SECTION SN
SONAR SYSTEM

CONTENTS

WITH PARK ASSIST

PRECAUTION

PRECAUTIONS

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

INFOID:0000000010735533

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. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

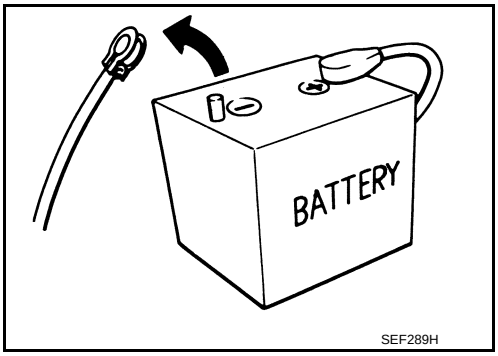
Always observe the following items for preventing accidental activation.

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

Precautions for Removing Battery Terminal

INFOID:0000000010922255

- With the adoption of Auto ACC function, ACC power is automatically supplied by operating the intelligent key or remote keyless entry or by opening/closing the driver side door. In addition, ACC power is supplied even after the ignition switch is turned to the OFF position, i.e. ACC power is supplied for a certain fixed time.
- When disconnecting the 12V battery terminal, turn off the ACC power before disconnecting the 12V battery terminal, observing “How to disconnect 12V battery terminal” described below.
  NOTE:
  Some ECUs operate for a certain fixed time even after ignition switch is turned OFF and ignition power supply is stopped. If the battery terminal is disconnected before ECU stops, accidental DTC detection or ECU data damage may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.



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HOW TO DISCONNECT 12V BATTERY TERMINAL

Disconnect 12V battery terminal according to Instruction 1 or Instruction 2 described below.
For vehicles parked by ignition switch OFF, refer to Instruction 2.

INSTRUCTION 1

1. Open the hood.

2. Turn key switch to the OFF position with the driver side door opened.
3. Get out of the vehicle and close the driver side door.
4. Wait at least 3 minutes. For vehicle with the engine listed below, remove the battery terminal after a lapse of the specified time.

D4D engine	: 20 minutes
HRA2DDT	: 12 minutes
K9K engine	: 4 minutes
M9R engine	: 4 minutes
R9M engine	: 4 minutes
V9X engine	: 4 minutes

CAUTION:
While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the Auto ACC function.

5. Remove 12V battery terminal.
CAUTION:
After installing 12V battery, always check self-diagnosis results of all ECUs and erase DTC.

INSTRUCTION 2 (FOR VEHICLES PARKED BY IGNITION SWITCH OFF)

1. Unlock the door with intelligent key or remote keyless entry.
NOTE:
At this moment, ACC power is supplied.
2. Open the driver side door.
3. Open the hood.
4. Close the driver side door.
5. Wait at least 3 minutes.
CAUTION:
While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the Auto ACC function.
6. Remove 12V battery terminal.
CAUTION:
After installing 12V battery, always check self-diagnosis results of all ECUs and erase DTC.

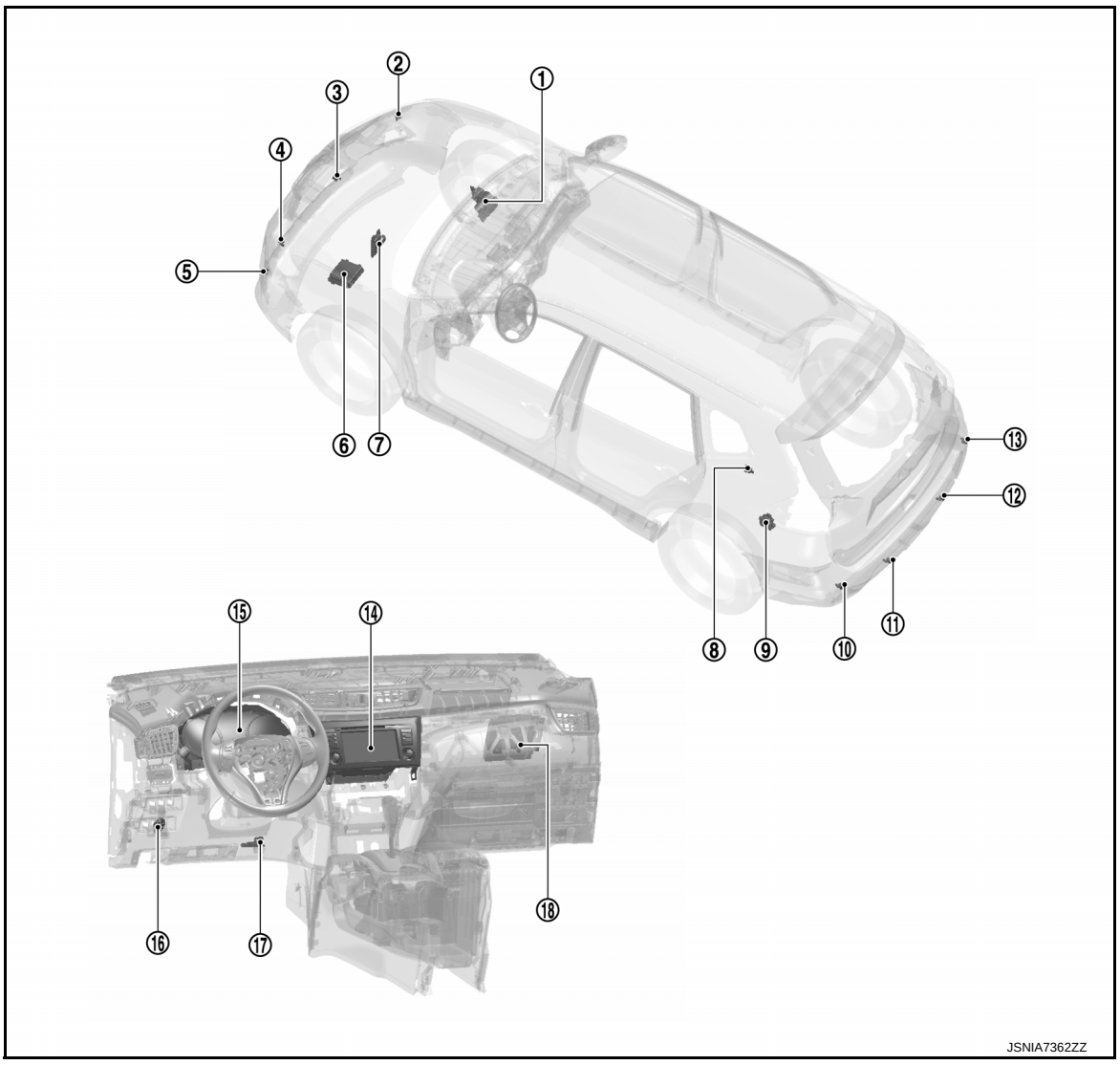
SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000010735535

LHD MODELS

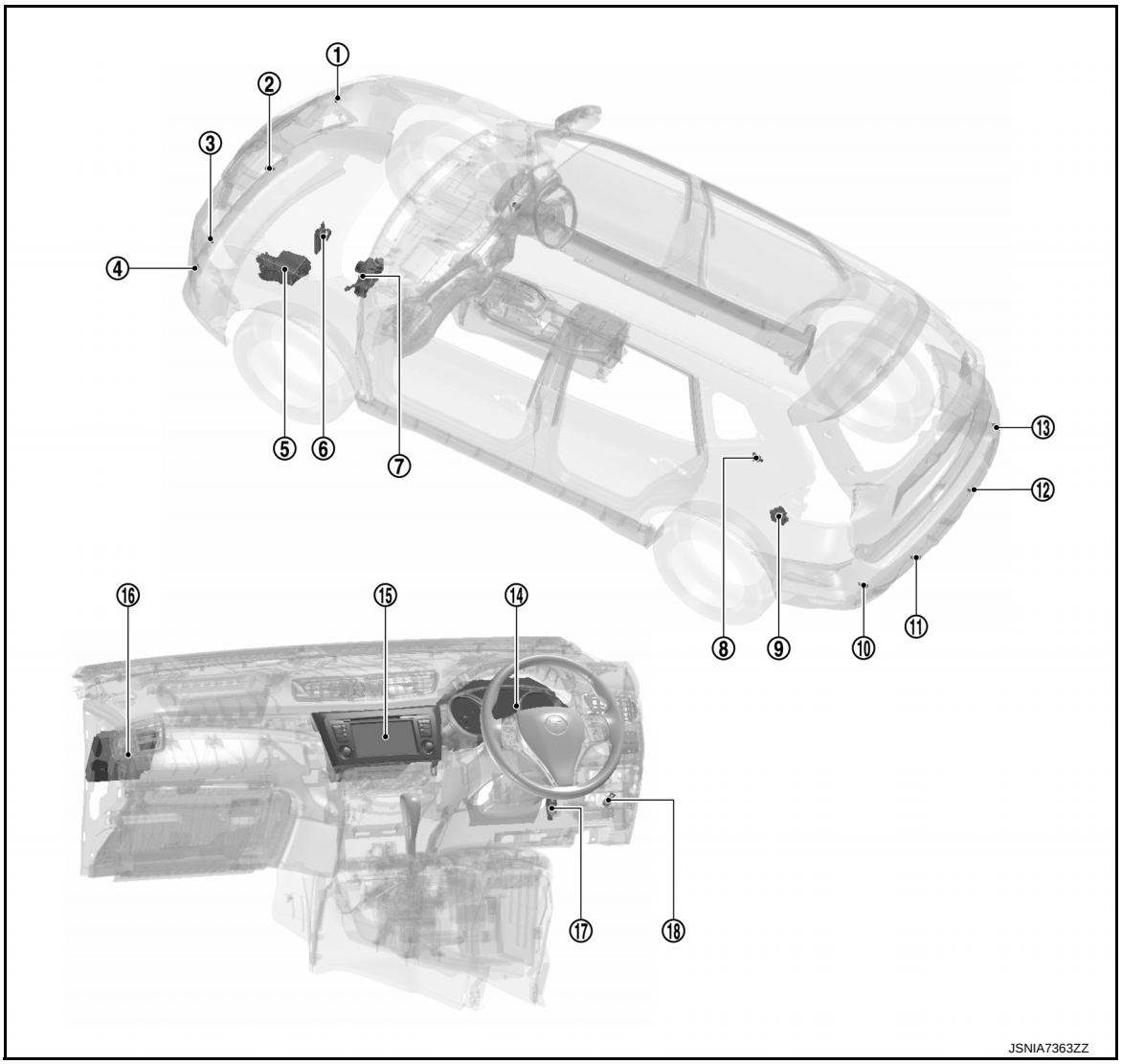


No.	Component	Function
①	ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the sonar control unit via CAN communication. Refer to BRC-14, "Component Parts Location", for detailed installation location.
②	Corner sensor front RH*	Refer to SN-12, "Sonar Sensor".
③	Center sensor front RH*	Refer to SN-12, "Sonar Sensor".
④	Center sensor front LH*	Refer to SN-12, "Sonar Sensor".
⑤	Corner sensor front LH*	Refer to SN-12, "Sonar Sensor".
⑥	IPDM E/R (M/T models)	Transmits the gear position signal to the sonar control unit via CAN communication. Refer to PCS-5, "Component Parts Location", for detailed installation location.

No.	Component	Function
⑦	TCM (CVT models)	Transmits the shift position signal to the sonar control unit via CAN communication. Refer to the following, for detailed installation location. • RE0F10D: TM-235, "CVT CONTROL SYSTEM : Component Parts Location" • RE0F10G: TM-466, "CVT CONTROL SYSTEM : Component Parts Location"
⑧	Buzzer (backward)*	Refer to SN-12, "Buzzer".
⑨	Sonar control unit	Refer to SN-11, "Sonar Control Unit".
⑩	Corner sensor rear LH	Refer to SN-12, "Sonar Sensor".
⑪	Center sensor rear LH	Refer to SN-12, "Sonar Sensor".
⑫	Center sensor rear RH	Refer to SN-12, "Sonar Sensor".
⑬	Corner sensor rear RH	Refer to SN-12, "Sonar Sensor".
⑭	NAVI control unit (With navigation)	When receiving a sonar indicator display signal from the sonar control unit, the around view monitor control unit synthesizes sonar indicator with a camera image and transmits to an NAVI control unit. Refer to AV-64, "Component Parts Location", for detailed installation location.
⑮	Combination meter	• The sonar control unit transmits the sonar indicator display signal to the combination meter via CAN communication. • The combination meter shows the sonar indicator on the information display, according to the signal. Refer to MWI-7, "METER SYSTEM : Component Parts Location", for detailed installation location.
⑯	Sonar system switch*	Refer to SN-11, "Sonar System Switch".
⑰	Buzzer (frontward)	Refer to SN-12, "Buzzer".
⑱	Around view monitor control unit (With around view monitor)	When receiving a sonar indicator display signal from the sonar control unit, the around view monitor control unit synthesizes sonar indicator with a camera image and transmits to an AV control unit or audio unit. Refer to AV-64, "Component Parts Location", for detailed installation location.

*: With front soner sensor (6 sensor) models.

RHD MODELS



No.	Component	Function
①	Corner sensor front RH*	Refer to SN-12, "Sonar Sensor".
②	Center sensor front RH*	Refer to SN-12, "Sonar Sensor".
③	Center sensor front LH*	Refer to SN-12, "Sonar Sensor".
④	Corner sensor front LH*	Refer to SN-12, "Sonar Sensor".
⑤	IPDM E/R (M/T models)	Transmits the gear position signal to the sonar control unit via CAN communication. Refer to PCS-5, "Component Parts Location", for detailed installation location.
⑥	TCM (CVT models)	Transmits the shift position signal to the sonar control unit via CAN communication. Refer to the following, for detailed installation location. • RE0F10D: TM-235, "CVT CONTROL SYSTEM : Component Parts Location" • RE0F10G: TM-466, "CVT CONTROL SYSTEM : Component Parts Location"
⑦	ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the sonar control unit via CAN communication. Refer to BRC-14, "Component Parts Location", for detailed installation location.
⑧	Buzzer (backward)*	Refer to SN-12, "Buzzer".
⑨	Sonar control unit	Refer to SN-11, "Sonar Control Unit".
⑩	Corner sensor rear LH	Refer to SN-12, "Sonar Sensor".

