SECTION CCS
CRUISE CONTROL SYSTEM

CONTENTS

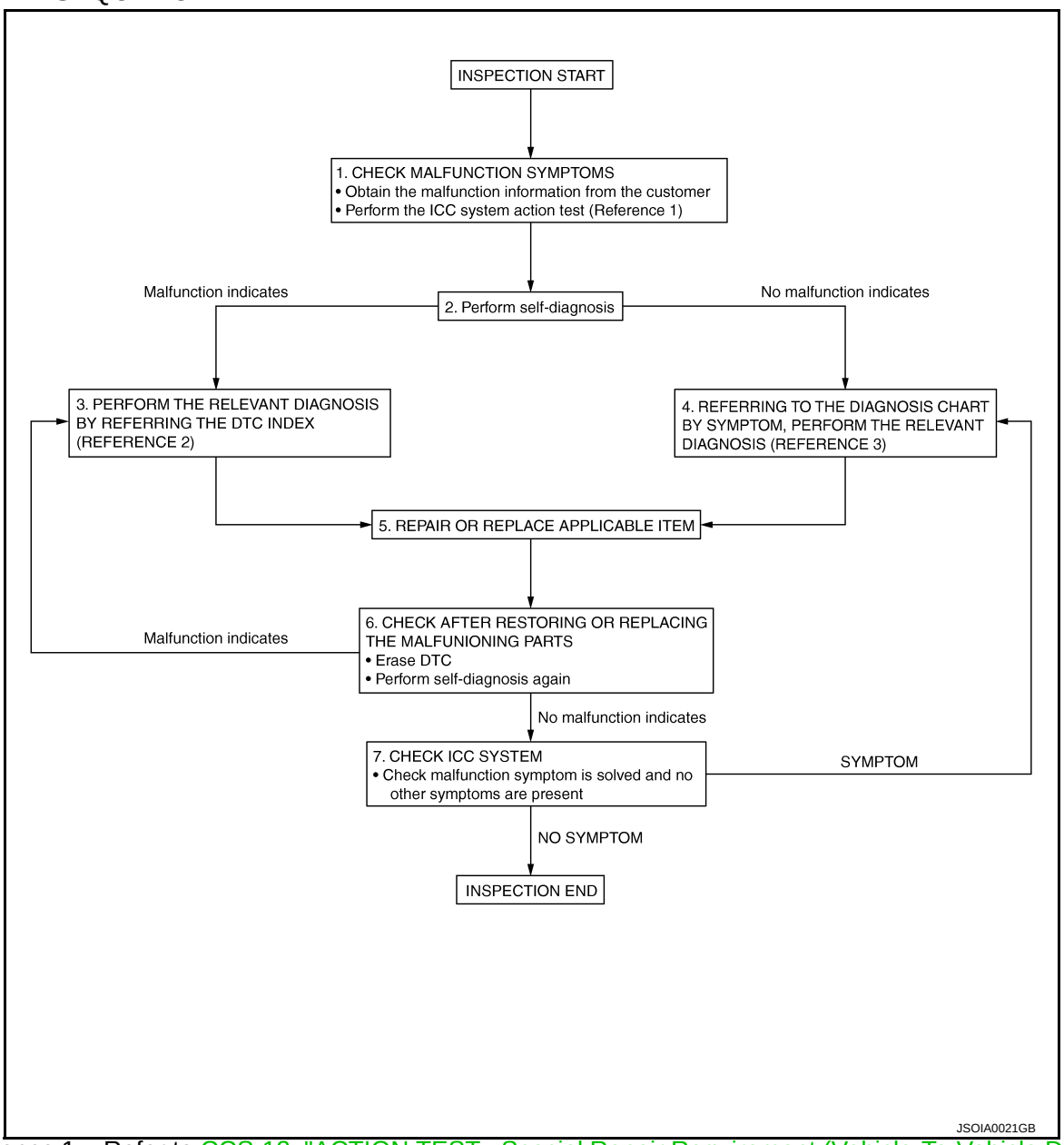
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000001835116

OVERALL SEQUENCE



- Reference 1··· Refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)".
- Reference 2··· Refer to CCS-93, "DTC Index".
- Reference 3··· Refer to CCS-95, "Symptom Table".

DETAILED FLOW

1.CHECK SYMPTOM

Check the malfunction symptoms by performing the following items.

- Obtain the malfunction information (conditions and environment when the malfunction occurred) from the customer.

- Perform the ICC system action test to check the ICC system operation status. Refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)".

>> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC is detected.

Is any DTC detected?

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

3. CHECK SELF-DIAGNOSIS RESULTS

1. Check the DTC detected in the self-diagnosis results.
2. Perform the relevant diagnosis by referring to the DTC index. Refer to CCS-93, "DTC Index".

NOTE:
If “U1000: CAN COMM CIRCUIT” (DTC 100) is displayed, start with the diagnosis for the CAN communication system. Refer to CCS-80, "Diagnosis Procedure".

>> GO TO 5.

4. DIAGNOSIS BY SYMPTOM

Referring to the diagnosis chart by symptom, perform the relevant diagnosis. Refer to CCS-95, "Symptom Table".

>> GO TO 5.

5. REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace applicable item.

>> GO TO 6.

6. CHECK AFTER REPAIRING OR REPLACING THE APPLICABLE ITEM

1. Erase DTC.
2. Perform the self-diagnosis for the ICC sensor integrated unit again after repairing or replacing the applicable item.
3. Check if DTC is detected.

Is any DTC detected?

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

7. CHECK ICC SYSTEM

Test the ICC system for normal operation to see if the malfunction symptom is solved and no other symptoms are present.

No symptoms?

YES >> INSPECTION END
NO >> GO TO 4.

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000001835117

Always perform the laser beam aiming adjustment after replacing the ICC sensor integrated unit. In addition, test the ICC system operations to see if it functions normally.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000001835118

1. LASER BEAM AIMING ADJUSTMENT

Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 2.

2. ICC SYSTEM ACTION TEST

1. Perform the ICC system action test. Refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)".
2. Check that the ICC system operates normally.

>> INSPECTION END

LASER BEAM AIMING ADJUSTMENT

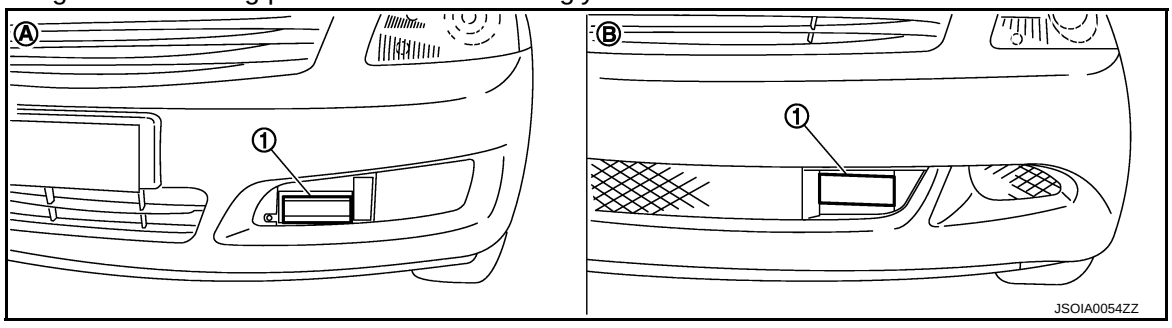
LASER BEAM AIMING ADJUSTMENT : Description

INFOID:0000000001835119

OUTLINE OF LASER BEAM AIMING ADJUSTMENT

Adjust the laser beam aiming every time the ICC sensor integrated unit is removed or installed.

1. Set up the ICC target board [SST: KV99110100 (J-45718)].
   NOTE:
   The location of the ICC sensor integrated unit (1) differs according to the front bumper fascia type. So the ICC target board setting position varies accordingly.



A : Normal front bumper fascia type B : Sport front bumper fascia type

2. Adjust the sensor following the procedure on CONSULT-III. (Turn manually the screw for up-down position adjustment. ICC sensor integrated unit automatically adjust the right-left position.)

CAUTIONARY POINTS FOR LASER BEAM AIMING

CAUTION:

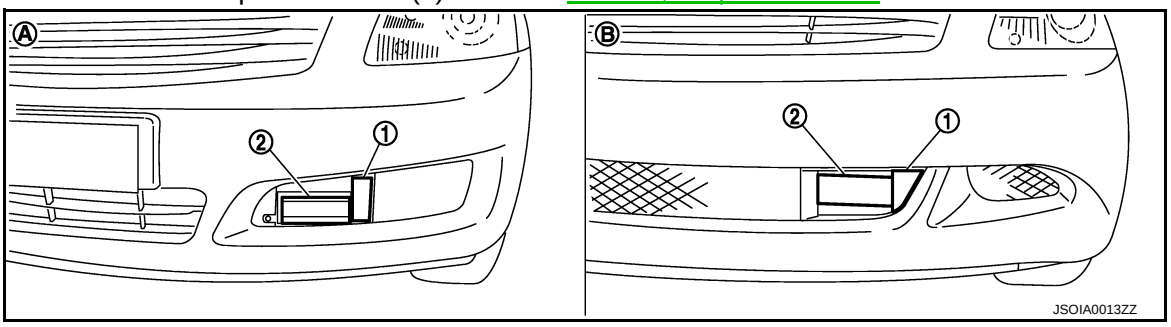
- **Adjust laser beam aiming at a horizontal place as far as 12 m (39 ft) forward the vehicle can be seen.**
- **Adjust laser beam aiming 5 seconds after starting engine.**
- **Never view ICC sensor integrated unit body window directly during laser beam aiming adjustment.**
- **Follow the CONSULT-III when adjusting the laser beam aiming (laser beam aiming adjustment cannot be operated without CONSULT-III).**
- **Never ride on vehicle during laser beam aiming adjustment.**
- **Idle and turn headlamps OFF during laser beam aiming adjustment.**

LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)

INFOID:0000000001835120

1. PREPARATION OF BEFORE LASER BEAM AIMING ADJUSTMENT

1. Adjust the tire pressure to the specified value.
2. See that there is no load in the vehicle.
3. Fill up the fuel tank full, and check coolant and engine oil are filled up to correct level.
4. Shift the selector lever to the “P” range (A/T) or the shift knob to the neutral position (M/T), and release the parking brake.
   CAUTION:
   Apply wheel chocks or other tire blocks to the wheels to prevent the vehicle from moving.
5. Clean the ICC sensor integrated unit body window with a soft cloth.
6. Remove the front bumper finisher B (1). Refer to EXT-12, "Exploded View".



1 : Bumper finisher B
2 : ICC sensor integrated unit
A : Normal front bumper fascia type
B : Sport front bumper fascia type

>> Go to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Setting The ICC Target Board)".

LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Setting The ICC Target Board)

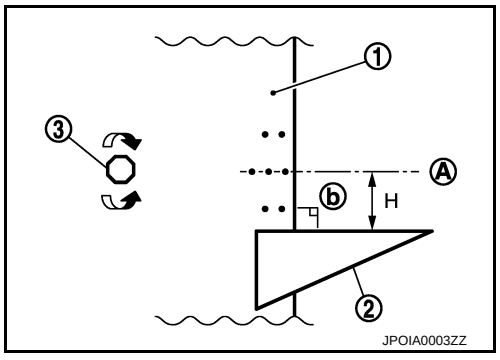
INFOID:0000000001835121

Accurate ICC target board setting is required for the laser beam aiming adjustment.
NOTE:
ICC system does not function normally if laser beam aiming is not accurate.

1. ADJUSTING HEIGHT OF THE ICC TARGET BOARD

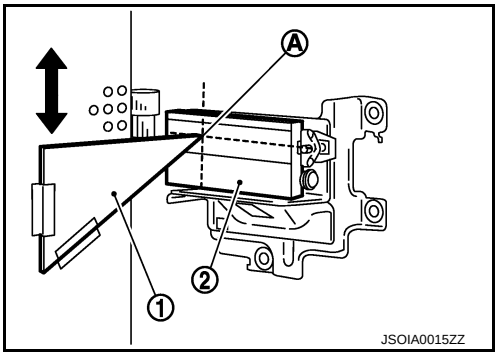
1. Attach a triangle scale (2) at a position 42 mm (1.65 in) (H) below the center (A) of the ICC target board (1).

3 : Adjust nut
b : 90°



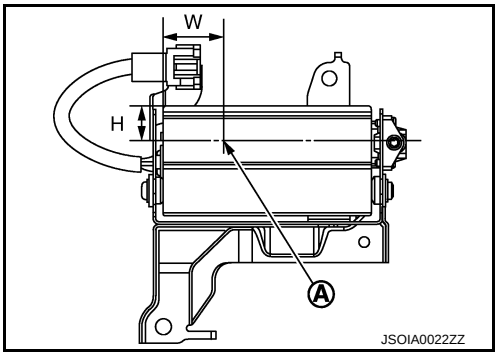
2. Adjust the height of the ICC target board aligning the upside tip of the triangle scale (1) with the center of laser beam axis (A).

2 : ICC sensor integrated unit



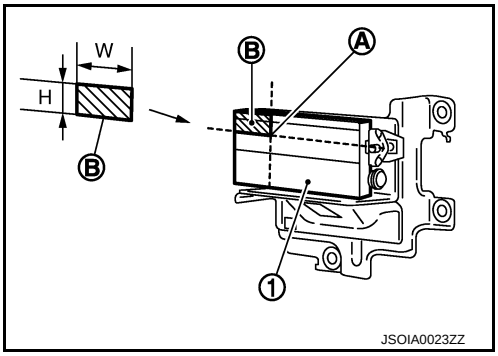
NOTE:

- The center of laser beam axis (A) is located at 38 mm (1.5 in) (W) from the left side and 22 mm (0.87 in) (H) from the top of the ICC sensor integrated unit from a front view of vehicle.



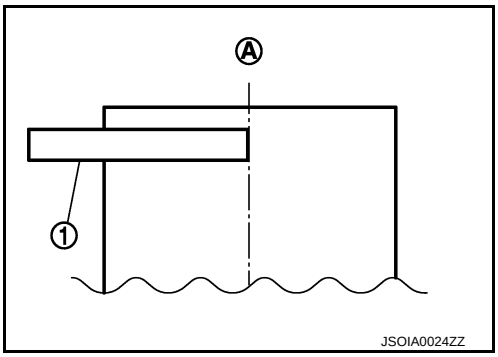
- To identify the center of laser beam axis (A) easily, prepare a piece of paper (B) cut to the size of 38 mm (1.5 in) (W) ×22 mm (0.87 in) (H) and attach it on the upper left point of the ICC sensor integrated unit (1).

>> GO TO 2.

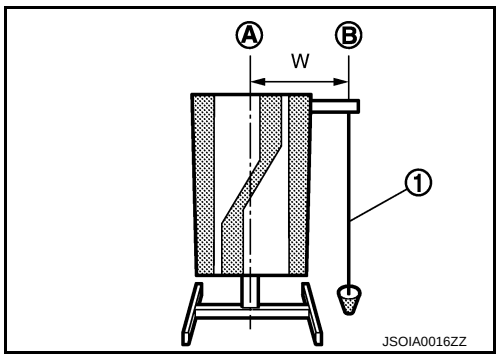


2. ADJUSTING THE RIGHT-LEFT POSITION OF THE ICC TARGET BOARD

1. Attach a ruler (1) or equivalent tool with a length of 450 mm (17.72 in) or more to the back face of the ICC target board center (A) in the leftward direction.



2. Suspend a thread with weight (1) at the point (B) rightward from the ICC target board center (A).



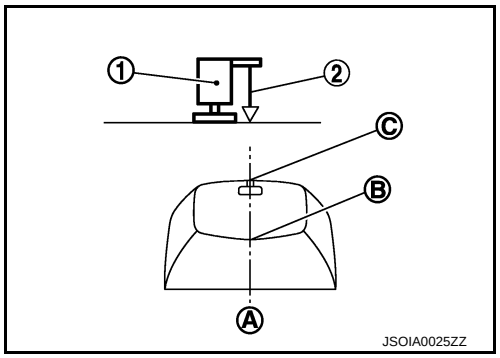
W [mm (in)]
Normal front bumper fascia type : 404 (15.91)
Sport front bumper fascia type : 247 (9.72)

NOTE:
To learn how to identify the vehicle grade, refer to CCS-6, "LASER BEAM AIMING ADJUSTMENT : Description".

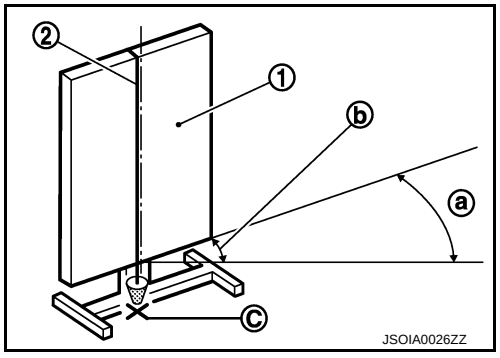
>> GO TO 3.

3. SETTING THE ICC TARGET BOARD

1. Suspend a thread with weight on tip from the center of the front and rear bumpers. Then, mark the center points on the ground as each weight points.
2. Link the front and rear bumpers center points marked on the ground and extend a straight line ahead. Then mark a point 3.9 m (12.8 ft) position ahead of the front bumper. Then, adjust the position of the ICC target board so that the weight come on the top of the marked point [3.9 m (12.8 ft) position ahead of the front bumper] and face to the vehicle.
3. Adjust the position of the ICC target board (1) so that the extended line (A) that links the center of the rear window glass (the center of the rear window defogger pattern) (B) and the center of the windshield (the setting part of the room mirror) (C) align with the weight suspended (2) from the ICC target board.



4. Remove the thread suspended to the right side of ICC target board and suspend a thread with weight on tip on the center of the ICC target board. Then mark the point of weight on the ground.
5. Pivot the edge of the ICC target board 25° (a) to either side.
NOTE:
Approx. 90 mm (3.54 in) (b) shift rates the 25° (a) movement.

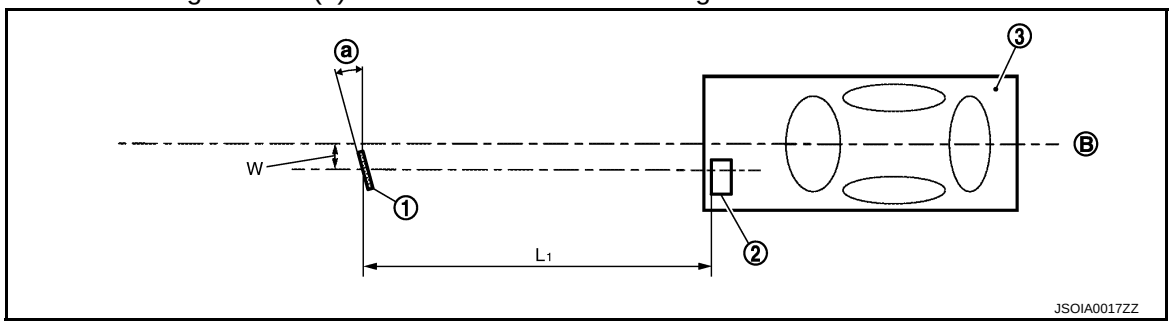


1 : ICC target board
2 : String with a weight
C : ICC target board center marking position

>> GO TO 4.

4. CHECKING THE ICC TARGET BOARD INSTALLATION POSITION

Check that the ICC target board (1) is located as shown in the figure.



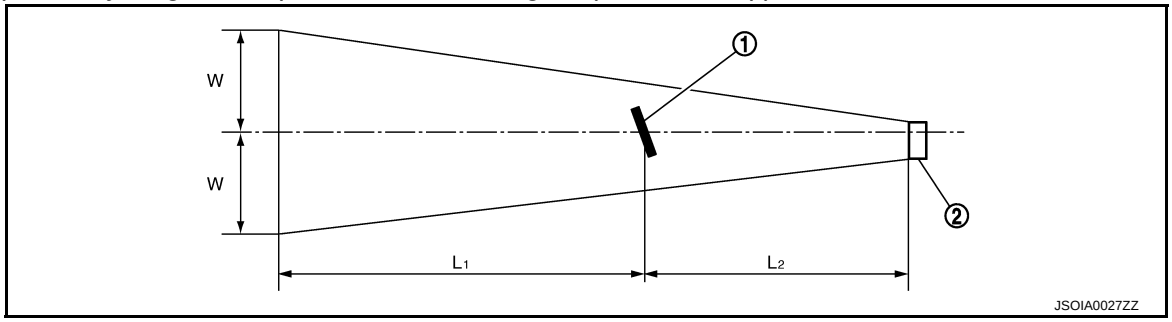
1. ICC target board
2. ICC sensor integrated unit
3. Vehicle
B. Vehicle center
L1. 4.0 m (13.0 ft)
W. 404 mm (15.91 in) (Normal front bumper fascia type)
247 mm (9.72 in) (Sport front bumper fascia type)
a. 25°

NOTE:
The distance between center of laser beam axis and ICC target board is 4 m (13.0 ft).

