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SECTION

CRUISE CONTROL SYSTEM

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PRECAUTION

PRECAUTIONS

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

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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 dual stage front air bag modules. The SRS system may only deploy one front air bag, depending on the severity of a collision and whether the front passenger seat is occupied. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which 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 the SR section.
- Do not 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:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT 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

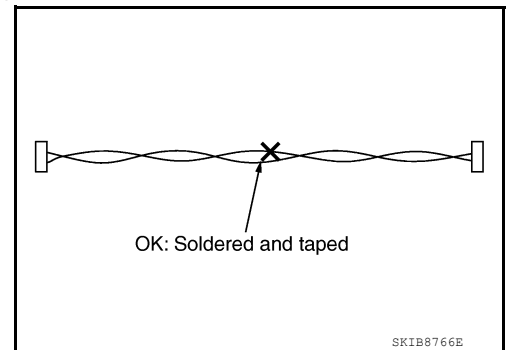
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ITS communication uses a twisted pair line. Be careful when repairing it.

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

NOTE:

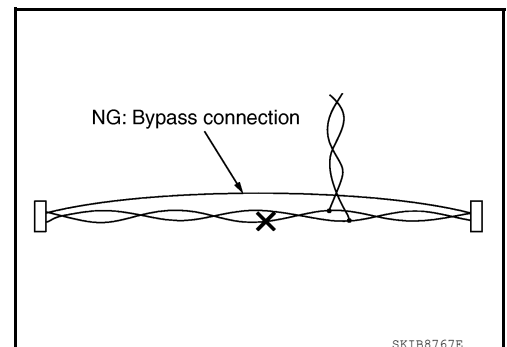
A fray of twisted lines must be within 110 mm (4.33 in).



- 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.



PRECAUTIONS

< PRECAUTION >

[ICC]

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 adjusting radar alignment if necessary.

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PREPARATION

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[ICC]

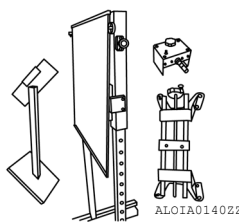
PREPARATION

PREPARATION

Special Service Tools

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The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

(Kent-Moore No.) Tool names	Description
<p>(J-50808) ICC target board Wheel adapter Laser assembly Stationary target</p> 	Used for laser beam aiming adjustment

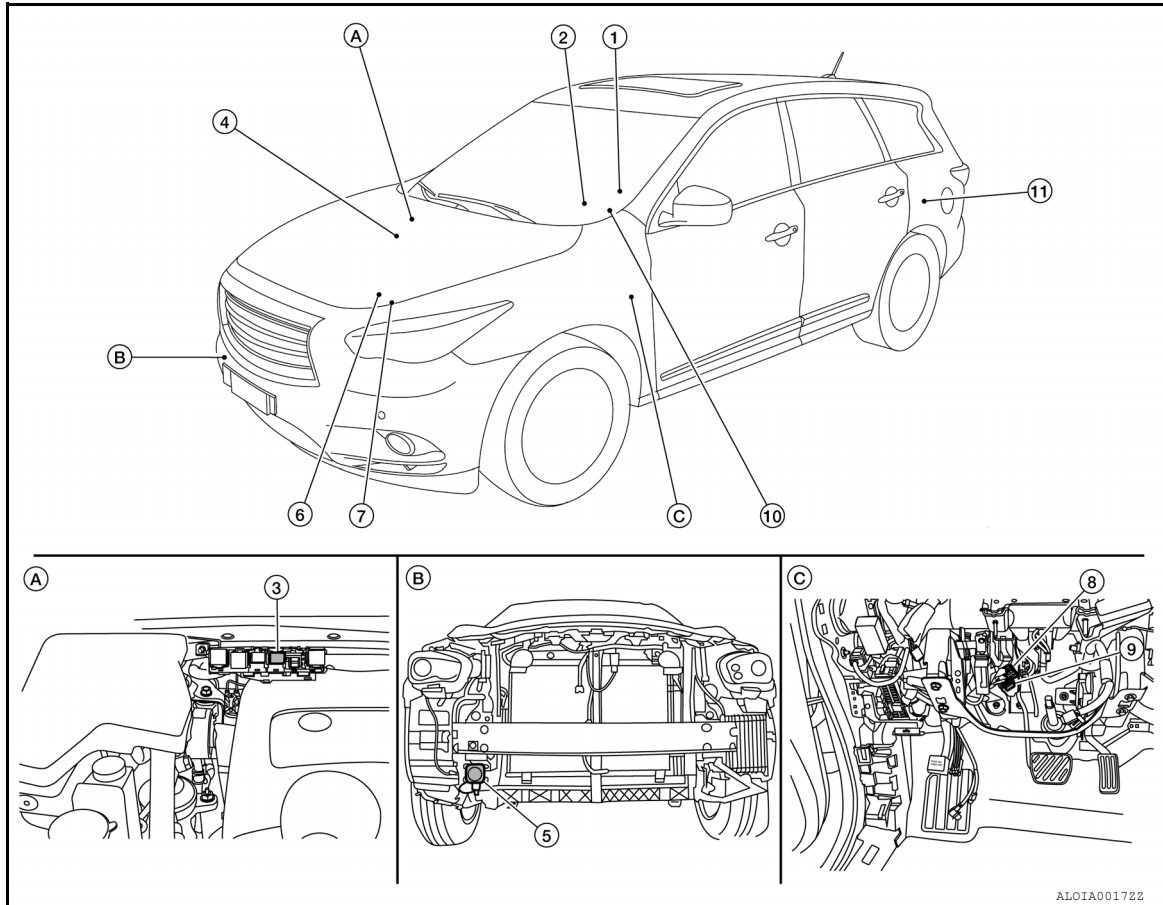
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SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

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- A. Back side of engine room (RH) (view with relay cover removed)
- B. Radiator core support assembly (RH) (view with front bumper fascia removed)
- C. Upper side of brake pedal (view with instrument panel LH removed)

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

[ICC]

No.	Component	Function				Function
		Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Intelligent Brake Assist (IBA)	Brake Assist (with preview function)	
1.	ICC steering switch	×	×			<ul style="list-style-type: none"> Description: Refer to CCS-12, "ICC Steering Switch" System display and warning (Vehicle-to-vehicle distance control mode): CCS-25, "VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION : Switch Name and Function" System display and warning (Conventional cruise control mode): CCS-28, "CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION : Switch Name and Function"
2.	Combination meter (Information display, IBA OFF indicator lamp, buzzer)	×	×	×	×	<ul style="list-style-type: none"> Description: Refer to CCS-13, "Combination Meter" System display and warning (Vehicle-to-vehicle distance control mode): CCS-25, "VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION : Menu Displayed by Pressing Each Switch" System display and warning (Conventional cruise control mode): CCS-29, "CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION : Menu Displayed by Pressing Each Switch"
3.	ICC brake hold relay	×		×		Refer to CCS-12, "ICC Brake Hold Relay"
4.	ABS actuator and electric unit (control unit)	×	×	×	×	<ul style="list-style-type: none"> ABS actuator and electric unit (control unit) transmits the vehicle speed signal (wheel speed), stop lamp signal and VDC/TCS/ABS system operation condition to ADAS control unit via CAN communication 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 CAN communication Refer to BRC-8, "Component Parts Location" for detailed installation location
5.	ICC sensor	×	×	×	×	Refer to CCS-11, "ICC Sensor"
6.	TCM	×	×			TCM transmits the signal related to CVT control to ADAS control unit via CAN communication Refer to TM-11, "CVT CONTROL SYSTEM : Component Parts Location" for detailed installation location
7.	ECM	×	×	×	×	<ul style="list-style-type: none"> ECM transmits the accelerator pedal position signal, ICC brake switch signal, stop lamp switch signal, ICC steering switch signal, etc. to ADAS control unit via CAN communication ECM controls the electric throttle control actuator based on the engine torque demand received from the ADAS control unit via CAN communication Refer to EC-16, "ENGINE CONTROL SYSTEM : Component Parts Location" for detailed installation location
8.	Stop lamp switch	×	×	×	×	Refer to CCS-12, "ICC Brake Switch/Stop Lamp Switch"
9.	ICC brake switch	×	×	×	×	

COMPONENT PARTS

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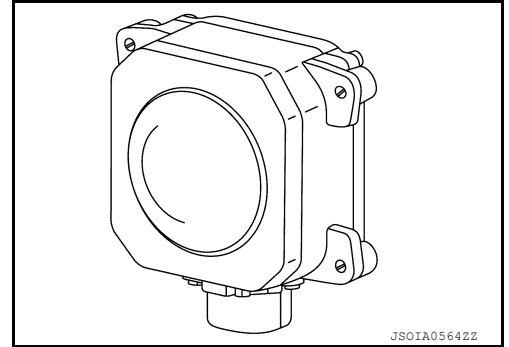
[ICC]

No.	Component	Function				Function
		Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Intelligent Brake Assist (IBA)	Brake Assist (with preview function)	
10.	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
11.	ADAS control unit	×	×	×	×	Refer to CCS-11, "ADAS Control Unit" Refer to DAS-18, "Component Parts Location" for detailed installation location

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ICC Sensor

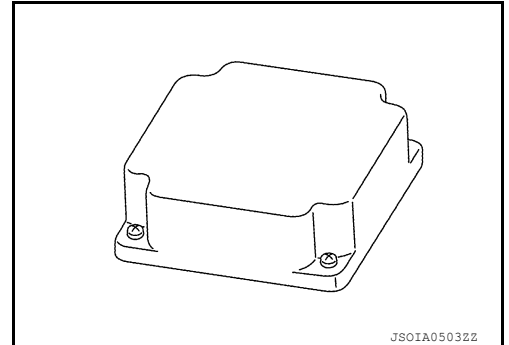
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- ICC sensor is installed on the back of the front bumper and detects a vehicle ahead by using millimeter waves.
- ICC sensor detects radar reflected from a vehicle ahead by irradiating radar forward and calculates a distance from the vehicle ahead 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.

ADAS Control Unit

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- ADAS control unit calculates a target distance between vehicles and a target speed, based on signals received from each sensor and switch to transmit an engine torque command value to ECM and a brake fluid pressure control signal to ABS actuator and electric unit (control unit) via CAN communication.
- ADAS control unit transmits buzzer output signal and meter display signal to combination meter via CAN communication.

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COMPONENT PARTS

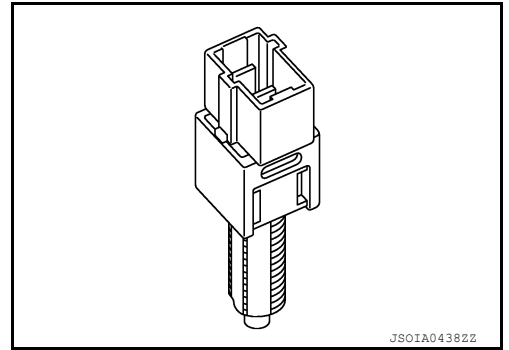
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[ICC]

ICC Brake Switch/Stop Lamp Switch

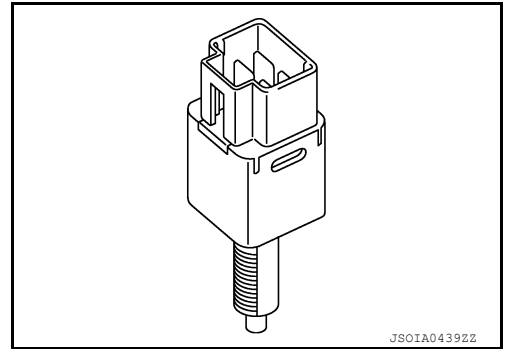
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ICC BRAKE SWITCH



- ICC brake switch is installed at the upper part of the brake pedal and detects a brake operation performed by the driver.
- ICC brake switch is turned OFF when depressing the brake pedal.
- ICC brake switch signal is input to ECM. ICC brake switch signal is transmitted from ECM to ADAS control unit via CAN communication.

STOP LAMP SWITCH



- 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.

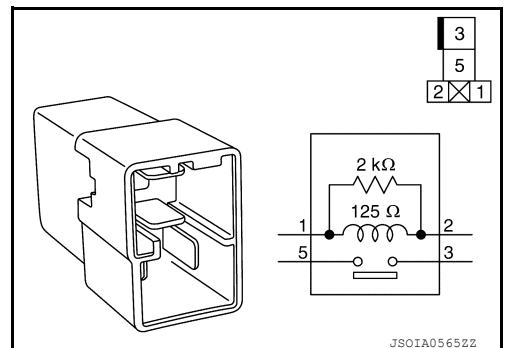
ICC Steering Switch

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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.

ICC Brake Hold Relay

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- ICC brake hold relay is installed in the engine room (right side).

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[ICC]

- When the brake is activated by the ICC 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.

A

Combination Meter

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- Performs the following operations using the signals received from the ADAS control unit via the CAN communication.
 - Displays the ICC system operation status using the meter display signal.
 - Illuminates the ICC system warning lamp using the ICC warning lamp signal.
 - Illuminates the IBA OFF indicator lamp using the IBA OFF indicator lamp signal.
 - Operates the buzzer (ICC warning chime) using the buzzer output signal.
- Combination meter turns ON/OFF the IBA system and transmits a system selection signal to the ADAS control unit.

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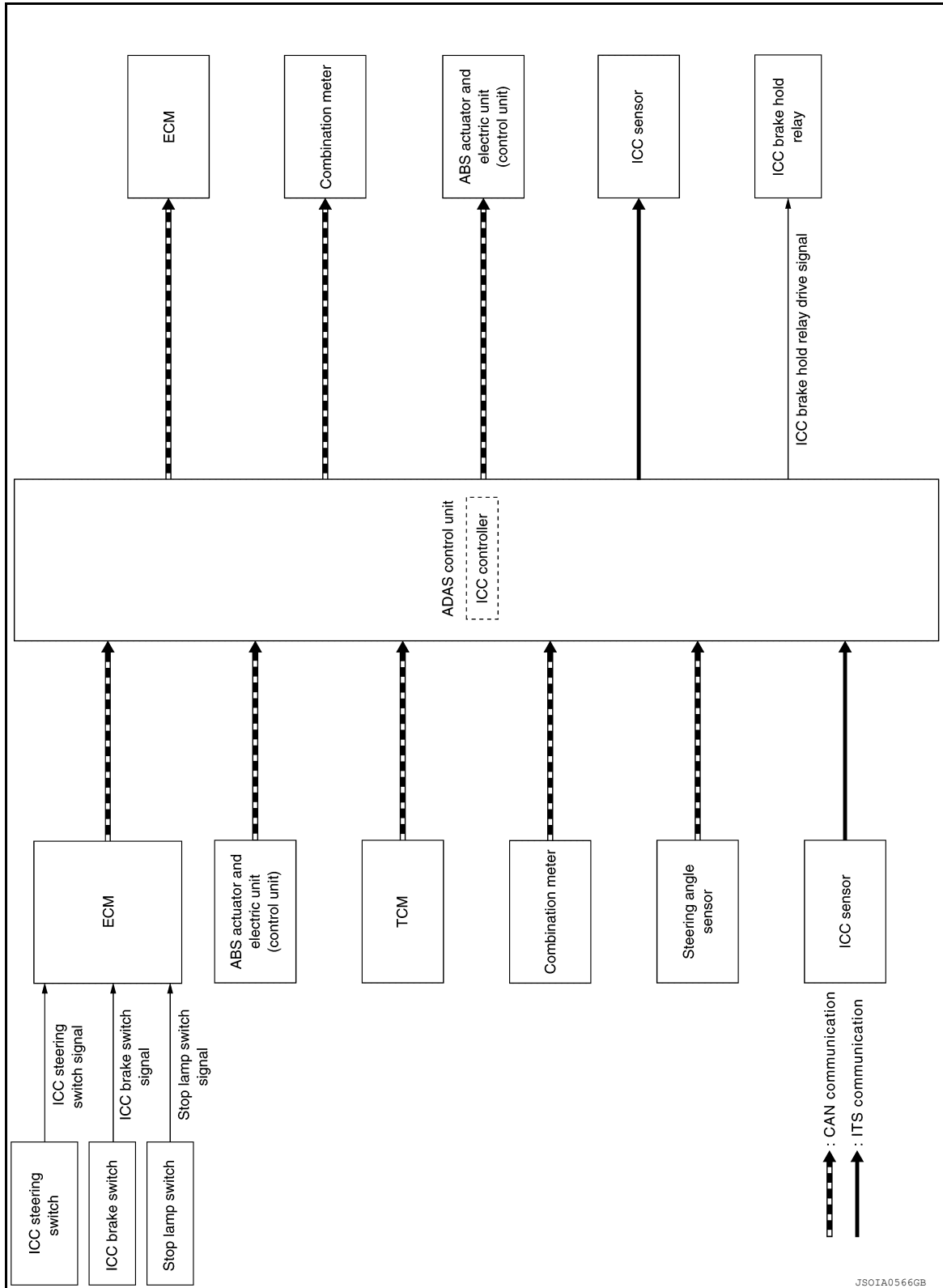
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SYSTEM

System Description

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SYSTEM DIAGRAM



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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	
		ICC steering switch signal	Main switch signal	Receives the operational state of the ICC steering switch
			SET/COAST switch signal	
			CANCEL switch signal	
			RESUME/ACCELERATE switch signal	
			DISTANCE switch signal	
		Engine speed signal	Receives engine speed	
		Stop lamp switch signal	Receives an operational state of the brake pedal	
		ICC brake switch signal	Receives an operational state of the brake pedal	
Snow mode switch signal	Receives an operational state of the snow mode			
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	
		System selection signal	Receives a selection state of IBA system	
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	
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

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SYSTEM

< SYSTEM DESCRIPTION >

[ICC]

Reception unit	Signal name		Description
ECM	CAN communication	ICC operation signal	Transmits an ICC operation signal necessary for Intelligent Cruise Control
TCM	CAN communication	ICC operation signal	Transmits an ICC operation signal necessary for Intelligent Cruise Control via ECM
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
Combination meter	CAN communication	ICC warning lamp signal	Transmits a signal to display a state of the system on the information display
		Vehicle ahead detection indicator signal	
		Set vehicle speed indicator signal	
		Set distance indicator signal	
		SET switch indicator signal	
		IBA OFF indicator lamp signal	<ul style="list-style-type: none"> • Transmits a signal to turn ON the IBA OFF indicator lamp • Transmits an ON/OFF state of the intelligent brake assist
		Buzzer output signal	Transmits a buzzer output signal to turn ON the buzzer of the following systems: <ul style="list-style-type: none"> • Intelligent Cruise Control (ICC) • Intelligent Brake Assist (IBA)
ICC sensor	ITS communication	Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
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 in front of own vehicle within the speed range of 0 to 144 km/h (0 to 90 MPH) up to the set speed.

The set speed can be selected by the driver between 32 to 144 km/h (20 to 90 MPH).

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 preset speed. Refer to [CCS-19, "VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION : System Description"](#).

Conventional (Fixed Speed) Cruise Control Mode

For cruising at a preset speed. Refer to [CCS-22, "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:

SYSTEM

< SYSTEM DESCRIPTION >

[ICC]

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.

A

Distance Control Assist (DCA) System

DCA share the systems and components with ICC system. Refer to [DAS-85, "System Description"](#).

B

Forward Collision Warning (FCW) System

FCW share the systems and components with ICC system. Refer to [DAS-248, "System Description"](#).

C

Intelligent Brake Assist (IBA) System

IBA system share the systems and components with ICC system. Refer to [BRC-142, "INTELLIGENT BRAKE ASSIST : System Description"](#).

D

Brake Assist (with preview function)

Brake Assist (with preview function) share the systems and components with ICC system. Refer to [BRC-135, "BRAKE ASSIST \(WITH PREVIEW FUNCTION\) : System Description"](#).

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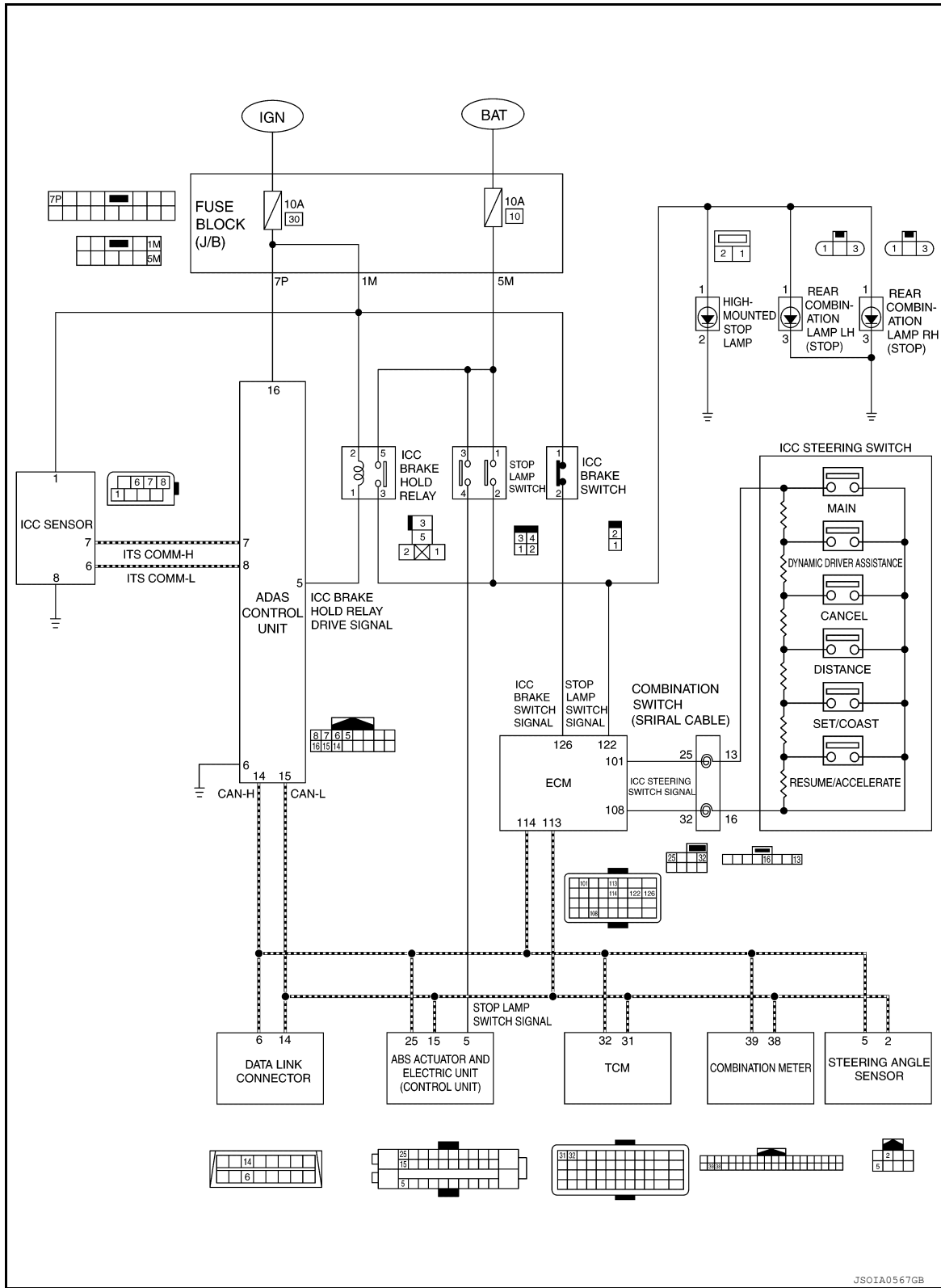
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JSOIA0567GB

Fail-safe (ADAS Control Unit)

INFOID:000000007911273

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

SYSTEM

< SYSTEM DESCRIPTION >

[ICC]

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention (BSI)	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Backup Collision Intervention (BCI)	Low-pitched tone	Backup Collision warning lamp	Cancel

Fail-safe (ICC Sensor)

INFOID:000000007911274

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

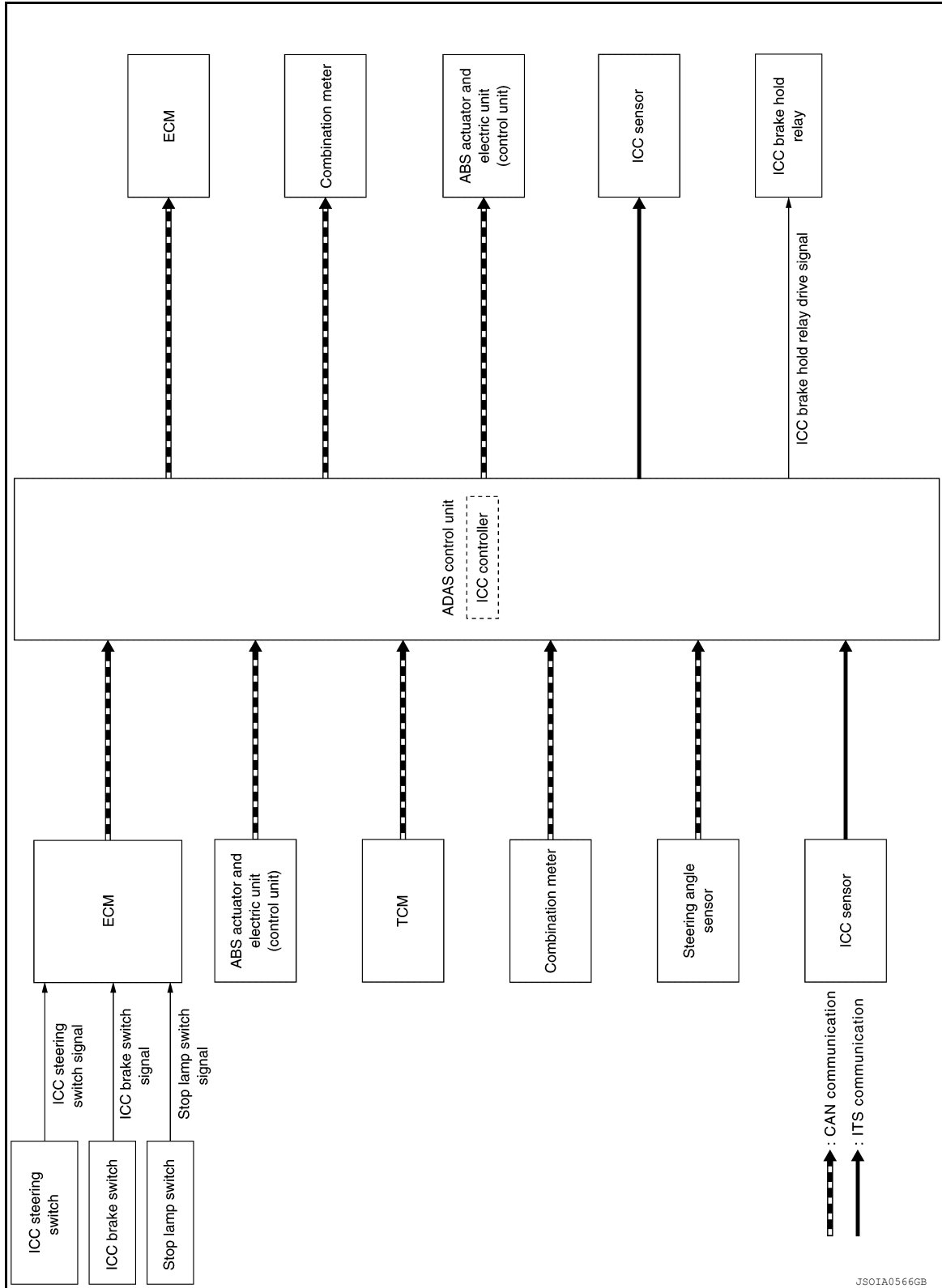
VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION : System Descrip-

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SYSTEM DIAGRAM



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.

SYSTEM

[ICC]

< SYSTEM DESCRIPTION >

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 set speed range is 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:

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 CAN communication and operates the brake
Following	The system controls the 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 1-6 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 and a warning chime will sound and displays that causes in combination meter (information display).
 - When the drive mode select switch is in SNOW position. (To use the ICC system, turn OFF the snow mode, push the ICC MAIN switch to turn OFF the ICC system and reset the ICC system by pushing the ICC 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.)

