SECTION SN
SONAR SYSTEM

CONTENTS

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000003160532

DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

Interview the conditions and environment when occurring any malfunction to the customer.

>> GO TO 2.

2.SYMPTOM CHECK

- Check the symptom from the customer's information.
- Check that any malfunction occurs other than the malfunction interviewed from the customer.

>> GO TO 3.

3.INSPECTION BEFORE DIAGNOSIS

Check the following conditions of the sensor.
- Check if the sonar sensor is not frozen.
- Check if snow, mud, or other foreign objects are not adhering to the sonar sensor.
- Check if there is no deformation, scratches, or other damage to the sonar sensor.
- Check if water has not accumulated in the sonar sensor.

Is the sensor condition normal?

YES >> GO TO 4.
NO >> Repair the sensor condition.

4.SELF-DIAGNOSIS WITH CONSULT-III RESULT INSPECTION

Perform the self-diagnosis with CONSULT-III.

Is the inspection result normal?

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

5.MALFUNCTIONING PART EXTRACTION BY SYMPTOM DIAGNOSIS

Repair the malfunctioning part by the symptom diagnosis.

>> GO TO 6.

6.FINAL INSPECTION

Check that the sonar system activates normally.

Does the sonar system activate normally?

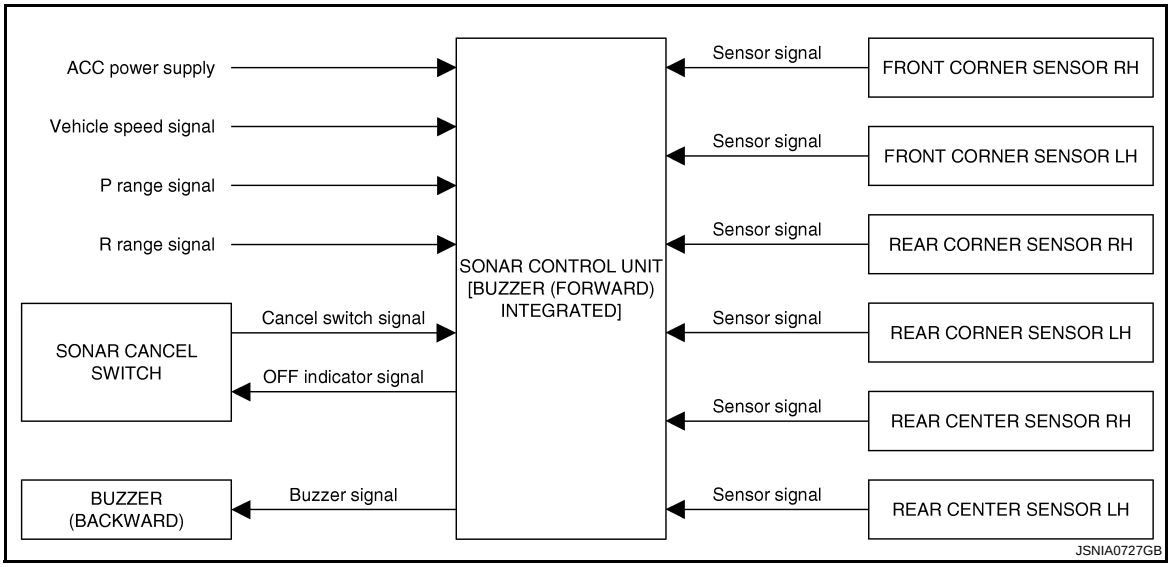
YES >> INSPECTION END
NO >> GO TO 1.

FUNCTION DIAGNOSIS

SONAR SYSTEM

System Diagram

INFOID:0000000003160533



System Description

INFOID:0000000003160534

- The sonar sensor installed to the front bumper and the rear bumper detects obstacles around the bumper.
- The distance between the bumper and the obstacle is informed of the driver with different frequency and sort of buzzers (low/high sound).

Activation condition

Front sensor
The front sensor activates and outputs the warning buzzer (low sound) in the following conditions.
- Cancel switch OFF
- P range signal OFF
- The vehicle speed signal is within the activation condition.
- Obstacle detection

Rear sensor
The rear sensor activates and outputs the warning buzzer (high sound) in the following conditions.
- Cancel switch OFF
- Reverse signal ON
- P range signal OFF
- Obstacle detection

x: applicable

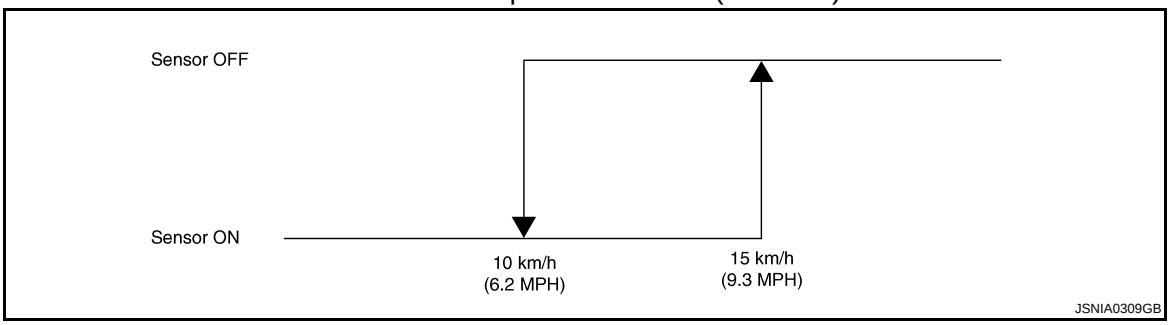
Cancel switch	Reverse signal	P range signal	Vehicle speed signal	Front sensor (Buzzer integrated in sonar control unit)	Rear sensor (Buzzer separated to other unit)
OFF	ON	OFF	—	X*	X*
OFF	OFF	OFF	Within the condition	X	—

NOTE:

*: If both the front and the rear sensors detect different objects simultaneously, the sensor which detects the closer object is prior to another sensor. If the detection distance is equal between the front and the rear, the rear sensor is prior to the front sensor.

Vehicle speed signal activation condition range
- The sensor activation turns OFF when the vehicle drives at 15 km/h (9.3 MPH) or more to the forward direction.

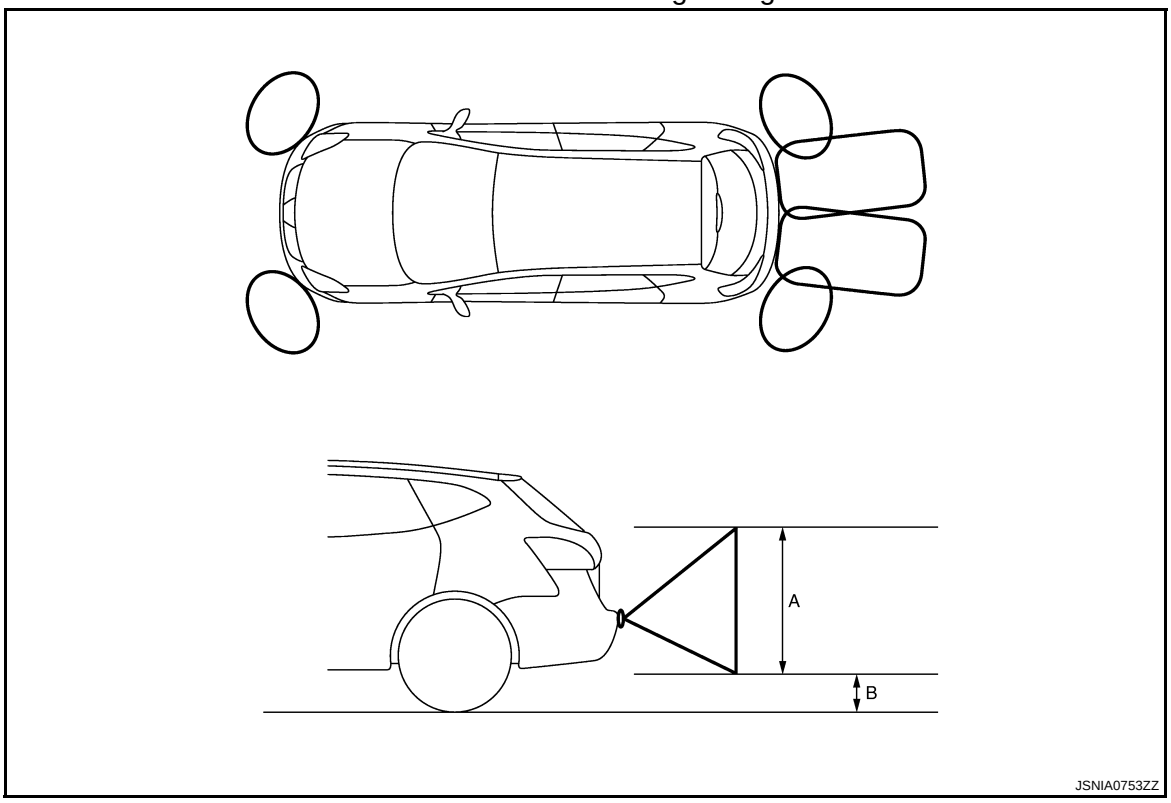
- The sensor activation starts when the vehicle speed is 10 km/h (6.2 MPH) or less.