>> GO TO 5.

5. CHECKING THE ICC TARGET BOARD INSTALLATION AREA

Do not place anything in the space shown in the figure (view from top).



1. ICC target board
2. ICC sensor integrated unit
L1. 6.5 m (21.3 ft)
L2. 4.0 m (13.0 ft)
W. 3.5 m (11.5 ft)

NOTE:
In case the space shown in the figure is not available, cover the side of the ICC target board with a 1400 mm (4.6 ft)-size frosted black board or black cloth.

>> Go to CCS-10, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Laser Beam Aiming Adjustment)".

LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Laser Beam Aiming Adjustment)

INFOID:0000000001835122

CAUTION:
Never view ICC sensor integrated unit body window directly during laser beam aiming adjustment.
NOTE:
Perform all necessary work for laser beam adjustment until the adjustment completes as shown in the procedure. If the procedure does not complete, the ICC system is inoperable.

1. SET CONSULT-III TO THE LASER BEAM AIMING ADJUSTMENT MODE

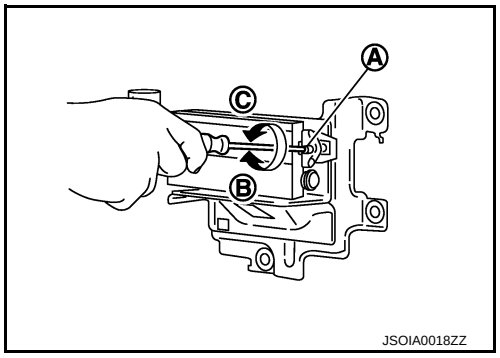
1. Start the engine.
2. Connect CONSULT-III and select “Work Support” of “ICC”.
3. Select “LASER BEAM ADJUST” after the “Work Support” screen is displayed.
4. Touch “START” after the “LASER BEAM ADJUST” screen is displayed.

NOTE:
If the adjustment screen does not appear on the CONSULT-III screen in 10 seconds, after touching "LASER BEAM ADJUST" screen, the following causes may be considered:
- ICC target is not set accurately.
- There is not enough space beside the ICC target.
- The laser beam aiming adjustment exceeds its proper installation range.
- Deformation of vehicle body.
- Deformation of unit.
- Deformation of bracket.
- The area is not suitable for the adjustment work.
- ICC sensor integrated unit body window is not clean.
- The ICC system warning lamp illuminates.

>> GO TO 2.

2. LASER BEAM AIMING ADJUSTMENT

1. After the CONSULT-III displays "ADJUST THE VERTICAL OF LASER BEAM AIMING" turn the up-down direction adjusting screw until "U/D CORRECT" value is set in the range of ±4.
   NOTE:
   - Turn the screw slowly. The value change on display is slower than actual movement of the ICC sensor integrated unit. Wait for 2 seconds every time the screw is turned half a rotation.
   - Turning the screw (A) clockwise directs the laser beam downward (B). The laser beam directs upward (C) when turning screw counterclockwise.



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>> GO TO 3.

3. LASER BEAM AIMING CONFIRMATION

1. When "U/D CORRECT" value indicates ±4, confirm that the margin of value remains within ±4 at least for 2 seconds with no equipment or hand touching the ICC sensor integrated unit.
2. When "COMPLETED THE VERTICAL AIMING OF LASER BEAM" appears on screen, touch "END".
   NOTE:
   Be sure that the margin of "U/D CORRECT" is within ±4 after leaving ICC sensor integrated unit for 2 seconds or more.
3. Confirm that "ADJUSTING AUTOMATIC HORIZONTAL LASER BEAM AIMING" is on screen and wait for a while (maximum: 10 seconds).
4. Confirm that "Normally Completed" is displayed on CONSULT-III and close the aiming adjustment procedure by touching "END".
   NOTE:
   Perform all the procedures once "LASER BEAM ADJUST" mode is entered in CONSULT-III. When the procedure is discontinued, the ICC system is inoperable.

>> LASER BEAM AIMING ADJUSTMENT END

ACTION TEST

ACTION TEST : Description

INFOID:0000000001835123

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

ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)

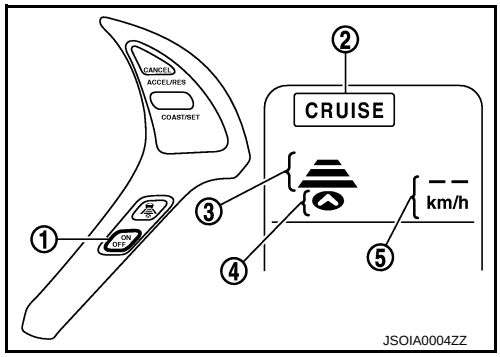
INFOID:0000000001835124

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 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 engine.
2. Press the MAIN switch (1) for less than 1.5 seconds.
3. Check the ICC system display in the combination meter to check that the vehicle-to-vehicle distance control mode is ready for activation.



ICC system display status		
“CRUISE” indicator lamp (2)	:	ON
Set distance indicator (3)	:	Long mode
Own vehicle indicator (4)	:	ON
Set vehicle speed indicator (5)	:	“____” “km/h (MPH)”

4. Press the MAIN switch, and check that the ICC system display turns off when the ICC system is deactivated.
5. Check that the ICC system display turns off after starting the engine again.

>> GO TO 2.

2.CHECK FOR DISTANCE SWITCH

1. Start engine.
2. Press the MAIN switch for less than 1.5 seconds.
3. Press the DISTANCE switch.
4. Check if 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	60 (195)
Middle	100 km/h	40 (130)
Short	100 km/h	30 (90)

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NOTE:
The set distance indicator shows (Long) immediately after the engine starts.

>> GO TO 3.

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

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

>> GO TO 4.

4. SET CHECKING

1. Start engine.
2. Press the MAIN switch for less than 1.5 seconds.
3. Drive the vehicle at 40 km/h (25 MPH) or more.
4. Push down the SET/COAST switch.
5. Confirm that the desired speed is set as hand is released from the SET/COAST switch.

NOTE:
The set vehicle speed is displayed on the ICC system display.

>> GO TO 5.

5. CHECK FOR INCREASE OF CRUISING SPEED

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

NOTE:
- Vehicle-to-vehicle distance control mode is automatically cancelled when the driving speed lowers to 32 km/h (20 MPH) due to the deceleration of the vehicle ahead.
- The minimum set speed of the vehicle-to-vehicle distance control mode is 40 km/h (25 MPH).

>> GO TO 7.

7. 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 the system is turned ON.
- When the clutch pedal is depressed after the system is turned ON (M/T).
- When the A/T selector lever is shifted to the “N” range (A/T).
- When the MAIN switch is turned OFF.
- When CANCEL switch is operated.

>> GO TO 8.

8. 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.
- Cancel the system by depressing the brake pedal. Then check if the speed before cancellation is restored when pushing up RESUME/ACCELERATE switch with 40 km/h (25 MPH) or above.
- Depress the clutch pedal to cancel the system. Then release the clutch pedal (shift knob at any of the 1st to 6th gear positions). Check that the vehicle restores the previous speed kept before the system deactivation when pushing up the RESUME/ACCELERATE switch while the vehicle speed is 40 km/h (25 MPH) or more.
- Shift the A/T shift selector lever to the “N” range to cancel the system. Then shift the A/T shift selector lever back to the “D” range. Check that the vehicle restores the previous speed kept before the system deactiva-

tion when pushing up the RESUME/ACCELERATE switch while the vehicle speed is 40 km/h (25 MPH) or more (A/T).
- Press the CANCEL switch to cancel the system. Then check that the vehicle restores the previous speed kept before the system deactivation when pushing up the RESUME/ACCELERATE switch while the vehicle speed is 40 km/h (25 MPH) or more.

>> OPERATION INSPECTION COMPLETION

ACTION TEST : Special Repair Requirement (Conventional (Fixed Speed) Cruise Control Mode)

INFOID:0000000001835125

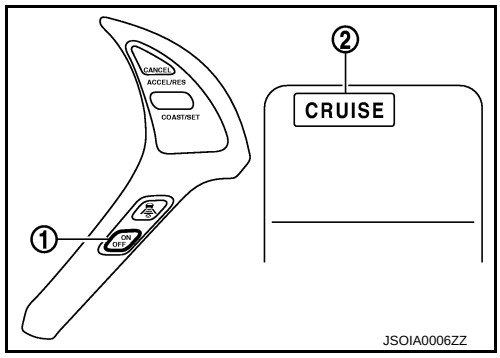
NOTE:
The running speed can be set between 40 km/h (25 MPH) and 144 km/h (90 MPH).
CAUTION:
Never set the cruise speed exceeding the posted speed limit.

1.CHECK FOR MAIN SWITCH

1. Start engine.
2. Press the MAIN switch (1) for more than 1.5 seconds.
3. Check that the ICC system display in the combination meter indicates that the conventional (fixed speed) cruise control mode is ready for activation.

ICC system display status
"CRUISE" indicator lamp (2) : ON

4. Press the MAIN switch, and check that the ICC system display turns off when the ICC system is deactivated.
5. Check that the ICC system display turns off after starting the engine again.



>> GO TO 2.

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

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

>> GO TO 3.

3.SET CHECKING

1. Start engine.
2. Press the MAIN switch for more than 1.5 seconds.
3. Drive the vehicle at 40 km/h (25 MPH) or more.
4. Push down the SET/COAST switch.
5. Confirm that the desired speed is set as hand is released from the SET/COAST switch.

NOTE:
- The set vehicle speed is not displayed on the ICC system display.
- The SET indicator in the ICC system display illuminates.

>> GO TO 4.

4.CHECK FOR INCREASE OF CRUISING SPEED

1. Set the conventional (fixed speed) cruise control mode at desired speed.
2. Check if the set speed increases by 1.6 km/h (1 MPH) as RESUME/ACCELERATE switch is pushed up.

NOTE:
- If the RESUME/ACCELERATE switch is kept pushing up during cruise control driving, the vehicle speed increases until the switch is released.
- The maximum set speed is 144 km/h (90 MPH).

CAUTION:

Never set the cruise speed exceeding the posted speed limit.

>> GO TO 5.

5. CHECK FOR DECREASE OF CRUISING SPEED

1. Set the conventional (fixed speed) cruise control mode at desired speed.
2. Check if the set speed decreases by 1.6 km/h (1 MPH) as SET/COAST switch is pushed down.

NOTE:
- Conventional (fixed speed) cruise control mode is automatically cancelled when the driving speed lowers to 32 km/h (20 MPH).
- The lowest set speed is 40 km/h (25 MPH).

>> 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 system is turned ON.
- When the clutch pedal is depressed after the system is turned ON (M/T).
- When the A/T selector lever is shifted to the “N” range (A/T).
- When the MAIN switch is turned OFF.
- When CANCEL switch is operated.

>> 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.
- Cancel the system by depressing the brake pedal. Then check if the speed before cancellation is restored when pushing up RESUME/ACCELERATE switch with 40 km/h (25 MPH) or above.
- Depress the clutch pedal to cancel the system. Then release the clutch pedal (shift knob at any of the 1st to 6th gear positions). Check that the vehicle restores the previous speed kept before the system deactivation when pushing up the RESUME/ACCELERATE switch while the vehicle speed is 40 km/h (25 MPH) or more.
- Shift the A/T shift selector lever to the “N” range to cancel the system. Then shift the A/T shift selector lever back to the “D” range. Check that the vehicle restores the previous speed kept before the system deactivation when pushing up the RESUME/ACCELERATE switch while the vehicle speed is 40 km/h (25 MPH) or more (A/T).
- Press the CANCEL switch to cancel the system. Then check that the vehicle restores the previous speed kept before the system deactivation when pushing up the RESUME/ACCELERATE switch while the vehicle speed is 40 km/h (25 MPH) or more.

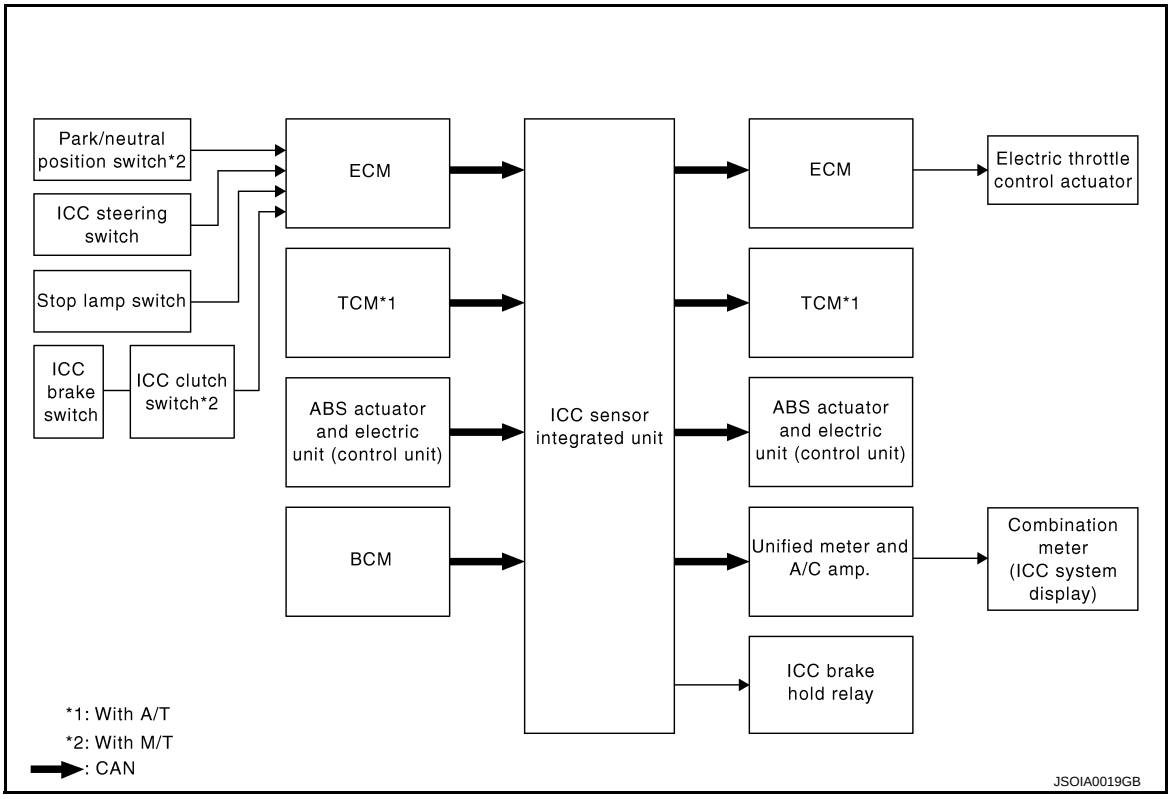
>> OPERATION INSPECTION COMPLETION

SYSTEM DESCRIPTION

INTELLIGENT CRUISE CONTROL SYSTEM

System Diagram

INFOID:0000000001835126



System Description

INFOID:0000000001835127

- The Intelligent Cruise Control (ICC) system automatically maintains a selected distance from the vehicle ahead according to that vehicle's speed, or the set speed, if the road ahead is clear.
- The ICC function has two cruise control modes and brake assist (with preview function).
- To activate or deactivate the ICC system and set the vehicle speed and vehicle-to-vehicle distance, use the ICC steering switch.
- The operation status of the ICC system is indicated on the ICC system display of the combination meter.

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE

- Vehicle-to-vehicle distance control mode, the driver can maintain the same speed as other vehicles without the constant need to adjust the set speed as the driver would with a normal cruise control system.
- The system is intended to enhance the operation of the vehicle when following the vehicle traveling in the same lane and direction.
- If the ICC sensor integrated unit detects a slower moving vehicle ahead, the system will reduce speed so that the vehicle ahead can be followed at the selected distance.
- The system automatically controls the throttle and applies the brakes (up to 25% of vehicle braking power) if necessary.
- The detection range of the sensor is approximately 390 ft (120 m) ahead.
- Refer to Owner's Manual for Intelligent Cruise Control System operating instructions.

CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE

- Conventional (fixed speed) cruise control mode is cruising at preset speeds.
- Refer to Owner's Manual for Intelligent Cruise Control System operating instructions.

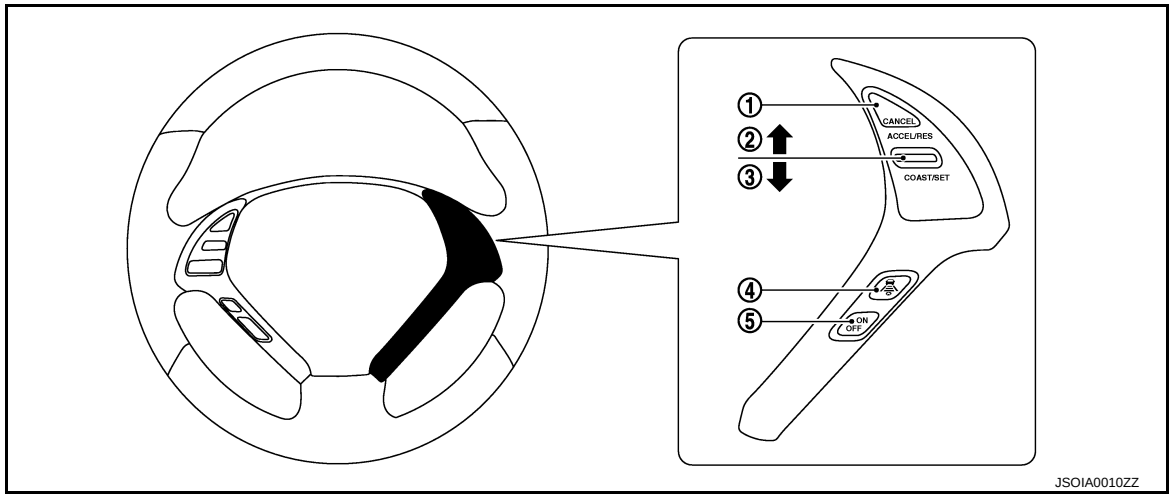
BRAKE ASSIST (WITH PREVIEW FUNCTION)

- When the force applied to brake pedal exceeds a certain level, the Brake Assist is activated and generates a greater braking force than that of a conventional brake booster even with light pedal force.

- When the Preview Function identifies the need to apply the sudden brake by sensing the vehicle ahead in the same lane and the distance and relative speed from it, it applies the brake pre-pressure before driver depresses the brake pedal and improves brake response by reducing its free play.
- Refer to Owner's Manual for BRAKE ASSIST (WITH PREVIEW FUNCTION) operating instructions.

ICC STEERING SWITCH

ICC system is operated by MAIN switch and four control switches, all mounted on the steering wheel.



1. CANCEL switch
2. RESUME/ACCELERATE switch
3. SET/COAST switch
4. DISTANCE switch
5. MAIN switch

NOTE:
The on board self-diagnosis function of the ICC system can be started with the RESUME/ACCELERATE switch and SET/COAST switch. Refer to CCS-23, "Diagnosis Description".

In Vehicle-To-Vehicle Distance Control Mode

No.	Switch name	Description
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	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).

In Conventional (Fixed Speed) Cruise Control Mode

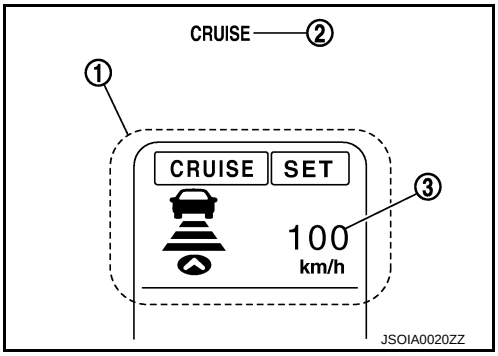
No.	Switch name	Description
1	CANCEL switch	Deactivates system without erasing set speed.
2	RESUME/ACCELERATE switch	Resumes set speed or increases speed incrementally.
3	SET/COAST switch	Sets desired cruise speed or reduces speed incrementally.
4	DISTANCE switch	Ineffective in this mode.
5	MAIN switch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

ICC SYSTEM DISPLAY

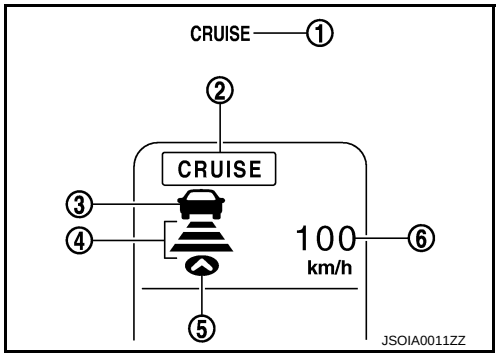
The multi information display (1) and ICC system warning lamp (2) in the combination meter indicate the operation status of the ICC system.

NOTE:

When the on board self-diagnosis is run, ICC system DTC (s), if any, are displayed in the set vehicle speed indicator (3). Refer to CCS-23, "Diagnosis Description".