No.	Component	Function
⑪	Center sensor rear LH	Refer to SN-12, "Sonar Sensor".
⑫	Center sensor rear RH	Refer to SN-12, "Sonar Sensor".
⑬	Corner sensor rear RH	Refer to SN-12, "Sonar Sensor".
⑭	Combination meter	• The sonar control unit transmits the sonar indicator display signal to the combination meter via CAN communication. • The combination meter shows the sonar indicator on the information display, according to the signal. Refer to MWI-7, "METER SYSTEM : Component Parts Location", for detailed installation location.
⑮	NAVI control unit (With navigation)	When receiving a sonar indicator display signal from the sonar control unit, the around view monitor control unit synthesizes sonar indicator with a camera image and transmits to an NAVI control unit. Refer to AV-64, "Component Parts Location", for detailed installation location.
⑯	Around view monitor control unit (With around view monitor)	When receiving a sonar indicator display signal from the sonar control unit, the around view monitor control unit synthesizes sonar indicator with a camera image and transmits to an AV control unit or audio unit. Refer to AV-64, "Component Parts Location", for detailed installation location.
⑰	Buzzer (frontward)	Refer to SN-12, "Buzzer".
⑱	Sonar system switch*	Refer to SN-11, "Sonar System Switch".

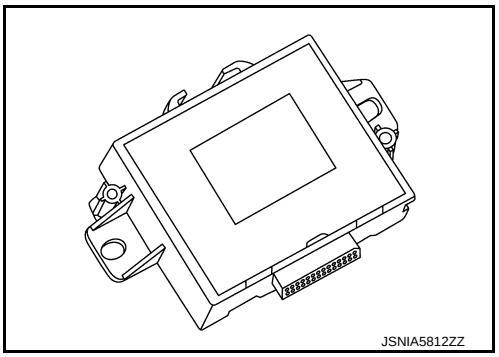
*: With front soner sensor (6 sensor) models .

Sonar Control Unit

INFOID:0000000010735536

DESCRIPTION

- The warning buzzer outputs by inputting the sensor signal from sonar sensor. The warning buzzer outputs the separated buzzer.
- The sonar indicator shows a warning according to a sensor signal received from the sonar sensor.
  NOTE:
  The information display of the combination meter displays a distance between an obstacle and the sensor as well.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Sonar System Switch

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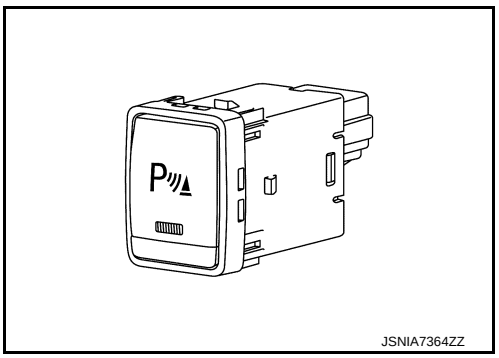
- The sonar system switch is installed instrument lower panel LH (LHD models) or instrument lower panel RH (RHD models).
- The sonar system switch signal is transmitted to the sonar control unit.
- Non-operational status or standby status of the sonar system (obstacle detection function) can be selected using sonar system switch.
- Sonar system indicator lamp indicates the operation status of function.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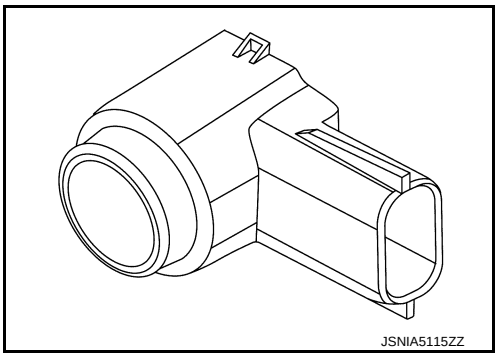
Sonar system indicator lamp	Sonar system
ON	Standby status
OFF	Non-operational status

Sonar Sensor

INFOID:0000000010735537

When a distance from an obstacle is detected, a distance signal is transmitted to the sonar control unit.



Buzzer

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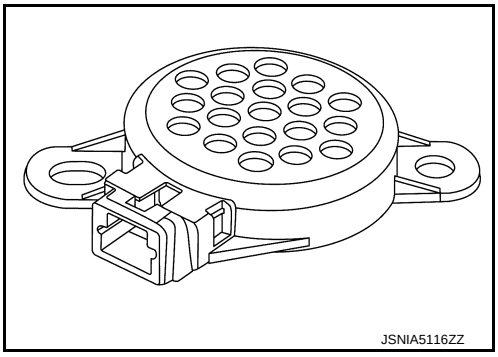
- The warning buzzer sounds with the signal from the sonar control unit.
- Buzzer (front ward) is installed to instrument lower panel LH (LHD models) or instrument lower panel RH (RHD models).
- Buzzer (backward) is installed inside the luggage side lower finisher LH.



SYSTEM
SONAR SYSTEM
SONAR SYSTEM : System Description

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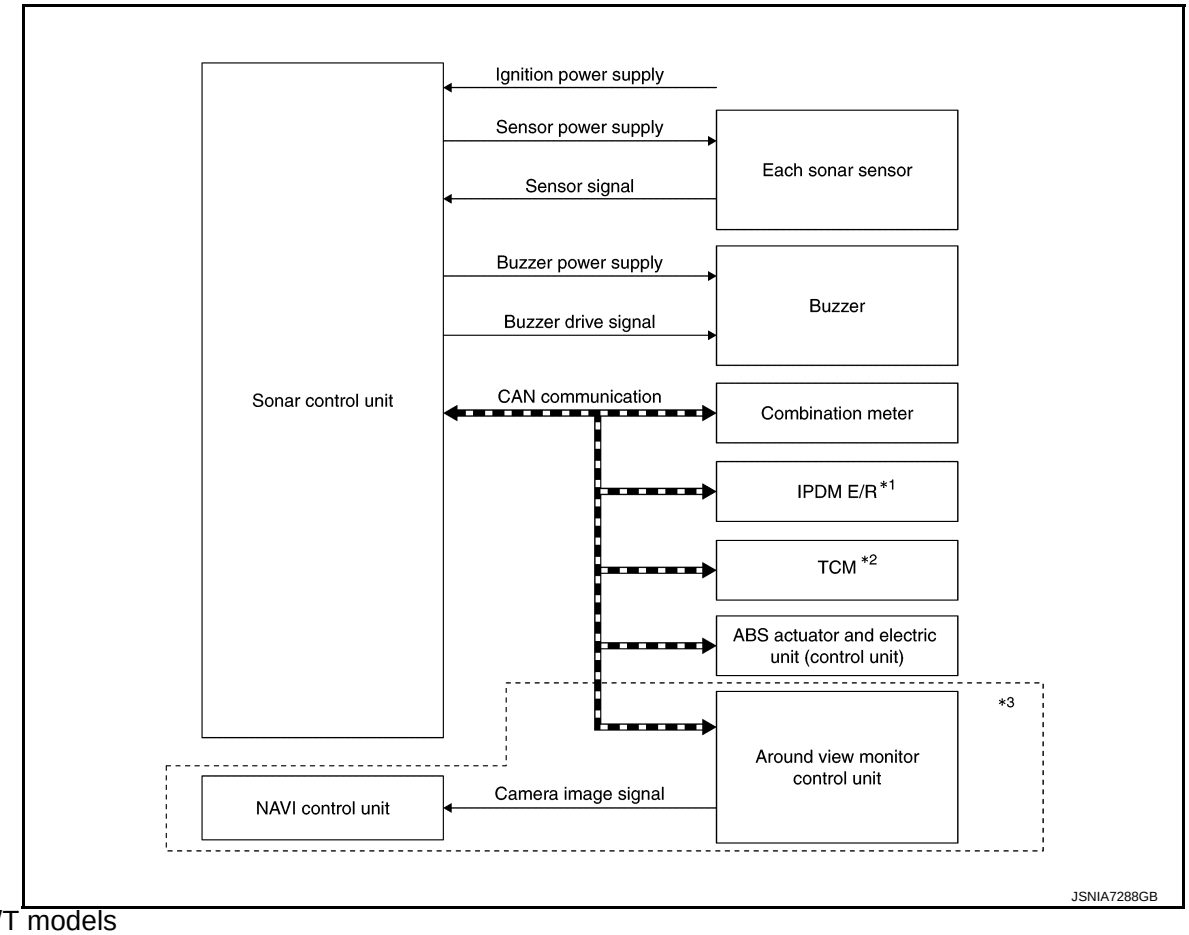
SYSTEM DIAGRAM



*1: M/T models
*2: CVT models
*3: With around view monitor system

Sonar Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
IPDM E/R (M/T models)	Gear position signal
TCM (CVT models)	Shift position signal
ABS actuator and electric unit (control unit)	Vehicle speed signal (ABS)
Combination meter	System setting signal

Sonar Control Unit Output Signal (CAN Communication)

Receiver unit	Signal name
Combination meter	• Sonar indicator display signal • Parking sensor error signal
Around view monitor control unit (with around view monitor system)	Sonar indicator display signal

DESCRIPTION

Without around view monitor system
• The sonar sensor installed to the front bumper and the rear bumper detects obstacles around the bumper.

- The sonar control unit changes the buzzer cycle and the warning of the sonar indicator (combination meter), according to a distance from an obstacle detected by the sonar sensor.
- The sonar control unit controls the buzzer cycle according to a buzzer drive signal.
- The sonar control unit controls the sonar indicator according to a sonar indicator display signal transmitted to the combination meter via CAN communication.

With around view monitor system
- The sonar sensor installed to the front bumper and the rear bumper detects obstacles around the bumper.
- The sonar control unit changes the buzzer cycle and the warning of the sonar indicator (combination meter and NAVI control unit display), according to a distance from an obstacle detected by the sonar sensor.
- The sonar control unit controls the buzzer cycle according to a buzzer drive signal.
- The sonar control unit controls the sonar indicator according to a sonar indicator display signal transmitted to the combination meter and the around view monitor control unit via CAN communication.

SONAR SYSTEM ACTIVATION CONDITION

The sonar system warns the driver of the presence or absence of obstacles by buzzer and the sonar indicator when the following conditions are satisfied while the ignition switch is turned ON.

×: Activation

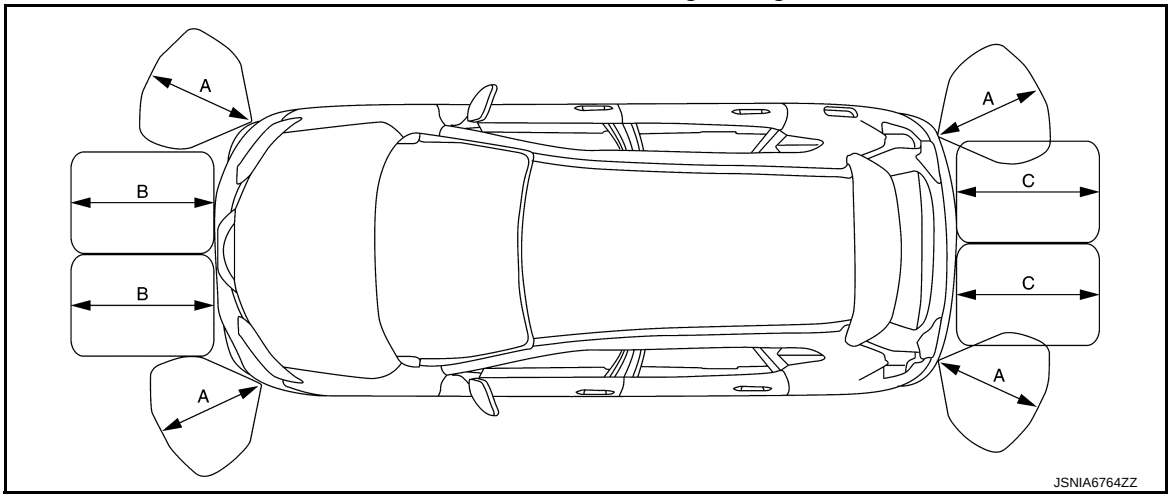
Sonar activation condition				Sonar operation		
Sonar system switch indicator	Shift position	Vehicle speed	Obstacle detecting sensor	Buzzer		Sonar indicator
				Front	Rear	
ON	R	Approx. 10 km/h (6.2 MPH) or less	Front sensor	×		×
			Rear sensor		×	×
	D		Front sensor	×		×
			Rear sensor	—	—	—
OFF	—	—	—	—	—	—

NOTE:
- When a sonar system switch is turned OFF, obstacle detection function stops.
- When an obstacle is detected by the sensor, Buzzer sounds.
- The sonar control unit activates the warning buzzer for approximately 0.5 seconds after detecting the reverse signal.
- The following items can be set for the sonar system on the settings screen of the combination meter.
- Only ON/OFF/Fr of sonar sensor
- Detection range of sonar sensor
- Buzzer volume

OBSTACLE DETECTION DISTANCE

- The sonar control unit changes a buzzer cycle and a sonar indicator indication according to a distance from an obstacle.

Obstacle detection range image



A. Approx. 60 cm (23.62 in) (default value)
B. Approx. 100 cm (39.37 in) (default value)
C. Approx. 150 cm (59.06 in) (default value)

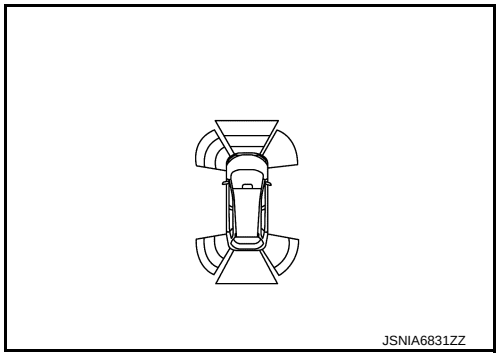
- Detection distance of an obstacle changes, as shown in the table below, when the detection sensitivity is changed on the settings screen of the information display of the combination meter. Refer to MWI-71, "INFORMATION DISPLAY : System Description".

Detection distance

Item (detection range)	Corner sensor	Front center sensor	Rear center sensor
FAR	60 cm (23.62 in) + 10%	100 cm (39.37 in) + 10%	150 cm (59.06 in) + 10%
NORMAL (default value)	Approx. 60 cm (23.62 in)	Approx. 100 cm (39.37 in)	Approx. 150 cm (59.06 in)
NEAR	60 cm (23.62 in) – 10%	100 cm (39.37 in) – 10%	150 cm (59.06 in) – 10%

Sonar Indicator

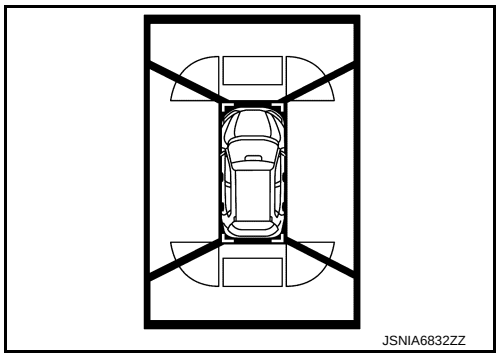
- Sonar indicator is displayed on the information display in combination meter.