Obstacle detection distance

- The sonar control unit controls the obstacle detection distance. The detection distance differs between the corner sensor and the center sensor.
- The sonar control unit outputs the warning buzzer frequency at 3 levels according to the corner sensor detection condition.
- The sonar control unit outputs the warning buzzer frequency at 4 levels according to the center sensor detection condition.
- The detection condition setting is adjustable to 4 levels with CONSULT-III. Refer to SN-8, "CONSULT-III Function (SONAR)".
- CONSULT-III enables the center sensor (rear) not to detect the range of 40 cm (15.7 in) or less to prevent from the trailer hitch vehicles misdetection. Refer to SN-8, "CONSULT-III Function (SONAR)".

Obstacle detection range image



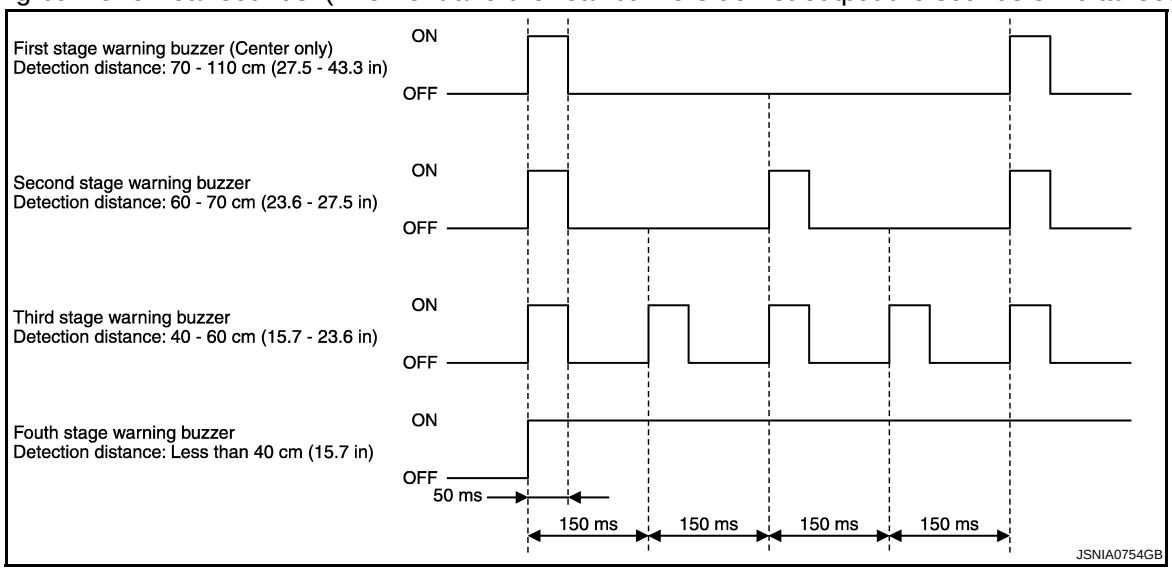
A Approx. 50 cm (19.6 in) B. Approx. 15 cm (5.9 in)

Detection distance

Warning item	Corner sensor	Center sensor
First stage warning	—	70 – 110 cm (27.5 – 43.3 in)
Second stage warning	60 – 70 cm (23.6 – 27.5 in)	60 – 70 cm (23.6 – 27.5 in)
Third stage warning	40 – 60 cm (15.7 – 23.6 in)	40 – 60 cm (15.7 – 23.6 in)
Fourth stage warning	Less than 40 cm (15.7 in)	Less than 40 cm (15.7 in)

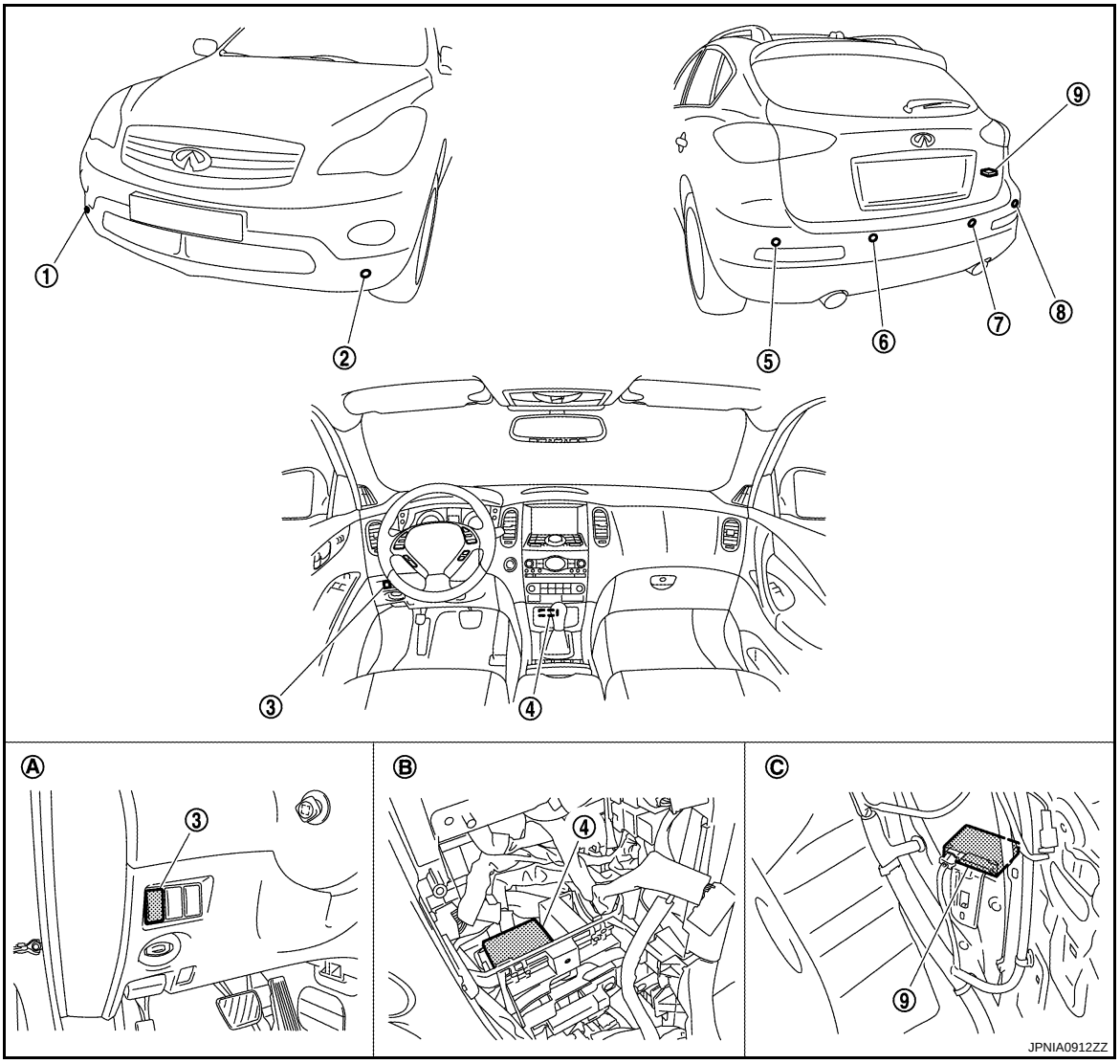
Warning buzzer frequency

- The warning buzzer output frequency changes 4 levels (for center) and 3 levels (for corner) according to the detection distance.
- The nearest sensor from the detected obstacle applies the buzzer output frequency if plural sensors detect any obstacle simultaneously.
- If both the front and the rear sensor detect different objects simultaneously, the sensor which detects the closer object is prior to another sensor. If the detection distance is equal between the front and the rear, warning buzzer of rear sounds. (The front and the rear buzzers do not output the sounds simultaneously.)