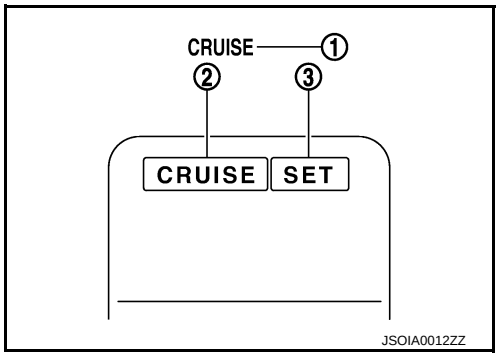


In Vehicle-To-Vehicle Distance Control Mode



No.	Display items	Description
1	ICC system warning lamp (CRUISE warning lamp)	This indicates that an abnormal condition is present in the ICC system.
2	MAIN switch indicator	Indicates that the MAIN switch is ON (ICC system ON).
3	Vehicle ahead detection indicator	Indicates whether it detects a vehicle ahead.
4	Set distance indicator	Indicates the selected distance between vehicles set with the DISTANCE switch.
5	Own vehicle indicator	Indicates the base vehicle.
6	Set vehicle speed indicator	Indicates the set vehicle speed.

In Conventional (Fixed Speed) Cruise Control Mode



No.	Display items	Description
1	ICC system warning lamp (CRUISE warning lamp)	This indicates that an abnormal condition is present in the ICC system.
2	MAIN switch indicator	Indicates that the MAIN switch is ON (ICC system ON).
3	SET switch indicator	Indicates that the set conventional (fixed speed) cruise control mode is controlled.

ICC SENSOR INTEGRATED UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Items

Transmission unit	Signal name		Description
ECM	Accelerator pedal position signal		ICC sensor integrated unit receives accelerator pedal position signal from ECM with CAN communication.
	ICC steering switch signal	MAIN switch signal	ICC sensor integrated unit receives ICC steering switch signal from ECM with CAN communication.
		SET/COAST switch signal	
		CANCEL switch signal	
		RESUME/ACCELERATE switch signal	
		DISTANCE switch signal	
	ICC brake switch signal		ICC sensor integrated unit receives ICC brake switch signal from ECM with CAN communication.
	Stop lamp switch signal		ICC sensor integrated unit receives stop lamp switch signal from ECM with CAN communication.
	Closed throttle position signal		ICC sensor integrated unit receives closed throttle position signal from ECM with CAN communication.
	Engine speed signal		ICC sensor integrated unit receives engine speed signal from ECM with CAN communication.
	ICC clutch switch signal*1		ICC sensor integrated unit receives ICC clutch switch signal from ECM with CAN communication.
	Park/neutral position switch signal*1		ICC sensor integrated unit receives park/neutral position switch signal from ECM with CAN communication.
TCM*2	Shift position signal		ICC sensor integrated unit receives shift position signal from TCM with CAN communication.
	Output shaft revolution signal		ICC sensor integrated unit receives A/T vehicle speed sensor signal (output shaft revolution signal) from TCM with CAN communication.
	Current gear position signal		ICC sensor integrated unit receives current gear position signal from TCM with CAN communication.
ABS actuator and electric unit (control unit)	Vehicle speed signal		ICC sensor integrated unit receives vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) with CAN communication.
BCM	Front wiper request signal		ICC sensor integrated unit receives front wiper request signal from BCM with CAN communication.

*1: M/T models

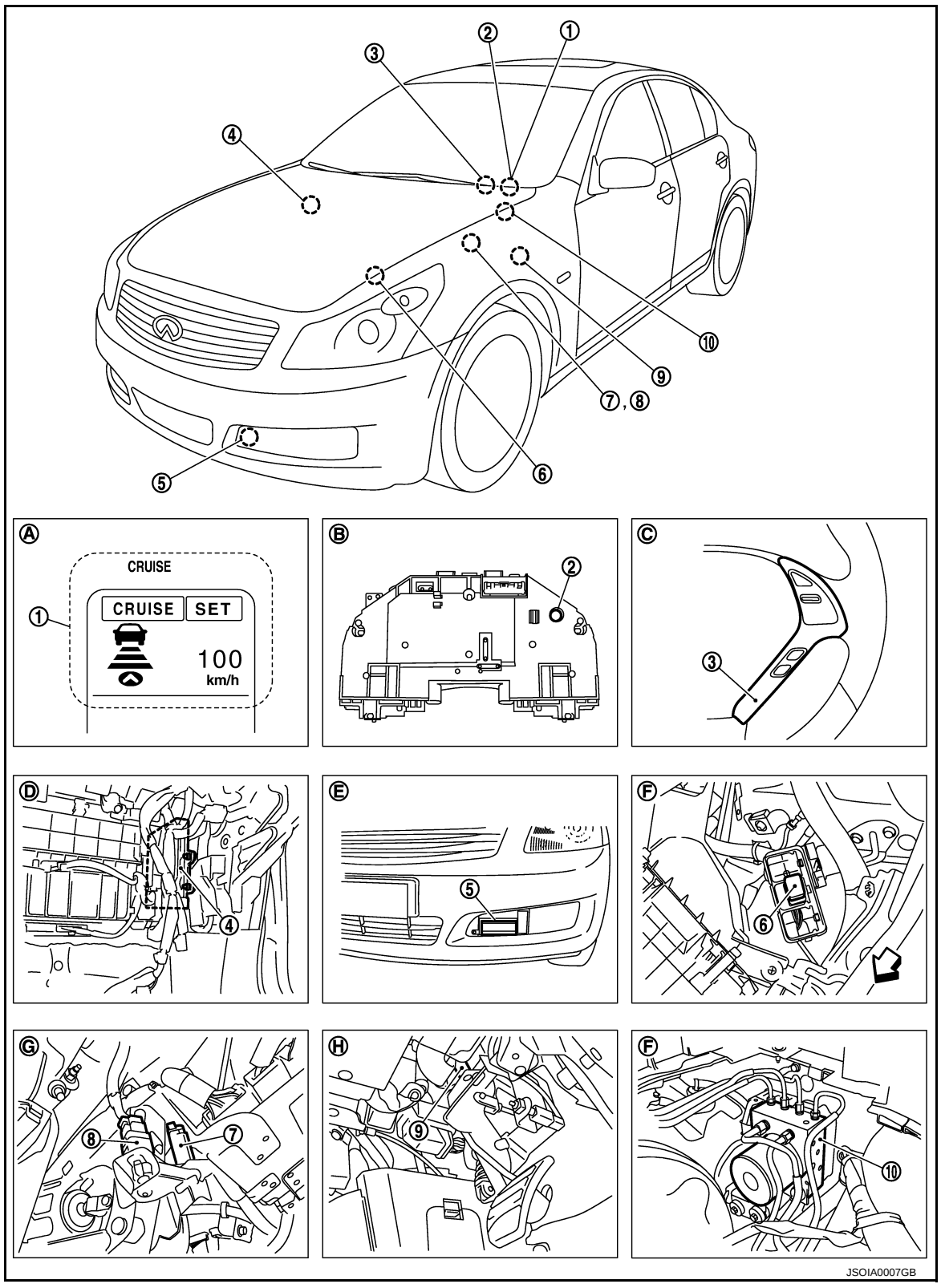
*2: A/T models

Output Signal Items

Reception unit	Signal name		Description
Combination meter (through unified meter and A/C amp.)	ICC system display signal	CRUISE indicator signal	ICC sensor integrated unit transmits ICC system display signal to combination meter (through unified meter and A/C amp.) with CAN communication.
		Own vehicle indicator signal	
		Vehicle ahead detection indicator signal	
		SET indicator signal	
		Set distance indicator signal	
	ICC system warning lamp signal		ICC sensor integrated unit transmits ICC system warning lamp signal to combination meter (through unified meter and A/C amp.) with CAN communication.
	Buzzer output signal		ICC sensor integrated unit transmits buzzer output signal to combination meter (through unified meter and A/C amp.) with CAN communication.
ICC brake hold relay	ICC brake hold relay drive signal		ICC sensor integrated unit output stop lamp drive signal to ICC brake hold relay.

Component Parts Location

INFOID:0000000001835128



1. ICC system display
2. Buzzer
3. ICC steering switch
4. ECM
5. ICC sensor integrated unit
6. ICC brake hold relay
7. ICC brake switch
8. Stop lamp switch
9. ICC clutch switch
10. ABS actuator and electric unit (control unit)

A. In combination meter
B. Back of combination meter
C. Steering wheel RH
D. Instrument passenger lower cover removed
E. Front bumper LH
F. Engine room LH
G. Brake pedal
H. Clutch pedal
⇦ : Vehicle front

Component Description

INFOID:0000000001835129

×: Applicable

Component	Vehicle-to-vehicle distance control mode	Conventional (Fixed speed) cruise control mode	Brake assist (With preview function)	Description
ICC sensor integrated unit	×	×	×	Refer to CCS-28, "Description".
ECM	×	×	×	Refer to CCS-56, "Description".
ABS actuator and electric unit (control unit)	×	×	×	Refer to CCS-33, "Description".
BCM	×			Transmits front wiper request signal to ICC sensor integrated unit through CAN communication.
TCM	×	×		Refer to CCS-76, "Description".
Unified meter and A/C amp.	×	×	×	Receives the ICC system display signal, ICC warning lamp signal and ICC warning buzzer signal from the ICC sensor integrated unit with CAN communication. Transmits the data to the combination meter with communication line.
Combination meter	×	×	×	Using the signals received from the unified meter A/C amp. with communication line, performs the following operations. • Displays the ICC system operation status according to the ICC system display signal. • Illuminates the ICC warning lamp according to the ICC warning lamp signal. • Operates the buzzer according to the ICC warning buzzer signal.
ICC brake switch	×	×	×	Refer to CCS-35, "Description".
Stop lamp switch	×	×	×	
ICC brake hold relay	×	×	×	Refer to CCS-49, "Description".
ICC clutch switch	×	×		Transmits operating signal to ECM when depressing clutch pedal. ICC sensor integrated unit cancels cruise system at driver's clutch operation.

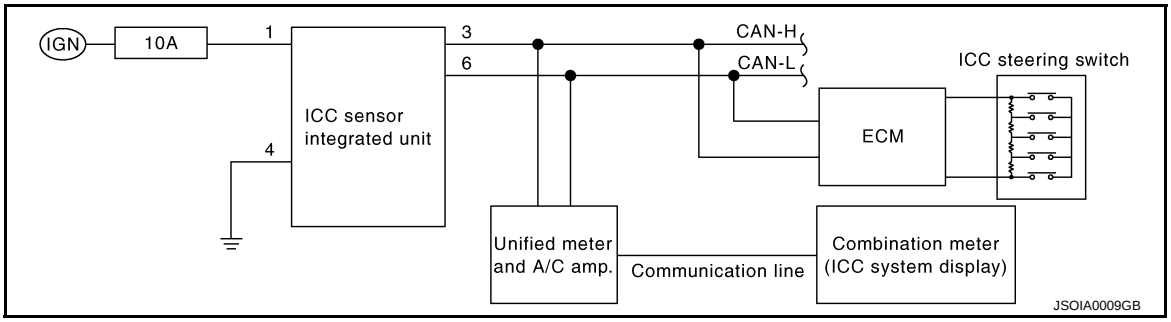
DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

Diagnosis Description

INFOID:0000000001835130

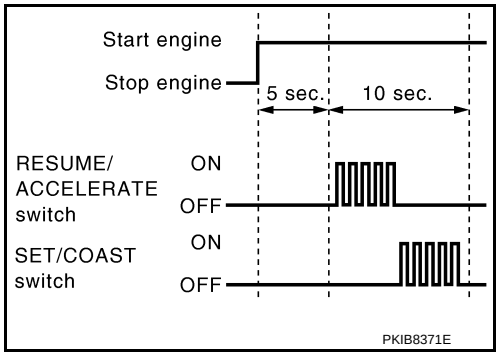
The ICC system includes the on board self-diagnosis function that allows the technician to check for any trouble codes on the ICC system display by operating the ICC steering switch.

ON BOARD SELF-DIAGNOSIS SYSTEM DIAGRAM

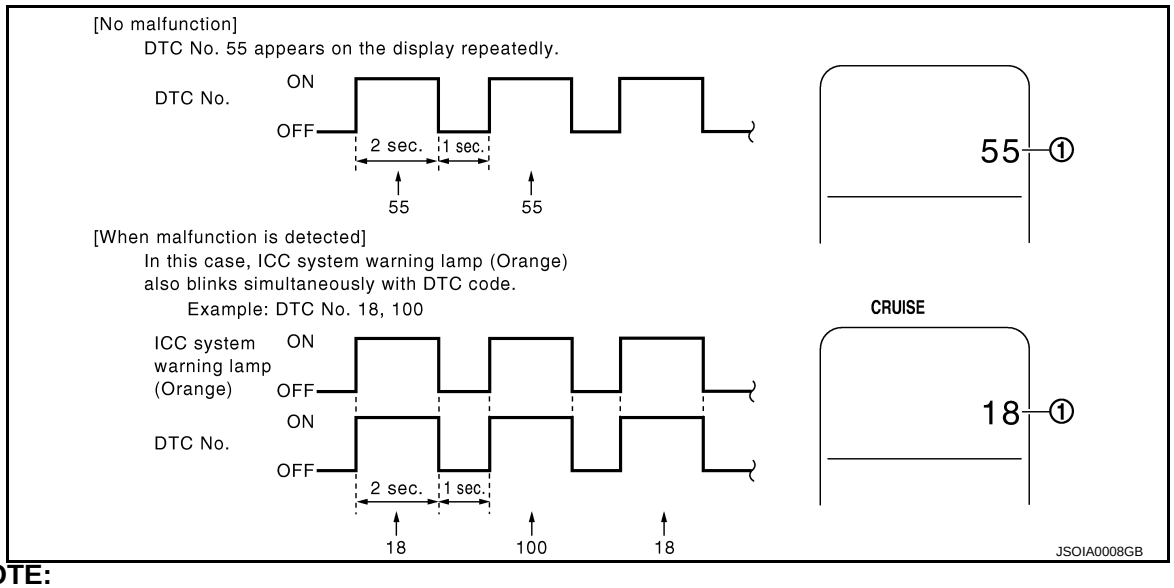


ON BOARD SELF-DIAGNOSIS OPERATION PROCEDURE

1. Turn ignition switch OFF.
2. Start engine.
3. Wait 5 seconds after starting engine, then within 10 seconds, push up RESUME/ACCELERATE switch 5 times, and push down SET/COAST switch 5 times.
   NOTE:
   - Never turn the MAIN switch ON.
   - When operation above is not completed within the specified period, go back to procedure 1 and do all over again.



4. When the on board self-diagnosis starts up, the ICC system display shows DTC No. (1) at the set vehicle speed indicator. Refer to CCS-93, "DTC Index".



NOTE:
- DTC will disappear after 5 minutes.
- When more than one malfunction is detected, a maximum of 3 code numbers can be stored; the latest malfunction will be displayed first.

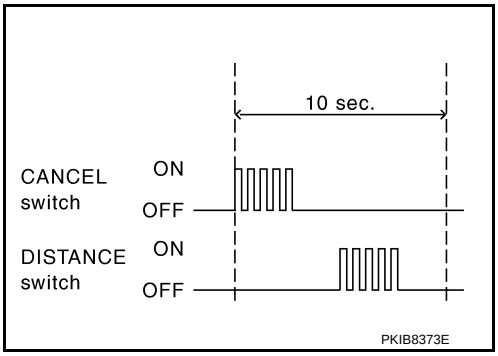
WHEN ON BOARD SELF-DIAGNOSIS WILL NOT START UP

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

Assumed abnormal point		Inspection item
Combination meter system.	Combination meter malfunction.	Check that the self-diagnosis function of the combination meter starts up. Refer to MWI-35, "Diagnosis Description".
	Unified meter and A/C amp. malfunction.	Inspect the unified meter and A/C amp. power and ground circuits. Refer to MWI-50, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure".
	Communication error of the combination meter and the unified meter and A/C amp.	Start up the self-diagnosis of the unified meter and A/C amp. and check the self-diagnosis results. Refer to MWI-98, "DTC Index".
ICC steering switch malfunction.		Perform the inspection for DTC “C1A06: OPERATION SW CIR” (DTC 6). Refer to CCS-45, "Diagnosis Procedure".
Harness malfunction between ICC steering switch and ECM.		
ECM malfunction.		
ICC sensor integrated unit malfunction.		• Inspect the ICC sensor integrated unit power and ground circuits. Refer to CCS-82, "Diagnosis Procedure" • Perform the self-diagnosis for the ICC sensor integrated unit with CONSULT-III, and check the diagnosis results. Refer to CCS-93, "DTC Index".

ERASING ON BOARD SELF-DIAGNOSIS

1. Stop the vehicle and turn ignition switch OFF.
2. Start engine and start on board self-diagnosis.
3. During on board self-diagnosis, press CANCEL switch 5 times, and DISTANCE switch 5 times in this order.
   NOTE:
   • Press them within 10 seconds after pressing CANCEL switch at first.
   • When operation is not completed within 10 seconds, start again from step 2 above.
4. DTC 55 will be shown.
   NOTE:
   DTC of an existing malfunction will not be erased.
5. Turn ignition switch OFF to exit the diagnosis.



CONSULT-III Function (ICC)

INFOID:0000000001835131

DESCRIPTION

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

Test mode	Function
Work Support	• Monitors aiming direction to facilitate laser beam aiming operation. • Indicates causes of automatic cancellation of the ICC system.
Self Diagnostic Result	Displays malfunctioning system memorized in ICC sensor integrated unit.
Data Monitor	Displays real-time input/output data of ICC sensor integrated unit.
Active Test	Enables operation check of electrical loads by sending driving signal to them.
ECU Identification	Displays part number of ICC sensor integrated unit.

WORK SUPPORT

Work support item	Function
CAUSE OF AUTO-CANCEL	Indicates causes of automatic cancellation of the ICC system.
LASER BEAM ADJUST	Outputs laser beam, calculates dislocation of the beam, and indicates adjustment direction. For the adjustment procedure, refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

Cause of Auto-Cancel Display Item List

×: Applicable

Cause of cancellation	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Description
OPERATING WIPER	×		Windshield wipers were operated at HI or LO speed operation.
OPERATING ABS	×		ABS function was operated.
OPERATING TCS	×	×	TCS function was operated.
OPERATING VDC	×	×	VDC function was operated.
OPE SW VOLT CIRC	×	×	The ICC steering switch input voltage is not within standard range.
ECM CIRCUIT	×	×	ECM did not permit ICC operation.
LASER SUN BEAM	×		Intense light such as sunlight entered ICC sensor integrated unit light sensing part.
LASER TEMP	×		Temperature around ICC sensor integrated unit became low.
OP SW DOUBLE TOUCH	×	×	ICC steering switches were pressed at the same time.
WHL SPD ELEC NOISE	×	×	Wheel speed sensor signal caught electromagnetic noise.
VDC/TCS OFF SW	×		VDC OFF switch was pressed.
WHEEL SPD UNMATCH	×	×	The wheel speeds of 4 wheels are out of the specified values.
TIRE SLIP	×	×	Wheel slipped.
IGN LOW VOLT	×	×	Power supply voltage became low.
SNOW MODE SW	×		Snow mode switch was pressed.
VHCL SPD DOWN	×	×	Vehicle speed becomes 32 km/h (20 MPH) and under.
VHCL SPD UNMATCH	×	×	Wheel speed became different from A/T vehicle speed.
CAN COMM ERROR	×	×	ICC sensor integrated unit received an abnormal signal with CAN communication.
ABS/TCS/VDC CIRC	×	×	An abnormal condition occurs in ABC/TCS/VDC 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.
NO RECORD	×	×	—

- Last five cancel (system cancel) causes are displayed.
- “CAUSE OF AUTO-CANCEL” displays times of ignition switch ON/OFF up to 254 maximum. 254 is kept though the number exceeds 254. The number returns to 0 when detecting the same cancellation causes.

SELF DIAGNOSTIC RESULT

For details, refer to CCS-93, "DTC Index".

NOTE:

“DTC RESULTS” and “TIME” are indicated on “Self Diagnostic Result”. “TIME” is used as a reference data of diagnosis. It shows when malfunction is detected.

“TIME” shows the following.

- 0: malfunction is detected at present (from malfunction detection to ignition switch OFF).
  CAN communication (U1000, U1010)
- 1 - 39: Displays when it is normal at present and finds malfunction in the past. It increases like 0→1→2...38→39 after returning to the normal condition whenever IGN OFF→ON. If it is over 39, it is fixed to 39 until the self-diagnostic results are erased. It returns to 0 when malfunction is detected again in the process.
  Other than CAN communication (other than U1000, U1010)
- 1 - 49: Displays when it is normal at present and finds malfunction in the past. It increases like 0→1→2...48→49 after returning to the normal condition whenever IGN OFF→ON. If it is over 49, it is fixed to 49 until the self-diagnostic results are erased. It returns to 0 when malfunction is detected again in the process.

