

CCS

SECTION

CRUISE CONTROL SYSTEM

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PRECAUTION

PRECAUTIONS

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

INFOID:0000000014225333

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, it is recommended that all maintenance and repair be performed by an authorized NISSAN/INFINITI dealer.
- Improper repair, 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 Air Bag Diagnosis Sensor Unit or other Air Bag 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 or batteries, and wait at least three minutes before performing any service.

Precautions For Harness Repair

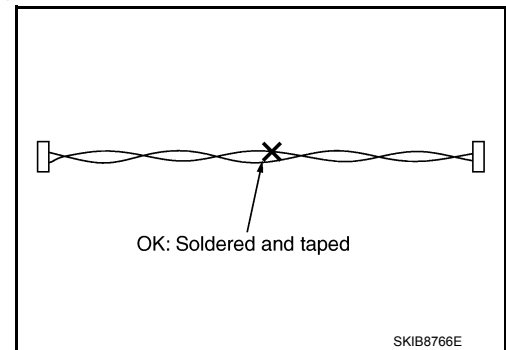
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ITS communication uses a twisted pair line. Be careful when repairing it.

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

NOTE:

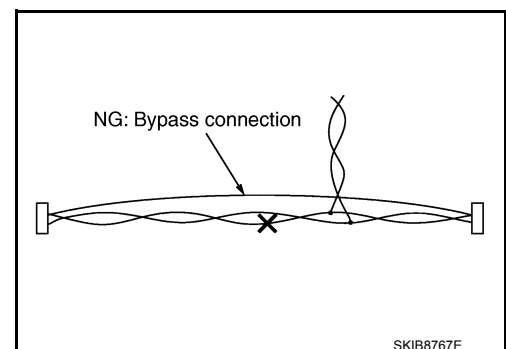
A fray of twisted lines must be within 110 mm (4.33 in).



- 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.

PREPARATION

< PREPARATION >

[ICC]

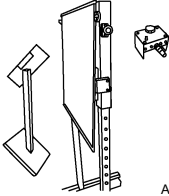
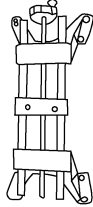
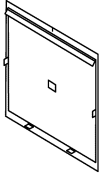
PREPARATION

PREPARATION

Special Service Tools

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The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name		Description
— (1-20-2721-1-IF) ICC Alignment Kit		Adjusting ICC sensor
— (1-20-2722-1-IF) Wheel Adaptor		Adjusting ICC sensor
— (J-50808) ICC alignment kit attachment board		Adjusting ICC sensor

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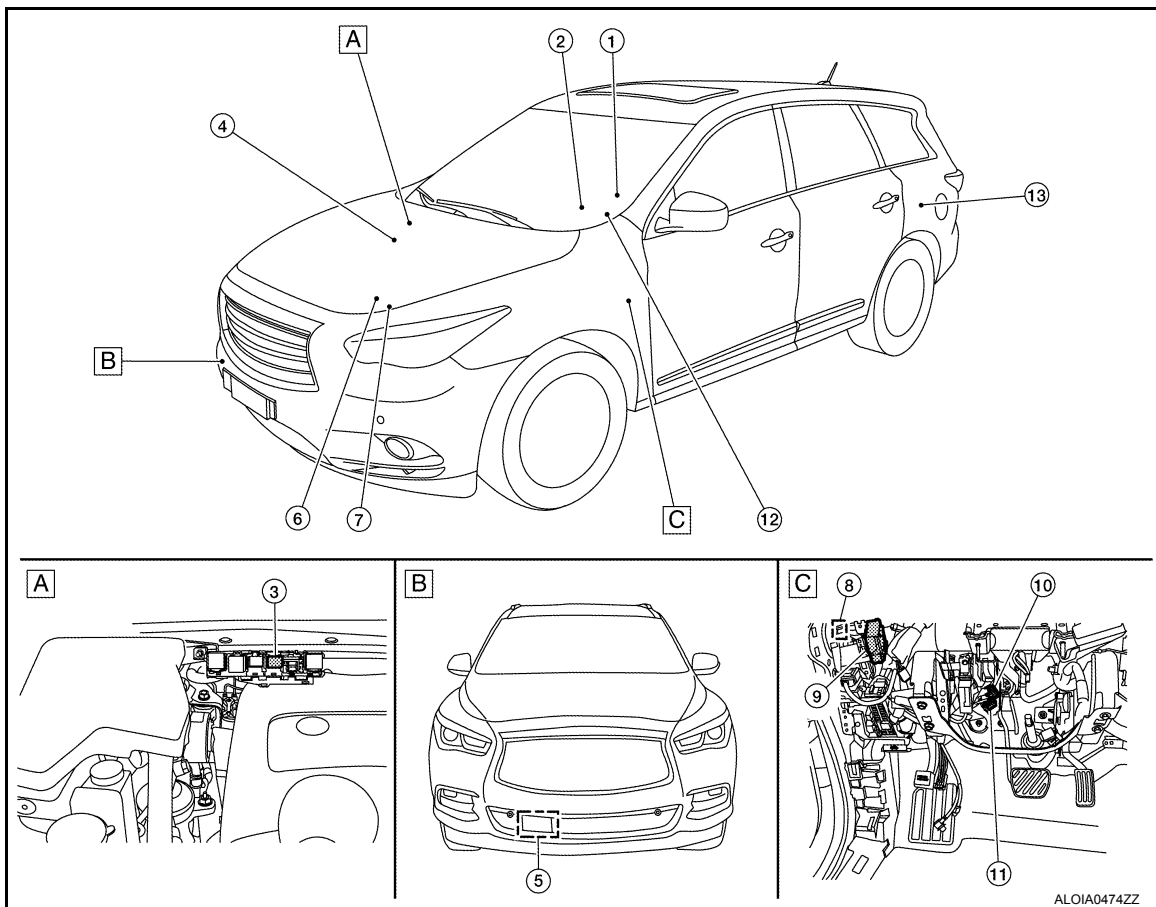
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SYSTEM DESCRIPTION

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) C. Upper side of brake pedal (view with instrument panel LH removed)

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[ICC]

No.	Component	Function			Function
		Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Forward Emergency Braking (FEB)	
1.	ICC steering switch	×	×		- Description: Refer to CCS-11, "ICC Steering Switch" - System display and warning (Vehicle-to-vehicle distance control mode): CCS-22, "VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION : Switch Name and Function" - System display and warning (Conventional cruise control mode): CCS-25, "CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION : Switch Name and Function"
2.	Combination meter (Information display, FEB OFF indicator lamp, buzzer)	×	×	×	- Description: Refer to CCS-11, "Combination Meter" - System display and warning (Vehicle-to-vehicle distance control mode): CCS-22, "VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION : Menu Displayed by Pressing Each Switch" - System display and warning (Conventional cruise control mode): CCS-26, "CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION : Menu Displayed by Pressing Each Switch"
3.	ICC brake hold relay	×		×	Refer to CCS-11, "ICC Brake Hold Relay"
4.	ABS actuator and electric unit (control unit)	×	×	×	- 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-11, "ABS Actuator and Electric Unit (Control Unit)" for detailed installation location
5.	ICC sensor	×	×	×	Refer to CCS-10, "ICC Sensor"
6.	TCM	×	×		TCM transmits the signal related to CVT control to ADAS control unit via CAN communication Refer to TM-16, "CVT CONTROL SYSTEM : TCM" (RE0F10E) or TM-242, "CVT CONTROL SYSTEM : TCM" (RE0F10J) for detailed installation location
7.	ECM	×	×	×	- ECM transmits the accelerator pedal position signal, brake pedal position 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-22, "ENGINE CONTROL SYSTEM : Component Parts Location" (except for Mexico) or EC-574, "ENGINE CONTROL SYSTEM : Component Parts Location" (for Mexico) for detailed installation location
8.	Warning buzzer	×	×	×	Refer to CCS-12, "Warning Buzzer"
9.	Driver assistance buzzer control module	×	×	×	Refer to CCS-12, "Driver Assistance Buzzer Control Module"
10.	Stop lamp switch	×	×	×	Refer to CCS-10, "Brake Pedal Position Switch/Stop Lamp Switch"
11.	Brake pedal position switch	×	×	×	

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COMPONENT PARTS

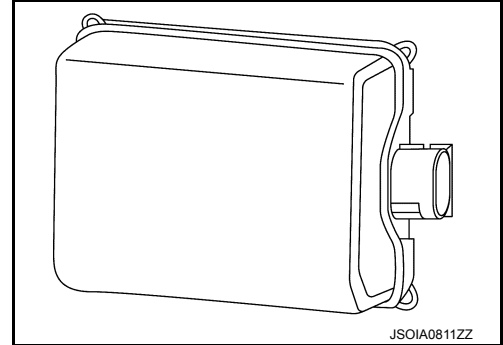
< SYSTEM DESCRIPTION >

[ICC]

		Function			
12.	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
13.	ADAS control unit	×	×	×	Refer to CCS-10, "ADAS Control Unit" Refer to DAS-11, "Component Parts Location" for detailed installation location

ICC Sensor

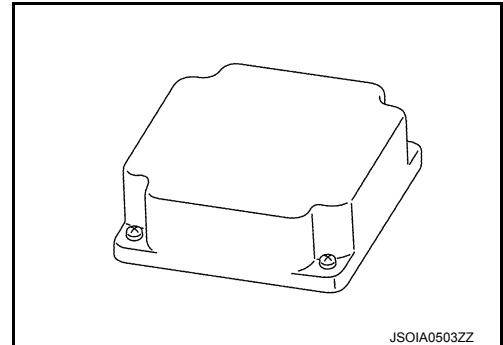
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- ICC sensor is installed on the back of the front bumper and detects a vehicle ahead by using millimeter waves.
- ICC sensor detects radar reflected from a vehicle ahead by irradiating radar forward and calculates a distance from the vehicle ahead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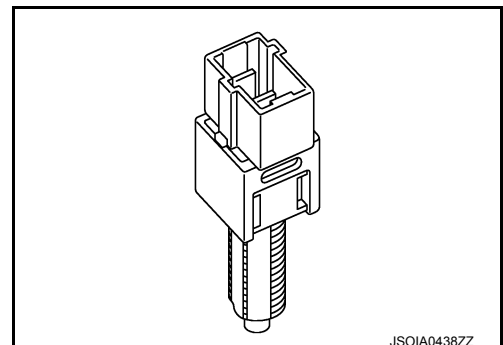


- ADAS control unit calculates a target distance between vehicles and a target speed, based on signals received from each sensor and switch to transmit an engine torque command value to ECM and a brake fluid pressure control signal to ABS actuator and electric unit (control unit) via CAN communication.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

Brake Pedal Position Switch/Stop Lamp Switch

INFOID:0000000012848240

BRAKE PEDAL POSITION SWITCH



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

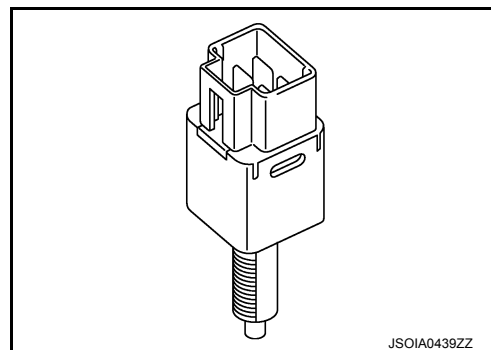
COMPONENT PARTS

< SYSTEM DESCRIPTION >

[ICC]

- Brake pedal position switch signal is input to ECM. Brake pedal position switch signal is transmitted from ECM to ADAS control unit via CAN communication.

STOP LAMP SWITCH



- 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.

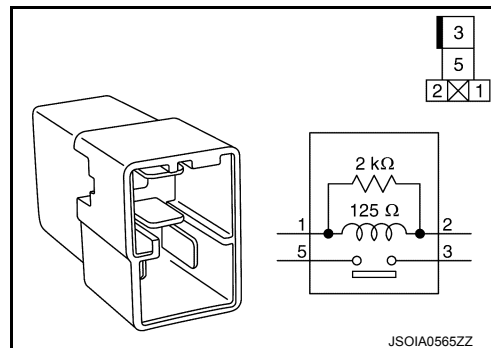
ICC Steering Switch

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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

INFOID:0000000012848242



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

Combination Meter

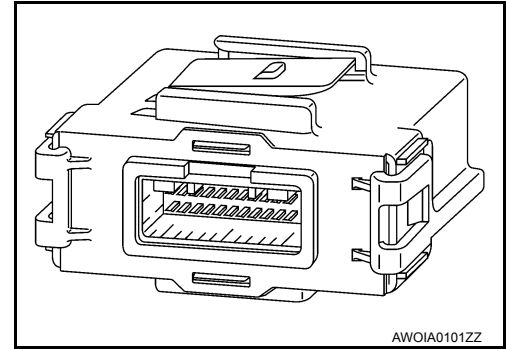
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- Performs the following operations using the signals received from the ADAS control unit via the CAN communication.
 - Displays the ICC system operation status using the meter display signal.
 - Illuminates the ICC system warning lamp using the ICC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

Driver Assistance Buzzer Control Module

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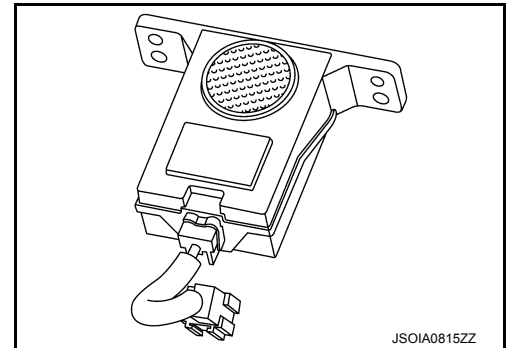
- Driver assistance buzzer control module is installed behind the instrument lower panel LH.
- When the warning buzzer signal is received from the ADAS control unit, the driver assistance buzzer control module transmits the warning buzzer signal to warning buzzer.



Warning Buzzer

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- Warning buzzer is installed behind the instrument panel assembly.
- When a warning buzzer signal is received from the driver assistance buzzer control module, the warning buzzer sounds.

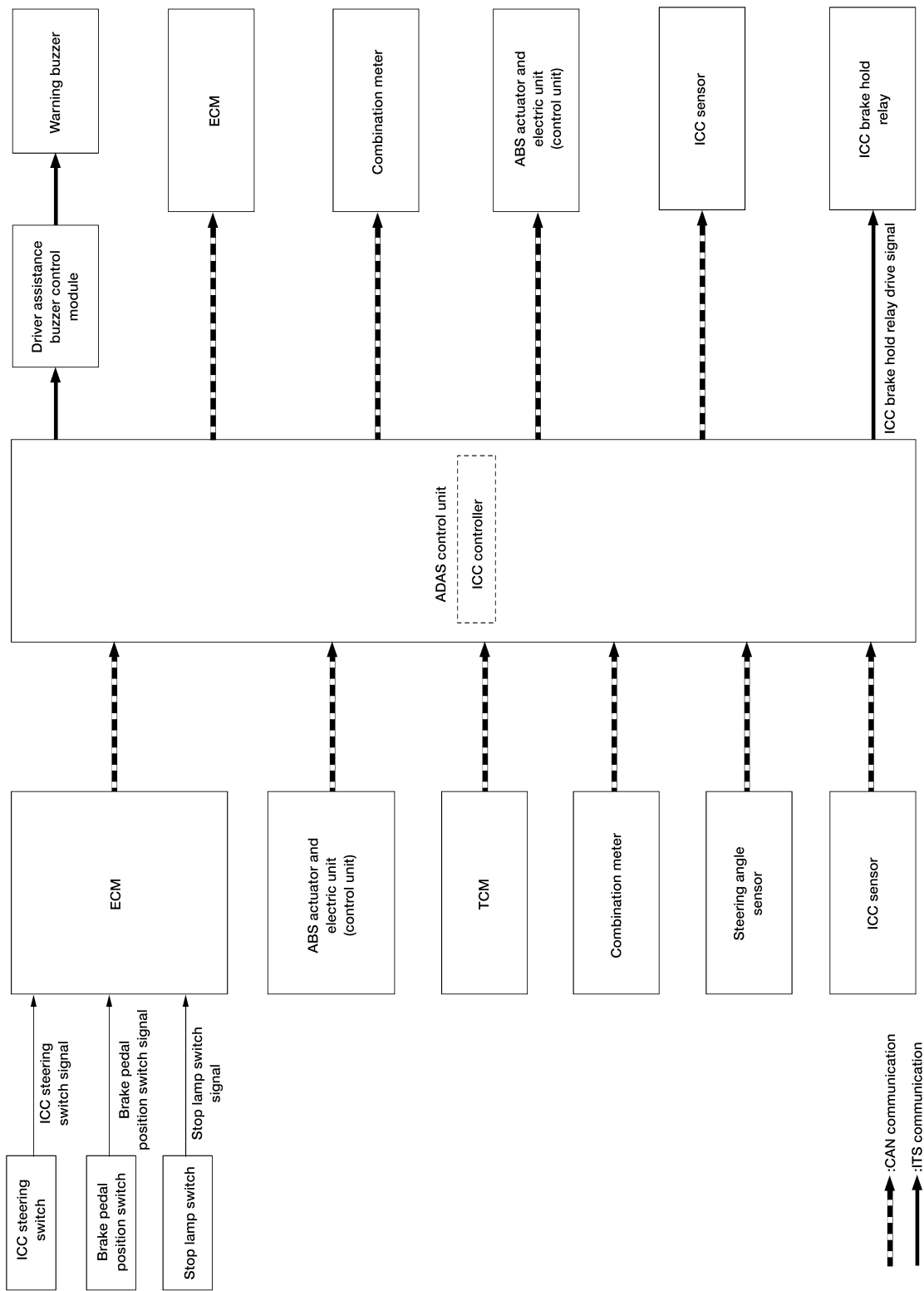


SYSTEM

System Description

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SYSTEM DIAGRAM



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ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

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
			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
		Brake pedal position switch signal	Receives an operational state of the brake pedal
TCM	CAN communication	Snow mode switch signal	Receives an operational state of the snow mode
		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
ABS actuator and electric unit (control unit)	CAN communication	Output shaft revolution signal	Receives the number of revolutions of output shaft
		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
Combination meter	CAN communication	Stop lamp switch signal	Receives an operational state of the brake pedal
		Yaw rate signal	Receives yaw rate acting on the vehicle
Steering angle sensor	CAN communication	Parking brake switch signal	Receives an operational state of the parking brake
		System selection signal	Receives a selection state of FEB system
		Steering angle sensor malfunction signal	Receives a malfunction state of steering angle sensor
ICC sensor	ITS communication	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

SYSTEM

< SYSTEM DESCRIPTION >

[ICC]

Reception unit	Signal name		Description
Electrically driven intelligent brake unit	CAN communication	Driver brake operation detection signal	Receives drivers brake operation state
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	
		MAIN switch indicator signal	
		FEB OFF indicator lamp signal	- Transmits a signal to turn ON the FEB OFF indicator lamp - Transmits an ON/OFF state of the FEB system
		Buzzer output signal	Transmits a buzzer output signal to turn ON the buzzer of the following systems: - Intelligent Cruise Control (ICC) - Forward Emergency Braking (FEB)
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
Driver assistance buzzer control module	ITS communication	Warning buzzer signal	Transmits a warning buzzer signal to turn ON the buzzer

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 GCC: 0 to 180 km/h (0 to 112 MPH) or MEX: 0 to 144 km/h (0 to 89 MPH) up to the set speed.

The set speed can be selected by the driver between GCC: 32 to 180 km/h (20 to 112 MPH) or MEX: 32 to 144 km/h (20 to 89 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 pre-set speed. Refer to [CCS-16, "VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION : System Description"](#).

Conventional (Fixed Speed) Cruise Control Mode

For cruising at a preset speed. Refer to [CCS-19. "CONVENTIONAL \(FIXED SPEED\) CRUISE CONTROL MODE FUNCTION : System Description"](#).

NOTE:

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

WARNING:

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

Distance Control Assist (DCA) System

DCA share the systems and components with ICC system. Refer to [CCS-13. "System Description"](#).

Forward Collision Warning (FCW) System

FCW share the systems and components with ICC system. Refer to [CCS-13. "System Description"](#).

Forward Emergency Braking (FEB) System

FEB system share the systems and components with ICC system. Refer to [CCS-13. "System Description"](#).

Fail-safe (ADAS Control Unit)

INFOID:0000000013500328

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

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	Warning message	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)	High-pitched tone	Backup Collision Intervention warning indicator	Cancel

Fail-safe (ICC Sensor)

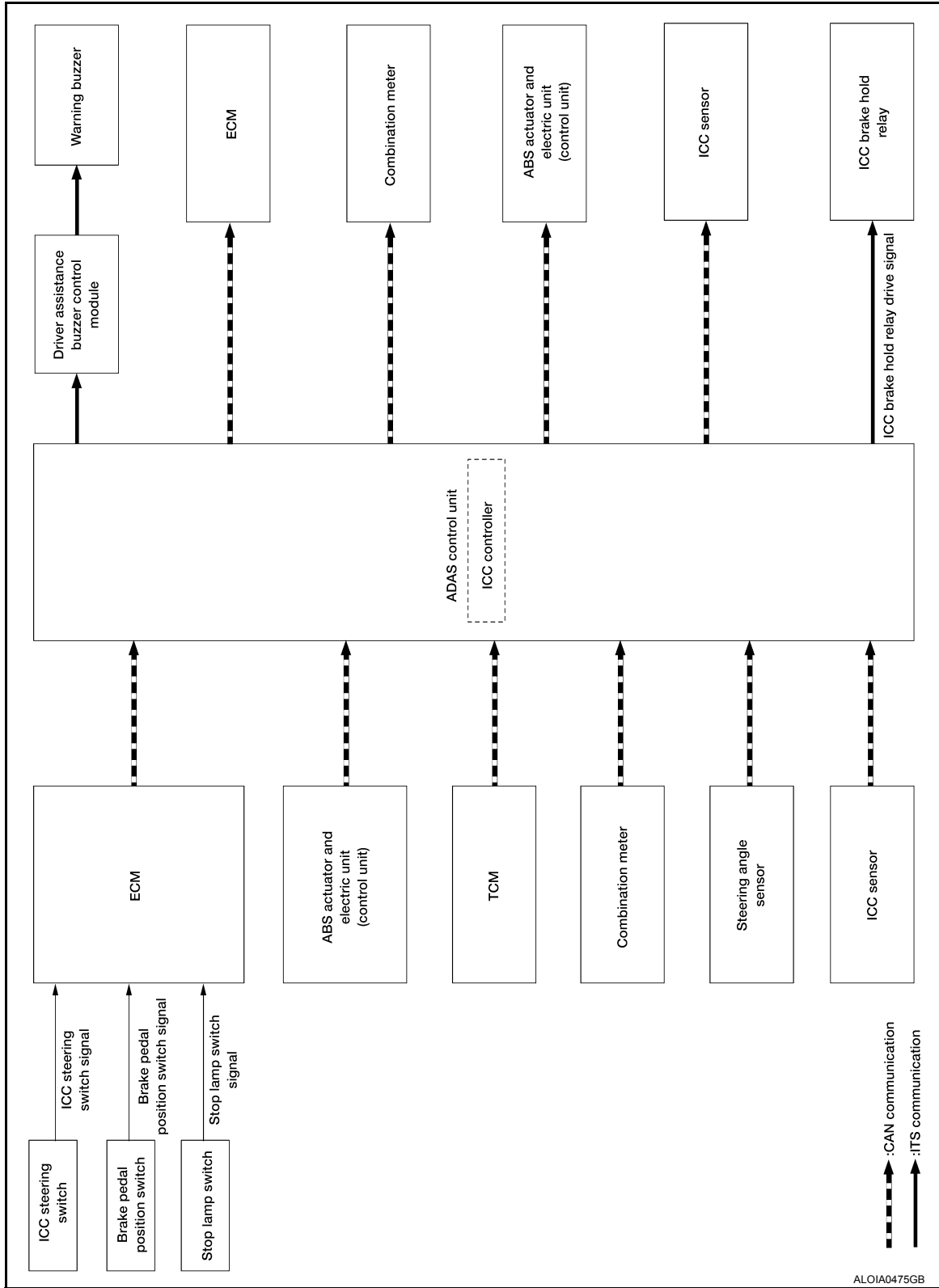
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If a malfunction occurs in the ICC sensor, ADAS control unit cancels control, sounds a beep, and turns ON the ICC system warning lamp in the combination meter.

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

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

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 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.)

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

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SYSTEM

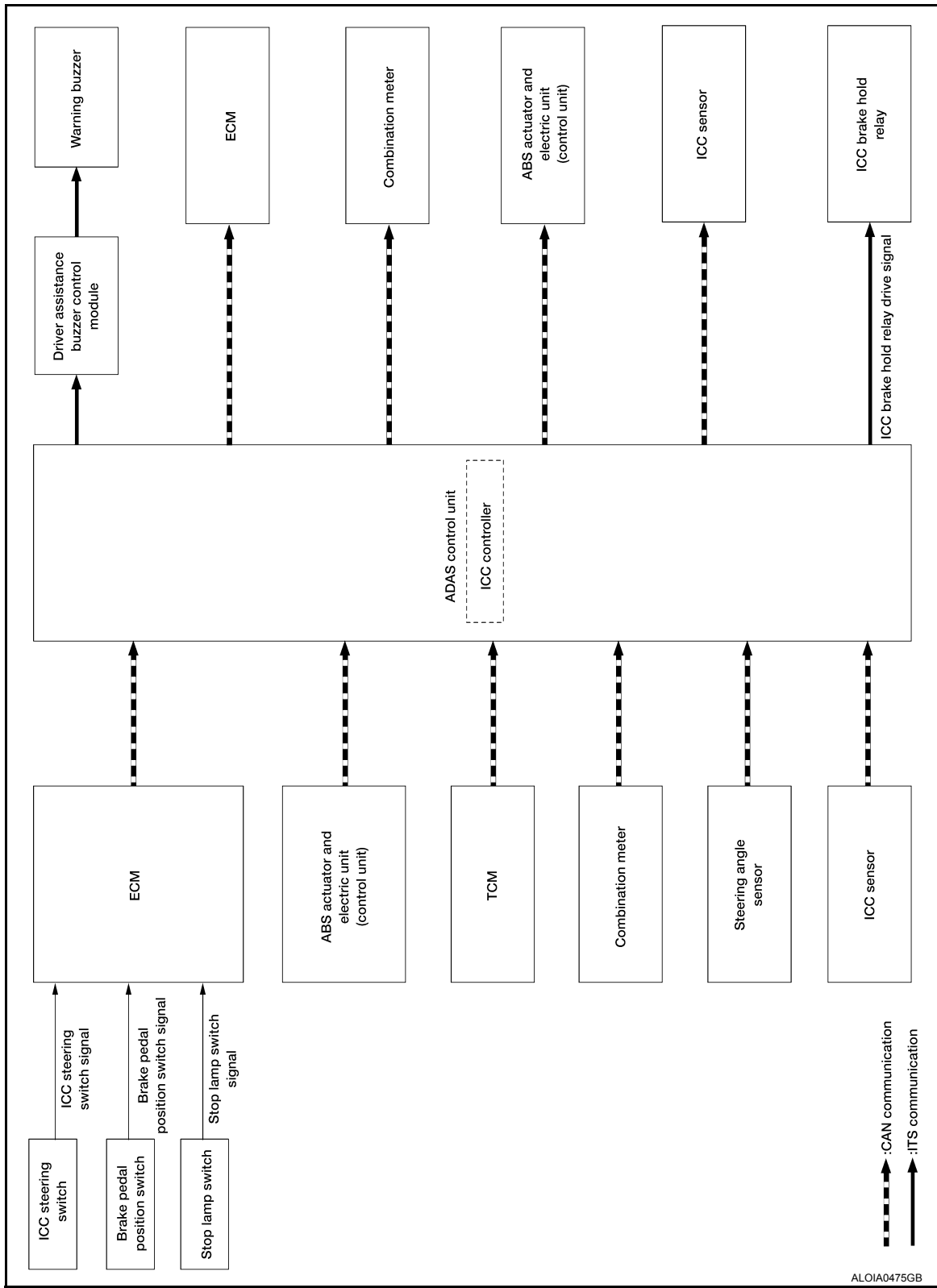
< SYSTEM DESCRIPTION >

[ICC]

INFOID:0000000012848249

Description

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:

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-182. "DCA : System Description"](#).