< SYSTEM DESCRIPTION >

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

CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION

CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION : System

SYSTEM

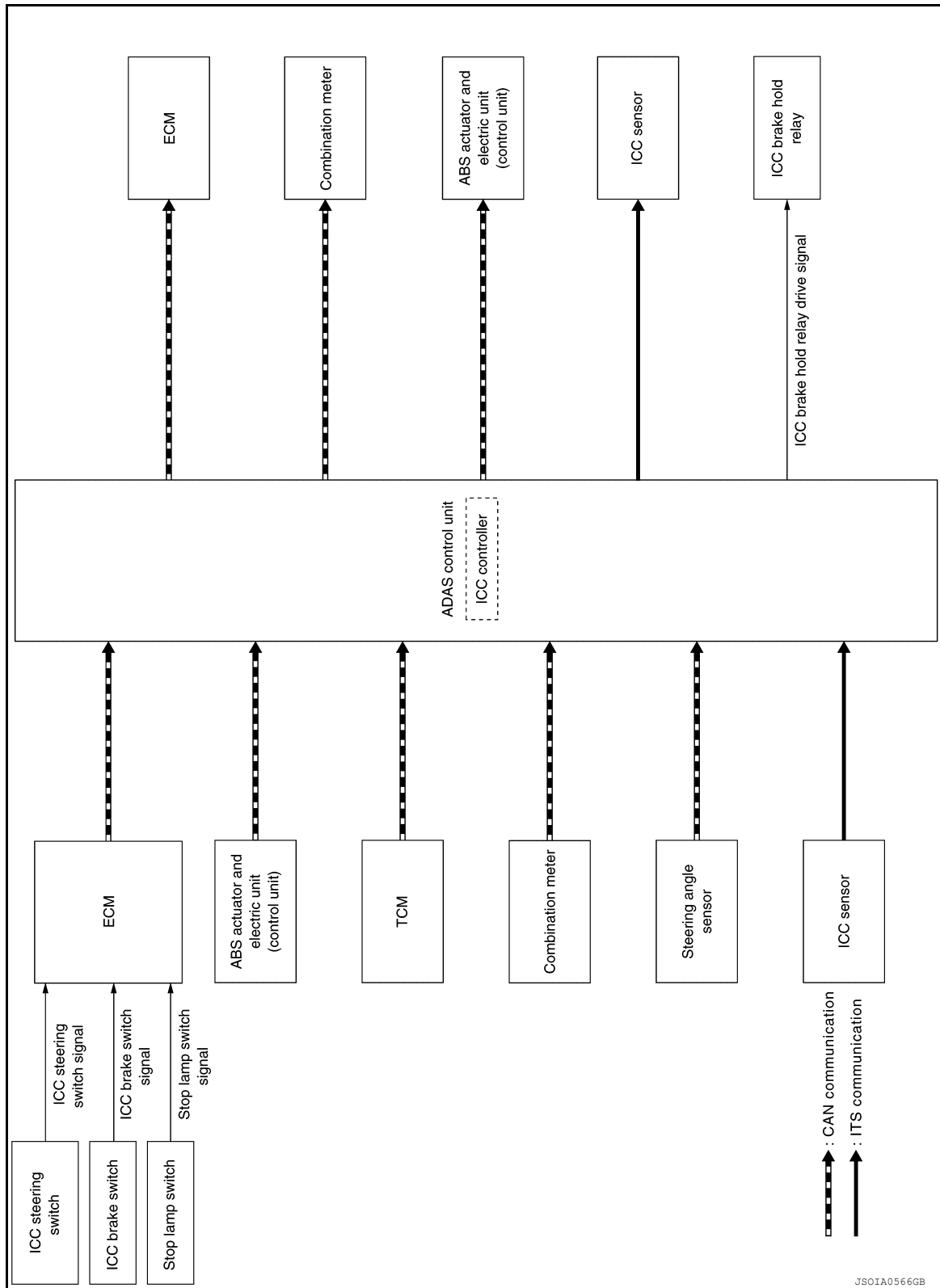
< SYSTEM DESCRIPTION >

[ICC]

Description

INFOID:000000007911276

SYSTEM DIAGRAM



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:

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SYSTEM

[ICC]

< SYSTEM DESCRIPTION >

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-85, "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 the electronic throttle control actuator.
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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 1-5 below, the system will resume control at the last set cruising speed by pushing the RESUME/ACCELERATE switch.

Cancel conditions

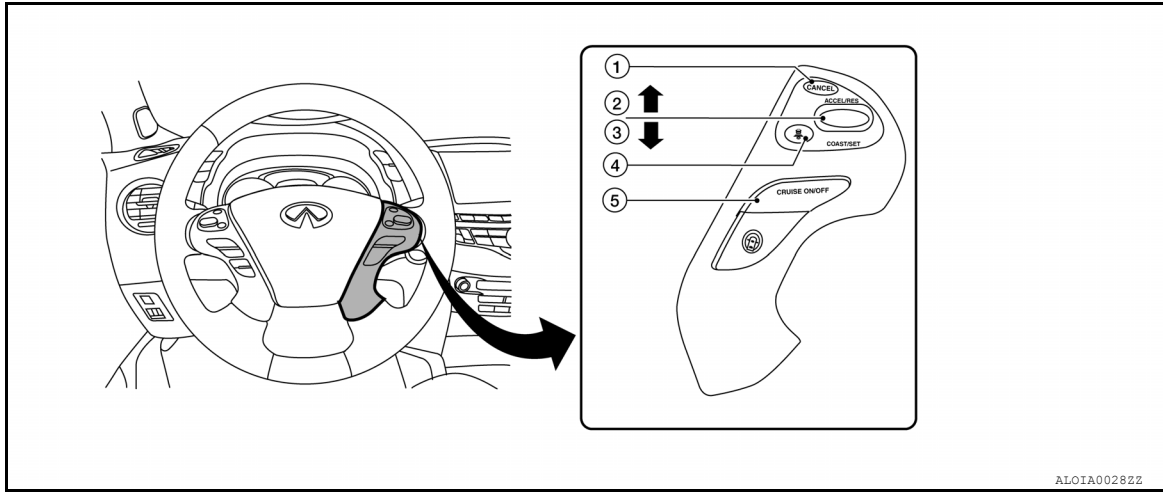
1. When CANCEL switch is pressed.
2. When brake pedal depressed.
3. When the vehicle slows down more than 13 km/h (8 MPH) below the set speed.
4. When the selector lever is not in the "D" position or manual mode.
5. When the parking brakes are applied.
6. When the MAIN switch is turned OFF.
7. When VDC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

OPERATION

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

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

INFOID:000000007911277



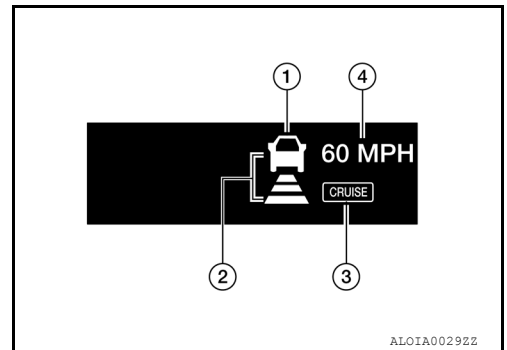
ALOIA0028ZZ

No.	Switch name	Description
1	CANCEL switch	Deactivates the system without erasing the set speed
2	RESUME/ACCELERATE switch	Resumes set speed or increases speed incrementally • Push and hold the switch to increase the set speed by 5 MPH (8 km/h) • Push then quickly release the switch to increase the set speed by 1 MPH (1.6 km/h)
3	SET/COAST switch	Sets desired cruise speed or reduces speed incrementally • Push and hold the switch to decrease the set speed by 5 MPH (8 km/h) • Push then quickly release the switch to decrease the set speed by 1 MPH (1.6 km/h) NOTE: The minimum set speed is 20 MPH (32 km/h)
4	DISTANCE switch	Changes the following distance from: Long, Middle, Short
5	MAIN switch	Master switch to activate the system (Press for less than 1.5 seconds)

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

INFOID:000000007911278

ICC SYSTEM DISPLAY (ON THE INFORMATION DISPLAY)



ALOIA0029ZZ

No.	Display item	Description
1	Vehicle ahead detection indicator	Indicates whether it detects a vehicle ahead
2	Set distance indicator	Indicates the selected distance between vehicles set with the DISTANCE switch

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OPERATION






[ICC]

< SYSTEM DESCRIPTION >

No.	Display item	Description
3	Main switch indicator (white)	White: Indicates the main switch is ON (ICC system ON)
	ICC system warning lamp (orange)	Orange: Indicates that a malfunction occurred in the ICC system
4	Set vehicle speed indicator	<ul style="list-style-type: none"> Indicates the set vehicle speed Indicates 20 MPH (32 km/h) when setting less than 20 MPH (km/h)

SYSTEM CONTROL CONDITION DISPLAY





Push and hold the ICC 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			 <p style="text-align: right; font-size: small;">ALOIA00302Z</p>
Control mode	Without a vehicle ahead	Set vehicle distance (Long)	 <p style="text-align: right; font-size: small;">ALOIA00312Z</p>
		Set vehicle distance (Middle)	 <p style="text-align: right; font-size: small;">ALOIA00322Z</p>
		Set vehicle distance (Short)	 <p style="text-align: right; font-size: small;">ALOIA00332Z</p>
		When the vehicle speed exceeds the set speed	 <p style="text-align: right; font-size: small;">ALOIA00342Z</p>

OPERATION

< SYSTEM DESCRIPTION >

[ICC]

		Condition	Display on ICC system display
Control mode	With a vehicle ahead	Set vehicle distance (Long)	 <small>ALOIA00352Z</small>
		Set vehicle distance (Middle)	 <small>ALOIA00362Z</small>
		Set vehicle distance (Short)	 <small>ALOIA00372Z</small>
		When the vehicle speed exceeds the set speed	 <small>ALOIA00382Z</small>

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 blinks in orange.

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 objects when the vehicle is driven on winding roads, hilly roads or when entering or exiting a curve.

The ICC sensor may also detect reflectors 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).


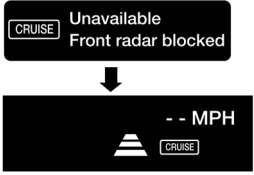


OPERATION

< SYSTEM DESCRIPTION >

[ICC]

Condition	Display on ICC system display
<p>When own vehicle comes closer to the vehicle ahead and it is judged that the distance between the vehicles is not sufficient</p>	 <p style="text-align: right; font-size: small;">ALOIA00392Z</p>

WARNING LAMP AND AUTOMATIC CANCELLATION DISPLAY

Condition	Description	Display on ICC system display
<p>Automatic cancellation display</p> <ul style="list-style-type: none"> When brake pedal is depressed When CANCEL switch is pressed When a vehicle ahead is not detected below the speed of 15 MPH (24 km/h) When the system judges the vehicle is at standstill When the selector lever is not in "D" position or manual mode When the parking brake are applied 	<p>A chime sounds and the control is automatically canceled.</p> <p>NOTE:</p> <ul style="list-style-type: none"> The system will be in a standby, after the control is automatically canceled. A chime sounds when the control is automatically canceled, except when brake pedal is depressed or when CANCEL switch is pressed. 	 <p style="text-align: right; font-size: small;">ALOIA00302Z</p>
<p>Warning display</p> <ul style="list-style-type: none"> When the VDC is turned OFF When the VDC or ABS (including the TCS) operates When a wheel slips When the driver mode selector (DMS) switch is in SNOW mode 	<p>A chime sounds and the control is automatically canceled.</p> <p>NOTE:</p> <p>When the conditions listed are no longer present, turn the system OFF using the MAIN switch. Turn the ICC system back on to use the system.</p>	<p>Example: When the front bumper near the ICC sensor is blocked or dirty, making it impossible to detect a vehicle ahead.</p> <div style="text-align: center;">  <p style="text-align: right; font-size: small;">ALOIA00402Z</p> </div>
<p>When the front bumper near the ICC sensor is blocked or dirty, making it impossible to detect a vehicle ahead.</p>	<p>A chime sounds and the control is automatically canceled.</p> <p>NOTE:</p> <p>Park the vehicle in a safe place, turn the engine OFF. Clean the front bumper near the ICC sensor and then perform the settings again.</p>	 <p style="text-align: right; font-size: small;">ALOIA00532Z</p>
<p>When the ICC system is malfunctioning</p>	<p>A chime sounds and the control is automatically canceled.</p> <p>NOTE:</p> <p>Turn the engine OFF and restart engine. If there is no malfunction, it is possible to set the system.</p>	 <p style="text-align: right; font-size: small;">ALOIA00532Z</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

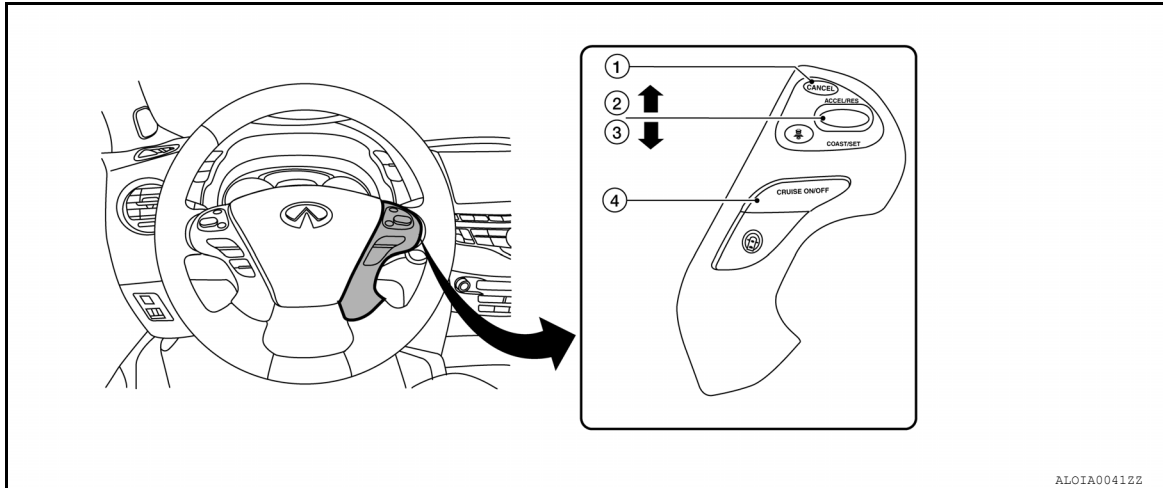
OPERATION

< SYSTEM DESCRIPTION >

[ICC]

Name and Function

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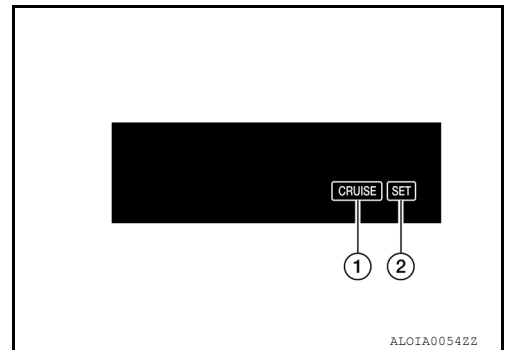
ALOIA00412Z

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

CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION : Menu Displayed by Pressing Each Switch

INFOID:000000007911280

ICC SYSTEM DISPLAY (ON THE INFORMATION DISPLAY)



ALOIA00542Z

No.	Display item	Description
1	MAIN switch indicator (white)	White: Indicates that the main switch is ON (ICC system ON)
	ICC system warning lamp (orange)	Orange: Indicates that a malfunction occurred in the ICC system
2	SET switch indicator	Indicates that the set conventional (fixed speed) cruise control mode is controlled

SYSTEM CONTROL CONDITION DISPLAY

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



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OPERATION

< SYSTEM DESCRIPTION >

[ICC]

Condition	Display on ICC system display
Standby mode	 <p style="text-align: right; font-size: small;">ALOIA0053ZZ</p>
Control mode	 <p style="text-align: right; font-size: small;">ALOIA0055ZZ</p>

WARNING AND AUTOMATIC CANCELLATION DISPLAY

Condition	Description	Display on ICC system display
Warning display	<p>When the ICC system is malfunctioning</p> <p>A chime sounds and the control is automatically canceled.</p> <p>NOTE: Turn the engine OFF and restart engine. If there is no malfunction, it is possible to set the system</p>	 <p style="text-align: right; font-size: small;">ALOIA0053ZZ</p>
System cancel display	<ul style="list-style-type: none"> • When brake pedal is depressed • When pressing CANCEL switch • When the vehicle slows down more than 8 MPH (13 km/h) below the set speed • When the selector lever is not in the "D" position or manual mode • When the parking brakes are applied • When VDC (including the TCS) operates • When a wheel slips <p>A chime sounds and the control is automatically canceled</p> <p>NOTE:</p> <ul style="list-style-type: none"> • The system will be in a standby, after the control is automatically canceled • A chime sounds when the control is automatically canceled, except when brake pedal is depressed or when CANCEL switch is pressed 	 <p style="text-align: right; font-size: small;">ALOIA0053ZZ</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:000000007911281

- ICC system is only an aid to assist the driver and is not a collision warning or avoidance system. 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. Never use the system on roads with sharp curves, or on icy roads, in heavy rain or in fog.
- The ICC sensor will not detect the following objects:
 - Stationary and slow moving vehicles.
 - Pedestrians or objects in the roadway.
 - Oncoming vehicles in the some 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 ICC 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.
 - Never use the ICC system if own vehicle is towing a trailer. The system may not detect a vehicle ahead.
- 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 front bumper of the vehicle 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 luggage room of own vehicle.
- The ICC system is designed to automatically check the sensor's operation within the limitation of the system. When the front bumper area of the ICC sensor is covered with dirt or is obstructed, the system will automatically cancel. If the front bumper area of the ICC 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 front bumper area of the ICC 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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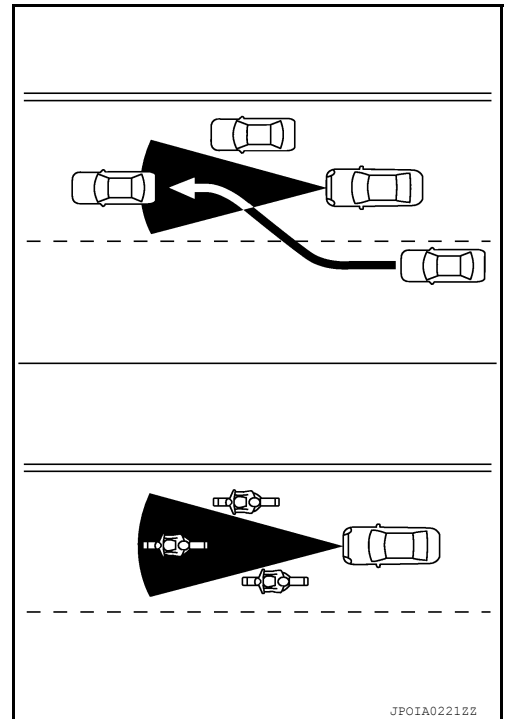
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HANDLING PRECAUTION

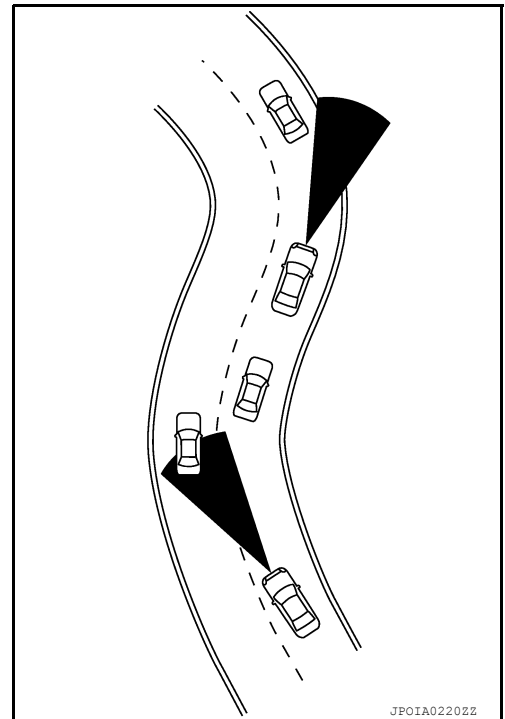
[ICC]

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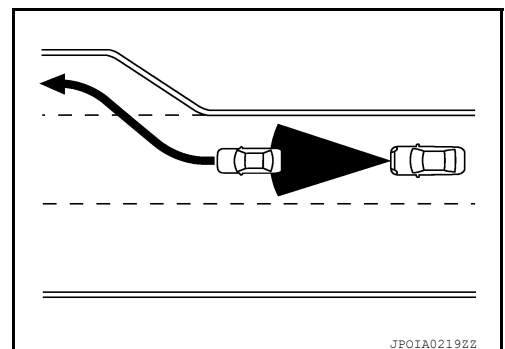
- The detection zone of the ICC sensor is limited. A vehicle ahead must be in the detection zone for the vehicle-to-vehicle distance detection mode to maintain the selected distance from the vehicle ahead. A vehicle ahead may move outside of the detection zone due to its position within the same lane 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.



HANDLING PRECAUTION

< SYSTEM DESCRIPTION >

[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.
- 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).

Precautions for Conventional (Fixed Speed) Cruise Control Mode

INFOID:000000007911282

- 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.
- Never 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 the MAIN switch OFF when not using ICC system.

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[ICC]

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

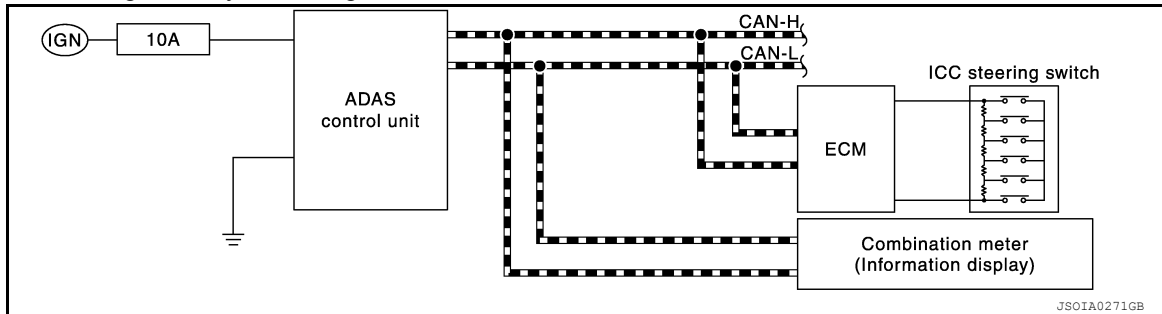
On Board Diagnosis Function

INFOID:000000008273210

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:

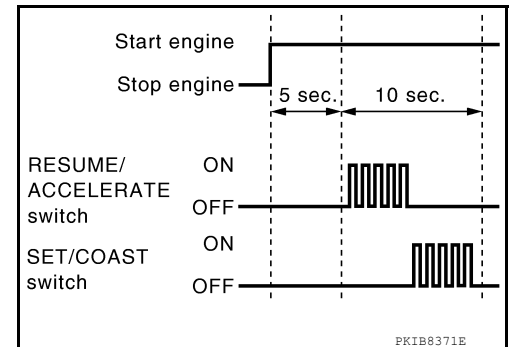
Start condition of on board self-diagnosis

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

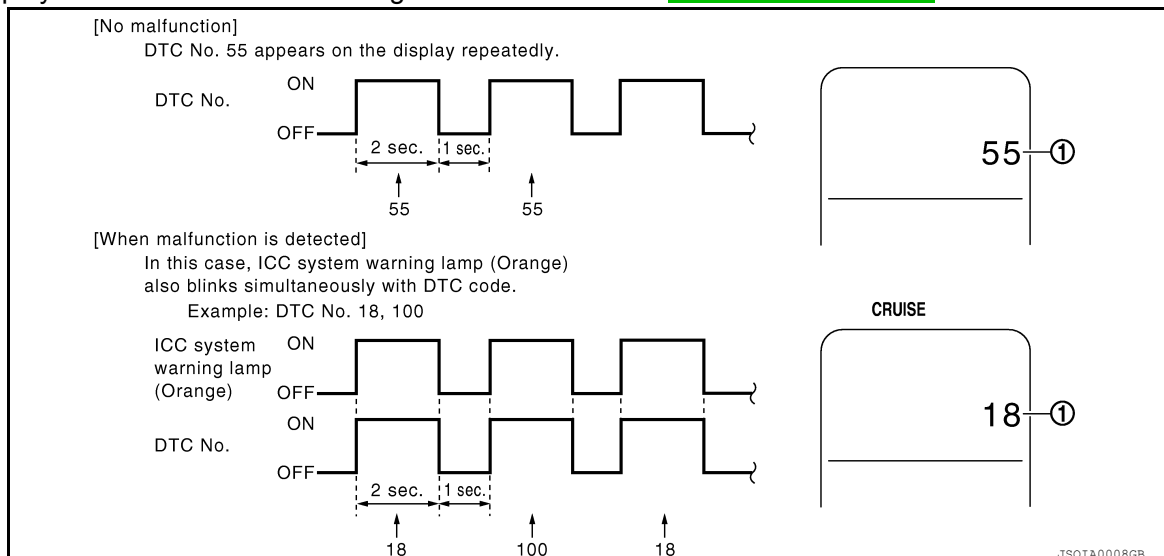
1. Turn the ignition switch OFF.
2. Start the engine.
3. Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.

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-48, "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 MWI-17, "Description"
ICC steering switch malfunction		Perform the inspection for DTC“C1A06”. Refer to CCS-109, "Diagnosis Procedure"
Harness malfunction between ICC steering switch and ECM		
ECM malfunction		
ADAS control unit malfunction		<ul style="list-style-type: none"> • Check power supply and ground circuit of ADAS control unit. Refer to DAS-78, "Diagnosis Procedure". • Perform SELF-DIAGNOSIS for “ICC/ADAS”with CONSULT, and then check the malfunctioning parts. Refer to DAS-48, "DTC Index".

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:

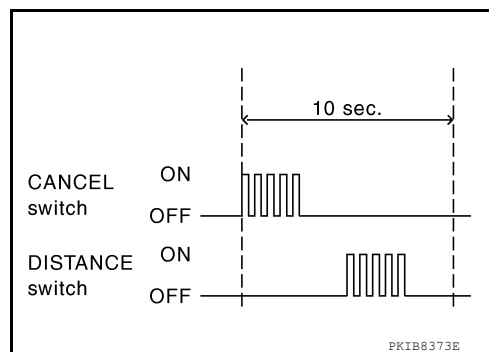
- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.

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:000000007911284

APPLICATION ITEMS

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

Diagnosis mode	Description
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.
Work support	Displays causes of automatic system cancellation occurred during system control.
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 Mntr	Displays a reception/transmission state of CAN communication and ITS communication.

SELF DIAGNOSTIC RESULT

Refer to [DAS-48, "DTC Index"](#).