DATA MONITOR

×: Applicable

Monitored Item [unit]	MAIN SIGNALS	Description
MAIN SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
SET/COAST SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
CANCEL SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
RESUME/ACC SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
DISTANCE SW [On/Off]		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
CRUISE OPE [On/Off]	×	Indicates whether controlling or not (ON means “controlling”).
BRAKE SW [On/Off]	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication).
STOP LAMP SW [On/Off]	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication).
IDLE SW [On/Off]		Indicates [On/Off] status of idle switch read from ICC sensor integrated unit through CAN communication (ECM transmits On/Off status through CAN communication).
SET DISTANCE [Short/Mid/Long]	×	Indicates set distance memorized in ICC sensor integrated 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 ICC sensor integrated 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 ICC sensor integrated unit.
BUZZER O/P [On/Off]		Indicates [On/Off] status of ICC warning chime output.
THRTL SENSOR [deg]	×	**NOTE:** This item is displayed, but cannot monitor.
ENGINE RPM [rpm]		Indicates engine speed read from ICC sensor integrated unit through CAN communication (ECM transmits engine speed 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:** This item is displayed, but cannot monitor.
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 “DS” or “M” positions read from ICC sensor integrated unit through CAN communication; ON when position “D” or “DS” or “M” (TCM transmits shift position signal through CAN communication).
NP RANGE SW [On/Off]		Indicates shift position indicator lamp signal read from ICC sensor integrated unit through CAN communication (TCM transmits shift position signal through CAN communication).

Monitored Item [unit]	MAIN SIGNALS	Description
PWR SUP MONI [V]	×	Indicates IGN voltage input by ICC sensor integrated unit.
VHCL SPD AT [km/h] or [mph]		Indicates vehicle speed calculated from A/T vehicle speed sensor read from ICC sensor integrated unit through CAN communication (TCM transmits A/T vehicle speed sensor signal through CAN communication).
THRTL OPENING [%]	×	Indicates throttle position read from ICC sensor integrated unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).
GEAR [1, 2, 3, 4, 5]		Indicates A/T gear position read from ICC sensor integrated unit through CAN communication (TCM transmits current gear position signal through CAN communication).
CLUTCH SW SIG [On/Off]	×	Indicates [On/Off] status as judged from ICC clutch switch signal (ECM transmits ICC clutch switch signal through CAN communication).
NP SW SIG [On/Off]	×	Indicates [On/Off] status as judged from park/neutral position switch signal (ECM transmits park/neutral position switch signal through CAN communication).
MODE SIG [OFF, ICC, ASCD]		Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode].
SET DISP IND [On/Off]		Indicates [On/Off] status of SET switch indicator output.
DISTANCE [m]		Indicates the distance from the vehicle ahead.
RELATIVE SPD [m/s]		Indicates the relative speed of the vehicle ahead.

ACTIVE TEST

Active test item	Function
ICC BUZZER	Activates/deactivates the ICC buzzer.
METER LAMP	Turns ON/OFF the MAIN switch indicator and ICC system warning lamp. **NOTE:** Start the engine and perform active test.
STOP LAMP	Drives the ICC brake hold relay and turns ON/OFF the stop lamp.

NOTE:
- Never perform the active test while driving.
- “Active Test” cannot be started while ICC system warning lamp illuminates.

ECU IDENTIFICATION

Displays the part number of the ICC sensor integrated unit.

DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

Description

INFOID:0000000001835132

ICC sensor integrated unit function description.
- Irradiates laser beam, and receives reflected laser beam to measure distance from preceding vehicle.
- Controls vehicle distance by operating electric throttle control actuator based on that sensor signals and CAN communication.
- Controls vehicle distance by transmitting deceleration degree commandment value signal to ABS actuator and electric unit (control unit) when deceleration with brake is needed.

DTC Logic

INFOID:0000000001835133

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A00 (0)	CONTROL UNIT	ICC sensor integrated unit internal malfunction.	ICC sensor integrated unit

Diagnosis Procedure

INFOID:0000000001835134

1.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC other than “C1A00: CONTROL UNIT” (DTC 0) is detected.

Is any DTC detected?

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

2.DIAGNOSIS FOR DETECTED DTC

Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to CCS-93, "DTC Index".

>> GO TO 4.

3.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 4.

4.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

Description

INFOID:0000000001835135

The ICC sensor integrated unit controls the ICC system through the ignition power supply.

DTC Logic

INFOID:0000000001835136

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A01 (1)	POWER SUPPLY CIR	ICC sensor integrated unit power supply voltage is excessively low (Less than 8 V).	• ICC sensor integrated unit • Connector, harness, fuse
C1A02 (2)	POWER SUPPLY CIR 2	ICC sensor integrated unit power supply voltage is excessively high (More than 19 V).	

Diagnosis Procedure

INFOID:0000000001835137

1.CHECK CONNECTOR OF ICC SENSOR INTEGRATED UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC sensor integrated unit connector, and connect it securely again.
3. Start engine and erase DTC.
4. Press MAIN switch (ICC system ON).
5. Perform self-diagnosis of ICC sensor integrated unit.
6. Check if DTC “C1A01: POWER SUPPLY CIR 1” (DTC 1) or “C1A02: POWER SUPPLY CIR 2” (DTC 2) is detected.

Is any DTC detected?

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

2.CHECK ICC SENSOR INTEGRATED UNIT CONNECTOR

1. Check ICC sensor integrated unit connector housing for disconnected, loose, bent, and collapsed terminals.
2. Repair or replace the applicable item if any abnormal condition is found.

>> GO TO 6.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT OF ICC SENSOR INTEGRATED UNIT

Check power supply and ground circuit of ICC sensor integrated unit. Refer to CCS-82, "Diagnosis Procedure".

Is the inspection result normal?

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

4.REPAIR OR REPLACE ICC SENSOR INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT

Repair and replace the malfunctioning ICC sensor integrated unit power supply and ground circuit.

>> GO TO 6.

5.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 6.

6. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

C1A03 VEHICLE SPEED SENSOR

Description

INFOID:0000000001835138

The ICC sensor integrated unit receives the vehicle speed signal (wheel speed) from the ABS actuator and electric unit (control unit) and the A/T vehicle speed sensor signal (output shaft revolution signal) from TCM with CAN communication.

NOTE:

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

- DTC “U1000”: Refer to CCS-80, "Diagnosis Procedure".
- DTC “C1A04”: Refer to CCS-33, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001835139

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A03 (3)	VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from the ABS actuator and electric unit (control unit) and the A/T vehicle speed sensor signal (output shaft revolution signal) from TCM, received by the ICC sensor integrated unit with CAN communication, are inconsistent.	• Wheel sensor • ABS actuator and electric unit (control unit) • A/T vehicle speed sensor • TCM • ICC sensor integrated unit

Diagnosis Procedure

INFOID:0000000001835140

1.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) or “C1A04: ABS/TCS/VDC CIRC” (DTC 4) other than “C1A03: VHCL SPEED SE CIRC” (DTC 3) is detected.

Is any DTC detected?

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

2.DIAGNOSIS FOR DETECTED DTC

Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to CCS-93, "DTC Index".

>> GO TO 6.

3.CHECK A/T VEHICLE SPEED SENSOR

With CONSULT-III

1. Start engine.
2. With “Data Monitor” of “ICC”, check if “VHCL SPD AT” operates normally.

Is the inspection result normal?

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

4.PERFORM SELF-DIAGNOSIS OF TCM

1. Perform self-diagnosis of TCM.
2. Repair or replace applicable item. Refer to TM-192, "DTC Index".

>> GO TO 6.

5.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.

2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 6.

6. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

C1A04 ABS/TCS/VDC SYSTEM

Description

INFOID:0000000001835141

- ABS actuator and electric unit (control unit) transmits the vehicle speed signal (wheel speed), the stop lamp switch signal, and the operation status of the VDC, TCS, and ABS systems to the ICC sensor integrated unit with CAN communication.
- ABS actuator and electric unit (control unit) receives the deceleration degree command value signal from the ICC sensor integrated unit with CAN communication and controls the brake fluid pressure.

NOTE:
If DTC “C1A04” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to CCS-80, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001835142

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A04 (4)	ABS/TCS/VDC CIRC	If an abnormal condition occurs in the VDC/TCS/ABS system.	ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:0000000001835143

1.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC100) other than “C1A04: ABS/TCS/VDC CIRC” (DTC 4) is detected.

Is any DTC detected?

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

2.CAN COMMUNICATION INSPECTION

Perform the CAN communication system inspection. Repair or replace the applicable item. Refer to CCS-80, "Diagnosis Procedure".

>> GO TO 6.

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

1. Perform self-diagnosis of ABS actuator and electric unit (control unit).
2. Check if DTC is detected.

Is any DTC detected?

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

4.REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace the applicable item identified by the self-diagnosis result.

>> GO TO 6.

5.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 6.

6.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

C1A05 BRAKE SW/STOP LAMP SW

Description

INFOID:0000000001835144

- When the brake pedal is depressed, ICC brake switch is turned OFF and stop lamp switch is turned ON.
- ICC brake switch signal is inputted to ECM. ECM transmits the data to the ICC sensor integrated unit with CAN communication.
- Stop lamp switch signal is inputted to ECM and the ABS actuator and electric unit (control unit). ECM and the ABS actuator and electric unit (control unit) transmit the data to the ICC sensor integrated unit with CAN communication.

NOTE:
If DTC “C1A05” is detected along with DTC “U1000”, “U0401”, “U0415” or “U0121”, first diagnose the DTC “U1000”, “U0401”, “U0415” or “U0121”.

- DTC “U1000”: Refer to CCS-80, "Diagnosis Procedure".
- DTC “U0401”: Refer to CCS-74, "Diagnosis Procedure".
- DTC “U0415”: Refer to CCS-78, "Diagnosis Procedure".
- DTC “U0121”: Refer to CCS-72, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001835145

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A05 (5)	BRAKE SW/STOP L SW	If the ICC sensor integrated unit receives signals indicating that the stop lamp switch [from ABS actuator and electric unit (control unit)] is ON and the ICC brake switch (from ECM) is ON.	• Stop lamp switch circuit • ICC brake switch circuit • ICC clutch switch circuit (M/T) • Stop lamp switch • ICC brake switch • ICC clutch switch (M/T) • Incorrect stop lamp switch installation • Incorrect ICC brake switch installation • Incorrect ICC clutch switch installation (M/T) • ECM • ABS actuator and electric unit (control unit)

Diagnosis Procedure (A/T Models)

INFOID:0000000001835146

1. PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100), “U0401: ECM CAN CIR 1” (DTC 120), “U0415: VDC CAN CIR 1” (DTC 126) or “U0121: VDC CON CIR 2” (DTC 127) other than “C1A05: BRAKE SW/STOP L SW” (DTC 5) is detected.

Is any DTC detected?

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

2. DIAGNOSIS FOR DETECTED DTC

Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to CCS-93, "DTC Index".

>> GO TO 27.

3. CHECK ICC BRAKE SWITCH WITH ICC DATA MONITOR

With CONSULT-III
With “Data Monitor” of “ICC”, check if “BRAKE SW” operates normally.

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 7.

4. CHECK STOP LAMP SWITCH WITH ABS DATA MONITOR

With CONSULT-III
With “Data Monitor” of “ABS”, check if “STOP LAMP SW” operates normally.

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 16.

5. PERFORM SELF-DIAGNOSIS OF ECM

1. Perform self-diagnosis of ECM.
2. Check if DTC is detected. Refer to EC-526, "DTC Index".

Is any DTC detected?

YES >> GO TO 25.
NO >> GO TO 6.

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

1. Perform self-diagnosis of ABS actuator and electric unit (control unit).
2. Check if DTC is detected. Refer to BRC-88, "DTC No. Index".

Is any DTC detected?

YES >> GO TO 25.
NO >> GO TO 26.

7. CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check ICC brake switch for proper installation. Refer to BR-8, "Inspection and Adjustment".

Is the inspection result normal?

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

8. ADJUST ICC BRAKE SWITCH

Adjust ICC brake switch. Refer to BR-8, "Inspection and Adjustment".

>> GO TO 27.

9. CHECK ICC BRAKE SWITCH

1. Disconnect ICC brake switch connector.
2. Check ICC brake switch. Refer to CCS-43, "Component Inspection (ICC BRAKE SWITCH)".

Is the inspection result normal?

YES >> GO TO 11.
NO >> GO TO 10.

10. REPLACE ICC BRAKE SWITCH

Replace ICC brake switch.

>> GO TO 27.

11. CHECK ICC BRAKE SWITCH POWER SUPPLY CIRCUIT

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

Terminal			Voltage (Approx.)
(+)		(–)	
ICC brake switch connector	Terminal		
E114	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 13.
NO >> GO TO 12.

12. REPAIR OR REPLACE ICC BRAKE SWITCH HARNESS OR FUSE

Repair or replace ICC brake switch power supply harness or fuse.

>> GO TO 27.

13. CHECK HARNESS BETWEEN ICC BRAKE SWITCH AND ECM

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

ICC brake switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E114	2	M107	126	Existed

Is the inspection result normal?

YES >> GO TO 15.
NO >> GO TO 14.

14. REPAIR OR REPLACE HARNESS BETWEEN ICC BRAKE SWITCH AND ECM

Repair or replace harness between ICC brake switch and ECM.

>> GO TO 27.

15. PERFORM SELF-DIAGNOSIS OF ECM

1. Perform self-diagnosis of ECM.
2. Check if DTC is detected. Refer to EC-526, "DTC Index".

Is any DTC detected?

YES >> GO TO 25.
NO >> GO TO 26.

16. CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check stop lamp switch for proper installation. Refer to BR-8, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 18.
NO >> GO TO 17.

17. ADJUST STOP LAMP SWITCH

Adjust stop lamp switch. Refer to BR-8, "Inspection and Adjustment".

>> GO TO 27.

18. CHECK STOP LAMP SWITCH

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to CCS-44, "Component Inspection (STOP LAMP SWITCH)".

Is the inspection result normal?

YES >> GO TO 20.
NO >> GO TO 19.

19. REPLACE STOP LAMP SWITCH

Replace stop lamp switch.

>> GO TO 27.

20. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

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

Terminal			Voltage (Approx.)
(+)		(–)	
Stop lamp switch connector	Terminal		
E110	3	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 22.
NO >> GO TO 21.

21. REPAIR OR REPLACE STOP LAMP SWITCH HARNESS OR FUSE

Repair or replace stop lamp switch power supply harness or fuse.

>> GO TO 27.

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

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check 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	
E110	4	E41	30	Existed

Is the inspection result normal?

YES >> GO TO 24.
NO >> GO TO 23.

23. REPAIR OR REPLACE HARNESS BETWEEN STOP LAMP SWITCH AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Repair or replace harness between stop lamp switch and ABS actuator and electric unit (control unit).

>> GO TO 27.

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

1. Perform self-diagnosis of ABS actuator and electric unit (control unit).
2. Check if DTC is detected. Refer to BRC-88, "DTC No. Index".

>> GO TO 25.

25. REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace the applicable item identified by the self-diagnosis result.

>> GO TO 27.

26. REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 27.

27. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

Diagnosis Procedure (M/T Models)

INFOID:0000000001835147

1. PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100), “U0401: ECM CAN CIR 1” (DTC 120), “U0415: VDC CAN CIR 1” (DTC 126) or “U0121: VDC CON CIR 2” (DTC 127) other than “C1A05: BRAKE SW/STOP L SW” (DTC 5) is detected.

Is any DTC detected?

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

2. DIAGNOSIS FOR DETECTED DTC

Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to CCS-93, "DTC Index".

>> GO TO 33.

3. CHECK ICC BRAKE SWITCH WITH ICC DATA MONITOR

With CONSULT-III
With “Data Monitor” of “ICC”, check if “BRAKE SW” operates normally.

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 7.

4. CHECK STOP LAMP SWITCH WITH ABS DATA MONITOR

With CONSULT-III
With “Data Monitor” of “ABS”, check if “STOP LAMP SW” operates normally.

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 22.

5. PERFORM SELF-DIAGNOSIS OF ECM

1. Perform self-diagnosis of ECM.
2. Check if DTC is detected. Refer to EC-526, "DTC Index".

Is any DTC detected?

YES >> GO TO 31.
NO >> GO TO 6.

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

1. Perform self-diagnosis of ABS actuator and electric unit (control unit).
2. Check if DTC is detected. Refer to BRC-88, "DTC No. Index".

Is any DTC detected?

YES >> GO TO 31.
NO >> GO TO 32.

7. CHECK ICC CLUTCH SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ICC clutch switch connector.
3. Turn ignition switch ON.
4. Check voltage between ICC clutch switch harness connector and ground.

Terminal			Condition	Voltage (Approx.)
(+)		(–)		
ICC clutch switch connector	Terminal			
E113	1	Ground	Brake pedal released	Battery voltage
			Brake pedal depressed	0 V

Is the inspection result normal?

YES >> GO TO 15.
NO >> GO TO 8.

8. CHECK ICC BRAKE SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ICC brake switch connector.
3. Turn ignition switch ON.
4. Check voltage between ICC brake switch harness connector and ground.

Terminal			Voltage (Approx.)
(+)		(–)	
ICC brake switch connector	Terminal		
E114	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 10.
NO >> GO TO 9.

9. REPAIR OR REPLACE ICC BRAKE SWITCH HARNESS OR FUSE

Repair or replace ICC brake switch power supply harness or fuse.

>> GO TO 33.

10. CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check ICC brake switch for proper installation. Refer to BR-8, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 12.
NO >> GO TO 11.

11. ADJUST ICC BRAKE SWITCH

Adjust ICC brake switch. Refer to BR-8, "Inspection and Adjustment".

>> GO TO 33.

12. CHECK ICC BRAKE SWITCH

Check ICC brake switch. Refer to CCS-43, "Component Inspection (ICC BRAKE SWITCH)".

Is the inspection result normal?

YES >> GO TO 14.
NO >> GO TO 13.

13. REPLACE ICC BRAKE SWITCH

Replace ICC brake switch.

>> GO TO 33.

14. REPAIR OR REPLACE HARNESS BETWEEN ICC BRAKE SWITCH AND ICC CLUTCH SWITCH

Repair or replace harness between ICC brake switch and ICC clutch switch.

>> GO TO 33.

15. CHECK ICC CLUTCH SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check ICC clutch switch for proper installation. Refer to CL-5, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 17.
NO >> GO TO 16.

16. ADJUST ICC CLUTCH SWITCH

Adjust ICC clutch switch. Refer to CL-5, "Inspection and Adjustment".

>> GO TO 33.

17. CHECK ICC CLUTCH SWITCH

1. Turn ignition switch OFF.
2. Check ICC clutch switch. Refer to CCS-44, "Component Inspection (ICC CLUTCH SWITCH)".

Is the inspection result normal?

YES >> GO TO 19.
NO >> GO TO 18.

18. REPLACE ICC CLUTCH SWITCH

Replace ICC clutch switch.

>> GO TO 33.

19. CHECK HARNESS BETWEEN ICC CLUTCH SWITCH AND ECM

1. Disconnect ECM connector.
2. Check continuity between ICC clutch switch harness connector and ECM harness connector.

ICC clutch switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E113	2	M107	126	Existed

Is the inspection result normal?

YES >> GO TO 21.
NO >> GO TO 20.

20. REPAIR OR REPLACE HARNESS BETWEEN ICC CLUTCH SWITCH AND ECM

Repair or replace harness between ICC clutch switch and ECM.

>> GO TO 33.

21. PERFORM SELF-DIAGNOSIS OF ECM

1. Perform self-diagnosis of ECM.
2. Check if DTC is detected. Refer to EC-526, "DTC Index".

Is any DTC detected?

YES >> GO TO 31.
NO >> GO TO 32.

22. CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check stop lamp switch for proper installation. Refer to BR-8, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 24.
NO >> GO TO 23.

23. ADJUST STOP LAMP SWITCH

Adjust stop lamp switch. Refer to BR-8, "Inspection and Adjustment".

>> GO TO 33.

24. CHECK STOP LAMP SWITCH

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to CCS-44, "Component Inspection (STOP LAMP SWITCH)".

Is the inspection result normal?

YES >> GO TO 26.
NO >> GO TO 25.

25. REPLACE STOP LAMP SWITCH

Replace stop lamp switch.

>> GO TO 33.

26. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

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

Terminal			Voltage (Approx.)
(+)		(–)	
Stop lamp switch connector	Terminal		
E110	3	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 28.
NO >> GO TO 27.

27. REPAIR OR REPLACE STOP LAMP SWITCH HARNESS OR FUSE

Repair or replace stop lamp switch power supply harness or fuse.

>> GO TO 33.

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

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check 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	
E110	4	E41	30	Existed

Is the inspection result normal?

YES >> GO TO 30.
NO >> GO TO 29.

29. REPAIR OR REPLACE HARNESS BETWEEN STOP LAMP SWITCH AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Repair or replace harness between stop lamp switch and ABS actuator and electric unit (control unit).

>> GO TO 33.

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

1. Perform self-diagnosis of ABS actuator and electric unit (control unit).
2. Check if DTC is detected. Refer to BRC-88, "DTC No. Index".

>> GO TO 31.

31. REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace the applicable item identified by the self-diagnosis result.

>> GO TO 33.

32. REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 33.

33. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

Component Inspection (ICC BRAKE SWITCH)

INFOID:0000000001835148

1. CHECK ICC BRAKE SWITCH

Check continuity between ICC brake switch terminals.

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

Is the inspection result normal?

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

Component Inspection (STOP LAMP SWITCH)

INFOID:0000000001835149

1.CHECK STOP LAMP SWITCH

Check continuity between stop lamp switch terminals.

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

Is the inspection result normal?

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

Component Inspection (ICC CLUTCH SWITCH)

INFOID:0000000001835150

1.CHECK ICC CLUTCH SWITCH

Check continuity between ICC clutch switch terminals.

Terminals		Condition	Continuity
1	2	When clutch pedal is depressed	Not existed
		When clutch pedal is released	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace ICC clutch switch.

C1A06 OPERATION SW

Description

INFOID:0000000001835151

- To activate or deactivate the ICC system and set the vehicle speed and vehicle-to-vehicle distance, use the ICC steering switch.
- The ICC steering switch signal is inputted to ECM. ECM transmits the data to the ICC sensor integrated unit with CAN communication.

NOTE:
If DTC “C1A06” is detected along with DTC “U1000” or “U0401”, first diagnose the DTC “U1000” or “U0401”.
- DTC “U1000”: Refer to CCS-80, "Diagnosis Procedure".
- DTC “U0401”: Refer to CCS-74, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001835152

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A06 (6)	OPERATION SW CIRC	If any abnormal condition is present in the input signal from the ICC steering switch.	• ICC steering switch circuit • ICC steering switch • ECM

Diagnosis Procedure

INFOID:0000000001835153

1. PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) or “U0401: ECM CAN CIR 1” (DTC 120) other than “C1A06: OPERATION SW CIRC” (DTC 6) is detected.

Is any DTC detected?

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

2. DIAGNOSIS FOR DETECTED DTC

Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to CCS-93, "DTC Index".

>> GO TO 12.

3. CHECK CONNECTOR OF ECM

1. Turn ignition switch OFF.
2. Disconnect ECM connector, and connect it securely again.
3. Erase DTC.
4. Operate the ICC steering switch.
5. Perform self-diagnosis of ICC sensor integrated unit.
6. Check if DTC “C1A06: OPERATION SW CIRC” (DTC 6) is detected.

Is any DTC detected?

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

4. CHECK ECM CONNECTOR

1. Check ECM connector housing for disconnected, loose, bent, and collapsed terminals.
2. Repair or replace the applicable item if any abnormal condition is found.

>> GO TO 12.

5. CHECK ICC STEERING SWITCH

1. Turn ignition switch OFF.
2. Disconnect ICC steering switch connector.
3. Check ICC steering switch. Refer to CCS-47, "Component Inspection".

Is the inspection result normal?

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

6. REPLACE ICC STEERING SWITCH

Replace ICC steering switch.

>> GO TO 12.

7. CHECK ICC STEERING SWITCH SIGNAL CIRCUIT

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

Spiral cable		ECM		Continuity
Connector	Terminal	Connector	Terminal	
M36	25	M107	101	Existed
	32		108	

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

Spiral cable		Ground	Continuity
Connector	Terminal		
M36	25		Not existed
	32		

Is the inspection result normal?

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

8. REPAIR OR REPLACE HARNESS BETWEEN SPIRAL CABLE AND ECM

Repair or replace harness between spiral cable and ECM.

>> GO TO 12.

9. CHECK COMBINATION SWITCH (SPIRAL CABLE)

Check continuity between spiral cable terminals.

M36	M303	Continuity
Terminal	Terminal	
25	13	Existed
32	16	

Is the inspection result normal?

YES >> GO TO 11.
NO >> GO TO 10.

10. REPLACE SPIRAL CABLE

Replace spiral cable.

>> GO TO 12.

11. PERFORM SELF-DIAGNOSIS OF ECM

1. Perform self-diagnosis of ECM.

2. Repair or replace applicable item. Refer to EC-526, "DTC Index".

>> GO TO 12.

12. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

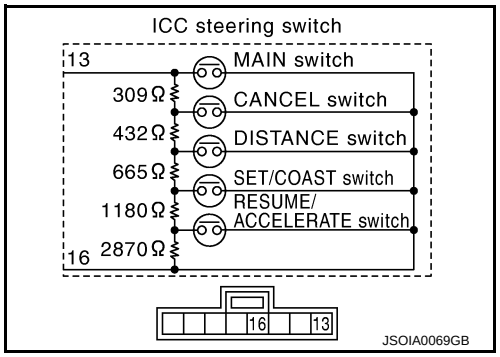
>> INSPECTION END

Component Inspection

INFOID:0000000001835154

1. CHECK ICC STEERING SWITCH

Check resistance between terminals by pressing each switch.



Terminal		Switch	Condition	Resistance [Ω]
13	16	MAIN	Pressed	Approx. 0
			Released	Approx. 5456
		CANCEL	Pressed	Approx. 309
			Released	Approx. 5456
		DISTANCE	Pressed	Approx. 741
			Released	Approx. 5456
		SET/COAST	Pressed	Approx. 1406
			Released	Approx. 5456
		RESUME/ACCELERATE	Pressed	Approx. 2586
			Released	Approx. 5456

Is the inspection result normal?

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

C1A12 LASER BEAM OFF CENTER

Description

INFOID:0000000001835155

ICC sensor integrated unit irradiates laser beam, and receives reflected laser beam to measure distance from preceding vehicle.

DTC Logic

INFOID:0000000001835156

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A12 (12)	LASER BEAM OFFCNTR	Laser beam of ICC sensor integrated unit is off the aiming point.	Laser beam aiming

Diagnosis Procedure

INFOID:0000000001835157

1.ADJUST LASER BEAM AIMING

1. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".
2. Erase DTC.
3. Activate the vehicle-to-vehicle distance control mode.
4. Perform self-diagnosis of ICC sensor integrated unit.
5. Check if DTC “C1A12: LASER BEAM OFFCNTR” (DTC 12) is detected.

Is any DTC detected?

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

2.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 3.

3.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

C1A13 STOP LAMP RELAY

Description

INFOID:0000000001835158

The ICC brake hold relay activates the stop lamp by the stop lamp drive signal (ICC brake hold relay signal) outputted by the ICC sensor integrated unit (Only in the vehicle-to-vehicle distance control mode).

NOTE:

If DTC “C1A13” is displayed along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to CCS-80, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001835159

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A13 (13)	STOP LAMP RLY FIX	• If the stop lamp is not activated even though the ICC sensor integrated unit is transmitting a stop lamp drive signal (ICC brake hold relay signal). • If the stop lamp is activated even though the ICC sensor integrated unit is not transmitting a stop lamp drive signal (ICC brake hold relay signal).	• ICC brake hold relay • ICC brake switch • Stop lamp switch • Incorrect ICC brake switch • Incorrect stop lamp switch • ICC brake hold relay circuit • ICC brake switch circuit • Stop lamp switch circuit • ECM • ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:0000000001835160

1. PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) other than “C1A13: STOP LAMP RLY FIX” (DTC 13) is detected.

Is any DTC detected?

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

2. CAN COMMUNICATION INSPECTION

Perform the CAN communication system inspection. Repair or replace the applicable item. Refer to CCS-80, "Diagnosis Procedure".

>> GO TO 42.

3. CHECK CONNECTOR OF ECM

1. Turn ignition switch OFF.
2. Disconnect ECM connector, and connect it securely again.
3. Erase DTC.
4. Activate the vehicle-to-vehicle distance control mode and drive the vehicle following the preceding vehicle.
5. Perform self-diagnosis of ICC sensor integrated unit.
6. Check if DTC “C1A13: STOP LAMP RLY FIX” (DTC 13) is detected.

Is any DTC detected?

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

4. CHECK ECM CONNECTOR

1. Check ECM connector housing for disconnected, loose, bent, and collapsed terminals.

2. Repair or replace the applicable item if any abnormal condition is found.

>> GO TO 42.

5. CHECK STOP LAMP SWITCH WITH ICC DATA MONITOR

With CONSULT-III
With “Data Monitor” of “ICC”, check if “STOP LAMP SW” operates normally.

Is the inspection result normal?

YES >> GO TO 17.
NO >> GO TO 6.

6. CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check stop lamp switch for proper installation. Refer to BR-8, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 8.
NO >> GO TO 7.

7. ADJUST STOP LAMP SWITCH

Adjust stop lamp switch. Refer to BR-8, "Inspection and Adjustment".

>> GO TO 42.

8. CHECK STOP LAMP SWITCH

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to CCS-44, "Component Inspection (STOP LAMP SWITCH)".

Is the inspection result normal?

YES >> GO TO 10.
NO >> GO TO 9.

9. REPLACE STOP LAMP SWITCH

Replace stop lamp switch.

>> GO TO 42.

10. CHECK STOP LAMP ILLUMINATION

1. Disconnect ICC brake hold relay.
2. Connect stop lamp switch connector.
3. Check if stop lamp is illuminated when depressing brake pedal.

Is the inspection result normal?

YES >> GO TO 12.
NO >> GO TO 11.

11. REPAIR OR REPLACE STOP LAMP SWITCH CIRCUIT

Repair or replace stop lamp circuit.

>> GO TO 42.

12. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ECM

1. Disconnect stop lamp switch connector and ECM connector.
2. Check continuity between stop lamp switch harness connector and ECM harness connector.

Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E110	2	M107	122	Existed

Is the inspection result normal?

YES >> GO TO 14.
NO >> GO TO 13.

13. REPAIR OR REPLACE HARNESS BETWEEN STOP LAMP SWITCH AND ECM

Repair or replace harness between stop lamp switch and ECM.

>> GO TO 42.

14. CHECK ICC BRAKE HOLD RELAY CIRCUIT

1. Connect ICC brake hold relay and ECM connector.
2. Check if stop lamp does not illuminate when brake pedal is not depressed.

Is the inspection result normal?

YES >> GO TO 16.
NO >> GO TO 15.

15. CHECK ICC BRAKE HOLD RELAY

1. Disconnect ICC brake hold relay.
2. Check ICC brake hold relay. Refer to CCS-55, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 16.
NO >> GO TO 27.

16. PERFORM SELF-DIAGNOSIS OF ECM

1. Perform self-diagnosis of ECM.
2. Check if DTC is detected. Refer to EC-526, "DTC Index".

Is any DTC detected?

YES >> GO TO 40.
NO >> GO TO 41.

17. CHECK HARNESS BETWEEN ICC SENSOR INTEGRATED UNIT AND ICC BRAKE HOLD RELAY

1. Turn ignition switch OFF.
2. Disconnect ICC sensor integrated unit connector and ICC brake hold relay.
3. Check continuity between ICC sensor integrated unit harness connector and ICC brake hold relay harness connector.

ICC sensor integrated unit		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
E67	2	E51	2	Existed

4. Check continuity between ICC sensor integrated unit harness connector and ground.

ICC sensor integrated unit		Ground	Continuity
Connector	Terminal		
E67	2		Not existed

Is the inspection result normal?

YES >> GO TO 19.
NO >> GO TO 18.

18. REPAIR HARNESS BETWEEN ICC SENSOR INTEGRATED UNIT AND ICC BRAKE HOLD RELAY

Repair harness between ICC sensor integrated unit and ICC brake hold relay.

>> GO TO 42.

19. CHECK ICC BRAKE HOLD RELAY GROUND CIRCUIT

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

ICC brake hold relay connector	Terminal	Ground	Continuity
E51	1		Existed

Is the inspection result normal?

YES >> GO TO 21.
NO >> GO TO 20.

20. REPAIR OR REPLACE HARNESS BETWEEN ICC BRAKE HOLD RELAY AND GROUND

Repair or replace harness between ICC brake hold relay and ground.

>> GO TO 42.

21. CHECK ICC SENSOR INTEGRATED UNIT STANDARD VOLTAGE

1. Connect ICC sensor integrated unit connector.
2. Turn ignition switch ON.
3. With the “Active Test” function of “ICC”, activate “STP LMP DRIVE”.
4. Check voltage between ICC brake hold relay harness connector and ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
ICC brake hold relay connector	Terminal			
E51	2	Ground	During “Active Test”	12 V

Is the inspection result normal?

YES >> GO TO 22.
NO >> GO TO 41.

22. CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

1. Exit the “Active Test” of “ICC”.
2. Check voltage between ICC brake hold relay harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
ICC brake hold relay connector	Terminal		
E51	3	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 24.
NO >> GO TO 23.

23. REPAIR OR REPLACE ICC BRAKE HOLD RELAY HARNESS OR FUSE

Repair or replace ICC brake hold relay power supply harness or fuse.

>> GO TO 42.

24. CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ECM

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

ICC brake hold relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E51	5	M107	122	Existed

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

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E51	5		Not existed

Is the inspection result normal?

YES >> GO TO 26.
NO >> GO TO 25.

25. REPAIR HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ECM

Repair harness between ICC brake hold relay and ECM.

>> GO TO 42.

26. CHECK ICC BRAKE HOLD RELAY

1. Connect ECM connector and ICC brake hold relay.
2. Disconnect stop lamp switch connector.
3. With the “Active Test” function of “ICC”, activate “STP LMP DRIVE”.
4. Check if stop lamp is illuminated.

Is the inspection result normal?

YES >> GO TO 28.
NO >> GO TO 27.

27. REPLACE ICC BRAKE HOLD RELAY

Replace ICC brake hold relay.

>> GO TO 42.

28. CHECK STOP LAMP SWITCH WITH ABS DATA MONITOR

With CONSULT-III
With “Data Monitor” of “ABS”, check if “STOP LAMP SW” are operates normally.

Is the inspection result normal?

YES >> GO TO 29.
NO >> GO TO 31.

29. PERFORM SELF-DIAGNOSIS OF ECM

1. Perform self-diagnosis of ECM.
2. Check if DTC is detected. Refer to EC-526, "DTC Index".

Is any DTC detected?

YES >> GO TO 40.
NO >> GO TO 30.

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

1. Perform self-diagnosis of ABS actuator and electric unit (control unit).
2. Check if DTC is detected. Refer to BRC-88, "DTC No. Index".

Is any DTC detected?

YES >> GO TO 40.
NO >> GO TO 41.

31. CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.

2. Check stop lamp switch for proper installation. Refer to BR-8, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 33.
NO >> GO TO 32.

32. ADJUST STOP LAMP SWITCH

Adjust stop lamp switch. Refer to BR-8, "Inspection and Adjustment".

>> GO TO 42.

33. CHECK STOP LAMP SWITCH

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to CCS-44, "Component Inspection (STOP LAMP SWITCH)".

Is the inspection result normal?

YES >> GO TO 35.
NO >> GO TO 34.

34. REPLACE STOP LAMP SWITCH

Replace stop lamp switch.

>> GO TO 42.

35. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

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

Terminals			Voltage (Approx.)
(+)		(–)	
Stop lamp switch connector	Terminal		
E110	3	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 37.
NO >> GO TO 36.

36. REPAIR OR REPLACE STOP LAMP SWITCH HARNESS OR FUSE

Repair or replace stop lamp switch power supply harness or fuse.

>> GO TO 42.

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

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check 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	
E110	4	E41	30	Existed

Is the inspection result normal?

YES >> GO TO 39.
NO >> GO TO 38.

38. REPAIR OR REPLACE HARNESS BETWEEN STOP LAMP SWITCH AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Repair or replace harness between stop lamp switch and ABS actuator and electric unit (control unit).

>> GO TO 42.

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

1. Perform self-diagnosis of ABS actuator and electric unit (control unit).
2. Check if DTC is detected. Refer to BRC-88, "DTC No. Index".

>> GO TO 40.

40. REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace the applicable item identified by the self-diagnosis result.

>> GO TO 42.

41. REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 42.

42. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

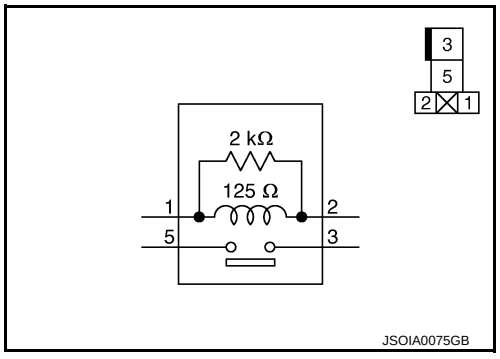
Component Inspection

INFOID:0000000001835161

1. CHECK ICC BRAKE HOLD RELAY

Check continuity between ICC brake hold relay terminals.

Terminals		condition	Continuity
3	5	Applying battery voltage between terminal 1 and 2	Existed
		No battery voltage	Not existed



Is the inspection result normal?

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

C1A14 ECM

Description

INFOID:0000000001835162

- ECM transmits the accelerator pedal position signal, ICC brake switch signal, stop lamp switch signal and ICC steering switch signal, etc. to the ICC sensor integrated unit with CAN communication.
- ECM controls the electronic control throttle based on the engine torque demand received from the ICC sensor integrated unit with CAN communication.

NOTE:
If DTC “C1A14” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to CCS-80, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001835163

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A14 (14)	ECM CIRCUIT	If an abnormal condition occurs with ECM.	• Accelerator pedal position sensor • ECM • ICC sensor integrated unit

Diagnosis Procedure

INFOID:0000000001835164

1.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) other than “C1A14: ECM CIRCUIT” (DTC 14) is detected.

Is any DTC detected?

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

2.CAN COMMUNICATION INSPECTION

Perform the CAN communication system inspection. Repair or replace the applicable item. Refer to CCS-80, "Diagnosis Procedure".

>> GO TO 6.

3.PERFORM SELF-DIAGNOSIS OF ECM

1. Perform self-diagnosis of ECM.
2. Check if DTC is detected. Refer to EC-526, "DTC Index".

Is any DTC detected?

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

4.REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace the applicable item identified by the self-diagnosis result.

>> GO TO 6.

5.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 6.

6. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

C1A15 GEAR POSITION

Description

INFOID:0000000001835165

ICC sensor integrated unit judges gear positions according to the following signals.
- Input speed signal transmitted from TCM with CAN communication.
- Gear ratio calculated from current gear position signal transmitted from TCM with CAN communication.
- Gear ratio calculated from vehicle speed signal transmitted from ABS actuator and electronic unit (control unit) with CAN communication

NOTE:
If DTC “C1A15” is detected along with DTC “U1000”, “C1A03” or “C1A04”, first diagnose the DTC “U1000”, “C1A03” or “C1A04”.
- DTC “U1000”: Refer to CCS-80, "Diagnosis Procedure".
- DTC “C1A03”: Refer to CCS-31, "Diagnosis Procedure".
- DTC “C1A04”: Refer to CCS-33, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001835166

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A15 (15)	GEAR POSITION	When a mismatch occurs between an input speed signal transmitted from TCM with CAN communication and a vehicle speed signal transmitted from ABS actuator and electric unit (control unit)	• Input speed sensor • TCM • Wheel sensor • ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:0000000001835167

1.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “C1A03: VHCL SPEED SE CIRC” (DTC 3), “C1A04: ABS/TCS/VDC CIRC” (DTC 4) or “U1000: CAN COMM CIRCUIT” (DTC100) other than “C1A15: GEAR POSITION” (DTC 15) is detected.

Is any DTC detected?

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

2.DIAGNOSIS FOR DETECTED DTC

Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to CCS-93, "DTC Index".

>> GO TO 9.

3.CHECK VEHICLE SPEED SIGNAL

With CONSULT-III
1. Start engine.
2. With “Data Monitor” of “ICC”, check if “VHCL SPEED SE” operates normally.

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 8.

4.CHECK SHIFT GEAR POSITION

Check if gear positions are correct in A/T.

Is the inspection result normal?

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

5. CHECK TCM GEAR POSITION SIGNAL

With CONSULT-III
With “Data Monitor” of “TRANSMISSION”, check if “GEAR” operates normally.

Is the inspection result normal?

YES >> GO TO 8.
NO >> GO TO 7.

6. CHECK TCM INPUT SPEED

With CONSULT-III
With “Data Monitor” of “TRANSMISSION”, check if “INPUT SPEED” operates normally.

Is the inspection result normal?

YES >> GO TO 8.
NO >> GO TO 7.

7. PERFORM SELF-DIAGNOSIS OF TCM

1. Perform self-diagnosis of TCM.
2. Check if DTC is detected. Refer to EC-526, "DTC Index".
3. Repair or replace applicable item.

>> GO TO 9.

8. REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 9.

9. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

C1A16 RADAR STAIN

Description

INFOID:0000000001835168

ICC sensor integrated unit irradiates laser beam, and receives reflected laser beam to measure distance from preceding vehicle.

DTC Logic

INFOID:0000000001835169

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A16 (16)	RADAR STAIN	If any stain occurs to ICC sensor integrated unit body window.	Stain or foreign materials is deposited

Diagnosis Procedure

INFOID:0000000001835170

1.VISUAL INSPECTION 1

Check ICC sensor integrated unit body window for contamination and foreign materials.