Component Parts Location

INFOID:0000000003160535



1. Corner sensor front RH
2. Corner sensor front LH
3. Sonar cancel switch
4. Sonar control unit [buzzer (forward) integrated]
5. Corner sensor rear LH
6. Center sensor rear LH
7. Center sensor rear RH
8. Corner sensor rear RH
9. Buzzer (backward)

A Instrument lower panel LH
B. Cluster lid C removed condition
C. Luggage side RH

Component Description

INFOID:0000000003160536

Component	Description
SONAR CONTROL UNIT	• The front warning buzzer is integrated. The warning buzzer outputs by inputting the sensor signal from corner/center sensor. The rear warning buzzer outputs the separated buzzer. • The activation condition is controlled by inputting P range signal, the reverse signal and the vehicle speed signal. • The system turns OFF with sonar cancel switch signal. • The system setting and the trouble diagnosis is supported with CONSULT-III (K-LINE).
CORNER/CENTER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.
BUZZER (BACKWARD)	The warning buzzer outputs with the signal from the sonar control unit. (For rear warning buzzer)
SONAR CANCEL SWITCH	The cancel signal is transmitted to the sonar control unit.

DIAGNOSIS SYSTEM (SONAR CONTROL UNIT)

CONSULT-III Function (SONAR)

INFOID:0000000003160537

DESCRIPTION

CONSULT-III can display each diagnostic item using the diagnostic test modes shown as follows:

Test mode	Function
Ecu Identification	Sonar control unit part number can be read.
Self Diagnostic Results	Sonar control unit checks the conditions and displays memorized error.
Data Monitor	Sonar control unit input/output data in real time.
Active Test	Gives a drive signal to a load to check the operation.
Work support	Changes setting of each function.

ECU IDENTIFICATION

Displays the part number of the sonar control unit.

SELF-DIAGNOSTIC RESULTS

For details, refer to SN-38, "DTC Index".

DATA MONITOR

Monitor Item	Display	Description
FRONT BUZZER	On	Buzzer (forward) output condition.
	Off	Buzzer (forward) non-output condition.
REAR BUZZER	On	Buzzer (backward) output condition.
	Off	Buzzer (backward) non-output condition.
P RANGE	On	Selector lever in P position.
	Off	Other than selector lever in P position.
REVERSE RANGE	On	Selector lever in R position.
	Off	Other than selector lever in R position.
CANCEL SW	On	When sonar system is ON.
	Off	When sonar system is OFF.
CANCEL SW IND	On	When cancel switch indicator lamp is ON.
	Off	When cancel switch indicator lamp is OFF.
VHCL SPE COND	On	Turns ON when the vehicle speed is 10 km/h (6.2 MPH) or less while accelerating.
	Off	Turns OFF when the vehicle speed is 15 km/h (9.3 MPH) or more while decelerating.
CR SEN [FL] CR SEN [FR] CR SEN [RL] CR SEN [RR]	ERROR	When a sensor is abnormal.
	LV.0	When a sensor is not detection.
	LV.2	The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).
	LV.3	The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).
	LV.4	The distance between corner sensor and an obstacle less than 40 cm (15.7 in).

Monitor Item	Display	Description
CTR SEN [RL] CTR SEN [RR]	ERROR	When a sensor is abnormal.
	LV.0	When a sensor is not detection.
	LV.1	The distance between the center sensor and an obstacle is 70 cm (27.5 in) or more and less then 110 cm (43.3 in).
	LV.2	The distance between the center sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).
	LV.3	The distance between the center sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).
	LV.4	The distance between center sensor and an obstacle less than 40 cm (15.7 in).

ACTIVE TEST

Active test item	Function
BUZZER	This test is able to check buzzer (forward/backward) operation.
CANCEL SW	This test is able to check cancel indicator lamp operation.
SONAR SENSOR	This test is able to check each sonar sensor operation.

WORK SUPPORT

Work support item	Function
CORNER SEN DISTANCE SET	Corner sensor warning buzzer distance is adjustable to 4 phases.
CENTER SEN DISTANCE SET	Center sensor warning buzzer distance is adjustable to 4 phases.
VOLUME SETTING	Warning buzzer volume can set it 2 phases.
TRAILER HITCH MODE	Center sensor (RR, RL) only is adjustable not to detect the distance less than 40 cm (15.7 in). **NOTE:** This adjustment is for preventing to miss detect the distance when installing the trailer hitch.

CORNER SEN DISTANCE SET

Corner sensor warning buzzer distance can set it to 4 phases as follows.

Warning item	FARTHER	FAR	NORMAL	NEAR
Second stage warning	70 – 80 cm (27.5 – 31.4 in)	60 – 70 cm (23.6 – 27.5 in)	50 – 60 cm (19.6 – 23.6 in)	40 – 50 cm (15.7 – 19.6 in)
Third stage warning	50 – 70 cm (19.6 – 27.5 in)	40 – 60 cm (15.7 – 23.6 in)	30 – 50 cm (11.8 – 19.6 in)	30 – 40 cm (11.8 – 15.7 in)
Fourth stage warning	Less than 50 cm (19.6 in)	Less than 40 cm (15.7 in)	Less than 30 cm (11.8 in)	Less than 30 cm (11.8 in)

The default of this model is “FAR”.

CENTER SEN DISTANCE SET

Center sensor warning buzzer distance can set it to 4 phases as follows.

Warning item	FARTHER	FAR	NORMAL	NEAR
First stage warning	80 – 120 cm (31.4 – 47.2 in)	70 – 110 cm (27.5 – 43.3 in)	60 – 100 cm (23.6 – 39.3 in)	50 – 90 cm (19.6 – 35.4 in)
Second stage warning	70 – 80 cm (27.5 – 31.4 in)	60 – 70 cm (23.6 – 27.5 in)	50 – 60 cm (19.6 – 23.6 in)	40 – 50 cm (15.7 – 19.6 in)
Third stage warning	50 – 70 cm (19.6 – 27.5 in)	40 – 60 cm (15.7 – 23.6 in)	30 – 50 cm (11.8 – 19.6 in)	30 – 40 cm (11.8 – 15.7 in)
Fourth stage warning	Less than 50 cm (19.6 in)	Less than 40 cm (15.7 in)	Less than 30 cm (11.8 in)	Less than 30 cm (11.8 in)

The default of this model is “FAR”.

VOLUME SETTING

Warning buzzer volume can set it to 2 phases.

TRAILER HITCH MODE
Center sensor (RR, RL) only is adjustable not to detect the distance less than 40 cm (15.7 in).

When installing the trailer hitch : ON
When not installing the trailer hitch : OFF

COMPONENT DIAGNOSIS

B2700 CORNER SENSOR [FL]

Description

INFOID:0000000003160538

Component	Description
CORNER/CENTER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000003160539

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2700	CORNER SENSOR [FL] [B2700]	Corner sensor front left is malfunctioning.	Replace corner sensor front LH.