ADAS control unit performs the control as per the following:

Constant speed	Comparing the set vehicle speed with the current vehicle speed, transmits the command to ECM via CAN communication to reach the set vehicle speed, and controls 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

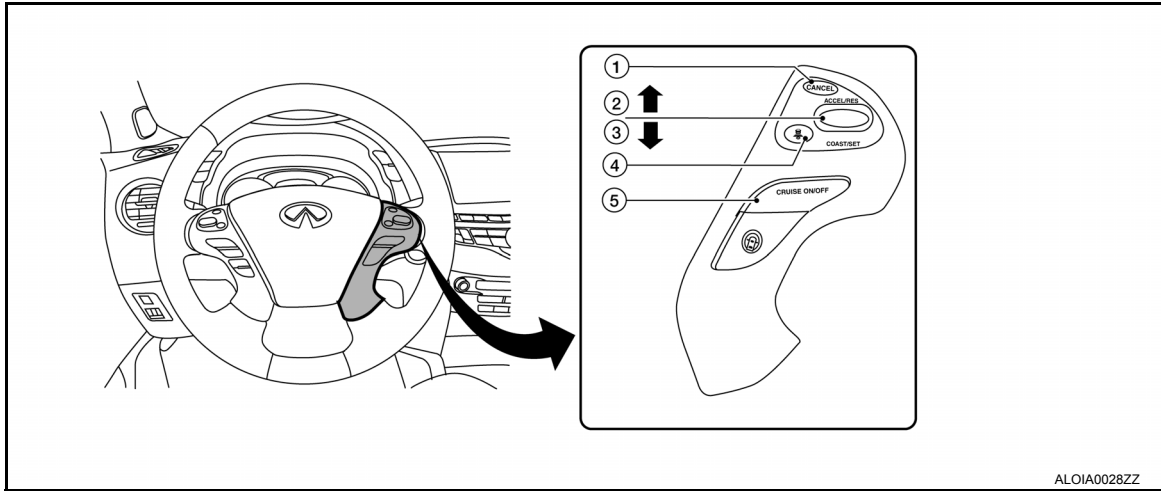
1. When CANCEL switch is pressed.
2. When brake pedal depressed.
3. When the vehicle slows down more than 13 km/h (8 MPH) below the set speed.
4. When the selector lever is not in the "D" position or manual mode.
5. When the parking brakes are applied.
6. When the MAIN switch is turned OFF.
7. When VDC (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:000000012848250



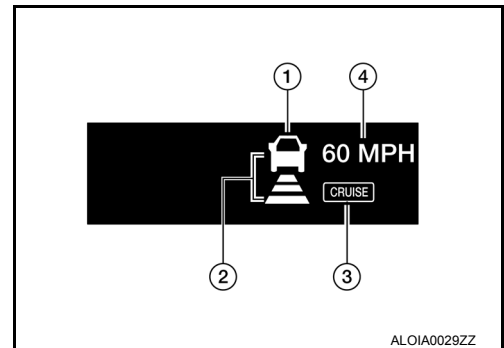
ALOIA0028ZZ

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 8 km/h (5 MPH) - Push then quickly release the switch to increase the set speed by 1.6 km/h (1 MPH)
3	SET/COAST switch	Sets desired cruise speed or reduces speed incrementally - Push and hold the switch to decrease the set speed by 8 km/h (5 MPH) - Push then quickly release the switch to decrease the set speed by 1.6 km/h (1 MPH) NOTE: The minimum set speed is 32 km/h (20 MPH)
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:000000012848251

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

OPERATION

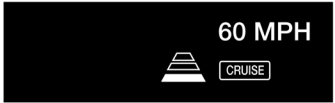
< SYSTEM DESCRIPTION >

[ICC]

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	- Indicates the set vehicle speed - Indicates 32 km/h (20 MPH) when setting less than 32 km/h (20 MPH)

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			 ALOIA0030ZZ
Control mode	Without a vehicle ahead	Set vehicle distance (Long)	 ALOIA0031ZZ
		Set vehicle distance (Middle)	 ALOIA0032ZZ
		Set vehicle distance (Short)	 ALOIA0033ZZ
		When the vehicle speed exceeds the set speed	 ALOIA0034ZZ

OPERATION

< SYSTEM DESCRIPTION >

[ICC]

Condition			Display on ICC system display
Control mode	With a vehicle ahead	Set vehicle distance (Long)	 ALOIA0035ZZ
		Set vehicle distance (Middle)	 ALOIA0036ZZ
		Set vehicle distance (Short)	 ALOIA0037ZZ
		When the vehicle speed exceeds the set speed	 ALOIA0038ZZ

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).

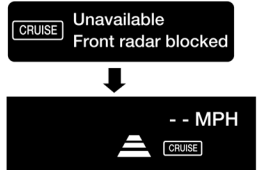
OPERATION

< SYSTEM DESCRIPTION >

[ICC]

Condition	Display on ICC system display
When own vehicle comes closer to the vehicle ahead and it is judged that the distance between the vehicles is not sufficient	 ALOIA0039ZZ

WARNING LAMP AND AUTOMATIC CANCELLATION DISPLAY

Condition	Description	Display on ICC system display
Automatic cancellation display	- When brake pedal is depressed - When CANCEL switch is pressed - When a vehicle ahead is not detected below the speed of 24 km/h (15 MPH) - 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	A chime sounds and the control is automatically canceled. NOTE: - 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.  ALOIA0030ZZ
Warning display	- 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	A chime sounds and the control is automatically canceled. NOTE: 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.
	When the front bumper near the ICC sensor is blocked or dirty, making it impossible to detect a vehicle ahead.	Example: When the front bumper near the ICC sensor is blocked or dirty, making it impossible to detect a vehicle ahead.  ALOIA0040ZZ
	When the ICC system is malfunctioning	A chime sounds and the control is automatically canceled. NOTE: Turn the engine OFF and restart engine. If there is no malfunction, it is possible to set the system.  ALOIA0053ZZ

NOTE:

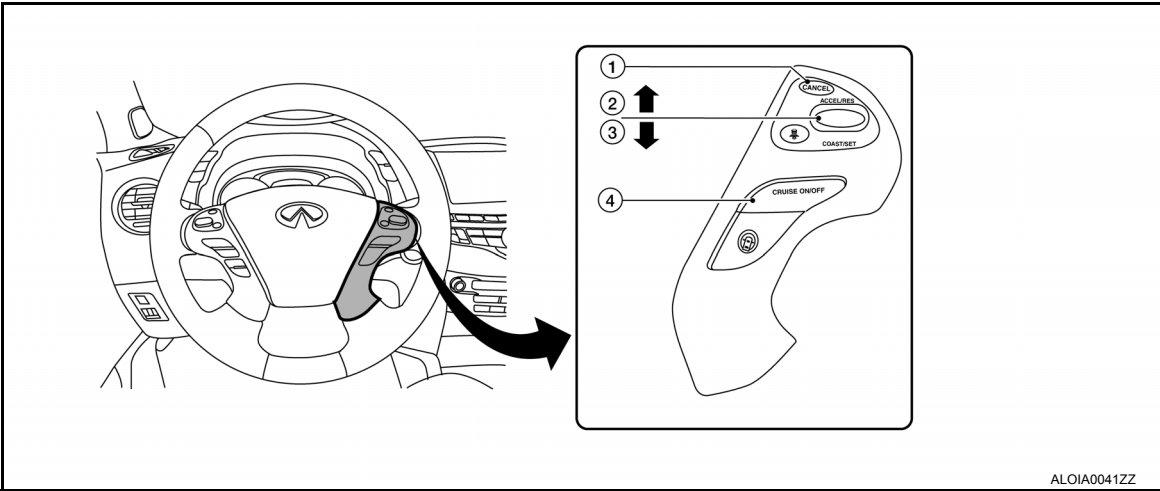
When the ICC system is automatically canceled, the cancellation condition can be displayed on "WORK SUPPORT" of CONSULT (ICC/ADAS).

CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION

CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION : Switch

Name and Function

INFOID:000000012848252

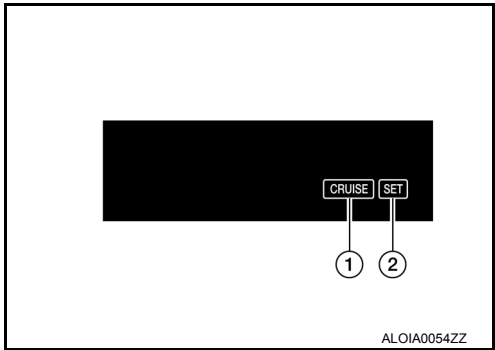


No.	Description	Function
1	CANCEL switch	Deactivates system without erasing set speed
2	RESUME/ACCELERATE switch	Resumes set speed or increases speed incrementally
3	SET/COAST switch	Sets desired cruise speed or reduces speed incrementally
4	MAIN switch	Master switch to activate the system (Press for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

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

INFOID:000000012848253

ICC SYSTEM DISPLAY (ON THE INFORMATION DISPLAY)



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.

OPERATION

< SYSTEM DESCRIPTION >

[ICC]

Condition	Display on ICC system display
Standby mode	 ALOIA0053ZZ
Control mode	 ALOIA0055ZZ

WARNING AND AUTOMATIC CANCELLATION DISPLAY

Condition	Description	Display on ICC system display
Warning display	When the ICC system is malfunctioning A chime sounds and the control is automatically canceled. NOTE: Turn the engine OFF and restart engine. If there is no malfunction, it is possible to set the system	 ALOIA0053ZZ
System cancel display	- When brake pedal is depressed - When pressing CANCEL switch - When the vehicle slows down more than (13 km/h) 8 MPH 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 A chime sounds and the control is automatically canceled NOTE: - 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	 ALOIA0053ZZ

NOTE:

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

CCS

HANDLING PRECAUTION

Precautions for Vehicle-to-Vehicle Distance Control Mode

INFOID:000000012848254

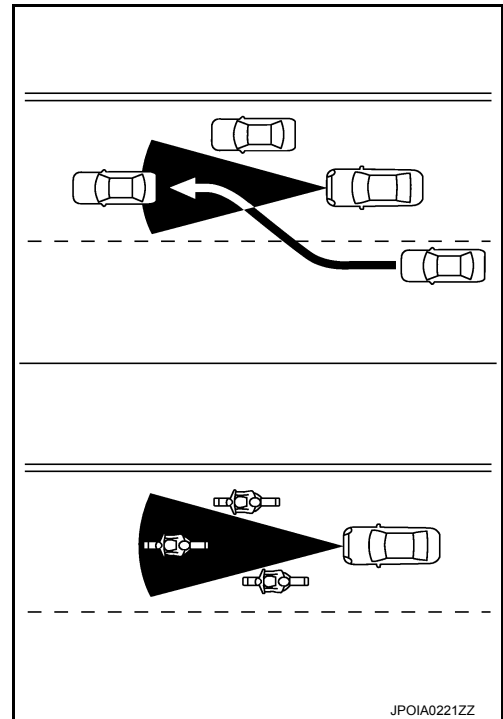
- ICC system is only an aid to assist the driver and is not a collision warning or avoidance system. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- The system is primarily intended for use on straight, dry, open roads with light traffic. 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 same lane.
 - Motorcycles traveling offset in the travel lane.
- As there is a performance limit to the distance control function, never rely solely on the ICC system. This system does not correct careless, inattentive or absent-minded driving, or overcome poor visibility in rain, fog, or other bad weather. Decelerate the vehicle speed by depressing the brake pedal, depending on the distance to the vehicle ahead and the surrounding circumstances in order to maintain a safe distance between vehicles.
- If the vehicle ahead comes to a stop, the vehicle decelerates to a standstill within the limitations of the system. The system will cancel once it judges that the vehicle has come to a standstill and sound a warning chime. To prevent the vehicle from moving, the driver must depress the brake pedal.
- The system may not detect the vehicle in front of the driver in certain road or weather conditions. To avoid accidents, never use the ICC system under the following conditions:
 - On roads where the traffic is heavy or there are sharp curves.
 - On slippery road surfaces such as on ice or snow, etc.
 - During bad weather (rain, fog, snow, etc.)
 - When rain, snow or dirt adhere to the 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.

HANDLING PRECAUTION

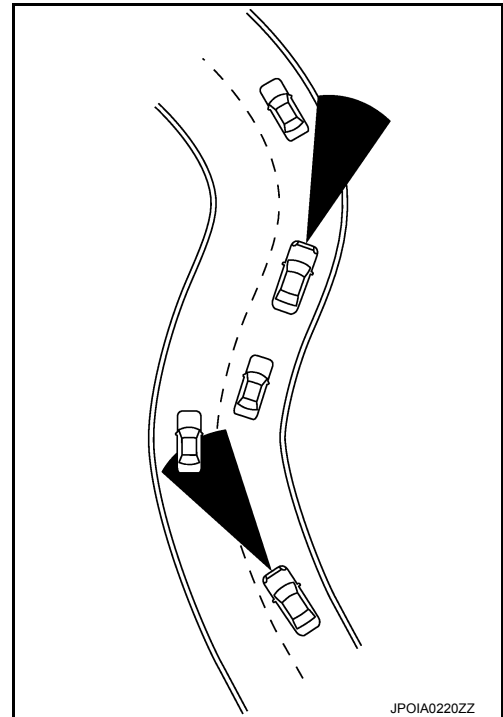
< SYSTEM DESCRIPTION >

[ICC]

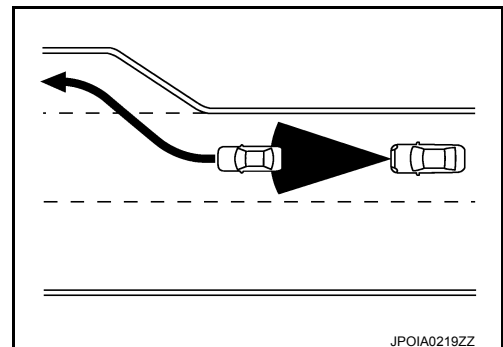
- The detection zone of the ICC sensor is limited. A vehicle ahead must be in the detection zone for the vehicle-to-vehicle distance detection mode to maintain the selected distance from the vehicle ahead. A vehicle ahead may move outside of the detection zone due to its position within the same lane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



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



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



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- 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:0000000012848255

- 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.

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

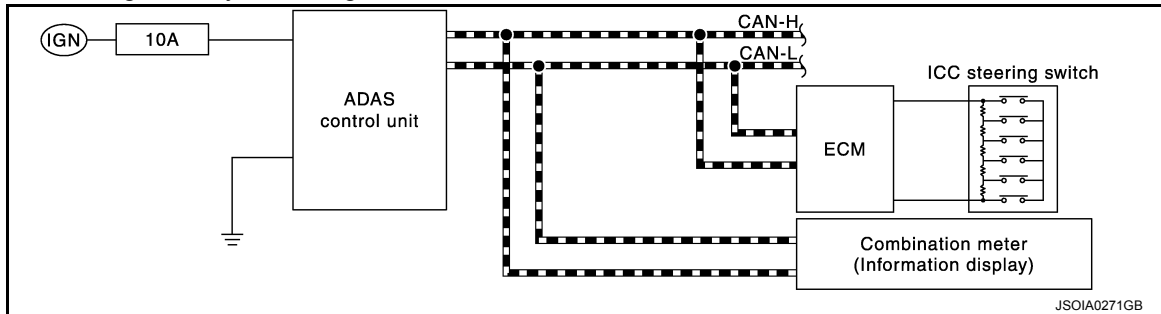
On Board Diagnosis Function

INFOID:000000014227413

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:

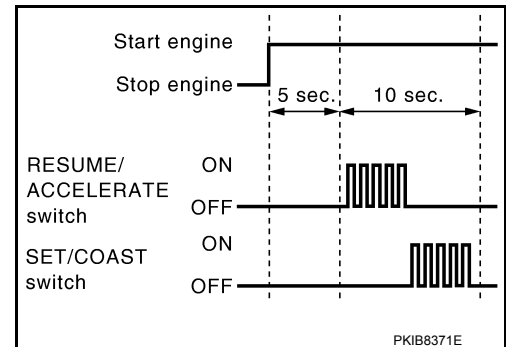
Start condition of on board self-diagnosis

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

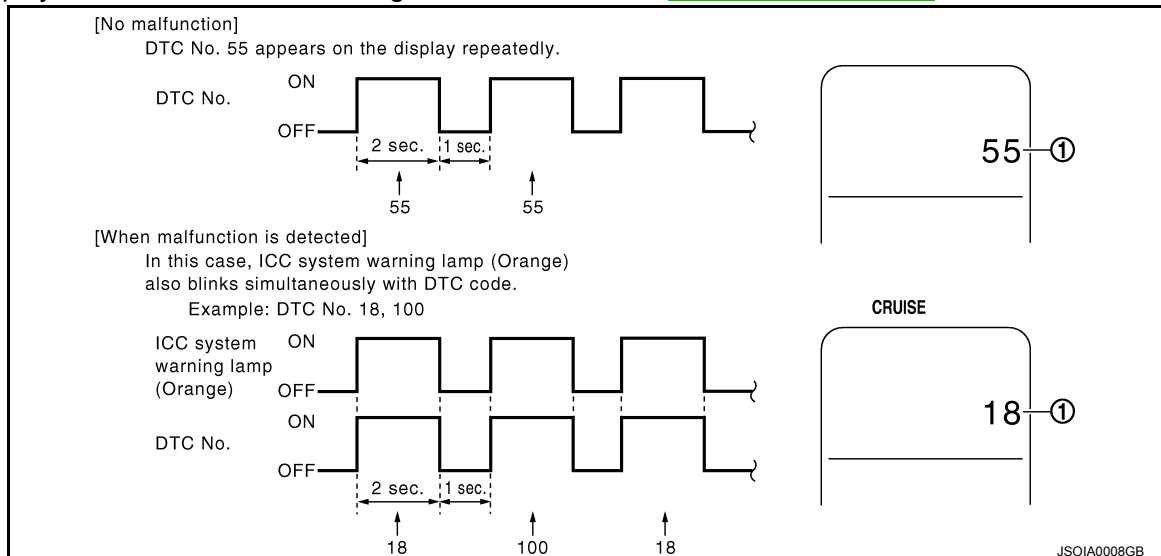
1. Turn the ignition switch OFF.
2. Start the engine.
3. Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.

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-40, "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 DAS-80, "DTC Logic" .
Harness malfunction between ICC steering switch and ECM		
ECM malfunction		
ADAS control unit malfunction		• Check power supply and ground circuit of ADAS control unit. Refer to DAS-169, "Diagnosis Procedure". • Perform SELF-DIAGNOSIS for "ICC/ADAS" with CONSULT, and then check the malfunctioning parts. Refer to DAS-40, "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:

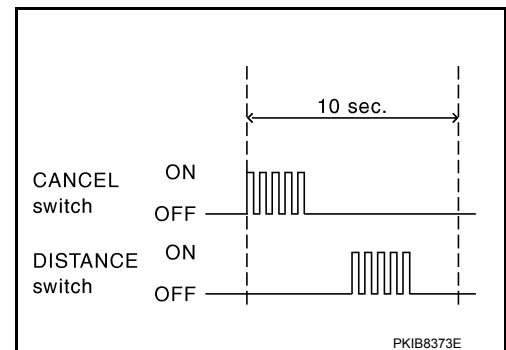
- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.

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.



PKIB8373E

INFOID:0000000014227414

CONSULT Function (ICC/ADAS)

APPLICATION ITEMS

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

Diagnosis mode	Description
Configuration	• The vehicle specification that is written in ADAS control unit can be displayed or stored • The vehicle specification can be written when ADAS control unit is replaced
Work support	Displays causes of automatic system cancellation occurred during system control
Self Diagnostic Result	Displays the name of a malfunctioning system stored in the ADAS control unit
Data Monitor	Displays ADAS control unit input/output data in real time
Active Test	Enables an operational check of a load by transmitting a driving signal from the ADAS control unit to the load
ECU Identification	Displays ADAS control unit part number
CAN Diag Support Monitor	Displays a reception/transmission state of CAN communication and ITS communication

CONFIGURATION

Configuration includes functions as follows.

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

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

WORK SUPPORT

Work support items	Description
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following systems - Vehicle-to-vehicle control mode - Conventional (fixed speed) control mode - Distance Control Assist (DCA) - Forward Emergency Braking (FEB)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following systems - Lane Departure Prevention (LDP) - Blind Spot Intervention
CAUSE OF AUTO-CANCEL 3	Displays causes of automatic system cancellation occurred during control of the Back-up Collision Intervention (BCI)

NOTE:

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

Display Items for The Cause of Automatic Cancellation 1

Cause of cancellation	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist	Forward Emergency Braking	Description
OPERATING ABS	×		×	×	ABS function was operated
OPERATING TCS	×	×	×		TCS function was operated
OPERATING VDC	×	×	×	×	VDC function was operated
ECM CIRCUIT	×	×			ECM did not permit ICC operation
OPE SW VOLT CIRC	×	×	×		The ICC steering switch input voltage is not within standard range
SNOW MODE SW	×		×		Shifting of the drive mode selector to SNOW position
OP SW DOUBLE TOUCH	×	×			ICC steering switches were pressed at the same time

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

VHCL SPD DOWN	×	×	×		Vehicle speed lower than the speed as follows • Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) • Conventional (fixed speed) cruise control mode is 32 km/h (20 MPH)
WHL SPD ELEC NOISE	×	×	×		Wheel speed sensor signal caught electromagnetic noise
VDC/TCS OFF SW	×		×	×	VDC OFF switch was pressed
VHCL SPD UNMATCH	×	×	×		Wheel speed became different from A/T vehicle speed
TIRE SLIP	×	×			Wheel slipped
IGN LOW VOLT	×	×	×	×	Decrease in ADAS control unit ignition voltage
PARKING BRAKE ON	×	×			The parking brake is operating
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 24 km/h (15 MPH) or less
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
ENG SPEED DOWN	×	×			Engine speed became extremely low while controlling ICC system
ASCD VHCL SPD DTAC		×			Vehicle speed is detached from set vehicle speed
ASCD DOUBLE COMD		×			Cancel switch and operation switch are detected simultaneously
APA HI TEMP			×		The accelerator pedal actuator integrated motor temperature is high
ICC SENSOR CAN COMM ERR	×		×	×	Communication error between ADAS control unit and the ICC sensor
ABS WARNING LAMP	×		×		ABS warning lamp ON
FR RADAR BLOCKED	×		×	×	Inclusion of dirt or stains on the ICC sensor area of the front bumper
FEB) CURVATURE				×	Road curve was more than the specified value
FEB) YAW RATE				×	Detected yawing speed was more than the specified value
FEB) LTRL ACCELERATION				×	Detected lateral speed is the specified value or more
RADAR INTERFERENCE	×		×	×	ICC sensor receives electromagnetic interference
NO RECORD	×	×	×		—

Display Items for The Cause of Automatic Cancellation 3

Cause of cancellation	Back-up Collision Intervention	Description
CAN COMM ERROR (CAN)	×	ADAS control unit received an abnormal signal with CAN communication
CAN COMM ERROR (ECD)	×	ADAS control unit received an abnormal signal with CAN communication
IGN LOW VOLT	×	Decrease in ADAS control unit ignition voltage
VEHICLE SPEED UP	×	Vehicle speed higher than 8 km/h (5 MPH)
ACCEL IS OPERATED	×	Accelerator pedal was depressed

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

Cause of cancellation	Back-up Collision Intervention	Description
BRAKE IS OPERATED	×	Brake pedal was operated
APA HI TEMP	×	The accelerator pedal actuator integrated motor temperature is high
APA POWER	×	Decrease in accelerator pedal actuator ignition or battery voltage
NO RECORD	×	—

SELF DIAGNOSTIC RESULT

Refer to [DAS-40, "DTC Index"](#).

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.

DATA MONITOR

NOTE:

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

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
MAIN SW [On/Off]	×	×	×	×		Indicates [On/Off] status as judged from ICC steering switch
SET/COAST SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch
CANCEL SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch
RESUME/ACC SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch
DISTANCE SW [On/Off]	×					Indicates [On/Off] status as judged from ICC steering switch
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)

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)	MAIN SIG (BCI)	Description
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 FEB indicator lamp output
STP LMP DRIVE [On/Off]	×	×			×	Indicates [On/Off] status of ICC brake hold relay drive output
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 A/T vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits A/T vehicle speed sensor signal through CAN communication)
THRTL OPENING [%]	×	×			×	Indicates throttle position read from ADAS control unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).

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)	MAIN SIG (BCI)	Description	
GEAR [1, 2, 3, 4, 5, 6, 7]	×					Indicates A/T gear position read from ADAS control unit through CAN communication (TCM transmits current gear position signal through CAN communication)	A
MODE SIG [OFF, ICC, ASCD]	×					Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode]	B
SET DISP IND [On/Off]	×					Indicates [On/Off] status of SET switch indicator output	C
DISTANCE [m]	×					Indicates the distance from the vehicle ahead	D
RELATIVE SPD [m/s]	×					Indicates the relative speed of the vehicle ahead	E
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)	F
DCA ON IND [On/Off]	×					The status [ON/OFF] of DCA system switch indicator output is displayed	G
DCA VHL AHED [On/Off]	×					The status [ON/OFF] of vehicle ahead detection indicator output in DCA system is displayed	H
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)	I
APA PWR [V]	×				×	Accelerator pedal actuator power supply voltage that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication)	J
NAVI ICC DISP [On/Off]						NOTE: The item is displayed, but it is not monitored	K
LDW SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDW system	L
LDW ON LAMP [On/Off]			×			Indicates [On/Off] status of LDW system display output	M
LDP ON IND [On/Off]			×			Indicates [On/Off] status of LDP system display output	N
LANE DPRT W/L [On/Off]			×			Indicates [On/Off] status of LDW/LDP warning display (Yellow) output	
LDW BUZER OUT- PUT [On/Off]			×			Indicates [On/Off] status of warning buzzer output	
LDP SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDP system	
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (ON/OFF) of LDP system	
READY signal [On/Off]			×			Indicates LDP system settings	
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 Chassis communication (Lane camera unit transmits a lane marker signal via Chassis 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 Chassis communication (The lane camera unit transmits a detected lane condition signal via Chassis communication)	

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)	MAIN SIG (BCI)	Description
STATUS signal [Stnby/Warn/Cancel/ Off]			×			Indicates a control state of LDP system
Shift position [Off, P, R, N, D, M/T1 - 7]			×	×	×	Indicates shift position read from ADAS control unit through CAN commu- nication (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 (FCW) [On/Off]	×	×	×	×		Indicates systems which can be set to ON/OFF by selecting "Driver Aids" ⇒"Emergency Assist" of the integral switch Forward Emergency Braking
FUNC ITEM (LDW) [On/Off]	×	×	×	×		Indicates systems which can be set to ON/OFF by selecting "Driver Aids" ⇒"Lane" of the integral switch Lane Departure Warning
FUNC ITEM (BSW) [On/Off]	×	×	×	×		Indicates systems which can be set to ON/OFF by selecting "Driver Aids" ⇒"Blind spot" of the integral switch Blind Spot Warning
DCA SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of the DCA system. The DCA system can be set to ON/OFF by selecting "Driving Aids"⇒"Front assist" of the integral switch
LDP SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of LDP system. LDP system can be set to ON/ OFF by selecting "Driving Aids"⇒"Lane" of the integral switch
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 "Driving Aids"⇒ "Blind Spot" of the integral switch
FCW SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of the PFCW system. The PFCW system can be set to ON/OFF by selecting "Driving Aids"⇒"Emergency Assist" of the integral switch
LDW SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of the LDW system. The LDW system can be set to ON/OFF by selecting "Driving Aids"⇒"Lane" of the integral switch
BSW SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of the BSW system. The BSW system can be set to ON/OFF by selecting "Driving Aids"⇒"Blind spot" of the integral switch
DRIVE MODE STATS [STD/SPT/ECO/SNO]	×	×	×	×		Indicates a drive mode selector select position judged from a drive mode select switch position signal read by the ADAS control unit via CAN com- munication
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 malfunction
BSI ON IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention system display
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
FCW SYSTEM ON [On/Off]	×	×				Indicates [On/Off] status of PFCW system

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

ACTIVE TEST

CAUTION:

- Never perform “Active Test” while driving the vehicle.
- The “Active Test” cannot be performed when the following systems malfunction is displayed.
- ICC system
- DCA
- LDW

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[ICC]

< SYSTEM DESCRIPTION >

- LDP
- Blind Spot Warning
- Blind Spot Intervention
- BCI
- The “Active Test” cannot be performed when the FEB warning lamp is illuminated.
- Shift the selector lever to “P” position, and then perform the test.