Is it found?

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

2.REMOVE DIRT AND FOREIGN OBJECTS

Remove any stain and foreign materials from the ICC sensor integrated unit body window.

>> GO TO 6.

3.VISUAL INSPECTION 2

Check ICC sensor integrated unit body window for cracks and scratches.

Is it found?

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

4.ASKING COMPLAINTS

1. Ask if there is any trace of contamination or foreign material on ICC sensor integrated unit.
2. Ask if vehicle was driven in snow or ICC sensor integrated unit was frosted.
3. Ask if ICC sensor integrated unit was fogged temporarily. (Front window glass may have also tended to be fogged.)

Is there any symptom?

YES >> Explain difference in displays between contamination detection result and current indication to customer, and tell them “This is not malfunction”.
NO >> GO TO 5.

5.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 6.

6.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").

2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

C1A18 LASER AIMING INCMP

Description

INFOID:0000000001835171

Always perform laser beam aiming adjustment after replacing ICC sensor integrated unit.

DTC Logic

INFOID:0000000001835172

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A18 (18)	LASER AIMING INCMP	Laser beam aiming of ICC sensor integrated unit is not adjusted.	• No laser beam aiming adjustment is performed • Laser beam aiming adjustment has been interrupted

Diagnosis Procedure

INFOID:0000000001835173

1.ADJUST LASER BEAM AIMING

1. Adjust laser beam aiming. Refer to CCS-6, "LASER BEAM AIMING ADJUSTMENT : Description".
2. Erase DTC.
3. Activate the vehicle-to-vehicle distance control mode.
4. Perform self-diagnosis of ICC sensor integrated unit.
5. Check if DTC “C1A18: LASER AIMING INCMP” (DTC 18) is detected.

Is any DTC detected?

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

2.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 3.

3.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

C1A21 UNIT HIGH TEMP

Description

INFOID:0000000001835174

ICC sensor integrated unit integrates a temperature sensor.

DTC Logic

INFOID:0000000001835175

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A21 (21)	UNIT HIGH TEMP	If temperature sensor (built in ICC sensor integrated unit) detects a high temperature.	Temperature around ICC sensor integrated unit is excessively high

Diagnosis Procedure

INFOID:0000000001835176

1.CHECK SYMPTOM

Check if engine cooling system malfunctions.

Does it malfunction?

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

2.REPAIR ENGINE COOLING SYSTEM

Repair engine cooling system.

>> GO TO 4.

3.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 4.

4.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

C1A24 NP RANGE

Description

INFOID:0000000001835177

Shift position signal is transmitted by TCM to ICC sensor integrated unit with CAN communication (A/T).

NOTE:

If DTC “C1A24” is detected along with DTC “U1000” or “U0402”, first diagnose the DTC “U1000” or “U0402”.

- DTC “U1000”: Refer to CCS-80, "Diagnosis Procedure".
- DTC “U0402”: Refer to CCS-76, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001835178

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A24 (24)	NP RANGE	If shift position signal and current gear position signal, transmitted by TCM with CAN communication, are inconsistent.	• Shift position signal • Current gear position signal • TCM

Diagnosis Procedure

INFOID:0000000001835179

1.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC100) or “U0402: TCM CAN CIR 1” (DTC 122) other than “C1A24: NP RANGE” (DTC 24) is detected.

Is any DTC detected?

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

2.DIAGNOSIS FOR DETECTED DTC

Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to CCS-93, "DTC Index".

>> GO TO 6.

3.CHECK DATA MONITOR OF TCM

With CONSULT-III

With “Data Monitor” of “TRANSMISSION”, check if “SLCT LVR POSI” are operates normally.

Is the inspection result normal?

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

4.PERFORM SELF-DIAGNOSIS OF TCM

1. Perform self-diagnosis of TCM.
2. Repair or replace applicable item. Refer o TM-192, "DTC Index".

>> GO TO 6.

5.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 6.

6. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

C1A26 ECD MODE MALFUNCTION

Description

INFOID:0000000001835180

ECD (ELECTRONICALLY CONTROLLED DECELERATION)
- Receives deceleration degree commandment value signal from ICC sensor integrated unit, and controls brake fluid pressure with the motor [built in ABS actuator and electric unit (control unit)].
- ECD control-related signals are transmitted by ABS actuator and electric unit (control unit) to ICC sensor integrated unit with CAN communication.

NOTE:
If DTC “C1A26” is detected along with DTC “U1000”, “U0415” or “U0121” first diagnose the DTC “U1000”, “U0415” or “U0121”.
- DTC “U1000”: Refer to CCS-80, "Diagnosis Procedure".
- DTC “U0415”: Refer to CCS-78, "Diagnosis Procedure".
- DTC “U0121”: Refer to CCS-72, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001835181

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A26 (26)	ECD MODE MALF	If an abnormal condition occurs with ECD system.	ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:0000000001835182

1.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) or “U0415: VDC CAN CIR 1” (DTC 126), “U0121: VDC CAN CIR 2” (DTC 127) other than “C1A26: ECD MODE MALF” (DTC 26) is detected.

Is any DTC detected?

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

2.DIAGNOSIS FOR DETECTED DTC

Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to CCS-93, "DTC Index".

>> GO TO 6.

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

1. Perform self-diagnosis of ABS actuator and electric unit (control unit).
2. Check if DTC is detected. Refer to BRC-88, "DTC No. Index".

Is any DTC detected?

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

4.REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace the applicable item identified by the self-diagnosis result.

>> GO TO 6.

5.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.

2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 6.

6. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

C1A27 ECD POWER SUPPLY CIRCUIT

Description

INFOID:0000000001835183

ECD (ELECTRONICALLY CONTROLLED DECELERATION)
- Receives deceleration degree commandment value signal from ICC sensor integrated unit, and controls brake fluid pressure with the motor [built in ABS actuator and electric unit (control unit)].
- ECD control-related signals are transmitted by ABS actuator and electric unit (control unit) to ICC sensor integrated unit with CAN communication.

NOTE:
If DTC “C1A27” is detected along with DTC “U1000”, “U0415” or “U0121” first diagnose the DTC “U1000”, “U0415” or “U0121”.
- DTC “U1000”: Refer to CCS-80, "Diagnosis Procedure".
- DTC “U0415”: Refer to CCS-78, "Diagnosis Procedure".
- DTC “U0121”: Refer to CCS-72, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001835184

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A27 (27)	ECD PWR SUPLY CIR	ECD system power supply voltage is excessively low.	• ABS actuator and electric unit (control unit) power supply circuit • ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:0000000001835185

1.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) or “U0415: VDC CAN CIR 1” (DTC 126), “U0121: VDC CAN CIR 2” (DTC 127) other than “C1A27: ECD PWR SUPLY CIR” (DTC 27) is detected.

Is any DTC detected?

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

2.DIAGNOSIS FOR DETECTED DTC

Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to CCS-93, "DTC Index".

>> GO TO 6.

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

Check power supply circuit of ABS actuator and electric unit (control unit). Refer to BRC-37, "Diagnosis Procedure".

Is the inspection result normal?

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

4.REPAIR OR REPLACE ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) POWER SUPPLY CIRCUIT

Repair or replace ABS actuator and electric unit (control unit) power supply circuit.

>> GO TO 6.

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

1. Perform self-diagnosis of ABS actuator and electric unit (control unit).
2. Repair or replace applicable item. Refer to BRC-88, "DTC No. Index".

>> GO TO 6.

6. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

C1A33 CAN TRANSMISSION ERROR

Description

INFOID:0000000001848867

ICC sensor integrated unit transmits a signal required by ICC system to ECM with CAN communication.

NOTE:

If DTC “C1A33” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to CCS-80, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001848868

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A33 (33)	CAN TRANSMISSION ERROR	If an error occurs in CAN communication signal that ICC sensor integrated unit transmits to ECM	ICC sensor integrated unit

Diagnosis Procedure

INFOID:0000000001848869

1.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) other than “C1A33: CAN TRANSMISSION ERROR” (DTC 33) is detected.

Is any DTC detected?

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

2.CAN COMMUNICATION INSPECTION

Perform the CAN communication system inspection. Repair or replace the applicable item. Refer to CCS-80, "Diagnosis Procedure".

>> GO TO 4.

3.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 4.

4.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

C1A34 COMMAND ERROR

Description

INFOID:0000000001848870

ICC sensor integrated unit sends command signal required for ECM control with CAN communication.

NOTE:

If DTC “C1A34” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to CCS-80, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001848871

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A34 (34)	COMMAND ERROR	If an error occurs in the command signal that ICC sensor integrated unit transmits to ECM with CAN communication	ICC sensor integrated unit

Diagnosis Procedure

INFOID:0000000001848872

1. PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) other than “C1A34: COMMAND ERROR” (DTC 34) is detected.

Is any DTC detected?

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

2. CAN COMMUNICATION INSPECTION

Perform the CAN communication system inspection. Repair or replace the applicable item. Refer to CCS-80, "Diagnosis Procedure".

>> GO TO 4.

3. REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 4.

4. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

U0121 VDC CAN 2

Description

INFOID:0000000001835186

ABS actuator and electric unit (control unit) transmits VDC system signal to ICC sensor integrated unit with CAN communication.

NOTE:

If DTC “U0121” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to CCS-80, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001835187

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
U0121 (127)	VDC CAN CIR2	When a mismatch occurs between a VDC system signal transmitted from ABS actuator electric unit (control unit) and a VDC system signal received by ICC sensor integrated unit.	ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:0000000001835188

1.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) other than “U0121: VDC CAN CIR2” (DTC 127) is detected.

Is any DTC detected?

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

2.CAN COMMUNICATION INSPECTION

Perform the CAN communication system inspection. Repair or replace the applicable item. Refer to CCS-80, "Diagnosis Procedure".

>> GO TO 6.

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

1. Perform self-diagnosis of ABS actuator and electric unit (control unit).
2. Check if DTC is detected. Refer to BRC-88, "DTC No. Index".

Is any DTC detected?

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

4.REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace the applicable item identified by the self-diagnosis result.

>> GO TO 6.

5.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 6.

6.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

U0401 ECM CAN 1

Description

INFOID:0000000001835189

ICC sensor integrated unit and ECM exchange ECM system-related signals with CAN communication.
NOTE:
If DTC “U0401” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to CCS-80, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001835190

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
U0401 (120)	ECM CAN CIR1	When a counter value of CAN signals received from ECM does not change.	ECM

Diagnosis Procedure

INFOID:0000000001835191

1.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) other than “U0401: ECM CAN CIR1” (DTC 120) is detected.

Is any DTC detected?

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

2.CAN COMMUNICATION INSPECTION

Perform the CAN communication system inspection. Repair or replace the applicable item. Refer to CCS-80, "Diagnosis Procedure".

>> GO TO 6.

3.PERFORM SELF-DIAGNOSIS OF ECM

1. Perform self-diagnosis of ECM.
2. Check if DTC is detected. Refer to EC-526, "DTC Index".

Is any DTC detected?

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

4.REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace the applicable item identified by the self-diagnosis result.

>> GO TO 6.

5.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 6.

6.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

U0402 TCM CAN 1

Description

INFOID:0000000001835192

TCM transmits A/T control system signal to ICC sensor integrated unit with CAN communication.

NOTE:

If DTC “U0402” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to CCS-80, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001835193

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
U0402 (122)	TCM CAN CIR1	When a counter value of CAN signals received from TCM does not change.	TCM

Diagnosis Procedure

INFOID:0000000001835194

1.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) other than “U0402: TCM CAN CIR1” (DTC 122) is detected.

Is any DTC detected?

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

2.CAN COMMUNICATION INSPECTION

Perform the CAN communication system inspection. Repair or replace the applicable item. Refer to CCS-80, "Diagnosis Procedure".

>> GO TO 6.

3.PERFORM SELF-DIAGNOSIS OF TCM

1. Perform self-diagnosis of TCM.
2. Check if DTC is detected. Refer to TM-192, "DTC Index".

Is any DTC detected?

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

4.REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace the applicable item identified by the self-diagnosis result.

>> GO TO 6.

5.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 6.

6.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

U0415 VDC CAN 1

Description

INFOID:0000000001835195

ABS actuator and electric unit (control unit) transmits VDC system signal to ICC sensor integrated unit with CAN communication.

NOTE:

If DTC “U0415” is detected along with DTC “U1000” or “U0121”, first diagnose the DTC “U1000” or “U0121”.

- DTC “U1000”: Refer to CCS-80, "Diagnosis Procedure".
- DTC “U0121”: Refer to CCS-72, "Diagnosis Procedure".

DTC Logic

INFOID:0000000001835196

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
U0415 (126)	VDC CAN CIR1	When a counter value of CAN signals received from ABS actuator and electric unit (control unit) does not change.	ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:0000000001835197

1. PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) or “U0121: VDC CAN CIR 1” (DTC 127) other than “U0415: VDC CAN CIR1” (DTC 126) is detected.

Is any DTC detected?

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

2. DIAGNOSIS FOR DETECTED DTC

Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to CCS-93, "DTC Index".

>> GO TO 6.

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

1. Perform self-diagnosis of ABS actuator and electric unit (control unit).
2. Check if DTC is detected. Refer to BRC-88, "DTC No. Index".

Is any DTC detected?

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

4. REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace the applicable item identified by the self-diagnosis result.

>> GO TO 6.

5. REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 6.

6. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000001835198

- CAN communication is a multiplex communication system. This enables it to transmit and receive many communication signals at high speed by connecting control units with two communication lines (CAN-H and CAN-L).
- Control units on the CAN network transmit signals with CAN communication control circuit in the control unit and receive only necessary signals from other control units for various controls. Refer to LAN-29, "CAN Communication Signal Chart".
- CAN communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

DTC Logic

INFOID:0000000001835199

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
U1000 (100)	CAN COMM CIRCUIT	When ICC sensor integrated unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication

Diagnosis Procedure

INFOID:0000000001835200

1.PERFORM SELF DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Go to “LAN system”. Refer to LAN-19, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-39, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000001835201

Initial diagnosis for ICC sensor integrated unit.

DTC Logic

INFOID:0000000001835202

DTC DETECTION LOGIC

DTC No. (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
U1010 (110)	CONTROL UNIT (CAN)	ICC sensor integrated unit detects malfunction by CAN initial diagnosis.	ICC sensor integrated unit

Diagnosis Procedure

INFOID:0000000001835203

1.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Print self-diagnosis result.
3. Erase DTC.
4. Perform self-diagnosis of ICC sensor integrated unit again.
5. Check if DTC “U1010: CONTROL UNIT (CAN)” (DTC110) is detected.

Is any DTC detected?

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

2.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 3.

3.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000001835204

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ON or START	45

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT FOR ICC SENSOR INTEGRATED UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC sensor integrated unit connector.
3. Turn ignition switch ON.
4. Check voltage between ICC sensor integrated unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
ICC sensor integrated unit connector	Terminal		
E67	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace ICC sensor integrated unit power supply harness or fuse.

3.CHECK GROUND CIRCUIT FOR ICC SENSOR INTEGRATED UNIT

1. Turn ignition switch OFF.
2. Check continuity between ICC sensor integrated unit harness connector and ground.

ICC sensor integrated unit connector	Terminal	Ground	Continuity
E67	4		Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace ICC sensor integrated unit ground harness.

PARK/NEUTRAL POSITION SWITCH (M/T)

Description

INFOID:0000000001835205

Park/neutral position switch provides input signals to ECM, which transmits the data to ICC sensor integrated unit with CAN communication.
ICC sensor integrated unit performs the following controls via park/neutral position switch.
- Rejects any attempt to set ICC system when M/T shift knob is set at neutral position.
- Cancels ICC system when M/T shift knob is set to neutral position.

Component Function Check

INFOID:0000000001835206

1.CHECK OPERATION OF PARK/NEUTRAL POSITION SWITCH

With CONSULT-III
With “ICC” of “Data Monitor”, check if “NP SW SIG” operate normally.

“NP SW SIG”	
M/T shift knob at Neutral	**: ON**
M/T shift knob at a position other than Neutral	**: OFF**

Is the inspection result normal?

YES >> INSPECTION END.
NO >> Go to CCS-83, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001835207

1.CHECK PARK/NEUTRAL POSITION SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect park/neutral position switch connector and ECM connector.
3. Check continuity between park/neutral position switch harness connector and ECM harness connector.

Park/neutral position switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F55	1	M107	109	Existed

4. Check continuity between park/neutral position switch harness connector and ground.

Park/neutral position switch		Ground	Continuity
Connector	Terminal		
F55	1		Not existed

Is the inspection result normal?

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

2.REPAIR OR REPLACE HARNESS BETWEEN PARK/NEUTRAL POSITION SWITCH AND ECM

Repair or replace harness between park/neutral position switch and ECM.

>> GO TO 10.

3.CHECK PARK/NEUTRAL POSITION SWITCH POWER SUPPLY CIRCUIT

1. Connect ECM connector.
2. Turn ignition switch ON.
3. Check voltage between park/neutral position switch harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Park/neutral position switch connector	Terminal		
F55	2	Ground	Battery voltage

Is the inspection result normal?

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

4. REPAIR OR REPLACE PARK/NEUTRAL POSITION SWITCH POWER SUPPLY HARNESS

Repair or replace park/neutral position switch power supply harness or fuse.

>> GO TO 10.

5. CHECK PARK/NEUTRAL POSITION SWITCH

Check park/neutral position switch. Refer to CCS-85, "Component Inspection".

Is the inspection result normal?

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

6. REPLACE PARK/NEUTRAL POSITION SWITCH

Replace park/neutral position switch.

>> GO TO 10.

7. PERFORM SELF-DIAGNOSIS OF ECM

1. Perform self-diagnosis of ECM.
2. Check if DTC is detected. Refer to EC-526, "DTC Index".

Is any DTC detected?

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

8. REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace the applicable item identified by the self-diagnosis result.

>> GO TO 10.

9. REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 10.

10. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

Component Inspection

INFOID:0000000001835208

1. CHECK PARK/NEUTRAL POSITION SWITCH

Check continuity between park/neutral position switch terminals.

Terminals		Condition	Continuity
1	2	When shift knob is neutral position	Existed
		When shift knob is except neutral position	Not existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace park/neutral position switch.

