
| Connector No.  | E34              |
| Connector Name | SHIFT LOCK RELAY |
| Connector Type | MS02FL-M2-LC     |



|              |               |                             |
|--------------|---------------|-----------------------------|
| Terminal No. | Color Of Wire | Signal Name [Specification] |
| 1            | B             | -                           |
| 2            | LG            | -                           |
| 3            | GR            | -                           |
| 5            | G             | -                           |

|                |                                               |
|----------------|-----------------------------------------------|
| Connector No.  | E35                                           |
| Connector Name | ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) |
| Connector Type | SX23PE-S24-L                                  |



|              |               |                                 |
|--------------|---------------|---------------------------------|
| Terminal No. | Color Of Wire | Signal Name [Specification]     |
| 1            | B             | GROUND                          |
| 2            | B             | GROUND                          |
| 3            | G             | VALVE BATTERY                   |
| 4            | G             | VALVE BATTERY                   |
| 5            | LG            | STOP LAMP SW SIGNAL (With ICC)  |
| 6            | V             | STOP LAMP SW SIGNAL (With ASD)  |
| 7            | GR            | RR LH WHEEL SENSOR SIGNAL       |
| 8            | G             | RR LH WHEEL SENSOR POWER SUPPLY |
| 9            | BR            | FR RH WHEEL SENSOR SIGNAL       |
| 10           | GR            | FR RH WHEEL SENSOR POWER SUPPLY |
| 13           | R             | VACUUM SENSOR SIGNAL            |

|    |        |                                 |
|----|--------|---------------------------------|
| 15 | P      | CAH-L [Without Gateway]         |
| 17 | V      | RR RH WHEEL SENSOR SIGNAL       |
| 18 | V      | RR RH WHEEL SENSOR POWER SUPPLY |
| 19 | SB     | FR LH WHEEL SENSOR SIGNAL       |
| 20 | BG     | FR LH WHEEL SENSOR POWER SUPPLY |
| 25 | L      | CAH-H                           |
| 28 | G      | VACUUM SENSOR POWER SUPPLY      |
| 30 | R      | VDC OFF SW SIGNAL               |
| 32 | SHIELD | VACUUM SENSOR GROUND            |
| 34 | G      | IGN                             |

|                |                             |
|----------------|-----------------------------|
| Connector No.  | E44                         |
| Connector Name | BRAKE PEDAL POSITION SWITCH |
| Connector Type | SS0FL                       |



|              |               |                             |
|--------------|---------------|-----------------------------|
| Terminal No. | Color Of Wire | Signal Name [Specification] |
| 1            | G             | -                           |
| 2            | BG            | -                           |

|                |                      |
|----------------|----------------------|
| Connector No.  | E52                  |
| Connector Name | ICC BRAKE HOLD RELAY |
| Connector Type | MS02FL-M2-LC         |



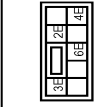
|              |               |                             |
|--------------|---------------|-----------------------------|
| Terminal No. | Color Of Wire | Signal Name [Specification] |
| 1            | Y             | -                           |
| 2            | G             | -                           |
| 3            | V             | -                           |
| 5            | L             | -                           |

|                |                  |
|----------------|------------------|
| Connector No.  | E57              |
| Connector Name | STOP LAMP SWITCH |
| Connector Type | MS04FW-LC        |



|              |               |                             |
|--------------|---------------|-----------------------------|
| Terminal No. | Color Of Wire | Signal Name [Specification] |
| 1            | G             | - [With ASD]                |
| 2            | GR            | - [With ASD]                |
| 2            | LG            | - [With ICC]                |
| 3            | BR            | -                           |
| 4            | V             | -                           |

|                |                  |
|----------------|------------------|
| Connector No.  | E64              |
| Connector Name | FUSE BLOCK (J/B) |
| Connector Type | MS06FW-CS        |



|              |               |                             |
|--------------|---------------|-----------------------------|
| Terminal No. | Color Of Wire | Signal Name [Specification] |
| 2E           | P             | -                           |
| 3E           | V             | -                           |
| 4E           | GR            | -                           |
| 6E           | L             | -                           |

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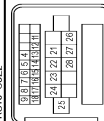
## INTELLIGENT CRUISE CONTROL

| Connector No.  | E65              |
|----------------|------------------|
| Connector Name | FUSE BLOCK (J.B) |
| Connector Type | TH12FW-NH        |



| Terminal No. | Color Of Wire | Signal Name [Specification]          |
|--------------|---------------|--------------------------------------|
| 1F           | R             | IGNITION                             |
| 2F           | G             | IGNITION POWER SUPPLY                |
| 3F           | P             | IGNITION POWER SUPPLY MEMORY BACK-UP |
| 4F           | L             | IGNITION POWER SUPPLY                |
| 5F           | P             | IGNITION POWER SUPPLY                |
| 6F           | L             | IGNITION POWER SUPPLY                |
| 7F           | R             | IGNITION POWER SUPPLY                |
| 8F           | L             | IGNITION POWER SUPPLY                |
| 9F           | L             | IGNITION POWER SUPPLY                |

| Connector No.  | E78               |
|----------------|-------------------|
| Connector Name | WIRE TO WIRE      |
| Connector Type | S4418FB-2S10-SL22 |



| Terminal No. | Color Of Wire | Signal Name [Specification]          |
|--------------|---------------|--------------------------------------|
| 1            | R             | IGNITION                             |
| 2            | G             | IGNITION POWER SUPPLY                |
| 3            | P             | IGNITION POWER SUPPLY MEMORY BACK-UP |
| 4            | L             | IGNITION POWER SUPPLY                |
| 5            | P             | IGNITION POWER SUPPLY                |
| 6            | L             | IGNITION POWER SUPPLY                |
| 7            | R             | IGNITION POWER SUPPLY                |
| 8            | L             | IGNITION POWER SUPPLY                |
| 9            | L             | IGNITION POWER SUPPLY                |
| 10           | L             | IGNITION POWER SUPPLY                |
| 11           | L             | IGNITION POWER SUPPLY                |
| 12           | B             | IGNITION POWER SUPPLY                |
| 13           | B             | IGNITION POWER SUPPLY                |

| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 14           | R             | IGNITION                    |
| 15           | G             | IGNITION POWER SUPPLY       |
| 16           | V             | IGNITION POWER SUPPLY       |
| 17           | B             | IGNITION POWER SUPPLY       |
| 18           | P             | IGNITION POWER SUPPLY       |
| 19           | P             | IGNITION POWER SUPPLY       |
| 20           | P             | IGNITION POWER SUPPLY       |
| 21           | B             | IGNITION POWER SUPPLY       |
| 22           | SHIELD        | IGNITION POWER SUPPLY       |
| 23           | P             | IGNITION POWER SUPPLY       |
| 24           | L             | IGNITION POWER SUPPLY       |
| 25           | V             | IGNITION POWER SUPPLY       |
| 26           | B             | IGNITION POWER SUPPLY       |
| 27           | B             | IGNITION POWER SUPPLY       |
| 28           | B             | IGNITION POWER SUPPLY       |

| Connector No.  | E60        |
|----------------|------------|
| Connector Name | ICG SENSOR |
| Connector Type | AA208FB    |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | R             | IGNITION                    |
| 2            | L             | IGNITION POWER SUPPLY       |
| 3            | Y             | IGNITION POWER SUPPLY       |
| 4            | B             | IGNITION POWER SUPPLY       |
| 5            | B             | IGNITION POWER SUPPLY       |
| 6            | B             | IGNITION POWER SUPPLY       |
| 7            | B             | IGNITION POWER SUPPLY       |
| 8            | B             | IGNITION POWER SUPPLY       |

| Connector No.  | E21                                                    |
|----------------|--------------------------------------------------------|
| Connector Name | FROM I/C INTELLIGENT CRUISE CONTROL MODULE ENGINE ROOM |
| Connector Type | TH132FW-NH                                             |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 19           | G             | IGNITION POWER SUPPLY       |
| 20           | B             | IGNITION POWER SUPPLY       |
| 21           | B             | IGNITION POWER SUPPLY       |
| 22           | B             | IGNITION POWER SUPPLY       |
| 23           | B             | IGNITION POWER SUPPLY       |
| 24           | B             | IGNITION POWER SUPPLY       |
| 25           | B             | IGNITION POWER SUPPLY       |
| 26           | B             | IGNITION POWER SUPPLY       |
| 27           | B             | IGNITION POWER SUPPLY       |
| 28           | B             | IGNITION POWER SUPPLY       |
| 29           | B             | IGNITION POWER SUPPLY       |
| 30           | B             | IGNITION POWER SUPPLY       |
| 31           | B             | IGNITION POWER SUPPLY       |
| 32           | B             | IGNITION POWER SUPPLY       |
| 33           | B             | IGNITION POWER SUPPLY       |
| 34           | B             | IGNITION POWER SUPPLY       |
| 35           | B             | IGNITION POWER SUPPLY       |
| 36           | B             | IGNITION POWER SUPPLY       |
| 37           | B             | IGNITION POWER SUPPLY       |
| 38           | B             | IGNITION POWER SUPPLY       |
| 39           | B             | IGNITION POWER SUPPLY       |
| 40           | B             | IGNITION POWER SUPPLY       |
| 41           | B             | IGNITION POWER SUPPLY       |
| 42           | B             | IGNITION POWER SUPPLY       |
| 43           | B             | IGNITION POWER SUPPLY       |

| Connector No.  | F2           |
|----------------|--------------|
| Connector Name | A/T ASSEMBLY |
| Connector Type | RK10FG-DQY   |



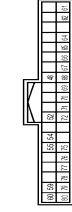
| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | GR            | IGNITION POWER SUPPLY       |
| 2            | P             | BATTERY POWER SUPPLY        |
| 3            | L             | BATTERY POWER SUPPLY        |
| 4            | L             | BATTERY POWER SUPPLY        |
| 5            | B             | BATTERY POWER SUPPLY        |
| 6            | GR            | BATTERY POWER SUPPLY        |
| 7            | GR            | BATTERY POWER SUPPLY        |
| 8            | P             | BATTERY POWER SUPPLY        |
| 9            | GR            | BATTERY POWER SUPPLY        |
| 10           | B             | BATTERY POWER SUPPLY        |

| Connector No.  | F100                              |
|----------------|-----------------------------------|
| Connector Name | TCM (TRANSMISSION CONTROL MODULE) |
| Connector Type | SP10FG                            |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | GR            | IGNITION POWER SUPPLY       |
| 2            | GR            | IGNITION POWER SUPPLY       |
| 3            | GR            | IGNITION POWER SUPPLY       |
| 4            | GR            | IGNITION POWER SUPPLY       |
| 5            | GR            | IGNITION POWER SUPPLY       |
| 6            | GR            | IGNITION POWER SUPPLY       |
| 7            | GR            | IGNITION POWER SUPPLY       |
| 8            | GR            | IGNITION POWER SUPPLY       |
| 9            | GR            | IGNITION POWER SUPPLY       |
| 10           | GR            | IGNITION POWER SUPPLY       |

| Connector No.  | M14                       |
|----------------|---------------------------|
| Connector Name | BOM (BODY CONTROL MODULE) |
| Connector Type | TH40FB-NH                 |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 48           | R             | PUSH-BTN IGN SW LLE PWR     |
| 49           | G             | IGNITION POWER SUPPLY       |
| 50           | V             | IGNITION POWER SUPPLY       |
| 51           | P             | IGNITION POWER SUPPLY       |
| 52           | P             | IGNITION POWER SUPPLY       |
| 53           | P             | IGNITION POWER SUPPLY       |
| 54           | P             | IGNITION POWER SUPPLY       |
| 55           | P             | IGNITION POWER SUPPLY       |
| 56           | P             | IGNITION POWER SUPPLY       |
| 57           | P             | IGNITION POWER SUPPLY       |
| 58           | P             | IGNITION POWER SUPPLY       |
| 59           | P             | IGNITION POWER SUPPLY       |
| 60           | P             | IGNITION POWER SUPPLY       |
| 61           | P             | IGNITION POWER SUPPLY       |
| 62           | P             | IGNITION POWER SUPPLY       |
| 63           | P             | IGNITION POWER SUPPLY       |
| 64           | P             | IGNITION POWER SUPPLY       |
| 65           | P             | IGNITION POWER SUPPLY       |

# INTELLIGENT CRUISE CONTROL

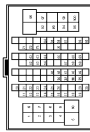
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[ICC]

## INTELLIGENT CRUISE CONTROL

| Connector No. | Wire | Signal Name [Specification] |
|---------------|------|-----------------------------|
| 66            | B    | BLOWER FAN RELY CONT        |
| 67            | W    | CAN RELAY PWR SUPPLY        |
| 68            | W    | COMB1                       |
| 69            | GR   | A/T SHIF SELECT PWR SELV    |
| 70            | B    | IGN RELAY (BDM E/R) CONT    |
| 71            | G    | DR DOOR REQ SW              |
| 72            | SB   | PASS DOOR REQ SW            |
| 75            | BR   | COMB1 SW INPUT 5            |
| 76            | EG   | COMB1 SW INPUT 4            |
| 77            | V    | COMB1 SW INPUT 3            |
| 78            | Y    | COMB1 SW INPUT 2            |
| 79            | LG   | COMB1 SW INPUT 1            |
| 80            | L    | TR LID OPNR SW              |

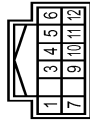
| Connector No.  | Wire | Signal Name [Specification] |
|----------------|------|-----------------------------|
| M22            |      |                             |
| WIRE TO WIRE   |      |                             |
| TH88MM-CSE-TM4 |      |                             |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | LG            |                             |
| 2            | LG            |                             |
| 3            | R             |                             |
| 4            | SHIELD        |                             |
| 5            | G             |                             |
| 6            | BG            |                             |
| 7            | LG            |                             |
| 8            | P             |                             |
| 9            | SHIELD        |                             |
| 10           | V             |                             |
| 11           | GR            |                             |
| 12           | V             |                             |
| 13           | LG            |                             |
| 14           | LG            |                             |
| 15           | GR            |                             |
| 16           | SB            |                             |
| 17           | V             |                             |
| 18           | L             |                             |
| 19           | G             |                             |
| 20           | GR            |                             |

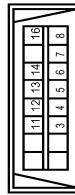
| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 21           | R             |                             |
| 22           | R             |                             |
| 23           | L             |                             |
| 24           | V             |                             |
| 25           | LG            |                             |
| 26           | GR            |                             |
| 29           | SB            |                             |
| 30           | LG            |                             |
| 36           | R             |                             |
| 37           | R             |                             |
| 38           | W             |                             |
| 39           | V             |                             |
| 43           | G             |                             |
| 46           | SHIELD        |                             |
| 47           | G             |                             |
| 48           | GR            |                             |
| 49           | SB            |                             |
| 52           | Y             |                             |
| 53           | R             |                             |
| 54           | GR            |                             |
| 57           | R             |                             |
| 58           | SB            |                             |
| 59           | LG            |                             |
| 62           | V             |                             |
| 63           | L             |                             |
| 64           | W             |                             |
| 66           | R             |                             |
| 68           | L             |                             |
| 69           | P             |                             |
| 72           | GR            |                             |
| 73           | SHIELD        |                             |
| 76           | V             |                             |
| 84           | BR            |                             |
| 85           | BR            |                             |
| 86           | V             |                             |
| 87           | LG            |                             |
| 89           | BR            |                             |
| 90           | V             |                             |
| 92           | W             |                             |
| 93           | R             |                             |
| 94           | R             |                             |
| 98           | W             |                             |
| 99           | L             |                             |
| 99           | BR            |                             |
| 100          | BR            |                             |

| Connector No. | Wire | Signal Name [Specification] |
|---------------|------|-----------------------------|
| M24           |      |                             |
| CAN GATEWAY   |      |                             |
| TH12FN-H4     |      |                             |



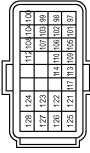
| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | L             | CAN-H                       |
| 2            | V             | CAN-L                       |
| 3            | B             | CAN-H                       |
| 5            | B             | GND                         |
| 6            | L             | CAN-H                       |
| 7            | P             | CAN-L                       |
| 9            | R             | IGN                         |
| 10           | R             | CAN-L                       |
| 11           | B             | GND                         |
| 12           | R             | CAN-L                       |

| Connector No.       | Wire | Signal Name [Specification] |
|---------------------|------|-----------------------------|
| M25                 |      |                             |
| DATA LINK CONNECTOR |      |                             |
| BD16FW              |      |                             |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 3            | SB            | AV COMM (L)                 |
| 4            | B             | EARTH                       |
| 5            | B             | EARTH                       |
| 7            | V             | IGNE                        |
| 8            | W             | IGN SW                      |
| 11           | LG            | AV COMM (H)                 |
| 12           | R             | CAN-L                       |
| 13           | L             | CAN-H                       |
| 14           | P             | CAN-L                       |

| Connector No.     | Wire | Signal Name [Specification] |
|-------------------|------|-----------------------------|
| M37               |      |                             |
| ECM               |      |                             |
| RH24FG-R2B-R-LH-Z |      |                             |