DATA MONITOR

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
MAIN SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
CRUISE OPE [On/Off]	×	×			Indicates whether controlling or not (ON means "controlling")
BRAKE SW [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 [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication)
IDLE SW [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 [Short/Mid/Long]	×	×			Indicates set distance memorized in ADAS control unit
CRUISE LAMP [On/Off]	×	×			Indicates [On/Off] status of MAIN switch indicator output
OWN VHCL [On/Off]	×				Indicates [On/Off] status of own vehicle indicator output
VHCL AHEAD [On/Off]	×				Indicates [On/Off] status of vehicle ahead detection indicator output
ICC WARNING [On/Off]	×				Indicates [On/Off] status of ICC system warning lamp output
VHCL SPEED SE [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 [km/h] or [mph]	×	×			Indicates set vehicle speed memorized in ADAS control unit
BUZZER O/P [On/Off]	×				Indicates [On/Off] status of ICC warning chime output
THRTL SENSOR [deg]	×	×			NOTE: The item is displayed, but it is not monitored
ENGINE RPM [rpm]	×				Indicates engine speed read from ADAS control unit through CAN communication (ECM transmits engine speed signal through CAN communication)
WIPER SW [OFF/LOW/HIGH]	×				Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication)
YAW RATE [deg/s]	×				NOTE: The item is displayed, but it is not monitored
BA WARNING [On/Off]	×				Indicates [On/Off] status of IBA OFF indicator lamp output
STP LMP DRIVE [On/Off]	×	×			Indicates [On/Off] status of ICC brake hold relay drive output

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
D RANGE SW [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 [On/Off]	×				Indicates shift position signal read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
PKB SW [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 [V]	×	×			Indicates IGN voltage input by ADAS control unit
VHCL SPD AT [km/h] or [mph]	×				Indicates vehicle speed calculated from CVT vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits CVT vehicle speed sensor signal through CAN communication)
THRTL OPENING [%]	×	×			Indicates throttle position read from ADAS control unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).
GEAR [1, 2, 3, 4, 5, 6]	×				Indicates CVT gear position read from ADAS control unit through CAN communication (TCM transmits current gear position signal through CAN communication)
MODE SIG [OFF, ICC, ASCD]	×				Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode]
SET DISP IND [On/Off]	×				Indicates [On/Off] status of SET switch indicator output
DISTANCE [m]	×				Indicates the distance from the vehicle ahead
RELATIVE SPD [m/s]	×				Indicates the relative speed of the vehicle ahead
Camera lost [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)
Lane unclear [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 (The lane camera unit transmits a detected lane condition signal via ITS communication)
STATUS signal [Stnby/Warn/Cancl/Off]			×		Indicates a control state of LDP system
DYNA ASIST SW [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 [On/Off]	×				The status [ON/OFF] of DCA system switch indicator output is displayed
DCA VHL AHED [On/Off]	×				The status [ON/OFF] of vehicle ahead detection indicator output in DCA system is displayed
IBA SW [On/Off]	×	×			Indicates [On/Off] status of IBA OFF switch
APA TEMP [°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)

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
APA PWR [V]	×				Accelerator pedal actuator power supply voltage that the ADAS control unit read-out via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication)
FCW SYSTEM ON [On/Off]	×	×			Indicates [On/Off] status of FCW system
LDW SYSTEM ON [On/Off]			×		Indicates [On/Off] status of LDW system
LDW ON LAMP [On/Off]			×		Indicates [On/Off] status of warning systems ON indicator output
LDP ON IND [On/Off]			×		Indicates [On/Off] status of LDP ON indicator lamp (Green) output
LANE DPRT W/L [On/Off]			×		Indicates [On/Off] status of lane departure warning lamp (Yellow) output
LDW BUZER OUTPUT [On/Off]			×		Indicates [On/Off] status of warning buzzer output
LDP SYSTEM ON [On/Off]			×		Indicates [On/Off] status of LDP system
READY signal [On/Off]			×		Indicates LDP system settings
Shift position [Off, P, R, N, D, M/T1 - 7]			×	×	Indicates shift position read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
Turn signal [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 [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)
FUNC ITEM [FUNC3]	×	×	×	×	Indicates systems which can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the navigation system FUNC3: Distance Control Assist (DCA), Lane Departure Prevention (LDP) and Blind Spot Intervention
FUNC ITEM (NV-ICC) [Off]	×	×	×	×	NOTE: The item is displayed, but it is not monitored
FUNC ITEM (NV-DCA) [Off]	×	×	×	×	NOTE: The item is displayed, but it is not monitored
DCA SELECT [On/Off]	×	×	×	×	Indicates an ON/OFF state of DCA system. DCA system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the navigation system
LDP SELECT [On/Off]	×	×	×	×	Indicates an ON/OFF state of LDP system. LDP system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the navigation system
BSI SELECT [On/Off]	×	×	×	×	Indicates an ON/OFF state of Blind Spot Intervention system. Blind Spot Intervention system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the navigation system
NAVI ICC SELECT [Off]	×	×	×	×	NOTE: The item is displayed, but it is not monitored
NAVI DCA SELECT [Off]	×	×	×	×	NOTE: The item is displayed, but it is not monitored

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
SYS SELECTABILITY [On/Off]	×	×	×	×	Indicates the availability of ON/OFF switching for "Driver Assistance" items received from the AV control unit via CAN communication
DRIVE MODE STATS [SNO/ECO/STD/SPT]	×	×	×	×	Indicates [On/Off] status of warning systems switch
WARN SYS SW [On/Off]	×	×	×	×	Indicates [On/Off] status of warning systems switch
BSW/BSI WARN LMP [On/Off]				×	Indicates [On/Off] status of Blind Spot Warning/Blind Spot Intervention warning lamp output
BSI ON IND [On/Off]				×	Indicates [On/Off] status of Blind Spot Intervention ON indicator output
BSW SYSTEM ON [On/Off]				×	Indicates [On/Off] status of BSW system
BSI SYSTEM ON [On/Off]				×	Indicates [On/Off] status of Blind Spot Intervention system
PRESS ORDER [BAR]					Indicates amount of foot pressure applied
BCP ON [On/Off]					Indicates [On/Off] status of BCP system
BCI SW ADAS [On/Off]					Indicates [On/Off] status of Backup Collision Intervention system
LDP_FAIL_LAMP [On/Off]				×	Indicates [On/Off] status of Lane Departure Prevention system failure lamp
LDW_ON_LAMP [On/Off]				×	Indicates [On/Off] status of LDW system
LDW_FAIL_LAMP [On/Off]				×	Indicates [On/Off] status of Lane Departure Warning system failure lamp
SYSTEM_CANCEL_MES SAGE [Request/No Request]	×	×	×	×	Indicates system cancel message request
CAM_HI_TEMP_MSG [On/Off]			×	×	Indicates high temperature message has been received
ITS Setting Item(DCA) [On/Off]	×	×	×	×	Indicates [On/Off] status of Distance Control Assist warning lamp output
ITS Setting Item(LDP) [On/Off]	×	×	×	×	Indicates [On/Off] status of Lane Departure Prevention warning lamp output
ITS Setting Item(BSI) [On/Off]	×	×	×	×	Indicates [On/Off] status of Blind Spot Intervention system
BSI FAIL IND [On/Off]				×	Indicates [On/Off] status of Blind Spot Intervention warning lamp indicator
BSW ON IND [On/Off]				×	Indicates [On/Off] status of BSW system
SR_BLK_MSG [On/Off]				×	Indicates [On/Off] status of messages received
WARN_LANE_TIMING [-] [On/Off]			×		Indicates [On/Off] status of warning lane timing

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
BSW_IND_BRIGHTNESS [Bright/Not Bright]				×	Indicates BSW warning lamp indicator brightness level
WARN REQ [On/Off]			×		Indicates an ADAS control unit judged warning state (ON/OFF) of LDP system

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"> • Vehicle-to-vehicle distance control mode • Conventional (fixed speed) cruise control mode • Distance Control Assist (DCA)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Lane Departure Prevention (LDP) • Blind Spot Intervention
CAUSE OF AUTO-CANCEL 3	Displays causes of automatic system cancellation occurred during control of the following system <ul style="list-style-type: none"> • Backup Collision Intervention

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	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
LASER TEMP	×		×	Temperature around ICC sensor became low
SNOW MODE SW	×		×	SNOW mode switch was pressed

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[ICC]

< SYSTEM DESCRIPTION >

OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time	A
VHCL SPD DOWN	×	×	×	Vehicle speed lower than the speed as follows • Vehicle-to-vehicle distance control mode is 15 MPH (24 km/h) • Conventional (fixed speed) cruise control mode is 14 MPH (22 km/h)	B
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise	
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed	C
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from CVT vehicle speed	
FR RADAR BLOCKED	×		×	The front bumper near the ICC sensor is blocked or dirty	D
TIRE SLIP	×	×		Wheel slipped	E
IGN LOW VOLT	×	×	×	Decrease in ADAS control unit IGN voltage	
PARKING BRAKE ON	×	×		The parking brake is engaged	F
WHEEL SPD UNMATCH	×	×	×	The wheel speeds of 4 wheels are out of the specified values	
INCHING LOST	×			A vehicle ahead is not detected during the following driving when the vehicle speed is approximately 15 MPH (24 km/h) or less	G
CAN COMM ERROR	×	×	×	ADAS control unit received an abnormal signal with CAN communication	H
ABS/TCS/VDC CIRC	×	×	×	An abnormal condition occurs in VDC/TCS/ABS system	I
ECD CIRCUIT	×	×	×	An abnormal condition occurs in ECD system	J
ASCD VHCL SPD DTAC		×		Vehicle speed is detached from set vehicle speed	K
ASCD DOUBLE COMD		×		Cancel switch and operation switch are detected simultaneously	L
APA HI TEMP			×	The accelerator pedal actuator integrated motor temperature is high	M
ICC SENSOR CAN COMM ERR	×		×	Communication error between ADAS control unit and the ICC sensor	N
ABS WARNING LAMP	×		×	ABS warning lamp ON	O
NO RECORD	×	×	×	—	P

Display Items for The Cause of Automatic Cancellation 2

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
OPE VDC/TCS/ABS 1	×		The activation of VDC, TCS, or ABS during LDP system control
Vehicle dynamics	×		Vehicle behavior exceeds specified value
Steering speed	×		Steering speed was more than the specified value in evasive direction
End by yaw angle	×		Yaw angle was the end of LDP control
Departure yaw large	×		Detected more than the specified value of yaw angle in departure direction
ICC WARNING	×		Target approach warning of ICC system, IBA system, or FCW system was activated
CURVATURE	×		Road curve was more than the specified value
Steering angle large	×		Steering angle was more than the specified value
Brake is operated	×		Brake pedal was operated
IGN LOW VOLT	×		Decrease in ADAS control unit IGN voltage

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
Lateral offset	×		Distance of vehicle and lane was detached in lateral direction more than the specified value
Lane marker lost	×		Lane camera unit lost the trace of lane marker
Lane marker unclear	×		Detected lane marker was unclear
Yaw acceleration	×		Detected yawing speed was more than the specified value
Deceleration large	×		Deceleration in a longitudinal direction was more than the specified value
Accel is operated	×		Accelerator pedal was depressed
Departure steering	×		Steering wheel was steered more than the specified value in departure direction
Evasive steering	×		Steering wheel was steered more than the specified value in the evasive direction
R range	×		Selector lever was operated to R range
Parking brake drift	×		Rear wheels lock was detected
Not operating condition	×		Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
SNOW MODE SW	×		SNOW mode switch was pressed
VDC OFF SW	×		VDC OFF switch was pressed
OPE VDC/ABS 2	×		The activation of VDC or ABS during a standby time of LDP system control
BSI WARNING	×		Blind Spot Intervention system was activated
BSI) OPE VDC/TCS/ABS 1		×	The activation of VDC, TCS, or ABS during Blind Spot Intervention system control
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value
BSI) Steering speed		×	Steering speed was more than the specified value in evasive direction
BSI) End by yaw angle		×	Yaw angle was the end of Blind Spot Intervention control
BSI) Departure yaw large		×	Detected more than the specified value of yaw angle in departure direction
BSI) ICC WARNING		×	Target approach warning of ICC system, IBA system or FCW system was activated
BSI) CURVATURE		×	Road curve was more than the specified value
BSI) Steering angle large		×	Steering angle was more than the specified value
BSI) Brake is operated		×	Brake pedal was operated
BSI) IGN LOW VOLT		×	Decrease in ADAS control unit IGN voltage
BSI) Lateral offset		×	Distance of vehicle and lane was detached in lateral direction more than the specified
BSI) Lane marker lost		×	Lane camera unit lost the trace of lane marker
BSI) Lane marker unclear		×	Detected lane marker was unclear
BSI) Yaw acceleration		×	Detected yawing speed was more than the specified value
BSI) Deceleration large		×	Deceleration in a longitudinal direction was more than the specified value
BSI) Accel is operated		×	Accelerator pedal was depressed
BSI) Departure steering		×	Steering wheel was steered more than the specified value in departure direction
BSI) Evasive steering		×	Steering wheel was steered more than the specified value in the evasive direction
BSI) R range		×	Selector lever was operated to R range
BSI) Parking brake drift		×	Rear wheels lock was detected

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
BSI) SNOW MODE SW		×	SNOW mode switch was pressed
BSI) VDC OFF SW		×	VDC OFF switch was pressed
BSI) OPE VDC/ABS 2		×	The activation of VDC or ABS during a standby time of Blind Spot Intervention system control
BSI) Not operating condition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	×	—

Display Items for The Cause of Automatic Cancellation 3

Cause of cancellation	Backup Collision Intervention	Description
OPERATING WIPER	×	The wiper operates at HI (it includes when the wiper is operated at HI with the wiper switch AUTO position)
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
SNOW MODE SW	×	SNOW mode switch was pressed
VDC/TCS OFF SW	×	VDC OFF switch was pressed
VHCL SPD UNMATCH	×	Wheel speed became different from CVT vehicle speed
TIRE SLIP	×	Wheel slipped
IGN LOW VOLT	×	Decrease in ADAS control unit IGN voltage
PARKING BRAKE ON	×	The parking brake is engaged
WHEEL SPD UNMATCH	×	The wheel speeds of 4 wheels are out of the specified values
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication
ABS/TCS/VDC CIRC	×	An abnormal condition occurs in VDC/TCS/ABS system
ECD CIRCUIT	×	An abnormal condition occurs in ECD system
APA HI TEMP		The accelerator pedal actuator integrated motor temperature is high
ABS WARNING LAMP	×	ABS warning lamp ON
Brake is operated	×	Brake pedal was operated
Accel is operated	×	Accelerator pedal was depressed
SNOW MODE SW	×	DMS switch SNOW mode was selected
VDC OFF SW	×	VDC OFF switch was pressed

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[ICC]

< SYSTEM DESCRIPTION >

Side Radar Lost	×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	—

ACTIVE TEST

CAUTION:

- **Never perform “Active Test” while driving the vehicle.**
- **The “Active Test” cannot be performed when the following systems warning lamp is illuminated.**
 - **ICC system warning lamp**
 - **Lane departure warning lamp**
 - **Blind Spot Warning/Blind Spot Intervention warning lamp**
 - **IBA OFF indicator lamp (IBA system ON)**
- **Shift the selector lever to “P” position, and then perform the test.**

Test item	Description
BRAKE ACTUATOR	Activates the brake by an arbitrary operation
ICC BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> • Intelligent Cruise Control (ICC) • Distance Control Assist (DCA) • Forward Collision Warning (FCW) • Intelligent Brake Assist (IBA)
METER LAMP	The ICC system warning lamp, MAIN switch indicator and IBA OFF indicator 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
ACTIVE PEDAL	The accelerator pedal actuator can be operated as necessary
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention
WARNING SYSTEM IND	Warning systems ON indicator (on warning systems switch) can be illuminated by ON/OFF operations as necessary
LDP ON IND	The LDP ON indicator lamp can be illuminated by ON/OFF operations as necessary
LANE DEPARTURE W/L	The Lane departure warning lamp can be illuminated by ON/OFF operations as necessary
BSW/BSI WARNING LAMP	The Blind Spot Warning/Blind Spot Intervention warning lamp can be illuminated by ON/OFF operations as necessary
BSI ON INDICATOR	The Blind Spot Intervention ON indicator can be illuminated by ON/OFF operations as necessary
LDW ON IND	The LDW ON indicator lamp can be illuminated by ON/OFF operations as necessary
LDP FAIL IND	The LDP fail indicator lamp can be illuminated by ON/OFF operations as necessary
LDW FAIL IND	The LDW fail indicator lamp can be illuminated by ON/OFF operations as necessary
BSW ON IND	The BSW ON indicator lamp can be illuminated by ON/OFF operations as necessary
BSI FAIL IND	The BSI fail indicator lamp can be illuminated by ON/OFF operations as necessary

BRAKE ACTUATOR

NOTE:

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

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

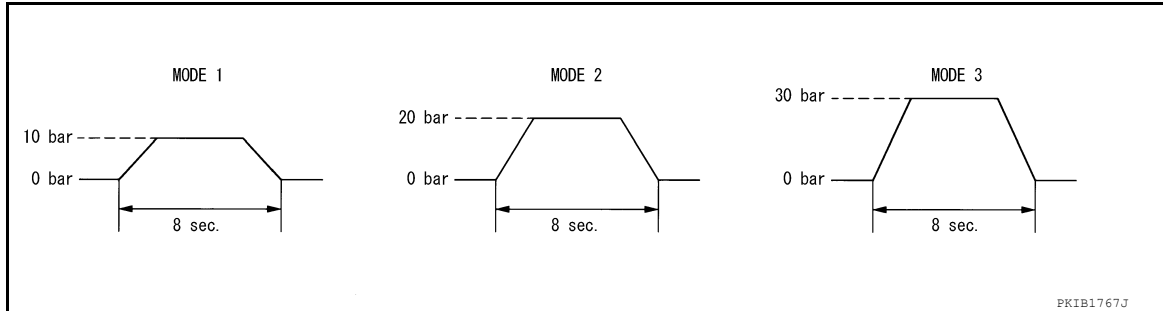
< SYSTEM DESCRIPTION >

[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 CAN communication	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



ICC BUZZER

Test item	Operation	Description	ICC warning chime operation sound
ICC BUZZER	MODE1	Transmits the buzzer output signals to the combination meter via CAN 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	—

METER LAMP

NOTE:

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

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

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[ICC]

< SYSTEM DESCRIPTION >

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.)

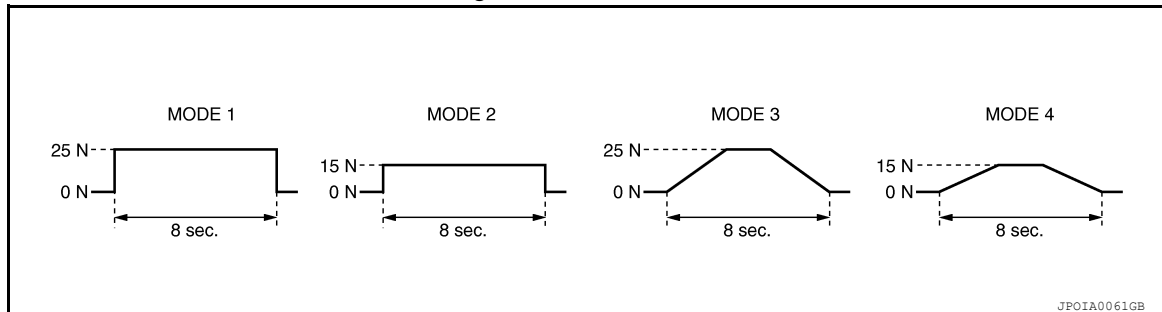
NOTE:

- 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:

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 switch indicator
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal below to end the test	—
	On	Transmits the DCA system switch indicator 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

WARNING SYSTEM IND

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

Test item	Operation	Description	Warning systems ON indicator
WARNING SYSTEM IND	Off	Stops transmitting the warning systems ON indicator signal below to end the test	—
	On	Transmits the warning systems ON indicator signal to the warning systems ON indicator	ON

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LDP ON IND

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

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LANE DEPARTURE W/L

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

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BSW/BSI WARNING LAMP

Test item	Operation	Description	Blind Spot Warning/Blind Spot Intervention warning lamp (Yellow)
BSW/BSI WARNING LAMP	Off	Stops transmitting the Blind Spot Warning/Blind Spot Intervention warning lamp signal below to end the test	—
	On	Transmits the Blind Spot Warning/Blind Spot Intervention warning lamp signal to the combination meter via CAN communication	ON

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BSI ON INDICATOR

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

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LDW ON INDICATOR

Test item	Operation	Description	Lane Departure Warning ON indicator lamp (Yellow)
LDW ON INDICATOR	Off	Stops transmitting the Lane Departure Warning ON indicator signal below to end the test	—
	On	Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication	ON

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LDP FAIL INDICATOR

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

Test item	Operation	Description	Lane Departure prevention ON indicator lamp (Yellow)
LDP FAIL INDICATOR	Off	Stops transmitting the Lane Departure prevention ON indicator signal below to end the test	—
	On	Transmits the Lane Departure prevention ON indicator signal to the combination meter via CAN communication	ON

LDW FAIL INDICATOR

Test item	Operation	Description	Lane Departure Warning ON indicator lamp (Yellow)
LDW FAIL INDICATOR	Off	Stops transmitting the Lane Departure Warning ON indicator signal below to end the test	—
	On	Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication	ON

BSW ON INDICATOR

Test item	Operation	Description	Blind Spot Warning ON indicator lamp (Yellow)
BSW ON INDICATOR	Off	Stops transmitting the Blind Spot Warning ON indicator signal below to end the test	—
	On	Transmits the Blind Spot Warning ON indicator signal to the warning lamp on the door	ON

BSI FAIL INDICATOR

Test item	Operation	Description	Blind Spot Intervention FAIL indicator lamp (Yellow)
BSI FAIL INDICATOR	Off	Stops transmitting the Blind Spot Intervention FAIL indicator signal below to end the test	—
	On	Transmits the Blind Spot Intervention FAIL indicator signal to the warning lamp on the door	ON

ECU IDENTIFICATION

ADAS control unit part number is displayed.

DIAGNOSIS SYSTEM (ICC SENSOR)

< SYSTEM DESCRIPTION >

[ICC]

DIAGNOSIS SYSTEM (ICC SENSOR)

CONSULT Function (LASER/RADAR)

INFOID:000000007911285

APPLICATION ITEMS

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

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

SELF DIAGNOSTIC RESULT

Refer to [CCS-65, "DTC Index"](#).

DATA MONITOR

Monitored item [Unit]	Description
VHCL SPEED SE [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 [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) 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 [V]	Indicates IGN voltage input by ICC sensor
DISTANCE [m]	Indicates the distance from the vehicle ahead
RELATIVE SPD [m/s]	Indicates the relative speed of the vehicle ahead
RADAR OFFSET [m]	NOTE: The item is indicated, but not used
RADAR HEIGHT [m]	NOTE: The item is indicated, but not used
STEERING ANGLE [deg]	The steering angle is displayed
STRG ANGLE SPEED [deg/s]	The steering angle speed is displayed
L/R ADJUST [deg]	Indicates a horizontal correction value of the radar
U/D ADJUST [deg]	Indicates a vertical correction value of the radar

WORK SUPPORT

DIAGNOSIS SYSTEM (ICC SENSOR)

[ICC]

< SYSTEM DESCRIPTION >

Work support items	Description
MILLIWAVE RADAR ADJUST	Outputs millimeter waves, calculates the displacement in radar direction, and indicates an adjustment direction

Milliwave Radar Adjust

Refer to [CCS-85](#), "Description".

ECU IDENTIFICATION

ICC sensor part number is displayed.

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:000000007911286

VALUES ON THE DIAGNOSIS TOOL

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 pedal is depressed	Off
		When brake 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"> • Start the engine and turn the ICC system ON • Press the DISTANCE switch to change the vehicle-to-vehicle distance setting 	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	Start the engine and press MAIN switch	ICC system ON (Own vehicle indicator ON)	On
		ICC system OFF (Own vehicle indicator OFF)	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 warning lamp ON)	On
		When ICC system is normal (ICC system warning lamp OFF)	Off

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays a vehicle speed calculated by the 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"> • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system 	On
		When the buzzer of the following system not operates <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system 	Off
THRTL SENSOR	NOTE: 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	NOTE: The item is indicated, but not monitored		0.0
BA WARNING	Engine running	IBA OFF indicator lamp ON <ul style="list-style-type: none"> • When IBA system is malfunctioning • When IBA system is turned to OFF 	On
		IBA OFF indicator lamp OFF <ul style="list-style-type: none"> • When IBA system is normal • When IBA system is turned to ON 	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 CVT vehicle speed sensor signal

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Monitor item	Condition		Value/Status
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position
GEAR	While driving		Displays the gear position
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"> Drive the vehicle and activate the conventional (fixed speed) cruise control mode Press SET/COAST switch 	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
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
Lane unclear	While driving	Lane marker is unclear	On
		Lane marker is clear	Off
STATUS signal	Drive the vehicle with the LDP system turned ON	When the LDP system is ON	Stnby
		When the LDP system is operating	Warn
		When the LDP system is canceled	Cancl
		When the LDP system is OFF	Off
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 system setting is ON)	DCA system OFF (DCA system switch indicator OFF)	Off
		DCA system ON (DCA system switch indicator 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	Ignition switch ON	When the IBA OFF switch is pressed	On
		When the IBA OFF switch is not pressed	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

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Monitor item	Condition		Value/Status
FCW SYSTEM ON	Ignition switch ON	When the FCW system is ON (Warning systems ON indicator ON)	On
		When the FCW system is OFF (Warning systems ON indicator OFF)	Off
LDW SYSTEM ON	Ignition switch ON	When the LDW system is ON (Warning systems ON indicator ON)	On
		When the LDW system is OFF (Warning systems ON indicator OFF)	Off
LDW ON LAMP	Ignition switch ON	Warning systems ON indicator ON	On
		Warning systems ON indicator OFF	Off
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 OUTPUT	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 • LDW/LDP system • Blind Spot Warning/Blind Spot Intervention system	On
		When the buzzer of the following system does not operate • LDW/LDP system • 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
Shift position	<ul style="list-style-type: none"> • Engine running • While driving 		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
FUNC ITEM	Ignition switch ON		FUNC3
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not monitored		Off
FUNC ITEM (NV-DCA)	NOTE: The item is indicated, but not monitored		Off
DCA SELECT	Ignition switch ON	"Distance Control Assist" set with the navigation system is ON	On
		"Distance Control Assist" set with the navigation system is OFF	Off
LDP SELECT	Ignition switch ON	"Lane Departure Prevention" set with the navigation system is ON	On
		"Lane Departure Prevention" set with the navigation system is OFF	Off

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Monitor item	Condition		Value/Status
BSI SELECT	Ignition switch ON	"Blind Spot Intervention" set with the navigation system is ON	On
		"Blind Spot Intervention" set with the navigation system is OFF	Off
NAVI ICC SELECT	NOTE: The item is indicated, but not monitored		Off
NAVI DCA SELECT	NOTE: The item is indicated, but not monitored		Off
SYS SELECTABILITY	Ignition switch ON	Items set with the navigation system can be switched normally	On
		Items set with the navigation system cannot be switched normally	Off
DRIVE MODE STATS	Ignition switch ON	When the DMS switch is in normal position	Std
		When the DMS switch is in SNOW position	SNO
		When the DMS switch is in ECO position	ECO
		When the DMS switch is in SPORT position	SPT
WARN SYS SW	Ignition switch ON	When warning systems switch is pressed	On
		When warning systems switch is not pressed	Off
BSW/BSI WARN LMP	Ignition switch ON	Blind Spot Warning/Blind Spot Intervention warning lamp ON	On
		Blind Spot Warning/Blind Spot Intervention warning lamp OFF	Off
BSI ON IND	Ignition switch ON	Blind Spot Intervention ON indicator ON	On
		Blind Spot Intervention ON indicator OFF	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON (Warning systems ON indicator ON)	On
		When the BSW system is OFF (Warning systems ON indicator 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
PRESS ORDER	Ignition switch ON	When pressure exists	Pressure value
		When pressure does not exist	0
BCP ON	Ignition switch ON	Backup Collision Prevention warning lamp ON	On
		Backup Collision Prevention warning lamp OFF	Off
BCI SW ADAS	Ignition switch ON	Backup Collision Intervention switch ON	On
		Backup Collision Intervention switch OFF	Off
LDP_FAIL_LAMP	Ignition switch ON	When the LDP fail lamp is ON (Warning systems ON indicator ON)	On
		When the LDP fail lamp is OFF	Off
LDW_ON_LAMP	Ignition switch ON	When LDW indicator lamp is ON	On
		When LDW indicator lamp is OFF	Off
LDW_FAIL_LAMP	Ignition switch ON	When LDW FAIL lamp is ON	On
		When LDW FAIL lamp is OFF	Off
SYSTEM_CANCEL_MESSAGE	Ignition switch ON	When a system cancel message is sent	Request
		When a system cancel message is not sent	No Request
CAM_HI_TEMP_MSG	Ignition switch ON	When camera high temperature message is sent	On
		When camera high temperature message is not sent	Off

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ADAS CONTROL UNIT

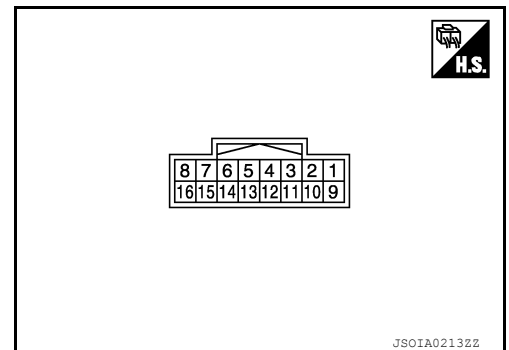
< ECU DIAGNOSIS INFORMATION >

[ICC]

Monitor item	Condition		Value/Status
ITS Setting Item(DCA)	Ignition switch ON	When the DCA is set	On
		When the DCA is not set	Off
ITS Setting Item(LDP)	Ignition switch ON	When the LDP is set	On
		When the LDP is not set	Off
ITS Setting Item(BSI)	Ignition switch ON	When the BSI is set	On
		When the BSI is not set	Off
BSI FAIL IND	Ignition switch ON	When BSI FAIL indicator warning lamp is ON	On
		When BSI FAIL indicator warning lamp is OFF	Off
BSW ON IND	Ignition switch ON	When BSW ON indicator lamp is ON	On
		When BSW ON indicator lamp is OFF	Off
SR_BLK_MSG	Ignition switch ON	When message exists	On
		When message does not exist	Off
WARN_LANE_TIMING	Ignition switch ON	When warning lane timing is present	On
		When warning lane timing is not present	Off
BSW_IND_BRIGHTNESS	Ignition switch ON	When BSW indicator brightness is selected	On
		When BSW indicator brightness is not selected	Off
WARN REQ	Drive the vehicle and activate the LDP system	Lane departure warning is operating	On
		Lane departure warning is not operating	Off