- The sonar control unit displays a warning on sonar indicator in 3 stages (green, yellow, and red), according to a distance from an obstacle.

NOTE:

- A distance from an obstacle is also displayed on the information display of the combination meter.
- Sonar indicator is displayed also on Bird-Eye view and Front-side view screen of around view monitor.



- Warning displayed on the sonar indicator and a distance change according to a distance between an obstacle and sensor as shown in the following table.

Detection distance (default value)

Status of warning	Detection distance		
	Corner sensor	Front center sensor	Rear center sensor
Red	0 – 30 cm (0 in – 11.81 in)	0 – 30 cm (0 in – 11.81 in)	0 – 30 cm (0 in – 11.81 in)
Yellow	31 – 50 cm (12.2 in – 19.69 in)	31 – 60 cm (12.2 in – 23.62 in)	31 – 60 cm (12.2 in – 23.62 in)
Green	51 – 60 cm (20.08 in – 23.62 in)	61 – 100 cm (24.02 in – 39.37 in)	61 – 150 cm (24.02 in – 59.06 in)

Warning Buzzer

- The warning buzzer output frequency changes levels according to the detection distance.
- As the vehicle approaches an obstacle, the buzzer-sounding cycle becomes shorter.

- The nearest sensor from the detected obstacle applies the buzzer output frequency if plural sensors detect any obstacle simultaneously.

NOTE:
Buzzer stops when the vehicle moves away from an obstacle and the warning level decreases.

Detection distance (default value)

Detection distance	Warning buzzer frequency
Less than 30 cm (Less than 11.81 in)	Continuous tone
31 – 40 cm (12.2 – 15.75 in)	10.0 Hz
41 – 50 cm (16.14 – 19.69 in)	8.0 Hz
51 – 60 cm (20.08 – 23.62 in)	6.7 Hz
61 – 70 cm (24.02 – 27.56 in)	5.7 Hz
71 – 80 cm (27.95 – 31.5 in)	5.0 Hz
81 – 90 cm (31.89 – 35.43 in)	4.4 Hz
91 – 100 cm (35.83 – 39.37 in)	4.0 Hz
101 – 110 cm (39.76 – 39.37 in)	3.6 Hz
111 – 120 cm (35.83 – 43.31 in)	3.3 Hz
121 – 130 cm (47.64 – 51.18 in)	3.1 Hz
131 – 140 cm (51.57 – 55.12 in)	2.9 Hz
141 – 150 cm (55.51 – 59.06 in)	2.7 Hz
151 – 160 cm (59.45 – 62.99 in)	2.5 Hz
161 – 170 cm (63.39 – 66.93 in)	2.2 Hz
More than 171 cm (More than 66.93 in)	2.0 Hz

Trailer Hitch Mode

The trailer hitch mode allows the setting that the sonar sensor does not accidentally detect the trailer hitch as an obstacle when connecting a trailer hitch.

SETTINGS

- Use “Work Support” of CONSULT and enter the distance to trailer hitch. Refer to SN-19, "CONSULT Function".
- Connect trailer hitch to the vehicle and drive approximately 10 seconds or more at 5 km/h (3.1 MPH).

How To Cancel The Setting

- Disconnect trailer hitch from the vehicle. Turn the ignition switch ON and maintain this state for 10 seconds or more.

SONAR SYSTEM : Circuit Diagram

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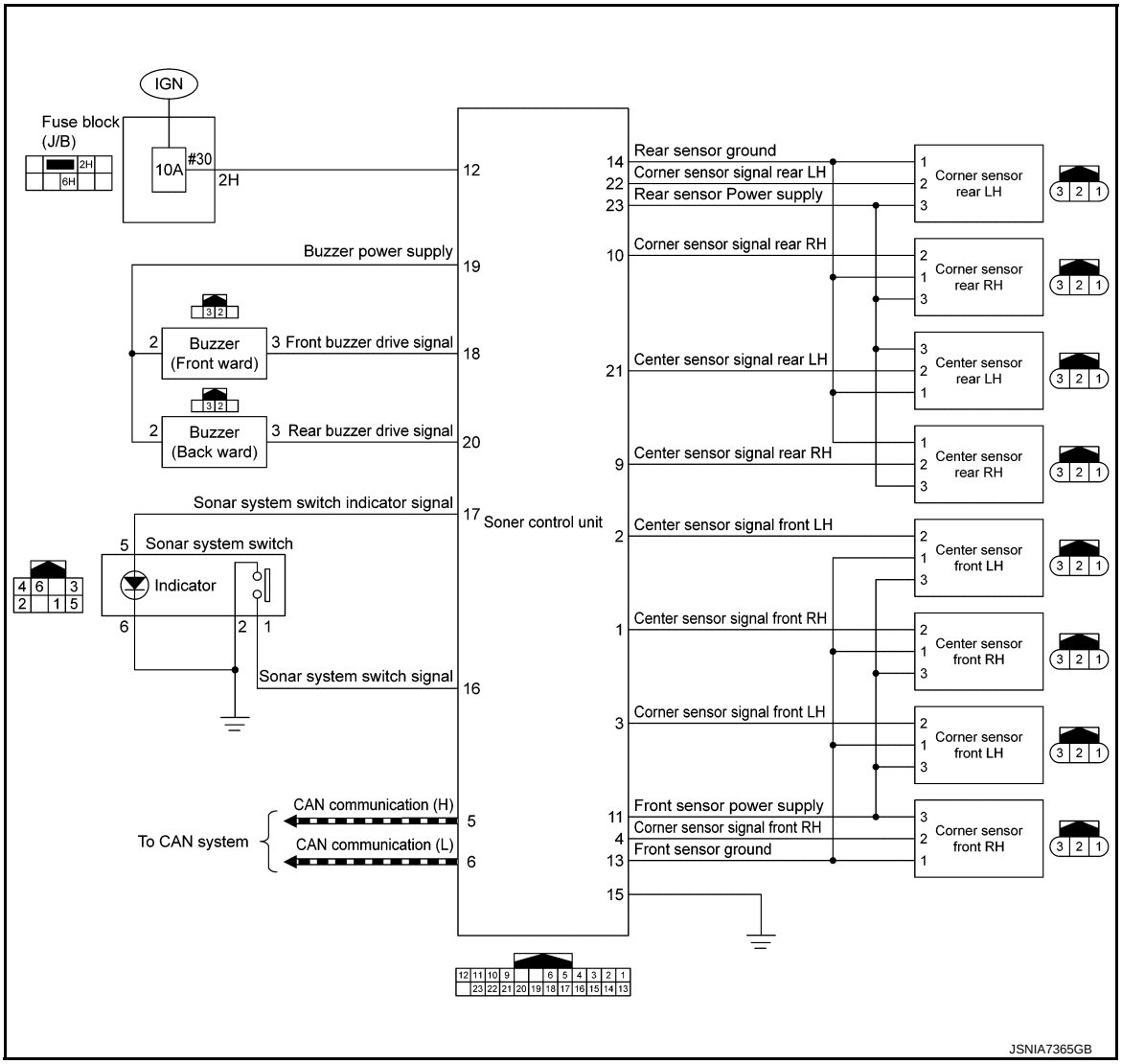


SONAR SYSTEM : Fail-Safe

INFOID:0000000010736623

When the shift position is in reverse position, the sonar control unit controls as follows if it detects a malfunction in the sonar sensor:

- Obstacle detection function is stopped.
- Alarm display is displayed on the information display of combination meter.

INFORMATION DISPLAY (COMBINATION METER)

INFORMATION DISPLAY (COMBINATION METER) : Parking Sensor Error

INFOID:0000000010735542

DESIGN/PURPOSE

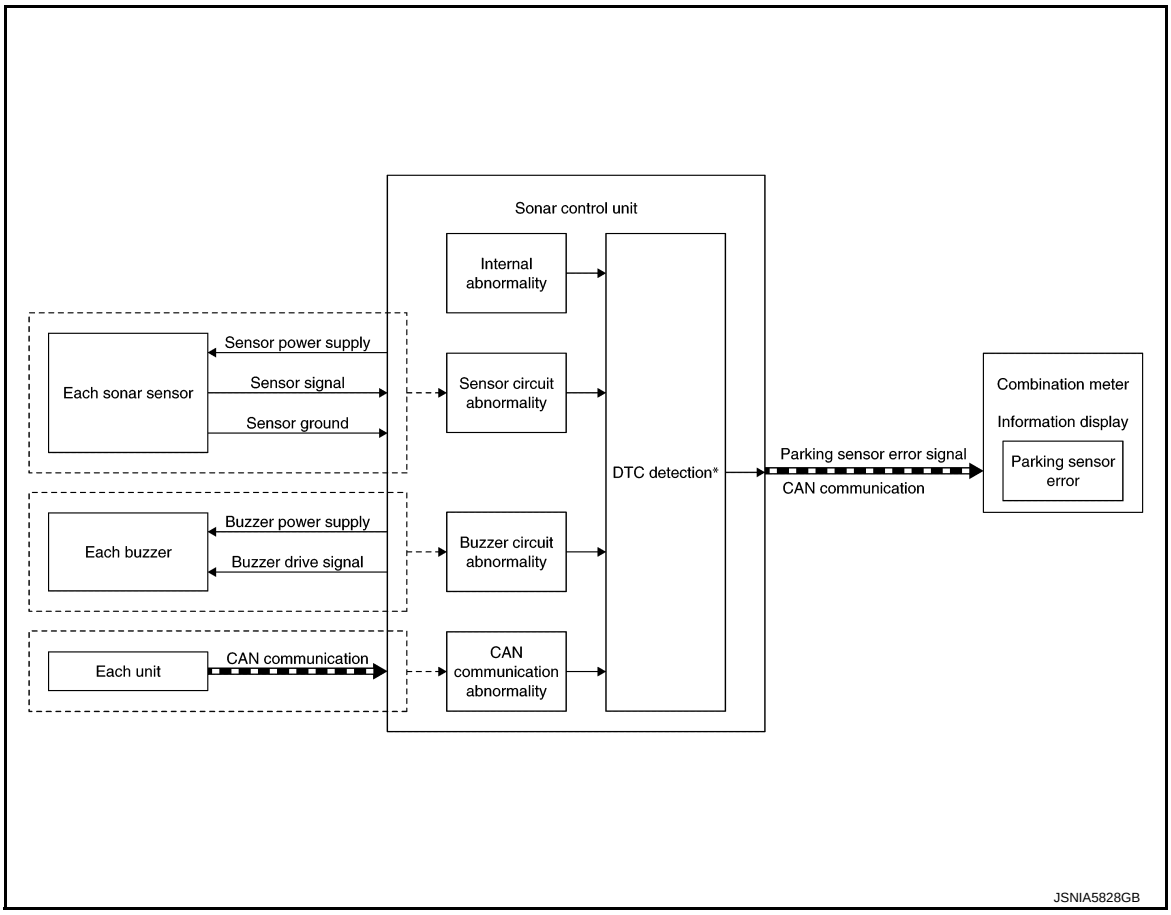
This warning is displayed when an error occurs in the sonar system.

Symbol	Message
—	Parking Sensor Error: See Owner's Manual.

SYNCHRONIZATION WITH MASTER WARNING LAMP

Synchronization is applied. Refer to MWI-47, "WARNING LAMPS/INDICATOR LAMPS : Master Warning Lamp".

SYSTEM DIAGRAM



NOTE:
*: For DTCs that parking sensor error turns ON, Refer to SN-28, "DTC Index".

SIGNAL PATH

- Sonar control unit transmits parking sensor error signal to the ON/OFF state of the combination meter via CAN communication when detecting DTC.
- Combination meter turns ON parking sensor error when receiving parking sensor error signal.

NOTE:
*: For DTCs that parking sensor error turns ON, Refer to SN-28, "DTC Index".

WARNING OPERATING CONDITION

When all of the following conditions are satisfied:

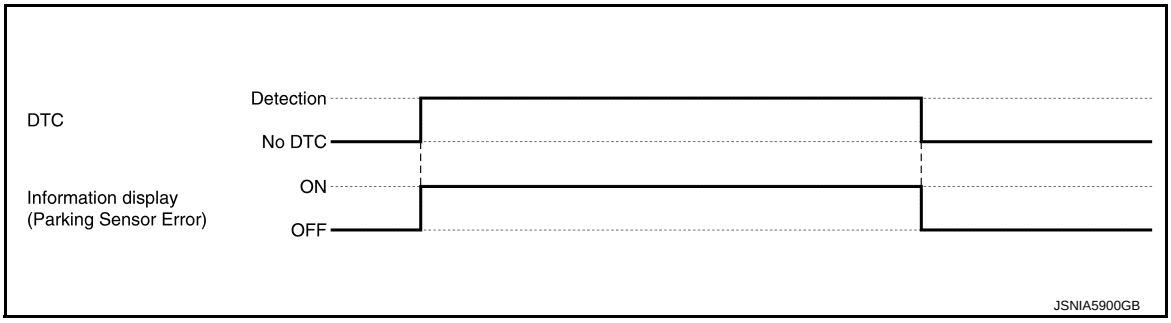
- Ignition switch ON
- DTC is detected.

WARNING CANCEL CONDITION

When any of the following conditions is satisfied:

- The ignition switch is in a position other than ON.
- DTC is deleted.

TIMING CHART



DIAGNOSIS SYSTEM (SONAR CONTROL UNIT)

CONSULT Function

INFOID:0000000010735543

APPLICATION ITEMS

CONSULT 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.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing sonar control unit.

ECU IDENTIFICATION

Displays the part number of the sonar control unit.

SELF-DIAGNOSTIC RESULTS

For details, refer to SN-28, "DTC Index".

Freeze Frame Data (FFD)

The following vehicle status is recorded when DTC is detected and is displayed on CONSULT.

Item name	Display content
ODO/TRIP METER (km)	Total driving distance (odometer value) upon DTC detection is displayed.