| Terminal No. | Color Of Wire | Signal Name [Specification]                               |
|--------------|---------------|-----------------------------------------------------------|
| 87           | Y             | ACCELERATOR PEDAL POSITION SENSOR 1                       |
| 88           | BR            | ACCELERATOR PEDAL POSITION SENSOR 2                       |
| 89           | W             | SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 1) |
| 100          | G             | ASCD STEERING SWITCH                                      |
| 101          | SB            | ASCD STEERING SWITCH                                      |
| 102          | LG            | EVAP CONTROL SYSTEM PRESSURE SENSOR                       |
| 103          | L             | EVAP CONTROL SYSTEM PRESSURE SENSOR                       |
| 104          | R             | SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 2) |
| 105          | L             | REFRIGERANT PRESSURE SENSOR                               |
| 106          | P             | FUEL TANK TEMPERATURE SENSOR                              |
| 107          | GR            | TRANSMISSION RANGE SWITCH                                 |
| 108          | BR            | ENGINE SPEED SIGNAL OUTPUT                                |
| 110          | V             | SINIA PIPES / FETTES                                      |
| 112          | V             | CAN COMMUNICATION LINE                                    |
| 113          | P             | CAN COMMUNICATION LINE                                    |
| 114          | L             | DATA LINK CONNECTOR                                       |
| 117          | V             | EVAP CANISTER VENT CONTROL VALVE                          |
| 121          | LG            | STOP LAMP SWITCH                                          |
| 122          | SB            | ECM GROUND                                                |
| 123          | B             | ECM GROUND                                                |
| 124          | B             | ECM GROUND                                                |
| 125          | R             | POWER SUPPLY FOR ECM                                      |
| 126          | EG            | POWER SUPPLY FOR ECM                                      |
| 127          | B             | POWER SUPPLY FOR ECM                                      |
| 128          | B             | POWER SUPPLY FOR ECM                                      |
| 129          | B             | POWER SUPPLY FOR ECM                                      |
| 130          | B             | POWER SUPPLY FOR ECM                                      |
| 131          | B             | POWER SUPPLY FOR ECM                                      |
| 132          | B             | POWER SUPPLY FOR ECM                                      |
| 133          | B             | POWER SUPPLY FOR ECM                                      |
| 134          | B             | POWER SUPPLY FOR ECM                                      |
| 135          | B             | POWER SUPPLY FOR ECM                                      |
| 136          | B             | POWER SUPPLY FOR ECM                                      |
| 137          | B             | POWER SUPPLY FOR ECM                                      |
| 138          | B             | POWER SUPPLY FOR ECM                                      |
| 139          | B             | POWER SUPPLY FOR ECM                                      |
| 140          | B             | POWER SUPPLY FOR ECM                                      |
| 141          | B             | POWER SUPPLY FOR ECM                                      |
| 142          | B             | POWER SUPPLY FOR ECM                                      |
| 143          | B             | POWER SUPPLY FOR ECM                                      |
| 144          | B             | POWER SUPPLY FOR ECM                                      |
| 145          | B             | POWER SUPPLY FOR ECM                                      |
| 146          | B             | POWER SUPPLY FOR ECM                                      |
| 147          | B             | POWER SUPPLY FOR ECM                                      |
| 148          | B             | POWER SUPPLY FOR ECM                                      |
| 149          | B             | POWER SUPPLY FOR ECM                                      |
| 150          | B             | POWER SUPPLY FOR ECM                                      |
| 151          | B             | POWER SUPPLY FOR ECM                                      |
| 152          | B             | POWER SUPPLY FOR ECM                                      |
| 153          | B             | POWER SUPPLY FOR ECM                                      |
| 154          | B             | POWER SUPPLY FOR ECM                                      |
| 155          | B             | POWER SUPPLY FOR ECM                                      |
| 156          | B             | POWER SUPPLY FOR ECM                                      |
| 157          | B             | POWER SUPPLY FOR ECM                                      |
| 158          | B             | POWER SUPPLY FOR ECM                                      |
| 159          | B             | POWER SUPPLY FOR ECM                                      |
| 160          | B             | POWER SUPPLY FOR ECM                                      |
| 161          | B             | POWER SUPPLY FOR ECM                                      |
| 162          | B             | POWER SUPPLY FOR ECM                                      |
| 163          | B             | POWER SUPPLY FOR ECM                                      |
| 164          | B             | POWER SUPPLY FOR ECM                                      |
| 165          | B             | POWER SUPPLY FOR ECM                                      |
| 166          | B             | POWER SUPPLY FOR ECM                                      |
| 167          | B             | POWER SUPPLY FOR ECM                                      |
| 168          | B             | POWER SUPPLY FOR ECM                                      |
| 169          | B             | POWER SUPPLY FOR ECM                                      |
| 170          | B             | POWER SUPPLY FOR ECM                                      |
| 171          | B             | POWER SUPPLY FOR ECM                                      |
| 172          | B             | POWER SUPPLY FOR ECM                                      |
| 173          | B             | POWER SUPPLY FOR ECM                                      |
| 174          | B             | POWER SUPPLY FOR ECM                                      |
| 175          | B             | POWER SUPPLY FOR ECM                                      |
| 176          | B             | POWER SUPPLY FOR ECM                                      |
| 177          | B             | POWER SUPPLY FOR ECM                                      |
| 178          | B             | POWER SUPPLY FOR ECM                                      |
| 179          | B             | POWER SUPPLY FOR ECM                                      |
| 180          | B             | POWER SUPPLY FOR ECM                                      |
| 181          | B             | POWER SUPPLY FOR ECM                                      |
| 182          | B             | POWER SUPPLY FOR ECM                                      |
| 183          | B             | POWER SUPPLY FOR ECM                                      |
| 184          | B             | POWER SUPPLY FOR ECM                                      |
| 185          | B             | POWER SUPPLY FOR ECM                                      |
| 186          | B             | POWER SUPPLY FOR ECM                                      |
| 187          | B             | POWER SUPPLY FOR ECM                                      |
| 188          | B             | POWER SUPPLY FOR ECM                                      |
| 189          | B             | POWER SUPPLY FOR ECM                                      |
| 190          | B             | POWER SUPPLY FOR ECM                                      |
| 191          | B             | POWER SUPPLY FOR ECM                                      |
| 192          | B             | POWER SUPPLY FOR ECM                                      |
| 193          | B             | POWER SUPPLY FOR ECM                                      |
| 194          | B             | POWER SUPPLY FOR ECM                                      |
| 195          | B             | POWER SUPPLY FOR ECM                                      |
| 196          | B             | POWER SUPPLY FOR ECM                                      |
| 197          | B             | POWER SUPPLY FOR ECM                                      |
| 198          | B             | POWER SUPPLY FOR ECM                                      |
| 199          | B             | POWER SUPPLY FOR ECM                                      |
| 200          | B             | POWER SUPPLY FOR ECM                                      |
| 201          | B             | POWER SUPPLY FOR ECM                                      |
| 202          | B             | POWER SUPPLY FOR ECM                                      |
| 203          | B             | POWER SUPPLY FOR ECM                                      |
| 204          | B             | POWER SUPPLY FOR ECM                                      |
| 205          | B             | POWER SUPPLY FOR ECM                                      |
| 206          | B             | POWER SUPPLY FOR ECM                                      |
| 207          | B             | POWER SUPPLY FOR ECM                                      |
| 208          | B             | POWER SUPPLY FOR ECM                                      |
| 209          | B             | POWER SUPPLY FOR ECM                                      |
| 210          | B             | POWER SUPPLY FOR ECM                                      |
| 211          | B             | POWER SUPPLY FOR ECM                                      |
| 212          | B             | POWER SUPPLY FOR ECM                                      |
| 213          | B             | POWER SUPPLY FOR ECM                                      |
| 214          | B             | POWER SUPPLY FOR ECM                                      |
| 215          | B             | POWER SUPPLY FOR ECM                                      |
| 216          | B             | POWER SUPPLY FOR ECM                                      |
| 217          | B             | POWER SUPPLY FOR ECM                                      |
| 218          | B             | POWER SUPPLY FOR ECM                                      |
| 219          | B             | POWER SUPPLY FOR ECM                                      |
| 220          | B             | POWER SUPPLY FOR ECM                                      |
| 221          | B             | POWER SUPPLY FOR ECM                                      |
| 222          | B             | POWER SUPPLY FOR ECM                                      |
| 223          | B             | POWER SUPPLY FOR ECM                                      |
| 224          | B             | POWER SUPPLY FOR ECM                                      |
| 225          | B             | POWER SUPPLY FOR ECM                                      |
| 226          | B             | POWER SUPPLY FOR ECM                                      |
| 227          | B             | POWER SUPPLY FOR ECM                                      |
| 228          | B             | POWER SUPPLY FOR ECM                                      |
| 229          | B             | POWER SUPPLY FOR ECM                                      |
| 230          | B             | POWER SUPPLY FOR ECM                                      |
| 231          | B             | POWER SUPPLY FOR ECM                                      |
| 232          | B             | POWER SUPPLY FOR ECM                                      |
| 233          | B             | POWER SUPPLY FOR ECM                                      |
| 234          | B             | POWER SUPPLY FOR ECM                                      |
| 235          | B             | POWER SUPPLY FOR ECM                                      |
| 236          | B             | POWER SUPPLY FOR ECM                                      |
| 237          | B             | POWER SUPPLY FOR ECM                                      |
| 238          | B             | POWER SUPPLY FOR ECM                                      |
| 239          | B             | POWER SUPPLY FOR ECM                                      |
| 240          | B             | POWER SUPPLY FOR ECM                                      |
| 241          | B             | POWER SUPPLY FOR ECM                                      |
| 242          | B             | POWER SUPPLY FOR ECM                                      |
| 243          | B             | POWER SUPPLY FOR ECM                                      |
| 244          | B             | POWER SUPPLY FOR ECM                                      |
| 245          | B             | POWER SUPPLY FOR ECM                                      |
| 246          | B             | POWER SUPPLY FOR ECM                                      |
| 247          | B             | POWER SUPPLY FOR ECM                                      |
| 248          | B             | POWER SUPPLY FOR ECM                                      |
| 249          | B             | POWER SUPPLY FOR ECM                                      |
| 250          | B             | POWER SUPPLY FOR ECM                                      |
| 251          | B             | POWER SUPPLY FOR ECM                                      |
| 252          | B             | POWER SUPPLY FOR ECM                                      |
| 253          | B             | POWER SUPPLY FOR ECM                                      |
| 254          | B             | POWER SUPPLY FOR ECM                                      |
| 255          | B             | POWER SUPPLY FOR ECM                                      |
| 256          | B             | POWER SUPPLY FOR ECM                                      |
| 257          | B             | POWER SUPPLY FOR ECM                                      |
| 258          | B             | POWER SUPPLY FOR ECM                                      |
| 259          | B             | POWER SUPPLY FOR ECM                                      |
| 260          | B             | POWER SUPPLY FOR ECM                                      |
| 261          | B             | POWER SUPPLY FOR ECM                                      |
| 262          | B             | POWER SUPPLY FOR ECM                                      |
| 263          | B             | POWER SUPPLY FOR ECM                                      |
| 264          | B             | POWER SUPPLY FOR ECM                                      |
| 265          | B             | POWER SUPPLY FOR ECM                                      |
| 266          | B             | POWER SUPPLY FOR ECM                                      |
| 267          | B             | POWER SUPPLY FOR ECM                                      |
| 268          | B             | POWER SUPPLY FOR ECM                                      |
| 269          | B             | POWER SUPPLY FOR ECM                                      |
| 270          | B             | POWER SUPPLY FOR ECM                                      |
| 271          | B             | POWER SUPPLY FOR ECM                                      |
| 272          | B             | POWER SUPPLY FOR ECM                                      |
| 273          | B             | POWER SUPPLY FOR ECM                                      |
| 274          | B             | POWER SUPPLY FOR ECM                                      |
| 275          | B             | POWER SUPPLY FOR ECM                                      |
| 276          | B             | POWER SUPPLY FOR ECM                                      |
| 277          | B             | POWER SUPPLY FOR ECM                                      |
| 278          | B             | POWER SUPPLY FOR ECM                                      |
| 279          | B             | POWER SUPPLY FOR ECM                                      |
| 280          | B             | POWER SUPPLY FOR ECM                                      |
| 281          | B             | POWER SUPPLY FOR ECM                                      |
| 282          | B             | POWER SUPPLY FOR ECM                                      |
| 283          | B             | POWER SUPPLY FOR ECM                                      |
| 284          | B             | POWER SUPPLY FOR ECM                                      |
| 285          | B             | POWER SUPPLY FOR ECM                                      |
| 286          | B             | POWER SUPPLY FOR ECM                                      |
| 287          | B             | POWER SUPPLY FOR ECM                                      |
| 288          | B             | POWER SUPPLY FOR ECM                                      |
| 289          | B             | POWER SUPPLY FOR ECM                                      |
| 290          | B             | POWER SUPPLY FOR ECM                                      |
| 291          | B             | POWER SUPPLY FOR ECM                                      |
| 292          | B             | POWER SUPPLY FOR ECM                                      |
| 293          | B             | POWER SUPPLY FOR ECM                                      |
| 294          | B             | POWER SUPPLY FOR ECM                                      |
| 295          | B             | POWER SUPPLY FOR ECM                                      |
| 296          | B             | POWER SUPPLY FOR ECM                                      |
| 297          | B             | POWER SUPPLY FOR ECM                                      |
| 298          | B             | POWER SUPPLY FOR ECM                                      |
| 299          | B             | POWER SUPPLY FOR ECM                                      |
| 300          | B             | POWER SUPPLY FOR ECM                                      |
| 301          | B             | POWER SUPPLY FOR ECM                                      |
| 302          | B             | POWER SUPPLY FOR ECM                                      |
| 303          | B             | POWER SUPPLY FOR ECM                                      |
| 304          | B             | POWER SUPPLY FOR ECM                                      |
| 305          | B             | POWER SUPPLY FOR ECM                                      |
| 306          | B             | POWER SUPPLY FOR ECM                                      |
| 307          | B             | POWER SUPPLY FOR ECM                                      |
| 308          | B             | POWER SUPPLY FOR ECM                                      |
| 309          | B             | POWER SUPPLY FOR ECM                                      |
| 310          | B             | POWER SUPPLY FOR ECM                                      |
| 311          | B             | POWER SUPPLY FOR ECM                                      |
| 312          | B             | POWER SUPPLY FOR ECM                                      |
| 313          | B             | POWER SUPPLY FOR ECM                                      |
| 314          | B             | POWER SUPPLY FOR ECM                                      |
| 315          | B             | POWER SUPPLY FOR ECM                                      |
| 316          | B             | POWER SUPPLY FOR ECM                                      |
| 317          | B             | POWER SUPPLY FOR ECM                                      |
| 318          | B             | POWER SUPPLY FOR ECM                                      |
| 319          | B             | POWER SUPPLY FOR ECM                                      |
| 320          | B             | POWER SUPPLY FOR ECM                                      |
| 321          | B             | POWER SUPPLY FOR ECM                                      |
| 322          | B             | POWER SUPPLY FOR ECM                                      |
| 323          | B             | POWER SUPPLY FOR ECM                                      |
| 324          | B             | POWER SUPPLY FOR ECM                                      |
| 325          | B             | POWER SUPPLY FOR ECM                                      |
| 326          | B             | POWER SUPPLY FOR ECM                                      |
| 327          | B             | POWER SUPPLY FOR ECM                                      |
| 328          | B             | POWER SUPPLY FOR ECM                                      |
| 329          | B             | POWER SUPPLY FOR ECM                                      |
| 330          | B             | POWER SUPPLY FOR ECM                                      |
| 331          | B             | POWER SUPPLY FOR ECM                                      |
| 332          | B             | POWER SUPPLY FOR ECM                                      |
| 333          | B             | POWER SUPPLY FOR ECM                                      |
| 334          | B             | POWER SUPPLY FOR ECM                                      |
| 335          | B             | POWER SUPPLY FOR ECM                                      |
| 336          | B             | POWER SUPPLY FOR ECM                                      |
| 337          | B             | POWER SUPPLY FOR ECM                                      |
| 338          | B             | POWER SUPPLY FOR ECM                                      |
| 339          | B             | POWER SUPPLY FOR ECM                                      |
| 340          | B             | POWER SUPPLY FOR ECM                                      |
| 341          | B             | POWER SUPPLY FOR ECM                                      |
| 342          | B             | POWER SUPPLY FOR ECM                                      |
| 343          | B             | POWER SUPPLY FOR ECM                                      |
| 344          | B             | POWER SUPPLY FOR ECM                                      |
| 345          | B             | POWER SUPPLY FOR ECM                                      |
| 346          | B             | POWER SUPPLY FOR ECM                                      |
| 347          | B             | POWER SUPPLY FOR ECM                                      |
| 348          | B             | POWER SUPPLY FOR ECM                                      |
| 349          | B             | POWER SUPPLY FOR ECM                                      |
| 350          | B             | POWER SUPPLY FOR ECM                                      |
| 351          | B             | POWER SUPPLY FOR ECM                                      |
| 352          | B             | POWER SUPPLY FOR ECM                                      |
| 353          | B             | POWER SUPPLY FOR ECM                                      |
| 354          | B             | POWER SUPPLY FOR ECM                                      |
| 355          | B             | POWER SUPPLY FOR ECM                                      |
| 356          | B             | POWER SUPPLY FOR ECM                                      |
| 357          | B             | POWER SUPPLY FOR ECM                                      |
| 358          | B             | POWER SUPPLY FOR ECM                                      |
| 359          | B             | POWER SUPPLY FOR ECM                                      |
| 360          | B             | POWER SUPPLY FOR ECM                                      |
| 361          | B             | POWER SUPPLY FOR ECM                                      |
| 362          | B             | POWER SUPPLY FOR ECM                                      |
| 363          | B             | POWER SUPPLY FOR ECM                                      |
| 364          | B             | POWER SUPPLY FOR ECM                                      |
| 365          | B             | POWER SUPPLY FOR ECM                                      |
| 366          | B             | POWER SUPPLY FOR ECM                                      |
| 367          | B             | POWER SUPPLY FOR ECM                                      |
| 368          | B             | POWER SUPPLY FOR ECM                                      |
| 369          | B             | POWER SUPPLY FOR ECM                                      |
| 370          | B             | POWER SUPPLY FOR ECM                                      |
| 371          | B             | POWER SUPPLY FOR ECM                                      |
| 372          | B             | POWER SUPPLY FOR ECM                                      |
| 373          | B             | POWER SUPPLY FOR ECM                                      |
| 374          | B             | POWER SUPPLY FOR ECM                                      |
| 375          | B             | POWER SUPPLY FOR ECM                                      |
| 376          | B             | POWER SUPPLY FOR ECM                                      |
| 377          | B             | POWER SUPPLY FOR ECM                                      |
| 378          | B             | POWER SUPPLY FOR ECM                                      |
| 379          | B             | POWER SUPPLY FOR ECM                                      |
| 380          | B             | POWER SUPPLY FOR ECM                                      |
| 381          | B             | POWER SUPPLY FOR ECM                                      |
| 382          | B             | POWER SUPPLY FOR ECM                                      |
| 383          | B             | POWER SUPPLY FOR ECM                                      |
| 384          | B             | POWER SUPPLY FOR ECM                                      |
| 385          | B             | POWER SUPPLY FOR ECM                                      |
| 386          | B             | POWER SUPPLY FOR ECM                                      |
| 387          | B             | POWER SUPPLY FOR ECM                                      |
| 388          | B             | POWER SUPPLY FOR ECM                                      |
| 389          | B             | POWER SUPPLY FOR ECM                                      |
| 390          | B             | POWER SUPPLY FOR ECM                                      |
| 391          | B             | POWER SUPPLY FOR ECM                                      |
| 392          | B             | POWER SUPPLY FOR ECM                                      |
| 393          | B             | POWER SUPPLY FOR ECM                                      |
| 394          | B             | POWER SUPPLY FOR ECM                                      |
| 395          | B             | POWER SUPPLY FOR ECM                                      |
| 396          | B             | POWER SUPPLY FOR ECM                                      |
| 397          | B             | POWER SUPPLY FOR ECM                                      |
| 398          | B             | POWER SUPPLY FOR ECM                                      |
| 399          | B             | POWER SUPPLY FOR ECM                                      |
| 400          | B             | POWER SUPPLY FOR ECM                                      |
| 401          | B             | POWER SUPPLY FOR ECM                                      |
| 402          | B             | POWER SUPPLY FOR ECM                                      |
| 403          | B             | POWER SUPPLY                                              |

# INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]

## INTELLIGENT CRUISE CONTROL

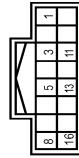
|                |                  |
|----------------|------------------|
| Connector No.  | M40              |
| Connector Name | WIRE TO WIRE     |
| Connector Type | TH180MM-C516-TM4 |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | GR            | -                           |
| 2            | GR            | -                           |
| 3            | GR            | -                           |
| 4            | V             | -                           |
| 5            | W/B           | -                           |
| 6            | W/B           | -                           |
| 7            | V             | -                           |
| 8            | W             | -                           |
| 9            | W             | -                           |
| 10           | W             | -                           |
| 11           | W             | -                           |
| 12           | B             | -                           |
| 13           | GR            | -                           |
| 14           | B             | -                           |
| 15           | SB            | -                           |
| 16           | B             | -                           |
| 17           | LG            | -                           |
| 18           | B             | -                           |
| 19           | V             | -                           |
| 20           | V             | -                           |
| 21           | RG            | -                           |
| 22           | V             | -                           |
| 23           | RG            | -                           |
| 24           | G             | -                           |
| 25           | B             | -                           |
| 26           | L             | -                           |
| 27           | Y             | -                           |
| 28           | Y             | -                           |
| 29           | GR            | -                           |
| 30           | L             | -                           |
| 31           | L             | -                           |
| 32           | BR            | -                           |
| 33           | W             | -                           |
| 34           | G             | -                           |
| 35           | R             | -                           |
| 36           | SHIELD        | -                           |
| 37           | BR            | -                           |
| 38           | W             | -                           |
| 39           | Y             | -                           |
| 40           | GR            | -                           |
| 41           | L             | -                           |
| 42           | BR            | -                           |
| 43           | W             | -                           |
| 44           | G             | -                           |
| 45           | R             | -                           |
| 46           | SHIELD        | -                           |
| 47           | BR            | -                           |
| 48           | W             | -                           |
| 49           | Y             | -                           |
| 50           | G             | -                           |
| 51           | W             | -                           |
| 52           | Y             | -                           |
| 53           | G             | -                           |
| 54           | Y             | -                           |
| 55           | P             | -                           |
| 56           | EG            | -                           |