B2701 SENSOR HARNESS OPEN [CR-FL]

Description

INFOID:0000000003513796

Component	Description
CORNER/CENTER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000003160541

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2701	SENSOR HARNESS OPEN [CR-FL] [B2701]	Corner sensor front LH harness circuit is open.	Check corner sensor front LH circuit.

Diagnosis Procedure

INFOID:0000000003160542

1.CHECK HARNESS CORNER SENSOR FRONT LH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor connector.
3. Check continuity between sonar control unit harness connector and corner sensor (FL) harness connector.

Sonar control unit		Corner sensor (FL)		Continuity
Connector	Terminal	Connector	Terminal	
M44	3	E63	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M44	3		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR FRONT LH GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (FL) harness connector.

Sonar control unit		Corner sensor (FL)		Continuity
Connector	Terminal	Connector	Terminal	
M44	12	E63	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

B2702 CORNER SENSOR [FR]

Description

INFOID:0000000003513797

Component	Description
CORNER/CENTER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000003160544

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2702	CORNER SENSOR [FR] [B2702]	Corner sensor front right is malfunctioning.	Replace corner sensor front RH.

B2703 SENSOR HARNESS OPEN [CR-FR]

Description

INFOID:0000000003513798

Component	Description
CORNER/CENTER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000003160546

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2703	SENSOR HARNESS OPEN [CR-FR] [B2703]	Corner sensor front right harness circuit is open.	Check corner sensor front RH circuit.

Diagnosis Procedure

INFOID:0000000003160547

1.CHECK HARNESS CORNER SENSOR FRONT RH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor connector.
3. Check continuity between sonar control unit harness connector and corner sensor (FR) harness connector.

Sonar control unit		Corner sensor (FR)		Continuity
Connector	Terminal	Connector	Terminal	
M44	4	E152	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M44	4		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR FRONT RH GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (FR) harness connector.

Sonar control unit		Corner sensor (FR)		Continuity
Connector	Terminal	Connector	Terminal	
M44	12	E152	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

B2704 CORNER SENSOR [RL]

Description

INFOID:0000000003513799

Component	Description
CORNER/CENTER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000003160549

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2704	CORNER SENSOR [RL] [B2704]	Corner sensor rear left is malfunctioning.	Replace corner sensor rear LH.

B2705 SENSOR HARNESS OPEN [CR-RL]

Description

INFOID:0000000003513800

Component	Description
CORNER/CENTER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000003160551

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2705	SENSOR HARNESS OPEN [CR-RL] [B2705]	Corner sensor rear left harness circuit is open.	Check corner sensor rear LH circuit.

Diagnosis Procedure

INFOID:0000000003160552

1.CHECK HARNESS CORNER SENSOR REAR LH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor connector.
3. Check continuity between sonar control unit harness connector and corner sensor (RL) harness connector.

Sonar control unit		Corner sensor (RL)		Continuity
Connector	Terminal	Connector	Terminal	
M44	5	B259	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M44	5		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR REAR LH GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (RL) harness connector.

Sonar control unit		Corner sensor (RL)		Continuity
Connector	Terminal	Connector	Terminal	
M44	12	B259	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

B2706 CORNER SENSOR [RR]

Description

INFOID:0000000003513801

Component	Description
CORNER/CENTER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000003160554

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2706	CORNER SENSOR [RR] [B2706]	Corner sensor rear right is malfunctioning.	Replace corner sensor rear RH.

B2707 SENSOR HARNESS OPEN [CR-RR]

Description

INFOID:0000000003513802

Component	Description
CORNER/CENTER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000003160556

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2707	SENSOR HARNESS OPEN [CR-RR] [B2707]	Corner sensor rear right harness circuit is open.	Check corner sensor rear RH circuit.

Diagnosis Procedure

INFOID:0000000003160557

1.CHECK HARNESS CORNER SENSOR REAR RH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor connector.
3. Check continuity between sonar control unit harness connector and corner sensor (RR) harness connector.

Sonar control unit		Corner sensor (RR)		Continuity
Connector	Terminal	Connector	Terminal	
M44	6	B256	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M44	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR REAR RH GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (RR) harness connector.

Sonar control unit		Corner sensor (RR)		Continuity
Connector	Terminal	Connector	Terminal	
M44	12	B256	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

B2708 CENTER SENSOR [BL]

Description

INFOID:0000000003513803

Component	Description
CORNER/CENTER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000003160559

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2708	CENTER SENSOR [RL] [B2708]	Center sensor rear left is malfunctioning.	Replace center sensor rear LH.

B2709 SENSOR HARNESS OPEN [CT-BL]

Description

INFOID:0000000003513804

Component	Description
CORNER/CENTER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000003160561

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2709	SENSOR HARNESS OPEN [CT-BL] [B2709]	Center sensor rear left harness circuit is open.	Check center sensor rear LH circuit.

Diagnosis Procedure

INFOID:0000000003160562

1.CHECK HARNESS CENTER SENSOR REAR LH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and center sensor connector.
3. Check continuity between sonar control unit harness connector and center sensor (RL) harness connector.

Sonar control unit		Center sensor (RL)		Continuity
Connector	Terminal	Connector	Terminal	
M44	7	B258	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M44	7		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CENTER SENSOR REAR LH GROUND CIRCUIT

Check continuity between sonar control unit harness connector and center sensor (RL) harness connector.

Sonar control unit		Center sensor (RL)		Continuity
Connector	Terminal	Connector	Terminal	
M44	12	B258	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

B270A CENTER SENSOR [BR]

Description

INFOID:0000000003513805

Component	Description
CORNER/CENTER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000003160564

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B270A	CENTER SENSOR [RR] [B270A]	Center sensor rear right is malfunctioning.	Replace center sensor rear RH.

B270B SENSOR HARNESS OPEN [CT-BR]

Description

INFOID:0000000003513806

Component	Description
CORNER/CENTER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000003160566

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B270B	SENSOR HARNESS OPEN [CT-BR] [B270B]	Center sensor rear right harness circuit is open.	Check center sensor rear RH circuit.

Diagnosis Procedure

INFOID:0000000003160567

1.CHECK HARNESS CENTER SENSOR REAR RH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and center sensor connector.
3. Check continuity between sonar control unit harness connector and center sensor (RR) harness connector.

Sonar control unit		Center sensor (RR)		Continuity
Connector	Terminal	Connector	Terminal	
M44	8	B257	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M44	8		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CENTER SENSOR REAR RH GROUND CIRCUIT

Check continuity between sonar control unit harness connector and center sensor (RR) harness connector.

Sonar control unit		Center sensor (RR)		Continuity
Connector	Terminal	Connector	Terminal	
M44	12	B257	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

POWER SUPPLY AND GROUND CIRCUIT
SONAR CONTROL UNIT

SONAR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000003160568

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ON or START	3

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

1. Turn ignition switch ON.
2. Check voltage between sonar control unit harness connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M44	13		Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace sonar control unit power supply harness.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector.
3. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M44	24		Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace sonar control unit ground harness.

P RANGE SIGNAL CIRCUIT

Description

INFOID:0000000003160569

The sonar control unit turns the sonar system activation OFF when inputting P range signal.

Component Function Check

INFOID:0000000003160570

1.SONAR CONTROL UNIT DATA MONITOR INSPECTION

Check the cancel switch with the sonar control unit data monitor.

P range

Vehicle condition	Indication
Shift position in P position	: ON
Other than shift position in P position	: OFF

>> INSPECTION END

Diagnosis Procedure

INFOID:0000000003160571

1.CHECK P RANGE SIGNAL

1. Turn ignition switch ON.
2. Check voltage between sonar control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Sonar control unit				
Connector	Terminal			
M44	16	Ground	Shift position in P position.	0 V
			Other than shift position in P position.	12.0 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

R RANGE SIGNAL CIRCUIT

Description

INFOID:0000000003160572

The sonar control unit turns the sonar system activation OFF when inputting the reverse signal.

Component Function Check

INFOID:0000000003160573

1.SONAR CONTROL UNIT DATA MONITOR INSPECTION

Check the cancel switch with the sonar control unit data monitor.