DATA MONITOR

NOTE:

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

Monitor Item	Display/ UNIT	Description
VEHICLE SPEED	km/h	Value of vehicle speed signal.
SONAR C/U POWER SUPPLY	V	Value of battery voltage (Ignition signal)
SENSOR VOLTAGE	V	Value of sensor voltage
DETECTION MODE	MODE1	**NOTE:** This item is displayed, but cannot be monitored.
	MODE2	
SW OPRT AFTER IGN ON	Yes	Temporary/permanent OFF operation by the user after turning ON the ignition switch.
	No	
SONAR TEMPORARY OFF	Yes	Sonar system is in temporary OFF state. **NOTE:** The user can set temporary OFF by canceling the sonar indicator displayed on the combination meter.
	No	
SONAR PERMANENT OFF	Yes	Sonar system is in permanent OFF state. **NOTE:** The user can set permanent OFF on the settings screen of the combination meter.
	No	
P N RANGE	ON	Status of shift position
	OFF	

Monitor Item	Display/ UNIT	Description
LED	ON	**NOTE:** This item is displayed, but cannot be monitored.
	OFF	
TRAILER CONNECT	ON	**NOTE:** This item is displayed, but cannot be monitored.
	OFF	
REVERSE RANGE	ON	Status of shift position
	OFF	
COR[RL]	cm	Distance according to oscillation from corner sensor rear LH and detection by corner sensor rear LH.
COR[RL]->CEN[RL]/ CEN[R]	cm	Distance according to oscillation from corner sensor rear LH and detection by center sensor rear LH.
CEN[RL]/CEN[R]- >COR[RL]	cm	Distance according to oscillation from center sensor rear LH and detection by corner sensor rear LH.
CEN[RL]/CEN[R]	cm	Distance according to oscillation from center sensor rear LH and detection by center sensor rear LH.
CEN[RL]->CEN[RR]	cm	Distance according to oscillation from center sensor rear LH and detection by center sensor rear RH.
CEN[RR]->CEN[RL]	cm	Distance according to oscillation from center sensor rear RH and detection by center sensor rear LH.
CEN[RR]	cm	Distance according to oscillation from center sensor rear RH and detection by center sensor rear RH.
CEN[RR]/CEN[R]- >COR[RR]	cm	Distance according to oscillation from center sensor rear RH and detection by corner sensor rear RH.
COR[RR]->CEN[RR]/ CEN[R]	cm	Distance according to oscillation from corner sensor rear RH and detection by center sensor rear RH.
COR[RR]	cm	Distance according to oscillation from corner sensor rear RH and detection by corner sensor rear RH.
COR[FL]	cm	Distance according to oscillation from corner sensor front LH and detection by corner sensor front LH.
COR[FL]->CEN[FL]/ CEN[F]	cm	Distance according to oscillation from corner sensor front LH and detection by center sensor front LH.
CEN[FL]/CEN[F]- >COR[FL]	cm	Distance according to oscillation from center sensor front LH and detection by corner sensor front LH.
CEN[FL]/CEN[F]	cm	Distance according to oscillation from center sensor front LH and detection by center sensor front LH.
CEN[FL]->CEN[FR]	cm	Distance according to oscillation from center sensor front LH and detection by center sensor front RH.
CEN[FR]->CEN[FL]	cm	Distance according to oscillation from center sensor front RH and detection by center sensor front LH.
CEN[FR]	cm	Distance according to oscillation from center sensor front RH and detection by center sensor front RH.
CEN[FR]/CEN[F]- >COR[FR]	cm	Distance according to oscillation from center sensor front RH and detection by corner sensor front RH.
COR[FR]->CEN[FR]/ CEN[F]	cm	Distance according to oscillation from corner sensor front RH and detection by center sensor front RH.
COR[FR]	cm	Distance according to oscillation from corner sensor front RH and detection by corner sensor front RH.
RVRB TIME COR[RL]	ms	Reverberating time of corner sensor rear LH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.

Monitor Item	Display/ UNIT	Description
RVRB TIME COR[RR]	ms	Reverberating time of corner sensor rear RH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME CEN[RL]	ms	Reverberating time of center sensor rear LH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME CEN[RR]	ms	Reverberating time of center sensor rear RH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME COR[FL]	ms	Reverberating time of corner sensor front LH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME COR[FR]	ms	Reverberating time of corner sensor front RH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME CEN[FL]	ms	Reverberating time of center sensor front LH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME CEN[FR]	ms	Reverberating time of center sensor front RH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.

ACTIVE TEST

Active test item	Function
FRONT BUZZER	This test is able to check buzzer (frontward) operation.
REAR BUZZER	This test is able to check buzzer (backward) operation.
LED	**NOTE:** This item is displayed, but cannot be tested

WORK SUPPORT

Work support item	Function
VOLUME SETTING	Adjusts the volume of buzzer.
TRAILER HITCH DETECTION RANGE ADJUSTMENT	Adjusts the distance to trailer hitch. **NOTE:** After adjusting the distance to trailer hitch, the adjustment value automatically turns to 0 after a lapse of 10 seconds or more after turning the ignition switch from OFF to ON if the trailer hitch is not connected to the vehicle.

CONFIGURATION

Configuration has three functions as follows.

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

ECU DIAGNOSIS INFORMATION

SONAR CONTROL UNIT

Reference Value

INFOID:0000000010735544

VALUES ON THE DIAGNOSIS TOOL

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

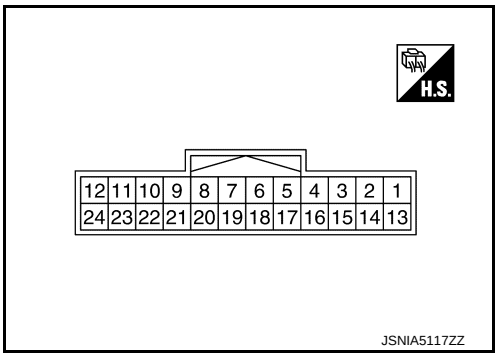
CONSULT MONITOR ITEM

Monitor Item	Condition		Value/Status
VEHICLE SPEED	Ignition switch ON	While driving	Input value of vehicle speed signal
SONAR C/U POWER SUPPLY	Ignition switch ON	While driving	Input value of battery voltage
SENSOR VOLTAGE	Ignition switch ON	While driving	Output value of power supply voltage (Approx. 8.0 V)
DETECTION MODE	Ignition switch ON	**NOTE:** This item is displayed, but cannot be monitored.	
SW OPRT AFTR IGN ON	Ignition switch ON	Temporary OFF or permanent OFF is set by the user after the ignition switch ON.	Yes
		Other than the above	No
SONAR TEMPORARY OFF	Ignition switch ON	Sonar system is in temporary OFF state.	Yes
		Other than the above	No
SONAR PERMANENT OFF	Ignition switch ON	Sonar system is in permanent OFF state.	Yes
		Other than the above	No
P N RANGE	Ignition switch ON	Shift position: “P” or “N” position	ON
		Other than the above	OFF
LED	Ignition switch ON	**NOTE:** This item is displayed, but cannot be monitored.	
TRAILER CONNECT	Ignition switch ON	**NOTE:** This item is displayed, but cannot be monitored.	
REVERSE RANGE	Ignition switch ON	Shift position: “R” position	ON
	Ignition switch ON	Other than the above	OFF
COR[RL]	Ignition switch ON	When an obstacle is detected by corner sensor rear LH. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]
		When no obstacles exist around corner sensor rear LH.	255 cm (100.39 in)
COR[RL]->CEN[RL]/CEN[R]	Ignition switch ON	When obstacles exist around rear bumper.	Distance between rear bumper and obstacle.
CEN[RL]/CEN[R]->COR[RL]	Ignition switch ON	When obstacles exist around rear bumper.	Distance between rear bumper and obstacle.
CEN[RL]/CEN[R]	Ignition switch ON	When an obstacle is detected by center sensor rear LH. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]
		When no obstacles exist around center sensor rear LH.	255 cm (100.39 in)

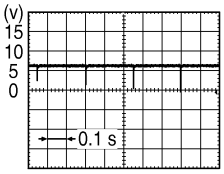
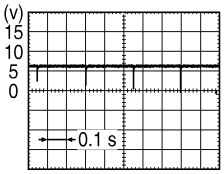
Monitor Item	Condition		Value/Status
CEN[RL]->CEN[RR]	Ignition switch ON	When obstacles exist around rear bumper.	Distance between rear bumper and obstacle.
CEN[RR]->CEN[RL]	Ignition switch ON	When obstacles exist around rear bumper.	Distance between rear bumper and obstacle.
CEN[RR]	Ignition switch ON	When an obstacle is detected by center sensor rear RH. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]
		When no obstacles exist around center sensor rear RH.	255 cm (100.39 in)
CEN[RR]/CEN[R]->COR[RR]	Ignition switch ON	When obstacles exist around rear bumper.	Distance between rear bumper and obstacle.
COR[RR]->CEN[RR]/CEN[R]	Ignition switch ON	When obstacles exist around rear bumper.	Distance between rear bumper and obstacle.
COR[RR]	Ignition switch ON	When an obstacle is detected by corner sensor rear RH. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]
		When no obstacles exist around corner sensor rear RH.	255 cm (100.39 in)
COR[FL]	Ignition switch ON	When an obstacle is detected by corner sensor front LH. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]
		When no obstacles exist around corner sensor front LH.	255 cm (100.39 in)
COR[FL]->CEN[FL]/CEN[F]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
CEN[FL]/CEN[F]->COR[FL]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
CEN[FL]/CEN[F]	Ignition switch ON	When an obstacle is detected by center sensor front LH. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]
		When no obstacles exist around center sensor front LH.	255 cm (100.39 in)
CEN[FL]->CEN[FR]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
CEN[FR]->CEN[FL]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
CEN[FR]	Ignition switch ON	When an obstacle is detected by center sensor front RH. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]
		When no obstacles exist around center sensor front RH.	255 cm (100.39 in)
CEN[FR]/CEN[F]->COR[FR]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
COR[FR]->CEN[FR]/CEN[F]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.

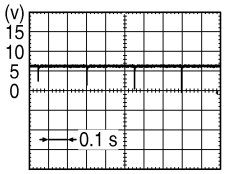
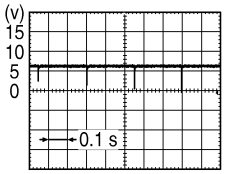
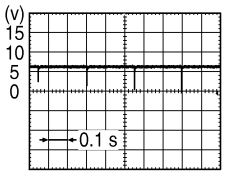
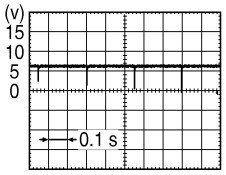
Monitor Item	Condition		Value/Status
COR[FR]	Ignition switch ON	When an obstacle is detected by corner sensor front RH. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]
		When no obstacles exist around corner sensor front RH.	255 cm (100.39 in)
RVRB TIME COR[RL]	Ignition switch ON		Approx. 1.5 ms
RVRB TIME COR[RR]	Ignition switch ON		Approx. 1.5 ms
RVRB TIME CEN[RL]	Ignition switch ON		Approx. 1.5 ms
RVRB TIME CEN[RR]	Ignition switch ON		Approx. 1.5 ms
RVRB TIME COR[FL]	Ignition switch ON		Approx. 1.5 ms
RVRB TIME COR[FR]	Ignition switch ON		Approx. 1.5 ms
RVRB TIME CEN[FL]	Ignition switch ON		Approx. 1.5 ms
RVRB TIME CEN[FR]	Ignition switch ON		Approx. 1.5 ms

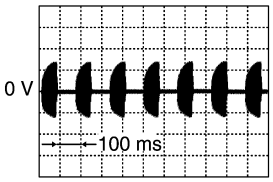
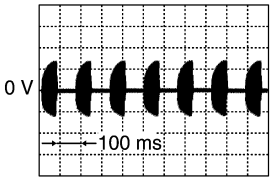
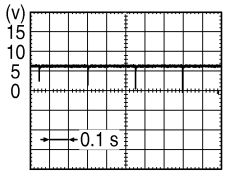
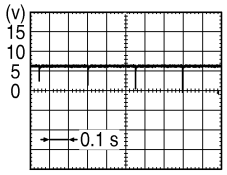
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (LG)	13 (P)	Center sensor signal front RH	Input	[Ignition switch ON] Shift position is in D position.	Waveform according to sensor signal is input	 SKIB8942E
2 (G)	13 (P)	Center sensor signal front LH	Input	[Ignition switch ON] Shift position is in D position.	Waveform according to sensor signal is input	 SKIB8942E

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)
+	–	Signal name	Input/ Output			
3 (W)	13 (P)	Corner sensor signal front LH	Input	[Ignition switch ON] Shift position is in D position.	Waveform according to sensor signal is input	 SKIB8942E
4 (V)	13 (P)	Corner sensor signal front RH	Input	[Ignition switch ON] Shift position is in D position.	Waveform according to sensor signal is input	 SKIB8942E
5 (L)	—	CAN–H	Input/ Output	—	—	—
6 (P)	—	CAN–L	Input/ Output	—	—	—
9 (V)	14 (P)	Center sensor signal rear RH	Input	[Ignition switch ON] Shift position is in R position.	Waveform according to sensor signal is input	 SKIB8942E
10 (LG)	14 (P)	Corner sensor signal rear RH	Input	[Ignition switch ON] Shift position is in R position.	Waveform according to sensor signal is input	 SKIB8942E
11 (SB)	13 (P)	Front sensor power supply	Output	—	—	8.0 V
12 (BR)	15 (B)	Ignition power supply	Input	—	9.0 - 16.0 V	Battery voltage
13 (P)	Ground	Front sensor ground	—	—	—	0 V
14 (P)	Ground	Rear sensor ground	—	—	—	0 V
15 (B)	Ground	Ground	—	—	—	0 V
16 (V)	Ground	Sonar system switch signal	Input	[Ignition switch ON] While pressing the sonar system switch.	2.0 V	2.0 V
				Other than above.	12.0 V	12.0 V

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)
+	–	Signal name	Input/ Output			
17 (SB)	Ground	Sonar system switch indicator signal	Output	[Ignition switch ON] Sonar system switch indicator lamp is ON.	12.0 V	12.0 V
				[Ignition switch ON] Sonar system switch indicator lamp is OFF.	0 V	0 V
18 (LA/L)	15 (B)	Front buzzer drive signal	Input	[Ignition switch ON] When the distance between the sensor and obstacle is approx 60 cm (23.62 in).	—	**NOTE:** • Voltage depends on volume. • Cycle depends on distance between sensor and obstacle.  JSNIA5232GB
19 (Y)	15 (B)	Buzzer power supply	Output	[Ignition switch ON]	—	0 V
20 (LA/G)	15 (B)	Rear buzzer drive signal	Input	[Ignition switch ON] When the distance between the sensor and obstacle is approx 60 cm (23.62 in).	—	**NOTE:** • Voltage depends on volume. • Cycle depends on distance between sensor and obstacle.  JSNIA5232GB
21 (G)	14 (P)	Center sensor signal rear LH	Input	[Ignition switch ON] Shift position is in R position.	Waveform according to sensor signal is input	 SKIB8942E
22 (R)	14 (P)	Corner sensor signal rear LH	Input	[Ignition switch ON] Shift position is in R position.	Waveform according to sensor signal is input	 SKIB8942E
23 (SB)	14 (P)	Rear sensor power supply	Output	—	—	8.0 V

Fail-Safe

INFOID:0000000010735545

When the shift position is in reverse position, the sonar control unit controls as follows if it detects a malfunction in the sonar sensor:
- Obstacle detection function is stopped.
- Alarm display is displayed on the information display of combination meter.