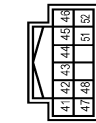
|     |        |   |
|-----|--------|---|
| 57  | GR     | - |
| 58  | B      | - |
| 59  | SB     | - |
| 60  | W/B    | - |
| 61  | W/B    | - |
| 62  | Y      | - |
| 63  | R      | - |
| 64  | V      | - |
| 65  | LG     | - |
| 66  | EG     | - |
| 67  | V      | - |
| 68  | LG     | - |
| 69  | LG     | - |
| 70  | R      | - |
| 71  | BR     | - |
| 72  | B      | - |
| 73  | W      | - |
| 74  | W      | - |
| 75  | W      | - |
| 76  | W      | - |
| 77  | W      | - |
| 78  | W      | - |
| 79  | W      | - |
| 80  | W      | - |
| 81  | W      | - |
| 82  | W      | - |
| 83  | W      | - |
| 84  | W      | - |
| 85  | W      | - |
| 86  | W      | - |
| 87  | W      | - |
| 88  | W      | - |
| 89  | W      | - |
| 90  | W      | - |
| 91  | W      | - |
| 92  | W      | - |
| 93  | W      | - |
| 94  | W      | - |
| 95  | W      | - |
| 96  | W      | - |
| 97  | W      | - |
| 98  | W      | - |
| 99  | W      | - |
| 100 | SHIELD | - |

|                |                                         |
|----------------|-----------------------------------------|
| Connector No.  | M58                                     |
| Connector Name | DRIVER ASSISTANCE BUZZER CONTROL MODULE |
| Connector Type | TH180FW-NH                              |



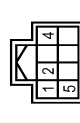
| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | G             | IGNITION                    |
| 2            | G             | ITS COMM-H                  |
| 3            | L             | GROUND                      |
| 4            | R             | WARNING BUZZER SIGNAL       |
| 5            | R             | ITS COMM-L                  |
| 6            | Y             | GROUND                      |
| 7            | B             | WARNING BUZZER SIGNAL       |
| 8            | G             | GROUND                      |
| 9            | G             | GROUND                      |
| 10           | G             | GROUND                      |
| 11           | G             | GROUND                      |
| 12           | G             | GROUND                      |
| 13           | G             | GROUND                      |
| 14           | G             | GROUND                      |
| 15           | G             | GROUND                      |
| 16           | G             | GROUND                      |

|                |                   |
|----------------|-------------------|
| Connector No.  | M56               |
| Connector Name | COMBINATION METER |
| Connector Type | TH12FW-NH         |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | GR            | -                           |
| 2            | GR            | -                           |
| 3            | GR            | -                           |
| 4            | P             | CAH-L                       |
| 5            | P             | CAH-H                       |
| 6            | B             | ILLUMINATION CONTROL SIGNAL |
| 7            | B             | FUEL LEVEL SENSOR GROUND    |
| 8            | Y             | BATTERY POWER SUPPLY        |
| 9            | W             | IGNITION SIGNAL             |
| 10           | R             | AV COMMUNICATION SIGNAL (H) |
| 11           | LG            | AV COMMUNICATION SIGNAL (L) |
| 12           | SB            | FUEL LEVEL SENSOR SIGNAL    |
| 13           | BR            | GROUND                      |
| 14           | B             | GROUND                      |

|                |                       |
|----------------|-----------------------|
| Connector No.  | M77                   |
| Connector Name | STEERING ANGLE SENSOR |
| Connector Type | TH08FW-NH             |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | B             | GROUND                      |
| 2            | P             | CAH-L (Without Gateway)     |
| 3            | P             | CAH-L (With Gateway)        |
| 4            | G             | CAH-H                       |
| 5            | L             | CAH-H                       |

|                |           |
|----------------|-----------|
| Connector No.  | M65       |
| Connector Name | RESISTOR  |
| Connector Type | M02FBR-LC |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | GR            | -                           |
| 2            | B             | -                           |

|                |                                   |
|----------------|-----------------------------------|
| Connector No.  | M67                               |
| Connector Name | COMBINATION SWITCH (SIGNAL CABLE) |
| Connector Type | TK08FOY-1V                        |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 24           | P             | -                           |
| 25           | SB            | -                           |
| 31           | W/B           | -                           |
| 32           | Y             | -                           |
| 33           | B             | -                           |

JROWC0565GB

# INTELLIGENT CRUISE CONTROL

[ICC]

< WIRING DIAGRAM >

## INTELLIGENT CRUISE CONTROL

|                |              |
|----------------|--------------|
| Connector No.  | M63          |
| Connector Name | A/C AUTO AMP |
| Connector Type | TH46FW-NH    |

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |



| Terminal No. | Color Of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1            | L             | CAN-H                       |
| 2            | B             | IGN SW                      |
| 3            | W             | BAT                         |
| 7            | G             | AMBIENT SENS                |
| 9            | R             | SUNLOAD SENS                |
| 13           | V             | IGN SW AGC                  |
| 16           | P             | LIN                         |
| 17           | R             | DOOR MOTOR PWR SPLY         |
| 18           | P             | BLOWER MOTOR CONT           |
| 20           | L             | HEAT STRG WHIL RLY CONT     |
| 21           | P             | CAN-L                       |
| 22           | B             | GND                         |
| 23           | W             | IGN SW ON                   |
| 26           | B             | SENS GND                    |
| 27           | G             | IR-VEHICLE SENS             |
| 28           | R             | IR-VEHICLE SENS             |
| 30           | EC            | EXH GAS OUT COORD TGT SENS  |
| 37           | B             | IONIZER GND                 |
| 38           | EG            | IONIZER CONT                |
| 40           | EG            | ECV CONT                    |

|                |                          |
|----------------|--------------------------|
| Connector No.  | M107                     |
| Connector Name | DRIVER ASSISTANCE BUZZER |
| Connector Type | NS50FW-CS                |

H.S.

21

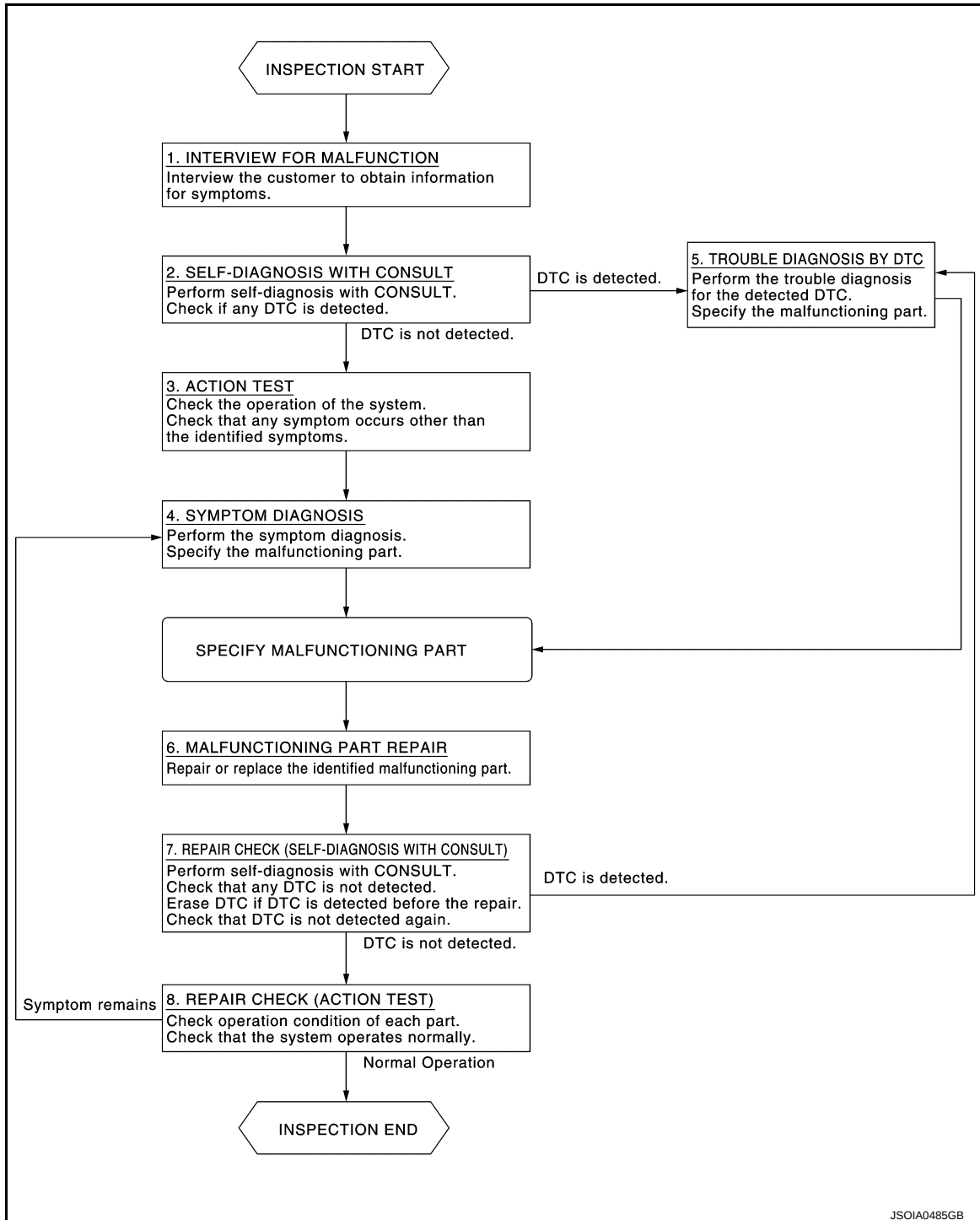
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORK FLOW

#### Work Flow

INFOID:000000009644231

#### OVERALL SEQUENCE



#### DETAILED FLOW

##### 1. INTERVIEW FOR MALFUNCTION

It is also important to clarify the customer concerns before starting the inspection. Interview the customer about the concerns carefully and understand the symptoms fully.

#### NOTE:

# DIAGNOSIS AND REPAIR WORK FLOW

## < BASIC INSPECTION >

[ICC]

The customers are not professionals. Never assume that “maybe the customer means…” or “maybe the customer mentioned this symptom”.

>> GO TO 2.

## 2.SELF-DIAGNOSIS WITH CONSULT

1. Perform “All DTC Reading” with CONSULT.
2. Check if any DTC is detected in self-diagnosis results of “ICC/ADAS”, “LASER/RADAR”, and “BSW/BUZZER”.

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 3.

## 3.ACTION TEST

Perform the ICC system action test to check the operation status. Refer to [CCS-95, "Description"](#).  
Check if any other malfunctions occur.

>> GO TO 4.

## 4.SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to [CCS-119, "Symptom Table"](#).

>> GO TO 6.

## 5.TROUBLE DIAGNOSIS BY DTC

1. Check the DTC in the self-diagnosis results.
2. Perform trouble diagnosis for the detected DTC. Refer to [CCS-58, "DTC Index"](#) (ICC/ADAS) or [CCS-63, "DTC Index"](#) (LASER/RADAR) or [DAS-280, "DTC Index"](#) (BSW/BUZZER).

### NOTE:

If “DTC: U1000” is detected, first diagnose the CAN communication system or ITS communication system.

>> GO TO 6.

## 6.MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 7.

## 7.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

1. Erases self-diagnosis results.
2. Perform “All DTC Reading” again after repairing or replacing the malfunctioning parts.
3. Check if any DTC is detected in self-diagnosis results of “ICC/ADAS”, “LASER/RADAR”, and “BSW/BUZZER”.

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 8.

## 8.REPAIR CHECK (ACTION TEST)

Perform the ICC system action test. Check if the malfunction symptom is solved or no other symptoms occur.

Is there any malfunction symptom?

YES >> GO TO 4.

NO >> INSPECTION END

A

B

C

D

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CCS

P

## ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR

< BASIC INSPECTION >

[ICC]

---

### ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR

#### Description

INFOID:000000009644232

- Always perform the radar alignment after removing and installing or replacing the ICC sensor.

**CAUTION:**

**The system does not operate normally unless the radar alignment is performed. Always perform it.**

- Perform the ICC system action test to check that the ICC system operates normally.

#### Work Procedure

INFOID:000000009644233

#### 1.PERFORM RADAR ALIGNMENT

---

Perform the radar alignment. Refer to [CCS-83, "TYPE 1 : Description"](#).

>> GO TO 2.

#### 2.ICC SYSTEM ACTION TEST

- 
1. Perform the ICC system action test. Refer to [CCS-95, "Description"](#).
  2. Check that the ICC system operates normally.

>> INSPECTION END

## ICC SENSOR ALIGNMENT

## Application Notice

INFOID:000000010304532

| Type   | Description                                                                                                                                                                                                                              |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE 1 | When using KV99112700 for radar alignment.                                                                                                                                                                                               |
| TYPE 2 | When using following tools for radar alignment. <ul style="list-style-type: none"> <li>• ICC Alignment Kit (1-20-2721-1-IF)</li> <li>• Wheel Adaptor (1-20-2722-1-IF)</li> <li>• ICC alignment kit attachment board (J-50808)</li> </ul> |

## TYPE 1

## TYPE 1 : Description

INFOID:000000009644234

## OUTLINE OF RADAR ALIGNMENT PROCEDURE

- A 4-wheel vehicle alignment must be performed before proceeding with radar alignment procedure.
- Always perform the radar alignment after removing and installing or replacing the ICC sensor.

**WARNING:**

Radio waves could adversely affect electric medical equipment. Those who use a pacemaker should contact the electric medical equipment manufacturer for the possible influences before use.

**CAUTION:**

The system does not operate normally unless the radar alignment is performed. Always perform it.

1. Set the distance sensor target board (SST: KV99112700) to the correct position in front of the vehicle.
2. Set the radar alignment mode ("MILLIWAVE RADAR ADJUST" on "Work support") with CONSULT, and then perform the adjustment according to the display. (ICC sensor automatically adjusts.)

## CAUTIONARY POINT FOR RADAR ALIGNMENT PROCEDURE

**CAUTION:**

- For radar alignment procedure, choose a level location with a few meter of working space in front and surrounding the vehicle.
- Vehicle must be stationary and unoccupied during the whole alignment procedure.
- Any slight vibration during the alignment procedure can cause the test to fail. If this happens, you will have to restart the alignment process.
- The ignition switch must be in the ON position.
- The battery voltage must not fall below 12 volts during the whole alignment procedure. Failure to maintain adequate battery voltage will cause the test to fail. If this happens, you will have to restart the alignment process.
- The ICC target board must be set in front of the vehicle facing the sensor.
- Adjust the radar alignment with CONSULT. (The radar alignment procedure cannot be adjusted without CONSULT.)
- Never enter the vehicle during radar alignment.
- Never block the area between the radar and the ICC target board at any time during the alignment process.
- Accurate steering wheel setting is crucial. Once set, do not disturb the steering wheel for the remainder of the alignment procedure.
- For proper system operation and adjustment, all vehicle wheels must be of the same size.

## TYPE 1 : Work Procedure (Preparation)

INFOID:000000009644235

## 1. ADVANCE PREPARATION FOR RADAR ALIGNMENT

1. Adjust all tire pressure to the specified value.
2. Empty the vehicle. (Remove any luggage from the passenger compartment, trunk room, etc.)
3. Shift the selector lever to "P" position, and release the parking brake.
4. Fully fill the fuel tank, and then check that the coolant and oils are filled up to correct level.

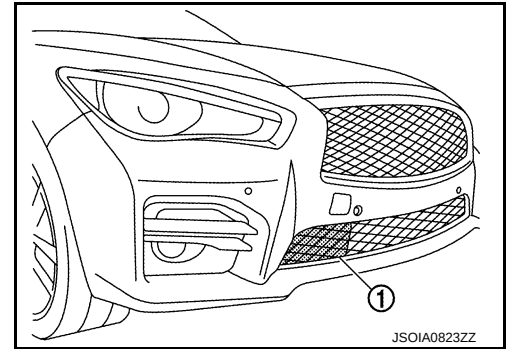
# ICC SENSOR ALIGNMENT

[ICC]

## < BASIC INSPECTION >

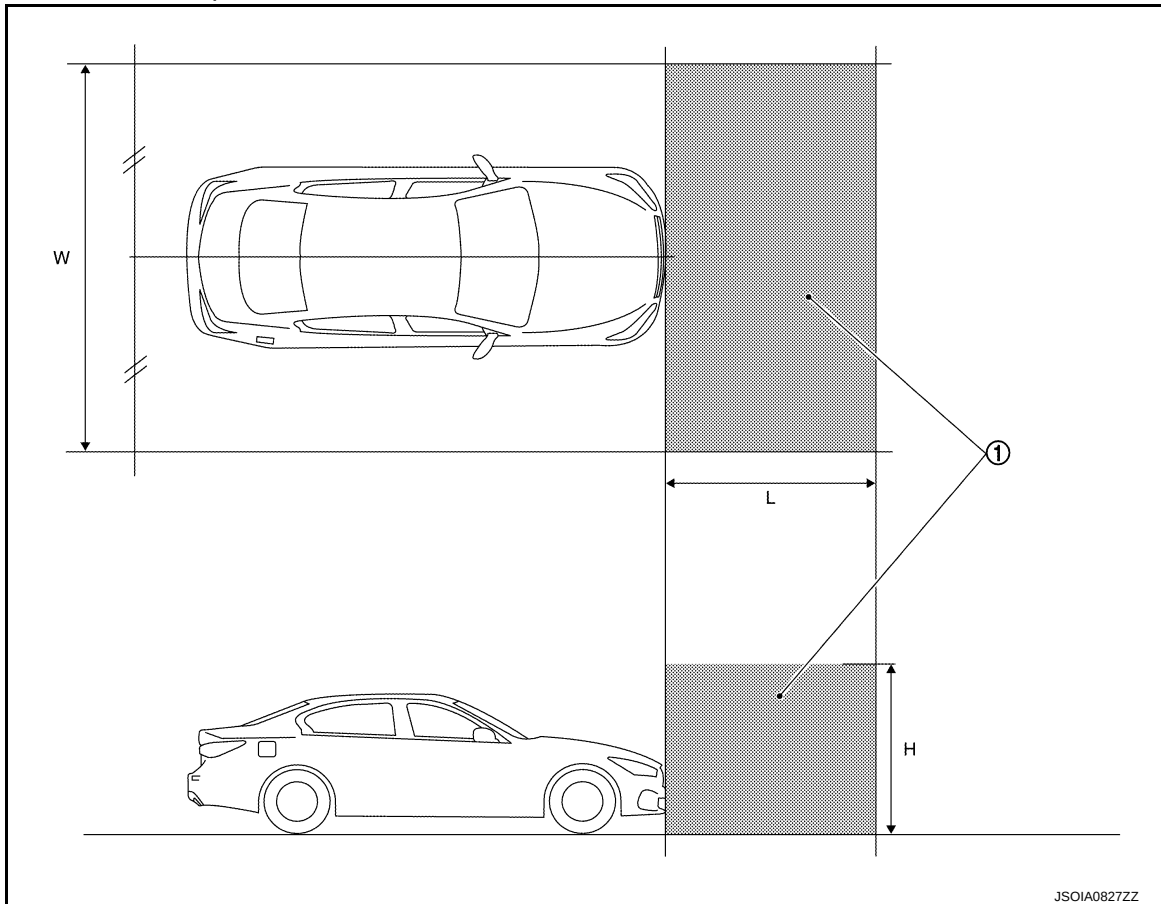
5. Clean the ICC sensor area ① of the front bumper grille.

>> GO TO 2.



## 2. RADAR ALIGNMENT OPERATION AREA

Position the vehicle in a place that is level and where ① area can be secured.



W : 3000 mm (118.11 in)

L : 2000 mm (78.74 in)

H : 2000 mm (78.74 in)

### NOTE:

① is a no object zone.

>> Go to [CCS-84, "TYPE 1 : Work Procedure \(Setting The ICC Target Board\)"](#).

## TYPE 1 : Work Procedure (Setting The ICC Target Board)

INFOID:000000009644236

### DESCRIPTION

Accurate adjustment of the radar alignment requires that the ICC sensor target board be accurately positioned.