Test item	Description
METER LAMP	The MAIN switch indicator and FEB warning lamp can be illuminated by ON/OFF operations as necessary
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated
ICC BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF • Intelligent Cruise Control (ICC) • Distance Control Assist (DCA) • Predictive Forward Collision Warning (PFCW) • Forward Emergency Brake (FEB)
BRAKE ACTUATOR	Activates the brake by an arbitrary operation
ACTIVE PEDAL	The accelerator pedal actuator can be operated as necessary
DCA INDICATOR	The DCA system display can be illuminated by ON/OFF operations as necessary
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF • 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 system display can be illuminated by ON/OFF operations as necessary
LANE DEPARTURE W/L	The LDW/LDP warning can be illuminated by ON/OFF operations as necessary
BSW/BSI WARNING LAMP	The Blind Spot Warning/Blind Spot Intervention warning lamp can be illuminated by ON/OFF operations as necessary
BSW ON INDICATOR	The Blind Spot Warning system display can be illuminated by ON/OFF operations as necessary
BSI ON INDICATOR	The Blind Spot Intervention system display can be illuminated by ON/OFF operations as necessary
LDW ON INDICATOR	The LDW system display can be illuminated by ON/OFF operations as necessary
LDP WARNING INDICATOR	The LDP malfunction can be illuminated by ON/OFF operations as necessary
LDW WARNING INDICATOR	The LDW malfunction can be illuminated by ON/OFF operations as necessary
BSW WARNING INDICATOR	The BSW malfunction can be illuminated by ON/OFF operations as necessary
BSI WARNING INDICATOR	The Blind Spot Intervention malfunction can be illuminated by ON/OFF operations as necessary

METER LAMP

NOTE:

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

Test item	Operation	Description	• MAIN switch indicator • ICC system warning • FEB warning lamp
METER LAMP	Off	Stops sending the following signals to exit from the test • Meter display signal • FEB warning lamp signal	OFF
	On	Transmits the following signals to the combination meter via CAN communication • Meter display signal • FEB warning lamp signal	ON

STOP LAMP

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

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

ICC BUZZER

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

BRAKE ACTUATOR

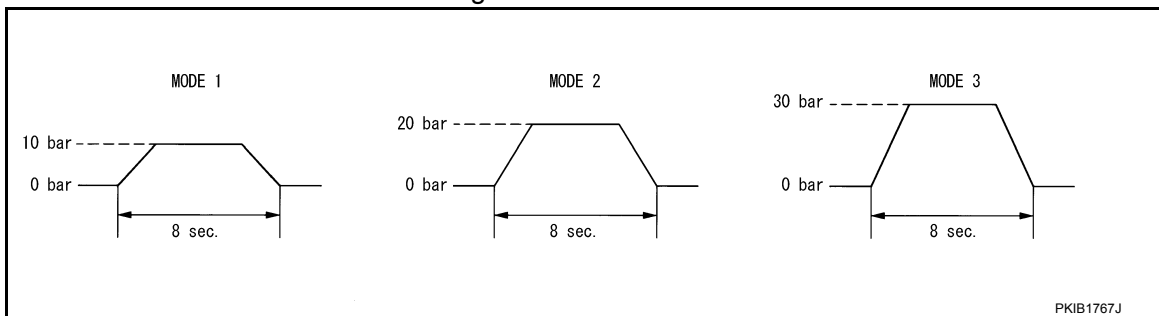
NOTE:

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

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



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.

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

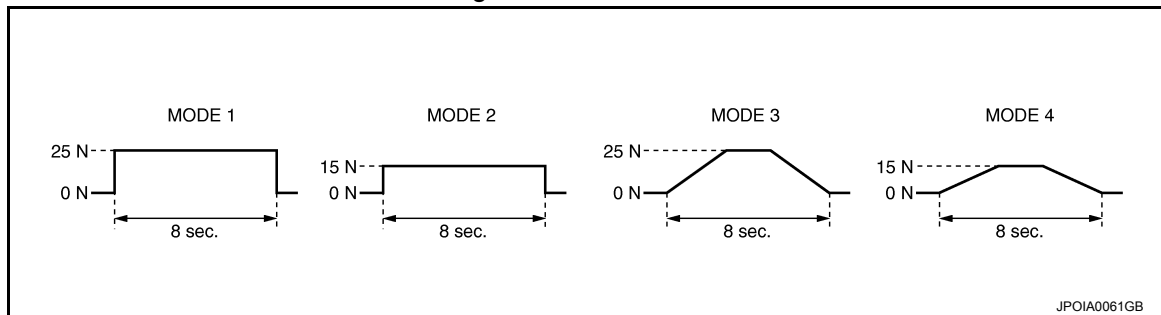
< SYSTEM DESCRIPTION >

[ICC]

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 display
DCA INDICATOR	Off	Stops transmitting the meter display signal below to end the test	—
	On	Transmits the meter display signal to the combination meter via CAN communication	ON

LDP BUZZER

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

WARNING SYSTEM IND

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

LDP ON IND

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

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

LANE DEPARTURE W/L

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

BSW/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

BSW ON INDICATOR

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

BSI ON INDICATOR

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

LDW ON INDICATOR

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

LDP WARNING INDICATOR

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ICC]

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

LDW WARNING INDICATOR

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

BSW WARNING INDICATOR

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

BSI WARNING INDICATOR

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

ECU IDENTIFICATION

Displays ADAS control unit parts number.

DIAGNOSIS SYSTEM (ICC SENSOR)

CONSULT Function (LASER/RADAR)

INFOID:0000000012848258

CAUTION:

After disconnecting the CONSULT vehicle interface (VI) from the data link connector, the ignition must be cycled OFF → ON (for at least 5 seconds) → OFF. If this step is not performed, the BCM may not go to "sleep mode", potentially causing a discharged battery and a no-start condition.

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-60, "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

DIAGNOSIS SYSTEM (ICC SENSOR)

< SYSTEM DESCRIPTION >

[ICC]

WORK SUPPORT

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

ICC sensor Adjust

ECU IDENTIFICATION

ICC sensor part number is displayed.

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:0000000014226917

VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

Monitor item	Condition		Value/Status
MAIN SW	Ignition switch ON	When MAIN switch is pressed	On
		When MAIN switch is not pressed	Off
SET/COAST SW	Ignition switch ON	When SET/COAST switch is pressed	On
		When SET/COAST switch is not pressed	Off
CANCEL SW	Ignition switch ON	When CANCEL switch is pressed	On
		When CANCEL switch is not pressed	Off
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is pressed	On
		When RESUME/ACCELERATE switch is not pressed	Off
DISTANCE SW	Ignition switch ON	When DISTANCE switch is pressed	On
		When DISTANCE switch is not pressed	Off
CRUISE OPE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC system is controlling	On
		When ICC system is not controlling	Off
BRAKE SW	Ignition switch ON	When brake or clutch pedal is depressed	Off
		When brake or clutch pedal is not depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
IDLE SW	Engine running	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	- 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	NOTE: The item is indicated, but not monitored		Off
VHCL AHEAD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
		When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
ICC WARNING	Start the engine and press MAIN switch	When ICC system is malfunctioning (ICC system malfunction ON)	On
		When ICC system is normal (ICC system malfunction OFF)	Off

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays the vehicle speed calculated by ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
BUZZER O/P	Engine running	When the buzzer of the following system operates • Vehicle-to-vehicle distance control mode • DCA system • PFCW system • FEB system	On
		When the buzzer of the following system not operates • Vehicle-to-vehicle distance control mode • DCA system • PFCW system • FEB 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	FEB OFF indicator lamp ON • When FEB system is malfunctioning • When FEB system is turned to OFF	On
		FEB OFF indicator lamp OFF • When FEB system is normal • When FEB 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 A/T vehicle speed sensor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Monitor item	Condition		Value/Status
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	- 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
DYNA ASIST SW	Ignition switch ON	When dynamic driver assistance switch is pressed	On
		When dynamic driver assistance switch is not pressed	Off
DCA ON IND	Start the engine and press dynamic driver assistance switch (When DCA setting is ON)	DCA system OFF	Off
		DCA system ON	On
DCA VHL AHED	Drive the vehicle and activate the DCA system	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
		When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
FCW SYSTEM ON	Ignition switch ON	When the PFCW system is ON	On
		When the PFCW system is OFF	Off
APA TEMP	Engine running		Display the accelerator pedal actuator integrated motor temperature
APA PWR	Ignition switch ON		Power supply voltage value of accelerator pedal actuator
LDW SYSTEM ON	Ignition switch ON	When the LDW system is ON	On
		When the LDW system is OFF	Off
LDW ON LAMP	Ignition switch ON	When the LDW system is ON	On
		When the LDW system is OFF	Off
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

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Monitor item	Condition		Value/Status
LDW BUZER OUT-PUT	Drive the vehicle and activate the LDW/LDP system or Blind Spot Warning/Blind Spot Intervention system	When the buzzer of the following system operates • 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
WARN REQ	Drive the vehicle and activate the LDP system	Lane departure warning is operating	On
		Lane departure warning is not operating	Off
READY signal	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	When the LDP system is ON	On
		When the LDP system is OFF	Off
Camera lost	Drive the vehicle and activate the LDW system, LDP system or Blind Spot Intervention system	Both side lane markers are detected	Detect
		Deviate side lane marker is lost	Deviate
		Both side lane markers are lost	Both
Lane unclear	While driving	Lane marker is unclear	On
		Lane marker is clear	Off
STATUS signal	Drive the vehicle and activate the LDP system	When the LDP system is ON	Stnby
		When the LDP system is operating	Warn
		When the LDP system is canceled	Cancl
		When the LDP system is OFF	Off
Shift position	• 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 (FCW)	Engine running		On
FUNC ITEM (LDW)	Engine running		On
FUNC ITEM (BSW)	Engine running		On
DCA SELECT	Ignition switch ON	"Distance Control Assist" set with the integral switch is ON	On
		"Distance Control Assist" set with the integral switch is OFF	Off
LDP SELECT	Ignition switch ON	"Lane Departure Intervention" set with the integral switch is ON	On
		"Lane Departure Intervention" set with the integral switch is OFF	Off
BSI SELECT	Ignition switch ON	"Blind Spot Intervention" set with the integral switch is ON	On
		"Blind Spot Intervention" set with the integral switch is OFF	Off

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Monitor item	Condition		Value/Status
FCW SELECT	Ignition switch ON	"Forward Emergency Braking" set with the integral switch is ON	On
		"Forward Emergency Braking" set with the integral switch is OFF	Off
LDW SELECT	Ignition switch ON	"Lane Departure Warning" set with the integral switch is ON	On
		"Lane Departure Warning" set with the integral switch is OFF	Off
BSW SELECT	Ignition switch ON	"Blind Spot Warning" set with the integral switch is ON	On
		"Blind Spot Warning" set with the integral switch is OFF	Off
DRIVE MODE STATS	Ignition switch ON	When drive mode select switch position is STANDARD	STD
		When drive mode select switch position is in SPORT	SPORT
		When drive mode select switch position is in ECO	ECO
		When drive mode select switch position is in SNOW	SNOW
		When drive mode select switch position is in PERSONAL	STD
		A signal other than those above is input	ERROR
WARN SYS SW	Ignition switch ON	When warning systems switch is pressed	On
		When warning systems switch is not pressed	Off
BSW/BSI WARN LMP	Engine running	When the BSW system is malfunctioning	On
		When the BSW system is normal	Off
BSI ON IND	Engine running	Blind Spot Intervention warning ON	On
		Blind Spot Intervention warning OFF	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON	On
		When the BSW system is OFF	Off
BSI SYSTEM ON	Start the engine and press dynamic driver assistance switch (When Blind Spot Intervention system setting is ON)	When the Blind Spot Intervention system is ON	On
		When the Blind Spot Intervention system is OFF	Off
FCW SYSTEM ON	Engine running	When the FEB/PFCW system is ON	On
		When the FEB/PFCW system is OFF	Off
BCI SYSTEM ON	Engine running	When the BCI system is ON	On
		When the BCI system is OFF	Off
BCI SWITCH	NOTE: The item is indicated, but not monitored		Off
BATTERY CIRCUIT OFF	NOTE: The item is indicated, but not used		Off
LDP WARNING INDICATOR	Engine running	When the LDP system is malfunctioning	On
		When the LDP system is normal	Off
LDW ON INDICATOR	Engine running	LDW system display ON	On
		LDW system display OFF	Off
LDW WARNING INDICATOR	Engine running	When the LDW system is malfunctioning	On
		When the LDW system is normal	Off
SYSTEM CANCEL MESSAGE	Engine running	When the vehicle is normal	NOREQ
		When the wheel is slipping	SLIP
		When the drive mode selector is SNOW mode	SNOW
		When the VDC is OFF	VDC OFF

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ADAS CONTROL UNIT

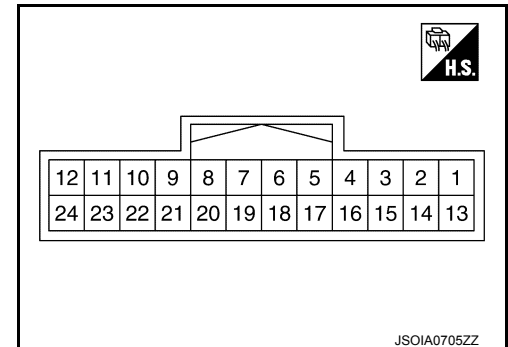
< ECU DIAGNOSIS INFORMATION >

[ICC]

Monitor item	Condition		Value/Status
CAMERA HI TEMP MSG	Engine running	Lane camera unit high temperature warning display ON	On
		Lane camera unit high temperature warning display OFF	Off
ITS SETTING ITEM(DCA)	Ignition switch ON		On
ITS SETTING ITEM(LDP)	Ignition switch ON		On
ITS SETTING ITEM(BSI)	Ignition switch ON		On
BSI WARNING INDICATOR	Engine running	When the Blind Spot Intervention is malfunctioning	On
		When the Blind Spot Intervention is normal	Off
BSW ON INDICATOR	Engine running	BSW system display ON	On
		BSW system display OFF	Off
SIDE RADAR BLOCK COND	Engine running	Front bumper or side radar is dirty	On
		Front bumper and side radar is clean	Off
LDW WARNING ALERT TIMING	Ignition switch ON	LDW system OFF	Nothing
		Lane departure warning timing is early setting	Early
		Lane departure warning timing is late setting	Late
BSW IND BRIGHTNESS	Ignition switch ON	BSW system OFF	Nothing
		Blind Spot Warning/Blind Spot Intervention indicator brightness bright	Bright
		Blind Spot Warning/Blind Spot Intervention indicator brightness normal	Normal
		Blind Spot Warning/Blind Spot Intervention indicator brightness dark	Dark

TERMINAL LAYOUT

PHYSICAL VALUES



ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	—	Signal name	Input/ Output			
1 (B)	Ground	CAN high	—	—	—	—
2 (W)		CAN low	—	—	—	—
5 (B)		Ground	—	Ignition switch ON	—	0 V
6 (L)		ITS communication high	—	—	—	—
7 (Y)		ITS communication low	—	—	—	—
8 (L)		Chassis communication high	—	—	—	—
9 (Y)		Chassis communication low	—	—	—	—
12 (R)		Ignition power supply	Input	Ignition switch ON		Battery voltage
17 (G)		ICC brake hold relay drive signal	Output	Ignition switch ON	— At “STOP LAMP” test of “Active test”	Battery voltage 0 V
18 (BR)		Warning systems switch	Input	Ignition switch ON	When warning systems switch is not pressed When warning systems switch is pressed	Battery voltage 0 V
19 (W)		Warning systems ON indicator	Output	Ignition switch ON	Warning systems ON indicator ON Warning systems ON indicator OFF	0 V Battery voltage
22 (BG)		BCI OFF switch	Input	Ignition switch ON	When BCI OFF switch is not pressed When BCI OFF switch is pressed	Battery voltage 0 V

Fail-safe (ADAS Control Unit)

INFOID:0000000014226918

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

System	Buzzer	Warning lamp/Warning display	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning	Cancel
Forward Emergency Braking (FEB)	High-pitched tone	FEB warning	Cancel
Predictive Forward Collision Warning (PFCW)	High-pitched tone	Warning message	Cancel
Distance Control Assist (DCA)	High-pitched tone	DCA system warning	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

System	Buzzer	Warning lamp/Warning display	Description
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Intervention warning lamp	Cancel
Backup Collision Intervention (BCI)	High-pitched tone	Backup Collision Intervention warning indicator	Cancel
Rear Cross Traffic Alert (RCTA)	—	Rear Cross Traffic Alert warning	Cancel

DTC Inspection Priority Chart

INFOID:0000000014226919

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

Priority	Detected items (DTC)	
1	- U1507: LOST COMM (SIDE RDR R) - U1508: LOST COMM (SIDE RDR L)	
2	1CA0A: CONFIG UNFINISHED - U1000: CAN COMM CIRCUIT - U1010: CONTROL UNIT (CAN)	
3	- C1B00: CAMERA UNIT MALF - C1F02: APA C/U MALF - C1B53: SIDE RDR R MALF - C1B54: SIDE RDR L MALF - C1B84: DIST SEN MALFUNCTION	
4	- C1A01: POWER SUPPLY CIR - C1A02: POWER SUPPLY CIR 2 - C1A04: ABS/TCS/VDC CIRC - C1A05: BRAKE SW/STOP L SW - C1A06: OPERATION SW CIRC - C1A13: STOP LAMP RLY FIX - C1A14: ECM CIRCUIT - 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 CIR - C1B01: CAM AIMING INCOMP - C1B03: CAM ABNORMAL TMP DETCT - C1B56: SONAR CIRCUIT - C1B57: AVM CIRCUIT - C1B58: DR ASSIST BUZZER CIRCUIT - C1B82: DIST SEN OFF-CENTER - C1B85: DIST SEN ABNORMAL TEMP - C1B86: DIST SEN PWR SUP CIR - 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 - U0424: HVAC 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 - U1512: HVAC CAN CIRC3 - U1513: METER CAN CIRC 3 - U1514: STRG SEN CAN CIRC 3 - U1515: ICC SENSOR CAN CIRC 3 - U1516: CAM CAN CIR 3 - U1517: APA CAN CIRC 3 - U1518: SIDE RDR L CAN CIRC 3 - U1519: SIDE RDR R CAN CIRC 3 - U1521: SONAR CAN COMMUNICATION 2 - U1522: SONAR CAN COMMUNICATION 1 - U1523: SONAR CAN COMMUNICATION 3 - U1524: AVM CAN COMMUNICATION 1 - U1525: AVM CAN COMMUNICATION 3 - U1530: DR ASSIST BUZZER CAN CIR 1

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Priority	Detected items (DTC)
5	• C1A03: VHCL SPEED SE CIRC
6	• C1A15: GEAR POSITION
7	• C1A00: CONTROL UNIT

DTC Index

INFOID:0000000014226920

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Distance Control Assist (DCA)
- D: Forward Emergency Braking (FEB)
- E: Predictive Forward Collision Warning (PFCW)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)/Rear Cross Traffic Alert (RCTA)
- G: Back-up Collision Intervention (BCI)
- H: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)

DTC		CONSULT display	Fail-safe	Reference
CONSULT	On board display		System	
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	—	—
C1A0A	41	CONFIG UNFINISHED	A, B, C, D, E, F, G, H	DAS-68
C1A00	0	CONTROL UNIT	A, B, C, D, E, F, G, H	DAS-69
C1A01	1	POWER SUPPLY CIR	A, B, C, D, E, F, G, H	DAS-70
C1A02	2	POWER SUPPLY CIR 2	A, B, C, D, E, F, G, H	DAS-70
C1A03	3	VHCL SPEED SE CIRC	A, B, C, D, E, F, G, H	DAS-71
C1A04	4	ABS/TCS/VDC CIRC	A, B, C, D, E, F, G, H	DAS-73
C1A05	5	BRAKE SW/STOP L SW	A, B, C, D, G, H	DAS-75
C1A06	6	OPERATION SW CIRC	A, B, C, D, E, H	DAS-80
C1A13	13	STOP LAMP RLY FIX	A, B, C, D, E, G	DAS-82
C1A14	14	ECM CIRCUIT	A, B, C, D, E	DAS-89
C1A15	15	GEAR POSITION	A, B, C, D, E	DAS-91
C1A24	24	NP RANGE	A, B, C, D, E, F, G	DAS-93
C1A26	26	ECD MODE MALF	A, B, C, D, G	DAS-95
C1A27	27	ECD PWR SUPPLY CIR	A, B, C, D, G	DAS-97
C1A33	33	CAN TRANSMISSION ERR	A, B, C, D, E	DAS-99
C1A34	34	COMMAND ERROR	A, B, C, D, E	DAS-100
C1A35	35	APA CIR	A, C, D, E	DAS-101
C1A36	36	APA CAN COMM CIR	A, C, D, E	DAS-102
C1A37	133	APA CAN CIR 2	A, C, D, E	DAS-103
C1A38	132	APA CAN CIR 1	A, C, D, E	DAS-104
C1A39	39	STRG SEN CIR	A, B, C, D, E, F, G	DAS-105
C1A40	40	SYSTEM SW CIR	G	DAS-105
C1B00	81	CAMERA UNIT MALF	F, H	DAS-108
C1B01	82	CAM AIMING INCMP	F, H	DAS-109
C1B03	83	ABNRML TMP DETCT	F, H	DAS-110
C1B53	84	SIDE RDR R MALF	F, G	DAS-111

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Distance Control Assist (DCA)
- D: Forward Emergency Braking (FEB)
- E: Predictive Forward Collision Warning (PFCW)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)/Rear Cross Traffic Alert (RCTA)
- G: Back-up Collision Intervention (BCI)
- H: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)

DTC		CONSULT display	Fail-safe	Reference
CONSULT	On board display		System	
C1B54	85	SIDE RDR L MALF	F, G	DAS-112
C1B56	86	SONAR CIRCUIT	G	DAS-113
C1B57	87	AVM CIRCUIT	G	DAS-114
C1A58	182	DR ASSIST BUZZER CIRCUIT		DAS-115
C1B82	12	DIST SEN OFF-CENTER	A, C, D, E	DAS-116
C1B83	16	DIST SEN BLOCKED	A, C, D, E	DAS-117
C1B84	17	DIST SEN MALFUNCTION	A, C, D, E	DAS-118
C1B85	21	DIST SEN ABNORMAL TEMP	A, C, D, E	DAS-119
C1B86	80	DIST SEN PWR SUP CIR	A, C, D, E	DAS-120
C1F01	91	APA MOTOR MALF	A, C, D, E	DAS-122
C1F02	92	APA C/U MALF	A, C, D, E	DAS-123
C1F05	95	APA PWR SUPPLY CIR	A, C, D, E	DAS-124
U0121	127	VDC CAN CIR 2	A, B, C, D, E, F, G, H	DAS-125
U0126	130	STRG SEN CAN CIR 1	A, B, C, D, E, F, G	DAS-126
U0235	144	ICC SENSOR CAN CIRC 1	A, C, D, E	DAS-127
U0401	120	ECM CAN CIR 1	A, B, C, D, E, F, G	DAS-128
U0402	122	TCM CAN CIR 1	A, B, C, D, E, F, G, H	DAS-129
U0415	126	VDC CAN CIR 1	A, B, C, D, E, F, G, H	DAS-131
U0424	156	HVAC CAN CIR 1		DAS-133
U0428	131	STRG SEN CAN CIR 2	A, B, C, D, E, F, G	DAS-134
U1000 ^{NOTE}	100	CAN COMM CIRCUIT	A, B, C, D, E, F, G, H	DAS-135
U1010	110	CONTROL UNIT (CAN)	A, B, C, D, E, F, G, H	DAS-137
U150B	157	ECM CAN CIRC 3	A, B, C, D, E, F, G, H	DAS-138
U150C	158	VDC CAN CIRC 3	A, B, C, D, E, F, G, H	DAS-140
U150D	159	TCM CAN CIRC 3	A, B, C, D, E, F, G, H	DAS-142
U150E	160	BCM CAN CIRC 3	A, B, C, D, F, G, H	DAS-144
U1500	145	CAM CAN CIR2	F, H	DAS-145
U1501	146	CAM CAN CIR 1	F, H	DAS-146
U1502	147	ICC SEN CAN COMM CIR	A, C, D, E	DAS-147
U1503	150	SIDE RDR L CAN CIR 2	F, G	DAS-148
U1504	151	SIDE RDR L CAN CIR 1	F, G	DAS-149
U1505	152	SIDE RDR R CAN CIR 2	F, G	DAS-150
U1506	153	SIDE RDR R CAN CIR 1	F, G	DAS-151
U1507	154	LOST COMM (SIDE RDR R)	F, G	DAS-152
U1508	155	LOST COMM (SIDE RDR L)	F, G	DAS-153
U1512	162	HVAC CAN CIRC3		DAS-154

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Distance Control Assist (DCA)
- D: Forward Emergency Braking (FEB)
- E: Predictive Forward Collision Warning (PFCW)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)/Rear Cross Traffic Alert (RCTA)
- G: Back-up Collision Intervention (BCI)
- H: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)

DTC		CONSULT display	Fail-safe	Reference
CONSULT	On board display		System	
U1513	163	METER CAN CIRC 3	A, B, C, D, E, F, G, H	DAS-155
U1514	164	STRG SEN CAN CIRC 3	A, B, C, D, E, F, G	DAS-156
U1515	165	ICC SENSOR CAN CIRC 3	A, C, D, E	DAS-157
U1516	166	CAM CAN CIRC 3	F, H	DAS-158
U1517	167	APA CAN CIRC 3	A, C, D, E	DAS-159
U1518	168	SIDE RDR L CAN CIRC 3	F, G	DAS-160
U1519	169	SIDE RDR R CAN CIRC 3	F, G	DAS-161
U1521	177	SONAR CAN COMMUNICATION 2	G	DAS-163
U1522	178	SONAR CAN COMMUNICATION 1	G	DAS-164
U1523	179	SONAR CAN COMMUNICATION 3	G	DAS-165
U1524	180	AVM CAN COMMUNICATION 1	G	DAS-166
U1525	181	AVM CAN COMMUNICATION 3	G	DAS-167
U1530	183	DR ASSIST BUZZER CAN CIR1		DAS-168

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.

ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[ICC]

ICC SENSOR

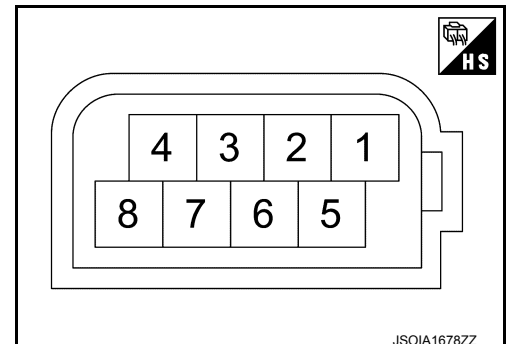
Reference Value

INFOID:000000014222528

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
3 (L)	—	ITS communication-L	—	—	—	—
6 (Y)		ITS communication-H	—	—	—	—
8 (B)	Ground	Ground	—	Ignition switch ON	0 - 0.1 V	0 V

Fail-safe (ICC Sensor)

INFOID:000000001422529

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:000000001422530

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

Priority	Detected items (DTC)
1	- U1000: CAN COMM CIRCUIT - U1010: CONTROL UNIT (CAN)
2	C1A50: ADAS MALFUNCTION

CCS

ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[ICC]

Priority	Detected items (DTC)
3	• C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A03: VHCL SPEED CIRC • C1A04: ABS/TCS/VDC CIRC • C1A05: BRAKE SW/STOP L SW • C1A06: OPERATION SW • C1A13: STOP LSMP RLY FIX • C1A14: ECM CIRCUIT • C1A15: GEAR POSITION • C1A23: UNIT LOW 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 CIR2 • C1A38: APA CAN CIR1 • C1A39: STRG SEN CIR • C1B58: DR ASSIST BUZZER CIRCUIT • C1B83: DIST SEN BLOCKED • C1F01: APA MOTOR MALF • C1F02: APA C/U MALF • C1F05: APA PWR SUPPLY CIR • U0104: ADAS CAN CIR1 • U0121: VDC CAN CIR2 • U0126: STRG SEN CAN CIR1 • U0235: ICC SENSOR CAN CIR1 • U0401: ECM CAN CIR2 • U0402: TCM CAN CIR2 • U0415: VDC CAN CIR1 • U150B: ECM CAN CIR3 • U150C: VDC CAN CIRC3 • U150D: TCM CAN CIRC3 • U150E:BCM CAN CIRC3 • U1513: METER CAN CIRC3 • U1514: STRG SEN CAN CIRC3 • U1515: ICC SENSOR CAN CIRC3 • U1517: APA CAN CIRC3
4	• C1A00: CONTROL UNIT

DTC Index

INFOID:0000000014222531

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			Fail-safe function					Reference
			Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist (DCA)	Forward Collision Warning (FCW)	Forward Emergency Braking (FEB)	
CONSULT	CONSULT display	ICC system warning lamp						
C1A00	CONTROL UNIT	ON	×	×	×	×	×	CCS-96, "ICC SENSOR : DTC Logic"
C1A01	POWER SUPPLY CIR	ON	×	×	×	×	×	CCS-98, "ICC SENSOR : DTC Logic"
C1A02	POWER SUPPLY CIR2	ON	×	×	×	×	×	CCS-98, "ICC SENSOR : DTC Logic"
C1A03	VHCL_SPEED SE CIRC	ON	×	×	×	×	×	CCS-100, "DTC Logic"
C1A04	ABS/TCS/VDC_CIRC	ON	×	×	×	×	×	CCS-102, "DTC Logic"
C1A05	BRAKE_SW/STOP_L_SW	ON	×	×	×	×	×	CCS-104, "DTC Logic"
C1A06	OPERATION_SW_CIRC	ON	×	×	×	×	×	CCS-109, "DTC Logic"
C1A13	STOP_LAMP_RLY_FIX	ON	×	×	×	×	×	CCS-112, "DTC Logic"
C1A14	ECM_CIRCUIT	ON	×	×	×	×	×	CCS-118, "DTC Logic"
C1A15	GEAR_POSITION	ON	×	×	×	×	×	CCS-119, "DTC Logic"
C1A23	UNIT HIGH TEMP	ON	×	×	×	×	×	CCS-121, "DTC Logic"
C1A24	NP_RANGE	ON	×	×	×	×	×	CCS-122, "DTC Logic"
C1A26	ECD_MODE_MALF	ON	×	×	×	×	×	CCS-124, "DTC Logic"
C1A27	ECD_PWR_SUPLY_CIR	ON	×	×	×	×	×	CCS-126, "DTC Logic"
C1A33	CAN TRANSMISSION ERROR	ON	×	×	×	×	×	CCS-128, "DTC Logic"
C1A34	COMMAND ERROR	ON	×	×	×	×	×	CCS-129, "DTC Logic"
C1A35	APA CIR	ON	×	×	×	×	×	CCS-130, "DTC Logic"

A

B

C

D

E

F

G

H

I

J

K

L

M

N

CCS

P

ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[ICC]

DTC			Fail-safe function					Reference
			Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist (DCA)	Forward Collision Warning (FCW)	Forward Emergency Braking (FEB)	
CONSULT	CONSULT display	ICC system warning lamp						
C1A36	APA CAN COMM CIR	ON	×	×	×	×	×	CCS-131. "DTC Logic"
C1A37	APA CAN CIR2	ON	×	×	×	×	×	CCS-132. "DTC Logic"
C1A38	APA CAN CIR2	ON	×	×	×	×	×	CCS-133. "DTC Logic"
C1A39	STRG SEN CIR	ON	×	×	×	×	×	CCS-135. "ICC SEN- SOR : DTC Logic"
C1B58	DR ASSIST BUZZER CIRCUIT	ON	×	×	×	×	×	CCS-169. "DTC Logic"
C1B83	DIST SEN BLOCKED	ON	×	×	×	×	×	CCS-137. "DTC Logic"
C1F01	APA MOTOR MALF	ON	×	×	×	×	×	CCS-138. "DTC Logic"
C1F02	APA C/U MALF	ON	×	×	×	×	×	CCS-139. "DTC Logic"
C1F05	APA PWR SUPPLY CIR	ON	×	×	×	×	×	CCS-140. "DTC Logic"
U0121	VDC CAN CIR2	ON	×	×	×	×	×	CCS-142. "ICC SEN- SOR : DTC Logic"
U0126	STRG SEN CAN CIR1	ON	×	×	×	×	×	CCS-144. "ICC SEN- SOR : DTC Logic"
U0235	ICC SENSOR CAN CIR1	ON	×	×	×	×	×	CCS-146. "DTC Logic"
U0401	ECM CAN CIR1	ON	×	×	×	×	×	CCS-147. "DTC Logic"
U0402	TCM CAN CIRC1	ON	×	×	×	×	×	CCS-148. "DTC Logic"
U0415	VDC CAN CIR1	ON	×	×	×	×	×	CCS-151. "ICC SEN- SOR : DTC Logic"

ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[ICC]

DTC			Fail-safe function					Reference
			Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist (DCA)	Forward Collision Warning (FCW)	Forward Emergency Braking (FEB)	
CONSULT	CONSULT display	ICC system warning lamp						
U0428	STRG SEN CAN CIR2	ON	×	×	×	×	×	CCS-153. "ICC SEN- SOR : DTC Logic"
U1000	CAN COMM CIRCUIT	ON	×	×	×	×	×	CCS-155. "ICC SEN- SOR : DTC Logic"
U1010	CONTROL UNIT (CAN)	ON	×	×	×	×	×	CCS-157. "ICC SEN- SOR : DTC Logic"
U150B	ECM CAN CIRC3	ON	×	×	×	×	×	CCS-158. "DTC Logic"
U150C	VDC CAN CIRC3	ON	×	×	×	×	×	CCS-160. "DTC Logic"
U150D	TCM CAN CIRC3	ON	×	×	×	×	×	CCS-162. "DTC Logic"
U150E	BCM CAN CIRC3	ON	×	×	×	×	×	CCS-164. "DTC Logic"
U1513	METER CAN CIRC#	ON	×	×	×	×	×	CCS-165. "DTC Logic"
U1514	STRG SEN CAN CIRC3	ON	×	×	×	×	×	CCS-166. "DTC Logic"
U1515	ICC SENSOR CAN CIRC3	ON	×	×	×	×	×	CCS-167. "DTC Logic"
U1517	APA CAN CIRC3	ON	×	×	×	×	×	CCS-168. "DTC Logic"

A
B
C
D
E
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N
P

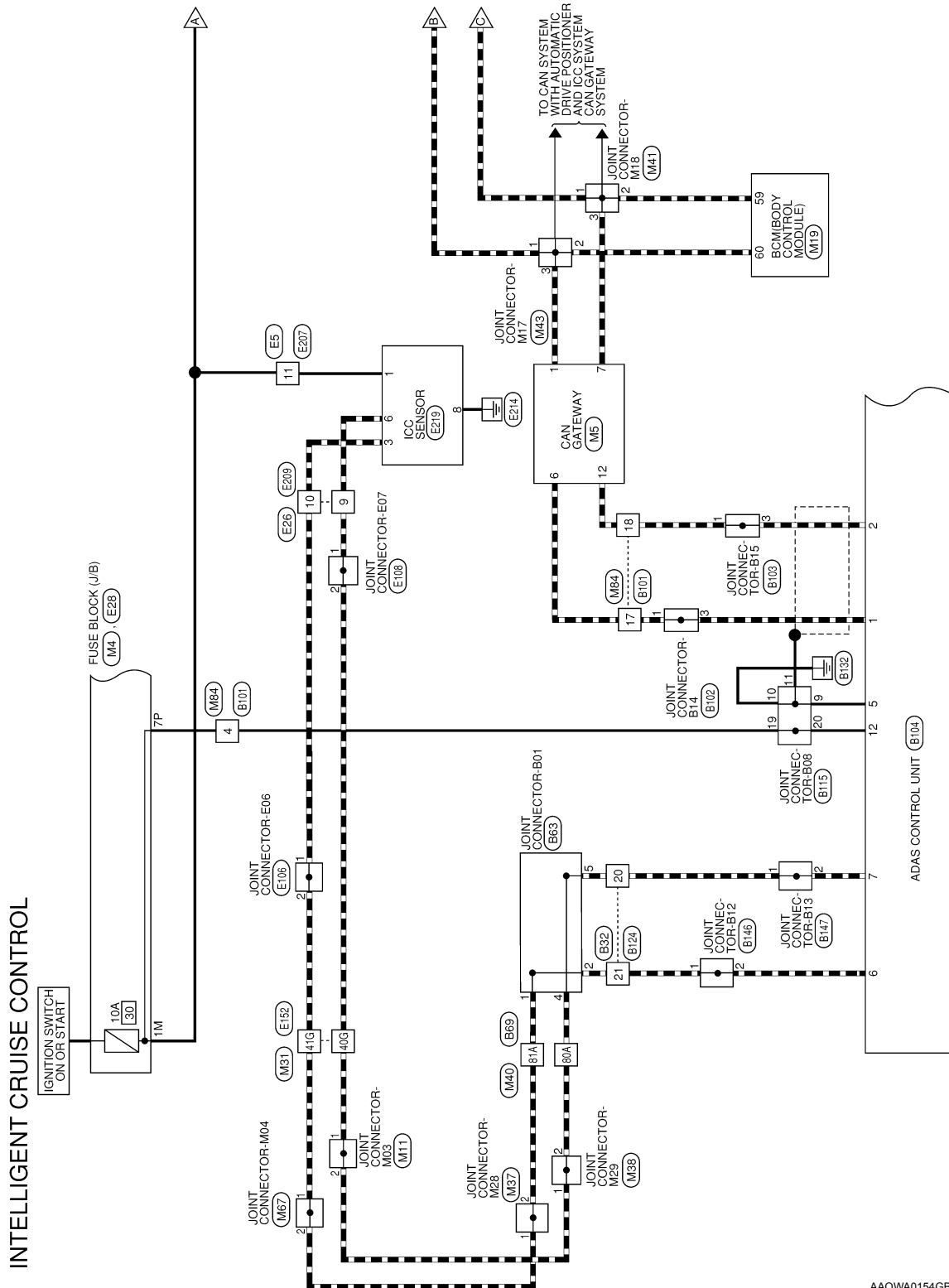
CCS

WIRING DIAGRAM

INTELLIGENT CRUISE CONTROL

Wiring Diagram

INFOID:0000000012848267

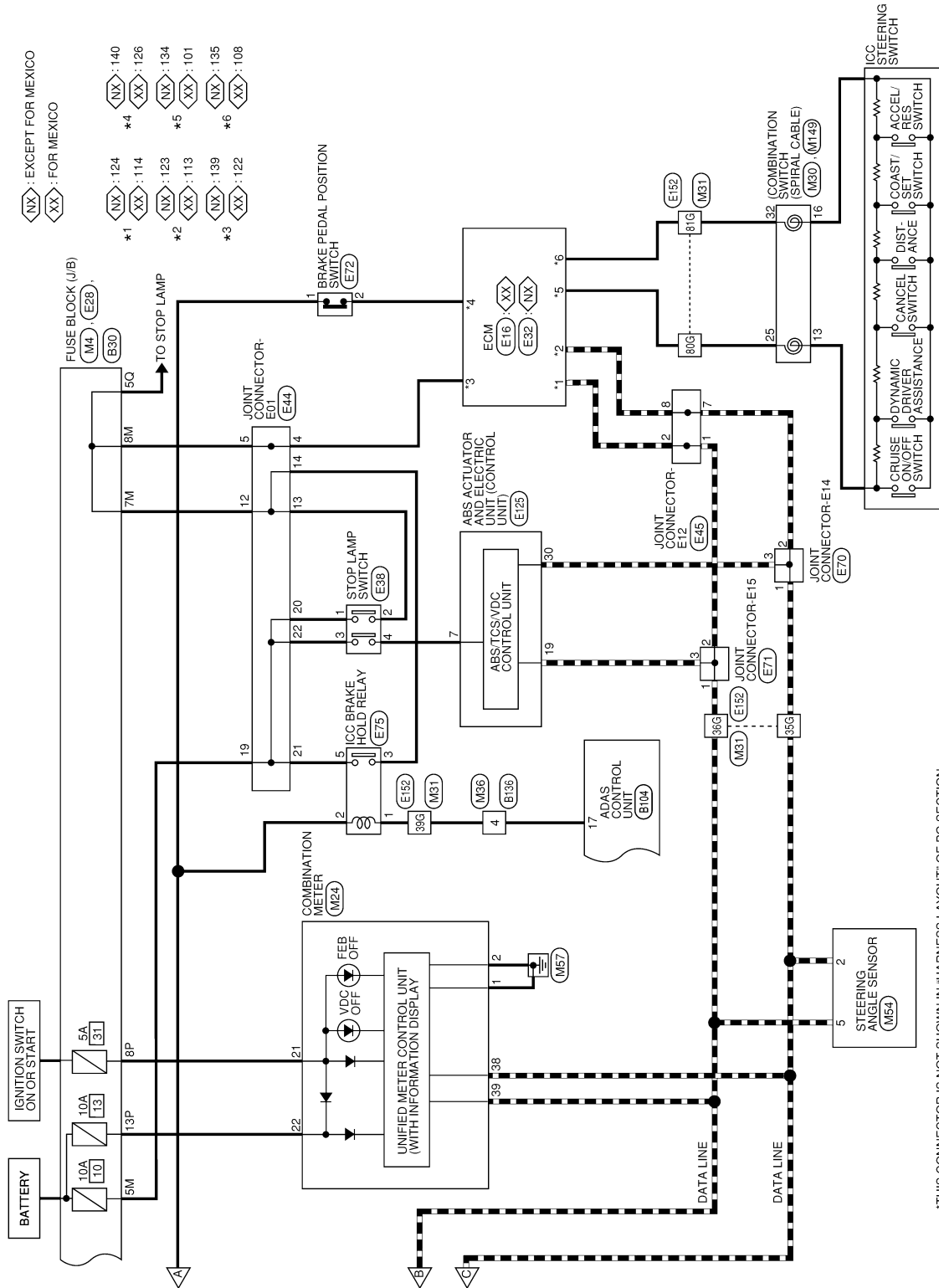


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INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]

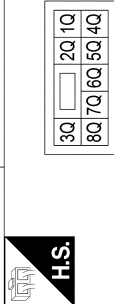


*THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION

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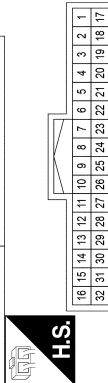
INTELLIGENT CRUISE CONTROL CONNECTORS

Connector No.	B30
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-CS
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1Q	-	-
2Q	-	-
3Q	-	-
4Q	-	-
5Q	G	BRAKE PEDAL POSITION SWITCH
6Q	P	BATTERY
7Q	-	-
8Q	-	-

Connector No.	B32
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH
Connector Color	WHITE

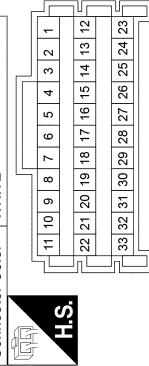


Terminal No.	Color of Wire	Signal Name
1	-	TO BODY HARNESS RH
2	-	TO BODY HARNESS RH
3	-	TO BODY HARNESS RH
4	-	TO BODY HARNESS RH
5	G	TO BODY HARNESS RH
6	R	TO BODY HARNESS RH
7	B	TO BODY HARNESS RH
8	R	TO BODY HARNESS RH
9	W	TO BODY HARNESS RH
10	SHIELD	TO BODY HARNESS RH
11	B	TO BODY HARNESS RH
12	L	TO BODY HARNESS RH
13	B	TO BODY HARNESS RH
14	R	TO BODY HARNESS RH
15	W	TO BODY HARNESS RH

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16	SHIELD	TO BODY HARNESS RH
17	L	TO BODY HARNESS RH
18	L	TO BODY HARNESS RH
19	P	TO BODY HARNESS RH
20	Y	TO BODY HARNESS RH
21	L	TO BODY HARNESS RH
22	B	TO BODY HARNESS RH
23	W	TO BODY HARNESS RH
24	SHIELD	TO BODY HARNESS RH
25	BR	TO BODY HARNESS RH
26	V	TO BODY HARNESS RH
27	-	TO BODY HARNESS RH
28	-	TO BODY HARNESS RH
29	-	TO BODY HARNESS RH
30	-	TO BODY HARNESS RH
31	-	TO BODY HARNESS RH
32	-	TO BODY HARNESS RH

Connector No.	B63
Connector Name	JOINT CONNECTOR-B01
Connector Type	BJ30FW
Connector Color	WHITE

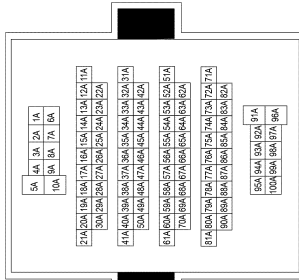


Terminal No.	Color of Wire	Signal Name
1	L	ITS CAN-H
2	L	ITS CAN-H
3	L	ITS CAN-H
4	Y	ITS CAN-L
5	Y	ITS CAN-L
6	Y	ITS CAN-L
7	-	-
8	SHIELD	GND
9	B	GND
10	B	GND
11	B	GND
12	LG	ILLUMI CONT OUT
13	LG	ILLUMI CONT OUT
14	LG	ILLUMI CONT OUT
15	-	-
16	W	ALERT SIGNAL
17	W	ALERT SIGNAL
18	-	-
19	B	GND
20	B	GND
21	SHIELD	SHIELD

22	B	GND
23	-	-
24	-	-
25	SHIELD	SHIELD
26	B	GND
27	B	GND
28	B	GND
29	W	TAIL
30	W	TAIL
31	W	TAIL
32	W	TAIL
33	W	TAIL

INTELLIGENT CRUISE CONTROL CONNECTORS

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Type	TH80MDGY-CS16-TM4
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1A	-	TO MAIN HARNESS
2A	Y	TO MAIN HARNESS
3A	Y	TO MAIN HARNESS
4A	G	TO MAIN HARNESS
5A	-	TO MAIN HARNESS
6A	LG	TO MAIN HARNESS - (WITHOUT CLIMATE CONTROLLED SEAT)
7A	R	TO MAIN HARNESS - (WITH CLIMATE CONTROLLED SEAT)
8A	BR	TO MAIN HARNESS
9A	G	TO MAIN HARNESS
10A	P	TO MAIN HARNESS
11A	-	TO MAIN HARNESS
12A	W	TO MAIN HARNESS
13A	G	TO MAIN HARNESS
14A	-	TO MAIN HARNESS
15A	R	TO MAIN HARNESS
16A	G	TO MAIN HARNESS
17A	W	TO MAIN HARNESS
18A	B	TO MAIN HARNESS
19A	SHIELD	TO MAIN HARNESS
20A	W	TO MAIN HARNESS
21A	SHIELD	TO MAIN HARNESS
22A	-	TO MAIN HARNESS
23A	W	TO MAIN HARNESS
24A	B	TO MAIN HARNESS

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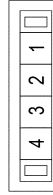
25A	SHIELD	TO MAIN HARNESS
26A	B	TO MAIN HARNESS
27A	B	TO MAIN HARNESS
28A	SHIELD	TO MAIN HARNESS
29A	R	TO MAIN HARNESS
30A	B	TO MAIN HARNESS
31A	BR	TO MAIN HARNESS
32A	-	TO MAIN HARNESS
33A	W	TO MAIN HARNESS
34A	B	TO MAIN HARNESS
35A	SHIELD	TO MAIN HARNESS
36A	-	TO MAIN HARNESS
37A	LG	TO MAIN HARNESS
38A	V	TO MAIN HARNESS
39A	SB	TO MAIN HARNESS
40A	BR	TO MAIN HARNESS
41A	Y	TO MAIN HARNESS
42A	-	TO MAIN HARNESS
43A	-	TO MAIN HARNESS
44A	V	TO MAIN HARNESS
45A	G	TO MAIN HARNESS
46A	V	TO MAIN HARNESS
47A	L	TO MAIN HARNESS
48A	SB	TO MAIN HARNESS
49A	G	TO MAIN HARNESS
50A	W	TO MAIN HARNESS
51A	-	TO MAIN HARNESS
52A	-	TO MAIN HARNESS
53A	R	TO MAIN HARNESS
54A	SB	TO MAIN HARNESS
55A	LG	TO MAIN HARNESS
56A	Y	TO MAIN HARNESS
57A	SB	TO MAIN HARNESS - (WITHOUT CLIMATE CONTROLLED SEAT)
57A	V	TO MAIN HARNESS - (WITH CLIMATE CONTROLLED SEAT)
58A	BR	TO MAIN HARNESS
59A	BR	TO MAIN HARNESS
60A	L	TO MAIN HARNESS
61A	Y	TO MAIN HARNESS
62A	-	TO MAIN HARNESS
63A	P	TO MAIN HARNESS
64A	R	TO MAIN HARNESS
65A	SB	TO MAIN HARNESS
66A	L	TO MAIN HARNESS
67A	LG	TO MAIN HARNESS
68A	P	TO MAIN HARNESS
69A	W	TO MAIN HARNESS
70A	G	TO MAIN HARNESS
71A	BR	TO MAIN HARNESS
72A	-	TO MAIN HARNESS
73A	Y	TO MAIN HARNESS
74A	P	TO MAIN HARNESS
75A	V	TO MAIN HARNESS

76A	R	TO MAIN HARNESS
77A	Y	TO MAIN HARNESS
78A	LG	TO MAIN HARNESS
79A	BR	TO MAIN HARNESS
80A	Y	TO MAIN HARNESS
81A	L	TO MAIN HARNESS
82A	BG	TO MAIN HARNESS
83A	Y	TO MAIN HARNESS
84A	LG	TO MAIN HARNESS
85A	SHIELD	TO MAIN HARNESS
86A	LG	TO MAIN HARNESS
87A	SB	TO MAIN HARNESS
88A	BG	TO MAIN HARNESS
89A	L	TO MAIN HARNESS
90A	P	TO MAIN HARNESS
91A	L	TO MAIN HARNESS
92A	LG	TO MAIN HARNESS
93A	B	TO MAIN HARNESS
94A	-	TO MAIN HARNESS
95A	-	TO MAIN HARNESS
96A	-	TO MAIN HARNESS
97A	BR	TO MAIN HARNESS
98A	L	TO MAIN HARNESS
99A	-	TO MAIN HARNESS
100A	-	TO MAIN HARNESS

Connector No.	B101
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH
Connector Color	WHITE



Connector No.	B102
Connector Name	JOINT CONNECTOR-B14
Connector Type	TK04FW-J
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
2	L	CAN-H
3	B	CAN-H
4	-	-

INTELLIGENT CRUISE CONTROL CONNECTORS

Connector No.	B103
Connector Name	JOINT CONNECTOR-B15
Connector Type	TK04FW-J
Connector Color	WHITE



4	3	2	1
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Terminal No.	Color of Wire	Signal Name
1	P	CAN-L
2	P	CAN-L
3	W	CAN-L
4	-	-

Connector No.	B104
Connector Name	ADAS CONTROL UNIT
Connector Type	TH24FW-NH
Connector Color	WHITE



12	11	10	9	8	7	6	5	4	3	2	1
24	23	22	21	20	19	18	17	16	15	14	13

Terminal No.	Color of Wire	Signal Name
1	B	CAN-H
2	W	CAN-L
3	-	-
4	-	-
5	B	GND
6	L	ITS CAN-H
7	Y	ITS CAN-L
8	L	IC CAN-H
9	Y	IC CAN-L
10	-	-
11	-	-
12	R	IGN
13	-	-
14	-	-
15	-	-
16	-	-
17	G	BRK-RLY
18	BR	ITS ALERT SW
19	W	ITS ALERT SW LED

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20	-	-
21	-	-
22	-	-
23	-	-
24	-	-

Connector No.	B115
Connector Name	JOINT CONNECTOR-B08
Connector Type	BJ30FW
Connector Color	WHITE



11	10	9	8	7	6	5	4	3	2	1
22	21	20	19	18	17	16	15	14	13	12
33	32	31	30	29	28	27	26	25	24	23

Terminal No.	Color of Wire	Signal Name
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	-	-
8	-	-
9	B	GND
10	GR	GND
11	SHIELD	SHIELD
12	-	-
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-
18	-	-
19	R	IGNITION
20	R	IGNITION
21	R	IGNITION
22	-	-
23	-	-
24	-	-
25	-	-
26	-	-
27	W	ALERT SIGNAL
28	W	ALERT SIGNAL
29	B	ADDRESS
30	B	GND
31	GR	GND
32	SHIELD	SHIELD

33	B	GND
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Connector No.	B124
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH
Connector Color	WHITE



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

Terminal No.	Color of Wire	Signal Name
1	-	TO BODY HARNESS
2	-	TO BODY HARNESS
3	-	TO BODY HARNESS
4	-	TO BODY HARNESS
5	G	TO BODY HARNESS
6	R	TO BODY HARNESS
7	G	TO BODY HARNESS
8	R	TO BODY HARNESS
9	W	TO BODY HARNESS
10	SHIELD	TO BODY HARNESS
11	B	TO BODY HARNESS
12	L	TO BODY HARNESS
13	G	TO BODY HARNESS
14	R	TO BODY HARNESS
15	W	TO BODY HARNESS
16	SHIELD	TO BODY HARNESS
17	Y	TO BODY HARNESS
18	L	TO BODY HARNESS
19	P	TO BODY HARNESS
20	Y	TO BODY HARNESS
21	L	TO BODY HARNESS
22	B	TO BODY HARNESS
23	W	TO BODY HARNESS
24	SHIELD	TO BODY HARNESS
25	BR	TO BODY HARNESS
26	V	TO BODY HARNESS
27	-	TO BODY HARNESS
28	-	TO BODY HARNESS
29	-	TO BODY HARNESS
30	-	TO BODY HARNESS
31	-	TO BODY HARNESS
32	-	TO BODY HARNESS

INTELLIGENT CRUISE CONTROL CONNECTORS

Connector No.	B136
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-NH
Connector Color	WHITE