DTC Inspection Priority Chart

INFOID:0000000010792461

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

Priority	Detected items (DTC)
1	• U1000-01: CAN COMM CIRCUIT • U1010-49: CONTROL UNIT (CAN)
2	B2724-55: SONAR CONTROL UNIT
3	• B2720-12: CORNER SENSOR [RL] • B2720-14: CORNER SENSOR [RL] • B2720-55: CORNER SENSOR [RL] • B2720-92: CORNER SENSOR [RL] • B2721-12: CENTER SENSOR [RL] • B2721-14: CENTER SENSOR [RL] • B2721-55: CENTER SENSOR [RL] • B2721-92: CENTER SENSOR [RL] • B2722-12: CENTER SENSOR [RR] • B2722-14: CENTER SENSOR [RR] • B2722-55: CENTER SENSOR [RR] • B2722-92: CENTER SENSOR [RR] • B2723-12: CORNER SENSOR [RR] • B2723-14: CORNER SENSOR [RR] • B2723-55: CORNER SENSOR [RR] • B2723-92: CORNER SENSOR [RR] • B2725-12: REAR BUZZER • B2725-14: REAR BUZZER • B2728-11: LED • B2728-12: LED • B2728-14: LED • B2729-12: CORNER SENSOR [FL] • B2729-14: CORNER SENSOR [FL] • B2729-55: CORNER SENSOR [FL] • B2729-92: CORNER SENSOR [FL] • B272A-12: CENTER SENSOR [FL] • B272A-14: CENTER SENSOR [FL] • B272A-55: CENTER SENSOR [FL] • B272A-92: CENTER SENSOR [FL] • B272B-12: CENTER SENSOR [FR] • B272B-14: CENTER SENSOR [FR] • B272B-55: CENTER SENSOR [FR] • B272B-92: CENTER SENSOR [FR] • B272C-12: CORNER SENSOR [FR] • B272C-14: CORNER SENSOR [FR] • B272C-55: CORNER SENSOR [FR] • B272C-92: CORNER SENSOR [FR] • B272D-12: FRONT BUZZER • B272D-14: FRONT BUZZER

DTC Index

INFOID:0000000010735546

×: Applicable

DTC	Display item		Parking sensor error	Reference
B2720-12	CORNER SENSOR [RL]	SHORT-BAT	×	SN-43, "DTC Description"
B2720-14		OPEN/SHORT-GND		SN-45, "DTC Description"
B2720-55		CONFIG ERROR		SN-47, "DTC Description"
B2720-92		SENSOR		SN-48, "DTC Description"

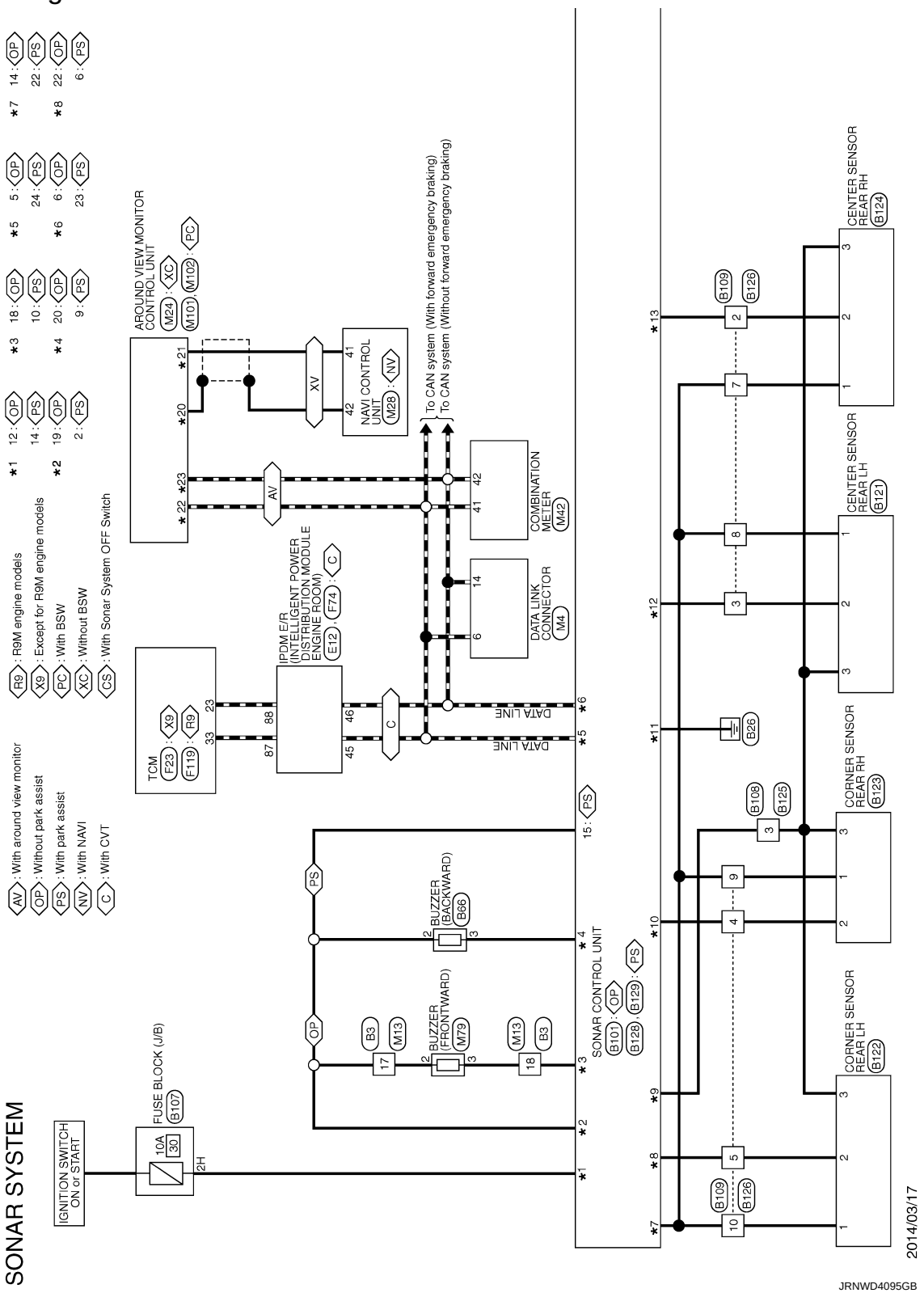
DTC	Display item		Parking sensor error	Reference
B2721-12	CENTER SENSOR [RL]	SHORT-BAT	×	SN-49, "DTC Description"
B2721-14		OPEN/SHORT-GND		SN-51, "DTC Description"
B2721-55		CONFIG ERROR		SN-53, "DTC Description"
B2721-92		SENSOR		SN-54, "DTC Description"
B2722-12	CENTER SENSOR [RR]	SHORT-BAT	×	SN-55, "DTC Description"
B2722-14		OPEN/SHORT-GND		SN-57, "DTC Description"
B2722-55		CONFIG ERROR		SN-59, "DTC Description"
B2722-92		SENSOR		SN-60, "DTC Description"
B2723-12	CORNER SENSOR [RR]	SHORT-BAT	×	SN-61, "DTC Description"
B2723-14		OPEN/SHORT-GND		SN-63, "DTC Description"
B2723-55		CONFIG ERROR		SN-65, "DTC Description"
B2723-92		SENSOR		SN-66, "DTC Description"
B2724-55	SONAR CONTROL UNIT	CONFIG ERROR	×	SN-67, "DTC Description"
B2725-12	REAR BUZZER	SHORT-BAT	×	SN-68, "DTC Description"
B2725-14		OPEN/SHORT-GND		SN-70, "DTC Description"
B2728-11	LED	SHORT-GND	×	SN-72, "DTC Description"
B2728-12		SHORT-BAT		SN-73, "DTC Description"
B2728-14		OPEN/SHORT-GND		SN-74, "DTC Description"
B2729-12	CORNER SENSOR [FL]	SHORT-BAT	×	SN-76, "DTC Description"
B2729-14		OPEN/SHORT-GND		SN-78, "DTC Description"
B2729-55		CONFIG ERROR		SN-80, "DTC Description"
B2729-92		SENSOR		SN-81, "DTC Description"
B272A-12	CENTER SENSOR [FL]	SHORT-BAT	×	SN-82, "DTC Description"
B272A-14		OPEN/SHORT-GND		SN-84, "DTC Description"
B272A-55		CONFIG ERROR		SN-86, "DTC Description"
B272A-92		SENSOR		SN-87, "DTC Description"
B272B-12	CENTER SENSOR [FR]	SHORT-BAT	×	SN-88, "DTC Description"
B272B-14		OPEN/SHORT-GND		SN-90, "DTC Description"
B272B-55		CONFIG ERROR		SN-92, "DTC Description"
B272B-92		SENSOR		SN-93, "DTC Description"
B272C-12	CORNER SENSOR [FR]	SHORT-BAT	×	SN-94, "DTC Description"
B272C-14		OPEN/SHORT-GND		SN-96, "DTC Description"
B272C-55		CONFIG ERROR		SN-98, "DTC Description"
B272C-92		SENSOR		SN-99, "DTC Description"
B272D-12	FRONT BUZZER	SHORT-BAT	×	SN-100, "DTC Description"
B272D-14		OPEN/SHORT-GND		SN-102, "DTC Description"
U1000-01	CAN COMM CIRCUIT		×	SN-104, "DTC Description"
U1010-49	CONTROL UNIT (CAN)		×	SN-105, "DTC Description"

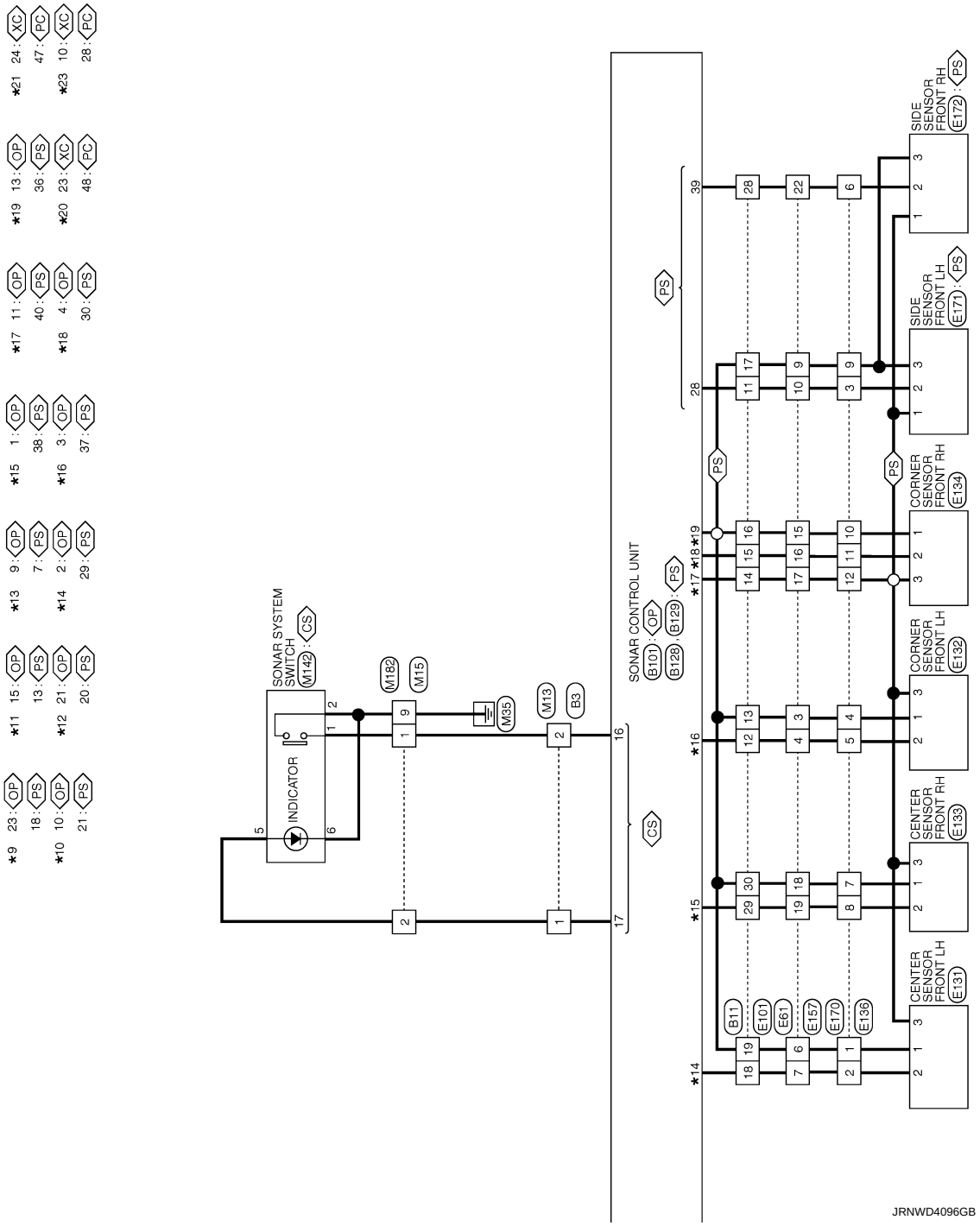
WIRING DIAGRAM

SONAR SYSTEM

Wiring Diagram

INFOID:0000000010735547



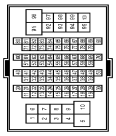

SONAR SYSTEM SWITCH M142 : CS
INDICATOR
M182
M15
M35
M13
B3
SONAR CONTROL UNIT
B101 : OP
B128 : B129 : PS
CS
PS
SIDE SENSOR FRONT RH E172 : PS
SIDE SENSOR FRONT LH E171 : PS
CORNER SENSOR FRONT RH E134
CORNER SENSOR FRONT LH E132
CENTER SENSOR FRONT RH E133
CENTER SENSOR FRONT LH E131
B11
E101
E61
E157
E170
E136
JRNWD4096GB