### CAUTION:

# ICC SENSOR ALIGNMENT

< BASIC INSPECTION >

[ICC]

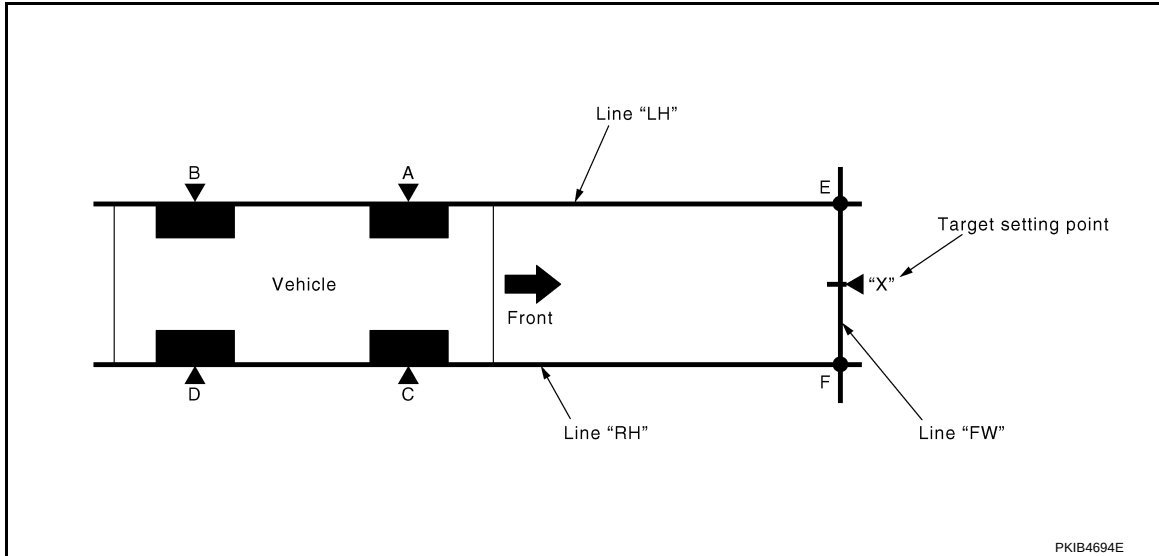
If the radar alignment is adjusted with the distance sensor target board in the incorrect position, the ICC system does not function normally.

## 1. DISTANCE SENSOR TARGET BOARD HEIGHT ADJUSTMENT

Adjust the base of ICC target board to approximately 30 mm (1.18 in) from the ground.

>> GO TO 2.

## 2. PREPARATION OF SETTING DISTANCE SENSOR TARGET BOARD (1)



“A” – “E” (“C” – “F”) : 1727 mm (67.99 in)

1. Mark points “A”, “B”, “C” and “D” at the center of the lateral surface of each wheels.

### NOTE:

Hang a string with a cone from the fender so as to pass through the center of wheel, and then mark a point at the center of the lateral surface of the wheel.

2. Draw line “LH” passing through points “A” and “B” on the left side of vehicle.

### NOTE:

Approximately 4 m (13.12 ft) or more from the front end of vehicle.

3. Mark point “E” on the line “LH” at the positions 1727 mm (67.99 in) from point “A”.

4. Draw line “RH” passing through points “C” and “D” on the right side of vehicle in the same way as step 2.

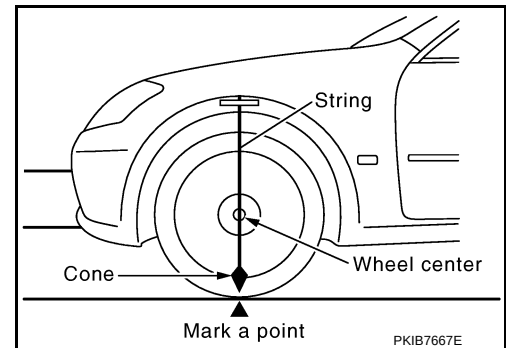
### NOTE:

Approximately 2 m (6.56 ft) or more from the front end of vehicle.

5. Mark point “F” on the line “RH” at the positions 1727 mm (67.99 in) from point “C”.
6. Draw line “FW” passing through the points “E” and “F” on the front side of vehicle.
7. Mark point “X” at the center of point “E” and “F” on the line “FW”.

### CAUTION:

Make sure that “E” to “X” is equal to “F” to “X”.



# ICC SENSOR ALIGNMENT

[ICC]

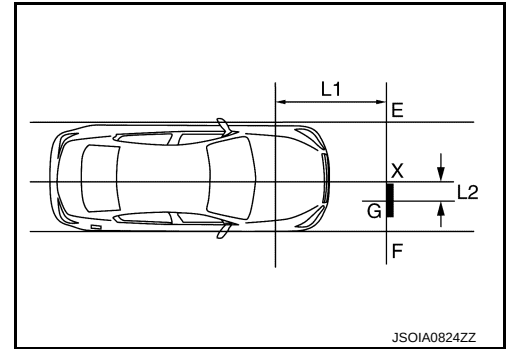
## < BASIC INSPECTION >

8. With point "X" as the starting point, mark point "G" on "F" point side 368 mm (14.49 in).

L1 : 1727 mm (67.99 in)

L2 : 368 mm (14.49 in)

>> GO TO 3.



## 3.SETTING DISTANCE SENSOR TARGET BOARD

Place the center of ICC target board on point "G" at line "E-F" and install the ICC target board.

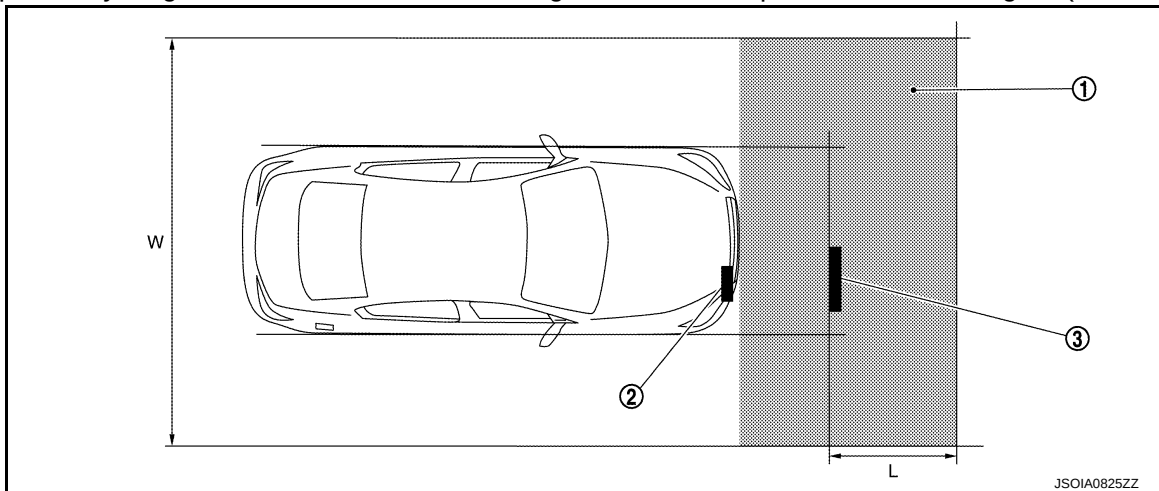
### CAUTION:

For performing the radar alignment correctly, securely install (ICC target board) to be parallel with the "E-F" line.

>> GO TO 4.

## 4.CHECK THE DISTANCE SENSOR TARGET BOARD INSTALLATION AREA

Do not place anything other than distance sensor target board in the space shown in the figure (view from top).



① No object zone

W. 3000 mm (118.11 in)

② ICC sensor

L. 1500 mm (59.06 in)

③ ICC target board

>> Go to [CCS-86, "TYPE 1 : Work Procedure \(Radar Alignment\)"](#).

## TYPE 1 : Work Procedure (Radar Alignment)

INFOID:000000009644237

### DESCRIPTION

The radar alignment is performed automatically with CONSULT.

### CAUTION:

Perform all necessary work for radar alignment until the adjustment completes as shown in the procedure. If the procedure does not complete, the ICC system is inoperable.

## 1.PERFORM RADAR ALIGNMENT

1. Start the engine.
2. Connect CONSULT and select "Work support" of "LASER/RADAR".
3. Select "MILLIWAVE RADAR ADJUST" after the "Work support" screen is displayed.

### NOTE:

Confirm the following items;

- The target should be accurately placed.

# ICC SENSOR ALIGNMENT

< BASIC INSPECTION >

[ICC]

- The vehicle should be stopped.
- 4. Select "Start" after the "MILLIWAVE RADAR ADJUST" screen is displayed.

**CAUTION:**

**Never select "Start" when the target is not accurately placed.**

- 5. Select "Start" after the preparation information is displayed.
- 6. Select "Next" after the "Starting alignment." screen is displayed.

**NOTE:**

If the radar is in alignment at this time, "Alignment in progress" is displayed. It may take several 10s of seconds until the result is displayed.

- 7. Confirm the displayed item.
- "Alignment completed.": Go to 8.
- Except "Alignment completed.": Perform the following services.

| Displayed item                                           | Possible cause                                                                                                                                                                                                                                      | Service procedure                                                   |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Alignment condition is not ready.                        | <ul style="list-style-type: none"> <li>• DTC is detected (Except C1A12).</li> <li>• The position of the ICC target board is not correct.</li> <li>• Vehicle is moving.</li> </ul>                                                                   | Check the vehicle condition and perform radar alignment again.      |
| Alignment condition is not ready.<br>(Stop the vehicle.) | Vehicle is moving.                                                                                                                                                                                                                                  | Stop the vehicle and perform radar alignment again.                 |
| Target is not detected.                                  | <ul style="list-style-type: none"> <li>• A target is not-yet-placed.<br/>(The ICC sensor cannot detect target)</li> <li>• The position of the ICC target board is not correct.</li> <li>• The position of the ICC sensor is not correct.</li> </ul> | Check the target board condition and perform radar alignment again. |
| Sensor malfunction.                                      | ICC sensor malfunction.                                                                                                                                                                                                                             | Check the vehicle condition and perform radar alignment again.      |

**NOTE:**

Replace ICC sensor if "Sensor malfunction." is repeatedly indicated.

- 8. Confirm displayed value.

| Displayed item       | Monitor item     | Reference value    |
|----------------------|------------------|--------------------|
| Alignment completed. | FACTORY AIM L/R  | Less than 3.00 deg |
|                      | FACTORY AIM U/D  | Less than 3.00 deg |
|                      | AIMING VALUE L/R | Less than 3.00 deg |
|                      | AIMING VALUE U/D | Less than 3.00 deg |

- Within reference value: Go to 9.
- Outside of reference value: Check the target board condition and perform radar alignment again.

**NOTE:**

- Check the condition of the ICC sensor installation.
- Check the vehicle for damage.
- Replace ICC sensor if it is outside the reference value, even when ICC sensor installation is installed normally and the vehicle is not damaged.

- 9. Select "OK" after the "No error detected." is displayed.
- 10. Select "OK" after the "End of alignment." is displayed.

**CAUTION:**

**Once "MILLIWAVE RADAR ADJUST" is started with CONSULT, always continue the work until the horizontal radar alignment is completed successfully. If the job is stopped midway, the radar alignment is not adjusted and the ICC system cannot operate.**

>> RADAR ALIGNMENT END

## TYPE 2

### TYPE 2 : Description

INFOID:0000000010249675

### OUTLINE OF RADAR ALIGNMENT PROCEDURE

- A 4-wheel vehicle alignment must be performed before proceeding with radar alignment procedure.

# ICC SENSOR ALIGNMENT

[ICC]

## < BASIC INSPECTION >

- Always perform the radar alignment after removing and installing or replacing the ICC sensor.
- Always perform the radar alignment if rear axle toe settings have been made.

### **WARNING:**

Radio waves could adversely affect electric medical equipment. Those who use a pacemaker should contact the electric medical equipment manufacturer for the possible influences before use.

### **CAUTION:**

The system does not operate normally unless the ICC sensor is aligned properly.

1. Required tools, refer to [CCS-88, "TYPE 2 : Required Tools"](#).
2. Preparation, refer to [CCS-89, "TYPE 2 : Preparation"](#).
3. Vehicle set up, refer to [CCS-90, "TYPE 2 : Vehicle Set Up"](#).
4. Setting the ICC target board, refer to [CCS-92, "TYPE 2 : Setting The ICC Target Board"](#).
5. ICC sensor adjustment, refer to [CCS-93, "TYPE 2 : ICC Sensor Adjustment"](#).

## CAUTIONARY POINT FOR RADAR ALIGNMENT PROCEDURE

### **CAUTION:**

- For radar alignment procedure, choose a level location with a few feet of working space in front and surrounding the vehicle.
- Vehicle must be stationary and unoccupied during the whole alignment procedure.
- Any slight vibration during the alignment procedure can cause the test to fail. If this happens, you will have to restart the alignment process.
- The battery voltage must not fall below 12 volts during the whole alignment procedure. Failure to maintain adequate battery voltage will cause the test to fail. If this happens, you will have to restart the alignment process.
- The ICC target board must be set in front of the vehicle facing the sensor.
- Adjust the radar alignment with CONSULT. (The radar alignment procedure cannot be adjusted without CONSULT.)
- Never enter the vehicle during radar alignment.
- Never block the area between the radar and the ICC target board at any time during the alignment process.
- Accurate steering wheel setting is crucial. Once set, do not disturb the steering wheel for the remainder of the alignment procedure.
- For proper system operation and adjustment, all vehicle wheels must be of the same size.

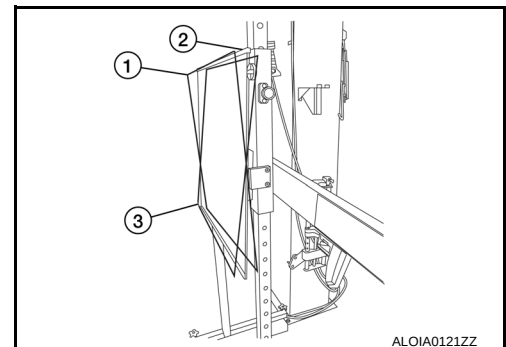
## TYPE 2 : Required Tools

INFOID:0000000010249676

- ICC alignment kit in addition to one of the following:
  - a) Hunter self-centering wheel adapter (Hunter wheel alignment tool)
  - b) Special Service Tool kit 1-20-2722-1-IF (kit SCA W/Tire Clamp-ICC Aiming)

The following ICC alignment kit are necessary to perform the ICC sensor alignment:

- ICC target board.
  - ①: Position 1, with top tilted 2° toward vehicle (Not used).
  - ②: Position 2, vertical.
  - ③: Position 3, with top tilted 2° away from vehicle (Not used).



# ICC SENSOR ALIGNMENT

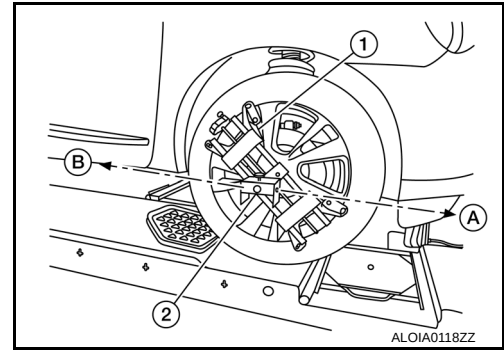
## < BASIC INSPECTION >

[ICC]

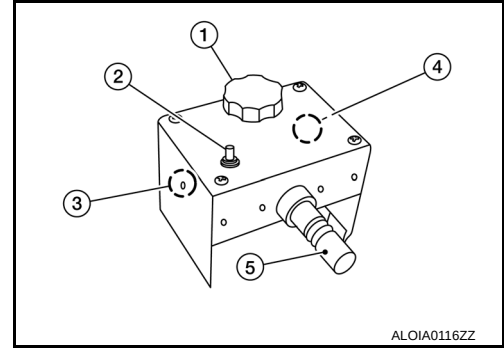
- Hunter self-centering wheel adapter ① [shown with laser assembly ② installed] (Hunter alignment rack head may be substituted).

### NOTE:

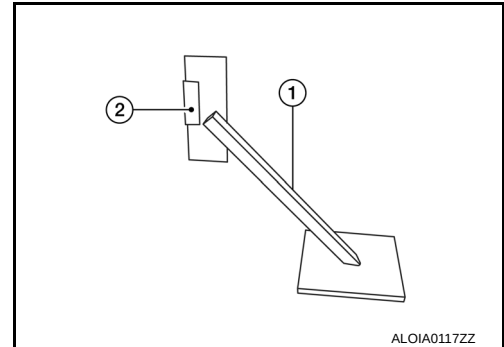
- Retailers that are not equipped with a Hunter self-centering wheel adapter will require the following kit:  
Part No. 1-20-2722-1-IF (kit SCA W/Tire Clamp-ICC Aiming)
- Directional arrows ① and ② are shown to illustrate the direction of the laser assembly beams.



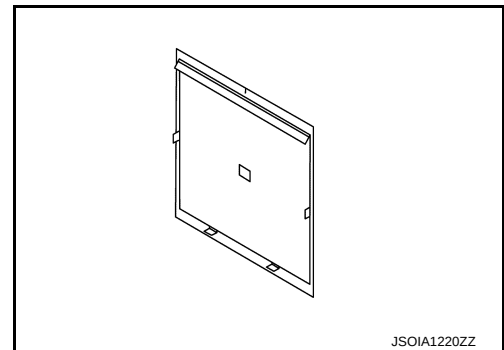
- Laser assembly (with bi-directional laser beam) as shown in the illustration.
- Tightening knob ①
- Power ON/OFF button ②
- Front laser beam opening ③
- Rear laser beam opening ④
- Attaching shaft ⑤



- Stationary target as shown in the illustration.
- Stationary target ①
- Laser signal reception plate ②



- ICC alignment kit attachment board as shown in the illustration.



## TYPE 2 : Preparation

### 1. ADVANCE PREPARATION FOR RADAR ALIGNMENT PROCEDURE

1. Adjust all tire pressure to the specified value.
2. Empty the vehicle. (Remove any luggage from the passenger compartment, luggage room, etc.)
3. Shift the selector lever to "P" position, and release the parking brake.
4. Fully fill the fuel tank, and then check that the coolant and oils are filled up to correct level.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
P

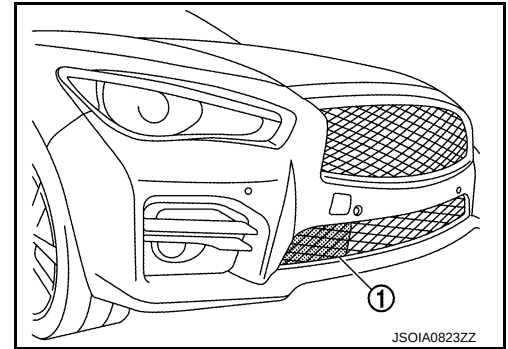
# ICC SENSOR ALIGNMENT

[ICC]

## < BASIC INSPECTION >

5. Clean the ICC sensor area ① of the front bumper grille.

>> Refer to [CCS-90. "TYPE 2 : Vehicle Set Up"](#).



INFOID:000000010249678

## TYPE 2 : Vehicle Set Up

### DESCRIPTION

Accurate adjustment of the radar alignment requires that the ICC target board, wheel adapter, laser assembly, and stationary target be properly positioned.

#### CAUTION:

**If the radar alignment is adjusted with the ICC target board, wheel adapter, laser assembly, or stationary target in the incorrect position, the ICC system will not function properly or the alignment procedure may not be completed successfully.**

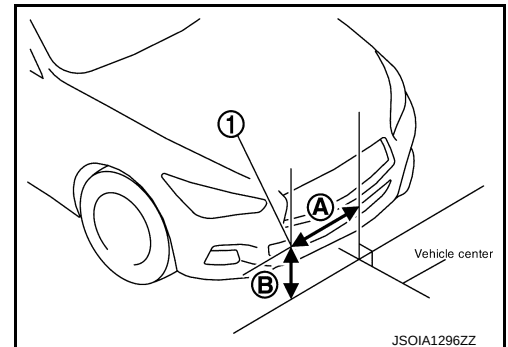
### 1. PREPOSITION TARGET BOARD

#### NOTE:

- To identify the sensor wave axis center, measure the point ① as shown in the illustration.

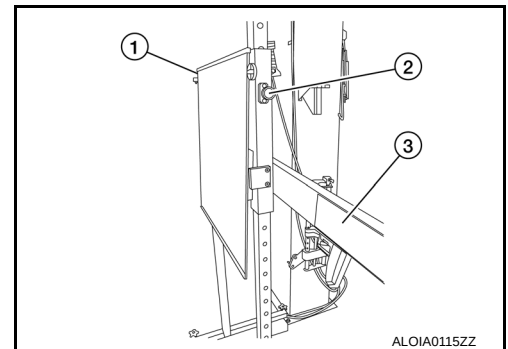
**A : 368 mm (14.49 in)**

**B : 320 mm (12.6 in)**



- ICC target board setting must be in the center position. (Position 2)
- Attaching the ICC alignment kit attachment board to the ICC target board.