R range

Vehicle condition	Indication
Shift position in R position	: ON
Other than shift position in R position	: OFF

>> INSPECTION END

Diagnosis Procedure

INFOID:0000000003160574

1.CHECK P RANGE SIGNAL

1. Turn ignition switch ON.
2. Check voltage between sonar control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Sonar control unit				
Connector	Terminal			
M44	17	Ground	Shift position in R position.	12.0 V
			Other than shift position in R position.	0 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

BUZZER CIRCUIT

Description

INFOID:0000000003160575

The sonar control unit outputs the buzzer signal when the rear sonar detects the obstacle.

Component Function Check

INFOID:0000000003160576

1.SONAR CONTROL UNIT ACTIVE TEST

Check the buzzer operation with the sonar control unit active test.

BUZZER

Test item	Condition
FRONT ON	: FRONT BUZZER ON
REAR ON	: REAR BUZZER ON

>> INSPECTION END

Diagnosis Procedure

INFOID:0000000003160577

1.CHECK BUZZER POWER SUPPLY

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

(+)		(–)	Voltage (Approx.)
Buzzer			
Connector	Terminal		
B231	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS BUZZER SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and buzzer connector.
3. Check continuity between sonar control unit harness connector and buzzer harness connector.

Sonar control unit		Buzzer		Continuity
Connector	Terminal	Connector	Terminal	
M44	23	B231	2	Existed

4. Check continuity between sonar control unit harness connector and ground.

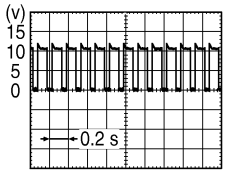
Sonar control unit		Ground	Continuity
Connector	Terminal		
M44	23		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK SIGNAL SONAR CONTROL UNIT

1. Connect sonar control unit connector and buzzer connector.
2. Check signal between sonar control unit harness connector and ground.

(+)		(–)	Condition	Signal
Sonar control unit				
Connector	Terminal			
M44	23	Ground	When buzzer operation	**NOTE:** Waveform period changes due to the distance to an obstacle.  SKIB8943E

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace sonar control unit.

SONAR CANCEL SWITCH CIRCUIT

Description

INFOID:0000000003160578

The sonar control unit turns the sonar system activation OFF when inputting the cancel switch signal.

Component Function Check

INFOID:0000000003160579

1.SONAR CONTROL UNIT DATA MONITOR INSPECTION

Check the cancel switch with the sonar control unit data monitor.

Cancel switch

Vehicle condition	Indication
Sonar system ON	: ON
Sonar system OFF	: OFF

>> INSPECTION END

Diagnosis Procedure

INFOID:0000000003160580

1.CHECK HARNESS CANCEL SWITCH SIGNAL CIRCUIT

1. Disconnect sonar control unit connector and cancel switch connector.
2. Check continuity between sonar control unit harness connector and cancel switch harness connector.

Sonar control unit		Cancel switch		Continuity
Connector	Terminal	Connector	Terminal	
M44	2	M153	1	Existed

3. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M44	2		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SONAR CONTROL UNIT

1. Connect sonar control unit connector.
2. Turn ignition switch ON.
3. Check voltage between sonar control unit harness connector and ground.

(+)		(–)	Voltage (Approx.)
Sonar control unit			
Connector	Terminal		
M44	2	Ground	12.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace sonar control unit.

3.CHECK CANCEL SWITCH

1. Turn ignition switch OFF.
2. Check sonar cancel switch function. Refer to SN-28, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace cancel switch.

4. CHECK HARNESS CANCEL SWITCH GROUND CIRCUIT

1. Turn ignition switch ON.
2. Check continuity between cancel switch harness connector and ground.

Cancel switch		Ground	Continuity
Connector	Terminal		
M153	3		Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

ECU DIAGNOSIS

SONAR CONTROL UNIT

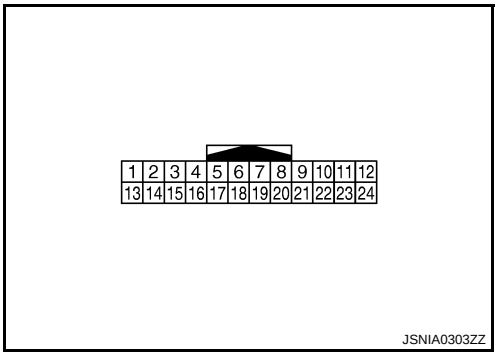
Reference Value

INFOID:0000000003160581

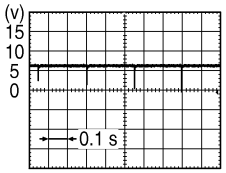
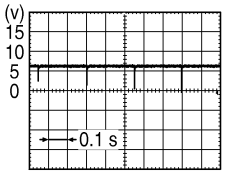
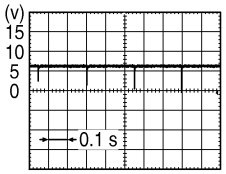
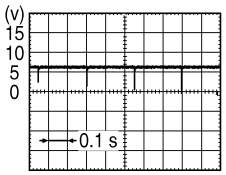
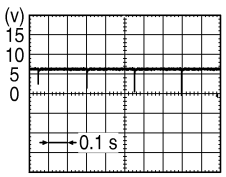
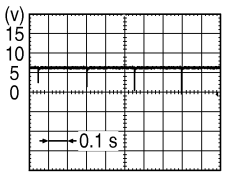
VALUES ON THE DIAGNOSIS TOOL

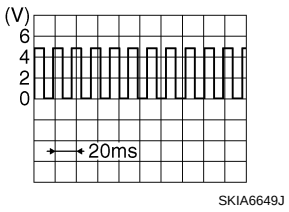
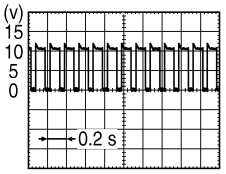
Monitor Item	Display	Description
FRONT BUZZER	On	Buzzer (forward) output condition.
	Off	Buzzer (forward) non-output condition.
REAR BUZZER	On	Buzzer (backward) output condition.
	Off	Buzzer (backward) non-output condition.
P RANGE	On	Selector lever in P position.
	Off	Other than selector lever in P position.
REVERSE RANGE	On	Selector lever in R position.
	Off	Other than selector lever in R position.
CANCEL SW	On	When sonar system is ON.
	Off	When sonar system is OFF.
CANCEL SW IND	On	When cancel switch indicator lamp is ON.
	Off	When cancel switch indicator lamp is OFF.
VHCL SPE COND	On	Turns ON when the vehicle speed is 10 km/h (6.2 MPH) or less while accelerating.
	Off	Turns OFF when the vehicle speed is 15 km/h (9.3 MPH) or more while decelerating.
CR SEN [FL] CR SEN [FR] CR SEN [RL] CR SEN [RR]	ERROR	When a sensor is abnormal.
	LV.0	When a sensor is not detection.
	LV.2	The distance between the corner sensor and an obstacle is 50 cm (19.6 in) or more and less then 60 cm (23.6 in).
	LV.3	The distance between the corner sensor and an obstacle is 30 cm (11.8 in) or more and less then 50 cm (19.6 in).
	LV.4	The distance between corner sensor and an obstacle less than 30 cm (11.8 in).
CTR SEN [RL] CTR SEN [RR]	ERROR	When a sensor is abnormal.
	LV.0	When a sensor is not detection.
	LV.1	The distance between the center sensor and an obstacle is 60 cm (23.6 in) or more and less then 100 cm (39.3 in).
	LV.2	The distance between the center sensor and an obstacle is 50 cm (19.6 in) or more and less then 60 cm (23.6 in).
	LV.3	The distance between the center sensor and an obstacle is 30 cm (11.8 in) or more and less then 50 cm (19.6 in).
	LV.4	The distance between center sensor and an obstacle less than 30 cm (11.8 in).