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
5 (G)	Ground	ICC brake hold relay drive signal	Output	Ignition switch ON	—	12 V
				At "STOP LAMP" test of "Active test"	—	0 V
6 (B)		Ground	Input	—	—	0 V
7 (L)		ITS communication-H	—	—	—	—
8 (Y)		ITS communication-L	—	—	—	—
14 (B)		CAN -H	—	—	—	—
15 (W)		CAN -L	—	—	—	—
16 (R)	Ignition power supply	Input	Ignition switch ON		Battery Voltage	

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Fail-safe (ADAS Control Unit)

INFOID:000000008273190

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

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention (BSI)	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Backup Collision Intervention (BCI)	Low-pitched tone	Backup Collision warning lamp	Cancel

DTC Inspection Priority Chart

INFOID:000000007911288

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"> • U1507: LOST COMM (SIDE RDR R) • U1508: LOST COMM (SIDE RDR L)
2	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	<ul style="list-style-type: none"> • C1B00: CAMERA UNIT MALF • C1F02: APA C/U MALF • C1A17: ICC SENSOR MALF • C1B53: SIDE RDR R MALF • C1B54: SIDE RDR L MALF • C1B56: SONAR CIRCUIT • C1B57: AVM CIRCUIT

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Priority	Detected items (DTC)
4	<ul style="list-style-type: none"> • C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A04: ABS/TCS/VDC CIRC • C1A05: BRAKE SW/STOP L SW • C1A06: OPERATION SW CIRC • C1A12: LASER BEAM OFFCNTR • C1A13: STOP LAMP RLY FIX • C1A14: ECM CIRCUIT • C1A16: RADAR STAIN • C1A18: LASER AIMING INCOMP • C1A2A: ICC SEN PWR SUP CIR • C1A21: ICC SENSOR HIGH TEMP • C1A24: NP RANGE • C1A26: ECD MODE MALF • C1A27: ECD PWR SUPPLY CIR • C1A33: CAN TRANSMISSION ERR • C1A34: COMMAND ERROR • C1A35: APA CIR • C1A36: APA CAN COMM CIR • C1A37: APA CAN CIR 2 • C1A38: APA CAN CIR 1 • C1A39: STRG SEN CIR • C1A40: SYSTEM SW CIRC • C1B01: CAM AIMING INCOMP • C1B03: CAM ABNRML TMP DETCT • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPPLY CIR • U0121: VDC CAN CIR 2 • U0126: STRG SEN CAN CIR 1 • U0235: ICC SENSOR CAN CIRC 1 • U0401: ECM CAN CIR 1 • U0402: TCM CAN CIR 1 • U0415: VDC CAN CIR 1 • U0428: STRG SEN CAN CIR 2 • U1500: CAM CAN CIR 2 • U1501: CAM CAN CIR 1 • U1502: ICC SEN CAN COMM CIR • U1503: SIDE RDR L CAN CIR 2 • U1504: SIDE RDR L CAN CIR 1 • U1505: SIDE RDR R CAN CIR 2 • U1506: SIDE RDR R CAN CIR 1 • U150B: ECM CAN CIRC 3 • U150C: VDC CAN CIRC 3 • U150D: TCM CAN CIRC 3 • U150E: BCM CAN CIRC 3 • U150F: AV CAN CIRC 3 • U1512: HVAC CAN CIRC3 • U1513: METER CAN CIRC 3 • U1514: STRG SEN CAN CIRC 3 • U1515: ICC SENSOR CAN CIRC 3 • U1516: CAM CAN CIRC 3 • U1517: APA CAN CIRC 3 • U1518: SIDE RDR L CAN CIRC 3 • U1519: SIDE RDR R CAN CIRC 3 • U1520: 4WD CAN CIRC 3 • U1521: SONAR CAN COMMUNICATION • U1522: SONAR CAN COMMUNICATION • U1523: SONAR CAN COMMUNICATION • U1524: AVM CAN COMMUNICATION • U1525: AVM CAN COMMUNICATION
5	<ul style="list-style-type: none"> • C1A03: VHCL SPEED SE CIRC
6	<ul style="list-style-type: none"> • C1A15: GEAR POSITION
7	<ul style="list-style-type: none"> • C1A00: CONTROL UNIT

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

DTC Index

INFOID:000000007911289

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.

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Backup Collision Intervention (BCI)

DTC		CONSULT display	Warning lamp					Fail-safe	Reference
CONSULT	Onboard display		ICC system warning lamp	IBA OFF indicator lamp	Lane Departure Warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Warning indicator	System	
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-98
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-100
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-100
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-102
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-104
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-105
C1A06	6	OPERATION SW CIRC	ON		ON	ON	ON	A, B, E, F, G, H	CCS-109
C1A12	12	LASER BEAM OFFCN-TR	ON	ON				A, C, D, E	CCS-111
C1A13	13	STOP LAMP RLY FIX	ON	ON				A, B, C, D, E	CCS-113
C1A14	14	ECM CIRCUIT	ON		ON	ON	ON	A, B, E, F, G, H	CCS-119

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
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- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Backup Collision Intervention (BCI)

DTC		CONSULT display	Warning lamp					Fail-safe	Reference
CONSULT	Onboard display		ICC system warning lamp	IBA OFF indicator lamp	Lane Departure Warning lamp	Blind Spot Warning/Blind Spot intervention warning lamp	Backup Collision Warning indicator	System	
C1A15	15	GEAR POSITION	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-120
C1A16	16	RADAR STAIN	ON	ON				A, C, D, E	CCS-122
C1A17	17	ICC SENSOR MALF	ON	ON				A, B, C, D, E	CCS-124
C1A18	18	LASER AIMING INCOMP	ON	ON				A, C, D, E	CCS-125
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON				A, B, C, D, E	CCS-127
C1A24	24	NP RANGE	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-129
C1A26	26	ECD MODE MALF	ON	ON				A, B, C, D, E	CCS-131
C1A27	27	ECD PWR SUPPLY CIR	ON	ON				A, B, C, D, E	CCS-132
C1A33	33	CAN TRANSMISSION ERR	ON					A, B, E	CCS-134
C1A34	34	COMMAND ERROR	ON					A, B, E	CCS-135
C1A35	35	APA CIR	ON					A, E	CCS-136
C1A36	36	APA CAN COMM CIR	ON					A, E	CCS-137
C1A37	133	APA CAN CIR 2	ON					A, B, E	CCS-138
C1A38	132	APA CAN CIR 1	ON					A, B, E	CCS-139
C1A39	39	STRG SEN CIR	ON	ON		ON	ON	A, B, C, D, E, G, H	CCS-140
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON				A, C, D, E	CCS-133
C1B00	81	CAMERA UNIT MALF			ON	ON		F, G	DAS-416
C1B01	82	CAM AIMING INCOMP			ON	ON		F, G	DAS-418
C1B03	83	CAM ABNRML TMP DETCT			BLINK	BLINK		F, G	DAS-420
C1B53	84	SIDE RDR R MALF				ON	ON	G, H	DAS-575
C1B54	85	SIDE RDR L MALF				ON	ON	G, H	DAS-576
C1B56	87	SONAR CIRCUIT					ON	H	DAS-742

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
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DTC		CONSULT display	Warning lamp					Fail-safe	Reference
CONSULT	Onboard display		ICC system warning lamp	IBA OFF indicator lamp	Lane Departure Warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Warning indicator	System	
C1B57	88	AVM CIRCUIT					ON	H	DAS-743
C1F01	91	APA MOTOR MALF	ON					A, E	CCS-143
C1F02	92	APA C/U MALF	ON					A, E	CCS-144
C1F05	95	APA PWR SUPPLY CIR	ON					A, E	CCS-145
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	—	—	—	—	—	—	—
U0121	127	VDC CAN CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-147
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	ON	A, B, C, D, E, G, H	CCS-149
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON				A, B, C, D, E	CCS-151
U0401	120	ECM CAN CIR 1	ON		ON	ON	ON	A, B, E, F, G, H	CCS-152
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-153
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-155
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	ON	A, B, C, D, E, G, H	CCS-157
U1000 ^{NOTE}	100	CAN COMM CIRCUIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-159
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-161
U1500	145	CAM CAN CIR 2			ON	ON	ON	F, G	DAS-436
U1501	146	CAM CAN CIR 1			ON	ON	ON	F, G	DAS-437
U1502	147	ICC SEN CAN COMM CIR	ON	ON				A, B, C, D, E	CCS-166
U1503	150	SIDE RDR L CAN CIR 2				ON	ON	G, H	DAS-601
U1504	151	SIDE RDR L CAN CIR 1				ON	ON	G, H	DAS-602

CCS

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: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Backup Collision Intervention (BCI)

DTC		CONSULT display	Warning lamp					Fail-safe	Reference
CONSULT	Onboard display		ICC system warning lamp	IBA OFF indicator lamp	Lane Departure Warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Warning indicator	System	
U1505	152	SIDE RDR R CAN CIRC 2				ON	ON	G, H	DAS-603
U1506	153	SIDE RDR R CAN CIRC 1				ON	ON	G, H	DAS-604
U1507	154	LOST COMM (SIDE RDR R)				ON	ON	G, H	DAS-605
U1508	155	LOST COMM (SIDE RDR L)				ON	ON	G, H	DAS-606
U150B	157	ECM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	CCS-162
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-163
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-164
U150E	160	BCM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	CCS-165
U150F	161	AV CAN CIRC 3							DAS-77
U1512	162	HVAC CAN CIRC3			ON	ON	ON	F, G, H	DAS-438
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-167
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON	ON	A, B, C, D, E, G, H	CCS-168
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON				A, B, C, D, E	CCS-169
U1516	166	CAM CAN CIRC 3			ON	ON	ON	F, G, H	DAS-440
U1517	167	APA CAN CIRC 3	ON					A, B, E	CCS-170
U1518	168	SIDE RDR L CAN CIRC 3				ON	ON	G, H	DAS-611
U1519	169	SIDE RDR R CAN CIRC 3				ON	ON	G, H	DAS-612
U1521	177	SONAR CAN COMMUNICATION					ON	H	DAS-779
U1522	178	SONAR CAN COMMUNICATION					ON	H	DAS-780

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: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Backup Collision Intervention (BCI)

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DTC		CONSULT display	Warning lamp					Fail-safe		Reference
DTC	Onboard display		ICC system warning lamp	IBA OFF indicator lamp	Lane Departure Warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Warning indicator	System		
U1523	179	SONAR CAN COMMUNICATION					ON	H	DAS-781	
U1524	180	AVM CAN COMMUNICATION					ON	H	DAS-782	
U1525	181	AVM CAN COMMUNICATION					ON	H	DAS-783	

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.

CCS

ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[ICC]

ICC SENSOR

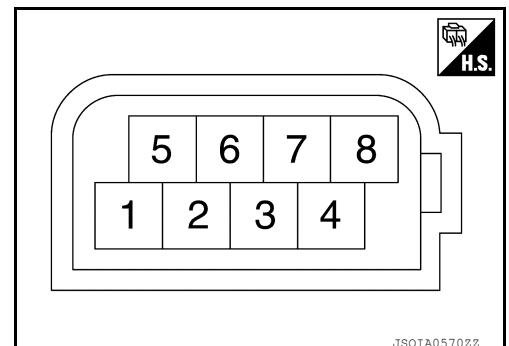
Reference Value

INFOID:000000007911290

VALUES ON THE DIAGNOSIS TOOL

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	NOTE: The item is indicated, but not used		—
RADAR HEIGHT	NOTE: 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

ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[ICC]

Terminal No. (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (P)	8 (B)	Ignition power supply	Input	Ignition switch ON	9.5 - 16 V	Battery voltage
6 (Y)	—	ITS communication-L	—	—	—	—
7 (L)		ITS communication-H	—	—	—	—
8 (B)	Ground	Ground	—	Ignition switch ON	0 - 0.1 V	0 V

Fail-safe

INFOID:000000007911291

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

DTC Inspection Priority Chart

INFOID:000000007911292

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"> U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)
2	<ul style="list-style-type: none"> C1A50: ADAS MALFUNCTION
3	<ul style="list-style-type: none"> C1A01: POWER SUPPLY CIR C1A02: POWER SUPPLY CIR 2 C1A12 :RADAR OFF-CENTER C1A16: RADAR BLOCKED C1A18: RADAR ALIGNMENT INCOMPLETE C1A21: UNIT HIGH TEMP C1A39: STRG SEN CIR U0104: ADAS CAN CIR1 U0121: VDC CAN CIR2 U0126: STRG SEN CAN CIR1 U0405: ADAS CAN CIR2 U0415: VDC CAN CIR1 U0428: STRG SEN CAN CIR2
4	<ul style="list-style-type: none"> C1A00: CONTROL UNIT

DTC Index

INFOID:000000007911293

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.

ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[ICC]

×: Applicable

DTC		ICC system warning lamp	Fail-safe function						Reference
			Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist (DCA)	Forward Collision Warning (FCW)	Intelligent Brake Assist (IBA)	Brake Assist (with preview function)	
CONSULT	CONSULT display								
C1A00	CONTROL UNIT	ON	×	×	×	×	×	×	CCS-98
C1A01	POWER SUPPLY CIR	ON	×	×	×	×	×	×	CCS-100
C1A02	POWER SUPPLY CIR2	ON	×	×	×	×	×	×	CCS-100
C1A12	RADAR OFF-CENTER	ON	×		×	×	×	×	CCS-112
C1A16	RADAR BLOCKED	ON	×		×	×	×	×	CCS-123
C1A18	RADAR ALIGNMENT INCOMPLETE	ON	×		×	×	×	×	CCS-126
C1A21	UNIT HIGH TEMP	ON	×	×	×	×	×	×	CCS-127
C1A39	STRG SEN CIR	ON	×	×	×	×	×	×	CCS-140
C1A50	ADAS MALFUNCTION	ON	×	×	×	×	×	×	CCS-142
U0104	ADAS CAN CIR1	ON	×	×	×	×	×	×	CCS-146
U0121	VDC CAN CIR2	ON	×	×	×	×	×	×	CCS-147
U0126	STRG SEN CAN CIR1	ON	×	×	×	×	×	×	CCS-149
U0405	ADAS CAN CIR2	ON	×	×	×	×	×	×	CCS-154
U0415	VDC CAN CIR1	ON	×	×	×	×	×	×	CCS-155
U0428	STRG SEN CAN CIR2	ON	×	×	×	×	×	×	CCS-157
U1000	CAN COMM CIRCUIT	ON	×	×	×	×	×	×	CCS-159
U1010	CONTROL UNIT (CAN)	ON	×	×	×	×	×	×	CCS-161

INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

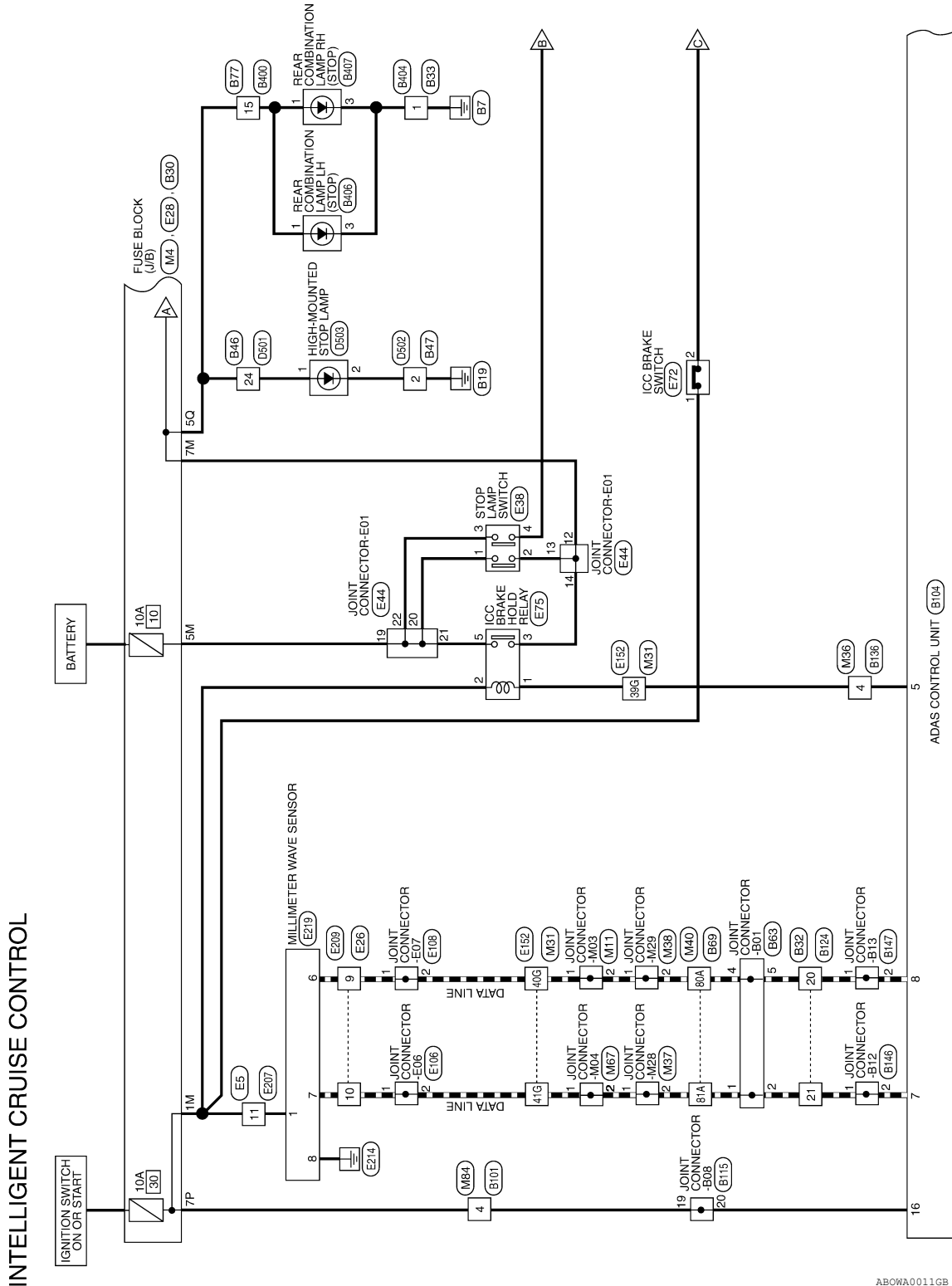
[ICC]

WIRING DIAGRAM

INTELLIGENT CRUISE CONTROL

Wiring Diagram

INFOID:000000007911294



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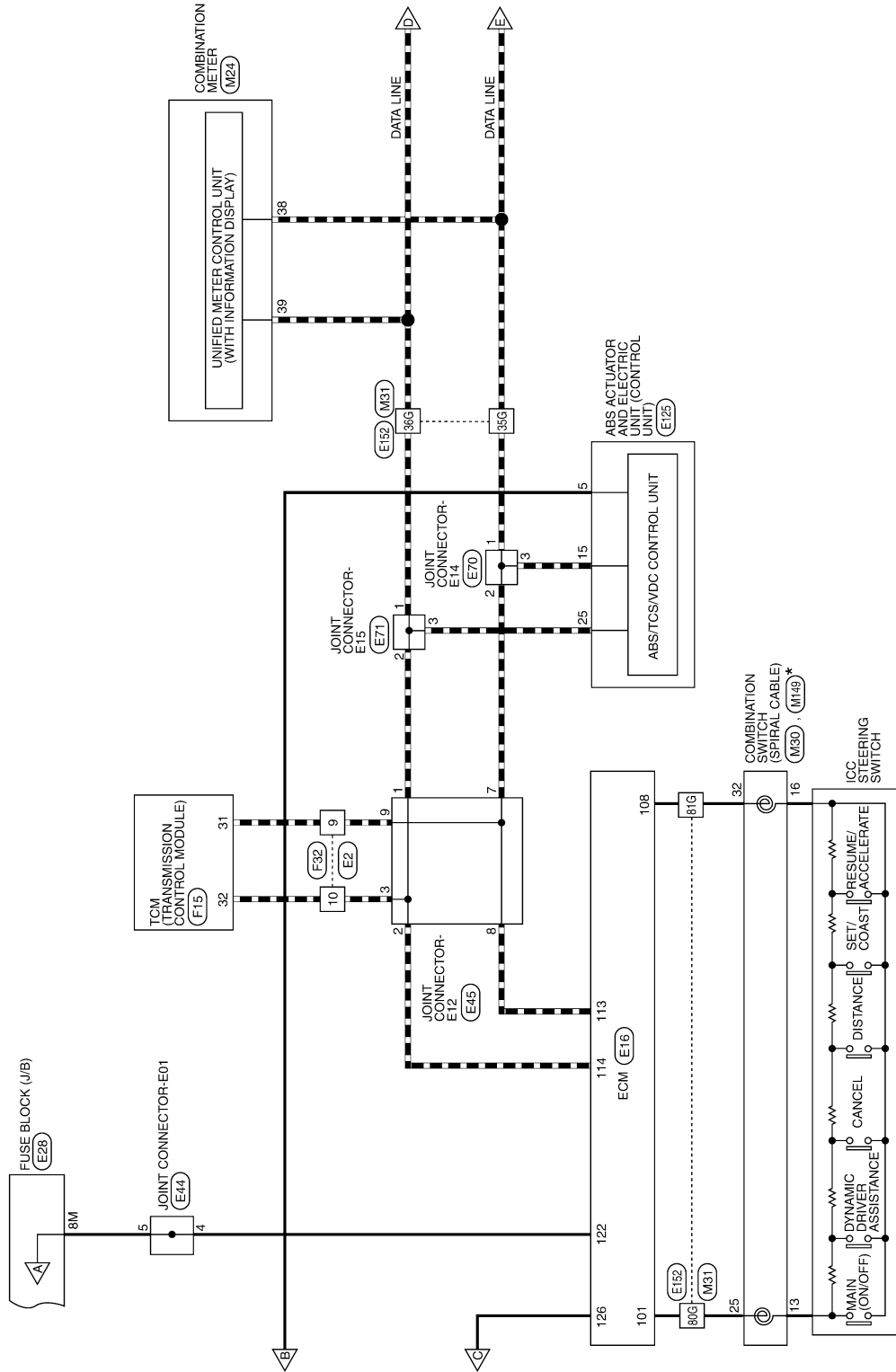
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INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]



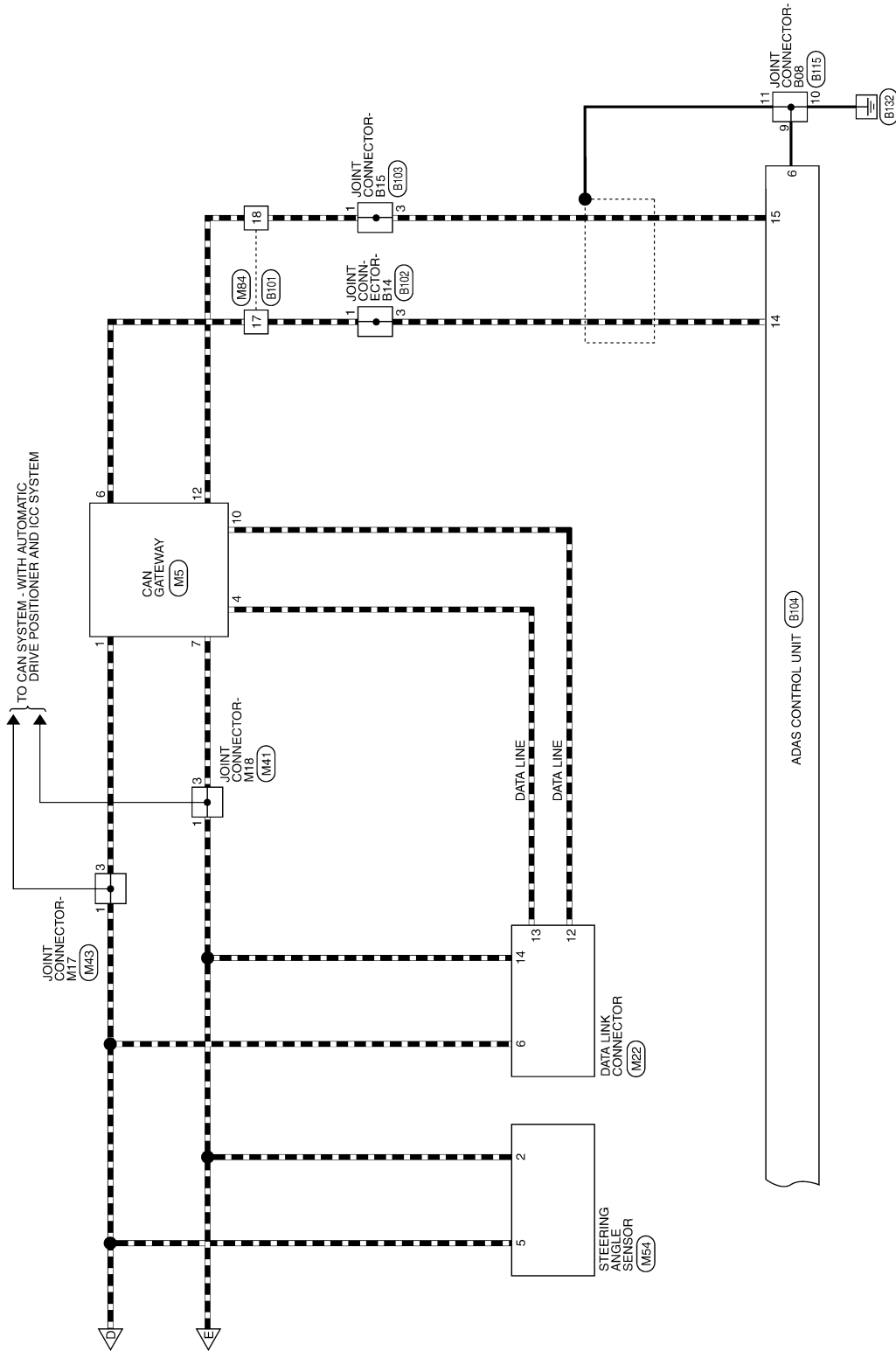
* : THIS CONNECTOR IS NOT SHOWN IN "HARNES LAYOUT" OF PG SECTION.

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INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]



* : THIS CONNECTOR IS NOT SHOWN IN "HARNES LAYOUT" OF PG SECTION.