1. Position the ICC target board in front facing the right front side of the vehicle:
  - Place the marked center of the ICC target board ① 1060 mm (41.73 in.)  $\pm$  50 mm (1.97 in) facing the ICC sensor.
  - Adjust the height of the ICC target board using the adjustable nut ② to achieve the proper height. The up/down tolerance is  $\pm$  30 mm (1.18 in).
  - Adjust the ICC target board lateral position aligning the marked center of the board horizontally with the center of the ICC sensor. The right/left tolerance is  $\pm$  80 mm (3.15 in).
2. Extend the machined arm of the ICC target board exposing the reflective surface ③ to the right front side of the vehicle.

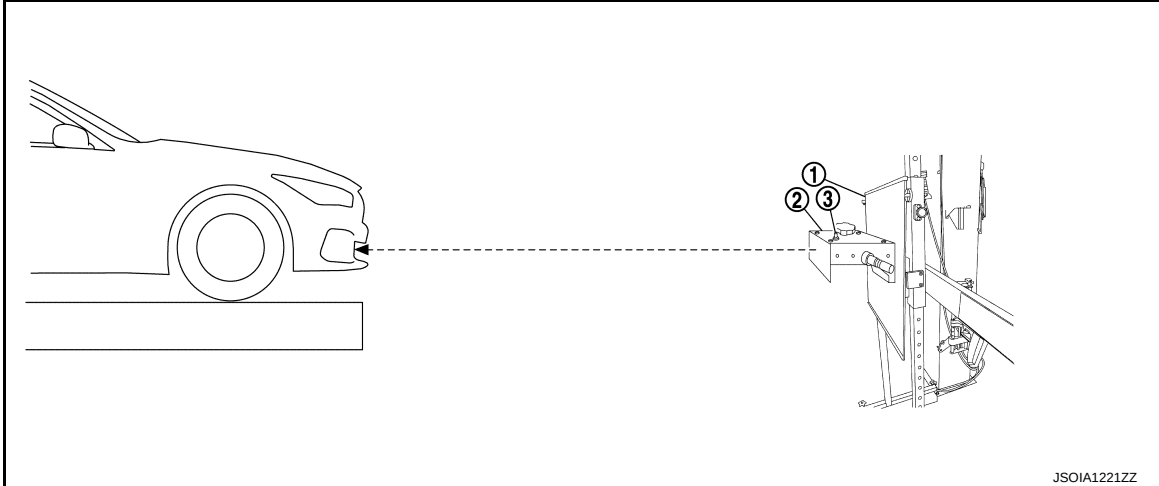


# ICC SENSOR ALIGNMENT

## < BASIC INSPECTION >

[ICC]

- Place one side of the laser assembly ② flush against the center of the ICC target board ① to assist in the positioning.



- Turn the laser assembly ON ③ allowing the laser beam to emit through the opening of the laser assembly toward the center of the ICC sensor.
- Move the ICC target board ① as necessary so that center of ICC target board aligns with center of ICC sensor.
- Turn the laser assembly OFF when done.

### Are using Hunter alignment equipment?

- YES >> Refer to Hunter's equipment instructions for complete vehicle set up and ICC target board setting.  
Then, refer to [CCS-93, "TYPE 2 : ICC Sensor Adjustment"](#).
- NO >> GO TO 2.

## 2.INSTALLING LASER ASSEMBLY

### NOTE:

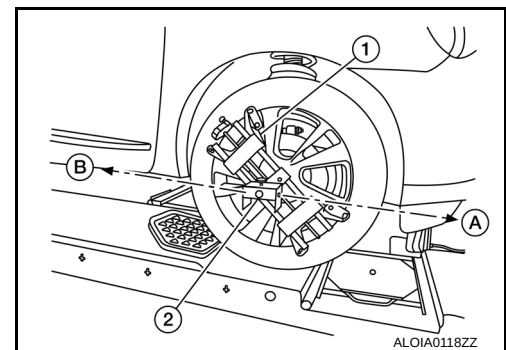
- Insure the steering wheel is positioned in the center straight forward position.
- Insure all 4 vehicle wheels do not contain any physical damage.

- Install the wheel adapter ① on the right front wheel.
- Mount the laser assembly ② to the wheel adapter ① as shown in the figure.

### NOTE:

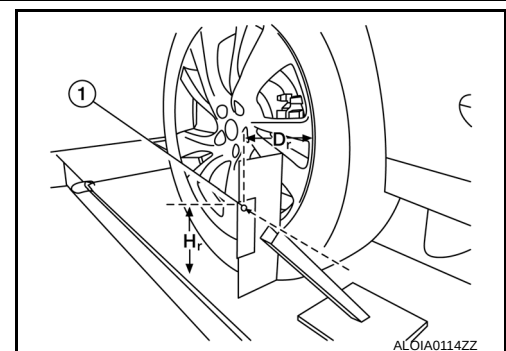
When the power switch is turned ON, the front laser signal ① will be emitted toward the front ICC target board, and the rear laser signal ② will be emitted toward the rear of the vehicle.

>> GO TO 3.



## 3.SETTING UP STATIONARY TARGET

- Place the stationary target next to the right rear tire as shown in the figure.



A

B

C

D

E

F

G

H

I

J

K

L

M

N

CCS

P

## < BASIC INSPECTION >

2. Turn the laser assembly ON allowing the laser beam to be emitted through the front and rear laser assembly openings.
3. Measure and record the distance ( $D_r$ ) between the edge of the right rear wheel and the laser beam (1) on the stationary target (horizontal line).
4. Measure and record the height ( $H_r$ ) between the laser beam ① on the stationary target and ground level (vertical line).
5. Measure and record the distance ( $D_f$ ) between the edge of the right front wheel and the laser beam signal/opening ① on the laser assembly (horizontal line).
6. Measure and record the height ( $H_f$ ) between the laser beam signal/opening ① on the laser assembly and ground level (vertical line).

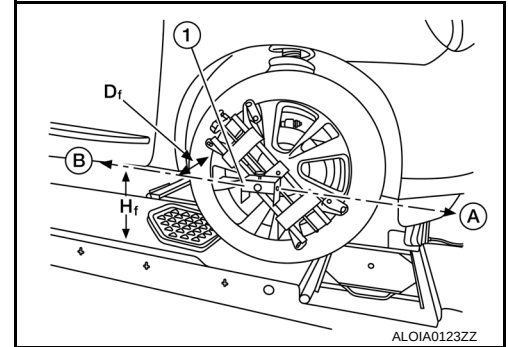
### NOTE:

- Horizontal adjustment [front distance ( $D_f$ ) and rear distance ( $D_r$ )] is accomplished by slowly turning the steering wheel until the 2 distances are the same.
- Vertical adjustment [front height ( $H_f$ ) and rear height ( $H_r$ )] is accomplished by rotating the laser assembly around its axis until the two heights are the same.
- Directional arrows ① and ② are shown to illustrate the direction of the laser assembly beams.

7. Adjust laser beam as necessary until the two distances match and the two heights match.

### NOTE:

Must be verify both horizontal and vertical adjustments anytime one adjustment is made.



>> Refer to [CCS-92, "TYPE 2 : Setting The ICC Target Board"](#).

## TYPE 2 : Setting The ICC Target Board

INFOID:0000000010249679

### DESCRIPTION

Accurate adjustment of the radar alignment requires that the ICC target board be accurately positioned.

### CAUTION:

If the radar alignment is adjusted with the ICC target board in the incorrect position, the ICC system will not function properly or the alignment procedure may not be completed successfully.

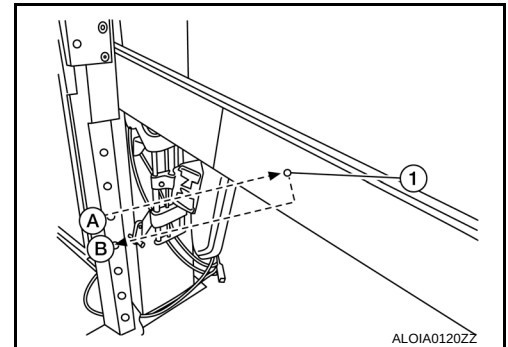
### 1. ICC TARGET BOARD FINAL SETTING

1. With the ICC target board arm extended, the laser beam ① emitted by the laser assembly ① will be reflected back ② toward the laser assembly.

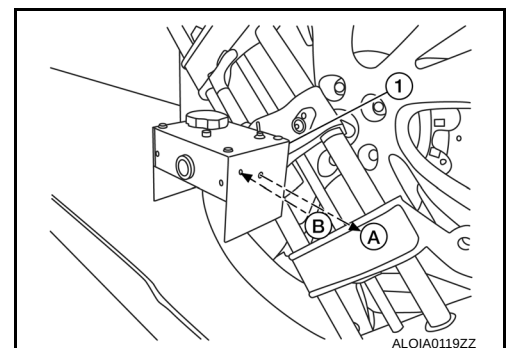
### NOTE:

When adjusted properly, reflected laser beam ② must align with emitted laser beam ① and the two laser beams will be seen as one.

2. Rotate the ICC target board to achieve the necessary horizontal adjustment.
3. Adjust the ICC target board leveling screws to achieve the necessary vertical adjustment.



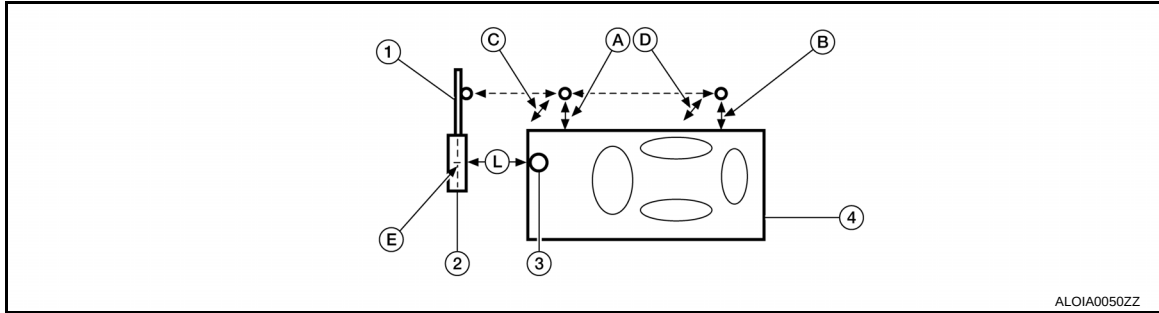
4. The figure shown illustrates the laser beam ① emitted by the laser assembly ① and its reflection ② off of the ICC target board arm.



>> GO TO 2.

## 2. CHECK THE POSITION OF THE ICC TARGET BOARD

Do not place anything other than the ICC target board in the space shown in front of the vehicle (view from top).



- |                                                         |                                                        |                                                        |
|---------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------|
| ① ICC target board arm                                  | ② ICC target board                                     | ③ ICC sensor                                           |
| ④ Vehicle                                               |                                                        |                                                        |
| Ⓐ Distance between front wheel and laser beam ( $D_f$ ) | Ⓑ Distance between rear wheel and laser beam ( $D_r$ ) | Ⓒ Height between front laser beam and ground ( $H_f$ ) |
| Ⓓ Height between rear laser beam and ground ( $H_r$ )   | Ⓔ ICC target board center position                     | Ⓕ 1010 - 1110 mm (39.76 - 43.7 in)                     |

>> Refer to [CCS-93, "TYPE 2 : ICC Sensor Adjustment"](#).

## TYPE 2 : ICC Sensor Adjustment

INFOID:000000010249680

### DESCRIPTION

The radar alignment is performed automatically with CONSULT.

#### CAUTION:

**Perform all necessary work for radar alignment until the adjustment completes as shown in the procedure. If the procedure does not complete, the ICC system is inoperable.**

### 1. PERFORM RADAR ALIGNMENT

1. Start the engine.
2. Connect CONSULT and select "Work support" of "LASER/RADAR".
3. Select "MILLIWAVE RADAR ADJUST" after the "Work support" screen is displayed.

#### NOTE:

Confirm the following items;

- The target should be accurately placed.
- The vehicle should be stopped.

4. Select "Start" after the "MILLIWAVE RADAR ADJUST" screen is displayed.

#### CAUTION:

**Never select "Start" when the target is not accurately placed.**

5. Select "Start" after the preparation information is displayed.
6. Select "Next" after the "Starting alignment." screen is displayed.

#### NOTE:

If the radar is in alignment at this time, "Alignment in progress" is displayed. It may take several 10s of seconds until the result is displayed.

7. Confirm the displayed item.
  - "Alignment completed.": Go to 8.
  - Except "Alignment completed.": Perform the following services.

# ICC SENSOR ALIGNMENT

< BASIC INSPECTION >

[ICC]

| Displayed item                                           | Possible cause                                                                                                                                                                                                                                | Service procedure                                                   |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Alignment condition is not ready.                        | <ul style="list-style-type: none"> <li>DTC is detected (Except C1A12).</li> <li>The position of the ICC target board is not correct.</li> <li>Vehicle is moving.</li> </ul>                                                                   | Check the vehicle condition and perform radar alignment again.      |
| Alignment condition is not ready.<br>(Stop the vehicle.) | Vehicle is moving.                                                                                                                                                                                                                            | Stop the vehicle and perform radar alignment again.                 |
| Target is not detected.                                  | <ul style="list-style-type: none"> <li>A target is not-yet-placed.<br/>(The ICC sensor cannot detect target)</li> <li>The position of the ICC target board is not correct.</li> <li>The position of the ICC sensor is not correct.</li> </ul> | Check the target board condition and perform radar alignment again. |
| Sensor malfunction.                                      | ICC sensor malfunction.                                                                                                                                                                                                                       | Check the vehicle condition and perform radar alignment again.      |

**NOTE:**

Replace ICC sensor if "Sensor malfunction." is repeatedly indicated.

8. Confirm displayed value.

| Displayed item       | Monitor item     | Reference value    |
|----------------------|------------------|--------------------|
| Alignment completed. | FACTORY AIM L/R  | Less than 3.00 deg |
|                      | FACTORY AIM U/D  | Less than 3.00 deg |
|                      | AIMING VALUE L/R | Less than 3.00 deg |
|                      | AIMING VALUE U/D | Less than 3.00 deg |

- Within reference value: Go to 9.

- Outside of reference value: Check the target board condition and perform radar alignment again.

**NOTE:**

- Check the condition of the ICC sensor installation.
- Check the vehicle for damage.
- Replace ICC sensor if it is outside the reference value, even when ICC sensor installation is installed normally and the vehicle is not damaged.

9. Select "OK" after the "No error detected." is displayed.

10. Select "OK" after the "End of alignment." is displayed.

**CAUTION:**

Once "MILLIWAVE RADAR ADJUST" is started with CONSULT, always continue the work until the horizontal radar alignment is completed successfully. If the job is stopped midway, the radar alignment is not adjusted and the ICC system cannot operate.

>> RADAR ALIGNMENT END

## Description

INFOID:0000000009644238

**CAUTION:**

- Always drive safely when performing the action test.
- Turn the DCA system to OFF when performing the action test.

## Work Procedure (Vehicle-To-Vehicle Distance Control Mode)

INFOID:0000000009644239

**NOTE:**

- When there is no vehicle ahead, drive at the set speed steadily.
- When there is a vehicle ahead, control to maintain distance from the vehicle ahead, watching its speed.
- The running speed can be set between 32 km/h (20 MPH) and 144 km/h (90 MPH).

**CAUTION:**

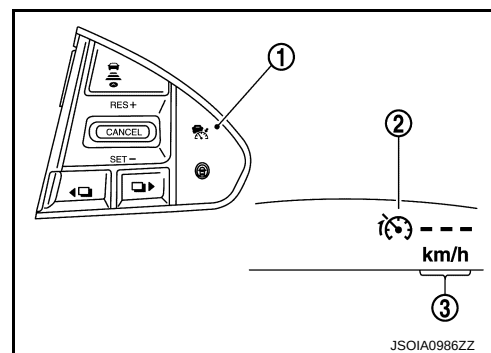
**Never set the cruise speed exceeding the posted speed limit.**

## 1.CHECK FOR MAIN SWITCH

1. Start the engine.
2. Press the MAIN switch ① (less than 1.5 seconds).

Information display status

|                               |   |                           |
|-------------------------------|---|---------------------------|
| MAIN switch indicator ②       | : | ON                        |
| Set distance indicator ③      | : | Long mode                 |
| Set vehicle speed indicator ④ | : | “— — —”<br>“km/h” (“MPH”) |



3. Check the ICC system display on the information display to check that the vehicle-to-vehicle distance control mode is ready for activation.
4. Press the MAIN switch, and check that the ICC system display on the information display turns OFF when the ICC system is deactivated.
5. Check that the ICC system display on the information display turns OFF after starting the engine again.

>> GO TO 2.

## 2.CHECK FOR DISTANCE SWITCH

1. Start the engine.
2. Press the MAIN switch (less than 1.5 seconds).
3. Press the DISTANCE switch.

## ACTION TEST

< BASIC INSPECTION >

[ICC]

4. Check that the set distance indicator changes display in order of: (Long)→(Middle)→(Short).

| Distance | Display                                                                                           | Approximate distance at 100 km/h (60 MPH) [m (ft)] |
|----------|---------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Long     |  <b>100 km/h</b> | 60 (200)                                           |
| Middle   |  <b>100 km/h</b> | 45 (150)                                           |
| Short    |  <b>100 km/h</b> | 30 (90)                                            |

JSOIA1051GB

**NOTE:**

When the MAIN switch is turned ON, initial setting set to (Long).

>> GO TO 3.

### 3.CHECK FOR RESUME/ACCELERATE, SET/COAST, AND CANCEL SWITCHES

1. Check that RESUME/ACCELERATE, SET/COAST, CANCEL switches are operated smoothly.
2. Check that switches come up as hand is released from the switches.

>> GO TO 4.

### 4.SET CHECKING (1)

1. Start the engine.
2. Press the MAIN switch (less than 1.5 seconds) and turn the vehicle-to-vehicle distance control mode ON.
3. Drive the vehicle at 32 km/h (20 MPH) or more.
4. Push down the SET/COAST switch.
5. Check that the desired speed is set and vehicle-to-vehicle distance control mode control starts when releasing SET/COAST switch.

**NOTE:**

The set vehicle speed is indicated on the set vehicle speed indicator in the ICC system display on the information display.

>> GO TO 5.

### 5.CHECK FOR INCREASE OF CRUISING SPEED (1)

1. Set the vehicle-to-vehicle distance control mode at desired speed.
2. Check that the set speed increases by 1 km/h (1 MPH) as RESUME/ACCELERATE switch is pushed up.

**NOTE:**

The maximum set speed of the vehicle-to-vehicle distance control mode is 144 km/h (90 MPH).

**CAUTION:**

**Never set the cruise speed exceeding the posted speed limit.**

>> GO TO 6.

### 6.CHECK FOR DECREASE OF CRUISING SPEED (1)

1. Set the vehicle-to-vehicle distance control mode at desired speed.
2. Check that the set speed decreases by 1 km/h (1 MPH) as SET/COAST switch is pushed down.

**NOTE:**

- The minimum set speed is approximately 32 km/h (20 MPH).

# ACTION TEST

## < BASIC INSPECTION >

[ICC]

- Cancel the control automatically when the vehicle speed is less than approximately 24 km/h (15 MPH) and when the system does not detect any vehicle ahead.

>> GO TO 7.

## 7.SET CHECKING (2)

1. Stop the vehicle.
2. Drive the vehicle at less than approximately 32 km/h (20 MPH).
3. Push down the SET/COAST switch when the system detects a vehicle ahead.
4. Check that the vehicle-to-vehicle distance control mode is performed so that the vehicle maintains a proper distance according to the vehicle speed [maximum: approximately 32 km/h (20 MPH)] when releasing SET/COAST switch.