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

35	-	TO MAIN HARNESS
36	-	TO MAIN HARNESS
37	BR	TO MAIN HARNESS
38	-	TO MAIN HARNESS
39	-	TO MAIN HARNESS
40	-	TO MAIN HARNESS

Connector No.	B146
Connector Name	JOINT CONNECTOR-B12
Connector Type	TK04FW-J
Connector Color	WHITE



4	3	2	1
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Terminal No.	Color of Wire	Signal Name
1	G	TO MAIN HARNESS
2	W	TO MAIN HARNESS
3	BR	TO MAIN HARNESS
4	G	TO MAIN HARNESS
5	BG	TO MAIN HARNESS
6	B	TO MAIN HARNESS
7	W	TO MAIN HARNESS
8	W	TO MAIN HARNESS
9	B	TO MAIN HARNESS
10	W	TO MAIN HARNESS
11	SHIELD	TO MAIN HARNESS
12	B	TO MAIN HARNESS
13	W	TO MAIN HARNESS
14	SHIELD	TO MAIN HARNESS
15	B	TO MAIN HARNESS
16	W	TO MAIN HARNESS
17	SHIELD	TO MAIN HARNESS
18	W	TO MAIN HARNESS
19	LG	TO MAIN HARNESS - (WITHOUT SURROUND SOUND SYSTEM)
19	B	TO MAIN HARNESS - (WITH SURROUND SOUND SYSTEM)
20	SB	TO MAIN HARNESS - (WITHOUT SURROUND SOUND SYSTEM)
20	W	TO MAIN HARNESS - (WITH SURROUND SOUND SYSTEM)
21	B	TO MAIN HARNESS
22	W	TO MAIN HARNESS
23	SHIELD	TO MAIN HARNESS
24	B	TO MAIN HARNESS
25	W	TO MAIN HARNESS
26	SHIELD	TO MAIN HARNESS
27	B	TO MAIN HARNESS
28	W	TO MAIN HARNESS
29	SHIELD	TO MAIN HARNESS
30	B	TO MAIN HARNESS
31	W	TO MAIN HARNESS
32	L	TO MAIN HARNESS
33	Y	TO MAIN HARNESS
34	-	TO MAIN HARNESS

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Connector No.	E5
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS
Connector Color	WHITE



1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16					

Terminal No.	Color of Wire	Signal Name
1	Y	TO FRONT END MODULE HARNESS
2	SB	TO FRONT END MODULE HARNESS
3	BR	TO FRONT END MODULE HARNESS
4	B	TO FRONT END MODULE HARNESS
5	B	TO FRONT END MODULE HARNESS
6	P	TO FRONT END MODULE HARNESS
7	W/G	TO FRONT END MODULE HARNESS
8	G	TO FRONT END MODULE HARNESS
9	L	TO FRONT END MODULE HARNESS
10	G	TO FRONT END MODULE HARNESS
11	R	TO FRONT END MODULE HARNESS
12	P	TO FRONT END MODULE HARNESS
13	SHIELD	TO FRONT END MODULE HARNESS
14	SHIELD	TO FRONT END MODULE HARNESS
15	P	TO FRONT END MODULE HARNESS
16	B	TO FRONT END MODULE HARNESS

Connector No.	B147
Connector Name	JOINT CONNECTOR-B13
Connector Type	TK04FW-J
Connector Color	WHITE



4	3	2	1
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Terminal No.	Color of Wire	Signal Name
1	Y	ITS CAN-L
2	Y	ITS CAN-L
3	Y	ITS CAN-L
4	-	-

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

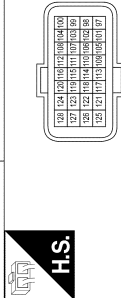
INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]

INTELLIGENT CRUISE CONTROL CONNECTORS

Connector No.	E16
Connector Name	ECM (FOR MEXICO)
Connector Type	RH24FGY-RZ8-R-RH
Connector Color	GRAY

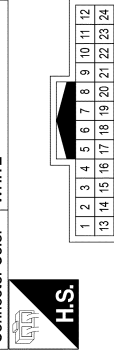


Terminal No.	Color of Wire	Signal Name
97	W	ACCELERATOR PEDAL POSITION SENSOR 1 (WITHOUT ICC SYSTEM)
97	R	ACCELERATOR PEDAL POSITION SENSOR 1 (WITH ICC SYSTEM)
98	P	ACCELERATOR PEDAL POSITION SENSOR 2 (WITHOUT ICC SYSTEM)
98	B	ACCELERATOR PEDAL POSITION SENSOR 2 (WITH ICC SYSTEM)
99	R	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 1) (WITHOUT ICC SYSTEM)
99	G	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 1) (WITH ICC SYSTEM)
100	R	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 1) (WITHOUT ICC SYSTEM)
100	W	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 1) (WITH ICC SYSTEM)
101	G	ASCD STEERING SWITCH/ICC STEERING SWITCH
102	O	EVAP CONTROL SYSTEM PRESSURE SENSOR
103	W	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 2) (WITHOUT ICC SYSTEM)
103	Y	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 2) (WITH ICC SYSTEM)
104	P	DATA LINK CONNECTOR
105	-	-
106	Y	EVAP CANISTER VENT CONTROL VALVE
107	W	SENSOR POWER SUPPLY (EVAP CONTROL SYSTEM PRESSURE SENSOR) (ENGINE OIL PRESSURE SENSOR)
108	R	SENSOR GROUND (ASCD STEERING SWITCH)
109	SB	IGNITION SWITCH
110	-	-

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111	BR	FUEL TANK TEMPERATURE SENSOR
112	G	SENSOR GROUND (EVAP CONTROL SYSTEM PRESSURE SENSOR, ENGINE OIL PRESSURE SENSOR)
113	P	CAN-L
114	L	CAN-H
115	-	-
116	G	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 2) (WITHOUT ICC SYSTEM)
116	L	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 2) (WITH ICC SYSTEM)
117	-	-
118	W	PNP SIGNAL
119	-	-
120	LG	SENSOR GROUND (FUEL TANK TEMPERATURE SENSOR)
121	LG	POWER SUPPLY FOR ECM
122	R	STOP LAMP SWITCH
123	B	ECM GND
124	B	ECM GND
125	-	-
126	LG	BRAKE PEDAL POSITION SWITCH
127	B	ECM GND
128	B	ECM GND

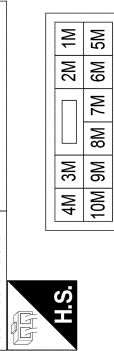
Connector No.	E26
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	R	TO FRONT END MODULE HARNESS
2	W	TO FRONT END MODULE HARNESS
3	B	TO FRONT END MODULE HARNESS
4	SHIELD	TO FRONT END MODULE HARNESS
5	B	TO FRONT END MODULE HARNESS
6	R	TO FRONT END MODULE HARNESS
7	W	TO FRONT END MODULE HARNESS

8	SHIELD	TO FRONT END MODULE HARNESS
9	Y	TO FRONT END MODULE HARNESS
10	BG	TO FRONT END MODULE HARNESS
11	G	TO FRONT END MODULE HARNESS
12	W	TO FRONT END MODULE HARNESS
13	R	TO FRONT END MODULE HARNESS
14	B	TO FRONT END MODULE HARNESS
15	G	TO FRONT END MODULE HARNESS
16	SHIELD	TO FRONT END MODULE HARNESS
17	W	TO FRONT END MODULE HARNESS
18	P	TO FRONT END MODULE HARNESS
19	W	TO FRONT END MODULE HARNESS
20	R	TO FRONT END MODULE HARNESS
21	W	TO FRONT END MODULE HARNESS
22	BR	TO FRONT END MODULE HARNESS
23	V	TO FRONT END MODULE HARNESS
24	SB	TO FRONT END MODULE HARNESS

Connector No.	E28
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1M	R	IGNITION
2M	-	-
3M	-	-
4M	-	-
5M	Y	BATTERY
6M	L	TAIL LH
7M	P	BRAKE PEDAL POSITION SWITCH
8M	R	BRAKE PEDAL POSITION SWITCH
9M	-	-

10M	-	-
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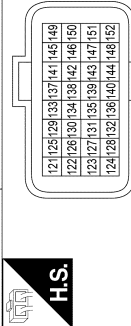
INTELLIGENT CRUISE CONTROL

[ICC]

< WIRING DIAGRAM >

INTELLIGENT CRUISE CONTROL CONNECTORS

Connector No.	E32
Connector Name	ECM (EXCEPT FOR MEXICO)
Connector Type	RH24FB-RZ8-L-LH
Connector Color	BLACK

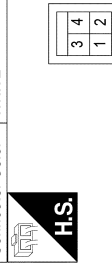


Terminal No.	Color of Wire	Signal Name
121	W	EVAP CONTROL SYSTEM PRESSURE SENSOR
122	-	-
123	P	CAN-L
124	L	CAN-H
125	R	POWER SUPPLY (EVAP CONTROL SYSTEM PRESSURE SENSOR)
126	-	-
127	-	-
128	BR	FUEL TANK TEMPERATURE SENSOR
129	-	-
130	-	-
131	-	-
132	-	-
133	SB	POWER SUPPLY
134	G	ASCD STEERING SWITCH/ICC STEERING SWITCH
135	R	SENSOR GROUND
136	-	-
137	-	-
138	-	-
139	R	STOP LAMP SWITCH
140	LG	BRAKE PEDAL POSITION SWITCH
141	Y	EVAP CANISTER VENT CONTROL VALVE
142	Y	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 2) (WITH ICC SYSTEM)
142	W	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 2) (WITHOUT ICC SYSTEM)
143	B	ACCELE PEDAL POSITION SENSOR 2 (WITH ICC SYSTEM)
143	P	ACCELE PEDAL POSITION SENSOR 2 (WITHOUT ICC SYSTEM)
144	L	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 2) (WITH ICC SYSTEM)

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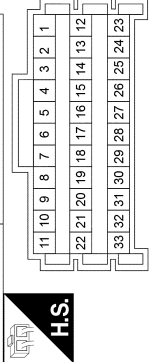
144	G	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 2) (WITHOUT ICC SYSTEM)
145	LG	POWER SUPPLY FOR ECM
146	G	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 1) (WITH ICC SYSTEM)
146	R	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 1) (WITHOUT ICC SYSTEM)
147	B	SENSOR GROUND
148	LG	SENSOR GROUND
149	B	SENSOR GROUND
150	R	ACCELE PEDAL POSITION SENSOR 1 (WITH ICC SYSTEM)
150	W	ACCELE PEDAL POSITION SENSOR 1 (WITHOUT ICC SYSTEM)
151	W	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 1) (WITH ICC SYSTEM)
151	R	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 1) (WITHOUT ICC SYSTEM)
152	B	SENSOR GROUND

Connector No.	E38
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC
Connector Color	WHITE



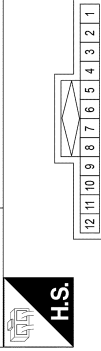
Terminal No.	Color of Wire	Signal Name
1	Y	BATT
2	P	BRAKE PEDAL POSITION SWITCH
3	Y	BATT
4	G	STP

Connector No.	E44
Connector Name	JOINT CONNECTOR-E01
Connector Type	BJ30FW
Connector Color	WHITE



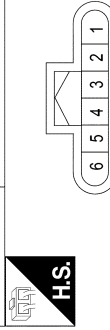
Terminal No.	Color of Wire	Signal Name
1	W	SENSOR POWER SUPPLY
2	W	SENSOR POWER SUPPLY
3	W	SENSOR POWER SUPPLY
4	R	BATTERY
5	R	BATTERY
6	R	BATTERY
7	-	-
8	LG	BATTERY
9	LG	BATTERY
10	LG	BATTERY
11	LG	BATTERY
12	P	BATTERY
13	P	BATTERY
14	P	BATTERY
15	GR	GND
16	B	GND
17	B	GND
18	-	-
19	Y	BATTERY
20	Y	BATTERY
21	Y	BATTERY
22	Y	BATTERY
23	BG	EVAP CONTROL SYSTEM PRESSURE SENSOR
24	O	EVAP CONTROL SYSTEM PRESSURE SENSOR
25	-	-
26	G	GND
27	G	GND
28	G	GND
29	-	-
30	V	BATTERY
31	LG	BATTERY
32	V	BATTERY
33	V	BATTERY

Connector No.	E45
Connector Name	JOINT CONNECTOR-E12
Connector Type	A12FL
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
2	L	CAN-H
3	L	CAN-H
4	L	CAN-H
5	-	-
6	-	-
7	P	CAN-L
8	P	CAN-L
9	P	CAN-L
10	P	CAN-L
11	-	-
12	-	-

Connector No.	E70
Connector Name	JOINT CONNECTOR-E14
Connector Type	RH06FB
Connector Color	BLACK



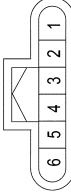
Terminal No.	Color of Wire	Signal Name
1	P	CAN-L
2	P	CAN-L
3	P	CAN-L
4	P	CAN-L
5	-	-
6	-	-

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

CCS

INTELLIGENT CRUISE CONTROL CONNECTORS

Connector No.	E71
Connector Name	JOINT CONNECTOR-E15
Connector Type	RH06FB
Connector Color	BLACK

Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
2	L	CAN-H
3	L	CAN-H
4	L	CAN-H
5	-	-
6	-	-

Connector No.	E72
Connector Name	BRAKE PEDAL POSITION SWITCH (WITH INTELLIGENT CRUISE CONTROL)
Connector Type	M02FBR-LC
Connector Color	BROWN

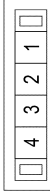



Connector No.	E75
Connector Name	ICC BRAKE HOLD RELAY
Connector Type	MS02FL-M2-LC
Connector Color	BLUE



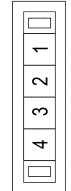

Terminal No.	Color of Wire	Signal Name
1	W	BRAKE HOLD RLY DRIVE SIGNAL
2	R	IGN
3	P	BRAKE PEDAL POSITION SWITCH
5	Y	BATT

Connector No.	E106
Connector Name	JOINT CONNECTOR-E06
Connector Type	TK04FW-J
Connector Color	WHITE

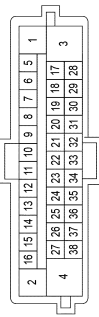
Terminal No.	Color of Wire	Signal Name
1	BG	CAN-H
2	BG	CAN-H
3	BG	CAN-H
4	-	-

Connector No.	E108
Connector Name	JOINT CONNECTOR-E07
Connector Type	TK04FW-J
Connector Color	WHITE

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

Connector No.	E125
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	SAZ34FB-HS2-SJSZ2-UH
Connector Color	BLACK

Terminal No.	Color of Wire	Signal Name
1	R	SOLENOID (POWER)
2	B	ECU (GND)
3	W	MOTOR (POWER)
4	B/W	MOTOR (GND)
5	-	-
6	-	-
7	P	STOP LAMP SW (WITHOUT ICC)
7	G	STOP LAMP SW (WITH INTELLIGENT CRUISE CONTROL)
8	-	-
9	R	VDC OFF SW
10	-	-
11	G	FR RH SEN (POWER)
12	W	FR RH SEN (SIGNAL)
13	R	RR LH SEN (POWER)
14	G	RR LH SEN (SIGNAL)
15	-	-
16	-	-

17	-	-
18	-	-
19	L	CAN-H
20	SHIELD	VAC SEN (GND)
21	B	VAC SEN (POWER)
22	W	VAC SEN (SIGNAL)
23	G	FR LH SEN (POWER)
24	W	FR LH SEN (SIGNAL)
25	BG	RR RH SEN (POWER)
26	P	RR RH SEN (SIGNAL)
27	-	-
28	BR	IGN (POWER)
29	-	-
30	P	CAN-L
31	-	-
32	-	-
33	-	-
34	-	-
35	-	-
36	-	-
37	-	-
38	-	-

[ICC]

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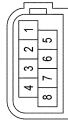
7	6	5	4		3	2	1
16	15	14	13	12	11	10	9
						8	



Terminal No.	Color of Wire	Signal Name
1	Y	TO ENGINE ROOM HARNESS
2	L	TO ENGINE ROOM HARNESS
3	B	TO ENGINE ROOM HARNESS
4	SHIELD	TO ENGINE ROOM HARNESS
5	B	TO ENGINE ROOM HARNESS
6	R	TO ENGINE ROOM HARNESS
7	W	TO ENGINE ROOM HARNESS
8	SHIELD	TO ENGINE ROOM HARNESS
9	Y	TO ENGINE ROOM HARNESS
10	L	TO ENGINE ROOM HARNESS
11	SB	TO ENGINE ROOM HARNESS
12	Y	TO ENGINE ROOM HARNESS
13	R	TO ENGINE ROOM HARNESS
14	B	TO ENGINE ROOM HARNESS
15	G	TO ENGINE ROOM HARNESS
16	SHIELD	TO ENGINE ROOM HARNESS
17	W	TO ENGINE ROOM HARNESS
18	L	TO ENGINE ROOM HARNESS
19	Y	TO ENGINE ROOM HARNESS
20	V	TO ENGINE ROOM HARNESS
21	G	TO ENGINE ROOM HARNESS
22	L	TO ENGINE ROOM HARNESS
23	G	TO ENGINE ROOM HARNESS
24	B	TO ENGINE ROOM HARNESS

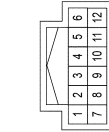
INTELLIGENT CRUISE CONTROL CONNECTORS

Connector No.	E219
Connector Name	ICC SENSOR
Connector Type	AAZ08FB
Connector Color	BLACK



H.S.

16P	W	BLOWER FAN RELAY OUT
Connector No.	M5	
Connector Name	CAN GATEWAY	
Connector Type	TH12FW-NH	
Connector Color	WHITE	



H.S.

Terminal No.	Color of Wire	Signal Name
1	P	UBAT
2	-	-
3	L	CAN+H
4	-	-
5	-	-
6	Y	CAN+L
7	-	-
8	B	GND

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE

H.S.

7P	6P	5P	4P		3P	2P	1P	
16P	15P	14P	13P	12P	11P	10P	9P	8P

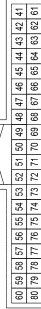
H.S.

Terminal No.	Color of Wire	Signal Name
1P	R	IGNITION
2P	LG	IGNITION
3P	G	IGN ELEC RELAY OUT 2
4P	-	-
5P	P	IGNITION
6P	BG	REAR DEFROGGER RELAY OUT
7P	LG	IGNITION
8P	BG	IGNITION
9P	L	BATTERY
10P	BR	IGNITION
11P	-	-
12P	-	-
13P	W	BATTERY
14P	Y	BATTERY
15P	L	BATT

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Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

H.S.



Terminal No.	Color of Wire	Signal Name
41	-	-
42	-	-
43	-	-
44	-	-
45	-	-
46	-	-
47	-	-
48	R	HIGH SIDE START SW LED
49	-	-
50	-	-
51	-	-
52	W	AUDIO DONGLE
53	-	-
54	W	PW LIN/COM
55	BR	R SENSOR K-LINE
56	-	-
57	-	-
58	-	-
59	P	CAN-L
60	L	CAN-H
61	BG	REAR DEFROGGER RELAY OUT
62	W	STARTER RELAY OUT
63	BG	I-KEY LINK SIGNAL
64	P	BUZZER OUT
65	P	DOOR HANDLE LAMP
66	W	BLOWER FAN RELAY OUT
67	G	IGN ELEC RELAY OUT 2
68	P	MR OUTPUT
69	G	AT DEVICE OUT
70	P	IGN USM OUT 1
71	R	DR REQUEST SW
72	G	AS REQUEST SW
73	-	-
74	-	-
75	BG	COMBI SW OUT 5
76	P	COMBI SW OUT 4
77	P	COMBI SW OUT 3
78	W	COMBI SW OUT 2

INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]

INTELLIGENT CRUISE CONTROL CONNECTORS

39	L	CAN-H
40	-	-

Connector No.	M30
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FGY-1V
Connector Color	GRAY



25	24	31	32	33
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Connector No.	M24
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH
Connector Color	WHITE



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

Terminal No.	Color of Wire	Signal Name
1	B	GND1
2	B	GND2
3	P	STRG SW INPUT 1
4	BG	STRG SW INPUT 2
5	P	ACC
6	V	SECURITY
7	R	AIR BAG
8	G	AS BELT
9	Y	DR BUCKLE SW
10	-	-
11	BG	ALTERNATOR (CHARGE)
12	G	PKB
13	-	-
14	G	STRG SW OUTPUT 1
15	W	STRG SW OUTPUT 2
16	B	STRG SW OUTPUT GND
17	-	-
18	-	-
19	-	-
20	-	-
21	BG	IGN
22	W	BAT
23	B	ILLUMI CONT OUT
24	R	STRG SW GND
25	G	BRAKE OIL SW
26	R	FUEL SENSOR GND
27	W	FUEL SENSOR
28	-	-
29	-	-
30	-	-
31	-	-
32	-	-
33	BR	SPEED 2 P/R
34	BG	SPEED 8 P/R
35	-	-
36	-	-
37	-	-
38	P	CAN-L

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[ICC]

INTELLIGENT CRUISE CONTROL CONNECTORS

☐	4	3	2	1	☐
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20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
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Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4
Connector Color	WHITE

10	20	30	40	50	60	70	80	90	100
20	40	60	80	100	120	140	160	180	200
30	60	90	120	150	180	210	240	270	300
40	80	120	160	200	240	280	320	360	400
50	100	150	200	250	300	350	400	450	500
60	120	180	240	300	360	420	480	540	600
70	140	210	280	350	420	490	560	630	700
80	160	240	320	400	480	560	640	720	800
90	180	270	360	450	540	630	720	810	900
100	200	300	400	500	600	700	800	900	1000

Terminal No.	Color of Wire	Signal Name
1G	SB	TO ENGINE ROOM HARNESS - WITHOUT CLIMATE CONTROLLED SEAT
1G	P	TO ENGINE ROOM HARNESS - (WITH CLIMATE CONTROLLED SEAT)
2G	W	TO ENGINE ROOM HARNESS
3G	P	TO ENGINE ROOM HARNESS
4G	G	TO ENGINE ROOM HARNESS
5G	P	TO ENGINE ROOM HARNESS
6G	SB	TO ENGINE ROOM HARNESS - WITHOUT CLIMATE CONTROLLED SEAT
6G	R	TO ENGINE ROOM HARNESS - (WITH CLIMATE CONTROLLED SEAT)
7G	SHIELD	TO ENGINE ROOM HARNESS
8G	G	TO ENGINE ROOM HARNESS
9G	BG	TO ENGINE ROOM HARNESS
10G	W	TO ENGINE ROOM HARNESS
11G	R	TO ENGINE ROOM HARNESS
12G	G	TO ENGINE ROOM HARNESS
13G	G	TO ENGINE ROOM HARNESS
14G	V	TO ENGINE ROOM HARNESS
15G	W	TO ENGINE ROOM HARNESS
16G	R	TO ENGINE ROOM HARNESS
17G	B	TO ENGINE ROOM HARNESS
18G	SHIELD	TO ENGINE ROOM HARNESS
19G	SB	TO ENGINE ROOM HARNESS

INTELLIGENT CRUISE CONTROL

< WIRING DIAGRAM >

[ICC]

INTELLIGENT CRUISE CONTROL CONNECTORS

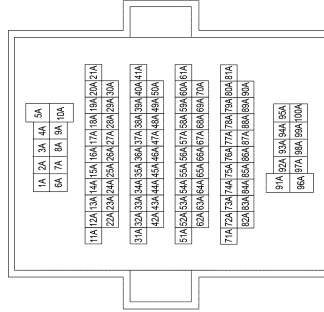
Connector No.	M38
Connector Name	JOINT CONNECTOR-M29
Connector Type	TK04FW-J
Connector Color	WHITE



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Terminal No.	Color of Wire	Signal Name
1	Y	CAN-L
2	Y	CAN-L
3	W	CAN-L
4	-	-

Connector No.	M40
Connector Name	WIRE TO WIPE
Connector Type	TH80FDGY-CS16-TM4
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1A	GR	TO BODY HARNESS
2A	BR	TO BODY HARNESS
3A	Y	TO BODY HARNESS
4A	V	TO BODY HARNESS
5A	L/B	TO BODY HARNESS

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57A	P	TO BODY HARNESS - (WITH CLIMATE CONTROLLED SEAT)
57A	L	TO BODY HARNESS - (WITHOUT CLIMATE CONTROLLED SEAT)
58A	G	TO BODY HARNESS
59A	SB	TO BODY HARNESS
60A	L	TO BODY HARNESS
61A	G	TO BODY HARNESS
62A	BR	TO BODY HARNESS
63A	BR	TO BODY HARNESS
64A	Y	TO BODY HARNESS
65A	W	TO BODY HARNESS
66A	BG	TO BODY HARNESS
67A	Y	TO BODY HARNESS
68A	LG	TO BODY HARNESS
69A	R	TO BODY HARNESS
70A	P	TO BODY HARNESS
71A	BR	TO BODY HARNESS
72A	SB	TO BODY HARNESS
73A	BG	TO BODY HARNESS
74A	BR	TO BODY HARNESS
75A	LG	TO BODY HARNESS
76A	W	TO BODY HARNESS
77A	L	TO BODY HARNESS
78A	V	TO BODY HARNESS
79A	LG	TO BODY HARNESS
80A	Y	TO BODY HARNESS
81A	L	TO BODY HARNESS
82A	BG	TO BODY HARNESS
83A	Y	TO BODY HARNESS
84A	LG	TO BODY HARNESS
85A	SHIELD	TO BODY HARNESS
86A	Y	TO BODY HARNESS
87A	LG	TO BODY HARNESS
88A	BR	TO BODY HARNESS
89A	L	TO BODY HARNESS
90A	P	TO BODY HARNESS
91A	L	TO BODY HARNESS
92A	L	TO BODY HARNESS
93A	B	TO BODY HARNESS
94A	W	TO BODY HARNESS
95A	W	TO BODY HARNESS
96A	-	TO BODY HARNESS
97A	SB	TO BODY HARNESS
98A	Y	TO BODY HARNESS - (WITHOUT AUTOMATIC DRIVE POSITIONER)
98A	L	TO BODY HARNESS - (WITH AUTOMATIC DRIVE POSITIONER)
99A	-	TO BODY HARNESS
100A	-	TO BODY HARNESS

6A	L	TO BODY HARNESS - (WITHOUT CLIMATE CONTROLLED SEAT)
6A	G	TO BODY HARNESS - (WITH CLIMATE CONTROLLED SEAT)
7A	Y	TO BODY HARNESS
8A	W	TO BODY HARNESS
9A	L	TO BODY HARNESS
10A	R	TO BODY HARNESS
11A	R	TO BODY HARNESS
12A	BG	TO BODY HARNESS
13A	O	TO BODY HARNESS
14A	LG	TO BODY HARNESS
15A	R	TO BODY HARNESS
16A	G	TO BODY HARNESS
17A	B	TO BODY HARNESS
18A	B	TO BODY HARNESS
19A	SHIELD	TO BODY HARNESS
20A	B	TO BODY HARNESS
21A	SHIELD	TO BODY HARNESS
22A	-	TO BODY HARNESS
23A	W	TO BODY HARNESS
24A	B	TO BODY HARNESS
25A	SHIELD	TO BODY HARNESS
26A	B	TO BODY HARNESS
27A	B	TO BODY HARNESS
28A	SHIELD	TO BODY HARNESS
29A	R	TO BODY HARNESS
30A	R	TO BODY HARNESS
31A	R	TO BODY HARNESS
32A	Y/R	TO BODY HARNESS
33A	W	TO BODY HARNESS
34A	B	TO BODY HARNESS
35A	SHIELD	TO BODY HARNESS
36A	L/Y	TO BODY HARNESS
37A	LG	TO BODY HARNESS
38A	V	TO BODY HARNESS
39A	SB	TO BODY HARNESS
40A	BR	TO BODY HARNESS
41A	Y	TO BODY HARNESS
42A	G	TO BODY HARNESS
43A	-	TO BODY HARNESS
44A	W	TO BODY HARNESS
45A	R	TO BODY HARNESS
46A	BG	TO BODY HARNESS
47A	LG	TO BODY HARNESS
48A	R	TO BODY HARNESS
49A	P	TO BODY HARNESS
50A	W	TO BODY HARNESS
51A	L	TO BODY HARNESS
52A	P	TO BODY HARNESS
53A	G	TO BODY HARNESS
54A	W	TO BODY HARNESS
55A	BG	TO BODY HARNESS
56A	BR	TO BODY HARNESS

Connector No.	M41
Connector Name	JOINT CONNECTOR-M18
Connector Type	TK04FW-J
Connector Color	WHITE



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

Connector No.	M43
Connector Name	JOINT CONNECTOR-M17
Connector Type	TK04FW-J
Connector Color	WHITE

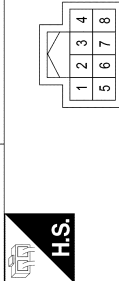


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Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
2	L	CAN-H
3	L	CAN-H
4	-	-

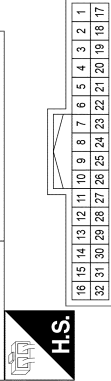
INTELLIGENT CRUISE CONTROL CONNECTORS

Connector No.	M54
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FW-NH
Connector Color	WHITE



H.S.