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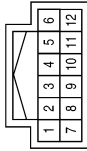
INTELLIGENT CRUISE CONTROL CONNECTORS

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7P	LG	-

Connector No.	M5
Connector Name	CAN GATEWAY
Connector Color	WHITE



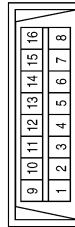
Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
4	L	CAN-H
6	L	CAN-H
7	P	CAN-L
10	P	CAN-L
12	P	CAN-L

Connector No.	M11
Connector Name	JOINT CONNECTOR-M03
Connector Color	WHITE



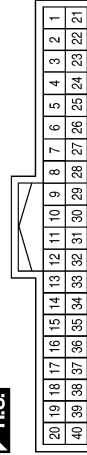
Terminal No.	Color of Wire	Signal Name
1	Y	-
2	Y	-

Connector No.	M22
Connector Name	DATA LINK CONNECTOR
Connector Color	WHITE



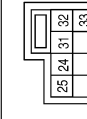
Terminal No.	Color of Wire	Signal Name
6	L	-
12	P	-
13	L	-
14	P	-

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
38	P	CAN-L
39	L	CAN-H

Connector No.	M30
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
25	W	-
32	G	-

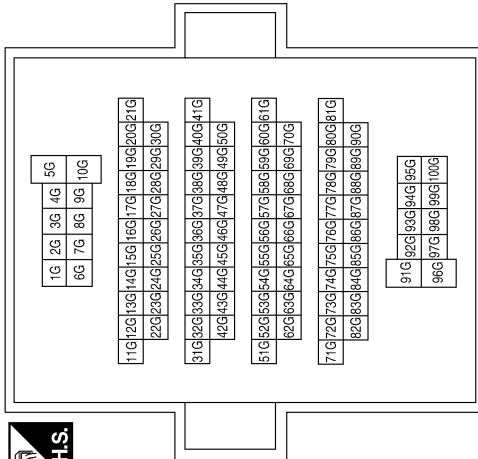
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INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

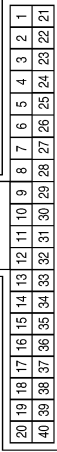
[ICC]

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



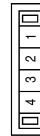
Terminal No.	Color of Wire	Signal Name
35G	P	-
36G	L	-
39G	R	-
40G	Y	-
41G	L	-
80G	W	-
81G	G	-

Connector No.	M36
Connector Name	WIRE TO WIRE
Connector Color	WHITE

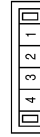


Terminal No.	Color of Wire	Signal Name
4	R	-

Connector No.	M37
Connector Name	JOINT CONNECTOR-M28
Connector Color	WHITE



Connector No.	M38
Connector Name	JOINT CONNECTOR-M29
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-

Terminal No.	Color of Wire	Signal Name
1	Y	-
2	Y	-

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INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]

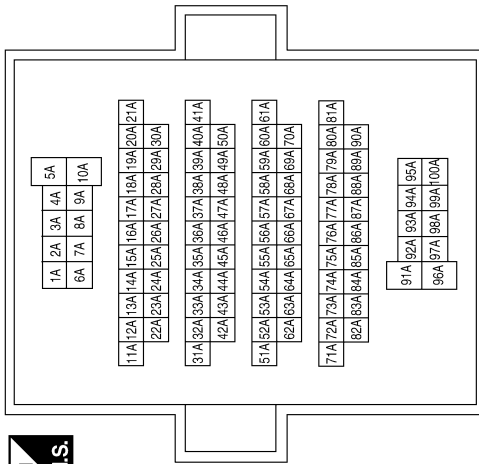
Connector No.	M41
Connector Name	JOINT CONNECTOR-M18
Connector Color	WHITE



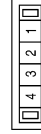
Terminal No.	Color of Wire	Signal Name
1	P	-
3	P	-

Terminal No.	Color of Wire	Signal Name
80A	Y	-
81A	L	-

Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Color	WHITE

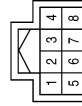


Connector No.	M67
Connector Name	JOINT CONNECTOR-M04
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-

Connector No.	M54
Connector Name	STEERING ANGLE SENSOR
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	P	-
5	L	-

Connector No.	M43
Connector Name	JOINT CONNECTOR-M17
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	L	-
3	L	-

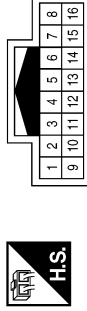
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INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

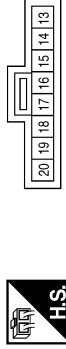
[ICC]

Connector No.	E2
Connector Name	WIRE TO WIRE
Connector Color	WHITE



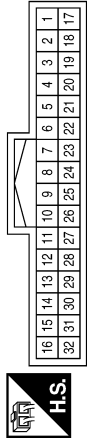
Terminal No.	Color of Wire	Signal Name
9	P	-
10	L	-

Connector No.	M149
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY



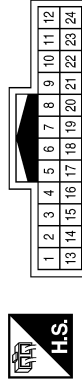
Terminal No.	Color of Wire	Signal Name
13	R	ASCD SW
16	L	ASCD GND

Connector No.	M84
Connector Name	WIRE TO WIRE
Connector Color	WHITE



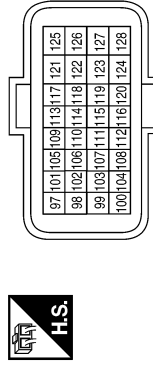
Terminal No.	Color of Wire	Signal Name
4	LG	-
17	L	-
18	P	-

Connector No.	E26
Connector Name	WIRE TO WIRE
Connector Color	WHITE



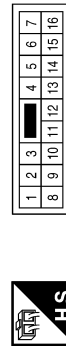
Terminal No.	Color of Wire	Signal Name
9	Y	-
10	BG	-

Connector No.	E16
Connector Name	ECM
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
101	G	ASCD SW
108	R	GND-ASCD SW
113	P	CAN-L
114	L	CAN-H
122	R	BRAKE
126	LG	BNC SW

Connector No.	E5
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
11	R	-

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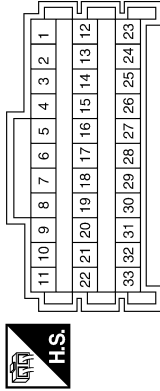
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INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]

Connector No.	E44
Connector Name	JOINT CONNECTOR-E01
Connector Color	WHITE



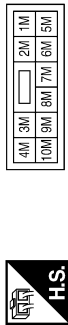
Terminal No.	Color of Wire	Signal Name
4	R	-
5	R	-
12	P	-
13	P	-
14	P	-
19	G	-
20	G	-
21	G	-
22	G	-

Connector No.	E38
Connector Name	STOP LAMP SWITCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	G	-
2	P	-
3	G	-
4	G	-

Connector No.	E28
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1M	R	-
5M	G	-
7M	P	-
8M	R	-

Connector No.	E71
Connector Name	JOINT CONNECTOR-E15
Connector Color	BLACK



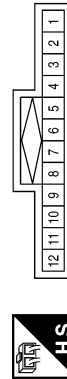
Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-
3	L	-

Connector No.	E70
Connector Name	JOINT CONNECTOR-E14
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	P	-
2	P	-
3	P	-

Connector No.	E45
Connector Name	JOINT CONNECTOR-E12
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-
3	L	-
7	P	-
8	P	-
9	P	-

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INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]

Connector No.	E72
Connector Name	ICC BRAKE SWITCH
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	G	-
2	LG	-

Connector No.	E75
Connector Name	ICC BRAKE HOLD RELAY
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	W	-
2	R	-
3	P	-
5	G	-

Connector No.	E106
Connector Name	JOINT CONNECTOR-E06
Connector Color	WHITE



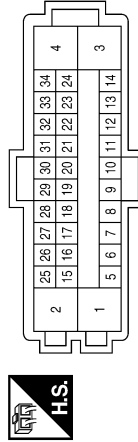
Terminal No.	Color of Wire	Signal Name
1	BG	-
2	BG	-

Connector No.	E108
Connector Name	JOINT CONNECTOR-E07
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	Y	-
2	Y	-

Connector No.	E125
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
5	G	STOP LAMP SWITCH
15	P	CAN-L
25	L	CAN-H

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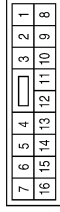


INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]

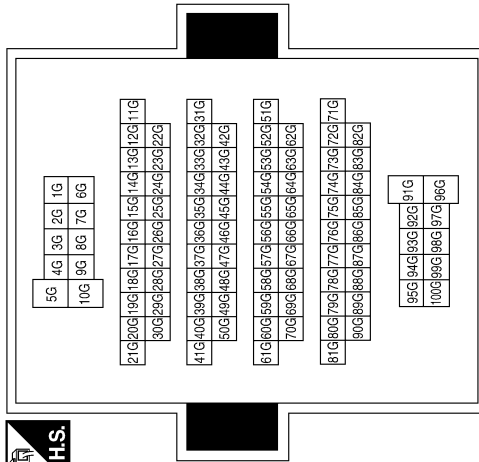
Connector No.	E207
Connector Name	WIRE TO WIRE
Connector Color	WHITE



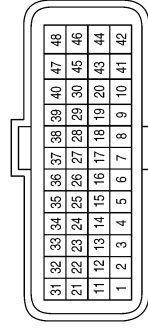
Terminal No.	Color of Wire	Signal Name
11	P	-

Terminal No.	Color of Wire	Signal Name
35G	P	-
36G	L	-
39G	W	-
40G	Y	-
41G	BG	-
80G	G	-
81G	R	-

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

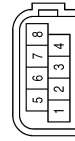


Connector No.	F15
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	BLACK



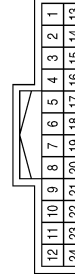
Terminal No.	Color of Wire	Signal Name
31	P	CAN-L
32	L	CAN-H

Connector No.	E219
Connector Name	MILLIMETER WAVE SENSOR
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	P	IGN
6	Y	ITS COMM-L
7	L	ITS COMM-H
8	B	GND

Connector No.	E209
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
9	Y	-
10	L	-

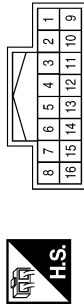
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INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]

Connector No.	F32
Connector Name	WIRE TO WIRE
Connector Color	WHITE



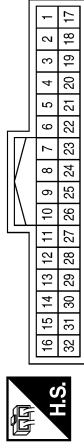
Terminal No.	Color of Wire	Signal Name
9	P	-
10	L	-

Connector No.	B30
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5Q	G	-

Connector No.	B32
Connector Name	WIRE TO WIRE
Connector Color	WHITE



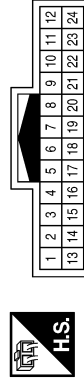
Terminal No.	Color of Wire	Signal Name
20	Y	-
21	L	-

Connector No.	B33
Connector Name	WIRE TO WIRE
Connector Color	BLACK



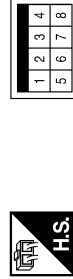
Terminal No.	Color of Wire	Signal Name
1	B	-

Connector No.	B46
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
24	G	-

Connector No.	B47
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	B	-

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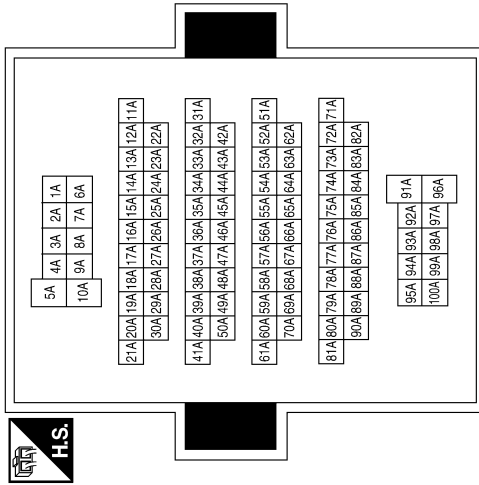
INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

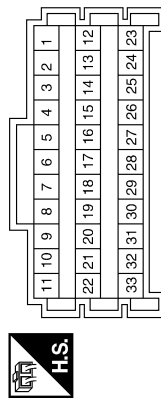
[ICC]

Terminal No.	Color of Wire	Signal Name
80A	Y	-
81A	L	-

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Color	WHITE

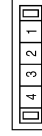


Connector No.	B63
Connector Name	JOINT CONNECTOR-B01
Connector Color	WHITE



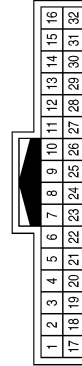
Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-
4	Y	-
5	Y	-

Connector No.	B102
Connector Name	JOINT CONNECTOR-B14
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	L	-
3	B	-

Connector No.	B101
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4	R	-
17	L	-
18	P	-

Connector No.	B77
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
15	G	-

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INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

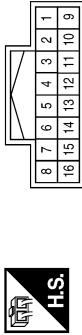
[ICC]

Connector No.	B103
Connector Name	JOINT CONNECTOR-B15
Connector Color	WHITE



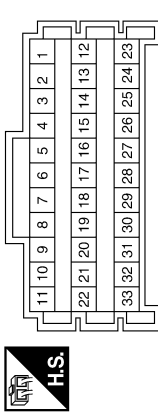
Terminal No.	Color of Wire	Signal Name
1	P	-
3	W	-

Connector No.	B104
Connector Name	ADAS CONTROL UNIT
Connector Color	WHITE



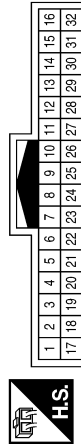
Terminal No.	Color of Wire	Signal Name
5	G	BRAKE HOLD RLY DRIVE SIGNAL
6	B	GND
7	L	ITS COMM-H
8	Y	ITS COMM-L
14	B	CAN-H
15	W	CAN-L
16	R	IGNITION

Connector No.	B115
Connector Name	JOINT CONNECTOR-B08
Connector Color	WHITE



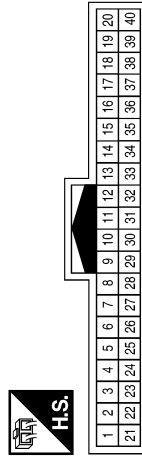
Terminal No.	Color of Wire	Signal Name
9	B	-
10	GR	-
11	SHIELD	-
19	R	-
20	R	-

Connector No.	B124
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
20	Y	-
21	L	-

Connector No.	B136
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4	G	-

Connector No.	B146
Connector Name	JOINT CONNECTOR-B12
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-

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INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

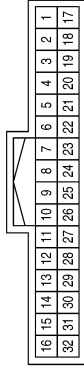
[ICC]

Connector No.	B404
Connector Name	WIRE TO WIRE
Connector Color	BLACK



Terminal No.	1	Color of Wire	B	Signal Name	-
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Connector No.	B400
Connector Name	WIRE TO WIRE
Connector Color	WHITE



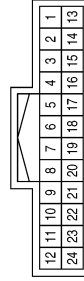
Terminal No.	15	Color of Wire	G	Signal Name	-
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Connector No.	B147
Connector Name	JOINT CONNECTOR-B13
Connector Color	WHITE



Terminal No.	1	Color of Wire	Y	Signal Name	-
2	Y	-	-	-	-

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	24	Color of Wire	LG	Signal Name	-
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Connector No.	B407
Connector Name	REAR COMBINATION LAMP RH
Connector Color	GRAY



Terminal No.	1	Color of Wire	G	Signal Name	-
3	GR	-	-	-	-

Connector No.	B406
Connector Name	REAR COMBINATION LAMP LH
Connector Color	GRAY



Terminal No.	1	Color of Wire	G	Signal Name	-
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AB01A0038GB

INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]

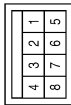
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Connector No.	D503
Connector Name	HIGH-MOUNTED STOP LAMP
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	LG	-
2	B	-

Connector No.	D502
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	B	-

AB01A0039GB

CCS

DIAGNOSIS AND REPAIR WORK FLOW

[ICC]

< BASIC INSPECTION >

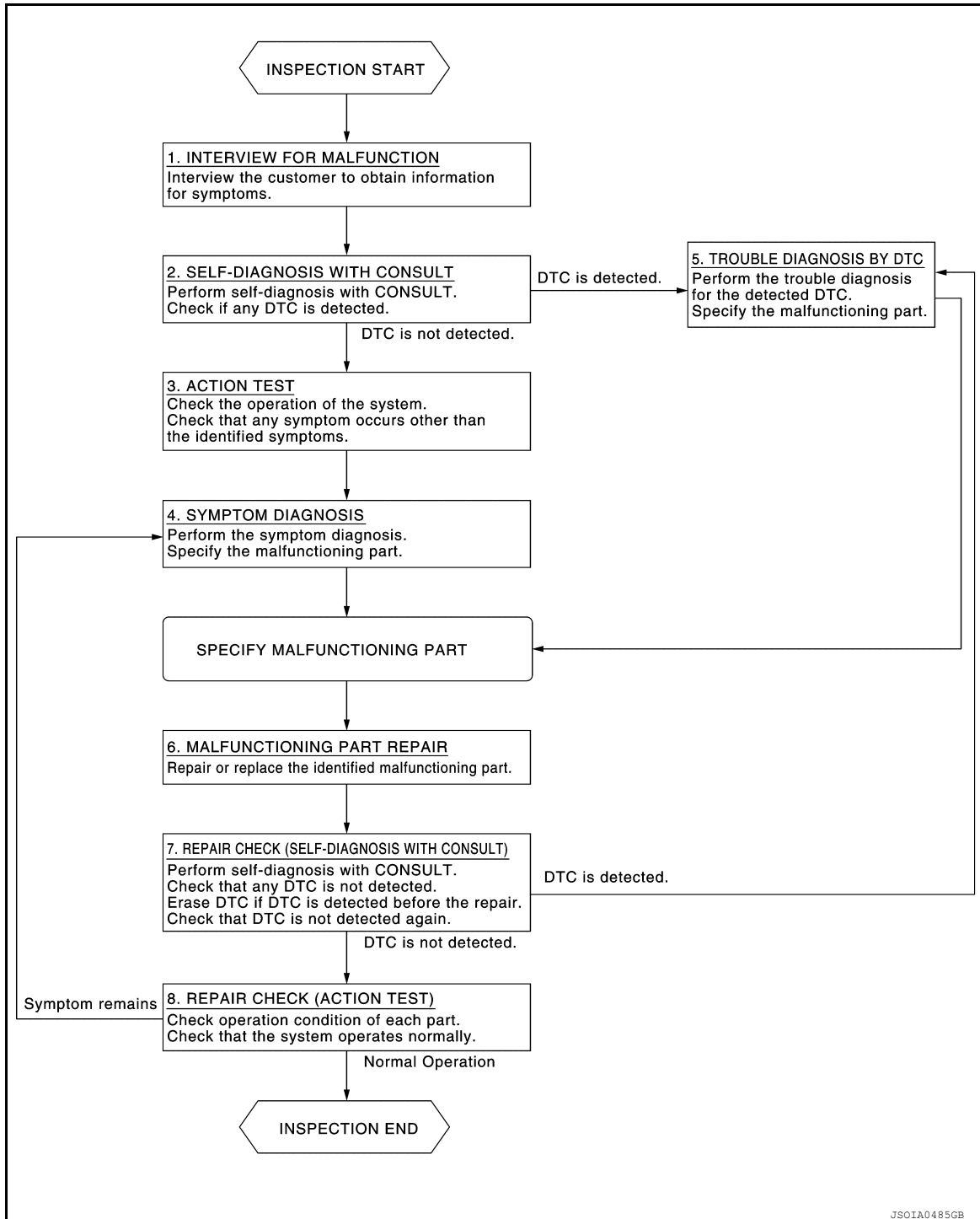
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000007911295

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.

DIAGNOSIS AND REPAIR WORK FLOW

[ICC]

< BASIC INSPECTION >

NOTE:

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” and “LASER/RADAR”.

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-92, "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-173, "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-59, "DTC Index"](#) (ICC/ADAS) or [CCS-65, "DTC Index"](#) (LASER/RADAR).

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” and “LASER/RADAR”.

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

ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR

< BASIC INSPECTION >

[ICC]

ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR

Description

INFOID:000000007911296

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

CAUTION:

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

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

Work Procedure

INFOID:000000007911297

1. RADAR ALIGNMENT ADJUSTMENT

Adjust the radar alignment. Refer to [CCS-85. "Description"](#).

>> GO TO 2.

2. ICC SYSTEM ACTION TEST

-
1. Perform the ICC system action test. Refer to [CCS-92. "Description"](#).
 2. Check that the ICC system operates normally.

>> INSPECTION END

MILLIMETER WAVE SENSOR ALIGNMENT

< BASIC INSPECTION >

[ICC]

MILLIMETER WAVE SENSOR ALIGNMENT

Description

INFOID:000000007911298

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.

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 millimeter wave sensor.

CAUTION:

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

1. Preparation, refer to [CCS-86, "Preparation"](#).
2. Vehicle set up, refer to [CCS-87, "Vehicle Set Up"](#).
3. Setting the ICC target board, refer to [CCS-89, "Setting The ICC Target Board"](#).
4. Millimeter wave sensor adjustment, refer to [CCS-90, "Millimeter Wave 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 ignition switch must be in the ON position.
- The battery voltage must not fall below 12 volt 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.
- Never break the laser beam between the laser assembly and front ICC target board or rear reflector at any time during alignment.
- Accurate steering wheel setting is crucial. Once set, do not disturb the steering wheel for the remainder of the alignment procedure.
- To avoid physical damage, the millimeter wave sensor adjustment screw must not be forced to either clockwise or counter-clockwise limit. For proper adjustment procedure, follow the directions of the CONSULT exactly as instructed.
- For proper system operation and adjustment, all vehicle wheels must be of the same size.

Required Tools

INFOID:000000008454385

The following tools are necessary to perform the millimeter wave sensor alignment:

CAUTION:

If special service tool kit J-50808 is not available, contact techline for assistance.

- CONSULT.

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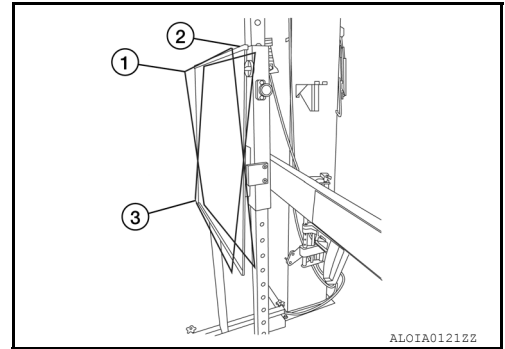


MILLIMETER WAVE SENSOR ALIGNMENT

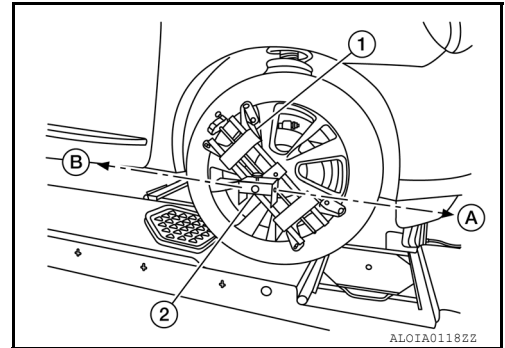
[ICC]

< BASIC INSPECTION >

- ICC target board.
- Position 1, with 2° top tilted toward the vehicle (1).
- Position 2, vertical (2).
- Position 3, with 2° top tilted away from the vehicle (3).

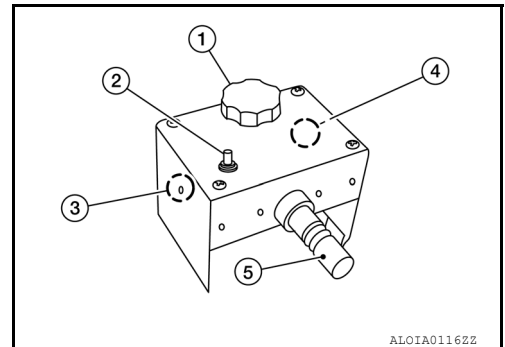


- Wheel adapter (1) [shown with laser assembly (2) installed] (Hunter alignment rack head may be substituted).



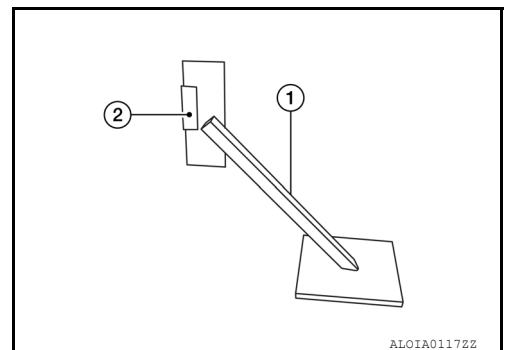
- Laser assembly (with bi-directional laser beam) as shown in the illustration.

- 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)



Preparation

INFOID:000000007911299

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.
5. Clean off the right front side of the fascia in front of the millimeter wave sensor.

NOTE:

MILLIMETER WAVE SENSOR ALIGNMENT

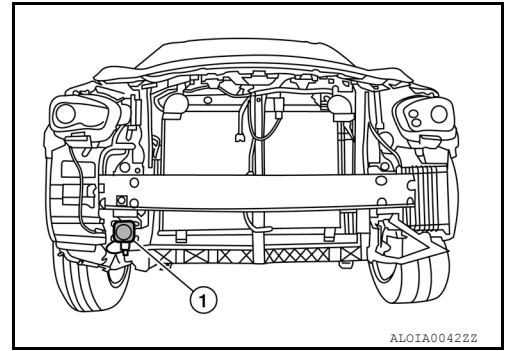
[ICC]

< BASIC INSPECTION >

The millimeter wave sensor is located behind the fascia and it is not exposed to the elements. Therefore it should not require any cleaning.

1 : Millimeter wave sensor

>> Refer to [CCS-87, "Vehicle Set Up"](#).



INFOID:000000007911300

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:

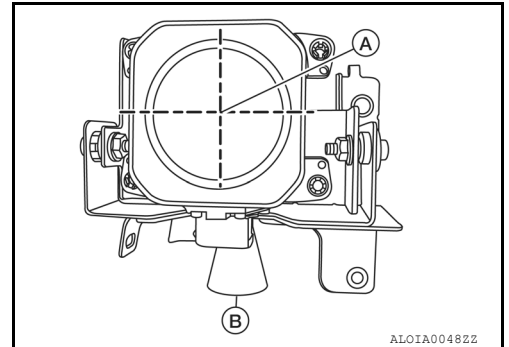
If the radar alignment is adjusted with the ICC target board, wheel adapter, laser assembly, or stationary target in the incorrect position, the ICC system will not function properly or the alignment procedure may not be completed successfully.

1. PREPOSITION TARGET BOARD

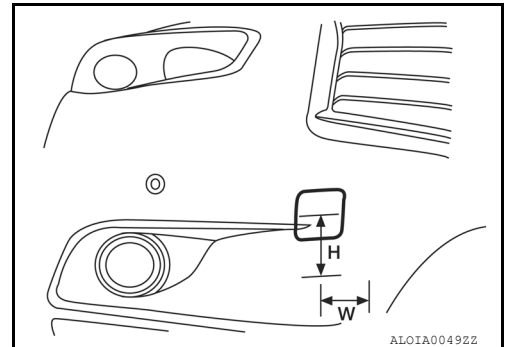
NOTE:

- The center of the sensor wave axis (A) is located at the center of the front lens.

B : Up-down direction adjusting screw



- To locate the millimeter wave sensor, and to identify the sensor wave axis center (A) easily, measure 4.5 in (115 mm) (H) down from the center of the recovery hook cover, and 0.5 in (13 mm) (W) to the right when viewed from the front of the vehicle.



- Initial ICC target board setting must be in the center position.

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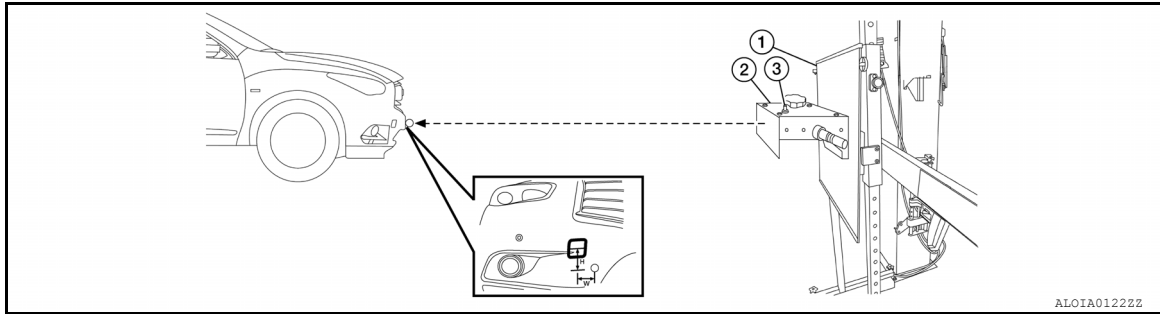
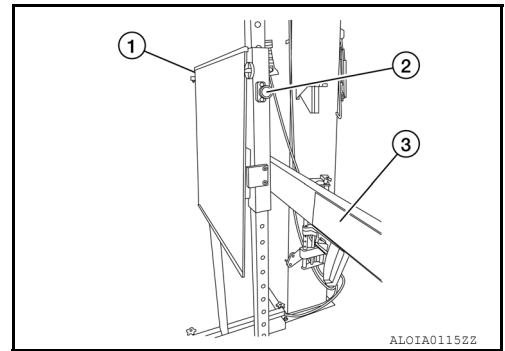
CCS

MILLIMETER WAVE SENSOR ALIGNMENT

[ICC]

< BASIC INSPECTION >

1. Position the center of the ICC target board in front of the vehicle:
 - Place the marked center of the ICC target board (1) 1375 mm (54.1 in.) \pm 625 mm(24.6 in) facing the millimeter wave 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 80 mm (3.15 in).
 - Adjust the ICC target board lateral position aligning the marked center of the board horizontally with the center of the millimeter wave sensor front lens. 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.
3. Place one side of the laser assembly (2) flush against the center of the ICC target board (1) to assist in the positioning.



4. 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.
5. Move the ICC target board (1) as necessary so that center of ICC target board aligns with center of ICC sensor.
6. Turn the laser assembly OFF when done.

Are you 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-90, "Millimeter Wave Sensor Adjustment"](#).

NO >> Go to 2.