### NOTE:

- The vehicle-to-vehicle distance control mode cannot be set when the vehicle speed is less than 32 km/h (20 MPH) and when a vehicle ahead is not detected.
- Cancel the control automatically when the vehicle speed is 24 km/h (15 MPH) or less during the control and when the system does not detect any vehicle ahead.
- The set vehicle speed indicator in the ICC system display on the information display is set to 32 km/h (20 MPH).

>> GO TO 8.

## 8.CHECK FOR INCREASE OF CRUISING SPEED (2)

1. Set the vehicle-to-vehicle distance control mode when the vehicle speed is less than approximately 32 km/h (20 MPH) and when a vehicle ahead is detected.
2. Check that the set speed increases by 1 km/h (1 MPH) as RESUME/ACCELERATE switch is pushed up.

### NOTE:

The maximum set speed of the vehicle-to-vehicle distance control mode is 144 km/h (90 MPH).

### CAUTION:

**Never set the cruise speed exceeding the posted speed limit.**

>> GO TO 9.

## 9.CHECK FOR DECREASE OF CRUISING SPEED INSPECTION (2)

1. Set the vehicle-to-vehicle distance control mode when the vehicle speed is less than approximately 32 km/h (20 MPH) and when a vehicle ahead is detected.
2. Set the set vehicle speed to the desired vehicle speed according to "check for increase of cruising speed".
3. Check that the set speed decreases by 1 km/h (1 MPH) as SET/COAST switch is pushed down.

### NOTE:

- The minimum the set speed is approximately 32 km/h (20 MPH).
- If the vehicle ahead comes to a stop, the vehicle decelerates to a standstill within the limitations of the system. The system will cancel once it judges a standstill with a warning chime.

### CAUTION:

**The creep occurs because the stop status is not maintained.**

>> GO TO 10.

## 10.CHECK FOR CANCELLATION OF VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE

Check that the vehicle-to-vehicle distance control mode is canceled when performing the following operations.

- When the brake pedal is depressed after vehicle-to-vehicle distance control mode is set and the vehicle is driven.
- When the selector lever is in the "N" position after vehicle-to-vehicle distance control mode is set and the vehicle is driven.
- When the MAIN switch is turned OFF after vehicle-to-vehicle distance control mode is set and the vehicle is driven.
- When the CANCEL switch is pressed after vehicle-to-vehicle distance control mode is set and the vehicle is driven.

>> GO TO 11.

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## 11.CHECK FOR RESTORING SPEED THAT IS SET BY VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE BEFORE CANCELLATION

Check that the vehicle restores the previous speed kept before the system deactivation when performing the following operations.

- Drive the vehicle when the vehicle-to-vehicle distance control mode is set and depress the brake pedal to cancel the control. Check that the vehicle restores the previous vehicle speed kept before the system deactivation when pushing up the RESUME/ACCELERATE switch.
- Drive the vehicle when the vehicle-to-vehicle distance control mode is set and shift the selector lever to the "N" position to cancel the control. Check that the vehicle restores the previous vehicle speed kept before the system deactivation when shifting the selector lever to the "D" position and pushing up the RESUME/ACCELERATE switch.
- Drive the vehicle when the vehicle-to-vehicle distance control mode is set and press the CANCEL switch to cancel the control. Check that the vehicle restores the previous vehicle speed kept before the system deactivation when pushing up the RESUME/ACCELERATE switch.

>> INSPECTION END

## Work Procedure [Conventional (Fixed Speed) Cruise Control Mode]

INFOID:0000000009644240

### NOTE:

The running speed can be set between 40 km/h (25 MPH) and 144 km/h (90 MPH)

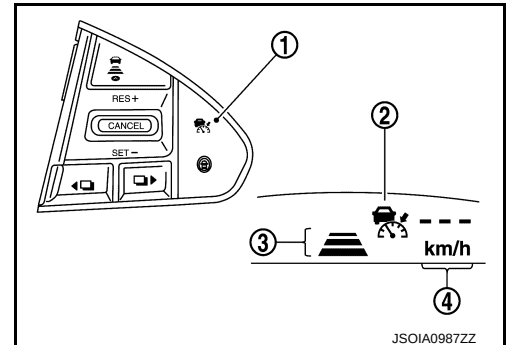
### CAUTION:

**Never set the cruise speed exceeding the posted speed limit.**

## 1.CHECK FOR MAIN SWITCH

1. Start the engine.
2. Press the MAIN switch ① (1.5 seconds or more).

|                               |   |                |
|-------------------------------|---|----------------|
| Information display status    | : | ON             |
| MAIN switch indicator ②       | : | " _ _ _ "      |
| Set vehicle speed indicator ③ | : | "km/h" ("MPH") |



3. Check that the ICC system display on the information display turns on and the display is ready for activation.
4. Press the MAIN switch, and check that the ICC system display on the information display turns OFF when the ICC system is deactivated.
5. Check that the ICC system display on the information display turns OFF after starting the engine again.

>> GO TO 2.

## 2.CHECK FOR RESUME/ACCELERATE, SET/COAST, AND CANCEL SWITCHES

1. Check that RESUME/ACCELERATE, SET/COAST, CANCEL switches are operated smoothly.
2. Check that switches come up as hand is released from the switches.

>> GO TO 3.

## 3.SET CHECKING

1. Start the engine.
2. Press the MAIN switch (1.5 seconds or more) and turn the conventional (fixed speed) cruise control mode to ON.
3. Drive the vehicle at 40 km/h (25 MPH) or more.
4. Push down the SET/COAST switch.

## ACTION TEST

### < BASIC INSPECTION >

[ICC]

5. Check that the desired speed is set and conventional (fixed speed) cruise control mode control starts when releasing SET/COAST switch.

**NOTE:**

- The set vehicle speed is not displayed in the ICC system display on the information display.
- Display the set status in the ICC system display on the information display.

>> GO TO 4.

### 4.CHECK FOR INCREASE OF CRUISING SPEED

1. Set the vehicle speed to any desired speed, and drive the vehicle.
2. Check that the set speed increases by 1.6 km/h (1 MPH) as RESUME/ACCELERATE switch is pushed up.

**NOTE:**

- The maximum set speed is 144 km/h (90 MPH).
- The set vehicle speed increases while pushing up the RESUME/ACCELERATE switch.

**CAUTION:**

**Never set the cruise speed exceeding the posted speed limit.**

>> GO TO 5.

### 5.CHECK FOR DECREASE OF CRUISING SPEED

1. Set the vehicle speed to any desired speed, and drive the vehicle.
2. Check that the set speed decreases by 1.6 km/h (1 MPH) as SET/COAST switch is pushed down.

**NOTE:**

- The minimum set speed is 40 km/h (25 MPH).
- The set vehicle speed decreases while pressing down the SET/COAST switch.

>> GO TO 6.

### 6.CHECK FOR CANCELLATION OF CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE

Check that the conventional (fixed speed) cruise control mode is canceled when performing the following operations.

- When the brake pedal is depressed after the conventional (fixed speed) cruise control mode is set and the vehicle is driven.
- When the selector lever is in the "N" position after the conventional (fixed speed) cruise control mode is set and the vehicle is driven.
- When the MAIN switch is turned OFF after the conventional (fixed speed) cruise control mode is set and the vehicle is driven.
- When the CANCEL switch is pressed after the conventional (fixed speed) cruise control mode is set and the vehicle is driven.

>> GO TO 7.

### 7.CHECK FOR RESTORING SPEED THAT IS SET BY CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE BEFORE CANCELLATION

Check that the vehicle restores the previous speed kept before the system deactivation when performing the following operations.

- Drive the vehicle when the conventional (fixed speed) cruise control mode is set and depress the brake pedal to cancel the control. Check that the vehicle restores the previous vehicle speed kept before the system deactivation when pushing up the RESUME/ACCELERATE switch at the vehicle speed approximately 40 km/h (25 MPH) or more.
- Drive the vehicle when the conventional (fixed speed) cruise control mode is set and shift the selector lever is in the "N" position to cancel the control. Check that the vehicle restores the previous vehicle speed kept before the system deactivation when shifting the selector lever is in the "D" position and pushing up the RESUME/ACCELERATE switch at the vehicle speed of approximately 40 km/h (25 MPH) or more.
- Drive the vehicle when the conventional (fixed speed) cruise control mode is set and press the CANCEL switch to cancel the control. Check that the vehicle restores the previous vehicle speed kept before the system deactivation when pushing up the RESUME/ACCELERATE switch at the vehicle speed of approximately 40 km/h (25 MPH) or more.

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## ACTION TEST

< BASIC INSPECTION >

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[ICC]

>> INSPECTION END

## DTC/CIRCUIT DIAGNOSIS

### C1A00 CONTROL UNIT

#### DTC Logic

INFOID:000000009644241

#### DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name                     | DTC detecting condition         |
|-------|--------------------------------------------|---------------------------------|
| C1A00 | CONTROL UNIT<br>(Control unit malfunction) | ICC sensor internal malfunction |

#### POSSIBLE CAUSE

ICC sensor

#### FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

#### DTC CONFIRMATION PROCEDURE

##### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1A00" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1A00" detected as the current malfunction?

- YES >> Refer to [CCS-101, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

#### Diagnosis Procedure

INFOID:000000009644242

##### 1.CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "LASER/RADAR".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-63, "DTC Index"](#).
- NO >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).

# C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

## C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

### DTC Logic

INFOID:000000009644243

#### DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name                         | DTC detecting condition                                                       |
|-------|------------------------------------------------|-------------------------------------------------------------------------------|
| C1A01 | POWER SUPPLY CIR<br>(Power supply circuit)     | The battery voltage sent to ICC sensor remains less than 7.9 V for 5 seconds  |
| C1A02 | POWER SUPPLY CIR 2<br>(Power supply circuit 2) | The battery voltage sent to ICC sensor remains more than 19.3 V for 5 seconds |

#### POSSIBLE CAUSE

- Connector, harness, fuse
- ICC sensor

#### FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

#### DTC CONFIRMATION PROCEDURE

##### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A01" or "C1A02" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1A01" or "C1A02" detected as the current malfunction?

YES >> Refer to [CCS-102, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000009644244

##### 1.CHECK ICC SENSOR POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ICC sensor. Refer to [CCS-118, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).

NO >> Repair or replace the malfunctioning parts.

# C1A12 RADAR OFF-CENTER

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

## C1A12 RADAR OFF-CENTER

### DTC Logic

INFOID:000000009644245

### DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name                 | DTC detecting condition                     |
|-------|----------------------------------------|---------------------------------------------|
| C1A12 | RADAR OFF-CENTER<br>(Radar off-center) | Radar of ICC sensor is off the aiming point |

### POSSIBLE CAUSE

Radar is off the aiming point

### FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A12" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1A12" detected as the current malfunction?

YES >> Refer to [CCS-103, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000009644246

#### 1.ADJUST RADAR AIMING

1. Adjust the radar beam aiming with CONSULT. Refer to [CCS-83, "TYPE 1 : Description"](#).
2. Perform "All DTC Reading".
3. Check if the "C1A12" is detected in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1A12" detected?

YES >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).

NO >> INSPECTION END

CCS

# C1A16 RADAR BLOCKED

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

## C1A16 RADAR BLOCKED

### DTC Logic

INFOID:000000009644247

### DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name           | DTC detecting condition                                                |
|-------|----------------------------------|------------------------------------------------------------------------|
| C1A16 | RADAR BLOCKED<br>(Radar blocked) | Inclusion of dirt or stains on the ICC sensor area of the front bumper |

#### NOTE:

DTC "C1A16" may be detected under the following conditions. (Explain to the customer about the difference between the contamination detection function and the indication when the malfunction is detected and tell them "This is not malfunction".)

- When contamination or foreign materials adhere to the ICC sensor area of the front bumper
- When driving while it is snowing or when frost forms on the ICC sensor area of the front bumper
- When ICC sensor area of the front bumper is temporarily fogged

#### POSSIBLE CAUSE

- Stain or foreign materials is deposited
- Cracks or scratches exist

#### FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A16" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1A16" detected as the current malfunction?

- YES >> Refer to [CCS-104, "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000009644248

#### 1.VISUAL CHECK 1

Check the contamination and foreign matter on the ICC sensor area of the front bumper.

Does contamination or foreign materials adhere?

- YES >> Wipe out the contamination and foreign matter on the ICC sensor area of the front bumper.  
NO >> GO TO 2.

#### 2.VISUAL CHECK 2

1. Remove the front bumper.Refer to [EXT-14, "Removal and Installation"](#).
2. Check ICC sensor for contamination and foreign matter.

Does contamination or foreign matter adhere?

- YES >> Wipe out the contamination and foreign matter from the ICC sensor.  
NO >> GO TO 3.

#### 3.VISUAL CHECK 3

Check ICC sensor for cracks and scratches.

## C1A16 RADAR BLOCKED

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

### Is it found?

- YES >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).  
NO >> GO TO 4.

### **4.**INTERVIEW

1. Ask if there is any trace of contamination or foreign materials adhering to the ICC sensor area of the front bumper.
2. Ask if ICC sensor area of the front bumper was frosted during driving or if vehicle was driven in snow.
3. Ask if ICC sensor area of the front bumper was temporarily fogged. (Windshield glass may also tend to fog, etc.)

### Is any of above conditions seen?

- YES >> Explain to the customer about the difference between the contamination detection function and the indication when the malfunction is detected and tell them "This is not malfunction".  
NO >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).

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## C1A21 UNIT HIGH TEMP

### DTC Logic

INFOID:000000009644251

### DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name                    | DTC detecting condition                                                                                                         |
|-------|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| C1A21 | UNIT HIGH TEMP<br>(Unit high temperature) | Temperature detected by the temperature sensor integrated in ICC sensor remains more than 105 °C (221 °F) for 5 seconds or more |

### POSSIBLE CAUSE

Temperature around the ICC sensor becomes extremely low or high

### FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch OFF.
2. Wait for 10 minutes or more.
3. Start the engine.
4. Turn the MAIN switch of ICC system ON.
5. Perform "All DTC Reading" with CONSULT.
6. Check if the "C1A21" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1A21" detected as the current malfunction?

- YES >> Refer to [CCS-106, "Diagnosis Procedure"](#).  
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).  
 NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000009644252

#### 1.CHECK ENGINE COOLING SYSTEM

Check for any malfunctions in engine cooling system.

Is engine cooling system normal?

- YES >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).  
 NO >> Repair engine cooling system.

## C1A23 UNIT LOW TEMP

## DTC Logic

INFOID:000000009731493

## DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name                  | DTC detecting condition                                                                                                         |
|-------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| C1A23 | UNIT LOW TEMP<br>(Unit low temperature) | Temperature detected by the temperature sensor integrated in ICC sensor remains less than -45 °C (-49 °F) for 5 seconds or more |

## POSSIBLE CAUSE

Temperature around the ICC sensor becomes extremely low or high

## FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

## DTC CONFIRMATION PROCEDURE

**1.**PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch OFF.
2. Wait for 10 minutes or more.
3. Start the engine.
4. Turn the MAIN switch of ICC system ON.
5. Perform "All DTC Reading" with CONSULT.
6. Check if the "C1A23" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1A23" detected as the current malfunction?

- YES >> Refer to [CCS-107, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:000000009731494

**1.**CHECK ENVIRONMENT CONDITION

Check ambient temperature.

Is ambient temperature 0°C (32°F) or more?

- YES >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).
- NO >> Perform check again at 0°C (32°F) or more.

# C1A39 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

## C1A39 STEERING ANGLE SENSOR

### DTC Logic

INFOID:000000009644253

#### DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name                          | DTC detecting condition                     |
|-------|-------------------------------------------------|---------------------------------------------|
| C1A39 | STRG SEN CIR<br>(Steering angle sensor circuit) | If the steering angle sensor is malfunction |

#### POSSIBLE CAUSE

Steering angle sensor

#### FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

#### DTC CONFIRMATION PROCEDURE

##### 1.CHECK DTC PRIORITY

If DTC "C1A39" is displayed with DTC "U1000", first diagnose the DTC "U1000".

##### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-128, "DTC Logic"](#).  
NO >> GO TO 2.

##### 2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A39" is detected as the current malfunction in self-diagnosis results of "LASER/RADAR".

##### Is "C1A39" detected as the current malfunction?

- YES >> Refer to [CCS-108, "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: INSPECTION END

#### Diagnosis Procedure

INFOID:000000009644254

##### 1.CHECK DTC PRIORITY

If DTC "C1A39" is displayed with DTC "U1000", first diagnose the DTC "U1000".

##### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-128, "DTC Logic"](#).  
NO >> GO TO 2.

##### 2.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

##### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-58, "DTC Index"](#).  
NO >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).

## C1A50 ADAS CONTROL UNIT

### DTC Logic

INFOID:000000009644255

### DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name                              | DTC detecting condition                |
|-------|-----------------------------------------------------|----------------------------------------|
| C1A50 | ADAS MALFUNCTION<br>(ADAS control unit malfunction) | If ADAS control unit is malfunctioning |

### POSSIBLE CAUSE

ADAS control unit

### FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

### DTC CONFIRMATION PROCEDURE

#### 1.CHECK DTC PRIORITY

If DTC "C1A50" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-116, "DTC Logic"](#).  
NO >> GO TO 2.

#### 2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A50" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1A50" detected as the current malfunction?

- YES >> Refer to [CCS-109, "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000009644256

#### 1.CHECK DTC PRIORITY

If DTC "C1A50" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-116, "DTC Logic"](#).  
NO >> GO TO 2.

#### 2.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-58, "DTC Index"](#).  
NO >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).

## U0104 ADAS CAN 1

### DTC Logic

INFOID:000000009644257

### DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name                              | DTC detecting condition                                                                             |
|-------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| U0104 | ADAS CAN CIR 1<br>(ADAS control unit CAN circuit 1) | If ICC sensor detects an error signal that is received from ADAS control unit via ITS communication |

### POSSIBLE CAUSE

ADAS control unit

### FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

### DTC CONFIRMATION PROCEDURE

#### 1.CHECK DTC PRIORITY

If DTC "U0104" is displayed with DTC "U1000", first diagnose the DTC "U1000".

#### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-116, "DTC Logic"](#).  
 NO >> GO TO 2.

#### 2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0104" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

#### Is "U0104" detected as the current malfunction?

- YES >> Refer to [CCS-110, "Diagnosis Procedure"](#).  
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).  
 NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000009644258

#### 1.CHECK DTC PRIORITY

If DTC "U0104" is displayed with DTC "U1000", first diagnose the DTC "U1000".

#### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-116, "DTC Logic"](#).  
 NO >> GO TO 2.

#### 2.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

#### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-58, "DTC Index"](#).  
 NO >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).

## U0121 VDC CAN 2

### DTC Logic

INFOID:000000009644259

### DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name             | DTC detecting condition                                                                                                         |
|-------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| U0121 | VDC CAN CIR2<br>(VDC CAN circuit2) | If ICC sensor detects an error signal that is received from ABS actuator and electric unit (control unit) via ADAS control unit |

### POSSIBLE CAUSE

ABS actuator and electric unit (control unit)

### FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

### DTC CONFIRMATION PROCEDURE

#### 1.CHECK DTC PRIORITY

If DTC "U0121" is displayed with DTC "U1000", first diagnose the DTC "U1000".

#### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-116. "DTC Logic"](#).  
NO >> GO TO 2.

#### 2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0121" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

#### Is "U0121" detected as the current malfunction?

- YES >> Refer to [CCS-111. "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-43. "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000009644260

#### 1.CHECK DTC PRIORITY

If DTC "U0121" is displayed with DTC "U1000", first diagnose the DTC "U1000".

#### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-116. "DTC Logic"](#).  
NO >> GO TO 2.

#### 2.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

#### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-58. "DTC Index"](#).  
NO >> Replace the ICC sensor. Refer to [CCS-135. "Removal and Installation"](#).