SONAR SYSTEM

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	V	-
3	LA/R	-
4	V	-
5	GR	-
6	Y	-
7	LG	-
8	BG	-
9	W	-
10	LA/Y	-
11	BR	-
12	Y	-
13	W	-
14	V	-
15	L	-
16	BR	-
17	Y	-
18	LA/L	- [Without PSM]
18	SB	- [With PSM]
20	LG	-
21	G	-
22	V	-
23	BR	-
24	P	-
25	L	-
26	G	-
29	SHIELD	-
30	W	-
31	B	-
32	R	-

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MEGY-CS16-TM4

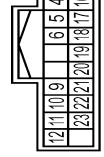


Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	LA/BR	-
5	BG	-
11	BR	-
12	W	-
13	P	-
14	SB	-
15	V	-
16	P	-
17	P	-
18	G	-
19	P	-
20	R	-
21	BR	-
22	Y	-
23	BG	-
24	SB	-
25	G	-
26	B	-
27	P	-
28	R	-
29	LG	-
30	P	-
92	BR	-
93	GR	-
94	Y	-
95	LG	-
97	LG	-

Connector No.	B66
Connector Name	BUZZER (BACKWARD)
Connector Type	TH04FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
2	Y	-
3	G	- [With PSM]
3	LA/G	- [Without PSM]

Connector No.	B101
Connector Name	SONAR CONTROL UNIT
Connector Type	TH24FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	CENTER SENSOR SIGNAL FRONT RH
2	G	CENTER SENSOR SIGNAL FRONT LH
3	W	CORNER SENSOR SIGNAL FRONT LH
4	V	CORNER SENSOR SIGNAL FRONT RH
5	L	CAN-H
6	P	CAN-L
9	V	CENTER SENSOR SIGNAL REAR RH
10	LG	CORNER SENSOR SIGNAL REAR RH
11	SB	FRONT SENSOR POWER SUPPLY
12	BR	IGNITION POWER SUPPLY
13	P	FRONT SENSOR GROUND
14	P	REAR SENSOR GROUND
15	B	GROUND
16	V	SONAR SYSTEM OFF SWITCH SIGNAL
17	SB	SONAR SYSTEM OFF SWITCH INDICATOR SIGNAL
18	LA/L	FRONT BUZZER DRIVE SIGNAL

19	Y	BUZZER POWER SUPPLY
20	LA/G	REAR BUZZER DRIVE SIGNAL
21	G	CENTER SENSOR SIGNAL REAR LH
22	R	CORNER SENSOR SIGNAL REAR LH
23	SB	REAR SENSOR POWER SUPPLY

Connector No.	B107
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-CS

Terminal No.	Color Of Wire	Signal Name [Specification]
2H	BR	-
6H	LA/L	-

Connector No.	B108
Connector Name	WIRE TO WIRE
Connector Type	RH08MB

Terminal No.	Color Of Wire	Signal Name [Specification]
3	SB	-

JRNWD4097GB

SONAR SYSTEM

Connector No.	B109
Connector Name	WIRE TO WIRE
Connector Type	RH10MB

Terminal No.	Color Of Wire	Signal Name [Specification]
2	V	-
3	G	-
4	LG	-
5	R	-
7	P	-
8	P	-
9	P	-
10	P	-

Connector No.	B121
Connector Name	CENTER SENSOR REAR LH
Connector Type	RH03FB

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	R	-
3	SB	-

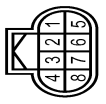
Connector No.	B122
Connector Name	CORNER SENSOR REAR LH
Connector Type	RH03FB

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	R	- [With PSM]
2	W	- [Without PSM]
3	SB	-

Connector No.	B124
Connector Name	CENTER SENSOR REAR RH
Connector Type	RH03FB

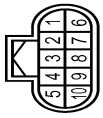
Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	G	-
3	SB	-

Connector No.	B125
Connector Name	WIRE TO WIRE
Connector Type	RH08FB



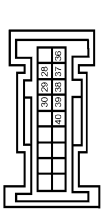
Terminal No.	Color Of Wire	Signal Name [Specification]
3	SB	-

Connector No.	B126
Connector Name	WIRE TO WIRE
Connector Type	RH10FB



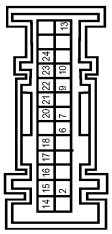
Terminal No.	Color Of Wire	Signal Name [Specification]
2	G	-
3	R	-
4	V	-
5	R	- [Without PSM]
5	W	- [With PSM]
7	P	-
8	P	-
9	P	-
10	P	-

Connector No.	B128
Connector Name	SONAR CONTROL UNIT
Connector Type	renault_8200280830



Terminal No.	Color Of Wire	Signal Name [Specification]
28	BR	SIDE SENSOR SIGNAL FRONT LH
29	G	CENTER SENSOR SIGNAL FRONT LH
30	V	CORNER SENSOR SIGNAL FRONT RH
36	P	FRONT SENSOR GROUND
37	W	CORNER SENSOR SIGNAL FRONT LH
38	LG	CENTER SENSOR SIGNAL FRONT RH
39	R	SIDE SENSOR SIGNAL FRONT RH
40	SB	FRONT SENSOR POWER SUPPLY

Connector No.	B129
Connector Name	SONAR CONTROL UNIT
Connector Type	renault_8200176157



Terminal No.	Color Of Wire	Signal Name [Specification]
2	Y	FRONT BUZZER POWER SUPPLY
6	R	CORNER SENSOR SIGNAL REAR LH
7	V	CENTER SENSOR SIGNAL REAR RH
9	G	REAR BUZZER DRIVE SIGNAL
10	SB	FRONT BUZZER DRIVE SIGNAL
13	B	GROUND
14	BR	IGNITION POWER SUPPLY
15	Y	REAR BUZZER POWER SUPPLY
16	V	SONAR SYSTEM OFF SWITCH SIGNAL
17	SB	SONAR SYSTEM OFF SWITCH INDICATOR SIGNAL
18	SB	REAR SENSOR POWER SUPPLY
20	G	CENTER SENSOR SIGNAL REAR LH

JRNWD4098GB

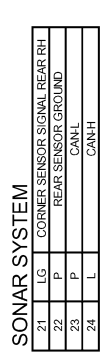
SONAR SYSTEM

21	LG	CORNER SENSOR SIGNAL REAR RH
22	P	REAR SENSOR GROUND
23	P	CAN-L
24	L	CAN-H

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH24FGY-NH

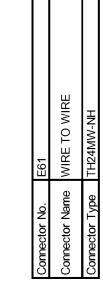
Terminal No.	Color Of Wire	Signal Name [Specification]
25	LG	-
26	W	-
27	SB	-
28	P	-
30	L	-
31	G	-
32	B	-
33	BG	-
34	LG	-
35	V	-
36	Y	-
37	B	-
38	GR	-
39	BR	-
45	L	-
46	P	-
47	W	-
48	R	-

Connector No.	E61
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH



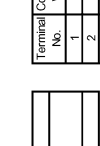
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	L	-
3	P	-
4	W	-
6	P	-
7	G	-
9	P	-
10	BR	-
12	GR	-
13	SHIELD	-
14	LG	-
15	P	-
16	V	-
17	SB	-
18	P	-
19	LG	-
22	R	-
23	Y	-
24	GR	-

Connector No.	E101
Connector Name	WIRE TO WIRE
Connector Type	TH80FDGY-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
5	G	-
11	BR	-
12	W	-
13	P	-
14	SB	-
15	V	-
16	P	-
17	P	-
18	G	-
19	P	-
20	G	-
21	BR	-
22	LG	-
23	Y	-
24	SB	-
25	G	-
26	B	-
27	P	-
28	R	-
29	LG	-
30	P	-
92	BR	-
93	GR	-
94	R	-
95	L	-
97	LG	-

Connector No.	E131
Connector Name	CENTER SENSOR FRONT LH
Connector Type	RH03FB

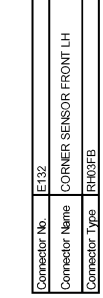


Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	GND
2	G	SIGNAL_GND
3	SB	POWER

Connector No.	E132
Connector Name	CORNER SENSOR FRONT LH
Connector Type	RH03FB

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	W	SIGNAL
3	SB	POWER

Connector No.	E133
Connector Name	CENTER SENSOR FRONT RH
Connector Type	RH03FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	GND
2	LG	SIGNAL_GND
3	SB	POWER

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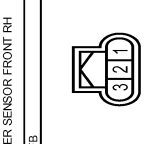
Connector No.	E134
Connector Name	CORNER SENSOR FRONT RH
Connector Type	RH03FB

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	V	-
3	SB	POWER

Connector No.	E136
Connector Name	WIRE TO WIRE
Connector Type	RH12FB

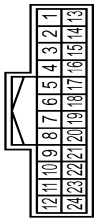
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	G	-
3	BR	-
4	P	-
5	W	-
6	R	-
7	P	-
8	LG	-
9	P	-
10	P	-
11	V	-
12	SB	-

Connector No.	E157
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH

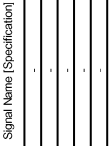
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	L	-
3	P	-
4	W	-
6	P	-
7	G	-
9	P	-
10	BR	-
12	GR	-
13	SHIELD	-
14	LG	-
15	P	-
16	V	-
17	SB	-
18	P	-
19	LG	-
22	R	-
23	V	-
24	GR	-

Connector No.	E170
Connector Name	WIRE TO WIRE
Connector Type	RH12MB

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	GND
2	G	SIGNAL
3	BR	SIGNAL
4	P	GND
5	W	SIGNAL
6	R	SIGNAL
7	P	GND
8	LG	GND
9	P	GND
10	P	GND
11	V	SIGNAL
12	SB	POWER

Connector No.	E171
Connector Name	SIDE SENSOR FRONT LH
Connector Type	ADZ03FB-1V

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	POWER
2	BR	SIGNAL_GND
3	P	GND

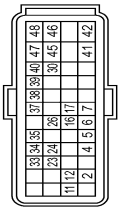
Connector No.	E172
Connector Name	SIDE SENSOR FRONT RH
Connector Type	ADZ03FB-1V

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	POWER
2	R	SIGNAL_GND
3	P	GND

Connector No.	F23
Connector Name	TCM
Connector Type	RH40FB-RZ8-L-RH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
2	GR	-
4	Y	D RANGE SWITCH
5	BR	N RANGE SWITCH
6	G	R RANGE SWITCH
7	V	P RANGE SWITCH
11	LG	SENSOR GROUND
12	BR	CVT FLUID TEMPERATURE SENSOR
16	SB	SECONDARY PRESSURE SENSOR
17	R	PRIMARY PRESSURE SENSOR
23	P	CAN-L
24	LG	INPUT SPEED SENSOR
26	BG	SENSOR POWER SUPPLY
30	GR	LINE PRESSURE SOLENOID VALVE
33	L	CAN-H
34	W	OUTPUT SPEED SENSOR
35	GR	PRIMARY SPEED SENSOR
37	Y	SELECT SOLENOID VALVE
38	G	TORQUE CONVERTER CLUTCH SOLENOID VALVE
39	W	SECONDARY PRESSURE SOLENOID VALVE
40	V	PRIMARY PRESSURE SOLENOID VALVE
41	B	GROUND
42	B	GROUND
45	V	BATTERY POWER SUPPLY
46	V	BATTERY POWER SUPPLY
47	BG	IGNITION POWER SUPPLY
48	BG	IGNITION POWER SUPPLY

JRNWD4100GB

SONAR SYSTEM

Connector No.	F74
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH24FB-NH

H.S.

98	97	96	95	94	93	92			90	89	88	87
110			101	105	104				102	100	101	99

Terminal No.	Color Of Wire	Signal Name [Specification]
87	L	-
88	P	-
89	W	-
90	R	-
92	GR	-
93	G	- [With R9M Engine]
93	P	- [With MR20 or QR25 Engine]
94	SB	-
95	LG	-
96	W	-
97	P	-
98	Y	-
99	BG	-
100	LG	-
101	V	-
102	Y	-
105	W	-
106	BR	-
107	V	-
110	SB	-

Connector No.	F119
Connector Name	TCM
Connector Type	RH40FB-RZ8-L-LH

H.S.

32	33	34	35		37	38	39	40	47	48
	23	24	25	26				30	45	46
11	12		14		16	17				
1	2		4	5	6	7			41	42

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	ELECTRIC OIL PUMP RELAY
2	GR	-
4	Y	D RANGE SWITCH
5	BR	N RANGE SWITCH
6	G	R RANGE SWITCH
7	V	P RANGE SWITCH
11	LG	SENSOR GROUND
12	BR	CVT FLUID TEMPERATURE SENSOR
14	V	G SENSOR
16	SB	SECONDARY PRESSURE SENSOR
17	R	PRIMARY PRESSURE SENSOR
23	P	CAN-L
24	LG	INPUT SPEED SENSOR
25	R	ELECTRIC OIL PUMP COMMAND SIGNAL
26	BG	SENSOR POWER SUPPLY
30	GR	LINE PRESSURE SOLENOID VALVE
32	SB	ELECTRIC OIL PUMP STATUS SIGNAL
33	L	CAN-H
34	W	OUTPUT SPEED SENSOR
35	GR	PRIMARY SPEED SENSOR
37	Y	SELECT SOLENOID VALVE
38	G	TORQUE CONVERTER CLUTCH SOLENOID VALVE
39	W	SECONDARY PRESSURE SOLENOID VALVE
40	V	PRIMARY PRESSURE SOLENOID VALVE
41	B	GROUND
42	B	GROUND
45	V	BATTERY POWER SUPPLY
46	V	BATTERY POWER SUPPLY
47	BG	IGNITION POWER SUPPLY
48	BG	IGNITION POWER SUPPLY

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

H.S.

							8
		3	4	5	6		
	11					14	15	16

Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
8	Y	-
11	SB	-
14	P	-
15	BR	-
16	W	-

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH

H.S.

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

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	V	-
3	SB	-
4	BR	-
5	L	-
6	Y	-
7	LG	-
8	BG	-
9	W	-
10	Y	-
11	R	-

12	SB	-
13	LG	-
14	V	-
15	SB	-
16	Y	-
17	LA/BR	-
18	LA/L	-
20	BG	-
21	BG	-
22	GR	-
23	GR	-
24	P	-
25	L	-
26	BR	-
29	SHIELD	-
30	W	-
31	B	-
32	R	-

Connector No.	M15
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH

H.S.

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

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	- [With corner sensor]
1	Y	- [Without corner sensor]
2	B	- [Without corner sensor]
2	SB	- [With corner sensor]
7	LA/L	-
8	B	-
9	B	- [With corner sensor]
9	G	- [Without corner sensor]
10	B	- [Without corner sensor]
10	Y	- [With corner sensor]
11	B	-
15	G	-
16	B	-

JRNWD4101GB

SONAR SYSTEM

Connector No.	M24
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FW-NH

H.S.