2. INSTALLING LASER ASSEMBLY

NOTE:

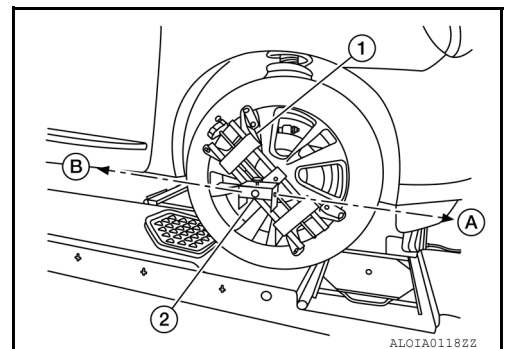
- Insure the steering wheel is positioned in the center straight forward position.
- Insure all 4 vehicle wheels do not contain any physical damage.

1. Install the wheel adapter (1) on the right front wheel.
2. 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 (A) will be emitted toward the front ICC target board, and the rear laser signal (B) will be emitted toward the rear of the vehicle.

>> Go to 3.



3. SETTING UP STATIONARY TARGET

MILLIMETER WAVE SENSOR ALIGNMENT

[ICC]

< BASIC INSPECTION >

1. Place the stationary target next to the right rear tire as shown in the figure.
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 (A) and (B) 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:

You will have to verify both horizontal and vertical adjustments anytime one adjustment is made.

>> Refer to [CCS-89, "Setting The ICC Target Board"](#).

Setting The ICC Target Board

INFOID:000000008471287

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.

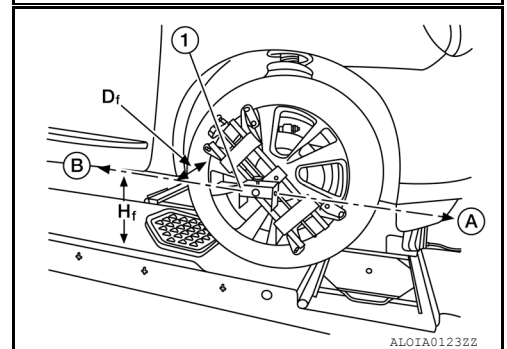
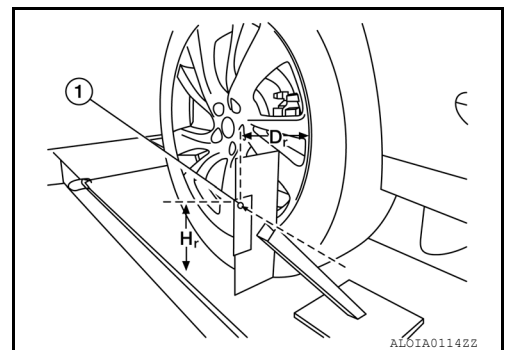
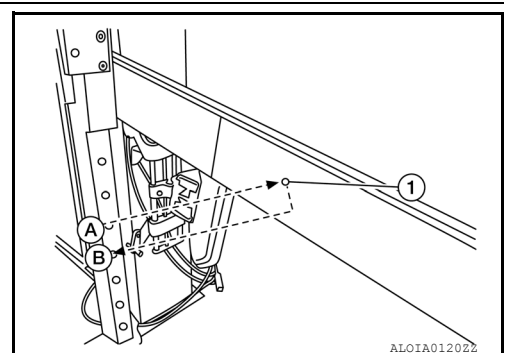
1. ICC TARGET BOARD FINAL SETTING

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

NOTE:

When adjusted properly, reflected laser beam (B) must align with emitted laser beam (A) 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.



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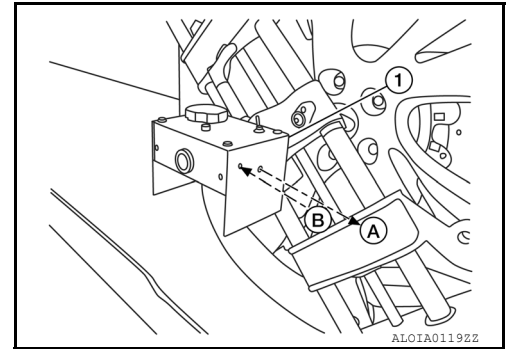
CCS

MILLIMETER WAVE SENSOR ALIGNMENT

[ICC]

< BASIC INSPECTION >

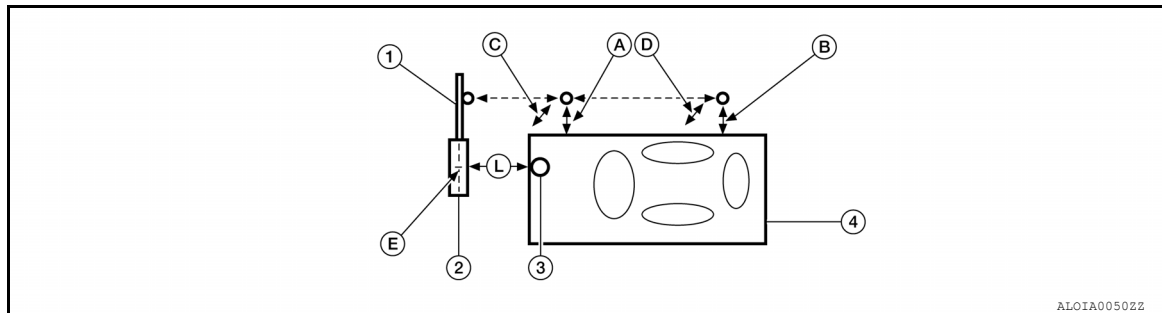
- The figure shown illustrates the laser beam (A) emitted by the laser assembly (1) and its reflection (B) off of the ICC target board arm.



>> 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. Millimeter wave sensor |
| 4. Vehicle | A. Distance between front wheel and laser beam (D_f) | B. Distance between rear wheel and laser beam (D_r) |
| C. Height between front laser beam and ground (H_f) | D. Height between rear laser beam and ground (H_r) | E. ICC target board center position (Position 2) |
| L. 750 - 2000 mm (29.5 - 78.7 in) | | |

>> Refer to [CCS-90, "Millimeter Wave Sensor Adjustment"](#).

Millimeter Wave Sensor Adjustment

INFOID:000000007911301

DESCRIPTION

- Adjust the radar alignment in a vertical direction with CONSULT as per the following.
- The radar alignment in the horizontal direction is performed automatically and cannot be adjusted manually.

CAUTION:

- Never look directly into or block the millimeter wave sensor source (between the front fascia and ICC target board) during the radar alignment procedure.**
- Perform all necessary work for radar alignment procedure until the adjustment completes as shown in the procedure. If the procedure is started but not completed, the ICC system is rendered inoperable.**

1. SET CONSULT TO THE RADAR ALIGNMENT MODE

- Place ignition switch in the ON position.
- Connect CONSULT and select "LASER/RADAR", then "Work Support".
- Select "RADAR Alignment".
- Select "START" after the "RADAR Alignment" screen is displayed.

NOTE:

If the adjustment screen does not appear within approximately 10 seconds after "RADAR Alignment" is selected, the following causes are possible.

- The ICC target board is not installed in the correct position.

MILLIMETER WAVE SENSOR ALIGNMENT

[ICC]

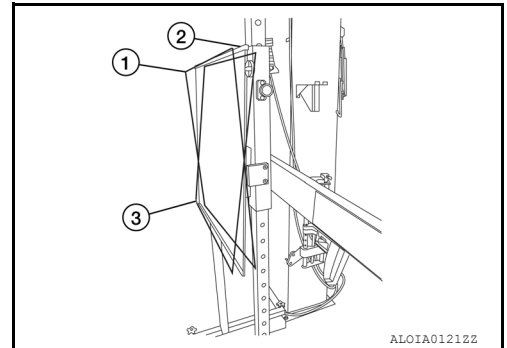
< BASIC INSPECTION >

- Adequate space is not secured around the ICC target board.
- The radar alignment procedure exceeds its proper installation range.
 - Deformation of vehicle body.
 - Deformation of unit.
 - Deformation of bracket.
- The area is not suitable for the adjustment work.
- Right front side of fascia (millimeter wave sensor view) is not clean.
- The ICC system warning lamp illuminates.

>> Go to 2.

2. RADAR ALIGNMENT

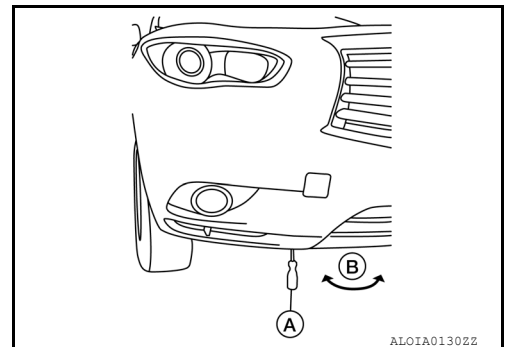
1. Once the radar alignment procedure is started, you will be prompted by the CONSULT for the next instruction.
2. Follow all the instructions exactly as requested by the CONSULT which will include the following:
 - Adjust ICC target board to position 1 (top tilted toward vehicle)
 - Adjust ICC target board to position 2 (vertical position)
 - Adjust ICC target board to position 3 (top tilted away from vehicle)



3. You will be prompted with specific instructions to perform physical adjustment to the sensor which may include turning the screw driver (A) by a certain number of turns (B) in increments of 0.25 in either direction.

CAUTION:

Be careful not to cover the right front side of the fascia (millimeter wave sensor view) with a hand or any other body part during adjustment.



>> GO TO 3.

3. RADAR ALIGNMENT CONFIRMATION

1. When the "U/D CORRECT" value is executed and the "ADJ VALUE" has been performed, touch "END".
2. When "COMPLETED THE VERTICAL AIMING OF LASER BEAM" display appears, touch "END".
CAUTION:
Always check that the value of "U/D CORRECT" remains accurate (within specification) when the millimeter wave sensor is left alone for at least 2 seconds.
3. Check that "ADJUSTING AUTOMATIC HORIZONTAL LASER BEAM AIMING" is displayed and wait for a short period of time. (The maximum: Approx 10 seconds).
4. Check that "Normally Completed" is displayed, and select "End" to end "RADAR Alignment".
CAUTION:
Once "RADAR Alignment" is started with CONSULT, always continue the work until the radar alignment is completed successfully. If the job is stopped midway, the radar alignment is not completed and the ICC system is rendered inoperative.
5. Confirm proper radar alignment by following CONSULT steps until it shows "ADJ VALUE" to be 0.00 turn.

>> Alignment End.

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ACTION TEST

Description

INFOID:000000007911302

Always perform the ICC system action test to check that the ICC system operates normally after replacing the ICC sensor or repairing any ICC system malfunction.

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:000000007911303

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:

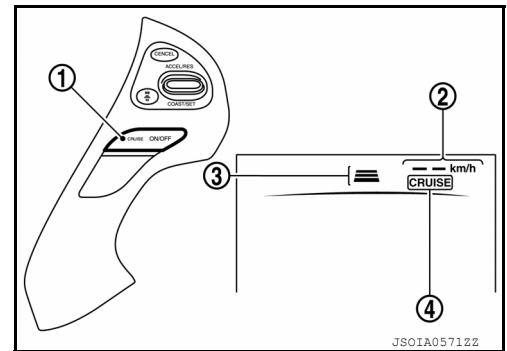
Never set the cruise speed exceeding the posted speed limit.

1. CHECK FOR MAIN SWITCH

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

Information display status

- | | | |
|---------------------------------|---|-----------|
| Set vehicle speed indicator (2) | : | “ ___ ” |
| Set distance indicator (3) | : | Long mode |
| MAIN switch indicator (4) | : | ON |



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	 100 km/h	55 (180)
Middle	 100 km/h	40 (130)
Short	 100 km/h	25 (80)

JSO1A0572GB

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).

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ACTION TEST

[ICC]

< BASIC INSPECTION >

- 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.

ACTION TEST

< BASIC INSPECTION >

[ICC]

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:000000007911304

NOTE:

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

CAUTION:

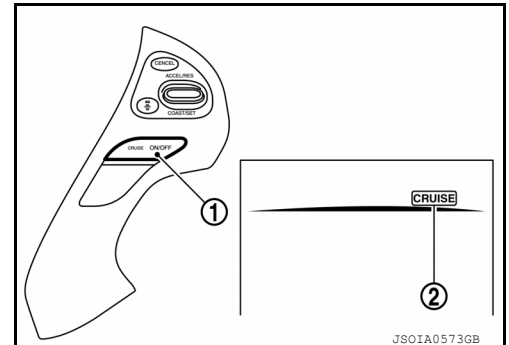
Never set the cruise speed exceeding the posted speed limit.

1. CHECK FOR MAIN SWITCH

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

Information display status

MAIN switch indicator (2) : ON



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.

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ACTION TEST

[ICC]

< BASIC INSPECTION >

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.

ACTION TEST

< BASIC INSPECTION >

[ICC]

>> INSPECTION END

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C1A00 CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911305

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A00 (0)	CONTROL UNIT	ADAS control unit internal malfunction	ADAS control unit

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 "ICC/ADAS".

Is "C1A00" detected as the current malfunction?

- YES >> Refer to [CCS-98, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
NO >> INSPECTION END

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000007911306

1.CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1A00" 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-59, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:000000007911307

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A00	CONTROL UNIT	ICC sensor internal malfunction	ICC sensor

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-98, "ICC SENSOR : Diagnosis Procedure"](#).
NO >> INSPECTION END

ICC SENSOR : Diagnosis Procedure

INFOID:000000007911308

1.CHECK SELF-DIAGNOSIS RESULTS

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

C1A00 CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-65, "DTC Index"](#).
- NO >> Replace the ICC sensor. Refer to [CCS-189, "Removal and Installation"](#).

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CCS

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2 ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911309

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A01 (1)	POWER SUPPLY CIR	The battery voltage sent to ADAS control unit remains less than 7.9 V for 5 seconds	• Connector, harness, fuse • ADAS control unit
C1A02 (2)	POWER SUPPLY CIR 2	The battery voltage sent to ADAS control unit remains more than 19.3 V for 5 seconds	

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 "ICC/ADAS".

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

- YES >> Refer to [CCS-100, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000007911310

1.CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to [CCS-171, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).
NO >> Repair or replace the malfunctioning parts.

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:000000007911311

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A01	POWER SUPPLY CIR	The battery voltage sent to ICC sensor remains less than 7.9 V for 5 seconds	• Connector, harness, fuse • ICC sensor
C1A02	POWER SUPPLY CIR 2	The battery voltage sent to ICC sensor remains more than 19.3 V for 5 seconds	

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?

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

YES >> Refer to [CCS-101, "ICC SENSOR : Diagnosis Procedure"](#).

NO >> Refer to [GI-53, "Intermittent Incident"](#).

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ICC SENSOR : Diagnosis Procedure

INFOID:000000007911312

1. CHECK ICC SENSOR POWER SUPPLY AND GROUND CIRCUIT

B

Check power supply and ground circuit of ICC sensor. Refer to [CCS-171, "ICC SENSOR : Diagnosis Procedure"](#).

C

Is the inspection result normal?

YES >> Replace the ICC sensor. Refer to [CCS-189, "Removal and Installation"](#).

NO >> Repair or replace the malfunctioning parts.

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C1A03 VEHICLE SPEED SENSOR

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

C1A03 VEHICLE SPEED SENSOR

DTC Logic

INFOID:000000007911313

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03 (3)	VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) and the CVT vehicle speed sensor signal (output shaft revolution signal) from TCM, received by the ADAS control unit via CAN communication, are inconsistent	<ul style="list-style-type: none">• Wheel speed sensor• ABS actuator and electric unit (control unit)• Vehicle speed sensor CVT (output speed sensor)• TCM• ADAS control unit

NOTE:

If DTC "C1A03" is detected along with DTC "U1000" or "C1A04", first diagnose the DTC "U1000" or "C1A04".

- Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [CCS-104, "DTC Logic"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Drive the vehicle at 30 km/h (19 MPH) or more.

CAUTION:

Always drive safely.

4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT.
6. Check if the "C1A03" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A03" detected as the current malfunction?

- YES >> Refer to [CCS-102, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911314

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A04" or "U1000" is detected other than "C1A03" 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-59, "DTC Index"](#).
NO >> GO TO 2.

2. CHECK DATA MONITOR

1. Start the engine.
2. Drive the vehicle.
3. Check that the value of "VHCL SPD AT" is almost the same as the value of "VHCL SPEED SE" in "DATA MONITOR" of "ICC/ADAS".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).
NO >> GO TO 3.

3. CHECK TCM SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

C1A03 VEHICLE SPEED SENSOR

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-55, "DTC Index"](#).

NO >> GO TO 4.

4. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-45, "DTC Index"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

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CCS

C1A04 ABS/TCS/VDC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A04 ABS/TCS/VDC SYSTEM

DTC Logic

INFOID:000000007911315

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A04 (4)	ABS/TCS/VDC CIRC	If a malfunction occurs in the VDC/TCS/ABS system	ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A04" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159. "ADAS CONTROL UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000007911316

1. CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "U1000" is detected other than "C1A04" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159. "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-45. "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-79. "Removal and Installation"](#).

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A05 BRAKE SW/STOP LAMP SW

DTC Logic

INFOID:000000007911317

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A05 (5)	BRAKE SW/STOP L SW	A mismatch between a stop lamp switch signal and a ICC brake switch signal received from ECM and a stop lamp signal received from the ABS actuator and electric unit (control unit) continues for 10 seconds or more with vehicle speeds at approximately 40 km/h or more	<ul style="list-style-type: none">• Stop lamp switch circuit• ICC brake switch circuit• Stop lamp switch• ICC brake switch• Incorrect stop lamp switch installation• Incorrect ICC brake switch installation• ECM• ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A05" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000007911318

1. CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "U1000" is detected other than "C1A05" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

Check that "STOP LAMP SW" and "BRAKE SW" operate normally in "DATA MONITOR" of "ICC/ADAS".

Is the inspection result normal?

- YES >> GO TO 3.
- NO-1 >> When "BRAKE SW" operation is malfunctioning: GO TO 4.
- NO-2 >> When "STOP LAMP SW" operation is malfunctioning: GO TO 9.

3. CHECK STOP LAMP SWITCH

Check that "STOP LAMP SW" operate normally in "DATA MONITOR" of "ABS".

Is the inspection result normal?

- YES >> GO TO 14.
- NO >> GO TO 9.

4. CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check ICC brake switch for correct installation. Refer to [BR-7, "Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Adjust ICC brake switch installation. Refer to [BR-15, "Adjustment"](#).

5. ICC BRAKE SWITCH INSPECTION

1. Disconnect ICC brake switch connector.
2. Check ICC brake switch. Refer to [CCS-108, "Component Inspection \(ICC Brake Switch\)"](#).

Is the inspection result normal?

C1A05 BRAKE SW/STOP LAMP SW

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 6.
NO >> Replace ICC brake switch.

6. CHECK ICC BRAKE SWITCH POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.
2. Check voltage between ICC brake switch harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
ICC brake switch		Ground
Connector	Terminal	
E72	1	
		Battery voltage

Is the inspection result normal?

- YES >> GO TO 7.
NO >> Repair the harnesses or connectors.

7. CHECK HARNESS BETWEEN ICC BRAKE SWITCH AND ECM

1. Turn ignition switch OFF
2. Disconnect ECM connector.
3. Check for continuity between ICC brake switch harness connector and ECM harness connector.

ICC brake switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E72	2	E16	126	Existed

4. Check for continuity between ICC brake switch harness connector and ground.

ICC brake switch		Ground	Continuity
Connector	Terminal		
E72	2		Not existed

Is the inspection result normal?

- YES >> GO TO 8.
NO >> Repair the harnesses or connectors.

8. PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-108, "DTC Index"](#).

Is any DTC detected?

- YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

9. CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check stop lamp switch for correct installation. Refer to [BR-7, "Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 10.
NO >> Adjust stop lamp switch installation. Refer to [BR-15, "Adjustment"](#).

10. STOP LAMP SWITCH INSPECTION

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to [CCS-108, "Component Inspection \(Stop Lamp Switch\)"](#).

Is the inspection result normal?

- YES >> GO TO 11.

C1A05 BRAKE SW/STOP LAMP SW

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace stop lamp switch.

11. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.
2. Check voltage between stop lamp switch harness connector and ground.

Terminals		Voltage (Approx.)	
(+)	(-)		
Stop lamp switch		Ground	Battery voltage
Connector	Terminal		
E38	1		
	3		

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair the harnesses or connectors.

12. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ECM

1. Turn ignition switch OFF
2. Disconnect ECM, rear combination lamp and high-mounted stop lamp connectors.
3. Check for continuity between stop lamp switch harness connector and ECM harness connector.

Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E38	2	E16	122	Existed

4. Check for continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E38	2		Not existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair the harnesses or connectors.

13. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check for continuity between stop lamp switch harness connector and ABS actuator and electric unit (control unit) harness connector.

Stop lamp switch		ABS actuator and electric unit (control unit)		Continuity
Connector	Terminal	Connector	Terminal	
E38	4	E125	5	Existed

3. Check for continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E38	4		Not existed

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair the harnesses or connectors.

C1A05 BRAKE SW/STOP LAMP SW

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

14. PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-108, "DTC Index"](#).

Is any DTC detected?

- YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
NO >> GO TO 15.

15. PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Check if any DTC is detected in "Self Diagnostic Result" of "ABS". Refer to [BRC-45, "DTC Index"](#).

Is any DTC detected?

- YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

Component Inspection (ICC Brake Switch)

INFOID:000000007911319

1. CHECK ICC BRAKE SWITCH

Check for continuity between ICC brake switch terminals.

Terminal		Condition	Continuity
1	2	When brake pedal is depressed	Not existed
		When brake pedal is released	Existed

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace ICC brake switch.

Component Inspection (Stop Lamp Switch)

INFOID:000000007911320

1. CHECK STOP LAMP SWITCH

Check for continuity between stop lamp switch terminals.

Terminal		Condition	Continuity
1	2	When brake pedal is depressed	Existed
		When brake pedal is released	Not existed
3	4	When brake pedal is depressed	Existed
		When brake pedal is released	Not existed

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace stop lamp switch.

C1A06 OPERATION SW

DTC Logic

INFOID:000000007911321

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A06 (6)	OPERATION SW CIRC	<ul style="list-style-type: none"> • Any switch of the ICC steering switch is detected as "ON" continuously for 60 seconds • An ON/OFF state judgment of the ICC differs between ECM and ADAS control unit, and the state continues for 2 seconds or more 	<ul style="list-style-type: none"> • ICC steering switch circuit • ICC steering switch • ECM

NOTE:

If DTC "C1A06" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Wait for approximately 5 minutes after turning the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A06" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A06" detected as the current malfunction?

- YES >> Refer to [CCS-109, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911322

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A06" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ICC STEERING SWITCH

1. Turn the ignition switch OFF.
2. Disconnect the ICC steering switch connector.
3. Check the ICC steering switch. Refer to [CCS-110, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace the ICC steering switch.

3. CHECK HARNESS BETWEEN SPIRAL CABLE AND ECM

1. Disconnect the ECM connector.
2. Check for continuity between the spiral cable harness connector and ECM harness connector.

Spiral cable		ECM		Continuity
Connector	Terminal	Connector	Terminal	
M30	25	E16	101	Existed
	32		108	

3. Check for continuity between spiral cable harness connector and ground.

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< DTC/CIRCUIT DIAGNOSIS >

Spiral cable		Ground	Continuity
Connector	Terminal		Not existed
M30	25		
	32		

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair the harnesses or connectors.

4. CHECK SPIRAL CABLE

Check for continuity between spiral cable terminals.

Spiral cable		Continuity
Terminal		
13	25	Existed
16	32	

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace the spiral cable.

5. PERFORM SELF-DIAGNOSIS OF ECM

1. Connect the connectors of ICC steering switch and ECM connector.
2. Turn the ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform self-diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-108, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

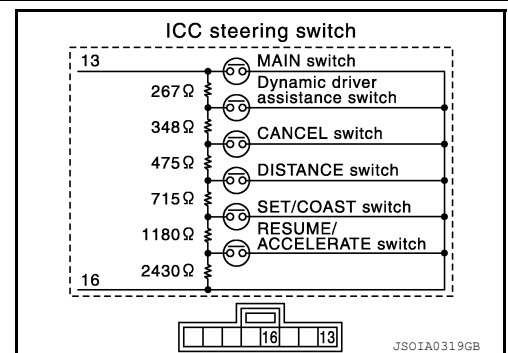
Component Inspection

INFOID:000000007911323

1. CHECK ICC STEERING SWITCH

Check resistance between ICC steering switch terminals.

Terminal	Switch operation	Resistance [Ω]
13 16	When pressing MAIN switch	Approx. 0
	When pressing dynamic driver assistance switch	Approx. 267
	When pressing CANCEL switch	Approx. 615
	When pressing DISTANCE switch	Approx. 1090
	When pressing SET/COAST switch	Approx. 1805
	When pressing RESUME/ACCELERATE switch	Approx. 2985
	When all switches are not pressed	Approx. 5415



Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the ICC steering switch.

C1A12 LASER BEAM OFF CENTER

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A12 LASER BEAM OFF CENTER

DTC Logic

INFOID:000000007911324

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A12 (12)	LASER BEAM OFFCNTR	Radar of ICC sensor is off the aiming point	Radar is off the aiming point

Diagnosis Procedure

INFOID:000000007911325

1. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "C1A12" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1A12" detected?

- YES >> Refer to [CCS-112, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ADAS CONTROL SELF-DIAGNOSIS RESULTS

Check if the "C1A12" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A12" detected?

- YES >> Replace ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).
NO >> INSPECTION END

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C1A12 RADAR OFF-CENTER

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A12 RADAR OFF-CENTER

DTC Logic

INFOID:000000007911326

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A12	RADAR OFF-CENTER	Radar of ICC sensor is off the aiming point	Radar is off the aiming point

Diagnosis Procedure

INFOID:000000007911327

1. ADJUST RADAR ALIGNMENT

1. Adjust the radar alignment with CONSULT. Refer to [CCS-85. "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-189. "Removal and Installation"](#).
NO >> INSPECTION END

C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A13 STOP LAMP RELAY

DTC Logic

INFOID:000000007911328

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A13 (13)	STOP LAMP RLY FIX	<ul style="list-style-type: none">Stop lamp inactive state continues for 0.3 seconds or more despite the outputting of an ICC sensor ICC brake hold relay drive signalThe stop lamp remains ON for 60 seconds or more under the following conditions:<ul style="list-style-type: none">Driving at 40 km/h or moreNo stop lamp drive signal output from ICC sensorNo brake operation	<ul style="list-style-type: none">Stop lamp switch circuitICC brake switch circuitICC brake hold relay circuitStop lamp switchICC brake switchICC brake hold relayIncorrect stop lamp switch installationIncorrect ICC brake switch installationECMABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A13" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE (1)

- Start the engine.
- Perform the active test item "STOP LAMP" with CONSULT.
- Perform "All DTC Reading".
- Check if the "C1A13" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A13" detected as the current malfunction?

YES >> Refer to [CCS-113, "Diagnosis Procedure"](#).

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (2)

- Drive at the vehicle speed of 40 km/h (25 MPH) or more for approximately 60 seconds or more without the brake pedal depressed.

CAUTION:

Always drive safely.

NOTE:

If it is outside the above condition, repeat step 1.

- Perform "All DTC Reading".
- Check if the "C1A13" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A13" detected as the current malfunction?

YES >> Refer to [CCS-113, "Diagnosis Procedure"](#).

NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911329

CCS

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A13" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> GO TO 2.

2. CHECK STOP LAMP SWITCH

Check that "STOP LAMP SW" operate normally in "DATA MONITOR" of "ICC/ADAS".

C1A13 STOP LAMP RELAY

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> GO TO 10.
- NO >> GO TO 3.

3. CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check stop lamp switch for correct installation. Refer to [BR-7, "Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Adjust stop lamp switch installation. Refer to [BR-15, "Adjustment"](#).

4. CHECK STOP LAMP SWITCH

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to [CCS-108, "Component Inspection \(Stop Lamp Switch\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace stop lamp switch.

5. CHECK STOP LAMP FOR ILLUMINATION

1. Turn the ignition switch OFF.
2. Remove ICC brake hold relay.
3. Check that the stop lamp is illuminated by depressing the brake pedal to turn the stop lamp ON.

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> Check the stop lamp circuit, and repair or replace the malfunctioning parts.

6. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ECM

1. Turn the ignition switch OFF.
2. Disconnect stop lamp switch, ECM, rear combination lamp, and high-mounted stop lamp connectors.
3. Check for continuity between the stop lamp switch harness connector and the ECM harness connector.

Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E38	2	E16	122	Existed

4. Check for continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E38	2		Not existed

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> Repair the harnesses or connectors.

7. CHECK ICC BRAKE HOLD RELAY CIRCUIT

1. Disconnect ECM, rear combination lamp, and high-mounted stop lamp connectors.
2. Check that the stop lamp does not illuminate when brake pedal is not depressed.