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## U0126 STRG SEN CAN 1

## DTC Logic

INFOID:000000009644261

## DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name                                    | DTC detecting condition                                                                                 |
|-------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| U0126 | STRG SEN CAN CIR1<br>(Steering angle sensor CAN circuit1) | If ICC sensor detects an error signal that is received from steering angle sensor via ADAS control unit |

## POSSIBLE CAUSE

Steering angle sensor error

## FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

## DTC CONFIRMATION PROCEDURE

## 1.CHECK DTC PRIORITY

If DTC "U0126" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?YES >> Perform diagnosis of applicable. Refer to [CCS-116, "DTC Logic"](#).

NO &gt;&gt; GO TO 2.

## 2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0126" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "U0126" detected as the current malfunction?YES >> Refer to [CCS-112, "Diagnosis Procedure"](#).NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).

NO-2 &gt;&gt; Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:000000009644262

## 1.CHECK DTC PRIORITY

If DTC "U0126" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?YES >> Perform diagnosis of applicable. Refer to [CCS-116, "DTC Logic"](#).

NO &gt;&gt; GO TO 2.

## 2.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-58, "DTC Index"](#).NO >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).

## U0405 ADAS CAN 2

## DTC Logic

INFOID:000000009644263

## DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name                              | DTC detecting condition                                                                             |
|-------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| U0405 | ADAS CAN CIR 2<br>(ADAS control unit CAN circuit 2) | If ICC sensor detects an error signal that is received from ADAS control unit via ITS communication |

## POSSIBLE CAUSE

ADAS control unit

## FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

## DTC CONFIRMATION PROCEDURE

**1.**CHECK DTC PRIORITY

If DTC "U0405" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-116, "DTC Logic"](#).  
 NO >> GO TO 2.

**2.**PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0405" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "U0405" detected as the current malfunction?

- YES >> Refer to [CCS-113, "Diagnosis Procedure"](#).  
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).  
 NO-2 >> Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:000000009644264

**1.**CHECK DTC PRIORITY

If DTC "U0405" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-116, "DTC Logic"](#).  
 NO >> GO TO 2.

**2.**CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-58, "DTC Index"](#).  
 NO >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).

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## U0415 VDC CAN 1

## DTC Logic

INFOID:000000009644265

## DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name             | DTC detecting condition                                                                                                         |
|-------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| U0415 | VDC CAN CIR1<br>(VDC CAN circuit1) | If ICC sensor detects an error signal that is received from ABS actuator and electric unit (control unit) via ADAS control unit |

## POSSIBLE CAUSE

ABS actuator and electric unit (control unit)

## FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

## DTC CONFIRMATION PROCEDURE

**1.**CHECK DTC PRIORITY

If DTC "U0415" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-116, "DTC Logic"](#).  
 NO >> GO TO 2.

**2.**PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0415" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "U0415" detected as the current malfunction?

- YES >> Refer to [CCS-114, "Diagnosis Procedure"](#).  
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).  
 NO-2 >> Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:000000009644266

**1.**CHECK DTC PRIORITY

If DTC "U0415" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-116, "DTC Logic"](#).  
 NO >> GO TO 2.

**2.**CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-58, "DTC Index"](#).  
 NO >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).

## U0428 STRG SEN CAN 2

## DTC Logic

INFOID:000000009644267

## DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name                                    | DTC detecting condition                                                                                 |
|-------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| U0428 | STRG SEN CAN CIR2<br>(Steering angle sensor CAN circuit2) | If ICC sensor detects an error signal that is received from steering angle sensor via ADAS control unit |

## POSSIBLE CAUSE

Steering angle sensor

## FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

## DTC CONFIRMATION PROCEDURE

## 1.CHECK DTC PRIORITY

If DTC "U0428" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-116, "DTC Logic"](#).  
 NO >> GO TO 2.

## 2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0428" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "U0428" detected as the current malfunction?

- YES >> Refer to [CCS-115, "Diagnosis Procedure"](#).  
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).  
 NO-2 >> Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:000000009644268

## 1.CHECK DTC PRIORITY

If DTC "U0428" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-116, "DTC Logic"](#).  
 NO >> GO TO 2.

## 2.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-58, "DTC Index"](#).  
 NO >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).

## U1000 CAN COMM CIRCUIT

## Description

INFOID:000000009644269

## ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

## DTC Logic

INFOID:000000009644270

## DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name                          | DTC detecting condition                                                                       |
|-------|-------------------------------------------------|-----------------------------------------------------------------------------------------------|
| U1000 | CAN COMM CIRCUIT<br>(CAN communication circuit) | If ICC sensor is not transmitting or receiving ITS communication signal for 2 seconds or more |

## POSSIBLE CAUSE

ITS communication system

## FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

## DTC CONFIRMATION PROCEDURE

## 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected as the current malfunction?

- YES >> Refer to [CCS-116, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:000000009644271

## 1.PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the MAIN switch of ICC system ON, and then wait for 2 seconds or more.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "U1000" detected as the current malfunction?

- YES >> Refer to [LAN-26, "Trouble Diagnosis Flow Chart"](#).
- NO >> INSPECTION END

# U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

## U1010 CONTROL UNIT (CAN)

### Description

INFOID:0000000009644272

CAN controller controls the communication of ITS communication signal and the error detection.

### DTC Logic

INFOID:0000000009644273

### DTC DETECTION LOGIC

| DTC   | Trouble diagnosis name                     | DTC detecting condition                                               |
|-------|--------------------------------------------|-----------------------------------------------------------------------|
| U1010 | CONTROL UNIT (CAN)<br>[Control unit (CAN)] | If ICC sensor detects malfunction by CAN controller initial diagnosis |

### POSSIBLE CAUSE

ICC sensor

### FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected as the current malfunction?

YES >> Refer to [CCS-116, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-43, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:0000000009644274

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the MAIN switch of ICC system ON.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "U1010" detected as the current malfunction?

YES >> Replace the ICC sensor. Refer to [CCS-135, "Removal and Installation"](#).

NO >> INSPECTION END

CCS

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

## POWER SUPPLY AND GROUND CIRCUIT

### Diagnosis Procedure

INFOID:000000009644275

#### 1.CHECK FUSES

Check if any of the following fuses are blown:

| Signal name           | Fuse No. |
|-----------------------|----------|
| Ignition power supply | 54       |

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

#### 2.CHECK ICC SENSOR POWER SUPPLY CIRCUIT

Check voltage between ICC sensor harness connector and ground.

| Terminal   |          | Condition          | Voltage<br>(Approx.) |
|------------|----------|--------------------|----------------------|
| (+)        | (-)      |                    |                      |
| ICC sensor |          | Ignition<br>switch |                      |
| Connector  | Terminal |                    |                      |
| E80        | 1        | OFF                | 0 V                  |
|            |          | ON                 | Battery volt-<br>age |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the ICC sensor power supply circuit.

#### 3.CHECK ICC SENSOR GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the ICC sensor connector.
3. Check for continuity between ICC sensor harness connector and ground.

| ICC sensor |          | Ground | Continuity |
|------------|----------|--------|------------|
| Connector  | Terminal |        |            |
| E80        | 8        |        | Existed    |

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the ICC sensor ground circuit.

## SYMPTOM DIAGNOSIS

### INTELLIGENT CRUISE CONTROL SYSTEM SYMPTOMS

#### Symptom Table

INFOID:000000009644276

| Symptoms                           |                                                                      | Reference page                                                                                                                                                                                                             |
|------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operation                          | MAIN switch does not turn ON                                         | Refer to <a href="#">CCS-120, "Description"</a>                                                                                                                                                                            |
|                                    | MAIN switch does not turn OFF                                        |                                                                                                                                                                                                                            |
|                                    | ICC system cannot be set (MAIN switch turns ON/OFF)                  | Refer to <a href="#">CCS-121, "Description"</a>                                                                                                                                                                            |
|                                    | CANCEL switch does not function                                      | Refer to <a href="#">CCS-123, "Description"</a>                                                                                                                                                                            |
|                                    | Resume does not function                                             |                                                                                                                                                                                                                            |
|                                    | Set speed does not increase                                          |                                                                                                                                                                                                                            |
|                                    | Set distance to a vehicle ahead cannot be changed                    |                                                                                                                                                                                                                            |
|                                    | ICC is not canceled when the A/T selector lever is "N" position      | Refer to <a href="#">CCS-124, "Description"</a>                                                                                                                                                                            |
| Display/Chime                      | ICC system display not appear                                        | Refer to <a href="#">MWI-62, "On Board Diagnosis Function"</a>                                                                                                                                                             |
|                                    | Chime does not sound                                                 | Refer to <a href="#">CCS-125, "Description"</a>                                                                                                                                                                            |
| Control                            | Driving force is hunting                                             | Refer to <a href="#">CCS-127, "Description"</a>                                                                                                                                                                            |
| Function to detect a vehicle ahead | System frequently cannot detect a vehicle ahead                      | Refer to <a href="#">CCS-128, "Description"</a>                                                                                                                                                                            |
|                                    | Distance to detect a vehicle ahead is short                          |                                                                                                                                                                                                                            |
|                                    | System misidentifies a vehicle even though there is no vehicle ahead | <ul style="list-style-type: none"> <li>Perform radar alignment: Refer to <a href="#">CCS-83, "TYPE 1 : Description"</a></li> <li>Perform ICC system action test. Refer to <a href="#">CCS-95, "Description"</a></li> </ul> |
|                                    | System misidentifies a vehicle in the next lane                      |                                                                                                                                                                                                                            |
|                                    | System does not detect a vehicle at all                              | Refer to <a href="#">CCS-130, "Description"</a>                                                                                                                                                                            |

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# MAIN SWITCH DOES NOT TURN ON, MAIN SWITCH DOES NOT TURN OFF

< SYMPTOM DIAGNOSIS >

[ICC]

## MAIN SWITCH DOES NOT TURN ON, MAIN SWITCH DOES NOT TURN OFF

### Description

INFOID:000000009644277

MAIN switch does not turn ON

- ICC system display does not appear even when MAIN switch is pressed.

MAIN switch does not turn OFF

- When ICC system display is ON, display does not turn OFF even if MAIN switch is pressed.

#### NOTE:

When ICC system warning illuminates, perform the self-diagnosis of ICC system, and then repair or replace the malfunctioning parts.

### Diagnosis Procedure

INFOID:000000009644278

#### 1.MAIN SWITCH INSPECTION

1. Start the engine.
2. Check that "MAIN SW" and "CRUISE LAMP" operate normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT.

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 4.

#### 2.CHECK COMBINATION METER

Check that "CRUISE IND" operates normally in "DATA MONITOR" of "METER/M&A".

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

#### 3.PERFORM SELF-DIAGNOSIS OF COMBINATION METER

1. Perform "Self Diagnostic Result" of "METER/M&A".
2. Check if DTC is detected. Refer to [MWI-80, "DTC Index"](#).

Is any DTC detected?

YES >> Repair or replace malfunctioning parts.

NO >> GO TO 4.

#### 4.PERFORM SELF-DIAGNOSIS RESULTS OF ICC SYSTEM

1. Perform "All DTC Reading".
2. Check if the "U1000" is detected in self-diagnosis results of "ICC/ADAS".

Is "U1000" detected?

YES >> GO TO 5.

NO >> GO TO 6.

#### 5.CAN COMMUNICATIONS INSPECTION

Check the CAN communication and repair or replace malfunctioning parts. Refer to [CCS-116, "DTC Logic"](#).

>> INSPECTION END

#### 6.CHECK ICC STEERING SWITCH

Check the ICC steering switch. Refer to [DAS-80, "Diagnosis Procedure"](#).

>> INSPECTION END

# ICC SYSTEM CANNOT BE SET (MAIN SWITCH TURNS ON/OFF)

< SYMPTOM DIAGNOSIS >

[ICC]

## ICC SYSTEM CANNOT BE SET (MAIN SWITCH TURNS ON/OFF)

### Description

INFOID:000000009644279

The MAIN switch can be turned ON/OFF, but the ICC system cannot be set even if the SET/COAST switch is pressed.

#### NOTE:

The system cannot be set in the following case.

- When the vehicle ahead is not detected below the speed of 32 km/h (20 MPH).
- When the selector lever is not in the "D" position or manual mode.
- When the brake pedal is depressed.
- When the VDC is turned OFF.
- When ABS or VDC (including the TCS) operates.
- When a wheel slips.
- When ABS warning lamp is ON.
- When drive mode select switch is in SNOW position.
- When the radar is temporarily interrupted.

### Diagnosis Procedure

INFOID:000000009644280

#### 1.CHECK CAUSE OF AUTOMATIC CANCELLATION

Check if there is the cancellation cause in the "CAUSE OF AUTO-CANCEL" on "WORK SUPPORT" of "ICC/ADAS" with CONSULT.

##### Is it displayed?

Not displayed>>GO TO 2.

"OPE SW VOLT CIRC">>Refer to [DAS-80, "DTC Logic"](#).

"VHCL SPD UNMATCH">>Refer to [DAS-72, "DTC Logic"](#).

"IGN LOW VOLT">>Refer to [CCS-102, "DTC Logic"](#).

"ECM CIRCUIT">>Refer to [DAS-89, "DTC Logic"](#).

"CAN COMM ERROR">>Refer to [DAS-122, "DTC Logic"](#).

"ICC SENSOR CAN COMM ERR">>Refer to [DAS-122, "DTC Logic"](#).

"ABS/TCS/VDC CIRC">>Refer to [DAS-74, "DTC Logic"](#).

"ECD CIRCUIT">>Refer to [DAS-95, "DTC Logic"](#).

#### 2.PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS" or "LASER/RADAR". Refer to [CCS-58, "DTC Index"](#) (ICC/ADAS) or [CCS-63, "DTC Index"](#) (LASER/RADAR).

##### Is any DTC detected?

YES >> GO TO 3.

NO >> GO TO 4.

#### 3.REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts identified by the self-diagnosis result.

>> GO TO 6.

#### 4.CHECK EACH SWITCH AND VEHICLE SPEED SIGNAL

1. Start the engine.
2. Check that the following items operate normally in "DATA MONITOR" of "ICC/ADAS".
  - "VHCL SPEED SE"
  - "D RANGE SW"
  - "SET/COAST SW"
  - "BRAKE SW"
  - "PKB SW"

##### Is there a malfunctioning item?

All items are normal>>GO TO 5.

"VHCL SPEED SE">>Refer to [DAS-72, "DTC Logic"](#).

"D RANGE SW">>Refer to [CCS-124, "Diagnosis Procedure"](#).

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## ICC SYSTEM CANNOT BE SET (MAIN SWITCH TURNS ON/OFF)

< SYMPTOM DIAGNOSIS >

[ICC]

"SET/COAST SW">>Refer to [DAS-80, "DTC Logic"](#).

"BRAKE SW">>Refer to [DAS-75, "DTC Logic"](#).

"PKB SW">>Refer to [WCS-56, "Diagnosis Procedure"](#).

### 5.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-161, "Removal and Installation"](#).

>> GO TO 6.

### 6.CHECK ICC SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-95, "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

# ICC STEERING SWITCH (OTHER THAN MAIN SWITCH) DOES NOT FUNCTION

< SYMPTOM DIAGNOSIS > [ICC]

## ICC STEERING SWITCH (OTHER THAN MAIN SWITCH) DOES NOT FUNCTION

### Description

INFOID:000000009644281

ICC MAIN switch can be turned ON/OFF, but the operation of RESUME/ACCELERATE switch, CANCEL switch, and DISTANCE switch cannot be performed during ICC system operation.

#### NOTE:

Resume is not accepted when the following condition is met.

- When the MAIN switch is turned OFF once.

The set distance change is not accepted when any of the following condition is met.

- When the DCA system is turned ON.

### Diagnosis Procedure

INFOID:000000009644282

#### 1.CHECK EACH SWITCH

1. Start the engine.
2. Check that each switch operates normally on "DATA MONITOR" of "ICC/ADAS" with CONSULT.
  - "RESUME/ACC SW"
  - "CANCEL SW"
  - "DISTANCE SW"

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

#### 2.PERFORM ALL OF THE SELF-DIAGNOSIS ITEMS

1. Perform "All DTC Reading".
2. Check if the "U1000" is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> GO TO 3.

NO >> GO TO 4.

#### 3.CAN COMMUNICATIONS INSPECTION

Check the CAN communication and repair or replace malfunctioning parts. Refer to [CCS-116. "DTC Logic"](#).

>> INSPECTION END

#### 4.CHECK ICC STEERING SWITCH

Check the ICC steering switch. Refer to [DAS-81. "Component Inspection"](#).

>> GO TO 6.

#### 5.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-161. "Removal and Installation"](#).

>> GO TO 6.

#### 6.CHECK ICC SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-95. "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

## ICC SYSTEM DOES NOT CANCEL WHEN A/T SELECTOR LEVER SETS ON "N"

### Description

INFOID:000000009644283

The ICC system is not canceled even when the A/T selector lever is shifted to the N position while the ICC system is active.

### Diagnosis Procedure

INFOID:000000009644284

#### 1.CHECK D RANGE SWITCH

Check if "D RANGE SW" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT.

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> GO TO 2.

#### 2.PERFORM ALL SELF-DIAGNOSIS ITEMS

1. Perform "All DTC Reading".
2. Check if the "U1000" is detected in "self-diagnosis results" of "ICC/ADAS".

Is "U1000" detected?

- YES >> GO TO 3.
- NO >> GO TO 4.

#### 3.CAN COMMUNICATIONS INSPECTION

Check the CAN communication and repair or replace malfunctioning parts. Refer to [CCS-116, "DTC Logic"](#).

>> INSPECTION END

#### 4.CHECK POSITION SWITCH

Check if "SLCT LVR POSI" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> GO TO 5.

#### 5.PERFORM TCM SELF-DIAGNOSIS

1. Perform the "Self Diagnostic Result" of "TRANSMISSION".
2. Repair or replace malfunctioning parts. Refer to [TM-85, "DTC Index"](#).

>> GO TO 7.

#### 6.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-161, "Removal and Installation"](#).

>> GO TO 7.

#### 7.CHECK ICC SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-95, "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

## CHIME DOES NOT SOUND

### Description

INFOID:000000009644285

Symptom check: In the following conditions, the warning chime may not sound even if the vehicle distance is short.

- When the vehicles are traveling at the same speed and the distance between vehicles is not changing.
- When the vehicle ahead is traveling faster and the distance between vehicles is increasing.
- The warning chime will not sound when the accelerator pedal is depressed, overriding the system.
- The warning chime will not sound when own vehicle approaches vehicles that are parked or moving slowly.
- The warning chime does not sound when the system does not detect any vehicle ahead. (Diagnose the conditions under which the system is detecting the vehicle ahead and when the system is malfunctioning. If there is any malfunction in detecting the vehicle ahead, check the system following the [CCS-128, "Description"](#).)

### Diagnosis Procedure

INFOID:000000009644286

#### 1.PERFORM ACTIVE TEST

Check if the warning chime sounds on the active test item "ICC BUZZER" of "ICC/ADAS" with CONSULT.

Does the warning chime sound?

- YES >> GO TO 2.  
NO >> GO TO 3.

#### 2.CHECK THE MALFUNCTION SYMPTOM DURING WARNING CHIME OPERATION

Understand the vehicle ahead detecting condition when the malfunction occurred. If the warning chime should have sounded, replace the ADAS control unit. Refer to [DAS-161, "Removal and Installation"](#).

>> GO TO 8.

#### 3.CHECK DRIVER ASSISTANCE BUZZER

Check if the warning chime sounds on the active test item BUZZER 2 (ADAS) of "BSW/BUZZER" with CONSULT.

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> GO TO 5.

#### 4.PERFORM THE SELF-DIAGNOSIS OF ADAS CONTROL UNIT

1. Perform "All DTC Reading" with CONSULT.
2. Check if the any DTC is detected in self-diagnosis results of "ICC/ADAS".

Is any DTC detected?

- YES >> GO TO 6.  
NO >> GO TO 5.

#### 5.PERFORM THE SELF-DIAGNOSIS OF DRIVER ASSISTANCE BUZZER CONTROL MODULE

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "any DTC" is detected in self-diagnosis results of "BSW/BUZZER".

Is "any DTC" detected?

- YES >> GO TO 6.  
NO >> GO TO 7.

#### 6.REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts.

>> GO TO 8.

#### 7.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-161, "Removal and Installation"](#).

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## CHIME DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

[ICC]

>> GO TO 8.