2	4								10	12								
1																		

24	26	28	29	30	34	36	38	40
23	25	27	31		33	35	37	39

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
2	Y	BATTERY POWER SUPPLY
4	SB	IGNITION SIGNAL
10	R	CAN-L
12	L	CAN-H
23	SHIELD	CAMERA IMAGE SIGNAL GROUND
24	G	CAMERA IMAGE SIGNAL
25	B	REAR CAMERA GROUND
26	R	REAR CAMERA POWER SUPPLY
27	SHIELD	REAR CAMERA IMAGE SIGNAL (-)
28	W	REAR CAMERA IMAGE SIGNAL (+)
29	Y	SIDE CAMERA DRIVER SIDE GROUND
30	L	SIDE CAMERA DRIVER SIDE POWER SUPPLY
31	SHIELD	SIDE CAMERA DRIVER SIDE IMAGE SIGNAL (-)
32	G	SIDE CAMERA DRIVER SIDE IMAGE SIGNAL (+)
33	L	SIDE CAMERA PASSENGER SIDE CAMERA GROUND
34	B	SIDE CAMERA PASSENGER SIDE CAMERA POWER SUPPLY
35	SHIELD	SIDE CAMERA PASSENGER SIDE CAMERA IMAGE SIGNAL (-)
36	Y	SIDE CAMERA PASSENGER SIDE CAMERA IMAGE SIGNAL (+)
37	V	FRONT CAMERA GROUND
38	L	FRONT CAMERA POWER SUPPLY
39	SHIELD	FRONT CAMERA IMAGE SIGNAL (-)
40	LG	FRONT CAMERA IMAGE SIGNAL (+)

Connector No.	M28
Connector Name	NAVI CONTROL UNIT
Connector Type	TH24FW-NH

H.S.

21	22	23		25				30	31	32
34	35	36	37	38	39	40	41	42		

Terminal No.	Color Of Wire	Signal Name [Specification]
21	G	AUX AUDIO SIGNAL RH
22	Y	AUX AUDIO SIGNAL GROUND
23	L	AUX AUDIO SIGNAL LH
25	BR	REVERSE SIGNAL
30	BG	DIMMER SIGNAL
31	SB	AV COMMUNICATION SIGNAL (H)
32	LG	AV COMMUNICATION SIGNAL (L)
34	W	MICROPHONE SIGNAL
35	B	MICROPHONE VCC
36	SHIELD	MICROPHONE GROUND
37	SHIELD	SHIELD
38	SB	AV COMMUNICATION SIGNAL (H)
39	LG	AV COMMUNICATION SIGNAL (L)
40	LG	IGNITIO NSIGNAL
41	G	CAMERA IMAGE SIGNAL
42	SHIELD	CAMERA IMAGE SIGNAL GROUND

Connector No.	M42
Connector Name	COMBINATION METER
Connector Type	TH12FW-NH

H.S.

41	42	43	44	45	46
47	48	49	50	51	52

Terminal No.	Color Of Wire	Signal Name [Specification]
41	L	CAN-H
42	P	CAN-L
43	W	ILLUMINATION CONTROL SIGNAL
44	LA/B	FUEL LEVEL SENSOR GROUND
45	LA/G	BATTERY POWER SUPPLY
46	LA/BR	IGNITION SIGNAL [Without ISS]
46	V	IGNITION SIGNAL [With ISS]
47	SB	AV COMMUNICATION SIGNAL (H)
48	LG	AV COMMUNICATION SIGNAL (L)
49	Y	OIL LEVEL SENSOR SIGNAL
50	BG	OIL LEVEL SENSOR GROUND
51	LA/L	FUEL LEVEL SENSOR SIGNAL
52	B	GROUND

Connector No.	M79
Connector Name	BUZZER (FRONTWARD)
Connector Type	TH04FW-NH

H.S.

3	1	2

Terminal No.	Color Of Wire	Signal Name [Specification]
2	LA/BR	POWER
3	LA/L	INPUT

Connector No.	M101
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FW-NH

H.S.

2	6								28			36	38	
1	3	5							27			35	37	39

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
2	Y	BATTERY POWER SUPPLY
3	SB	IGNITION SIGNAL
7	R	BSW INDICATOR LH
8	G	BSW INDICATOR RH
27	L	CAN-H
28	R	CAN-L
36	Y	COMMUNICATION SIGNAL (CAMERA → PUMP)
37	V	COMM GND
38	SB	COMMUNICATION SIGNAL (PUMP → CAMERA)

Connector No.	M102
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH52FW-NH

H.S.

				48	50	52	54	56	58	60	62	64	66	68	70	72		
				47	49		53		59				65			71		

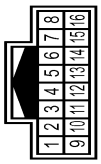
Terminal No.	Color Of Wire	Signal Name [Specification]
47	G	CAMERA IMAGE SIGNAL
48	SHIELD	CAMERA IMAGE SIGNAL GROUND
49	LG	REAR CAMERA COMMUNICATION SIGNAL
50	R	REAR CAMERA POWER SUPPLY
52	B	REAR CAMERA GROUND
53	W	REAR CAMERA IMAGE SIGNAL (+)
54	SHIELD	REAR CAMERA IMAGE SIGNAL (-)
56	L	SIDE CAMERA DRIVER SIDE POWER SUPPLY
58	Y	SIDE CAMERA DRIVER SIDE GROUND
59	G	SIDE CAMERA DRIVER SIDE IMAGE SIGNAL (+)
60	SHIELD	SIDE CAMERA DRIVER SIDE IMAGE SIGNAL (-)
62	B	SIDE CAMERA PASSENGER SIDE CAMERA POWER SUPPLY
64	L	SIDE CAMERA PASSENGER SIDE CAMERA GROUND
65	Y	SIDE CAMERA PASSENGER SIDE CAMERA IMAGE SIGNAL (+)
66	SHIELD	SIDE CAMERA PASSENGER SIDE CAMERA IMAGE SIGNAL (-)
68	L	FRONT CAMERA POWER SUPPLY
70	V	FRONT CAMERA GROUND
71	LG	FRONT CAMERA IMAGE SIGNAL (+)
72	SHIELD	FRONT CAMERA IMAGE SIGNAL (-)

JRNWD4102GB

SONAR SYSTEM

Connector No.	M182
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	- [With corner sensor]
1	Y	- [Without corner sensor]
2	B	- [Without corner sensor]
2	SB	- [With corner sensor]
7	L	-
8	B	-
9	B	- [With corner sensor]
9	R	- [Without corner sensor]
10	B	- [Without corner sensor]
10	Y	- [With corner sensor]
11	B	-
15	P	-
16	B	-

JRNWD4103GB

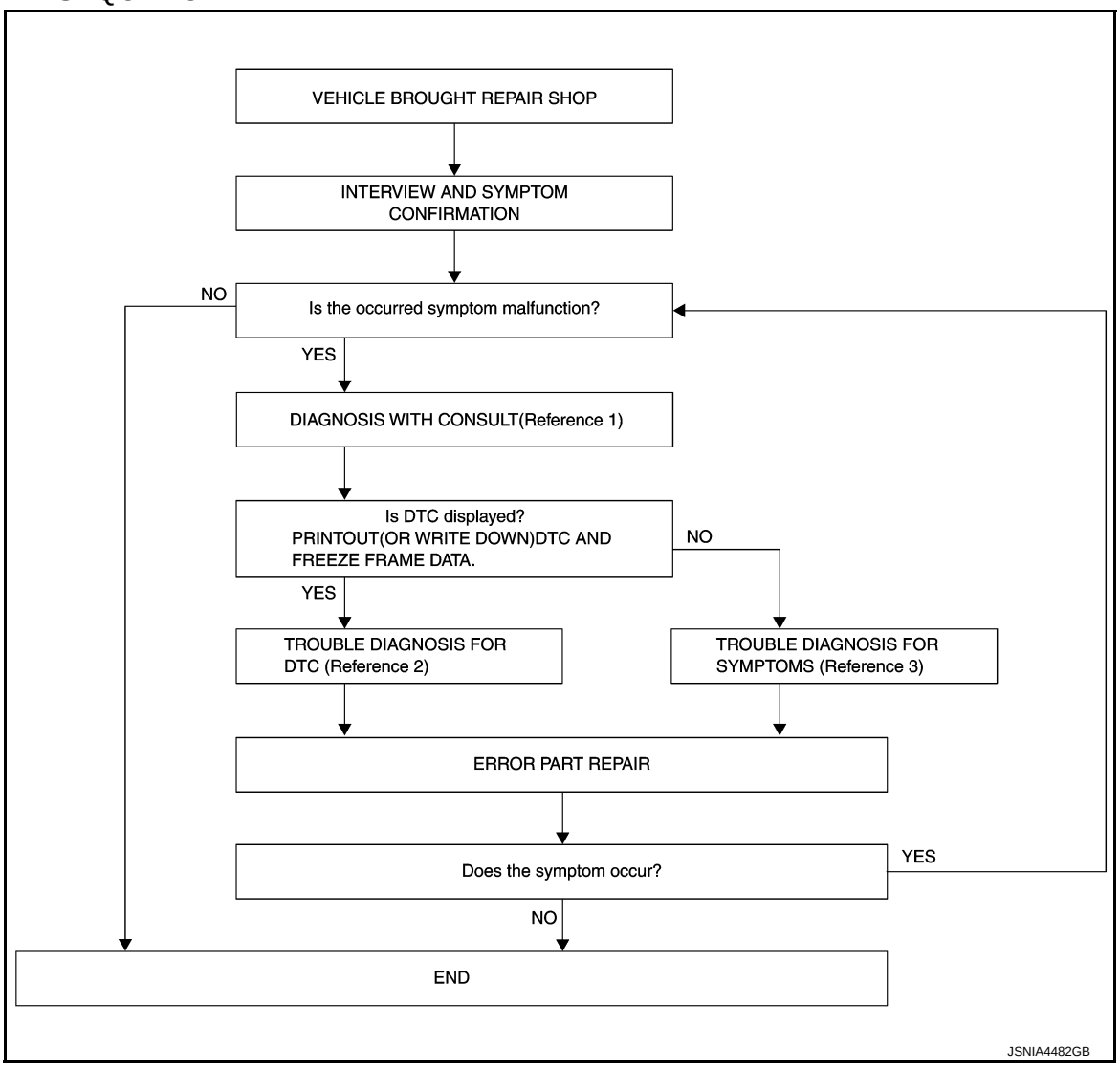
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000010735548

OVERALL SEQUENCE



- Reference 1··· Refer to SN-19, "CONSULT Function".
- Reference 2··· Refer to SN-28, "DTC Index".
- Reference 3··· Refer to SN-109, "Symptom Table".

DETAILED FLOW

1.INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check if 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.
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.

NO >> INSPECTION END

2.DIAGNOSIS WITH CONSULT

1. Connect CONSULT and perform a self-diagnosis for “SONAR”. Refer to SN-19, "CONSULT Function".
2. When DTC is detected, follow the instructions below:

- Record DTC and Freeze Frame Data.

Is DTC displayed?

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

3.TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to SN-28, "DTC Index".

>> GO TO 5.

4.TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to SN-109, "Symptom Table".

>> GO TO 5.

5.ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “SONAR” with CONSULT.
3. Check that the symptom does not occur.

Does the symptom occur?

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

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING SONAR CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING SONAR CONTROL UNIT : Description

INFOID:0000000010735549

Perform the following operations when replacing sonar control unit.
Configuration, refer to SN-41, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

CONFIGURATION (SONAR CONTROL UNIT)

CONFIGURATION (SONAR CONTROL UNIT) : Description

INFOID:0000000010735550

- Since vehicle specifications are not included in the sonar control unit after replacement, it is required to write vehicle specifications with CONSULT.
- The sonar control unit configuration includes functions as follows.

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

CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure

INFOID:0000000010735551

1. WRITE VEHICLE SPECIFICATION

CONSULT Configuration
Write vehicle specification into sonar control unit.

To write vehicle specification stored in CONSULT into the sonar control unit>>GO TO 2.
To write vehicle specification into the sonar control unit by hand>>GO TO 3.

2. WRITE STORED DATA

CONSULT Configuration
Select “After Replace ECU” in “Read/Write Configuration.” Write data stored in CONSULT with the “Before Replace ECU” function into the sonar control unit.

>> GO TO 4.

3. MANUALLY WRITE VEHICLE SPECIFICATION

CONSULT Configuration
Select “Manual Configuration”, and write the setting value as shown in the following table to sonar control unit according to the vehicle specification.

CAUTION:
Grasp vehicle specifications precisely. The control of ECU may not function normally if the specifications are misread.
NOTE:
- The items shown in this list depend on vehicle specifications.
- The config list may not be displayed depending on vehicle specifications. This is not a malfunction.
- If selection items are not displayed on the CONSULT screen, touch “NEXT”.

MANUAL SETTING ITEM		Detail
Items	Setting value	
FRONT SENSOR	2 SENSORS	—
	4 SENSORS	With front sonar sensor
	3 SENSORS	—
	NONE	Without front sonar sensor
LDW FUNCTION	WITHOUT	With LDW
	WITH	Without LDW
TRANSMISSION	A/T	A/T models
	M/T	M/T models

>> GO TO 4.

4. OPERATION CHECK

Check that the operation of the sonar control unit is normal.

>> WORK END

DTC/CIRCUIT DIAGNOSIS

B2720-12 CORNER SENSOR [RL]

DTC Description

INFOID:0000000010735552

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2720-12	CORNER SENSOR [RL] (Corner sensor rear-left)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and corner sensor rear LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Corner sensor rear LH circuit)
- Corner sensor rear LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2720-12 detected?

YES >> Proceed to SN-43, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735553

1. CHECK CORNER SENSOR SIGNAL REAR LH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor rear LH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	22	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2. CHECK CORNER SENSOR SIGNAL REAR LH CIRCUIT FOR SHORT (2)

Check the continuity between corner sensor rear LH harness connector and ground.

Terminals			Continuity
(+)		(–)	
Corner sensor rear LH			
Connector	Terminal		
B122	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace corner sensor rear LH. Refer to SN-114, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2720-14 CORNER SENSOR [RL]

DTC Description

INFOID:0000000010735554

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2720-14	CORNER SENSOR [RL] (Corner sensor rear-left)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and corner sensor rear LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Corner sensor rear LH circuit)
- Corner sensor rear LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2720-14 detected?