Is the inspection result normal?

- YES >> GO TO 9.
- NO >> GO TO 8.

8. CHECK ICC BRAKE HOLD RELAY

1. Remove ICC brake hold relay
2. Check ICC brake hold relay. Refer to [CCS-118, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 9.

C1A13 STOP LAMP RELAY

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace ICC brake hold relay.

9.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-108, "DTC Index"](#).

Is any DTC detected?

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

NO >> Replace ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

10.CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Remove ICC brake hold relay.
3. Check the voltage between ICC brake hold relay harness connector and ground.

Terminal		Voltage (Approx.)
(+)	(-)	
ICC brake hold relay		Ground
Connector	Terminal	
E75	2	
		Battery voltage

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair or replace ICC brake hold relay power supply circuit.

11.CHECK HARNESS BETWEEN AND ICC BRAKE HOLD RELAY AND ADAS CONTROL UNIT

1. Disconnect ADAS control unit connectors.
2. Check for continuity between ICC brake hold relay harness connector and ECM harness connector.

ICC brake hold relay		ADAS control unit		Continuity
Connector	Terminal	Connector	Terminal	
E75	1	B104	5	Existed

3. Check for continuity between ADAS control unit harness connector and ground.

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E75	1		Not existed

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair the harnesses or connectors.

12.CHECK ADAS CONTROL UNIT STANDARD VOLTAGE

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "STOP LAMP" on "Active Test" of "ICC/ADAS", and then check the voltage between ADAS control unit harness connector and ground.

C1A13 STOP LAMP RELAY

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ADAS control unit		Active Test item "STOP LAMP"	Battery voltage
Connector	Terminal		
B104	5	Off	Battery voltage
		On	0 V

Is the inspection result normal?

YES >> GO TO 13.

NO >> Replace ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

13.CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Check the voltage between ICC brake hold relay harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ICC brake hold relay		Ground	Battery voltage
Connector	Terminal		
E75	5		

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair or replace ICC brake hold relay power supply circuit.

14.CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ECM

1. Disconnect ECM, rear combination lamp, and high-mounted stop lamp connectors and remove ICC brake hold relay.
2. Check for continuity between ICC brake hold relay harness connector and ECM harness connector.

ICC brake hold relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E75	3	M16	122	Existed

3. Check for continuity between ICC brake hold relay harness connector and ground.

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E75	3		Not existed

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair the harnesses or connectors.

15.CHECK ICC BRAKE HOLD RELAY

1. Remove ICC brake hold relay.
2. Check ICC brake hold relay. Refer to [CCS-118, "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 16.

NO >> Replace ICC brake hold relay.

16.CHECK STOP LAMP SWITCH

Check that "STOP LAMP SW" operate normally in "DATA MONITOR" of "ABS".

C1A13 STOP LAMP RELAY

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> GO TO 21.
- NO >> GO TO 17.

17. CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check stop lamp switch for correct installation. Refer to [BR-7, "Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 18.
- NO >> Adjust stop lamp switch installation. Refer to [BR-15, "Adjustment"](#).

18. CHECK STOP LAMP SWITCH

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to [CCS-108, "Component Inspection \(Stop Lamp Switch\)"](#).

Is the inspection result normal?

- YES >> GO TO 19.
- NO >> Replace stop lamp switch.

19. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Connect stop lamp switch connector.
2. Check the voltage between stop lamp switch harness connector and ground.

Terminal		Voltage (Approx.)
(+)	(-)	
Stop lamp switch		Ground
Connector	Terminal	
E38	3	
		Battery voltage

Is the inspection result normal?

- YES >> GO TO 20.
- NO >> Repair or replace stop lamp switch power supply circuit.

20. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

1. Turn the ignition switch OFF.
2. Disconnect stop lamp switch, ABS actuator and electric unit (control unit) connectors.
3. Check for continuity between the stop lamp switch harness connector and the ABS actuator and electric unit (control unit) harness connector.

Stop lamp switch		ABS actuator and electric unit (control unit)		Continuity
Connector	Terminal	Connector	Terminal	
E38	4	E125	5	Existed

4. Check for continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E38	4		Not existed

Is the inspection result normal?

- YES >> GO TO 21.
- NO >> Repair the harnesses or connectors.

21. PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.

C1A13 STOP LAMP RELAY

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-108, "DTC Index"](#).

Is any DTC detected?

- YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
 NO >> GO TO 22.

22. PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ABS". Refer to [BRC-45, "DTC Index"](#).

Is any DTC detected?

- YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
 NO >> Replace ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

Component Inspection

INFOID:000000007911330

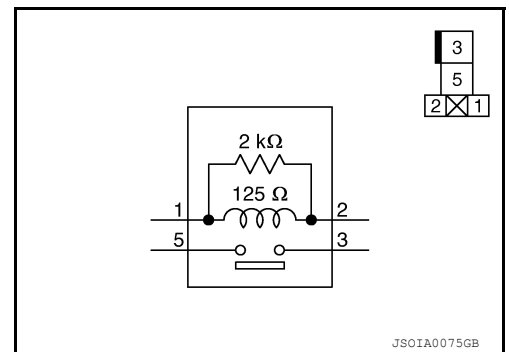
1. CHECK ICC BRAKE HOLD RELAY

Apply battery voltage to ICC brake hold relay terminals 1 and 2, and then check for continuity under the following conditions.

Terminal		Condition	Continuity
3	5	When the battery voltage is applied	Existed
		When the battery voltage is not applied	Not existed

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace ICC brake hold relay.



C1A14 ECM

DTC Logic

INFOID:000000007911331

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A14 (14)	ECM CIRCUIT	If ECM is malfunctioning	<ul style="list-style-type: none"> Accelerator pedal position sensor ECM ADAS control unit

NOTE:

If DTC "C1A14" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

1. PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Operate the ICC system and drive.
CAUTION:
Always drive safely.
- Stop the vehicle.
- Perform "All DTC Reading" with CONSULT.
- Check if the "C1A14" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A14" detected as the current malfunction?

- YES >> Refer to [CCS-119, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911332

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A14" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF ECM

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-108, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

C1A15 GEAR POSITION

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A15 GEAR POSITION

Description

INFOID:000000007911333

ADAS control unit judges the gear position based on the following signals.

- Current gear position signal transmitted from TCM via CAN communication.
- Value of gear ratio calculated from input speed signal transmitted from TCM via CAN communication.
- Value of gear ratio calculated from the vehicle speed signal transmitted from ABS actuator and electric unit (control unit) via CAN communication.

DTC Logic

INFOID:000000007911334

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A15 (15)	GEAR POSITION	A mismatch between a current gear position signal transmitted from TCM via CAN communication and a gear position calculated by the ADAS control unit continues for approximately 11 minutes or more	<ul style="list-style-type: none">• Input speed sensor• Vehicle speed sensor CVT (output speed sensor)• TCM

NOTE:

If DTC "C1A15" is detected along with DTC "U1000", "C1A03", or "C1A04", first diagnose the DTC "U1000", "C1A03", or "C1A04".

- Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [CCS-102, "DTC Logic"](#) for DTC "C1A03".
- Refer to [CCS-104, "DTC Logic"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Drive the vehicle at 10 km/h (6 MPH) or faster for approximately 15 minutes or more.

CAUTION:

Always drive safely.

4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT.
6. Check if "C1A15" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A15" detected as the current malfunction?

YES >> Refer to [CCS-120, "Diagnosis Procedure"](#).

NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911335

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A03", "C1A04", or "U1000" is detected other than "C1A15" 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-59, "DTC Index"](#).

NO >> GO TO 2.

2. CHECK VEHICLE SPEED SIGNAL

Check that "VHCL SPEED SE" operates normally in "DATA MONITOR" of "ICC/ADAS".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

C1A15 GEAR POSITION

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 3.
- NO >> GO TO 7.

3. CHECK GEAR POSITION

Check that "GEAR" operates normally in "DATA MONITOR" of "ICC/ADAS".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

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

4. CHECK GEAR POSITION SIGNAL

Check that "GEAR" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

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

5. CHECK INPUT SPEED SENSOR SIGNAL

Check that "INPUT SPEED" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).
- NO >> GO TO 6.

6. CHECK TCM SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-55, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

7. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-45, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

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CCS

C1A16 RADAR STAIN

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A16 RADAR STAIN

DTC Logic

INFOID:000000007911336

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A16 (16)	RADAR STAIN	Inclusion of dirt or stains on the ICC sensor area of the front bumper	<ul style="list-style-type: none">• Stain or foreign materials is deposited• Cracks or scratches exist

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.

Diagnosis Procedure

INFOID:000000007911337

1. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "C1A16" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1A16" detected?

- YES >> Refer to [CCS-123, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

1. Erase All self-diagnosis results with CONSULT.
2. Perform "All DTC Reading"
3. Check if the "C1A16" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A16" detected?

- YES >> Replace ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).
NO >> INSPECTION END

C1A16 RADAR BLOCKED

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A16 RADAR BLOCKED

DTC Logic

INFOID:000000007911338

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A16	RADAR BLOCKED	Inclusion of dirt or stains on the ICC sensor area of the front bumper	<ul style="list-style-type: none">• Stain or foreign materials is deposited• Cracks or scratches exist

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.

Diagnosis Procedure

INFOID:000000007911339

1. VISUAL CHECK 1

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

Does contamination or foreign matter 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-17, "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.

Is it found?

- YES >> Replace the ICC sensor. Refer to [CCS-189, "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-189, "Removal and Installation"](#).

C1A17 ICC SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A17 ICC SENSOR

DTC Logic

INFOID:000000007911340

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A17 (17)	ICC SENSOR MALF	If ICC sensor is malfunctioning	ICC sensor

NOTE:

If DTC "C1A17" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000007911341

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if "U1000" is detected other than "C1A17" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-124, "DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if any DTC 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-65, "DTC Index"](#).
- NO >> Replace ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

C1A18 LASER AIMING INCOMP

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

C1A18 LASER AIMING INCOMP

DTC Logic

INFOID:000000007911342

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A18 (18)	LASER AIMING INCOMP	The radar of the ICC sensor is not adjusted	<ul style="list-style-type: none">The adjustment of the radar is not yet performedInterruption in radar adjustment

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 "C1A18" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A18" detected as the current malfunction?

- YES >> Refer to [CCS-125, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007911343

1. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if the "C1A18" is detected in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1A18" detected?

- YES >> Refer to [CCS-126, "DTC Logic"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

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C1A18 RADAR ALIGNMENT INCOMPLETE

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A18 RADAR ALIGNMENT INCOMPLETE

DTC Logic

INFOID:000000007911344

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A18	RADAR ALIGNMENT INCOMPLETE	The radar of the ICC sensor is not adjusted	<ul style="list-style-type: none">• The adjustment of the radar is not yet performed• Interruption in radar adjustment

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 "C1A18" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1A18" detected as the current malfunction?

- YES >> Refer to [CCS-126, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007911345

1. ADJUST RADAR ALIGNMENT

1. Adjust the radar alignment. Refer to [CCS-85, "Description"](#).
2. Erase All self-diagnosis results with CONSULT.
3. Perform "All DTC Reading".
4. Check if the "C1A18" is detected in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1A18" detected?

- YES >> Replace the ICC sensor. Refer to [CCS-189, "Removal and Installation"](#).
NO >> INSPECTION END

C1A21 UNIT HIGH TEMP

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

C1A21 UNIT HIGH TEMP

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911346

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A21 (21)	ICC SENSOR HIGH TEMP	ICC sensor judges high temperature abnormality	Temperature around the ICC sensor becomes high

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch OFF.
2. Wait for 10 minutes or more to cool the ICC sensor.
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 "ICC/ADAS".

Is "C1A21" detected as the current malfunction?

- YES >> Refer to [CCS-127, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
 NO >> Refer to [GI-53, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000007911347

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A21" is detected in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1A21" detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-127, "ICC SENSOR : DTC Logic"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:000000007911348

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A21	UNIT HIGH TEMP	Temperature detected by the temperature sensor integrated in ICC sensor remains less than -45 °C (-49 °F) or more than 105 °C (221 °F) for 5 seconds or more	Temperature around the ICC sensor becomes extremely low or high

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-127, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

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CCS

C1A21 UNIT HIGH TEMP

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

NO >> Refer to [GI-53, "Intermittent Incident"](#).

ICC SENSOR : Diagnosis Procedure

INFOID:000000007911349

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-189, "Removal and Installation"](#).

NO >> Repair engine cooling system.

C1A24 NP RANGE

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A24 NP RANGE

DTC Logic

INFOID:000000007911350

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A24 (24)	NP RANGE	A mismatch between a shift position signal transmitted from TCM via CAN communication and a current gear position signal continues for 60 seconds or more	<ul style="list-style-type: none">• TCM• Transmission range switch

NOTE:

If DTC "C1A24" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. CHECK DTC REPRODUCE (1)

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Wait for approximately 5 minutes or more after shifting the selector lever to "P" position.
4. Perform "All DTC Reading" with CONSULT.
5. Check if the "C1A24" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A24" detected as the current malfunction?

- YES >> Refer to [CCS-129, "Diagnosis Procedure"](#).
NO >> GO TO 2.

2. CHECK DTC REPRODUCE (2)

1. Wait for approximately 5 minutes or more after shifting the selector lever to "N" position.
2. Perform "All DTC Reading".
3. Check if the "C1A24" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A24" detected as the current malfunction?

- YES >> Refer to [CCS-129, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911351

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A24" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TCM DATA MONITOR

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

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Perform diagnosis for transmission range switch circuit and repair or replace the malfunctioning parts. Refer to [DAS-79, "Removal and Installation"](#).

3. PERFORM TCM SELF-DIAGNOSIS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

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C1A24 NP RANGE

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

-
- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-55, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

C1A26 ECD MODE MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A26 ECD MODE MALFUNCTION

DTC Logic

INFOID:000000007911352

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A26 (26)	ECD MODE MALF	If an abnormal condition occurs with ECD system	ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A26" is detected along with DTC "U1000", "U0415" or "U0121" first diagnose the DTC "U1000", "U0415" or "U0121".

- DTC "U1000": Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
- DTC "U0415": Refer to [CCS-155, "ADAS CONTROL UNIT : DTC Logic"](#).
- DTC "U0121": Refer to [CCS-147, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Wait for approximately 1 minute after turning the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A26" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A26" detected as the current malfunction?

- YES >> Refer to [CCS-131, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911353

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000", "U0415" or "U0121" is detected other than "C1A26" 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-59, "DTC Index"](#).
NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-45, "DTC Index"](#).
NO >> Replace ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

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C1A27 ECD POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A27 ECD POWER SUPPLY CIRCUIT

DTC Logic

INFOID:000000007911354

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A27 (27)	ECD PWR SUPPLY CIR	ECD system power supply voltage is excessively low	<ul style="list-style-type: none">• ABS actuator and electric unit (control unit) power supply circuit• ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A27" is detected along with DTC "U1000", "U0415" or "U0121" first diagnose the DTC "U1000", "U0415" or "U0121".

- DTC "U1000": Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
- DTC "U0415": Refer to [CCS-155, "ADAS CONTROL UNIT : DTC Logic"](#).
- DTC "U0121": Refer to [CCS-147, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Wait for approximately 1 minute after turning the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A27" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A27" detected as the current malfunction?

- YES >> Refer to [CCS-132, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911355

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000", "U0415" or "U0121" is detected other than "C1A27" 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-59, "DTC Index"](#).
NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Check power supply circuit of ABS actuator and electric unit (control unit). Refer to [BRC-67, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Perform self-diagnosis of ABS actuator and electric unit (control unit). Refer to [BRC-45, "DTC Index"](#).
NO >> Repair the harnesses or connectors.

C1A2A ICC SENSOR POWER SUPPLY CIRCUIT

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

C1A2A ICC SENSOR POWER SUPPLY CIRCUIT

DTC Logic

INFOID:000000007911356

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A2A (80)	ICC SEN PWR SUP CIR	Abnormal power supply voltage in ICC sensor	<ul style="list-style-type: none">• Harness, connector, fuse• ICC sensor

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 "C1A2A" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A2A" detected as the current malfunction?

- YES >> Refer to [CCS-133, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911357

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A2A" 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-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ICC SENSOR SELF-DIAGNOSIS

Check if any DTC 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-65, "DTC Index"](#).
NO >> Replace ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

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C1A33 CAN TRANSMISSION ERROR

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

C1A33 CAN TRANSMISSION ERROR

DTC Logic

INFOID:000000007911358

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A33 (33)	CAN TRANSMISSION ERR	If an error occurs in the CAN communication signal that ADAS control unit transmits to ECM	ADAS control unit

NOTE:

If DTC "C1A33" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "C1A33" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A33" detected as the current malfunction?

- YES >> Refer to [CCS-134, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911359

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A33" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

C1A34 COMMAND ERROR

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A34 COMMAND ERROR

DTC Logic

INFOID:000000007911360

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A34 (34)	COMMAND ERROR	If an error occurs in the command signal that ADAS control unit transmits to ECM via CAN communication	ADAS control unit

NOTE:

If DTC "C1A34" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Operate the ICC system and drive.
CAUTION:
Always drive safely.
3. Stop the vehicle.
4. Perform "All DTC Reading" with CONSULT.
5. Check if the "C1A34" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A34" detected as the current malfunction?

- YES >> Refer to [CCS-135, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911361

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A34" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

C1A35 ACCELERATOR PEDAL ACTUATOR

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

C1A35 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:000000007911362

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A35 (35)	APA CIR	If the accelerator pedal actuator is malfunctioning	Accelerator pedal actuator

NOTE:

If DTC "C1A35" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000007911363

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A35" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A35" detected as the current malfunction?

- YES >> GO TO 2.
NO >> INSPECTION END

2. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A35" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 3.

3. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if the DTC is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-131, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

C1A36 ACCELERATOR PEDAL ACTUATOR CAN COMM

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A36 ACCELERATOR PEDAL ACTUATOR CAN COMM

DTC Logic

INFOID:000000007911364

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A36 (36)	APA CAN COMM CIR	If an error occurs in the signal that the accelerator pedal actuator transmits via ITS communication	<ul style="list-style-type: none">• ADAS control unit• Accelerator pedal actuator• ITS communication system

NOTE:

If DTC "C1A36" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A36" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A36" detected as the current malfunction?

- YES >> Refer to [CCS-137, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911365

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A36" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if the DTC is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-131, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

C1A37 ACCELERATOR PEDAL ACTUATOR CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A37 ACCELERATOR PEDAL ACTUATOR CAN 2

DTC Logic

INFOID:000000007911366

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A37 (133)	APA CAN CIR2	If ADAS control unit detects an error signal that is received from accelerator pedal actuator via ITS communication	Accelerator pedal actuator malfunction

NOTE:

If DTC "C1A37" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A37" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A37" detected as the current malfunction?

- YES >> Refer to [CCS-138, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911367

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A37" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. REPLACE ACCELERATOR PEDAL ASSEMBLY

1. Turn the ignition switch OFF.
2. Replace the accelerator pedal assembly.
3. Turn the ignition switch ON.
4. Erases all self-diagnosis results.
5. Perform "All DTC Reading" again.
6. Check if the DTC "C1A37" is detected in self-diagnosis results of "ICC/ADAS".

Is "C1A37" detected?

- YES >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).
NO >> INSPECTION END

C1A38 ACCELERATOR PEDAL ACTUATOR CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A38 ACCELERATOR PEDAL ACTUATOR CAN 1

DTC Logic

INFOID:000000007911368

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A38 (132)	APA CAN CIR1	If ADAS control unit detects an error signal that is received from accelerator pedal actuator via ITS communication	Accelerator pedal actuator malfunction

NOTE:

If DTC "C1A38" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A38" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A38" detected as the current malfunction?

- YES >> Refer to [CCS-139, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911369

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A38" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. REPLACE ACCELERATOR PEDAL ASSEMBLY

1. Turn the ignition switch OFF.
2. Replace the accelerator pedal assembly.
3. Erases All self-diagnosis results.
4. Perform "All DTC Reading" again.
5. Check if the "C1A38" is detected in self-diagnosis results of "ICC/ADAS".

Is "C1A38" detected?

- YES >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).
NO >> INSPECTION END

C1A39 STEERING ANGLE SENSOR

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

C1A39 STEERING ANGLE SENSOR ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911370

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A39 (39)	STRG SEN CIR	If the steering angle sensor is malfunction	Steering angle sensor

NOTE:

If DTC "C1A39" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "C1A39" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A39" detected as the current malfunction?

- YES >> Refer to [CCS-140, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000007911371

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A39" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-45, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:000000007911372

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A39	STRG SEN CIR	If the steering angle sensor is malfunction	Steering angle sensor

NOTE:

If DTC "C1A39" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ICC SENSOR : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

C1A39 STEERING ANGLE SENSOR

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

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-141, "ICC SENSOR : Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

ICC SENSOR : Diagnosis Procedure

INFOID:000000007911373

1. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A39" in "Self Diagnostic Result" of "LASER/RADAR".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ICC SENSOR : 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-59, "DTC Index"](#).
NO >> Replace the ICC sensor. Refer to [CCS-189, "Removal and Installation"](#).

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C1A50 ADAS CONTROL UNIT

DTC Logic

INFOID:000000007911377

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A50	ADAS MALFUNCTION	If ADAS control unit is malfunctioning	ADAS control unit

NOTE:

If DTC "C1A50" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159. "ICC SENSOR : DTC Logic"](#).

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 "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-142. "Diagnosis Procedure"](#).
 NO >> Refer to [GI-53. "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911378

1. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A50" in "Self Diagnostic Result" of "LASER/RADAR".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
 Refer to [CCS-159. "ICC SENSOR : 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-59. "DTC Index"](#).
 NO >> Replace the ICC sensor. Refer to [CCS-189. "Exploded View"](#).

C1F01 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1F01 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:000000007911379

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F01 (91)	APA MOTOR MALF	If the accelerator pedal actuator motor error is detected	Accelerator pedal actuator integrated motor malfunction

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch OFF.
2. Turn the ignition switch ON.
3. Slowly depress the accelerator pedal completely, and then release it.
4. Repeat step 3 several times.
5. Perform "All DTC Reading" with CONSULT.
6. Check if the DTC "C1F01" is detected as the current malfunction on the self-diagnosis results of "ICC/ADAS".

Is "C1F01" detected as the current malfunction?

- YES >> Refer to [CCS-143, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911380

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F01" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if "C1F01" is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "C1F01" detected?

- YES >> Refer to [DAS-195, "ACCELERATOR PEDAL ACTUATOR : DTC Logic"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

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C1F02 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1F02 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:000000007911381

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F02 (92)	APA C/U MALF	If the accelerator pedal actuator integrated control unit error is detected	Accelerator pedal actuator integrated control unit malfunction

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1F02" is detected as the current malfunction on the self-diagnosis results of "ICC/ADAS".

Is "C1F02" detected as the current malfunction?

- YES >> Refer to [CCS-144, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911382

1.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F02" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if "C1F02" is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "C1F02" detected?

- YES >> Refer to [DAS-195, "ACCELERATOR PEDAL ACTUATOR : DTC Logic"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT

DTC Logic

INFOID:000000007911383

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F05 (95)	APA PWR SUPPLY CIR	The battery voltage sent to accelerator pedal actuator remains less than 7.9 V or more than 19.3 V for 5 seconds	<ul style="list-style-type: none">• Harness, connector, or fuse• Accelerator pedal actuator

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1F05" is detected as the current malfunction on the self-diagnosis results of "ICC/ADAS".

Is "C1F05" detected as the current malfunction?

YES >> Refer to [CCS-145, "Diagnosis Procedure"](#).

NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911384

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F05" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> GO TO 2.

2. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if "C1F05" is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "C1F05" detected?

YES >> Refer to [DAS-200, "ACCELERATOR PEDAL ACTUATOR : DTC Logic"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

U0104 ADAS CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U0104 ADAS CAN 1

DTC Logic

INFOID:000000007911385

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0104	ADAS CAN CIR 1	If ICC sensor detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit

NOTE:

If DTC "U0104" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ICC SENSOR : DTC Logic"](#).

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 "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-146, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911386

1. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0104" in "Self Diagnostic Result" of "LASER/RADAR".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ICC SENSOR : 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-59, "DTC Index"](#).
NO >> Replace the ICC sensor. Refer to [CCS-189, "Exploded View"](#).

U0121 VDC CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U0121 VDC CAN 2

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911387

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0121 (127)	VDC CAN CIR2	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0121" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U0121" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0121" detected as the current malfunction?

- YES >> Refer to [CCS-147, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000007911388

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0121" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-45, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:000000007911389

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0121	VDC CAN CIR2	If ICC sensor detects an error signal that is received from ABS actuator and electric unit (control unit) via ADAS control unit	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0121" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ICC SENSOR : DTC Logic"](#).

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< DTC/CIRCUIT DIAGNOSIS >

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 "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-148, "ICC SENSOR : Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

ICC SENSOR : Diagnosis Procedure

INFOID:000000007911390

1. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0121" in "Self Diagnostic Result" of "LASER/RADAR".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ICC SENSOR : 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-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> Replace the ICC sensor. Refer to [CCS-189, "Removal and Installation"](#).

U0126 STRG SEN CAN 1

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

U0126 STRG SEN CAN 1

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911391

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0126 (130)	STRG SEN CAN CIR1	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U0126" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U0126" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0126" detected as the current malfunction?

- YES >> Refer to [CCS-149, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000007911392

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0126" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-45, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:000000007911393

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0126	STRG SEN CAN CIR1	If ICC sensor detects an error signal that is received from steering angle sensor via ADAS control unit	Steering angle sensor

NOTE:

If DTC "U0126" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ICC SENSOR : DTC Logic"](#).

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< DTC/CIRCUIT DIAGNOSIS >

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 "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-150, "ICC SENSOR : Diagnosis Procedure"](#).

NO >> Refer to [GI-53, "Intermittent Incident"](#).

ICC SENSOR : Diagnosis Procedure

INFOID:000000007911394

1. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0126" in "Self Diagnostic Result" of "LASER/RADAR".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ICC SENSOR : 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-59, "DTC Index"](#).

NO >> Replace the ICC sensor. Refer to [CCS-189, "Exploded View"](#).

U0235 ICC SENSOR CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U0235 ICC SENSOR CAN 1

DTC Logic

INFOID:000000007911395

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0235 (144)	ICC SENSOR CAN CIR1	If ADAS control unit detects an error signal that is received from ICC sensor via ITS communication	ICC sensor

NOTE:

If DTC "U0235" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ICC SENSOR : DTC Logic"](#).

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 "U0235" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0235" detected as the current malfunction?

- YES >> Refer to [CCS-151, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911396

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0235" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if any DTC 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-65, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

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U0401 ECM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U0401 ECM CAN 1

DTC Logic

INFOID:000000007911397

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0401 (120)	ECM CAN CIR1	If ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U0401" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U0401" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0401" detected as the current malfunction?

- YES >> Refer to [CCS-152, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911398

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0401" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ECM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-108, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

U0402 TCM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U0402 TCM CAN 1

DTC Logic

INFOID:000000007911399

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0402 (122)	TCM CAN CIRC1	If ADAS control unit detects an error signal that is received from TCM via CAN communication	TCM

NOTE:

If DTC "U0402" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U0402" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0402" detected as the current malfunction?

- YES >> Refer to [CCS-153, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911400

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0402" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-55, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

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U0405 ADAS CAN 2

DTC Logic

INFOID:000000007911401

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0405	ADAS CAN CIR 2	If ICC sensor detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit

NOTE:

If DTC "U0405" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ICC SENSOR : DTC Logic"](#).

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 "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-154, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911402

1. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0405" in "Self Diagnostic Result" of "LASER/RADAR".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
 Refer to [CCS-159, "ICC SENSOR : 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-59, "DTC Index"](#).
 NO >> Replace the ICC sensor. Refer to [CCS-189, "Exploded View"](#).

U0415 VDC CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U0415 VDC CAN 1

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911403

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0415 (126)	VDC CAN CIR1	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0415" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U0415" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0415" detected as the current malfunction?

- YES >> Refer to [CCS-155, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000007911404

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0415" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-45, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:000000007911405

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0415	VDC CAN CIR1	If ICC sensor detects an error signal that is received from ABS actuator and electric unit (control unit) via ADAS control unit	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0415" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ICC SENSOR : DTC Logic"](#).

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CCS

< DTC/CIRCUIT DIAGNOSIS >

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 "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-156, "ICC SENSOR : Diagnosis Procedure"](#).

NO >> Refer to [GI-53, "Intermittent Incident"](#).

ICC SENSOR : Diagnosis Procedure

INFOID:000000007911406

1. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0415" in "Self Diagnostic Result" of "LASER/RADAR".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ICC SENSOR : 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-59, "DTC Index"](#).