TERMINAL LAYOUT



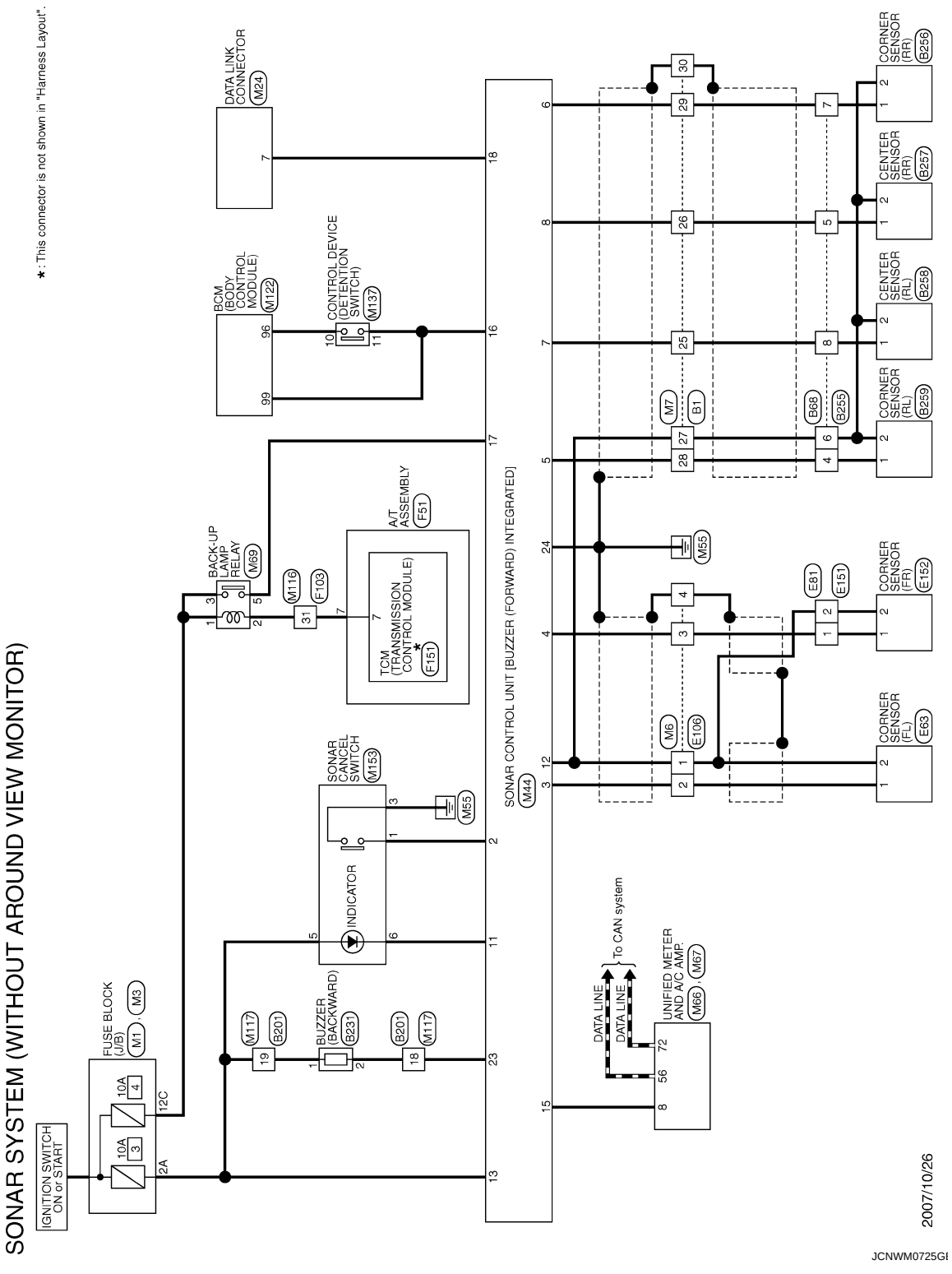
PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
2 (R)	Ground	Cancel switch signal	Input	Ignition switch ON	Turns ON while pressing sonar cancel switch ON.	0 V
					Other than while pressing sonar cancel switch ON.	12.0 V
3 (R)	12 (B)	Corner sensor signal front LH	Input	Ignition switch ON	Other than shift position in P position.	 SKIB8942E
4 (W)	12 (B)	Corner sensor signal front RH	Input	Ignition switch ON	Other than shift position in P position.	 SKIB8942E
5 (W)	12 (B)	Corner sensor signal rear LH	Input	Ignition switch ON	Shift position in R position.	 SKIB8942E
6 (L)	12 (B)	Corner sensor signal rear RH	Input	Ignition switch ON	Selector lever in R position.	 SKIB8942E
7 (G)	12 (B)	Center sensor signal rear LH	Input	Ignition switch ON	Selector lever in R position.	 SKIB8942E
8 (Y)	12 (B)	Center sensor signal rear RH	Input	Ignition switch ON	Selector lever in R position.	 SKIB8942E

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
11 (W)	Ground	LED signal	Output	Ignition switch ON	Sonar system ON	12.0 V
					Sonar system OFF	0 V
12 (B)	Ground	Sensor ground	—	Ignition switch ON	—	0 V
13 (V)	Ground	Ignition power supply	Input	Ignition switch ON	—	12.0 V
15 (G)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH).	 SKIA6649J
16 (BR)	Ground	P range signal	Input	Ignition switch ON	Shift position in P position.	0 V
					Other than shift position in P position.	12.0 V
17 (BR)	Ground	Reverse range	Input	Ignition switch ON	Shift position in R position.	12.0 V
					Other than shift position in R position.	0 V
18 (O)	—	K-line (CONSULT-III)	—	—	—	—
23 (GR)	Ground	Buzzer drive signal	Output	Ignition switch ON	When buzzer operation	**NOTE:** Waveform period changes due to the distance to an obstacle.  SKIB8943E
24 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

Wiring Diagram — SONAR SYSTEM —

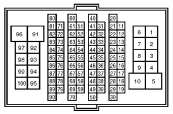
INFOID:0000000003160582



SONAR SYSTEM (WITHOUT AROUND VIEW MONITOR)

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

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
25	G	–
26	Y	–
27	BR	–
28	W	–
29	L	–
30	SHIELD	–

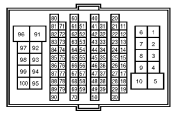
Connector No.	B68
Connector Name	WIRE TO WIRE
Connector Type	RH08MB

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
4	W	– [Without around view monitor]
5	Y	–
6	BR	– [Without around view monitor]
7	L	– [Without around view monitor]
8	G	–

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
18	GR	–
19	P	–

Connector No.	B231
Connector Name	BUZZER (BACKWARD)
Connector Type	RK02FBR

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	P	–
2	GR	–

Connector No.	B255
Connector Name	WIRE TO WIRE
Connector Type	RH08FB

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
4	W	–
5	G	–
6	B	–
7	R	–
8	O	–

Connector No.	B256
Connector Name	CORNER SENSOR (RR)
Connector Type	YDX02FB

H.S.

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

Connector No.	B257
Connector Name	CENTER SENSOR (RR)
Connector Type	YDX02FB

H.S.