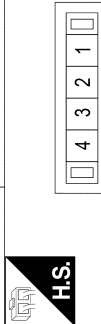
Connector No.	M84
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH
Connector Color	WHITE



H.S.

Terminal No.	Color of Wire	Signal Name
1	GR	GND
2	P	CAN-H
3	-	-
4	G	IGN
5	L	CAN-H
6	-	-
7	-	-
8	-	-

Connector No.	M67
Connector Name	JOINT CONNECTOR-M04
Connector Type	TK04FW-J
Connector Color	WHITE

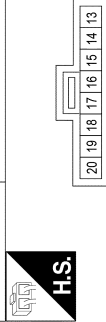


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Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
2	L	CAN-H
3	B	CAN-H
4	L	CAN-H

25	W	TO BODY HARNESS RH
26	W	TO BODY HARNESS RH
27	EG	TO BODY HARNESS RH
28	V	TO BODY HARNESS RH
29	SB	TO BODY HARNESS RH
30	L	TO BODY HARNESS RH
31	W	TO BODY HARNESS RH
32	-	TO BODY HARNESS RH

Connector No.	M149
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FGY
Connector Color	GRAY



H.S.

Terminal No.	Color of Wire	Signal Name
13	R	ASCD
14	B	AUDIO STRG SW REMOTE A
15	GR	AUDIO STRG SW REMOTE B
16	L	ASCDG
17	BR	AUDIO STRG SW GND
18	G	HORN SWITCH
19	Y	ILL CONT
20	W	ILL

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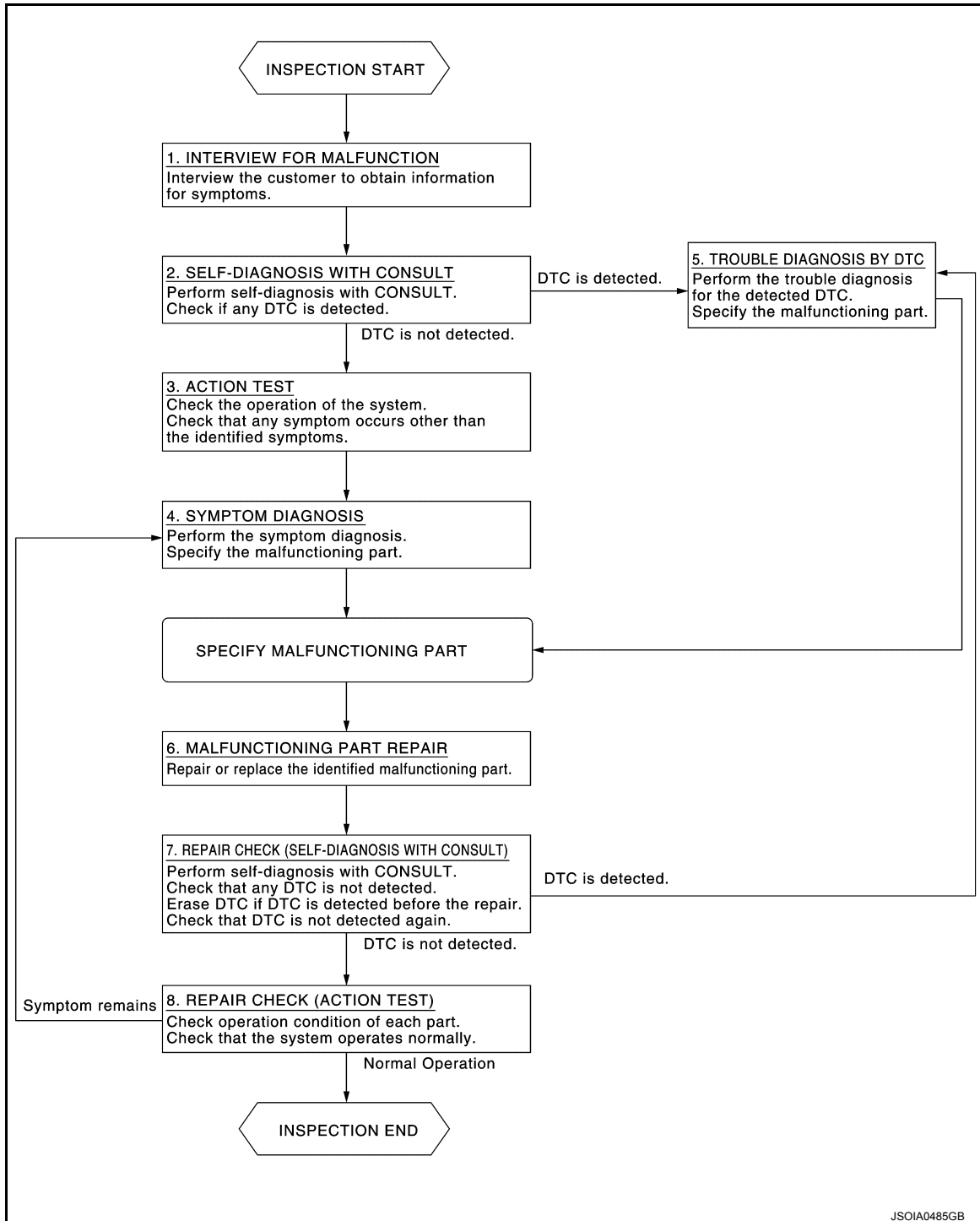
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000012848268

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-89, "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-172, "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 [DAS-40, "DTC Index"](#) (ICC/ADAS) or [CCS-60, "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:0000000012848269

- 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 ICC sensor is aligned properly.

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

Work Procedure

INFOID:0000000012848270

1. RADAR ALIGNMENT ADJUSTMENT

Adjust the radar alignment.

>> GO TO 2.

2. ICC SYSTEM ACTION TEST

1. Perform the ICC system action test. Refer to [CCS-89, "Description"](#).
2. Check that the ICC system operates normally.

>> Inspection End.

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CCS

ICC SENSOR ALIGNMENT

Description

INFOID:000000014170246

OUTLINE OF RADAR ALIGNMENT PROCEDURE

- A 4-wheel vehicle alignment must be performed before proceeding with radar alignment procedure.
- Always perform the radar alignment after removing and installing or replacing the ICC sensor.
- Always perform the radar alignment if rear axle toe settings have been made.

WARNING:

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

CAUTION:

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

1. Required tools, refer to [CCS-82, "Required Tools"](#).
2. Preparation, refer to [CCS-83, "Preparation"](#).
3. Vehicle set up, refer to [CCS-84, "Vehicle Set Up"](#).
4. Setting the ICC target board, refer to [CCS-86, "Setting The ICC Target Board"](#).
5. ICC sensor adjustment, refer to [CCS-87, "ICC Sensor Adjustment"](#).

CAUTIONARY POINT FOR RADAR ALIGNMENT PROCEDURE

CAUTION:

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

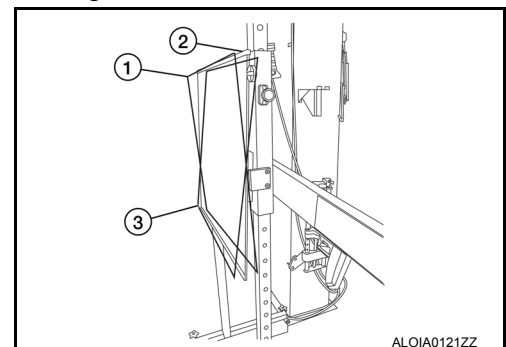
Required Tools

INFOID:000000014170247

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

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

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



ALOIA0121ZZ

ICC SENSOR ALIGNMENT

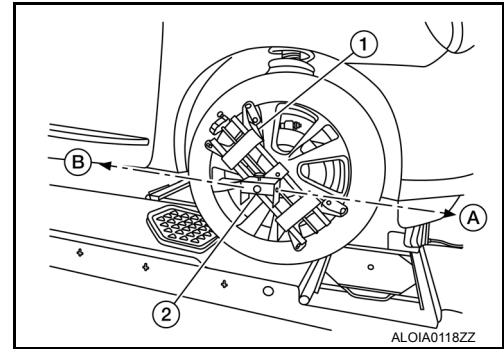
< BASIC INSPECTION >

[ICC]

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

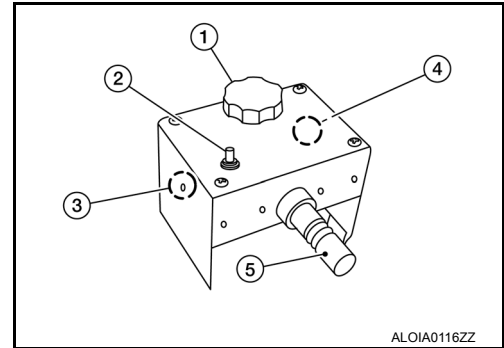
NOTE:

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



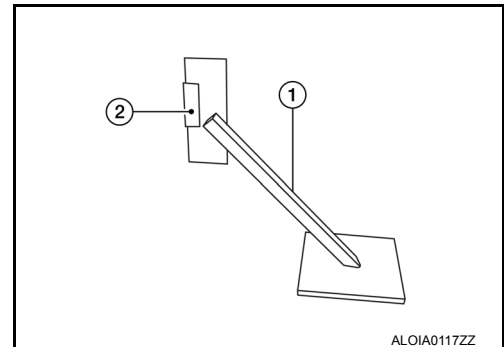
- Laser assembly (with bi-directional laser beam) as shown in the illustration.

- Tightening knob ①
- Power ON/OFF button ②
- Front laser beam opening ③
- Rear laser beam opening ④
- Attaching shaft ⑤

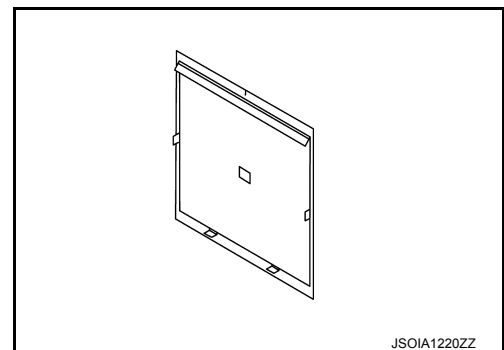


- Stationary target as shown in the illustration.

- Stationary target ①
- Laser signal reception plate ②



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



Preparation

1. ADVANCE PREPARATION FOR RADAR ALIGNMENT PROCEDURE

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

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CCS

INFOID:0000000014170248

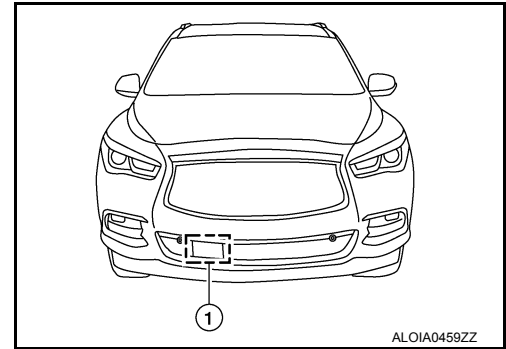
ICC SENSOR ALIGNMENT

[ICC]

< BASIC INSPECTION >

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

>> Refer to [CCS-84. "Vehicle Set Up"](#).



Vehicle Set Up

INFOID:000000014170249

DESCRIPTION

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

CAUTION:

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

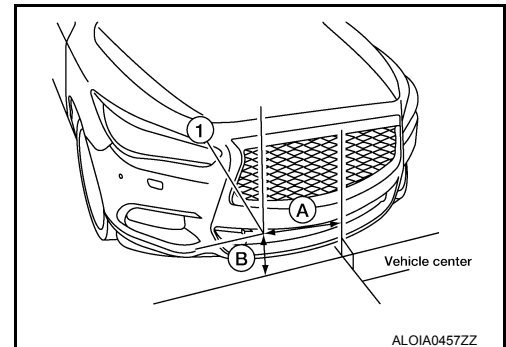
1. PREPOSITION TARGET BOARD

NOTE:

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

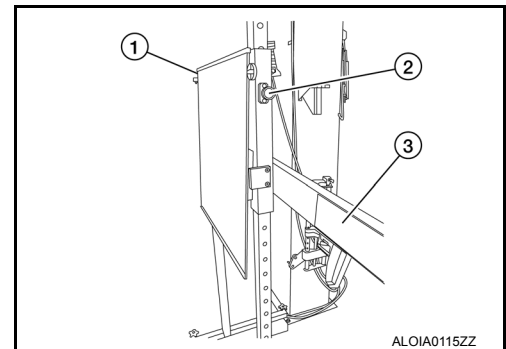
A : 368 mm (14.49 in)

B : 320 mm (12.6 in)



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

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

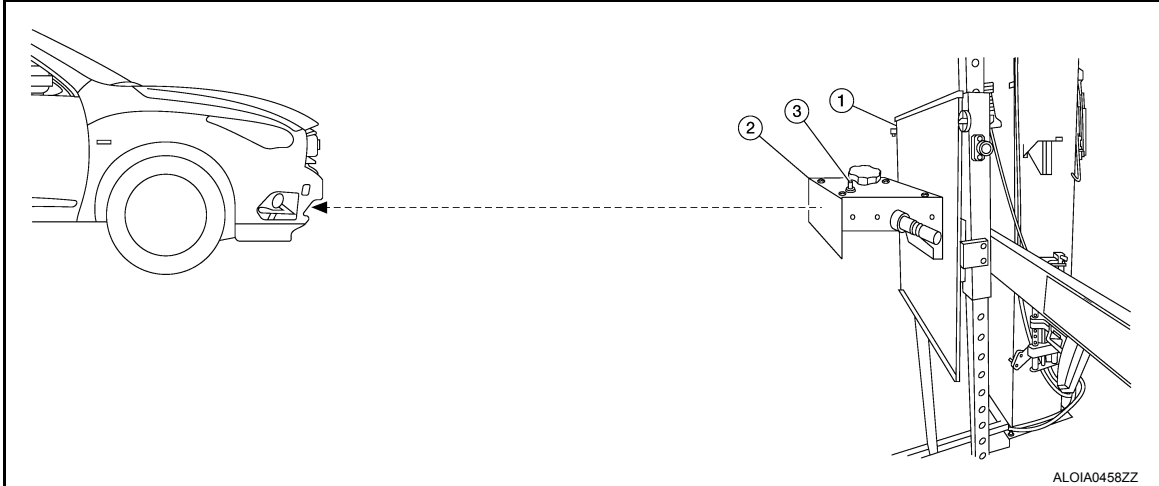


ICC SENSOR ALIGNMENT

< BASIC INSPECTION >

[ICC]

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



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

Are using Hunter alignment equipment?

YES >> Refer to Hunter's equipment instructions for complete vehicle set up and ICC target board setting.
Then, refer to [CCS-87, "ICC Sensor Adjustment"](#).

NO >> GO TO 2.

2. INSTALLING LASER ASSEMBLY

NOTE:

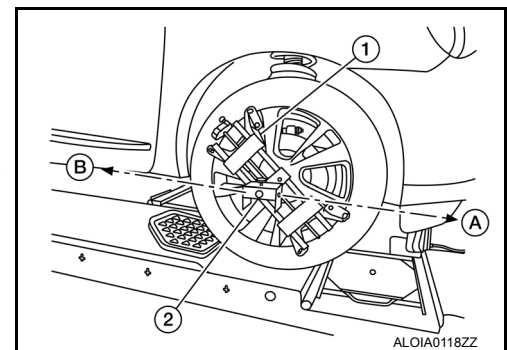
- Insure the steering wheel is positioned in the center straight forward position.
- Insure all 4 vehicle wheels do not contain any physical damage.

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

NOTE:

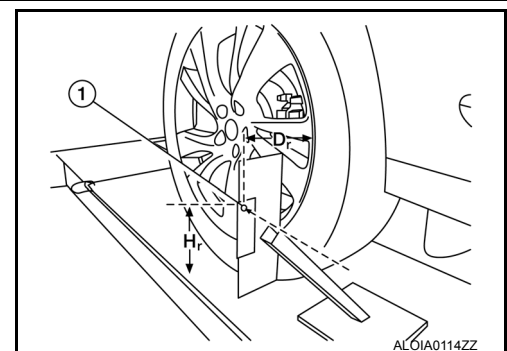
When the power switch is turned ON, the front laser signal ① will be emitted toward the front ICC target board, and the rear laser signal ② will be emitted toward the rear of the vehicle.

>> GO TO 3.



3. SETTING UP STATIONARY TARGET

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



ICC SENSOR ALIGNMENT

[ICC]

< BASIC INSPECTION >

- Turn the laser assembly ON allowing the laser beam to be emitted through the front and rear laser assembly openings.
- 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).
- Measure and record the height (H_r) between the laser beam ① on the stationary target and ground level (vertical line).
- 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).
- Measure and record the height (H_f) between the laser beam signal/opening ① on the laser assembly and ground level (vertical line).

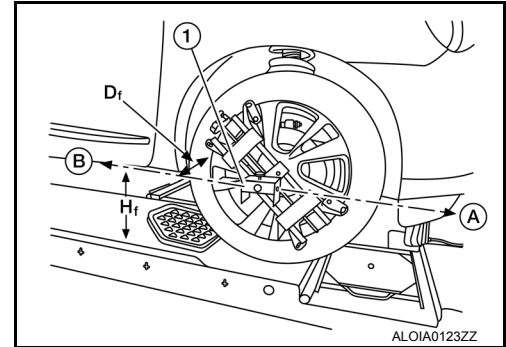
NOTE:

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

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

NOTE:

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



>> Refer to [CCS-86, "Setting The ICC Target Board"](#).

Setting The ICC Target Board

INFOID:0000000014170250

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.

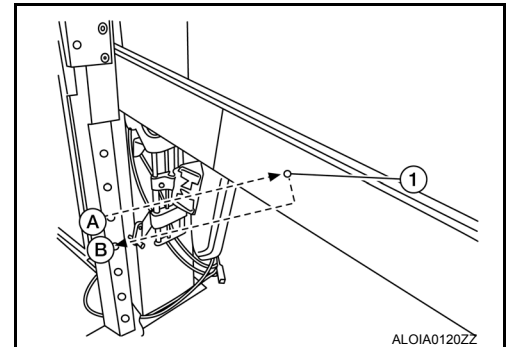
1. ICC TARGET BOARD FINAL SETTING

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

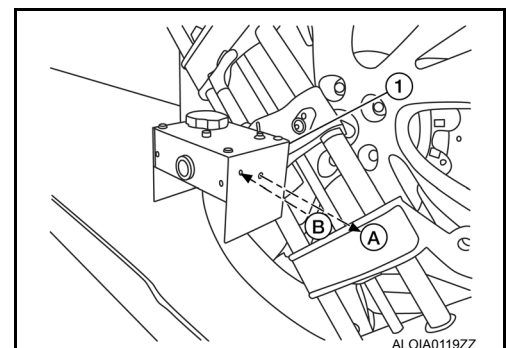
NOTE:

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

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



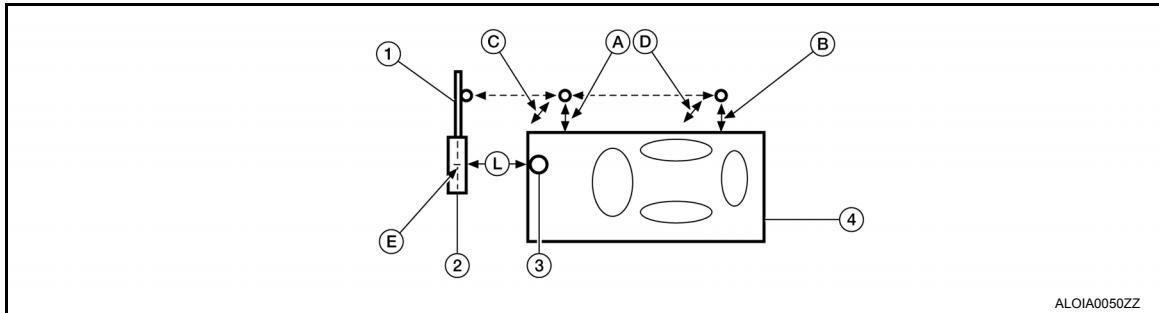
- The figure shown illustrates the laser beam ① emitted by the laser assembly ① and its reflection ② off of the ICC target board arm.



>> GO TO 2.

2. CHECK THE POSITION OF THE ICC TARGET BOARD

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



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

>> Refer to [CCS-87, "ICC Sensor Adjustment"](#).**ICC Sensor Adjustment**

INFOID:0000000014170251

DESCRIPTION

The radar alignment is performed automatically with CONSULT.

CAUTION:

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

1. PERFORM RADAR ALIGNMENT

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

NOTE:

Confirm the following items;

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

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

CAUTION:

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

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

NOTE:

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

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

ICC SENSOR ALIGNMENT

< BASIC INSPECTION >

[ICC]

Displayed item	Possible cause	Service procedure
Alignment condition is not ready.	- DTC is detected. - The position of the ICC target board is not correct. - Vehicle is moving.	Check the vehicle condition and perform radar alignment again.
Alignment condition is not ready. (Stop the vehicle.)	Vehicle is moving.	Stop the vehicle and perform radar alignment again.
Target is not detected.	- A target is not-yet-placed. (The ICC sensor cannot detect target) - The position of the ICC target board is not correct. - The position of the ICC sensor is not correct.	Check the target board condition and perform radar alignment again.
Sensor malfunction.	ICC sensor malfunction.	Check the vehicle condition and perform radar alignment again.

NOTE:

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

8. Confirm displayed value.

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

- Within reference value: Go to 9.

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

NOTE:

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

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

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

CAUTION:

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

>> RADAR ALIGNMENT END

ACTION TEST

Description

INFOID:000000012848281

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:000000012848282

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

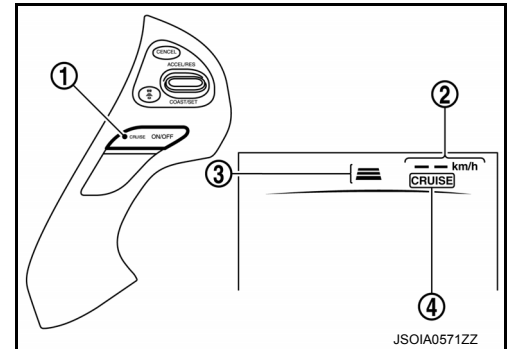
1. Start the engine.
2. Press the MAIN switch (1) (less than 1.5 seconds).

Information display status

Set vehicle speed indicator (2) : " " "km/h" ("MPH")

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)

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NOTE:

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

>> GO TO 3.

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

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

>> GO TO 4.

4.SET CHECKING (1)

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

NOTE:

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

>> GO TO 5.

5.CHECK FOR INCREASE OF CRUISING SPEED (1)

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

NOTE:

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

CAUTION:

Never set the cruise speed exceeding the posted speed limit.

>> GO TO 6.

6.CHECK FOR DECREASE OF CRUISING SPEED (1)

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

NOTE:

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

ACTION TEST

< BASIC INSPECTION >

[ICC]

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

>> GO TO 7.

7.SET CHECKING (2)

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

NOTE:

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

>> GO TO 8.

8.CHECK FOR INCREASE OF CRUISING SPEED (2)

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

NOTE:

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

CAUTION:

Never set the cruise speed exceeding the posted speed limit.

>> GO TO 9.

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

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

NOTE:

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

CAUTION:

The creep occurs because the stop status is not maintained.

>> GO TO 10.

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

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

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

>> GO TO 11.

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:0000000012848283

NOTE:

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

CAUTION:

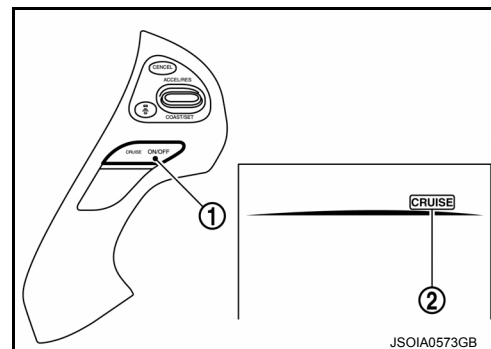
Never set the cruise speed exceeding the posted speed limit.

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.

ACTION TEST

< BASIC INSPECTION >

[ICC]

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

NOTE:

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

>> GO TO 4.

4.CHECK FOR INCREASE OF CRUISING SPEED

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

NOTE:

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

CAUTION:

Never set the cruise speed exceeding the posted speed limit.

>> GO TO 5.

5.CHECK FOR DECREASE OF CRUISING SPEED

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

NOTE:

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

>> GO TO 6.

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

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

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

>> GO TO 7.

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

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

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

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ACTION TEST

< BASIC INSPECTION >

[ICC]

>> Inspection End.

DTC/CIRCUIT DIAGNOSIS**C1A0A CONFIG UNFINISHED****DTC Logic**

INFOID:0000000014225398

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1A0A (41)	CONFIG UNFINISH (Configuration unfinished)	The vehicle specifications of ADAS control unit is incomplete.

POSSIBLE CAUSE

Vehicle specifications for ADAS control unit is incomplete.

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Lane Departure Warning (LDW)
- Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

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

Is "C1A01" detected as the current malfunction?

YES >> Refer to [CCS-95, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225399

1.PERFORM CONFIGURATION OF ADAS CONTROL UNIT

Perform configuration of ADAS control unit when DTC "C1A0A" is detected.

>> Perform configuration of ADAS control unit. Refer to [DAS-66, "Description"](#).

CCS

C1A00 CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A00 CONTROL UNIT

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000014225316

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

ADAS control unit

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Lane Departure Warning (LDW)
- Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

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-96, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000014225317

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 [DAS-40, "DTC Index"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:0000000012848286

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

C1A00 CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

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-97. "ICC SENSOR : Diagnosis Procedure"](#).
NO >> INSPECTION END

ICC SENSOR : Diagnosis Procedure

INFOID:0000000012848287

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-60. "DTC Index"](#).
NO >> Replace the ICC sensor. Refer to [CCS-188. "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:0000000014225318

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1A01 (1)	POWER SUPPLY CIR (Power supply circuit)	The battery voltage sent to ADAS control unit remains less than 7.9 V for 5 seconds
C1A02 (2)	POWER SUPPLY CIR 2 (Power supply circuit 2)	The battery voltage sent to ADAS control unit remains more than 19.3 V for 5 seconds

POSSIBLE CAUSE

- Connector, harness, fuse
- ADAS control unit

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Lane Departure Warning (LDW)
- Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

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-98. "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-50. "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000012848290

1.CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to [CCS-170. "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to [DAS-170. "Removal and Installation"](#).