NO >> Replace the ICC sensor. Refer to [CCS-189, "Removal and Installation"](#).

U0428 STRG SEN CAN 2

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

U0428 STRG SEN CAN 2

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911407

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0428 (131)	STRG SEN CAN CIR2	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U0428" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U0428" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0428" detected as the current malfunction?

- YES >> Refer to [CCS-157, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
 NO >> Refer to [GI-53, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000007911408

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0428" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-55, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:000000007911409

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0428	STRG SEN CAN CIR2	If ICC sensor detects an error signal that is received from steering angle sensor via ADAS control unit	Steering angle sensor

NOTE:

If DTC "U0428" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ICC SENSOR : DTC Logic"](#).

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< DTC/CIRCUIT DIAGNOSIS >

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 "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-157, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

NO >> Refer to [GI-53, "Intermittent Incident"](#).

ICC SENSOR : Diagnosis Procedure

INFOID:000000007911410

1. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0428" in "Self Diagnostic Result" of "LASER/RADAR".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ICC SENSOR : 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-59, "DTC Index"](#).

NO >> Replace the ICC sensor. Refer to [CCS-189, "Removal and Installation"](#).

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U1000 CAN COMM CIRCUIT ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:000000007911411

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.

CAN communication signal chart. Refer to [LAN-39. "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

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.

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911412

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000 (100)	CAN COMM CIRCUIT	If ADAS control unit is not transmitting or receiving CAN communication signal or ITS communication signal for 2 seconds or more	<ul style="list-style-type: none">• CAN communication system• ITS communication system

NOTE:

If "U1000" is detected, first diagnose the CAN communication system.

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000007911413

1. PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the MAIN switch of ICC system ON, and then wait for 30 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 "ICC/ADAS".

Is "U1000" detected as the current malfunction?

YES >> Refer to [LAN-22. "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-53. "Intermittent Incident"](#).

ICC SENSOR

ICC SENSOR : Description

INFOID:000000007911414

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.

ICC SENSOR : DTC Logic

INFOID:000000007911415

DTC DETECTION LOGIC

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CCS

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If ICC sensor is not transmitting or receiving ITS communication signal for 2 seconds or more	ITS communication system

ICC SENSOR : Diagnosis Procedure

INFOID:000000007911416

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-22. "Trouble Diagnosis Flow Chart"](#).
NO >> Refer to [GI-53. "Intermittent Incident"](#).

U1010 CONTROL UNIT (CAN)

[ICC]

< DTC/CIRCUIT DIAGNOSIS >

U1010 CONTROL UNIT (CAN)

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:000000007911417

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

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911418

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010 (110)	CONTROL UNIT (CAN)	If ADAS control unit detects malfunction by CAN controller initial diagnosis	ADAS control unit

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000007911419

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 "ICC/ADAS".

Is "U1010" detected as the current malfunction?

- YES >> Replace the ADAS control unit. Refer to [DAS-79. "Removal and Installation"](#).
NO >> INSPECTION END

ICC SENSOR

ICC SENSOR : Description

INFOID:000000007911420

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

ICC SENSOR : DTC Logic

INFOID:000000007911421

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010	CONTROL UNIT (CAN)	If ICC sensor detects malfunction by CAN controller initial diagnosis	ICC sensor

ICC SENSOR : Diagnosis Procedure

INFOID:000000007911422

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-189. "Removal and Installation"](#).
NO >> INSPECTION END

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U150B ECM CAN 3

DTC Logic

INFOID:000000007911423

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150B (157)	ECM CAN CIRC 3	ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U150B" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U150B" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150B" detected as the current malfunction?

- YES >> Refer to [CCS-162, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911424

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150B" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
 Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ECM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-108, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

U150C VDC CAN 3

DTC Logic

INFOID:000000007911425

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150C (158)	VDC CAN CIRC 3	ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U150C" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U150C" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150C" detected as the current malfunction?

- YES >> Refer to [CCS-163, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911426

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150C" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-45, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

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U150D TCM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U150D TCM CAN 3

DTC Logic

INFOID:000000007911427

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150D (159)	TCM CAN CIRC 3	ADAS control unit detects an error signal that is received from TCM via CAN communication	TCM

NOTE:

If DTC "U150D" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U150D" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150D" detected as the current malfunction?

- YES >> Refer to [CCS-164, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911428

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150D" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-55, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

U150E BCM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U150E BCM CAN 3

DTC Logic

INFOID:000000007911429

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150E (160)	BCM CAN CIRC 3	ADAS control unit detects an error signal that is received from BCM via CAN communication	BCM

NOTE:

If DTC "U150E" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U150E" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150E" detected as the current malfunction?

- YES >> Refer to [CCS-165, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911430

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150E" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK BCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "BCM".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BCS-49, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

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U1502 ICC SENSOR CAN COMM CIRC

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U1502 ICC SENSOR CAN COMM CIRC

DTC Logic

INFOID:000000007911431

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1502 (147)	ICC SEN CAN COMM CIR	ADAS control unit detects an error signal that is received from ICC sensor via CAN communication	ICC sensor

NOTE:

If DTC "U1502" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U1502" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1502" detected as the current malfunction?

- YES >> Refer to [CCS-166, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911432

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1502" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if any DTC 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-65, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

U1513 METER CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U1513 METER CAN 3

DTC Logic

INFOID:000000007911433

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1513 (163)	METER CAN CIRC 3	ADAS control unit detects an error signal that is received from combination meter via CAN communication	Combination meter

NOTE:

If DTC "U1513" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U1513" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1513" detected as the current malfunction?

- YES >> Refer to [CCS-167, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911434

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1513" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK COMBINATION METER SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "METER/M&A".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [MWI-25, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

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U1514 STRG SEN CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U1514 STRG SEN CAN 3

DTC Logic

INFOID:000000007911435

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1514 (165)	STRG SEN CAN CIRC 3	ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U1514" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U1514" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1514" detected as the current malfunction?

- YES >> Refer to [CCS-168, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911436

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1514" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-45, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

U1515 ICC SENSOR CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U1515 ICC SENSOR CAN 3

DTC Logic

INFOID:000000007911437

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1515 (165)	ICC SENSOR CAN CIRC 3	ADAS control unit detects an error signal that is received from ICC sensor via CAN communication	ICC sensor

NOTE:

If DTC "U1515" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U1515" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1515" detected as the current malfunction?

- YES >> Refer to [CCS-169, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911438

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1515" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if any DTC 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-65, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

U1517 ACCELERATOR PEDAL ACTUATOR CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U1517 ACCELERATOR PEDAL ACTUATOR CAN 3

DTC Logic

INFOID:000000007911439

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1517 (167)	APA CAN CIRC 3	ADAS control unit detects an error signal that is received from accelerator pedal actuator via CAN communication	Accelerator pedal actuator

NOTE:

If DTC "U1517" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

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 "U1517" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1517" detected as the current malfunction?

- YES >> Refer to [CCS-170, "Diagnosis Procedure"](#).
NO >> Refer to [GI-53, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000007911440

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1517" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-131, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-79, "Removal and Installation"](#).

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

POWER SUPPLY AND GROUND CIRCUIT ADAS CONTROL UNIT

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000008452498

Regarding Wiring Diagram information, refer to [DAS-53, "Wiring Diagram"](#).

1. CHECK ADAS CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between ADAS control unit harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ADAS control unit		Ignition switch	0 V
Connector	Terminal		
B104	16	OFF	0 V
		ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the ADAS control unit power supply circuit.

2. CHECK ADAS CONTROL UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the ADAS control unit connector.
3. Check for continuity between ADAS control unit harness connector and ground.

ADAS control unit		Ground	Continuity
Connector	Terminal		
B104	6		Yes

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the ADAS control unit ground circuit.

ICC SENSOR

ICC SENSOR : Diagnosis Procedure

INFOID:000000007911444

1. CHECK ICC SENSOR POWER SUPPLY CIRCUIT

Check voltage between ICC sensor harness connector and ground.

Terminal				Condition	Standard voltage	Reference voltage (Approx.)
(+) Terminal		(-) Terminal				
ICC sensor				Ignition switch	0 - 0.1 V	0 V
Connector	Terminal	Connector	Terminal			
E219	1	E219	8	OFF	0 - 0.1 V	0 V
				ON	9.5 - 16 V	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the ICC sensor power supply circuit.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

2. 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		
E219	8		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the ICC sensor ground circuit.

INTELLIGENT CRUISE CONTROL SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[ICC]

SYMPTOM DIAGNOSIS

INTELLIGENT CRUISE CONTROL SYSTEM SYMPTOMS

Symptom Table

INFOID:000000007911445

Symptoms		Reference page
Operation	MAIN switch does not turn ON	Refer to CCS-174, "Description"
	MAIN switch does not turn OFF	
	ICC system cannot be set (MAIN switch turns ON/OFF)	Refer to CCS-175, "Description"
	CANCEL switch does not function	Refer to CCS-177, "Description"
	Resume does not function	
	Set speed does not increase	
	Set distance to a vehicle ahead cannot be changed	
	ICC is not canceled when the CVT selector lever is "N" position	Refer to CCS-178, "Description"
Display/Chime	ICC system display not appear	Refer to MWI-17, "Description"
	Chime does not sound	Refer to CCS-179, "Description"
Control	Driving force is hunting	Refer to CCS-181, "Description"
Function to detect a vehicle ahead	System frequently cannot detect a vehicle ahead	Refer to CCS-182, "Description"
	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"> Adjust radar alignment: Refer to CCS-85, "Description" Perform ICC system action test. Refer to CCS-92, "Description"
	System misidentifies a vehicle in the next lane	
	System does not detect a vehicle at all	Refer to CCS-184, "Description"

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CCS

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:000000007911446

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

Diagnosis Procedure

INFOID:000000007911447

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-25, "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-159, "ADAS CONTROL UNIT : DTC Logic"](#).

>> INSPECTION END

6.CHECK ICC STEERING SWITCH

Check the ICC steering switch. Refer to [CCS-110, "Component Inspection"](#).

>> 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:000000007911448

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 the drive mode select switch is in SNOW position.
- When ABS warning lamp is ON.

Diagnosis Procedure

INFOID:000000007911449

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 [CCS-109, "DTC Logic"](#).
"VHCL SPD UNMATCH">>Refer to [CCS-102, "DTC Logic"](#).
"IGN LOW VOLT">>Refer to [CCS-100, "ADAS CONTROL UNIT : DTC Logic"](#).
"ECM CIRCUIT">>Refer to [CCS-119, "DTC Logic"](#).
"CAN COMM ERROR">>Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).
"ICC SENSOR CAN COMM ERR">>Refer to [CCS-151, "DTC Logic"](#).
"ABS/TCS/VDC CIRC">>Refer to [CCS-104, "DTC Logic"](#).
"ECD CIRCUIT">>Refer to [CCS-131, "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" of "LASER/RADAR". Refer to [CCS-59, "DTC Index"](#) (ICC/ADAS) or [CCS-65, "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 [CCS-102, "DTC Logic"](#).
"D RANGE SW">>Refer to [CCS-178, "Diagnosis Procedure"](#).
"SET/COAST SW">>Refer to [CCS-109, "DTC Logic"](#).

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CCS

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

[ICC]

< SYMPTOM DIAGNOSIS >

“BRAKE SW”>>Refer to [CCS-105, "DTC Logic"](#).

“PKB SW”>>Refer to [MWI-81, "Diagnosis Procedure"](#).

5. REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-79, "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-92, "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:000000007911450

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:000000007911451

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-159, "ADAS CONTROL UNIT : DTC Logic"](#).

>> INSPECTION END

4. CHECK ICC STEERING SWITCH

Check the ICC steering switch. Refer to [CCS-110, "Component Inspection"](#).

>> GO TO 6.

5. REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-79, "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-92, "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

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ICC SYSTEM DOES NOT CANCEL WHEN CVT SELECTOR LEVER SETS ON "N"

< SYMPTOM DIAGNOSIS >

[ICC]

ICC SYSTEM DOES NOT CANCEL WHEN CVT SELECTOR LEVER SETS ON "N"

Description

INFOID:000000007911452

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

Diagnosis Procedure

INFOID:000000007911453

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-159, "ADAS CONTROL UNIT : 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-55, "DTC Index"](#).

>> GO TO 7.

6. REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-79, "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-92, "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

CHIME DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

[ICC]

CHIME DOES NOT SOUND

Description

INFOID:000000007911454

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-182, "Description"](#).)

Diagnosis Procedure

INFOID:000000007911455

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-79, "Removal and Installation"](#).

>> GO TO 8.

3.CHECK ICC WARNING CHIME CIRCUIT

Check the meter buzzer circuit. Refer to [WCS-28, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 6.

4.PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT.

2. Check if the "U1000" is detected in self-diagnosis results of "ICC/ADAS".

Is "U1000" detected?

YES >> GO TO 5.

NO >> GO TO 7.

5.CAN COMMUNICATIONS SYSTEM INSPECTION

Check the CAN communication system and repair or replace malfunctioning parts. Refer to [CCS-159, "ADAS CONTROL UNIT : DTC Logic"](#).

>> INSPECTION END

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-79, "Removal and Installation"](#).

>> GO TO 8.

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CCS

CHIME DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

[ICC]

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-92, "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

DRIVING FORCE IS HUNTING

Description

INFOID:000000007911456

The vehicle causes hunting when the ICC system is active.

Diagnosis Procedure

INFOID:000000007911457

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-108, "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-182, "Description"](#).
2. Check the ICC sensor for contamination, foreign materials, or cracks. Refer to [CCS-182, "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-92, "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:000000007911458

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:000000007911459

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-17, "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. ADJUST RADAR ALIGNMENT

1. Install the front bumper. Refer to [EXT-17, "Removal and Installation"](#).
2. Adjust the radar alignment. Refer to [CCS-85, "Description"](#).
3. Perform ICC system action test. Refer to [CCS-92, "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-189, "Removal and Installation"](#).
2. Install the front bumper. Refer to [EXT-17, "Removal and Installation"](#).
3. Adjust the radar alignment. Refer to [CCS-85, "Description"](#).
4. Perform ICC system action test. Refer to [CCS-92, "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-79, "Removal and Installation"](#).

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

< 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-92. "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

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CCS

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

[ICC]

< SYMPTOM DIAGNOSIS >

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

Description

INFOID:000000007911460

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

Diagnosis Procedure

INFOID:000000007911461

1. CHECK ICC SYSTEM DISPLAY ON INFORMATION DISPLAY

1. Start the self-diagnosis mode of combination meter. Refer to [MWI-17, "Description"](#).
2. Check that the 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 matter adhere?

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

3. VISUAL CHECK (2)

1. Remove the front bumper. Refer to [EXT-17, "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 MATTER

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. RADAR ALIGNMENT ADJUSTMENT

1. Install the front bumper. Refer to [EXT-17, "Removal and Installation"](#).
2. Adjust the radar alignment. Refer to [CCS-85, "Description"](#).
3. Perform ICC system action test. Refer to [CCS-92, "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-189, "Removal and Installation"](#).
2. Install the front bumper. Refer to [EXT-17, "Removal and Installation"](#).
3. Adjust the radar alignment. Refer to [CCS-85, "Description"](#).
4. Perform ICC system action test. Refer to [CCS-92, "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

[ICC]

< SYMPTOM DIAGNOSIS >

NO >> GO TO 8.

8.REPLACE ADAS CONTROL UNIT

Replace ADAS control unit. Refer to [DAS-79, "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-92, "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

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NORMAL OPERATING CONDITION

Description

INFOID:000000007911462

PRECAUTIONS FOR VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE

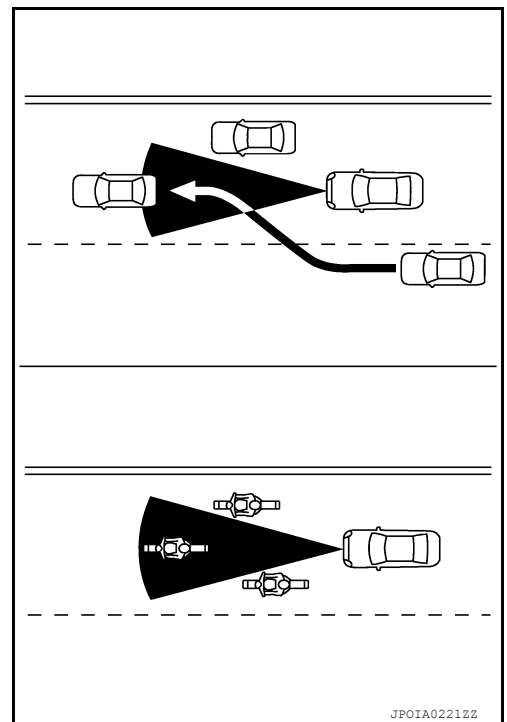
- ICC system is only an aid to assist the driver and is not a collision warning or avoidance system. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- The system is primarily intended for use on straight, dry, open roads with light traffic. 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. Never use the system on roads with sharp curves, or on icy roads, in heavy rain or in fog.
- The ICC sensor will not detect the following objects:
 - Stationary and slow moving vehicles.
 - Pedestrians or objects in the roadway.
 - Oncoming vehicles in the some 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 ICC 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.
 - Never use the ICC system if own vehicle is towing a trailer. The system may not detect a vehicle ahead.
- 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 front bumper of the vehicle 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 luggage room of own vehicle.
- The ICC system is designed to automatically check the sensor's operation within the limitation of the system. When the front bumper area of the ICC sensor is covered with dirt or is obstructed, the system will automatically cancel. If the front bumper area of the ICC 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 front bumper area of the ICC 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

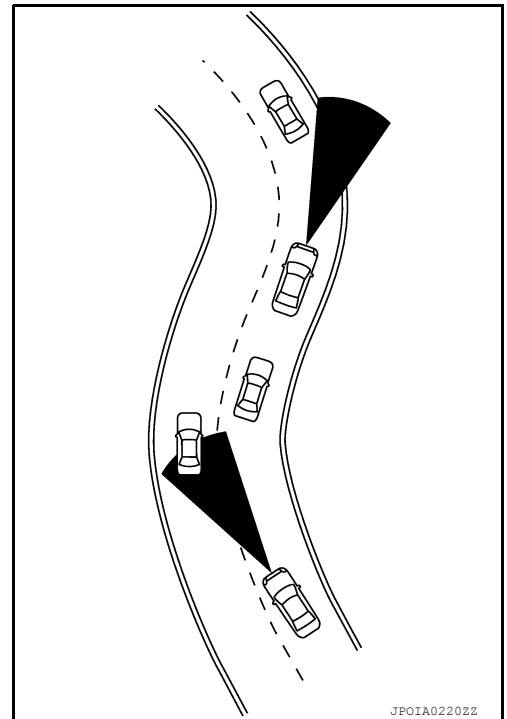
[ICC]

< SYMPTOM DIAGNOSIS >

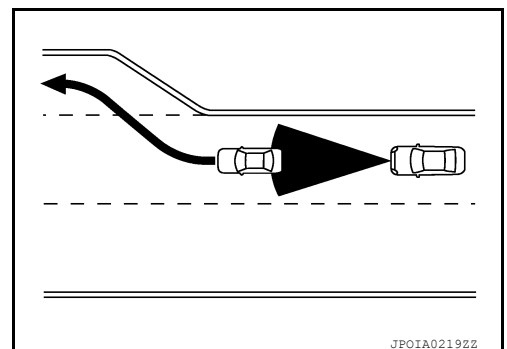
- The detection zone of the ICC sensor is limited. A vehicle ahead must be in the detection zone for the vehicle-to-vehicle distance detection mode to maintain the selected distance from the vehicle ahead. A vehicle ahead may move outside of the detection zone due to its position within the same lane 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

[ICC]

< SYMPTOM DIAGNOSIS >

- 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.
- 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).

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.
- Never 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 the MAIN switch OFF when not using ICC system.

MILLIMETER WAVE SENSOR

< REMOVAL AND INSTALLATION >

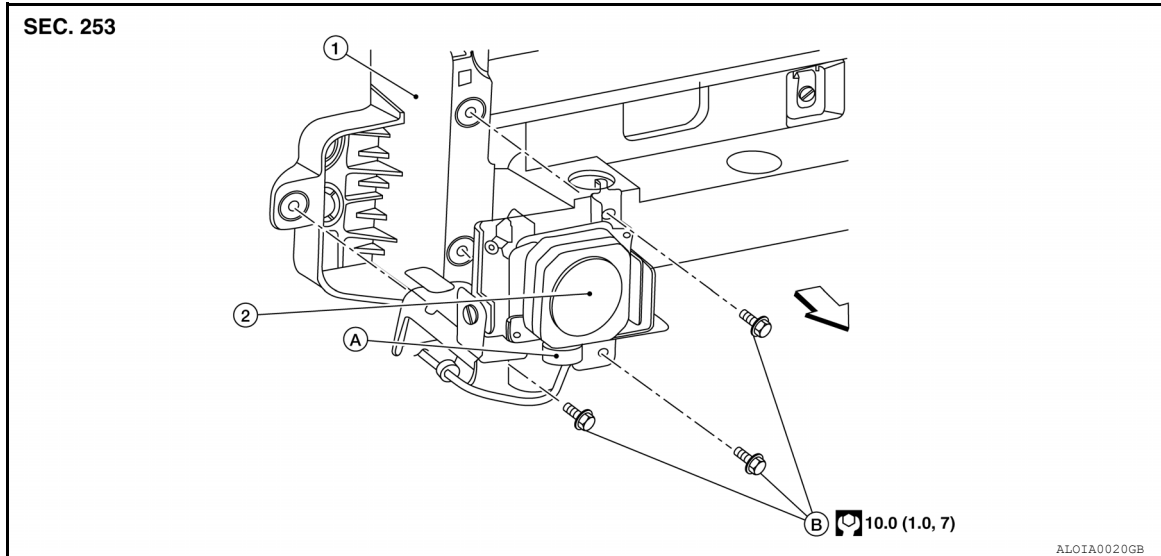
[ICC]

REMOVAL AND INSTALLATION

MILLIMETER WAVE SENSOR

Exploded View

INFOID:000000007911463



1. Radiator core support assembly 2. Millimeter wave sensor ← Front
- A. Millimeter wave sensor harness connector B. For tightening sequence refer to [CCS-189. "Removal and Installation"](#).

Removal and Installation

INFOID:000000007911464

REMOVAL

1. Remove front bumper fascia. Refer to [EXT-17. "Removal and Installation"](#).
2. Disconnect the harness connector from the millimeter wave sensor.
3. Release the harness clip from the millimeter wave sensor.
4. Remove millimeter wave sensor bolts.
5. Remove millimeter wave sensor.

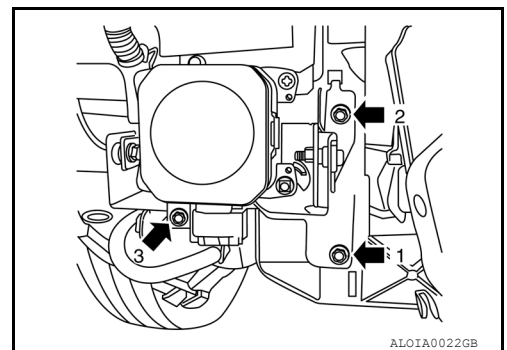
INSTALLATION

Installation is in the reverse order of removal.

- Install millimeter wave sensor bolts (←) loosely; then tighten in sequence shown.

WARNING:

- Do not look straight into the millimeter wave sensor when performing millimeter wave sensor alignment.
- Always perform the millimeter wave sensor alignment and check the operation after removal, installation or replacement of millimeter wave sensor. Refer to [CCS-84. "Work Procedure"](#).



CAUTION:

- Do not drop or shock millimeter wave sensor.
- Make sure millimeter wave sensor harness is installed without any twists.

ICC STEERING SWITCH

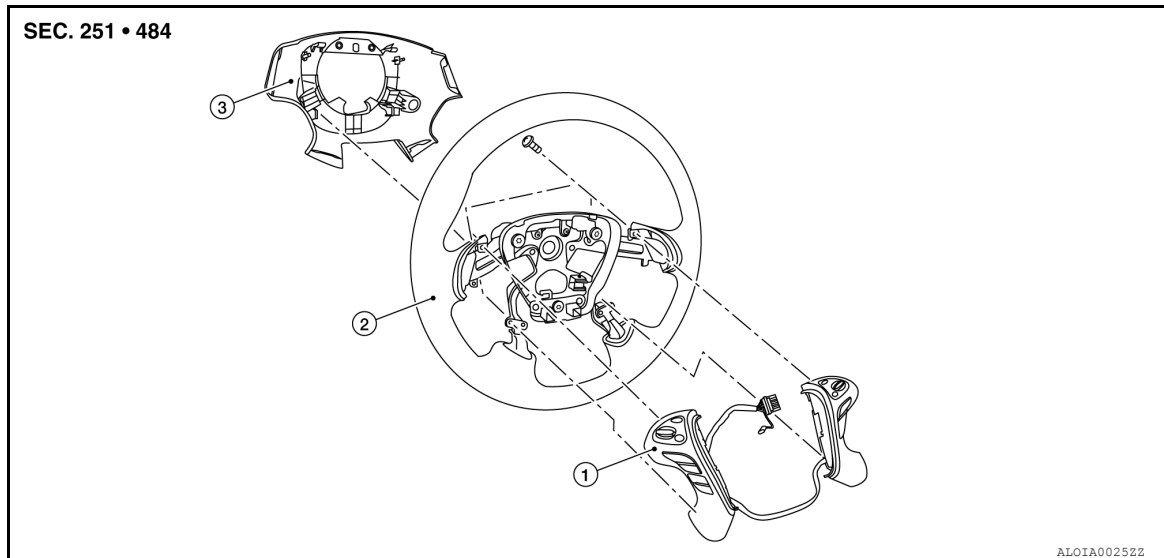
< REMOVAL AND INSTALLATION >

[ICC]

ICC STEERING SWITCH

Exploded View

INFOID:000000007911465



1. ICC steering switch

2. Steering wheel

3. Steering wheel rear finisher

Removal and Installation

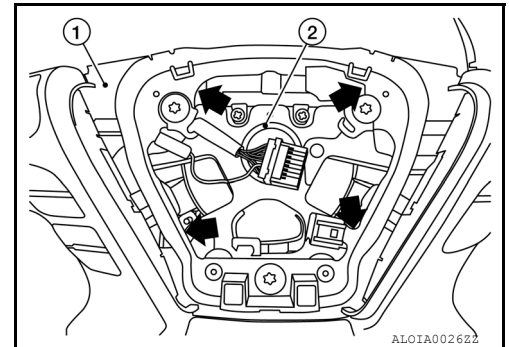
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REMOVAL

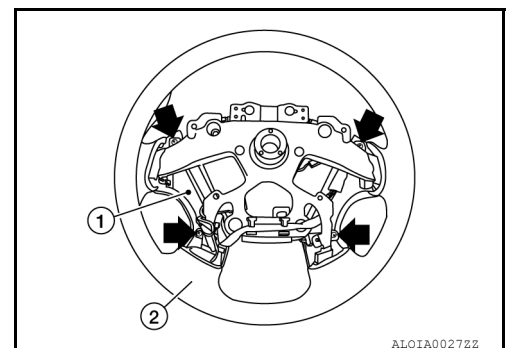
NOTE:

The ICC steering and audio switches are serviced as an assembly.

1. Remove steering wheel. Refer to [ST-45, "Removal and Installation"](#).
2. Release pawls (◀) and remove steering wheel rear finisher (1) from steering wheel (2).



3. Remove ICC steering and audio switch assembly screws (◀).
4. Remove ICC steering and audio switch assembly (1) from steering wheel (2).



INSTALLATION

Installation is in the reverse order of removal.

ICC STEERING SWITCH

< REMOVAL AND INSTALLATION >

[ICC]

CAUTION:

Always perform the ICC system action test to check that the ICC system operates normally after replacing the millimeter wave sensor or repairing any ICC system malfunction. Refer to [CCS-92, "Work Procedure \(Vehicle-To-Vehicle Distance Control Mode\)"](#).

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PRECAUTION

PRECAUTIONS

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

INFOID:000000008497658

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 dual stage front air bag modules. The SRS system may only deploy one front air bag, depending on the severity of a collision and whether the front passenger seat is occupied. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which 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 the SR section.
- Do not 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:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT 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.

SYSTEM DESCRIPTION

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Information

INFOID:000000007911466

Automatic Speed Control Device (ASCD) system is controlled by ECM.

Regarding the information for ASCD system, refer to following;

- VQ35DE: [EC-48. "AUTOMATIC SPEED CONTROL DEVICE \(ASCD\) : System Description"](#)

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