ECU DIAGNOSIS INFORMATION

ICC SENSOR INTEGRATED UNIT

Reference Value

INFOID:0000000001835209

VALUES ON THE DIAGNOSIS TOOL

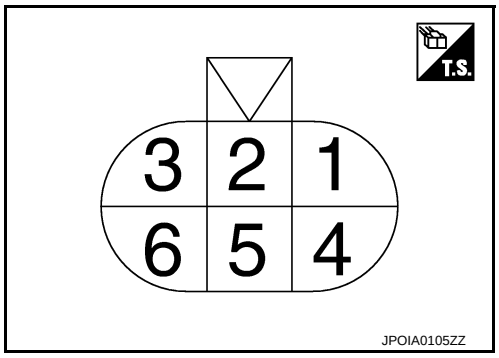
CONSULT-III MONITOR ITEM

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 ICC system	ICC system control active	On
		ICC system control inactive	Off
BRAKE SW	Ignition switch ON	Brake pedal depressed	Off
		Brake pedal not depressed	On
STOP LAMP SW	Ignition switch ON	Brake pedal depressed	On
		Brake pedal not depressed	Off
IDLE SW	Engine running	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	• Start the engine and activate the vehicle-to-vehicle distance control mode • 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 the MAIN switch	ICC system ON (CRUISE indicator turned on)	On
		ICC system OFF (CRUISE indicator turned off)	Off
OWN VHCL	Start the engine and press the MAIN switch	ICC system ON (Own vehicle indicator turned on)	On
		ICC system OFF (Own vehicle indicator turned off)	Off
VHCL AHEAD	• Start the engine and press the MAIN switch • Drive the vehicle in the vehicle-to-vehicle distance control mode	Vehicle ahead detected (Vehicle ahead indicator turned on)	On
		Vehicle ahead not detected (Vehicle ahead indicator turned off)	Off
ICC WARNING	Engine running	ICC system malfunctioning (CRUISE warning lamp turned on)	On
		ICC system operating normally (CRUISE warning lamp turned off)	Off
VHCL SPEED SE	While driving		Value of vehicle speed signal (wheel speed)
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed

Monitor Item	Condition		Value/Status
BUZZER O/P	Engine running	When ICC warning buzzer signal is outputted	On
		When ICC warning buzzer signal is not outputted	Off
THRTL SENSOR	**NOTE:** This item is displayed, but cannot monitor		0.0
ENGINE RPM	While driving		Equivalent to tachometer reading
WIPER SW	Ignition switch ON	Wiper switch at OFF	Off
		Wiper switch at LOW	Low
		Wiper switch at HIGH	High
YAW RATE	**NOTE:** This item is displayed, but cannot monitor		0.0
STP LMP DRIVE	While driving	ICC brake hold relay activated	On
		ICC brake hold relay deactivated	Off
D RANGE SW	Ignition switch ON	When “D”, “DS” or “M” range is selected	On
		When any position other than “D”, “DS” or “M” range is selected	Off
NP RANGE SW	Ignition switch ON	When “N” or “P” range is selected	On
		When any position other than “N” or “P” range is selected	Off
PWR SUP MONI	Engine running		Power supply voltage of 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
GEAR	While driving		Displays the shift position
CLUTCH SW SIG	Ignition switch ON	When clutch pedal is depressed	On
		When clutch pedal is not depressed	Off
NP SW SIG	Ignition switch ON	• When any position other than “N” or “P” range is selected (A/T) • When neutral position is selected (M/T)	On
		• When any position other than “N” or “P” range is selected (A/T) • When any position other than neutral is selected (M/T)	Off
MODE SIG	Start the engine and press the 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	• Start the engine and activate the conventional (fixed speed) cruise control mode • Press SET/COAST switch	When SET indicator is turned on	On
		When SET indicator is turned off	Off
DISTANCE	Drive the vehicle in the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the distance from the preceding vehicle
		When no vehicle ahead is detected	0.0

Monitor Item	Condition		Value/Status
RELATIVE SPD	Drive the vehicle in the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the relative speed
		When no vehicle ahead is detected	0.0

TERMINAL LAYOUT

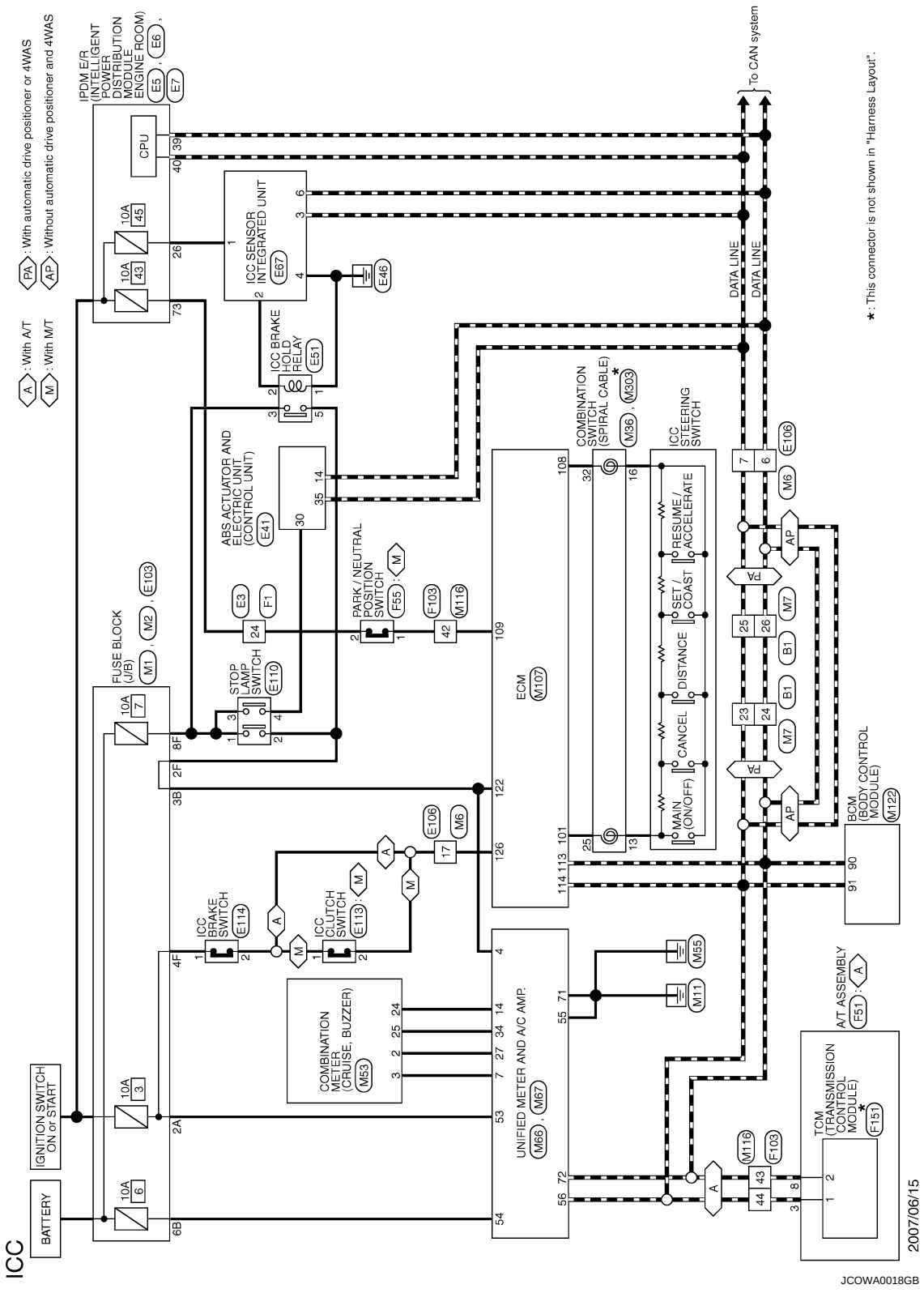


PHYSICAL VALUES

Terminal No.		Wire color	Description		Condition		Value (Approx.)
+	–		Signal name	Input/ Output			
1	Ground	R	Ignition power supply	Input	Ignition switch ON		Battery voltage
2		V	Stop lamp drive output signal	Output	Ignition switch ON	At “STOP LAMP” test on “ACTIVE TEST”	12 V
						—	0 V
3		L	CAN–H	—	—		—
4		B	Ground	—	Ignition switch ON		0 V
6		P	CAN–L	—	—		—

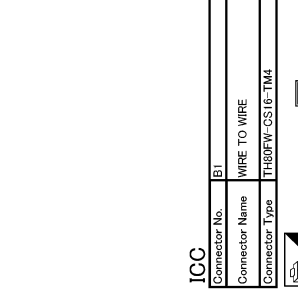
Wiring Diagram - ICC SYSTEM -

INFOID:0000000001835210



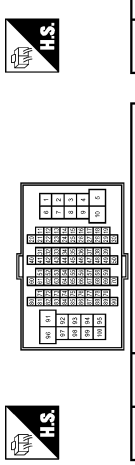
ICC

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



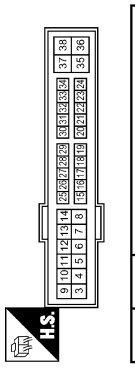
Terminal No.	Color of Wire	Signal Name [Specification]
23	L	–
24	P	–
25	L	–
26	P	–

Connector No.	E3
Connector Name	WIRE TO WIRE
Connector Type	SAA36MB-RS10-SJ22



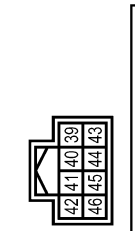
Terminal No.	Color of Wire	Signal Name [Specification]
24	P	–

Connector No.	E5
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V



Terminal No.	Color of Wire	Signal Name [Specification]
26	R	–

Connector No.	E6
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH

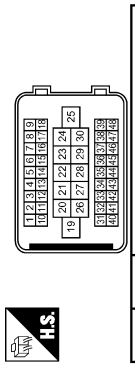


Terminal No.	Color of Wire	Signal Name [Specification]
39	P	–
40	L	–

Connector No.	E7
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4

Terminal No.	Color of Wire	Signal Name [Specification]
73	P	–

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	BAA42FB-AHZ4-LH



Terminal No.	Color of Wire	Signal Name [Specification]
14	P	CAN-L
30	SB	BLS
35	L	CAN-H

Connector No.	E51
Connector Name	ICC BRAKE HOLD RELAY
Connector Type	MS02FL-M2

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	V	–
3	R	–
5	P	–

Connector No.	E67
Connector Name	ICC SENSOR INTEGRATED UNIT
Connector Type	RS06FB-PR

Terminal No.	Color of Wire	Signal Name [Specification]
1	R	IGN
2	V	BRK LMP RLY
3	L	CAN-H
4	B	GND
6	P	CAN-L

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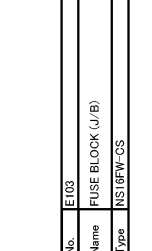
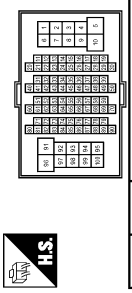
ICC

Connector No.	E103
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
2F	W	–
4F	G	–
8F	L	–

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
6	P	–
7	L	–
17	SB	–

Connector No.	E110
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	–
2	W	–
3	L	–
4	SB	–

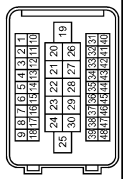
Connector No.	E113
Connector Name	ICC CLUTCH SWITCH (WITH ICC)
Connector Type	S02FL

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–
2	SB	–

Connector No.	E114
Connector Name	ICC BRAKE SWITCH (WITH ICC)
Connector Type	S02FL

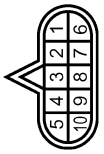
Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–
2	SB	– [With A/T]
2	G	– [With M/T]

Connector No.	F1
Connector Name	WIRE TO WIRE
Connector Type	SAA36FB-RS10-SJ22



Terminal No.	Color of Wire	Signal Name [Specification]
24	W	–

Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG-DGY



Terminal No.	Color of Wire	Signal Name [Specification]
3	L	–
8	P	–

Connector No.	F55
Connector Name	PARK/NEUTRAL POSITION SWITCH
Connector Type	RK02FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	–
2	W	–

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ICC

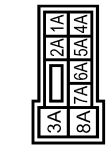
Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK36FW-NS10

Terminal No.	Color of Wire	Signal Name [Specification]
42	BR	–
43	P	–
44	L	–

Connector No.	F151
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FBGY

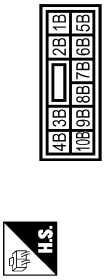
Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	CAN-H
2	L/Y	CAN-L

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2



Terminal No.	Color of Wire	Signal Name [Specification]
2A	G	–

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
3B	P	–
6B	Y	–

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
6	P	–
7	L	–
17	BR	–

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
23	L	–
24	P	–
25	L	–
26	P	–

Connector No.	M36
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FGY-1V

Terminal No.	Color of Wire	Signal Name [Specification]
25	SB	–
32	Y	–

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	LG	COMM (METER->AMP.)
3	GR	COMM (AMP->METER)
24	BR	COMM (LCD->AMP.)
25	Y	COMM (AMP->LCD)

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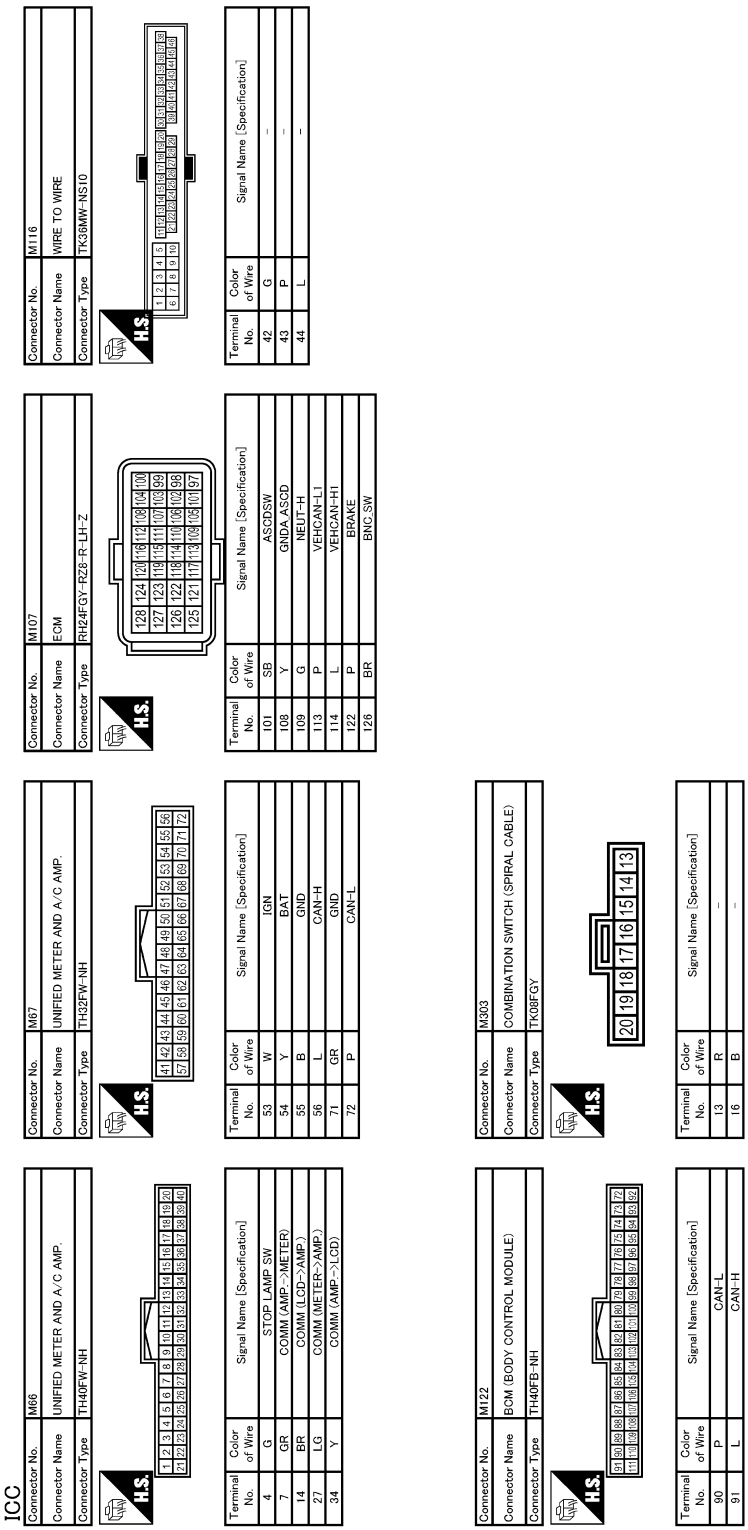

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Fail-safe

INFOID:0000000001835211

When a malfunction occurs in ICC system, a chime sounds a beep, the system is released and ICC system warning lamp in combination meter illuminates. System setting is not accepted when malfunction is detected.

DTC Index

INFOID:0000000001835212

×: Applicable

DTC No.		CONSULT-III screen terms	ICC system warning lamp	Fail-safe			Reference page
CONSULT-III	On board display			Vehicle-to-vehicle distance control mode	Conventional (Fixed speed) cruise control mode	Brake assist (With preview function)	
C1A00	0	CONTROL UNIT	×	×	×	×	CCS-28
C1A01	1	POWER SUPPLY CIR 1	×	×	×	×	CCS-29
C1A02	2	POWER SUPPLY CIR 2	×	×	×	×	
C1A03	3	VHCL SPEED SE CIRC	×	×	×	×	CCS-31
C1A04	4	ABS/TCS/VDC CIRC	×	×	×	×	CCS-33
C1A05	5	BRAKE SW/STOP L SW	×	×	×	×	CCS-35
C1A06	6	OPERATION SW CIRC	×	×	×		CCS-45
C1A12	12	LASER BEAM OFFCNTR	×	×		×	CCS-48
C1A13	13	STOP LAMP RLY FIX	×	×		×	CCS-49
C1A14	14	ECM CIRCUIT	×	×	×	×	CCS-56
C1A15	15	GEAR POSITION	×	×	×		CCS-58
C1A16	16	RADAR STAIN	×	×		×	CCS-60
C1A18	18	LASER AIMING INCMP	×	×		×	CCS-62
C1A21	21	UNIT HIGH TEMP	×	×		×	CCS-63
C1A24	24	NP RANGE	×	×	×		CCS-64
C1A26	26	ECD MODE MALF	×	×	×	×	CCS-66
C1A27	27	ECD PWR SUPLY CIR	×	×	×	×	CCS-68
C1A33	33	CAN TRANSMISSION ERROR	×	×	×	×	CCS-70
C1A34	34	COMMAND ERROR	×	×	×	×	CCS-71
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	—	—	—	—	—
U1000	100	CAN COMM CIRCUIT	×	×	×	×	CCS-80
U1010	110	CONTROL UNIT (CAN)	×	×	×	×	CCS-81
U0121	127	VDC CAN CIR2	×	×	×	×	CCS-72
U0401	120	ECM CAN CIR1	×	×	×	×	CCS-74
U0402	122	TCM CAN CIR1	×	×	×	×	CCS-76
U0415	126	VDC CAN CIR1	×	×	×	×	CCS-78

SYMPTOM DIAGNOSIS

INTELLIGENT CRUISE CONTROL SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000001835213

Symptoms		Reference page
Operation	MAIN switch does not turn ON.	CCS-96
	MAIN switch does not turn OFF.	
	Cruise does not function for setting (powering functions).	CCS-98
	CANCEL switch does not function.	CCS-100
	Resume does not function.	
	Set speed does not increase.	
	Set distance to the vehicle ahead cannot be changed.	
	ICC is not cancelled when the A/T selector lever is “N”.	CCS-101
Display/Chime	Multi information display not appear.	Check combination meter. Refer to MWI-35, "Diagnosis Description".
	Chime does not function.	CCS-103
Control	Driving force is hunting.	CCS-105
Function to detect the vehicle ahead	System frequently cannot detect the vehicle ahead.	CCS-106
	Distance to detect the vehicle ahead is short.	
	System misidentifies a vehicle even though there is no vehicle ahead.	• Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)". • Perform ICC action test. Refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)".
	System misidentifies a vehicle in the next lane.	
	System does not detect a vehicle at all.	CCS-107

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

Description

INFOID:0000000001835214

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:
- ICC system is in fail-safe mode when ICC system warning lamp is turned on. Therefore, ICC system display is not appeared even if MAIN switch is pressed.
- Perform the self-diagnosis for ICC sensor integrated unit if ICC system warning lamp is illuminated. Repair or replace applicable item.

Diagnosis Procedure

INFOID:0000000001835215

1.CHECK MAIN SWITCH

With CONSULT-III
1. Start engine.
2. With “Data Monitor” of “ICC”, check if “MAIN SW” and “CRUISE LAMP” operate normally.

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 5.

2.CHECK UNIFIED METER AND A/C AMP.

With CONSULT-III
With “Data Monitor” of “METER/M&A”, check if “CRUISE IND” operate normally.

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 5.

3.PERFORM SELF-DIAGNOSIS OF UNIFIED METER AND A/C AMP.

1. Perform self-diagnosis of unified meter and A/C amp.
2. Check if DTC is detected. Refer to MWI-98, "DTC Index".

Is any DTC detected?

YES >> Repair or replace applicable item.
NO >> GO TO 4

4.PERFORM SELF-DIAGNOSIS MODE OF COMBINATION METER

1. Perform self-diagnosis mode of combination meter. Refer to MWI-35, "Diagnosis Description".
2. Check that the multi information display operates normally.
3. If it does not operate normally, repair the affected components or replace the combination meter.

>> INSPECTION END

5.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) is detected.

Is it DTC detected?

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

6.CAN COMMUNICATION INSPECTION

Perform CAN communication system inspection. Repair or replace the applicable item. Refer to CCS-80, "Diagnosis Procedure".

>> INSPECTION END

7. CHECK ICC STEERING SWITCH

Inspect ICC steering switch. Refer to CCS-45, "Diagnosis Procedure"

>> INSPECTION END

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

Description

INFOID:0000000001835216

ICC system cannot be set by pressing SET/COAST switch though MAIN switch can be turned ON/OFF.
NOTE:
ICC system cannot be set in the following cases.
- When the vehicle speed is not in range of approx. 40 km/h (25 MPH) to 144 km/h (90 MPH).
- When the A/T selector lever is in “N” (A/T).
- When the M/T shift knob is set at the neutral position (M/T).
- When the clutch pedal is depressed (M/T).
- While the brake is in operation.
- When the wiper switch is at LOW/HI position.

Diagnosis Procedure

INFOID:0000000001835217

1.CHECK CAUSE OF AUTOMATIC CANCELLATION

With CONSULT-III
With “CAUSE OF AUTO-CANCEL” in “Work Support” at “ICC”, check if any cause of cancellation is found.

Is any cause found?

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

2.CHECK RELEVANT CANCEL FACTORS

According to cancel cause, go to specified diagnosis.

Cancel cause	Inspection item
OPE SW VOLT CIRC	Refer to CCS-45, "Diagnosis Procedure".
VHCL SPD UNMATCH	Refer to CCS-31, "Diagnosis Procedure".
IGN LOW VOLT	Refer to CCS-29, "Diagnosis Procedure".
ECM CIRCUIT	Refer to CCS-56, "Diagnosis Procedure".

>> INSPECTION END

3.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC is detected. Refer to CCS-93, "DTC Index".

Is any DTC detected?

YES >> GO TO 6.
NO >> GO TO 4.

4.CHECK SWITCHES AND VEHICLE SPEED SIGNAL

With CONSULT-III
1. Start engine.
2. With “Data Monitor” of “ICC”, check the following items for normal operation.

- VHCL SPEED SE
- D RANGE SW (A/T)
- SET/COAST SW
- BRAKE SW
- CLUTCH SW SIG (M/T)
- NP SW SIG (M/T)

Is the inspection result normal?