### 8. CHECK ICC SYSTEM

---

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-95. "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

## DRIVING FORCE IS HUNTING

### Description

INFOID:000000009644287

The vehicle causes hunting when the ICC system is active.

### Diagnosis Procedure

INFOID:000000009644288

#### 1.PERFORM SELF-DIAGNOSIS OF ECM

1. Perform "All DTC Reading" with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "ENGINE". Refer to [EC-106, "DTC Index"](#).

##### Is any DTC detected?

- YES >> GO TO 3.  
NO >> GO TO 2.

#### 2.CHECK ICC SENSOR

1. Check the vehicle driving conditions. Refer to [CCS-128, "Description"](#).
2. Check the ICC sensor for contamination, foreign materials, or cracks. Refer to [CCS-128, "Diagnosis Procedure"](#).

>> INSPECTION END

#### 3.REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts identified by the self-diagnosis result.

>> GO TO 4.

#### 4.CHECK ICC SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-95, "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

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CCS

# FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

< SYMPTOM DIAGNOSIS >

[ICC]

## FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

### Description

INFOID:000000009644289

The detection function may become unstable in the following cases.

- When radar reflections from the vehicle ahead is interrupted.
- When driving a road with extremely sharp corners.
- When the sensor cannot detect a vehicle ahead while the vehicle ahead passes a hill or valley.

### Diagnosis Procedure

INFOID:000000009644290

#### 1.VISUAL CHECK (1)

Check the contamination and foreign matter on the ICC sensor area of the front bumper.

Do foreign matter adhere?

- YES >> GO TO 3.
- NO >> GO TO 2.

#### 2.VISUAL CHECK (2)

1. Remove the front bumper. Refer to [EXT-14, "Removal and Installation"](#).
2. Check ICC sensor for contamination and foreign matter.

Do foreign matter adhere?

- YES >> GO TO 3.
- NO >> GO TO 4.

#### 3.WIPE OUT DIRT AND FOREIGN MATERIALS

Wipe out the contamination and foreign matter in the area around the ICC sensor.

>> GO TO 8.

#### 4.VISUAL CHECK (3)

Check ICC sensor for cracks and scratches.

Are there any cracks or scratches?

- YES >> GO TO 6.
- NO >> GO TO 5.

#### 5.PERFORM RADAR ALIGNMENT

1. Install the front bumper. Refer to [EXT-14, "Removal and Installation"](#).
2. Perform the radar alignment. Refer to [CCS-83, "TYPE 1 : Description"](#).
3. Perform ICC system action test. Refer to [CCS-95, "Description"](#).
4. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> INSPECTION END
- NO >> GO TO 6.

#### 6.REPLACE ICC SENSOR

1. Replace the ICC sensor. Refer to [CCS-135, "Exploded View"](#).
2. Install the front bumper. Refer to [EXT-14, "Removal and Installation"](#).
3. Perform the radar alignment. Refer to [CCS-83, "TYPE 1 : Description"](#).
4. Perform ICC system action test. Refer to [CCS-95, "Description"](#).
5. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> INSPECTION END
- NO >> GO TO 7.

#### 7.REPLACE ADAS CONTROL UNIT

Replace ADAS control unit. Refer to [DAS-161, "Removal and Installation"](#).

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

< SYMPTOM DIAGNOSIS > [ICC]

>> GO TO 8.

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8.CHECK ICC SYSTEM

- 1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action-test. (Refer to [CCS-95, "Description"](#) for action test).
- 2. Check that the ICC system is normal.

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>> INSPECTION END

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# THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

< SYMPTOM DIAGNOSIS >

[ICC]

## THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

### Description

INFOID:000000009644291

When ICC system is active, the ICC system does not perform any control even though there is a vehicle ahead.

### Diagnosis Procedure

INFOID:000000009644292

#### 1. CHECK ICC SYSTEM DISPLAY ON MULTI INFORMATION DISPLAY

1. Start the self-diagnosis mode of combination meter. Refer to [MWI-62, "On Board Diagnosis Function"](#).
2. Check that the multi information display turns on normally.

Is the inspection result normal?

- YES >> GO TO 2.  
NO >> Replace the combination meter.

#### 2. VISUAL CHECK (1)

Check the contamination and foreign matter on the ICC sensor area of the front bumper.

Do foreign materials adhere?

- YES >> GO TO 4.  
NO >> GO TO 3.

#### 3. VISUAL CHECK (2)

1. Remove the front bumper. Refer to [EXT-14, "Removal and Installation"](#).
2. Check ICC sensor for contamination and foreign matter.

Do foreign matter adhere?

- YES >> GO TO 4.  
NO >> GO TO 5.

#### 4. WIPE OUT DIRT AND FOREIGN MATERIALS

Wipe out the contamination and foreign matter in the area around the ICC sensor.

>> GO TO 9.

#### 5. VISUAL CHECK (3)

Check ICC sensor for cracks and/or scratches.

Are there cracks?

- YES >> GO TO 7.  
NO >> GO TO 6.

#### 6. PERFORM RADAR ALIGNMENT

1. Install the front bumper. Refer to [EXT-14, "Removal and Installation"](#).
2. Perform the radar alignment. Refer to [CCS-83, "TYPE 1 : Description"](#).
3. Perform ICC system action test. Refer to [CCS-95, "Description"](#).
4. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> INSPECTION END  
NO >> GO TO 8.

#### 7. REPLACE ICC SENSOR

1. Replace the ICC sensor. Refer to [CCS-135, "Exploded View"](#).
2. Install the front bumper. Refer to [EXT-14, "Removal and Installation"](#).
3. Perform the radar alignment. Refer to [CCS-83, "TYPE 1 : Description"](#).
4. Perform ICC system action test. Refer to [CCS-95, "Description"](#).
5. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> INSPECTION END

# THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

< SYMPTOM DIAGNOSIS >

[ICC]

NO >> GO TO 8.

## 8.REPLACE ADAS CONTROL UNIT

Replace ADAS control unit. Refer to [DAS-161, "Removal and Installation"](#).

>> GO TO 9.

## 9.CHECK ICC SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-95, "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

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## NORMAL OPERATING CONDITION

### Description

INFOID:000000009644293

#### PRECAUTIONS FOR VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE

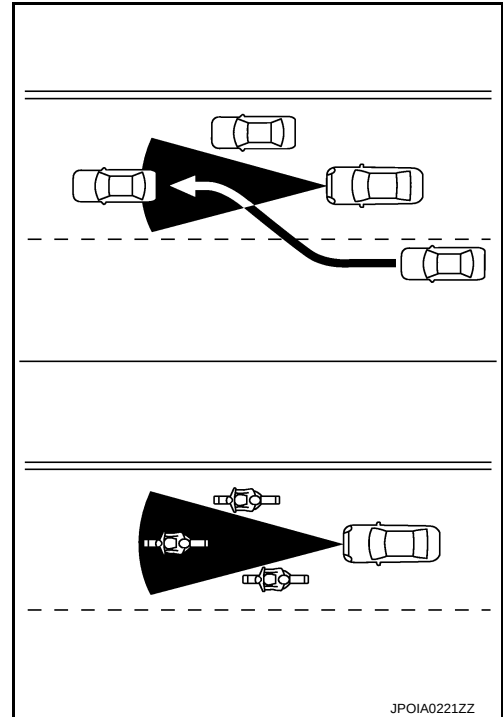
- ICC system is only an aid to assist the driver and is not a collision warning or avoidance device. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- The system is primarily intended for use on straight, dry, open roads with light traffic. It is not advisable to use the system in city traffic or congested areas.
- This system will not adapt automatically to road conditions. This system should be used in evenly flowing traffic. Do not use the system on roads with sharp curves, or on icy roads, in heavy rain or in fog.
- The ICC sensor will not detect under most conditions.
  - Stationary and slow moving vehicles.
  - Pedestrians or objects in the roadway.
  - Oncoming vehicles in the same lane.
  - Motorcycles traveling offset in the travel lane.
- As there is a performance limit to the distance control function, never rely solely on the ICC system. This system does not correct careless, inattentive or absent-minded driving, or overcome poor visibility in rain, fog, or other bad weather. Decelerate the vehicle speed by depressing the brake pedal, depending on the distance to the vehicle ahead and the surrounding circumstances in order to maintain a safe distance between vehicles.
- If the vehicle ahead comes to a stop, the vehicle decelerates to a standstill within the limitations of the system. The system will cancel once it judges that the vehicle has come to a standstill and sound a warning chime. To prevent the vehicle from moving, the driver must depress the brake pedal.
- The system may not detect the vehicle in front of the driver in certain road or weather conditions. To avoid accidents, never use the ICC system under the following conditions:
  - On roads where the traffic is heavy or there are sharp curves.
  - On slippery road surfaces such as on ice or snow, etc.
  - During bad weather (rain, fog, snow, etc.)
  - When rain, snow or dirt adhere to the system sensor.
  - On steep downhill roads (the vehicle may go beyond the set vehicle speed and frequent braking may result in overheating the brakes).
  - On repeated uphill and downhill roads.
  - When traffic conditions make it difficult to keep a proper distance between vehicles because of frequent acceleration or deceleration.
- In some road or traffic conditions, a vehicle or object can unexpectedly come into the sensor detection zone and cause automatic braking. The driver may need to control the distance from other vehicles using the accelerator pedal. Always stay alert and avoid using the ICC system when it is not recommended in this section.
- The vehicle-to-vehicle distance control mode uses a sensor located behind the lower grille of the front bumper to detect vehicles traveling ahead. The sensor generally detects the signals returned from the vehicle ahead. Therefore, if the sensor cannot detect the reflection from the vehicle ahead, the ICC system may not maintain the selected distance.
- The following are some conditions in which the sensor cannot detect the signals:
  - When the snow or road spray from traveling vehicles reduces the sensor's visibility.
  - When excessively heavy baggage is loaded in the rear seat or the trunk room of own vehicle.
- The ICC system is designed to automatically check the sensor's operation within the limitation of the system. When the sensor area of the front bumper is covered with dirt or is obstructed, the system will automatically be canceled. If the sensor is covered with ice, a transparent or translucent vinyl bag, etc., the ICC system may not detect them. In these instances, the vehicle-to-vehicle distance control mode may not cancel and may not be able to maintain the selected following distance from the vehicle ahead. Be sure to check and clean the sensor regularly.
- The ICC system does not control vehicle speed or warn the driver when own vehicle approaches stationary and slow moving vehicles. The driver must pay attention to vehicle operation to maintain proper distance from vehicles ahead when approaching toll gates or traffic congestion.

## NORMAL OPERATING CONDITION

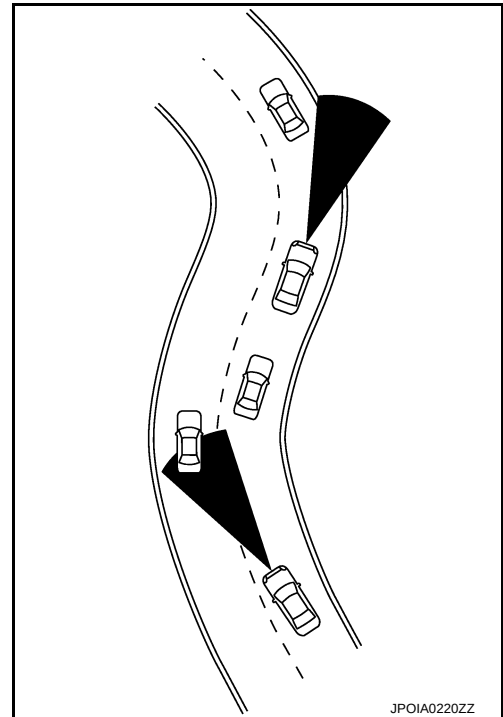
### < SYMPTOM DIAGNOSIS >

[ICC]

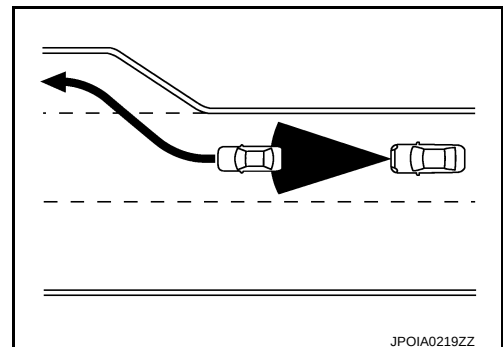
- The detection zone of the ICC sensor is limited. A vehicle ahead must be in the detection zone for the vehicle-to-vehicle distance detection mode to maintain the selected distance from the vehicle ahead. A vehicle ahead may move outside of the detection zone due to its position within the same lane of travel. Motorcycles may not be detected in the same lane ahead if they are traveling offset from the center line of the lane. A vehicle that is entering the lane ahead may not be detected until the vehicle has completely moved into the lane. If this occurs, the ICC system may warn the driver by blinking the system indicator and sounding the chime. The driver may have to manually control the proper distance away from vehicle traveling ahead.



- When driving on some roads, such as winding, hilly, curved, narrow roads, or roads which are under construction, the ICC sensor may detect vehicles in a different lane, or may temporarily not detect a vehicle traveling ahead. This may cause the ICC system to decelerate or accelerate the vehicle. The detection of vehicles may also be affected by vehicle operation (steering maneuver or traveling position in the lane, etc.) or vehicle condition. If this occurs, the ICC system may warn the driver by blinking the system indicator and sounding the chime unexpectedly. The driver will have to manually control the proper distance away from the vehicle traveling ahead.



- When driving on the freeway at a set speed and approaching a slower traveling vehicle ahead, the ICC will adjust the speed to maintain the distance, selected by the driver, from the vehicle ahead. If the vehicle ahead changes lanes or exits the freeway, the ICC system will accelerate and maintain the speed up to the set speed. Pay attention to the driving operation to maintain control of the vehicle as it accelerates to the set speed. The vehicle may not maintain the set speed on winding or hilly roads. If this occurs, the driver will have to manually control the vehicle speed.



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## NORMAL OPERATING CONDITION

### < SYMPTOM DIAGNOSIS >

[ICC]

- Normally when controlling the distance to a vehicle ahead, this system automatically accelerates or decelerates own vehicle according to the speed of the vehicle ahead. Depress the accelerator to properly accelerate own vehicle when acceleration is required for a lane change. Depress the brake pedal when deceleration is required to maintain a safe distance to the vehicle ahead due to its sudden braking or if a vehicle cuts in. Always stay alert when using the ICC system.

### PRECAUTIONS FOR CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE

- In the conventional (fixed speed) cruise control mode, a warning chime does not sound to warn the driver if own vehicle is too close to the vehicle ahead, as neither the presence of the vehicle ahead nor the vehicle-to-vehicle distance is detected.
- Pay special attention to the distance between own vehicle and the vehicle ahead or a collision could occur.
- Always confirm the setting in the ICC system display.
- Do not use the conventional (fixed speed) cruise control mode when driving under the following conditions:
  - When it is not possible to keep the vehicle at a set speed.
  - In heavy traffic or in traffic that varies in speed.
  - On winding or hilly roads.
  - On slippery roads (rain, snow, ice, etc.).
  - In very windy areas.
  - Doing so could cause a loss of vehicle control and result in an accident.
  - To avoid accidentally engaging cruise control, make sure to turn the MAIN switch off when not using the ICC system.

## REMOVAL AND INSTALLATION

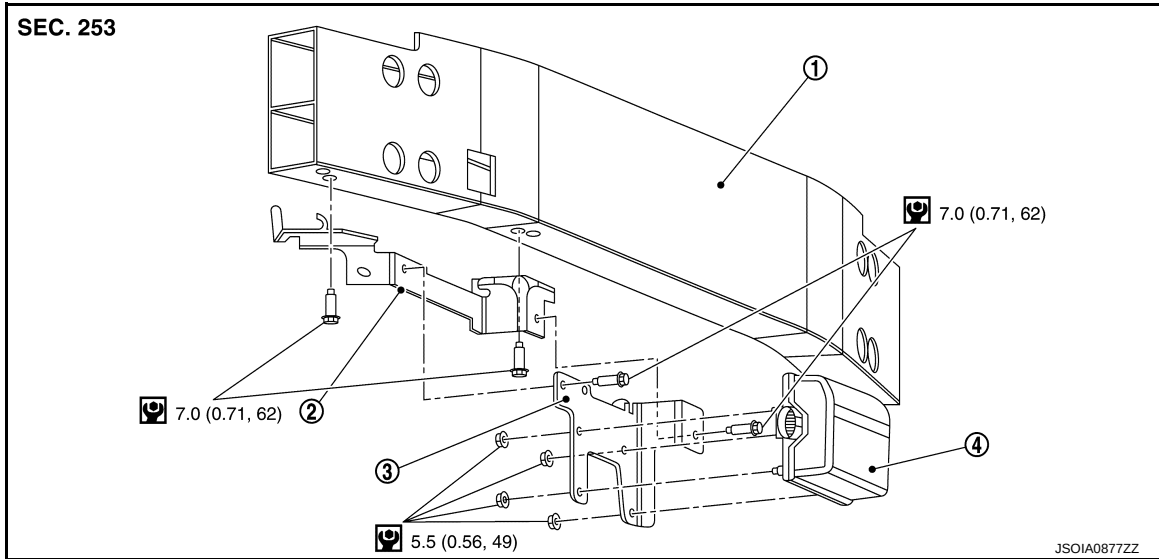
### ICC SENSOR

#### Exploded View

INFOID:000000009644294

#### CAUTION:

Always perform the laser beam aiming adjustment and check the operation after the replacement, removal and installation of ICC sensor.



① Front bumper reinforcement

② bracket A

③ bracket B

④ ICC sensor

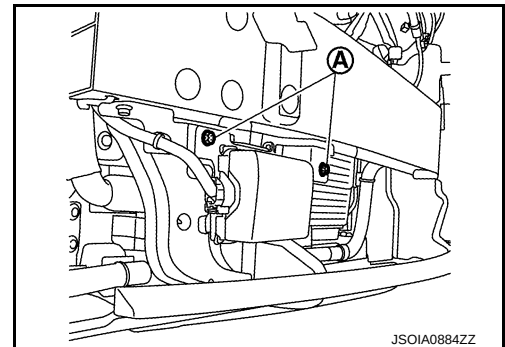
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#### Removal and Installation

INFOID:000000009644295

#### REMOVAL

1. Remove front bumper fascia. Refer to [EXT-14, "Removal and Installation"](#).
2. Disconnect ICC sensor connector.
3. Remove mounting bolts ① of bracket A to remove ICC sensor with bracket A.

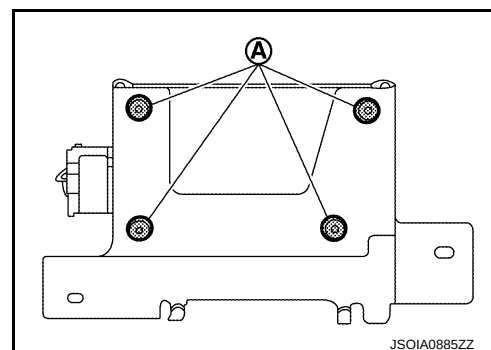


## ICC SENSOR

### < REMOVAL AND INSTALLATION >

[ICC]

4. Remove mounting nuts (A) of ICC sensor.



5. Remove ICC sensor.
6. Remove mounting bolts of bracket B to remove bracket B from front bumper reinforcement.

### INSTALLATION

Install in the reverse order of removal.

#### **CAUTION:**

Always perform the radar alignment and check the operation after the replacement, removal, and installation of ICC sensor. Refer to [CCS-82, "Description"](#).

ICC STEERING SWITCH

Exploded View

INFOID:000000009644296

ICC steering switch is integrated in the steering switch.

Refer to [ST-86, "Removal and Installation"](#).

**NOTE:**

Always remove ICC steering switch together with steering wheel.

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## SYSTEM DESCRIPTION

### AUTOMATIC SPEED CONTROL DEVICE (ASCD)

#### Information

INFOID:000000009240444

Automatic Speed Control Device (ASCD) system is controlled by ECM.

Regarding the information for ASCD system, refer to [EC-48, "AUTOMATIC SPEED CONTROL DEVICE \(ASCD\) : System Description"](#).