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

Connector No.	B258
Connector Name	CENTER SENSOR (RL)
Connector Type	YDX02FB

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	O	–
2	B	–

JCNWM0726GI

SONAR SYSTEM (WITHOUT AROUND VIEW MONITOR)

Connector No.	B259
Connector Name	CORNER SENSOR (RL)
Connector Type	YDX02FB

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

Connector No.	E63
Connector Name	CORNER SENSOR (FL)
Connector Type	YDX02FB

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

Connector No.	E81
Connector Name	WIRE TO WIRE
Connector Type	RS02MB

Terminal No.	Color of Wire	Signal Name [Specification]
1	R	–
2	L	–

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

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	W	–
3	R	–
4	GR	–

Connector No.	E151
Connector Name	WIRE TO WIRE
Connector Type	RS02FB

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

Connector No.	E152
Connector Name	CORNER SENSOR (FR)
Connector Type	YDX02FB

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

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

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

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

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

JCNWM0727GB

SONAR SYSTEM (WITHOUT AROUND VIEW MONITOR)

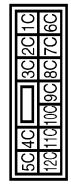
Connector No.	F151
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FBGY

Terminal No.	Color of Wire	Signal Name [Specification]
7	O	REV LAMP RLY

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

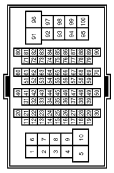
Terminal No.	Color of Wire	Signal Name [Specification]
2A	G	–

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
12C	O	–

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



Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	R	–
3	W	–
4	SHIELD	–

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

Terminal No.	Color of Wire	Signal Name [Specification]
25	G	–
26	Y	–
27	R	–
28	W	–
29	L	–
30	SHIELD	–

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

Terminal No.	Color of Wire	Signal Name [Specification]
7	V	–

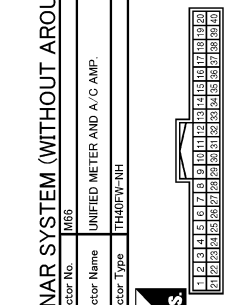
Connector No.	M44
Connector Name	SONAR CONTROL UNIT [BUZZER (FORWARD) INTEGRATED]
Connector Type	TH24FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
2	R	CANCEL SW
3	R	CORNER SENSOR FRONT LH
4	W	CORNER SENSOR FRONT RH
5	W	CORNER SENSOR REAR LH
6	L	CORNER SENSOR REAR RH
7	G	CENTER SENSOR REAR LH
8	Y	CENTER SENSOR REAR RH
11	W	CANCEL SW INDICATOR
12	B	SENSOR GND
13	V	IGN
15	G	VEHICLE SPEED SIGNAL
16	BR	P RANGE
17	BR	REVERSE
18	O	K LINE
23	GR	BUZZER
24	B	GND

JCNWM0728GB

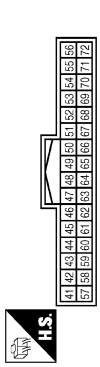
SONAR SYSTEM (WITHOUT AROUND VIEW MONITOR)

Connector No.	M66
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH40FW-NH



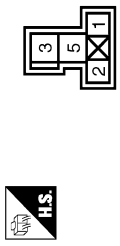
Terminal No.	Color of Wire	Signal Name [Specification]
8	L	VEHICLE SPEED (2-PULSE)

Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH32FW-NH



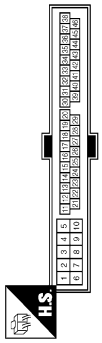
Terminal No.	Color of Wire	Signal Name [Specification]
56	L	CAN-H
72	P	CAN-L

Connector No.	M69
Connector Name	BACK-UP LAMP RELAY
Connector Type	MS02FL-M2



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	–
2	W	–
3	LG	–
5	O	–

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK36MW-NS10



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

Connector No.	M117
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
18	GR	–
19	P	–

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

Terminal No.	Color of Wire	Signal Name [Specification]
96	GR	A/T DEVICE POWER SUPPLY
99	R	SHIFT P

Connector No.	M137
Connector Name	CONTROL DEVICE
Connector Type	TH12FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
10	GR	–
11	R	–

Connector No.	M153
Connector Name	SONAR CANCEL SWITCH
Connector Type	TK08FW

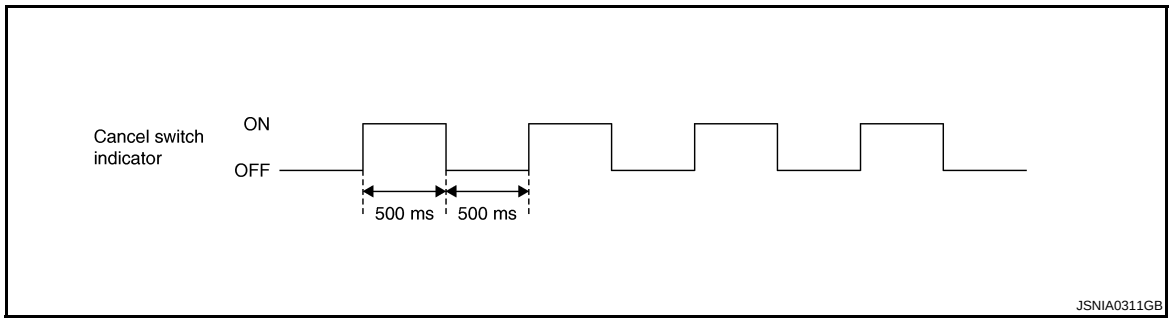
Terminal No.	Color of Wire	Signal Name [Specification]
1	R	–
3	V	–
5	P	–
6	W	–

JCNWM0729GB

Fail-Safe

INFOID:0000000003160583

The warning buzzer function shuts off and the cancel switch indicator blinks when the sensor system error is detected.



DTC Index

INFOID:0000000003160584

DTC	Display item [Code]	Malfunction is detected when...	Reference
B2700	CORNER SENSOR [FL] [B2700]	Corner sensor front left is malfunctioning.	SN-11
B2701	SENSOR HARNESS OPEN [CR-FL] [B2701]	Corner sensor front left harness circuit is open.	SN-12
B2702	CORNER SENSOR [FR] [B2702]	Corner sensor front right is malfunctioning.	SN-13
B2703	SENSOR HARNESS OPEN [CR-FR] [B2703]	Corner sensor front right harness circuit is open.	SN-14
B2704	CORNER SENSOR [RL] [B2704]	Corner sensor rear left is malfunctioning.	SN-15
B2705	SENSOR HARNESS OPEN [CR-RL] [B2705]	Corner sensor rear left harness circuit is open.	SN-16
B2706	CORNER SENSOR [RR] [B2706]	Corner sensor rear right is malfunctioning.	SN-17
B2707	SENSOR HARNESS OPEN [CR-RR] [B2707]	Corner sensor rear right harness circuit is open.	SN-18
B2708	CENTER SENSOR [RL] [B2708]	Center sensor rear left is malfunctioning.	SN-19
B2709	SENSOR HARNESS OPEN [CT-BL] [B2709]	Center sensor rear left harness circuit is open.	SN-20
B270A	CENTER SENSOR [RR] [B270A]	Center sensor rear right is malfunctioning.	SN-21
B270B	SENSOR HARNESS OPEN [CT-BR] [B270B]	Center sensor rear right harness circuit is open.	SN-22

NOTE:
"TIME" means the following.
- 0: Means detected malfunction at present. (From malfunction detection to turning ignition switch OFF)
- 1–39: Means detected malfunction in past.

SYMPTOM DIAGNOSIS

SONAR SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000003160585

Symptom	Check item	Diagnosis method
All sonar sensors do not activate.	“SONAR” is indicated on “SELECT SYSTEM” screen after connection CONSULT-III.	• Perform the self-diagnosis of CONSULT-III. Refer to SN-8, "CONSULT-III Function (SONAR)". • Check P range signal if the self-diagnosis does not detect any error. Refer to SN-24, "Diagnosis Procedure".
	“SONAR” is not indicated on “SELECT SYSTEM” screen after connection CONSULT-III.	Check sonar control unit power supply and ground circuit. Refer to SN-23, "SONAR CONTROL UNIT : Diagnosis Procedure".
Corner sensor (RL, RR) and center sensor (RL, RR) does not activate.	Buzzer beeps when indicating “REAR ON” on “BUZZER” screen of the ACTIVE TEST.	Check reverse signal for sonar control unit. Refer to SN-25, "Diagnosis Procedure".
	Buzzer does not beeps when indicating “REAR ON” on “BUZZER” screen of the ACTIVE TEST.	Check buzzer signal for sonar control unit. Refer to SN-26, "Diagnosis Procedure".
Any sonar sensor does not activate.	—	Perform the self-diagnosis of CONSULT-III. Refer to SN-8, "CONSULT-III Function (SONAR)".

PRECAUTION

PRECAUTIONS

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

INFOID:0000000003711292

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 AIRBAG” and “SEAT BELT” of this Service Manual.