NO >> Repair or replace the malfunctioning parts.

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:0000000012848290

DTC DETECTION LOGIC

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

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?

- YES >> Refer to [CCS-99. "ICC SENSOR : Diagnosis Procedure"](#).
NO >> Refer to [GI-50. "Intermittent Incident"](#).

ICC SENSOR : Diagnosis Procedure

INFOID:0000000012848291

1.CHECK ICC SENSOR POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ICC sensor. Refer to [CCS-170. "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace the ICC sensor. Refer to [CCS-188. "Removal and Installation"](#).
NO >> Repair or replace the malfunctioning parts.

CCS

C1A03 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A03 VEHICLE SPEED SENSOR

DTC Logic

INFOID:0000000014225320

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1A03 (3)	VHCL SPEED SE CIRC (Vehicle speed sensor circuit)	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

POSSIBLE CAUSE

- Wheel speed sensor
- ABS actuator and electric unit (control unit)
- Vehicle speed sensor CVT (output speed sensor)
- TCM
- ADAS control unit

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Lane Departure Warning (LDW)
- Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1. CHECK DTC PRIORITY

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

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
- U1000: Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#)
 - C1A04: Refer to [CCS-102, "DTC Logic"](#)

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. 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-101, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

C1A03 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

Diagnosis Procedure

INFOID:0000000014225321

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.

- U1000: Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#)
- C1A04: Refer to [CCS-102, "DTC Logic"](#)

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-170, "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".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-64, "DTC Index"](#) (RE0F10E) or [TM-291, "DTC Index"](#) (RE0F10J).

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-47, "DTC Index"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

C1A04 ABS/TCS/VDC SYSTEM

DTC Logic

INFOID:0000000014225322

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1A04 (4)	ABS/TCS/VDC CIRC (ABS/TCS/VDC circuit)	If a malfunction occurs in the VDC/TCS/ABS system

POSSIBLE CAUSE

ABS actuator and electric unit (control unit)

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Lane Departure Warning (LDW)
- Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "C1A04" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A04" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A04" detected as the current malfunction?

- YES >> Refer to [CCS-102, "Diagnosis Procedure"](#).
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
 NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225323

1.CHECK DTC PRIORITY

If DTC "C1A04" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-47, "DTC Index"](#).

C1A04 ABS/TCS/VDC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

NO >> Replace the ADAS control unit. Refer to [DAS-170. "Removal and Installation"](#).

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C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A05 BRAKE SW/STOP LAMP SW

DTC Logic

INFOID:0000000014225324

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1A05 (5)	BRAKE SW/STOP L SW (Brake switch/Stop lamp switch)	A mismatch between a stop lamp switch signal and a brake pedal position 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

POSSIBLE CAUSE

- Stop lamp switch circuit
- Brake pedal position switch circuit
- Stop lamp switch
- Brake pedal position switch
- Incorrect stop lamp switch installation
- Incorrect brake pedal position switch installation
- ECM
- ABS actuator and electric unit (control unit)

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "C1A05" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A05" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A05" detected as the current malfunction?

- YES >> Refer to [CCS-104, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225325

Regarding Wiring Diagram information, refer to [DAS-43, "Wiring Diagram"](#).

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".

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH AND BRAKE PEDAL POSITION 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 BRAKE PEDAL POSITION SWITCH INSTALLATION

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

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Adjust brake pedal position switch installation. Refer to [BR-13, "Adjustment"](#).

5.BRAKE PEDAL POSITION SWITCH INSPECTION

1. Disconnect brake pedal position switch connector.
2. Check brake pedal position switch. Refer to [DAS-79, "Component Inspection \(Brake Pedal Position Switch\)"](#).

Is the inspection result normal?

- YES >> GO TO 6.
NO >> Replace brake pedal position switch.

6.CHECK BRAKE PEDAL POSITION SWITCH POWER SUPPLY CIRCUIT

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

Terminals			Voltage (Approx.)
(+)		(-)	
Brake pedal position switch			
Connector	Terminal	Ground	
E72	1		
			Battery voltage

Is the inspection result normal?

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

7.CHECK HARNESS BETWEEN BRAKE PEDAL POSITION SWITCH AND ECM

1. Turn ignition switch OFF
2. Disconnect ECM connector.
3. Check for continuity between brake pedal position switch harness connector and ECM harness connector.
For Mexico

Brake pedal position switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E72	2	E16	126	Yes

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

Except for Mexico

Brake pedal position switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E72	2	E32	140	Yes

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

Brake pedal position switch		Ground	Continuity
Connector	Terminal		
E72	2		No

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-112, "DTC Index"](#) (except for Mexico) or [EC-654, "DTC Index"](#) (for Mexico).

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-170, "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-13, "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.

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	
Connector	Terminal		
E38	1		
	3		
			Battery voltage

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair the harnesses or connectors.

12.CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ECM

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

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.
For Mexico

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

Except for Mexico

Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E38	2	E32	139	Yes

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

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E38	2		No

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	7	Yes

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

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E38	4		No

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair the harnesses or connectors.

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-112, "DTC Index"](#) (except for Mexico) or [EC-654, "DTC Index"](#) (for Mexico).

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-47, "DTC Index"](#).

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

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-170. "Removal and Installation"](#).

Component Inspection (Brake Pedal Position Switch)

INFOID:0000000014225326

1.CHECK BRAKE PEDAL POSITION SWITCH

Check for continuity between brake pedal position switch terminals.

Terminal		Condition	Continuity
1	2	When brake pedal is depressed	No
		When brake pedal is released	Yes

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace brake pedal position switch. Refer to [BR-20. "Exploded View"](#).

Component Inspection (Stop Lamp Switch)

INFOID:0000000014225327

1.CHECK STOP LAMP SWITCH

Check for continuity between stop lamp switch terminals.

Terminal		Condition	Continuity
1	2	When brake pedal is depressed	Yes
		When brake pedal is released	No
3	4	When brake pedal is depressed	Yes
		When brake pedal is released	No

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace stop lamp switch. Refer to [BR-20. "Exploded View"](#).

C1A06 OPERATION SW

DTC Logic

INFOID:0000000014225330

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A06 (6)	OPERATION SW CIRC	- 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	- 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-155, "ICC SENSOR : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Wait for approximately 5 minutes after turning the MAIN switch of ICC system ON.
- Perform "All DTC Reading" with CONSULT.
- 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-50, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:0000000014225331

Regarding Wiring Diagram information, refer to [CCS-64, "Wiring Diagram"](#).

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-155, "ICC SENSOR : DTC Logic"](#).
 NO >> GO TO 2.

2.CHECK ICC STEERING SWITCH

- Turn the ignition switch OFF.
- Disconnect the ICC steering switch connector.
- 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

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

Spiral cable		ECM		Continuity
Connector	Terminal	Connector	Terminal	

C1A06 OPERATION SW

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

M30	25	E16 (for Mexico)	101	Yes
	32		108	
	25	E32 (except for Mexico)	134	
	32		135	

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

Spiral cable		Ground	Continuity
Connector	Terminal		
M30	25		No
	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	Yes
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-112, "DTC Index"](#) (except for Mexico) or [EC-654, "DTC Index"](#) (for Mexico).

NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

Component Inspection

INFOID:0000000014225332

1.CHECK ICC STEERING SWITCH

Check resistance between ICC steering switch terminals.

Terminal	Switch operation	Resistance [Ω]
13	16	When pressing MAIN switch
		When pressing dynamic driver assistance switch
		When pressing CANCEL switch
		When pressing DISTANCE switch
		When pressing SET/COAST switch
		When pressing RESUME/ACCELERATE switch
		When all switches are not pressed

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace the ICC steering switch. Refer to [CCS-190, "Removal and Installation"](#).

C1A07 CVT

DTC Logic

INFOID:0000000014170305

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1A07 (7)	CVT MSG CIRCUIT (CVT msg circuit)	If ICC sensor detects an error signal that is received from TCM via CAN communication

POSSIBLE CAUSE

TCM

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Select "Self Diagnostic Result" mode of "LASER/RADAR".
4. Check if the "C1A07" is detected as the current malfunction in "Self Diagnostic Result" mode of "LASER/RADAR".

Is "C1A07" detected as the current malfunction?

- YES >> Refer to [CCS-111, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-50, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:0000000014170306

1.CHECK ICC SENSOR SELF-DIAGNOSIS RESULT

Check if "U1000" is also detected with "C1A07" in "Self Diagnostic Result" mode of "LASER/RADAR".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
 Refer to [CCS-157, "ICC SENSOR : Description"](#).
 NO >> GO TO 2.

2.CHECK TCM SELF DIAGNOSTIC RESULTS

CONSULT

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-64, "DTC Index"](#) (RE0F10E). or [TM-291, "DTC Index"](#) (RE0F10J)
 NO >> Replace the ICC sensor. Refer to [CCS-188, "Removal and Installation"](#).

CCS

C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A13 STOP LAMP RELAY

DTC Logic

INFOID:0000000013638744

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A13 (13)	STOP LAMP RLY FIX	- Stop lamp inactive state continues for 0.3 seconds or more despite the outputting of an ICC sensor ICC brake hold relay drive signal - The stop lamp remains ON for 60 seconds or more under the following conditions: - Driving at 40 km/h or more - No stop lamp drive signal output from ICC sensor - No brake operation	- Stop lamp switch circuit - Brake pedal position switch circuit - ICC brake hold relay circuit - Stop lamp switch - Brake pedal position switch - ICC brake hold relay - Incorrect stop lamp switch installation - Incorrect brake pedal position switch installation - ECM - ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A13" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-155, "ICC SENSOR : 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-112, "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-112, "Diagnosis Procedure"](#).

NO >> Refer to [GI-50, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:0000000013638745

Regarding Wiring Diagram information, refer to [EXL-72, "Wiring Diagram"](#).

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" detected?

C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-155, "ICC SENSOR : DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH

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

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-13, "Adjustment"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Adjust stop lamp switch installation. Refer to [BR-13, "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.
For Mexico

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

Except for Mexico

Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E38	2	E32	139	Yes

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

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E38	2		No

Is the inspection result normal?

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

C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

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-117, "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 9.

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-112, "DTC Index"](#) (except for Mexico) or [EC-654, "DTC Index"](#) (for Mexico).

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-170, "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	17	Yes

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

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E75	1		No

Is the inspection result normal?

YES >> GO TO 12.

C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

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.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ADAS control unit		Active Test item "STOP LAMP"	
Connector	Terminal		
B104	17	Off	Battery voltage
		On	0 V

Is the inspection result normal?

YES >> GO TO 13.

NO >> Replace ADAS control unit. Refer to [DAS-170. "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	
Connector	Terminal		
E75	5		Battery voltage

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.
For Mexico

ICC brake hold relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E75	3	E16	122	Yes

Except for Mexico

ICC brake hold relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E75	3	E32	139	Yes

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

C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E75	3		No

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-117. "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".

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-13. "Adjustment"](#).

Is the inspection result normal?

YES >> GO TO 18.

NO >> Adjust stop lamp switch installation. Refer to [BR-13. "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			
Connector	Terminal	Ground	Battery voltage
E38	3		

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.

C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

Stop lamp switch		ABS actuator and electric unit (control unit)		Continuity
Connector	Terminal	Connector	Terminal	
E38	4	E125	7	Yes

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

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E38	4		No

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.
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-112. "DTC Index"](#) (except for Mexico) or [EC-654. "DTC Index"](#) (for Mexico).

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-47. "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-170. "Removal and Installation"](#).

Component Inspection

INFOID:0000000013638746

1.CHECK ICC BRAKE HOLD RELAY

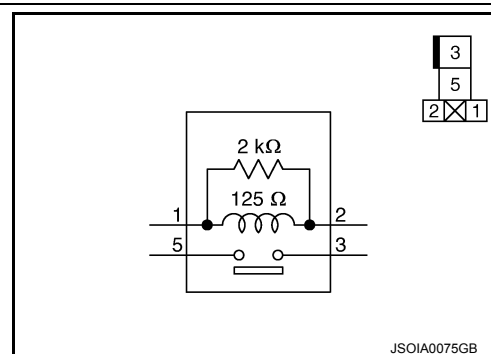
Apply battery voltage to ICC brake hold relay terminals 1 and 2, and then check for continuity under the following conditions.

Terminal		Condition	Continuity
3	5	When the battery voltage is applied	Yes
		When the battery voltage is not applied	No

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace ICC brake hold relay.



C1A14 ECM

DTC Logic

INFOID:0000000013638747

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A14 (14)	ECM CIRCUIT	If ECM is malfunctioning	• 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-155, "ICC SENSOR : Diagnosis 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 "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-118, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-50, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:0000000013638748

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-157, "ICC SENSOR : 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 self-diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-112, "DTC Index"](#) (except for Mexico) or [EC-654, "DTC Index"](#) (for Mexico).
 NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

C1A15 GEAR POSITION

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A15 GEAR POSITION

Description

INFOID:0000000013638749

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:0000000013638750

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	• 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-155, "ICC SENSOR : DTC Logic"](#) for DTC "U1000".
- Refer to [CCS-100, "DTC Logic"](#) for DTC "C1A03".
- Refer to [CCS-102, "Diagnosis Procedure"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA 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-119, "Diagnosis Procedure"](#).
NO >> Refer to [GI-50, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:0000000013638751

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.
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?

- YES >> GO TO 3.

< DTC/CIRCUIT DIAGNOSIS >

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-170, "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-64, "DTC Index"](#) (RE0F10E) or [TM-291, "DTC Index"](#) (RE0F10J).

NO >> Replace the ADAS control unit. Refer to [DAS-170, "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 [CCS-60, "DTC Index"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

C1A23 UNIT LOW TEMP

DTC Logic

INFOID:0000000014267022

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

Temperature around the ICC sensor becomes extremely low or high

FAIL-SAFE

The following systems are canceled.

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is "C1A23" detected as the current malfunction?

- YES >> Refer to [CCS-121, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000014267023

1.CHECK ENVIRONMENT CONDITION

Check ambient temperature.

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

- YES >> Replace the ICC sensor. Refer to [CCS-188, "Removal and Installation"](#).
- NO >> Perform check again at 0°C (32°F) or more.

C1A24 NP RANGE

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A24 NP RANGE

DTC Logic

INFOID:0000000014225334

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1A24 (24)	NP RANGE (NP range)	A mismatch between a shift position signal transmitted from TCM via CAN communication and an current gear position signal continues for 60 seconds or more

POSSIBLE CAUSE

- TCM
- Transmission range switch

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "C1A24" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.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-122, "Diagnosis Procedure"](#).
NO >> GO TO 3.

3.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-122, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225335

1.CHECK DTC PRIORITY

If DTC "C1A24" is displayed with DTC "U1000", first diagnose the DTC "U1000".

C1A24 NP RANGE

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-93, "Diagnosis Procedure"](#).

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?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-64, "DTC Index"](#) (RE0F10E) or [TM-291, "DTC Index"](#) (RE0F10J).
NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

CCS

C1A26 ECD MODE MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A26 ECD MODE MALFUNCTION

DTC Logic

INFOID:0000000014225336

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1A26 (26)	ECD MODE MALF (ECD mode malfunction)	If an abnormal condition occurs with ECD system

POSSIBLE CAUSE

ABS actuator and electric unit (control unit)

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
- U1000: Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#)
 - U0415: Refer to [CCS-150, "ADAS CONTROL UNIT : DTC Logic"](#)
 - U0121: Refer to [CCS-141, "ADAS CONTROL UNIT : DTC Logic"](#)

NO >> GO TO 2.

2.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-124, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225337

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
- U1000: Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#)
 - U0415: Refer to [CCS-150, "ADAS CONTROL UNIT : DTC Logic"](#)
 - U0121: Refer to [CCS-141, "ADAS CONTROL UNIT : DTC Logic"](#)

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".

C1A26 ECD MODE MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-47. "DTC Index"](#).
- NO >> Replace ADAS control unit. Refer to [DAS-170. "Removal and Installation"](#).

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CCS

C1A27 ECD POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A27 ECD POWER SUPPLY CIRCUIT

DTC Logic

INFOID:0000000014225338

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1A27 (27)	ECD PWR SUPPLY CIR (ECD power supply circuit)	ECD system power supply voltage is excessively low

POSSIBLE CAUSE

- ABS actuator and electric unit (control unit) power supply circuit
- ABS actuator and electric unit (control unit)

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.

- U1000: Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#)
- U0415: Refer to [CCS-150, "ADAS CONTROL UNIT : DTC Logic"](#)
- U0121: Refer to [CCS-141, "ADAS CONTROL UNIT : DTC Logic"](#)

NO >> GO TO 2.

2.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-126, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225339

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.

- U1000: Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#)
- U0415: Refer to [CCS-150, "ADAS CONTROL UNIT : DTC Logic"](#)
- U0121: Refer to [CCS-141, "ADAS CONTROL UNIT : DTC Logic"](#)

NO >> GO TO 2.

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

C1A27 ECD POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

Check power supply circuit of ABS actuator and electric unit (control unit). Refer to [BRC-157. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Perform self-diagnosis of ABS actuator and electric unit (control unit). Refer to [BRC-47. "DTC Index"](#).

NO >> Repair the harnesses or connectors.

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CCS

C1A33 CAN TRANSMISSION ERROR

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A33 CAN TRANSMISSION ERROR

DTC Logic

INFOID:0000000014225341

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

ADAS control unit

FAIL-SAFE

The following systems are canceled.

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "C1A33" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "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-128, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225342

1.CHECK DTC PRIORITY

If DTC "C1A33" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.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 [DAS-40, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

C1A34 COMMAND ERROR

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A34 COMMAND ERROR

DTC Logic

INFOID:0000000014225343

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

ADAS control unit

FAIL-SAFE

The following systems are canceled.

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "C1A34" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.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-129, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225344

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-154, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

C1A35 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A35 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:0000000014225345

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

Accelerator pedal actuator

FAIL-SAFE

The following systems are canceled.

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "C1A35" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> GO TO 2.

2.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 >> Refer to [CCS-130, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225346

1.CHECK DTC PRIORITY

If DTC "C1A35" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-271, "DTC Index"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

C1A36 ACCELERATOR PEDAL ACTUATOR CAN COMM

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A36 ACCELERATOR PEDAL ACTUATOR CAN COMM

DTC Logic

INFOID:000000014225347

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1A36 (36)	APA CAN COMM CIR (Accelerator pedal actuator CAN circuit)	If an error occurs in the signal that the accelerator pedal actuator transmits via ITS communication

POSSIBLE CAUSE

- ADAS control unit
- Accelerator pedal actuator
- ITS communication system

FAIL-SAFE

The following systems are canceled.

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "C1A36" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.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-131, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:000000014225348

1.CHECK DTC PRIORITY

If DTC "C1A36" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-271, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

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C1A37 ACCELERATOR PEDAL ACTUATOR CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A37 ACCELERATOR PEDAL ACTUATOR CAN 2

DTC Logic

INFOID:0000000014225349

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1A37 (133)	APA CAN CIR2 (Accelerator pedal actuator CAN circuit2)	If ADAS control unit detects an error signal that is received from accelerator pedal actuator via ITS communication

POSSIBLE CAUSE

Accelerator pedal actuator malfunction

FAIL-SAFE

The following systems are canceled.

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "C1A37" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.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-132, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225350

1.CHECK DTC PRIORITY

If DTC "C1A37" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-170, "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:0000000014225351

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1A38 (132)	APA CAN CIR1 (Accelerator pedal actuator CAN circuit1)	If ADAS control unit detects an error signal that is received from accelerator pedal actuator via ITS communication

POSSIBLE CAUSE

Accelerator pedal actuator malfunction

FAIL-SAFE

The following systems are canceled.

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "C1A38" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.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-133, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225352

1.CHECK DTC PRIORITY

If DTC "C1A38" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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 "C1A38" is detected in self-diagnosis results of "ICC/ADAS".

Is "C1A38" detected?

- YES >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).
NO >> INSPECTION END

C1A39 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1A39 STEERING ANGLE SENSOR

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000014225353

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

Steering angle sensor

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

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

Is "C1A39" detected as the current malfunction?

- YES >> Refer to [CCS-134, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000014225354

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-47, "DTC Index"](#).

C1A39 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:0000000012848347

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-155, "ICC SENSOR : 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 "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-135, "ICC SENSOR : Diagnosis Procedure"](#).

NO >> Refer to [GI-50, "Intermittent Incident"](#).

ICC SENSOR : Diagnosis Procedure

INFOID:0000000012848348

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-155, "ICC SENSOR : 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-47, "DTC Index"](#).

NO >> 1. Perform neutral position adjustment of steering angle sensor. Refer to [BRC-82, "Work Procedure"](#).

2. GO TO 3.

3.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "C1A39" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A39" detected?

YES >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

NO >> Inspection End.

C1B82 DISTANCE SENSOR OFF-CENTER

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1B82 DISTANCE SENSOR OFF-CENTER

DTC Logic

INFOID:0000000014225400

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1B82 (12)	DIST SEN OFF-CENTER (Distance sensor off-center)	ICC sensor is off the alignment point

POSSIBLE CAUSE

Radar alignment is off the aiming point

FAIL-SAFE

The following systems are canceled.

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B82" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B82" detected as the current malfunction?

- YES >> Refer to [CCS-136, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225401

1.CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "C1B82" is detected as the current malfunction in "Self Diagnostic Result" of "LASER/RADAR".

Is "C1B82" detected?

- YES >> Refer to [CCS-136, "DTC Logic"](#).
NO >> GO TO 2.

2.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if the "C1B82" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B82" detected?

- YES >> Replace ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).
NO >> INSPECTION END

C1B83 DISTANCE SENSOR BLOCKED

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1B83 DISTANCE SENSOR BLOCKED

DTC Logic

INFOID:0000000014170307

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1B83 (16)	DIST SEN BLOCKED (Distance sensor blocked)	If ICC sensor is malfunctioning

POSSIBLE CAUSE

ICC sensor

FAIL-SAFE

The following systems are canceled.

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B84" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B84" detected as the current malfunction?

- YES >> Refer to [CCS-137, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014170308

1.CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if "U1000" is detected other than "C1B84" in "Self Diagnostic Result" of "LASER/RADAR".

Is "" detected?

- YES >> Perform the CAN communication system inspection. Refer to [CCS-155, "ICC SENSOR : DTC Logic"](#).
NO >> GO TO 2.

2.CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-60, "DTC Index"](#).
NO >> Replace ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

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CCS

C1F01 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1F01 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:0000000014225355

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

Accelerator pedal actuator integrated motor malfunction

FAIL-SAFE

The following systems are canceled.

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. 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-138, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225356

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-154, "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-271, "DTC Index"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

C1F02 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1F02 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:0000000014225357

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

Accelerator pedal actuator integrated control unit malfunction

FAIL-SAFE

The following systems are canceled.

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
 2. Turn the 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-139, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225358

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-154, "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-271, "DTC Index"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT

DTC Logic

INFOID:0000000014225359

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1F05 (95)	APA PWR SUPPLY CIR (Accelerator pedal actuator power supply circuit)	The battery voltage sent to accelerator pedal actuator remains less than 7.9 V or more than 19.3 V for 5 seconds

POSSIBLE CAUSE

- Harness, connector, or fuse
- Accelerator pedal actuator

FAIL-SAFE

The following systems are canceled.

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the 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-140, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225360

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-154, "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-271, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

U0121 VDC CAN 2

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000014225361

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
U0121 (127)	VDC CAN CIR2 (VDC CAN circuit2)	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication

POSSIBLE CAUSE

ABS actuator and electric unit (control unit)

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

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

Is "U0121" detected as the current malfunction?

- YES >> Refer to [CCS-141, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
 NO-2 >> Confirmation after repair: INSPECTION END

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000014225362

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-47, "DTC Index"](#).

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< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the ADAS control unit. Refer to [DAS-170. "Removal and Installation"](#).

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:0000000012848363

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-155. "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 "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-142. "ICC SENSOR : Diagnosis Procedure"](#).

NO >> Refer to [GI-50. "Intermittent Incident"](#).

ICC SENSOR : Diagnosis Procedure

INFOID:0000000012848364

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-155. "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-60. "DTC Index"](#).

NO >> Replace the ICC sensor. Refer to [CCS-188. "Removal and Installation"](#).

U0126 STRG SEN CAN 1

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000014225366

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
U0126 (130)	STRG SEN CAN CIR1 (Steering sensor CAN circuit1)	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication

POSSIBLE CAUSE

Steering angle sensor

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "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-143, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000014225367

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-47, "DTC Index"](#).

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U0126 STRG SEN CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000013638794

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-155, "ICC SENSOR : 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 "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-144, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

NO >> Refer to [GI-50, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000013638795

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-155, "ICC SENSOR : 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-47, "DTC Index"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:0000000012848367

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-155, "ICC SENSOR : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

U0126 STRG SEN CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

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-145, "ICC SENSOR : Diagnosis Procedure"](#).
NO >> Refer to [GI-50, "Intermittent Incident"](#).

ICC SENSOR : Diagnosis Procedure

INFOID:0000000012848368

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-155, "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-60, "DTC Index"](#).
NO >> Replace the ICC sensor. Refer to [CCS-188, "Removal and Installation"](#).

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U0235 ICC SENSOR CAN 1

DTC Logic

INFOID:0000000012848369

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-155, "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-146, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-50, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:0000000012848370

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-155, "ICC SENSOR : 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-60, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

U0401 ECM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U0401 ECM CAN 1

DTC Logic

INFOID:0000000014225368

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
U0401 (120)	ECM CAN CIR1 (ECM CAN circuit1)	If ADAS control unit detects an error signal that is received from ECM via CAN communication

POSSIBLE CAUSE

ECM

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "U0401" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "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-147, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225369

1.CHECK DTC PRIORITY

If DTC "U0401" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-654, "DTC Index"](#) (for Mexico) or [EC-112, "DTC Index"](#) (except for Mexico).
NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

U0402 TCM CAN 1

DTC Logic

INFOID:0000000014225370

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
U0402 (122)	TCM CAN CIRC1 (TCM CAN circuit1)	If ADAS control unit detects an error signal that is received from TCM via CAN communication

POSSIBLE CAUSE

TCM

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Lane Departure Warning (LDW)
- Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "U0402" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "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-148, "Diagnosis Procedure"](#).
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
 NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225371

1.CHECK DTC PRIORITY

If DTC "U0402" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-64, "DTC Index"](#) (RE0F10E) or [TM-291, "DTC Index"](#) (RE0F10J).

NO >> Replace the ADAS control unit. Refer to [DAS-170. "Removal and Installation"](#).

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< DTC/CIRCUIT DIAGNOSIS >

U0415 VDC CAN 1

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000014225372

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
U0415 (126)	VDC CAN CIR1 (VDC CAN circuit1)	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication

POSSIBLE CAUSE

ABS actuator and electric unit (control unit)

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Lane Departure Warning (LDW)
- Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

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

Is "U0415" detected as the current malfunction?

- YES >> Refer to [CCS-150, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
 NO-2 >> Confirmation after repair: INSPECTION END

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000014225373

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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?

U0415 VDC CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-47, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:0000000014170311

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-155, "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 "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-151, "ICC SENSOR : Diagnosis Procedure"](#).
- NO >> Refer to [GI-50, "Intermittent Incident"](#).

ICC SENSOR : Diagnosis Procedure

INFOID:0000000014170312

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-155, "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-60, "DTC Index"](#).
- NO >> Replace the ICC sensor. Refer to [CCS-188, "Removal and Installation"](#).

CCS

< DTC/CIRCUIT DIAGNOSIS >

U0428 STRG SEN CAN 2

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000014225374

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
U0428 (131)	STRG SEN CAN CIR2 (Steering sensor CAN circuit2)	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication

POSSIBLE CAUSE

Steering angle sensor

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

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

Is "U0428" detected as the current malfunction?YES >> Refer to [CCS-152, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000014225375

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-47, "DTC Index"](#).