YES >> GO TO 7.
NO >> GO TO 5.

5.CHECK INOPERATIVE ITEMS

Check the items for which DATA MONITOR cannot operate normally

DATA MONITOR item	Inspection item
VHCL SPEED SE	Refer to CCS-31, "Diagnosis Procedure".
D RANGE SW	Refer to CCS-101, "Diagnosis Procedure"
SET/COAST SW	Refer to CCS-45, "Diagnosis Procedure".
BRAKE SW	Refer to CCS-35, "Diagnosis Procedure (A/T Models)".
CLUTCH SW SIG	
NP SW SIG (M/T)	Refer to CCS-83, "Diagnosis Procedure".

>> INSPECTION END

6. REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace applicable item identified by the self-diagnosis result.

>> GO TO 8.

7. REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 8.

8. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

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

Description

INFOID:0000000001835218

RESUME/ACCELERATE, CANCEL, and DISTANCE switches cannot be operated while ICC system is active though MAIN switch can be turned ON/OFF.

NOTE:

RESUME does not function in the following cases.

- When MAIN switch is turned OFF once.
- When the vehicle speed is less than 40 km/h (25 MPH).

Diagnosis Procedure

INFOID:0000000001835219

1.CHECK ICC STEERING SWITCHES

With CONSULT-III

1. Start engine.
2. With “Data Monitor” of “ICC”, check if ICC steering switches operate normally.

- “RESUME/ACC SW”
- “CANCEL SW”
- “DISTANCE SW”

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 2.

2.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) is detected.

Is it DTC detected?

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

3.CAN COMMUNICATION INSPECTION

Perform CAN communication system inspection. Repair or replace applicable item. Refer to CCS-80, "Diagnosis Procedure".

>> INSPECTION END

4.ICC STEERING SWITCH INSPECTION

Inspect ICC steering switch. Refer to CCS-47, "Component Inspection".

>> INSPECTION END

5.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 6.

6.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

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

Description

INFOID:0000000001835220

ICC system is not canceled even when the A/T selector lever is shifted to the “N” range while ICC system is active.

Diagnosis Procedure

INFOID:0000000001835221

1.CHECK INPUT “D” RANGE SWITCH SIGNAL (ICC SENSOR INTEGRATED UNIT)

With CONSULT-III
1. Start engine.
2. With “Data Monitor” of “ICC”, check if “D RANGE SW” and “NP RANGE SW” operate normally.

Is the inspection result normal?

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

2.PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) is detected.

Is it DTC detected?

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

3.CAN COMMUNICATION INSPECTION

Perform the CAN communication system inspection. Repair or replace the applicable item. Refer to CCS-80, "Diagnosis Procedure".

>> INSPECTION END

4.CHECK INPUT “D” RANGE SWITCH SIGNAL (TCM)

With CONSULT-III
With “Data Monitor” of “TRANSMISSION”, check if “SLCT LVR POSI” operates normally.

Is the inspection result normal?

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

5.PERFORM SELF-DIAGNOSIS OF TCM

1. Perform self-diagnosis of TCM.
2. Repair or replace applicable item. Refer to TM-192, "DTC Index".

>> GO TO 7.

6.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 7.

7.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

CHIME DOES NOT SOUND

Description

INFOID:0000000001835222

The chime may not sound occasionally in the following cases even if the distance from the vehicle ahead is short:

- When the speed difference from that of the vehicle ahead is small (both vehicles driving at similar speed).
- When the vehicle ahead drives at faster speed (the actual distance is increasing).
- When depressing the accelerator pedal.
- Chime does not sound when the vehicle ahead is not driving.
- 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-106, "Diagnosis Procedure").

Diagnosis Procedure

INFOID:0000000001835223

1. CHECK ICC WARNING CHIME

With CONSULT-III

1. Start engine.
2. With “Active Test” of “ICC”, check if “ICC BUZZER” operates normally.

Is the inspection result normal?

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

2. CHECK THE MALFUNCTION SYMPTOM DURING BUZZER OPERATION

Determine preceding vehicle detection status when malfunction occurred. If chime should have sounded: replace ICC sensor integrated unit and adjust laser beam aiming.

>> INSPECTION END

3. PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

1. Perform self-diagnosis of ICC sensor integrated unit.
2. Check if DTC “U1000: CAN COMM CIRCUIT” (DTC 100) is detected.

Is any DTC detected?

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

4. CAN COMMUNICATION INSPECTION

Perform the CAN communication system inspection. Repair or replace applicable item. Refer to CCS-80, "Diagnosis Procedure".

>> INSPECTION END

5. PERFORM SELF-DIAGNOSIS OF UNIFIED METER AND A/C AMP.

1. Perform self-diagnosis of unified meter and A/C amp.
2. Check if DTC is detected. Refer to MWI-98, "DTC Index".

Is any DTC detected?

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

6. CHECK COMBINATION METER CHIME OPERATION

With CONSULT-III

1. Select “BUZZER” on “BCM”.
2. With “Active Test” of “BUZZER”, check if “IGN KEY WARN ALM” and “LIGHT WARN ALM” operate normally.

Does chime sound?

YES >> GO TO 8.

NO >> Replace combination meter.

7. REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace applicable item identified by the self-diagnosis result.

>> GO TO 9.

8. REPLACE ICC SENSOR INTEGRATED UNIT.

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 9.

9. CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

DRIVING FORCE IS HUNTING

Description

INFOID:0000000001835224

The vehicle causes hunting when the ICC system is active.

Diagnosis Procedure

INFOID:0000000001835225

1.PERFORM SELF-DIAGNOSIS OF ECM

1. Perform self-diagnosis of ECM.
2. Check if DTC is detected. Refer to EC-526, "DTC Index".

Is any DTC detected?

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

2.CHECK ICC SENSOR INTEGRATED UNIT BODY WINDOW

1. Check the vehicle driving conditions. Refer to CCS-106, "Description".
2. Check ICC sensor integrated unit body window. Refer to CCS-106, "Diagnosis Procedure".

>> INSPECTION END

3.REPAIR OR REPLACE APPLICABLE ITEM

Repair or replace applicable item identified by the self-diagnosis result.

>> GO TO 4.

4.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

ICC SYSTEM FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD/ DETECTION ZONE IS SHORT

Description

INFOID:0000000001835226

The detection function may become unstable in the following cases.
- When the reflector of the vehicle ahead is deficient/ not clean enough to reflect the radar.
- When driving a road with extremely sharp corners.
- When the sensor cannot detect the reflector of the vehicle ahead as the vehicle ahead is passing a hill or passing the peak.

Diagnosis Procedure

INFOID:0000000001835227

1.VISUAL INSPECTION 1

Check ICC sensor integrated unit body window for contamination and foreign materials.

Is it found?

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

2.REMOVE DIRT AND FOREIGN OBJECTS

Remove any dirt and foreign objects from ICC sensor integrated unit body window.

>> GO TO 6.

3.VISUAL INSPECTION 2

Check ICC sensor integrated unit body window for cracks and scratches.

Is it found?

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

4.ADJUST LASER BEAM AIMING

1. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".
2. Perform ICC system action test. Refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)".
3. Check if preceding vehicle detection performance has been improved.

Is it improved?

YES >> INSPECTION END
NO >> GO TO 5.

5.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 6.

6.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

Description

INFOID:0000000001835228

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

Diagnosis Procedure

INFOID:0000000001835229

1.CHECK ICC SYSTEM DISPLAY IN COMBINATION METER

1. Perform the combination meter self-diagnosis. Refer to MWI-35, "Diagnosis Description".
2. Check if the multi information display turns on normally.

Is the inspection result normal?

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

2.VISUAL INSPECTION 1

Check ICC sensor integrated unit body window for contamination and foreign materials.

Is it found?

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

3.REMOVE DIRT AND FOREIGN OBJECTS

Remove any stain and foreign materials from the ICC sensor integrated unit body window.

>> GO TO 6.

4.VISUAL INSPECTION 2

Check ICC sensor integrated unit body window for cracks and scratches.

Is it found?

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

5.ADJUST LASER BEAM AIMING

1. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".
2. Perform ICC system action test. Refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)".
3. Check if preceding vehicle detection performance has been improved.

Is it improved?

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

6.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace ICC sensor integrated unit.
2. Adjust laser beam aiming. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

>> GO TO 7.

7.CHECK ICC SYSTEM

1. Erase DTC and perform ICC system action test. Then perform self-diagnosis of ICC sensor integrated unit. (For the details on the ICC system action test, refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)").
2. Check that no abnormal condition is present in the ICC system.

>> INSPECTION END

NORMAL OPERATING CONDITION

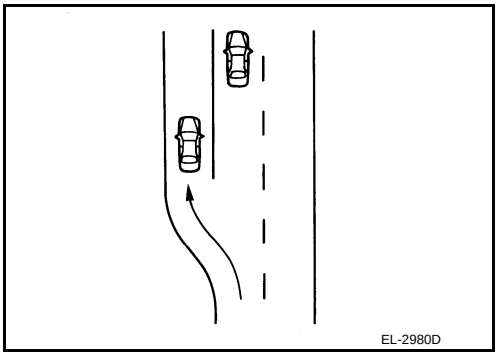
Description

INFOID:0000000001835230

PRECAUTIONS FOR VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE

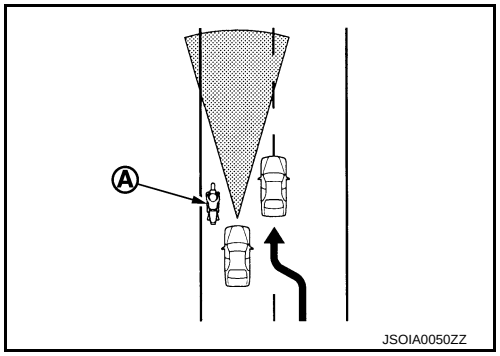
- Intelligent Cruise Control is functionally limited. This never supports careless driving and low visibility (rain, fog, etc.). Drive the vehicle safely. Keep a safe distance between vehicles by decreasing the vehicle speed according to the driving condition etc.
- Intelligent Cruise Control never stops the vehicle automatically. Intelligent Cruise Control is automatically released, and the buzzer sounds if any vehicle ahead is not detected when the vehicle speed is approximately 35 km (21.5 MPH) or less.
- Use this system when the vehicle speed does not extremely change. This system may not properly function when any vehicle cuts in, or when the vehicle ahead suddenly applies the brake. Then, the warnings (buzzer and indication) are activated.
- Never use Intelligent Cruise Control under the following conditions.

- A heavily-trafficked road and a tight turn.
  It may cause any accident because the driving speed does not fit to the road condition.
- A slippery road (e.g., freezing, or snowy road)
  The vehicle may lose the control by wheel spin.
- When driving in bad whether (rain, fog, snow etc.).
  The distance from the vehicle ahead is not detected precisely if the whether condition is bad. Intelligent Cruise Control is released automatically if the wipers are activated in low or high speed.
- The vehicle receives bright light (sunshine, etc.).
  The distance from the vehicle ahead is not detected precisely if bright light enters into the vehicle sensor.
- Raindrops or the snow is on the sensor.
  The distance from the vehicle ahead is not detected precisely if raindrops or the snow attaches on the sensor.
- A steep downhill
  The setting vehicle speed may exceed if Intelligent Cruise Control does not detect the vehicle ahead. The brake may heat up in the vehicle-to-vehicle distance control mode.
- A repeated uphill and downhill
  Intelligent Cruise Control may not detect the vehicle ahead precisely. An accident may occur by tailgating.
- Maintaining proper vehicle distance is difficult due to frequent acceleration/deceleration.
  It may cause any accident because the driving speed does not fit to the road condition if keeping a proper vehicle-to-vehicle distance is difficult.
- When entering in the highway interchange (swerving off the main line)
  Unexpected accident may cause if the vehicle ahead drives slower than the preset vehicle speed. The vehicle-to-vehicle distance control mode accelerates automatically because the vehicle ahead is not detected on the lane if the own vehicle or the vehicle ahead changes the lane.



- Intelligent Cruise Control is not activated to the parking vehicles, and vehicles driving extremely slower than the own vehicle. Never hit the vehicle stopping at a tollgate, or the tail end of traffic jam.
- Intelligent Cruise Control is not activated to the vehicle edging way, and non-vehicle objects (pedestrian, etc.).
- This function detects the reflector of the vehicle ahead. Intelligent Cruise Control may not detect the vehicle ahead, therefore keep a proper vehicle-to-vehicle distance under the following conditions. Drive the vehicle according to the driving condition.

- The vehicle ahead installs the reflector higher (trailer etc.).
- The rear of the vehicle ahead is extremely dirt.
- The vehicle ahead or vehicle on other lanes splashes water or snow on the road.
- The vehicle ahead provides dark exhaust gas. Smoke blocks the visibility.
- The vehicle ahead attaches film on the reflector. The vehicle ahead does not install the reflector. The reflector is broken.
- Extremely heavy load is on the rear seat, or in the trunk room.
- The vehicle drives on a repeated uphill and downhill



- The sensor detection distance is limited if the vehicle-to-vehicle distance is close. The vehicle distance may not maintain properly because the motorcycle (A) driving on the lane edge is not detected or the detection of the vehicle ahead (cutting in the own vehicle) delays.
- The sensor dirt is detected automatically. But it is not perfect. Dirt is not judged despite the sensor is dirt. Dirt is not detected if the snow or ice is on the sensor.
  Keeping the vehicle-to-vehicle distance is difficult if the snow or ice is on the sensor. Drive the vehicle safely. Always clean the sensor. Intelligent Cruise Control is released automatically if dirt is detected.
- The following conditions may occur depend on road shapes (curve and narrow road) and the vehicle condition (steering condition, driving lane position, malfunctions and accidents, etc.).

- A vehicle ahead may not be detected temporarily.
- The vehicle may be controlled by detecting a vehicle/object on the neighboring lane.
- The warning buzzer may sounds.
- The vehicle running ahead cannot be detected temporarily, therefore the vehicle may get too close.

PRECAUTIONS FOR CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE

- Conventional cruise control mode does neither control the brake nor activate the warning.
  Drive the vehicle safely. Keep a safe distance between vehicles by decreasing the vehicle speed according to the driving condition etc.
- Never use the conventional cruise control mode under the following conditions.

- A heaving-trafficked road and a tight turn.
  It may cause any accident because the driving speed does not fit to the road condition.
- A slippery road (e.g., freezing, or snowy road)
  The vehicle may lose the control by wheel spin.
- A steep downhill
  The engine brake does not work effectively on a steep downhill. Therefore, the preset vehicle speed may exceed and cause any accident.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000001835231

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

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the “SRS AIR BAG”.**
- **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, and wait at least 3 minutes before performing any service.**

ICC System Service

INFOID:0000000001835232

- Do not look straight into the laser beam discharger when adjusting laser beam aiming.
- Turn the MAIN switch OFF in conditions similar to driving, such as free rollers or a chassis dynamometer.
- Do not use the ICC sensor integrated unit removing from vehicle. Never disassemble and remodel.
- Erase DTC when replacing parts of ICC system, then check the operation of ICC system after adjusting laser beam aiming if necessary.

PREPARATION

PREPARATION

Special Service Tools

INFOID:0000000001835233

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

Tool number (Kent-Moore No.) Tool name	Description
KV99110100 (J-45718) ICC target board  PKIA0358J	Uses for laser beam aiming adjustment

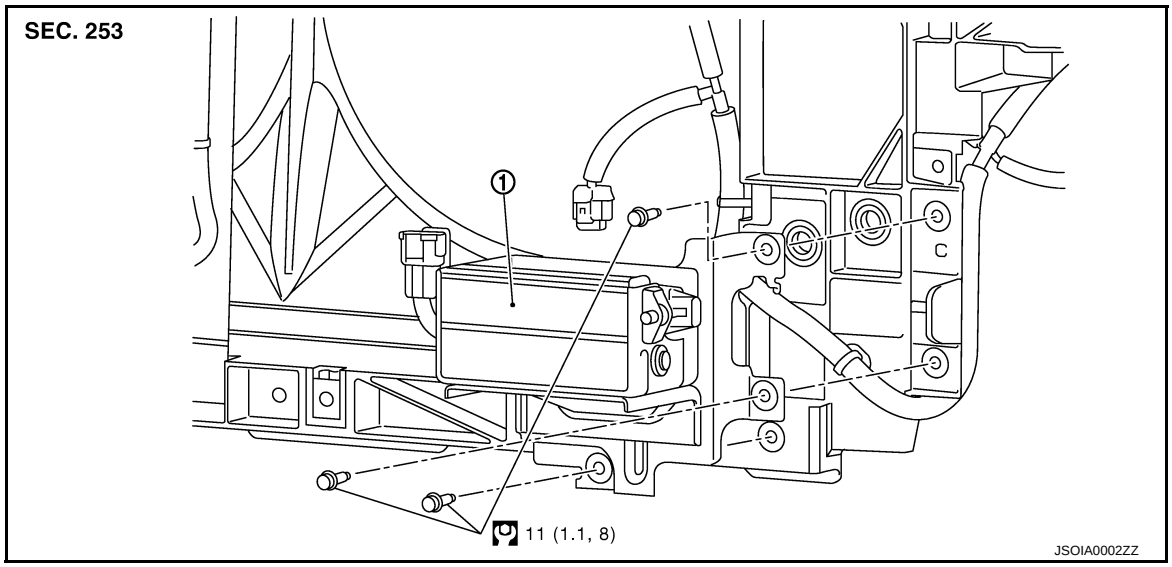
REMOVAL AND INSTALLATION

ICC SENSOR INTEGRATED UNIT

Exploded View

INFOID:0000000001835234

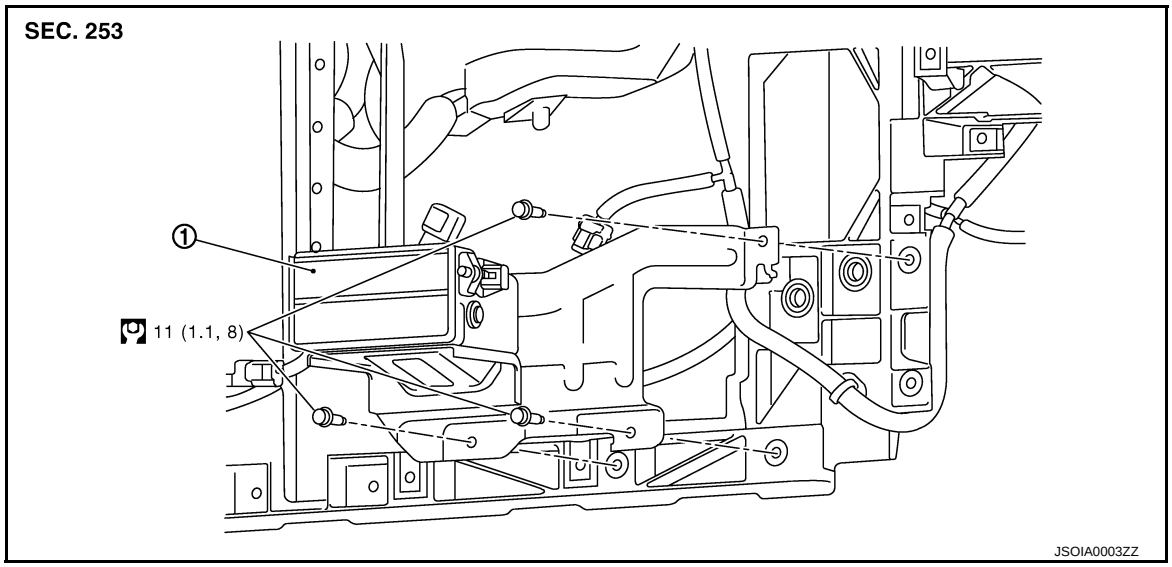
NORMAL FRONT BUMPER FASCIA TYPE



1. ICC sensor integrated unit

Refer to GI-4, "Components" for symbols in the figure.

SPORT FRONT BUMPER FASCIA TYPE



1. ICC sensor integrated unit

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000001835235

REMOVAL

1. Remove the front bumper fascia. Refer to EXT-12, "Exploded View".
2. Disconnect ICC sensor integrated unit connector.

3. Remove mounting bolts from ICC sensor integrated unit.
4. Remove ICC sensor integrated unit.

INSTALLATION

Install in the reverse order of removal.

Inspection and Adjustment

INFOID:0000000001835236

ADJUSTMENT

Always perform the laser beam aiming adjustment after replacing or removing/installing the ICC sensor integrated unit. Refer to CCS-7, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)".

INSPECTION

Always perform the laser beam aiming adjustment and the ICC system operation inspection after replacing or removing/installing the ICC sensor integrated unit. Refer to CCS-12, "ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)".

ICC STEERING SWITCH

Exploded View

INFOID:0000000001835237

Refer to ST-17, "Exploded View".

Removal and Installation

INFOID:0000000001835238

REMOVAL
Refer to ST-17, "Exploded View".

INSTALLATION
Install in the reverse order of removal.