WARNING:

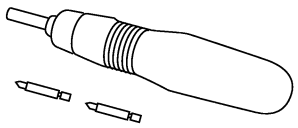
- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal 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 AIRBAG”.**
- **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.**

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000003711313

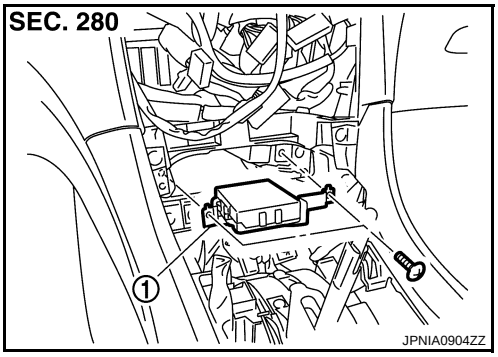
Tool name	Description
Power tool  PBIC0191E	Loosening screws

ON-VEHICLE REPAIR

SONAR CONTROL UNIT

Exploded View

INFOID:0000000003569882



1. Sonar control unit

Removal and Installation

INFOID:0000000003569883

REMOVAL

1. Remove AV control unit. Refer to AV-903, "Exploded View".
2. Remove screws and connector, and then sonar control unit.

INSTALLATION

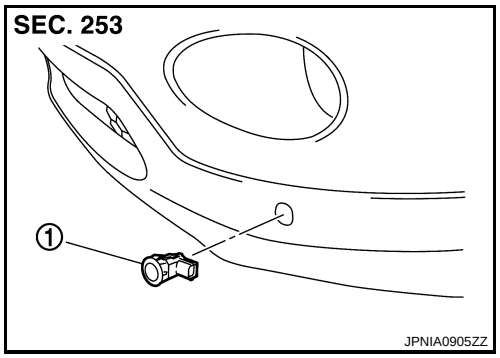
Install in the reverse order of removal.

SONAR SENSOR

FRONT

FRONT : Exploded View

INFOID:0000000003569884



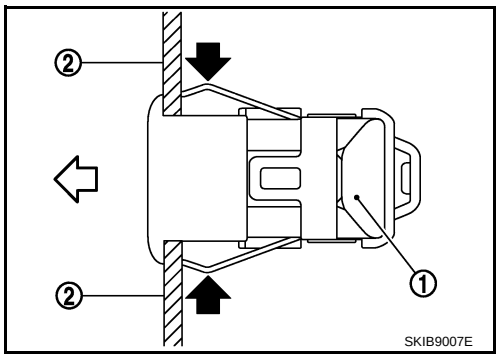
1. Sonar sensor (front)

FRONT : Removal and Installation

INFOID:0000000003569885

REMOVAL

1. Remove fender protector. Keep a service area. Refer to EXT-25, "FENDER PROTECTOR : Exploded View".
2. Remove sonar sensor connector.
3. Push the sonar sensor (1) outside (direction of white arrow) the front bumper (2), pressing the metal clips on the back to the direction of black arrows.



INSTALLATION

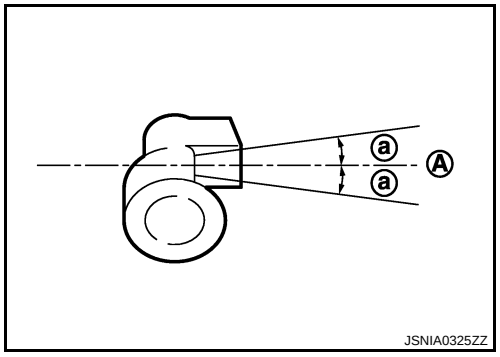
Install the bumper when the pawl engages.

CAUTION:

The connector direction is within ±10° from the horizontal position when assembling the bumper.

A : Horizontal position

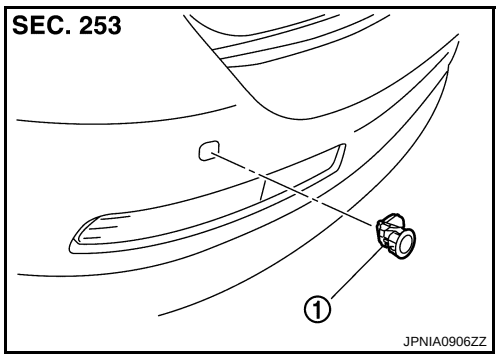
a : 10°



REAR

REAR : Exploded View

INFOID:0000000003569886



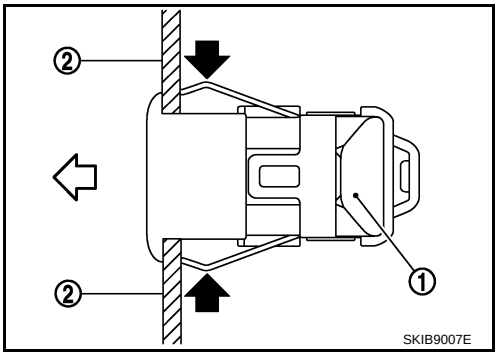
1. Sonar sensor (rear)

REAR : Removal and Installation

INFOID:0000000003569887

REMOVAL

1. Remove sonar sensor connector.
2. Push the sonar sensor (1) outside (direction of white arrow) the rear bumper (2), pressing the metal clips on the back to the direction of black arrows.



INSTALLATION

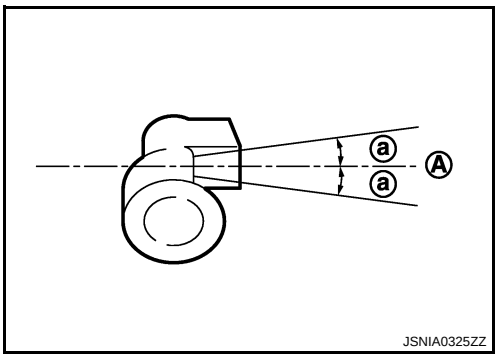
Install the bumper when the pawl engages.

CAUTION:

The connector direction is within ±10° from the horizontal position when assembling the bumper.

A : Horizontal position

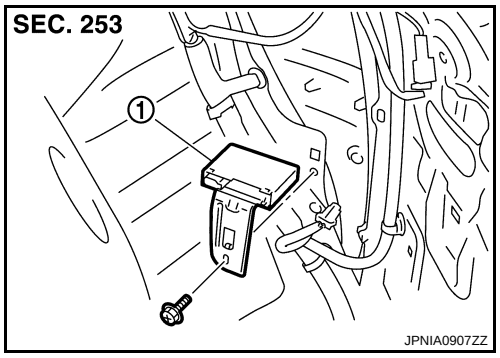
a : 10°



BUZZER (BACKWARD)

Exploded View

INFOID:0000000003569888



1. Buzzer (backward)

Removal and Installation

INFOID:0000000003569889

REMOVAL

1. Remove luggage side lower finisher (RH). Refer to INT-34, "Exploded View".
2. Remove buzzer (backward) mounting bolt.
3. Remove buzzer (backward).

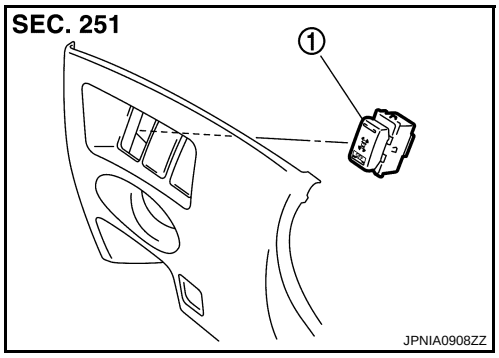
INSTALLATION

Install in the reverse order of removal.

SONAR CANCEL SWITCH

Exploded View

INFOID:0000000003569890



1. Sonar cancel switch

Removal and Installation

INFOID:0000000003569891

REMOVAL

1. Remove instrument lower panel LH. Refer to IP-11, "Exploded View".
2. Widen the pawl. And remove sonar cancel switch.

INSTALLATION

Install in the reverse order of removal.