U0428 STRG SEN CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

ICC SENSOR

ICC SENSOR : DTC Logic

INFOID:0000000012848383

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-155, "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 "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-153, "ICC SENSOR : Diagnosis Procedure"](#).
NO >> Refer to [GI-50, "Intermittent Incident"](#).

ICC SENSOR : Diagnosis Procedure

INFOID:0000000012848384

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-155, "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-60, "DTC Index"](#).
NO >> Replace the ICC sensor. Refer to [CCS-188, "Removal and Installation"](#).

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CCS

U1000 CAN COMM CIRCUIT

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:0000000014225377

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-49. "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.

CHASSIS COMMUNICATION

- Chassis 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.
- Chassis communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000014225378

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
U1000 (100)	CAN COMM CIRCUIT (CAN communication circuit)	If ADAS control unit is not transmitting or receiving CAN communication signal or ITS communication signal or chassis communication signal for 2 seconds or more

NOTE:

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

POSSIBLE CAUSE

- CAN communication system
- ITS communication system
- Chassis communication system

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

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.

DTC CONFIRMATION PROCEDURE

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is "U1000" detected as the current malfunction?

YES >> Refer to [CCS-147, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000014225379

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-28, "Trouble Diagnosis Flow Chart"](#).

NO >> INSPECTION END

ICC SENSOR

ICC SENSOR : Description

INFOID:0000000012848388

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:0000000012848389

DTC DETECTION LOGIC

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:0000000012848390

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-28, "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-50, "Intermittent Incident"](#).

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U1010 CONTROL UNIT (CAN)

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:0000000014225380

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

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000014225381

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

ADAS control unit

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Lane Departure Warning (LDW)
- Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is "U1000" detected as the current malfunction?

- YES >> Refer to [CCS-156, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000014225382

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-170, "Removal and Installation"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

ICC SENSOR

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

ICC SENSOR : Description

INFOID:0000000012848394

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

ICC SENSOR : DTC Logic

INFOID:0000000012848395

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:0000000012848396

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-188, "Removal and Installation"](#).
NO >> Inspection End.

CCS

< DTC/CIRCUIT DIAGNOSIS >

U150B ECM CAN 3

DTC Logic

INFOID:0000000014225383

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

ECM

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Lane Departure Warning (LDW)
- Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "U0150B" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "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-158, "Diagnosis Procedure"](#).NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225384

1.CHECK DTC PRIORITY

If DTC "U0150B" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-654, "DTC Index"](#) (for Mexico) or [EC-112, "DTC Index"](#) (except for Mexico).

U150B ECM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

NO >> Replace the ADAS control unit. Refer to [DAS-170. "Removal and Installation"](#).

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U150C VDC CAN 3

DTC Logic

INFOID:0000000014225385

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

ABS actuator and electric unit (control unit)

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Lane Departure Warning (LDW)
- Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "U0150C" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "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-160, "Diagnosis Procedure"](#).
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
 NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225386

1.CHECK DTC PRIORITY

If DTC "U0150C" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-47, "DTC Index"](#).

U150C VDC CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

NO >> Replace the ADAS control unit. Refer to [DAS-170. "Removal and Installation"](#).

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U150D TCM CAN 3

DTC Logic

INFOID:0000000014225387

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

TCM

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Lane Departure Warning (LDW)
- Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "U0150D" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "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-162, "Diagnosis Procedure"](#).
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
 NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225388

1.CHECK DTC PRIORITY

If DTC "U0150D" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-64, "DTC Index"](#) (RE0F10E) or [TM-291, "DTC Index"](#) (RE0F10J).

U150D TCM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

NO >> Replace the ADAS control unit. Refer to [DAS-170. "Removal and Installation"](#).

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U150E BCM CAN 3

DTC Logic

INFOID:0000000014225389

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

BCM

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Lane Departure Warning (LDW)
- Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1. CHECK DTC PRIORITY

If DTC "U0150E" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "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-164, "Diagnosis Procedure"](#).
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
 NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225390

1. CHECK DTC PRIORITY

If DTC "U0150E" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-51, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

U1513 METER CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U1513 METER CAN 3

DTC Logic

INFOID:0000000014225391

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

Combination meter

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "U1513" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "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-165, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225392

1.CHECK DTC PRIORITY

If DTC "U1513" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-26, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

U1514 STRG SEN CAN 3

DTC Logic

INFOID:0000000014225393

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
U1514 (164)	STRG SEN CAN CIRC 3 (Steering sensor CAN circuit 3)	ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication

POSSIBLE CAUSE

Steering angle sensor

FAIL-SAFE

The following systems are canceled.

- Vehicle-to-vehicle distance control mode
- Conventional (fixed speed) cruise control mode
- Distance Control Assist (DCA)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)
- Back-up Collision Intervention (BCI)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "U1514" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154. "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "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-166. "Diagnosis Procedure"](#).
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-50. "Intermittent Incident"](#).
 NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014225394

1.CHECK DTC PRIORITY

If DTC "U1514" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-154. "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-47. "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-170. "Removal and Installation"](#).

U1515 ICC SENSOR CAN 3

DTC Logic

INFOID:000000014225395

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
U1515 (165)	ICC SENSOR CAN CIRC 3 (ICC sensor CAN circuit 3)	ADAS control unit detects an error signal that is received from ICC sensor via ITS communication

POSSIBLE CAUSE

ICC sensor

FAIL-SAFE

The following systems are canceled.

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "U1515" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?YES >> Perform diagnosis of applicable. Refer to [CCS-154, "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "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-167, "Diagnosis Procedure"](#).NO-1 >> To check malfunction symptom before repair: Refer to [GI-50, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:000000014225396

1.CHECK DTC PRIORITY

If DTC "U1515" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?YES >> Perform diagnosis of applicable. Refer to [CCS-154, "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-60, "DTC Index"](#).NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

U1517 ACCELERATOR PEDAL ACTUATOR CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

U1517 ACCELERATOR PEDAL ACTUATOR CAN 3

DTC Logic

INFOID:0000000013638822

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-155, "ICC SENSOR : 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 "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-168, "Diagnosis Procedure"](#).
NO >> Refer to [GI-50, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:0000000013638823

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-155, "ICC SENSOR : 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.
NO >> Replace the ADAS control unit. Refer to [DAS-170, "Removal and Installation"](#).

C1B58 DRIVER ASSISTANCE BUZZER

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

C1B58 DRIVER ASSISTANCE BUZZER

DTC Logic

INFOID:0000000014170313

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition
C1B58 (14)	DR ASSIST BUZZER CIRCUIT (Driver assistance buzzer circuit)	ADAS control unit detects that driver assistance buzzer has a malfunction.

POSSIBLE CAUSE

- Driver assistance buzzer
- Driver assistance buzzer control module
- ADAS control unit

FAIL-SAFE

None

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 "C1B58" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

Is "C1B58" detected as the current malfunction?

- YES >> Refer to [CCS-169. "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-50. "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000014170314

1.CHECK DTC PRIORITY

If DTC "C1B58" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [CCS-155. "ICC SENSOR : DTC Logic"](#).
NO >> GO TO 2.

2.CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" mode of "BSW/BUZZER".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts.
NO >> Replace the ADAS control unit. Refer to [DAS-170. "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:0000000014225397

Regarding Wiring Diagram information, refer to [DAS-43. "Wiring Diagram"](#).

1.CHECK FUSES

Check that the following fuse is not blown.

Signal name	Fuse No.
Ignition power supply	30 (10A)

Is the fuse blown?

YES >> Replace the blown fuse after repairing the affected circuit.

NO >> GO TO 2.

2.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	
Connector	Terminal		
B104	12	OFF	0 V
		ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the ADAS control unit power supply circuit.

3.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	5		Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair the ADAS control unit ground circuit.

ICC SENSOR

ICC SENSOR : Diagnosis Procedure

INFOID:0000000012848416

1.CHECK ICC SENSOR POWER SUPPLY CIRCUIT

Check voltage between ICC sensor harness connector and ground.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC]

Terminal				Condition	Standard voltage	Reference voltage (Approx.)
(+)		(−)				
ICC sensor				Ignition switch		
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.

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		Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair the ICC sensor ground circuit.

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CCS

INTELLIGENT CRUISE CONTROL SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[ICC]

SYMPTOM DIAGNOSIS

INTELLIGENT CRUISE CONTROL SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000012848417

Symptoms		Reference page
Operation	MAIN switch does not turn ON	Refer to CCS-173. "Description"
	MAIN switch does not turn OFF	
	ICC system cannot be set (MAIN switch turns ON/OFF)	Refer to CCS-174. "Description"
	CANCEL switch does not function	Refer to CCS-176. "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-177. "Description"
Display/Chime	ICC system display not appear	Refer to MWI-17. "Description"
	Chime does not sound	Refer to CCS-178. "Description"
Control	Driving force is hunting	Refer to CCS-180. "Description"
Function to detect a vehicle ahead	System frequently cannot detect a vehicle ahead	Refer to CCS-181. "Description"
	Distance to detect a vehicle ahead is short	
	System misidentifies a vehicle even though there is no vehicle ahead	- Adjust radar alignment: - Perform ICC system action test. Refer to CCS-89. "Description"
	System misidentifies a vehicle in the next lane	
	System does not detect a vehicle at all	Refer to CCS-183. "Description"

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:0000000012848418

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:0000000012848419

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-26, "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-155, "ICC SENSOR : 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:0000000012848420

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:0000000012848421

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-100, "DTC Logic"](#).

"IGN LOW VOLT">>Refer to [CCS-98, "ICC SENSOR : DTC Logic"](#).

"ECM CIRCUIT">>Refer to [CCS-118, "DTC Logic"](#).

"CAN COMM ERROR">>Refer to [CCS-157, "ICC SENSOR : DTC Logic"](#).

"ICC SENSOR CAN COMM ERR">>Refer to [CCS-155, "ICC SENSOR : DTC Logic"](#).

"ABS/TCS/VDC CIRC">>Refer to [CCS-102, "DTC Logic"](#).

"ECD CIRCUIT">>Refer to [CCS-124, "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-55, "DTC Index"](#) (ICC/ADAS) or [CCS-60, "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-100, "DTC Logic"](#).

"D RANGE SW">>Refer to [CCS-119, "DTC Logic"](#).

"SET/COAST SW">>Refer to [CCS-109, "DTC Logic"](#).

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

< SYMPTOM DIAGNOSIS >

[ICC]

"BRAKE SW">>Refer to [CCS-104, "DTC Logic"](#).

"PKB SW">>Refer to [BRC-160, "Diagnosis Procedure"](#).

5.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-170, "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-89, "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

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CCS

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

[ICC]

< SYMPTOM DIAGNOSIS >

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

Description

INFOID:0000000012848422

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:0000000012848423

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-155, "ICC SENSOR : 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-170, "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-89, "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> Inspection End.

ICC SYSTEM DOES NOT CANCEL WHEN CVT SELECTOR LEVER SETS ON "N" [ICC]

< SYMPTOM DIAGNOSIS >

ICC SYSTEM DOES NOT CANCEL WHEN CVT SELECTOR LEVER SETS ON "N"

Description

INFOID:0000000012848424

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:0000000012848425

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-155, "ICC SENSOR : 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-64, "DTC Index"](#) (RE0F10E) or [TM-291, "DTC Index"](#) (RE0F10J).

>> GO TO 7.

6.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-170, "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-89, "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

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CHIME DOES NOT SOUND

Description

INFOID:0000000012848426

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-181, "Description"](#).)

Diagnosis Procedure

INFOID:0000000012848427

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-170, "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-98, "ICC SENSOR : 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-170, "Removal and Installation"](#).

>> GO TO 8.

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-89, "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

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DRIVING FORCE IS HUNTING

Description

INFOID:0000000012848428

The vehicle causes hunting when the ICC system is active.

Diagnosis Procedure

INFOID:0000000012848429

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-112, "DTC Index"](#) (except for Mexico) or [EC-654, "DTC Index"](#) (for Mexico).

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-181, "Description"](#).
2. Check the ICC sensor for contamination, foreign materials, or cracks. Refer to [CCS-181, "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-89, "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> Inspection End.

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:0000000012848430

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:0000000012848431

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.

3. Perform ICC system action test. Refer to [CCS-89. "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-188. "Removal and Installation"](#).

2. Install the front bumper. Refer to [EXT-17. "Removal and Installation"](#).

3. Adjust the radar alignment.

4. Perform ICC system action test. Refer to [CCS-89. "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-170. "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-89. "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

< SYMPTOM DIAGNOSIS >

[ICC]

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

Description

INFOID:0000000012848432

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

Diagnosis Procedure

INFOID:0000000012848433

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.
3. Perform ICC system action test. Refer to [CCS-89, "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-188, "Removal and Installation"](#).
2. Install the front bumper. Refer to [EXT-17, "Removal and Installation"](#).
3. Adjust the radar alignment.
4. Perform ICC system action test. Refer to [CCS-89, "Description"](#).
5. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> INSPECTION END

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THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

< SYMPTOM DIAGNOSIS >

[ICC]

NO >> GO TO 8.

8.REPLACE ADAS CONTROL UNIT

Replace ADAS control unit. Refer to [DAS-170, "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-89, "Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

NORMAL OPERATING CONDITION

Description

INFOID:0000000012848434

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 same lane.
 - Motorcycles traveling offset in the travel lane.
- As there is a performance limit to the distance control function, never rely solely on the ICC system. This system does not correct careless, inattentive or absent-minded driving, or overcome poor visibility in rain, fog, or other bad weather. Decelerate the vehicle speed by depressing the brake pedal, depending on the distance to the vehicle ahead and the surrounding circumstances in order to maintain a safe distance between vehicles.
- If the vehicle ahead comes to a stop, the vehicle decelerates to a standstill within the limitations of the system. The system will cancel once it judges that the vehicle has come to a standstill and sound a warning chime. To prevent the vehicle from moving, the driver must depress the brake pedal.
- The system may not detect the vehicle in front of the driver in certain road or weather conditions. To avoid accidents, never use the ICC system under the following conditions:
 - On roads where the traffic is heavy or there are sharp curves.
 - On slippery road surfaces such as on ice or snow, etc.
 - During bad weather (rain, fog, snow, etc.)
 - When rain, snow or dirt adhere to the 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.

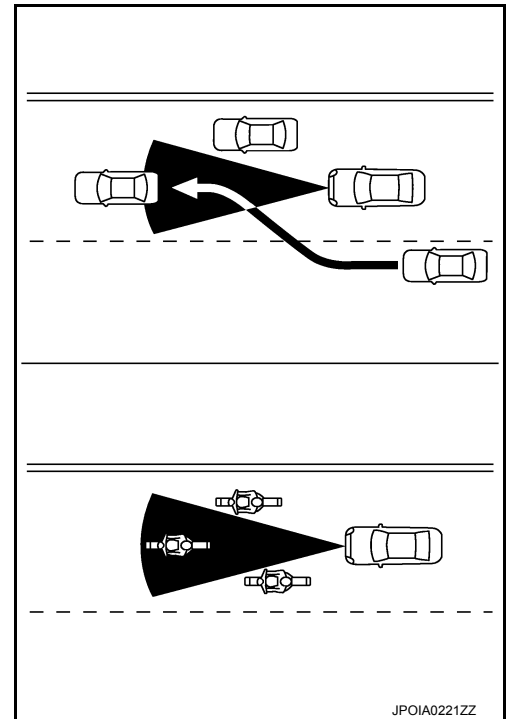
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NORMAL OPERATING CONDITION

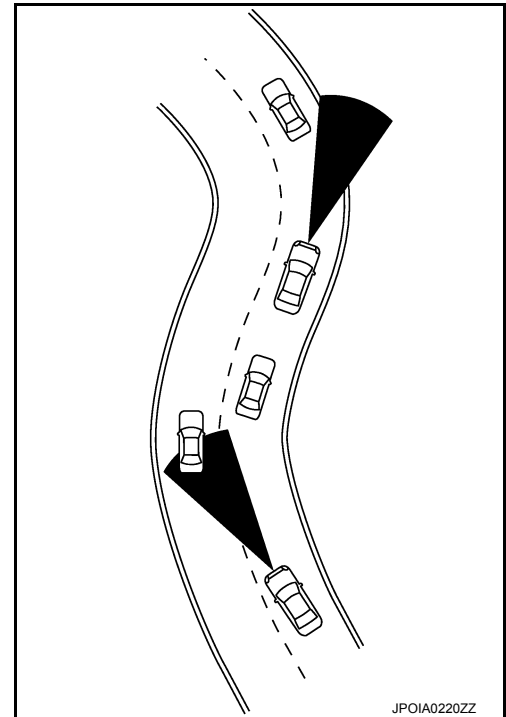
< SYMPTOM DIAGNOSIS >

[ICC]

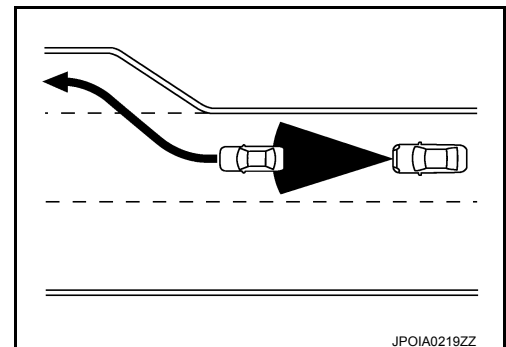
- The detection zone of the ICC sensor is limited. A vehicle ahead must be in the detection zone for the vehicle-to-vehicle distance detection mode to maintain the selected distance from the vehicle ahead. A vehicle ahead may move outside of the detection zone due to its position within the same lane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



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



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



NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[ICC]

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

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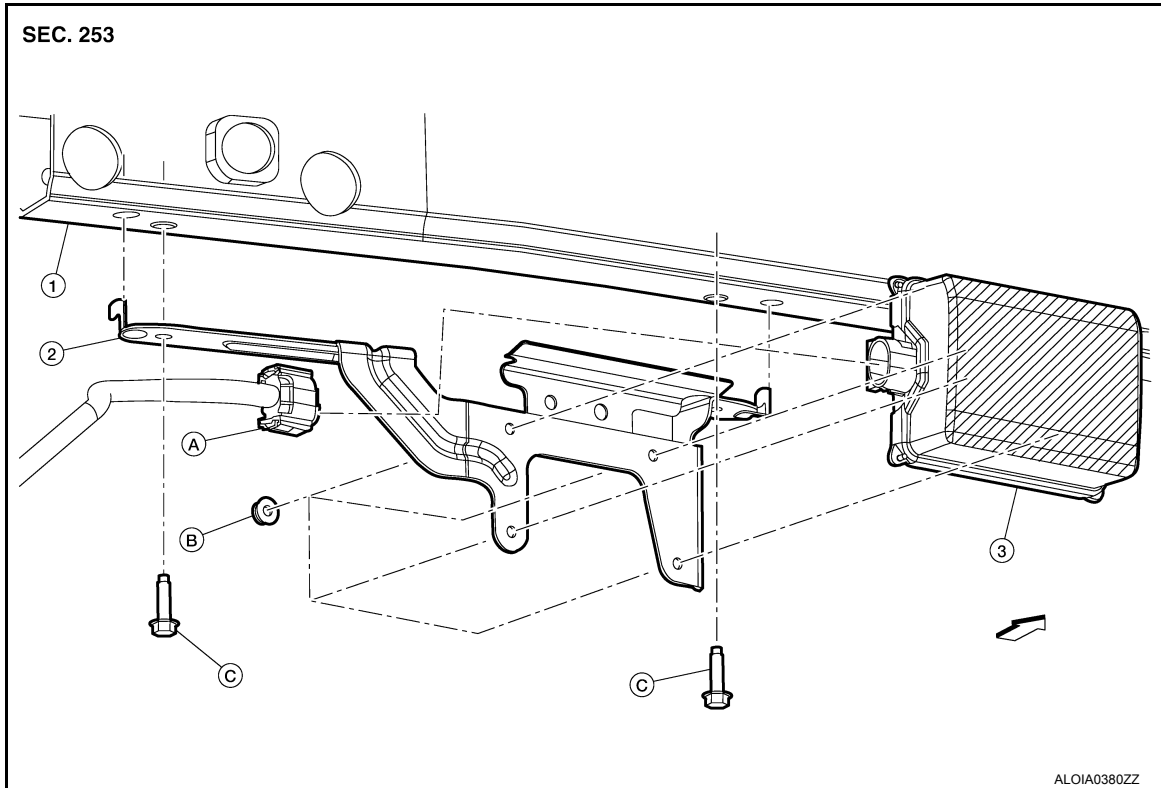
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REMOVAL AND INSTALLATION

ICC SENSOR

Exploded View

INFOID:000000012848435



- | | | |
|---------------------------------|---------------------------|---------------------------|
| 1. Front bumper reinforcement | 2. ICC sensor bracket | 3. ICC sensor |
| A. ICC sensor harness connector | B. Refer to INSTALLATION. | C. Refer to INSTALLATION. |

⇐ Front

Removal and Installation

INFOID:000000012848436

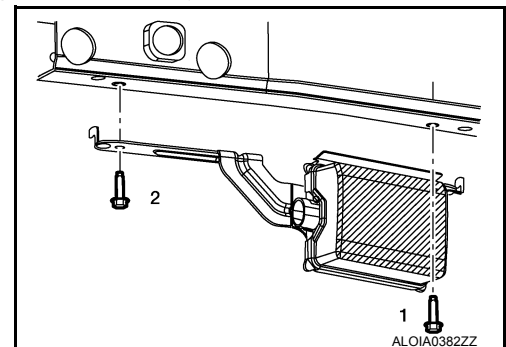
REMOVAL

1. Remove front bumper fascia. Refer to [EXT-17. "Removal and Installation"](#).
2. Disconnect harness connector from ICC sensor.
3. Remove ICC sensor nuts and remove ICC sensor.
4. Remove bolts and remove ICC sensor bracket (if necessary).

INSTALLATION

1. Install ICC sensor bracket and ICC sensor bracket bolts finger-tight (if necessary).
2. Tighten ICC sensor bracket bolts to the specified torque in the sequence shown.

**ICC sensor
bracket bolts** : 10.0 N·m (1.0 kg-m, 7 ft-lb)



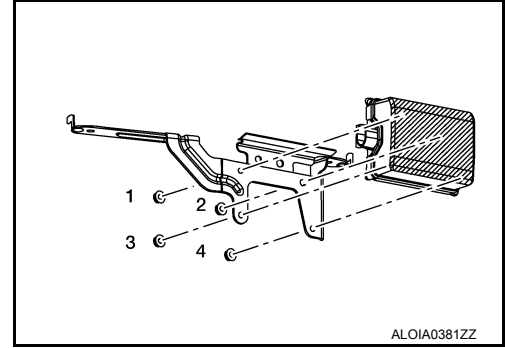
ICC SENSOR

< REMOVAL AND INSTALLATION >

[ICC]

3. Install ICC sensor and ICC sensor nuts finger-tight.
4. Tighten ICC sensor nuts to the specified torque in the sequence shown.

ICC sensor bolts : 5.5 N·m (0.56 kg-m, 49 in-lb)



5. Installation of the remaining components is in the reverse order of removal.

CAUTION:

- Always perform ICC sensor alignment and check operation after removal, installation or replacement of ICC sensor. Refer to [CCS-81, "Description"](#).
- Do not drop or shock ICC sensor.
- Make sure ICC sensor harness is installed without any twists.

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ICC STEERING SWITCH

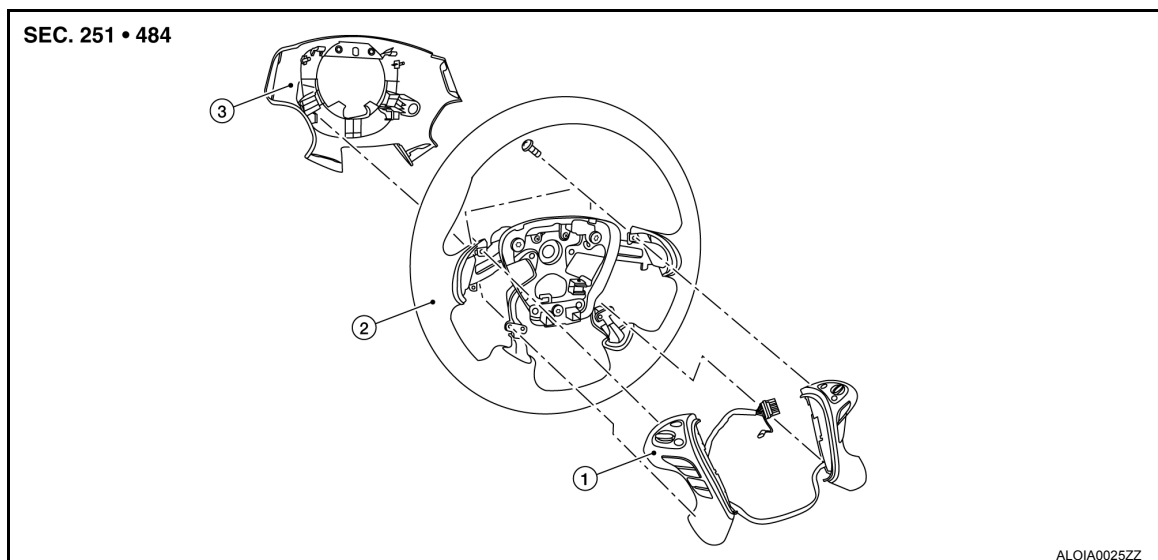
< REMOVAL AND INSTALLATION >

[ICC]

ICC STEERING SWITCH

Exploded View

INFOID:000000012848437



1. ICC steering switch

2. Steering wheel

3. Steering wheel rear finisher

Removal and Installation

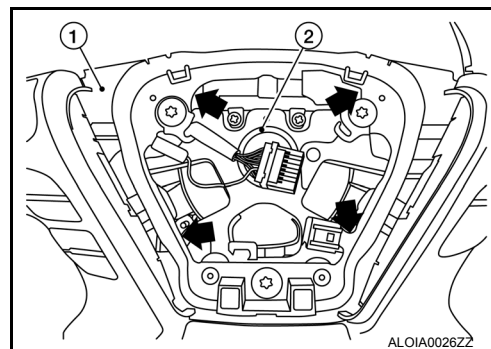
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REMOVAL

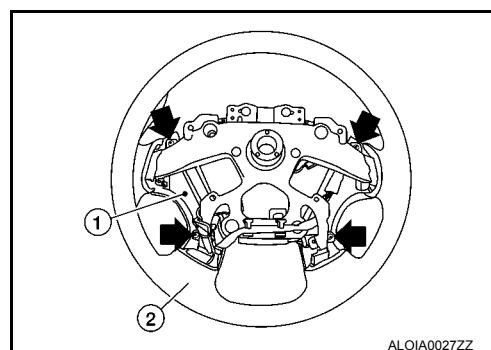
NOTE:

The ICC steering and audio switches are serviced as an assembly.

1. Remove steering wheel. Refer to [ST-50. "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 ICC sensor or repairing any ICC system malfunction. Refer to [CCS-89, "Description"](#).

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PRECAUTION

PRECAUTIONS

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

INFOID:0000000014225340

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, it is recommended that all maintenance and repair be performed by an authorized NISSAN/INFINITI dealer.
- Improper repair, 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 Air Bag Diagnosis Sensor Unit or other Air Bag 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 or batteries, and wait at least three minutes before performing any service.

SYSTEM DESCRIPTION

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Information

INFOID:0000000012848440

Automatic Speed Control Device (ASCD) system is controlled by ECM.

Regarding the information for ASCD system, refer to following:

- VQ35DE: [EC-49. "AUTOMATIC SPEED CONTROL DEVICE \(ASCD\) : System Description"](#) (except for Mexico)
- VQ35DE: [EC-598. "AUTOMATIC SPEED CONTROL DEVICE \(ASCD\) : System Description"](#) (for Mexico)

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