YES >> Proceed to SN-45, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735555

1.CHECK CORNER SENSOR SIGNAL REAR LH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor rear LH harness connector.
3. Check the continuity between sonar control unit harness connector and corner sensor rear LH harness connector.

Sonar control unit		Corner sensor rear LH		Continuity
Connector	Terminal	Connector	Terminal	
B101	22	B122	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR SIGNAL REAR LH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	22	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK REAR SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and corner sensor rear LH harness connector.

Sonar control unit		Corner sensor rear LH		Continuity
Connector	Terminal	Connector	Terminal	
B101	14	B122	1	Existed

Is the inspection result normal?

YES >> Replace corner sensor rear LH. Refer to SN-114, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2720-55 CORNER SENSOR [RL]

DTC Description

INFOID:0000000010735556

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2720-55	CORNER SENSOR [RL] (Corner sensor rear-left)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Corner sensor rear LH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2720-55 detected?

YES >> Proceed to SN-47, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735557

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-41, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-45, "DTC Description".

Is DTC B2720-55 detected again?

YES >> Replace corner sensor rear LH. Refer to SN-114, "REAR : Removal and Installation".
NO >> INSPECTION END.

B2720-92 CORNER SENSOR [RL]

DTC Description

INFOID:0000000010735558

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2720-92	CORNER SENSOR [RL] (Corner sensor rear-left)	SENSOR (Sensor)	Corner sensor rear LH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Corner sensor rear LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2720-92 detected?

YES >> Proceed to SN-48, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735559

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-45, "DTC Description".

Is DTC B2720-92 detected again?

YES >> Replace corner sensor rear LH. Refer to SN-114, "REAR : Removal and Installation".
NO >> INSPECTION END

B2721-12 CENTER SENSOR [RL]

DTC Description

INFOID:0000000010735560

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2721-12	CENTER SENSOR [RL] (Center sensor rear-left)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and center sensor rear LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Center sensor rear LH circuit)
- Center sensor rear LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2721-12 detected?

YES >> Proceed to SN-49, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735561

1.CHECK CENTER SENSOR SIGNAL REAR LH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor rear LH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	21	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL REAR LH CIRCUIT FOR SHORT (2)

Check the continuity between center sensor rear LH harness connector and ground.

Terminals			Continuity
(+)		(–)	
Center sensor rear LH			
Connector	Terminal		
B121	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace center sensor rear LH. Refer to SN-114, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2721-14 CENTER SENSOR [RL]

DTC Description

INFOID:0000000010735562

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2721-14	CENTER SENSOR [RL] (Center sensor rear-left)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and center sensor rear LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Center sensor rear LH circuit)
- Center sensor rear LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2721-14 detected?

YES >> Proceed to SN-51, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735563

1.CHECK CENTER SENSOR SIGNAL REAR LH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor rear LH harness connector.
3. Check the continuity between sonar control unit harness connector and center sensor rear LH harness connector.

Sonar control unit		Center sensor rear LH		Continuity
Connector	Terminal	Connector	Terminal	
B101	21	B121	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL REAR LH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	21	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK REAR SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and center sensor rear LH harness connector.

Sonar control unit		Center sensor rear LH		Continuity
Connector	Terminal	Connector	Terminal	
B101	14	B121	1	Existed

Is the inspection result normal?

YES >> Replace center sensor rear LH. Refer to SN-114, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2721-55 CENTER SENSOR [RL]

DTC Description

INFOID:0000000010735564

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2721-55	CENTER SENSOR [RL] (Center sensor rear-left)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Center sensor rear LH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2721-55 detected?

YES >> Proceed to SN-53, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735565

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-41, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-53, "DTC Description".

Is DTC B2721-55 detected again?

YES >> Replace center sensor rear LH. Refer to SN-114, "REAR : Removal and Installation".
NO >> INSPECTION END.

B2721-92 CENTER SENSOR [RL]

DTC Description

INFOID:0000000010735566

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2721-92	CENTER SENSOR [RL] (Center sensor rear-left)	SENSOR (Sensor)	Center sensor rear LH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Center sensor rear LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2721-92 detected?

YES >> Proceed to SN-54, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735567

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-54, "DTC Description".

Is DTC B2721-92 detected again?

YES >> Replace center sensor rear LH. Refer to SN-114, "REAR : Removal and Installation".
NO >> INSPECTION END

B2722-12 CENTER SENSOR [RR]

DTC Description

INFOID:0000000010735568

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2722-12	CENTER SENSOR [RR] (Center sensor rear-right)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and center sensor rear RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Center sensor rear RH circuit)
- Center sensor rear RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2722-12 detected?

YES >> Proceed to SN-55, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735569

1.CHECK CENTER SENSOR SIGNAL REAR RH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor rear RH connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	9	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL REAR RH CIRCUIT FOR SHORT (2)

Check the continuity between center sensor rear RH harness connector and ground.

Terminals			Continuity
(+)		(–)	
Center sensor rear RH			
Connector	Terminal		
B124	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace center sensor rear RH . Refer to SN-114, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2722-14 CENTER SENSOR [RR]

DTC Description

INFOID:0000000010735570

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2722-14	CENTER SENSOR [RR] (Center sensor rear-right)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and center sensor rear RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Center sensor rear RH circuit)
- Center sensor rear RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2722-14 detected?

YES >> Proceed to SN-57, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735571

1.CHECK CENTER SENSOR SIGNAL REAR RH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor rear RH harness connector.
3. Check the continuity between sonar control unit harness connector and center sensor rear RH harness connector.

Sonar control unit		Center sensor rear RH		Continuity
Connector	Terminal	Connector	Terminal	
B101	9	B124	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL REAR RH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	9	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK REAR SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and center sensor rear RH harness connector.

Sonar control unit		Center sensor rear RH		Continuity
Connector	Terminal	Connector	Terminal	
B101	14	B124	1	Existed

Is the inspection result normal?

YES >> Replace center sensor rear RH . Refer to SN-114, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2722-55 CENTER SENSOR [RR]

DTC Description

INFOID:0000000010735572

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2722-55	CENTER SENSOR [RR] (Center sensor rear-right)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Center sensor rear RH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2722-55 detected?

YES >> Proceed to SN-59, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735573

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-41, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-59, "DTC Description".

Is DTC B2722-55 detected again?

YES >> Replace center sensor rear RH . Refer to SN-114, "REAR : Removal and Installation".
NO >> INSPECTION END.

B2722-92 CENTER SENSOR [RR]

DTC Description

INFOID:0000000010735574

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2722-92	CENTER SENSOR [RR] (Center sensor rear-right)	SENSOR (Sensor)	Center sensor rear RH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Center sensor rear RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2722-92 detected?

YES >> Proceed to SN-60, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735575

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-60, "DTC Description".

Is DTC B2722-92 detected again?

YES >> Replace center sensor rear RH . Refer to SN-114, "REAR : Removal and Installation".
NO >> INSPECTION END

B2723-12 CORNER SENSOR [RR]

DTC Description

INFOID:0000000010735576

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2723-12	CORNER SENSOR [RR] (Corner sensor rear-right)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and corner sensor rear RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Corner sensor rear RH circuit)
- Corner sensor rear RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2723-12 detected?

YES >> Proceed to SN-61, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735577

1.CHECK CORNER SENSOR REAR RH SIGNAL CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor rear RH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	10	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR REAR RH SIGNAL CIRCUIT FOR SHORT (2)

Check the continuity between corner sensor rear RH harness connector and ground.

Terminals			Continuity
(+)		(–)	
Corner sensor rear RH			
Connector	Terminal		
B123	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace corner sensor rear RH. Refer to SN-114, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2723-14 CORNER SENSOR [RR]

DTC Description

INFOID:0000000010735578

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2723-14	CORNER SENSOR [RR] (Corner sensor rear-right)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and corner sensor rear RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Corner sensor rear RH circuit)
- Corner sensor rear RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2723-14 detected?

YES >> Proceed to SN-63, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735579

1.CHECK CORNER SENSOR REAR RH SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor rear RH harness connector.
3. Check the continuity between sonar control unit harness connector and corner sensor rear RH harness connector.

Sonar control unit		Corner sensor rear RH		Continuity
Connector	Terminal	Connector	Terminal	
B101	10	B123	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR REAR RH SIGNAL CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	10	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK CORNER SENSOR REAR RH GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and corner sensor rear RH harness connector.

Sonar control unit		Corner sensor rear RH		Continuity
Connector	Terminal	Connector	Terminal	
B101	14	B123	1	Existed

Is the inspection result normal?

YES >> Replace corner sensor rear RH. Refer to SN-114, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2723-55 CORNER SENSOR [RR]

DTC Description

INFOID:0000000010735580

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2723-55	CORNER SENSOR [RR] (Corner sensor rear-right)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Corner sensor rear RH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2723-55 detected?

YES >> Proceed to SN-65, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735581

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-41, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-65, "DTC Description".

Is DTC B2723-55 detected again?

YES >> Replace corner sensor rear RH. Refer to SN-114, "REAR : Removal and Installation".
NO >> INSPECTION END.

B2723-92 CORNER SENSOR [RR]

DTC Description

INFOID:0000000010735582

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2723-92	CORNER SENSOR [RR] (Corner sensor rear-right)	SENSOR (Sensor)	Corner sensor rear RH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Corner sensor rear RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2723-92 detected?

YES >> Proceed to SN-66, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735583

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-66, "DTC Description".

Is DTC B2723-92 detected again?

YES >> Replace corner sensor rear RH. Refer to SN-114, "REAR : Removal and Installation".
NO >> INSPECTION END

B2724-55 SONAR CONTROL UNIT

DTC Description

INFOID:0000000010735584

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)	Detecting condition
B2724-55	SONAR CONTROL UNIT (Sonar control unit)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2724-55 detected?

YES >> Proceed to SN-67, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735585

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-41, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-67, "DTC Description".

Is DTC B2724-55 detected again?

YES >> Replace sonar control unit. Refer to SN-111, "Removal and Installation".
NO >> INSPECTION END

B2725-12 REAR BUZZER

DTC Description

INFOID:0000000010919356

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detection condition
B2725-12	REAR BUZZER (Rear buzzer)	SHORT-BAT (Short to battery)	A short circuit is detected in harness between sonar control unit and buzzer (backward) with an obstacle detected.

POSSIBLE CAUSE

Harness between sonar control unit and buzzer (backward)

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC “B2725-12” detected?

YES >> Proceed to SN-68, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010919357

1.CHECK BUZZER (BACKWARD) POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and buzzer (backward) connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit harness connector and ground.

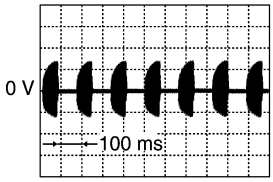
Sonar control unit		Ground	Reference value (Approx.)
Connector	Terminal		
B101	19		0 V

Is the inspection result normal?

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

2.CHECK BUZZER DRIVE SIGNAL CIRCUIT

Check voltage between sonar control unit harness connector and ground.

Sonar control unit			Standard	Reference value (Approx.)
Connector	Terminal			
B101	20	Ground	—	**NOTE:** • Voltage depends on volume. • Cycle depends on distance between sensor and obstacle.  JSNIA5232GB

Is the inspection result normal?

YES >> Replace buzzer (backward). Refer to SN-116, "REAR : Removal and Installation".
NO >> Repair harness or connector.

B2725-14 REAR BUZZER

DTC Description

INFOID:0000000010919358

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detection condition
B2725-14	REAR BUZZER (Rear buzzer)	OPEN/SHORT-GND (Open/Short to ground)	A break in harness between sonar control unit and buzzer (backward) or a short circuit between sonar control unit and ground is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Harness between sonar control unit and buzzer (backward)

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC “B2725-14” detected?

YES >> Proceed to SN-70, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010919359

1.CHECK CONTINUITY BUZZER (BACKWARD) POWER SUPPLY CIRCUIT

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

Sonar control unit		Buzzer (backward)		Continuity
Connector	Terminal	Connector	Terminal	
B101	19	B66	2	Existed

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
B101	19		Not existed

Is the inspection result normal?

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

2.CHECK CONTINUITY BUZZER DRIVE SIGNAL CIRCUIT

1. Check continuity between sonar control unit harness connector and buzzer (backward) harness connector.

Sonar control unit		Buzzer (backward)		Continuity
Connector	Terminal	Connector	Terminal	
B101	20	B66	3	Existed

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
B101	20		Not existed

Is the inspection result normal?

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

3. CHECK CONTINUITY SONAR CONTROL UNIT

1. Check continuity between terminals of sonar control unit.

Sonar control unit		Continuity.
Terminal		
19	20	Not existed

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

Sonar control unit	Ground	Continuity
Terminal		
19		Not existed
20		

Is the inspection result normal?

YES >> Replace buzzer (backward). Refer to SN-116, "REAR : Removal and Installation".
NO >> Replace sonar control unit. Refer to SN-111, "Removal and Installation".

B2728-11 LED

DTC Description

INFOID:0000000011009380

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detection condition
B2728-11	LED (Light emitting diode)	SHORT-GND (Short to ground)	Short circuit to ground is detected in harness between sonar control unit and sonar system switch when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness between sonar control unit and sonar system switch
- Sonar control unit

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2728-11 detected?

YES >> Proceed to SN-72, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011009381

1.CHECK SONAR SYSTEM SWITCH INDICATOR SIGNAL CIRCUIT FOR SHORT

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
B101	17		Not existed

Is the inspection result normal?

YES >> Replace sonar control unit. Refer to SN-111, "Removal and Installation".
NO >> Repair harness or connector.

B2728-12 LED

DTC Description

INFOID:0000000011009376

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detection condition
B2728-12	LED (Light emitting diode)	SHORT-BAT (Short to battery)	Short circuit to battery is detected in harness between sonar control unit and sonar system switch when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness between sonar control unit and sonar system switch
- Sonar control unit

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2728-12 detected?

YES >> Proceed to SN-73, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011009377

1.CHECK SONAR SYSTEM SWITCH INDICATOR SIGNAL CIRCUIT FOR SHORT

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

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	17	Ground	0 V

Is the inspection result normal?

YES >> Replace sonar control unit. Refer to SN-111, "Removal and Installation".
NO >> Repair harness or connector.

B2728-14 LED

DTC Description

INFOID:0000000011009373

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detection condition
B2728-14	LED (Light emitting diode)	OPEN/SHORT-GND (open/short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and sonar system switch when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness between sonar control unit and sonar system switch
- Sonar control unit
- Sonar system switch

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2728-14 detected?

YES >> Proceed to SN-74, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011009374

1.CHECK SONAR SYSTEM SWITCH INDICATOR SIGNAL CIRCUIT FOR SHORT

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
B101	17		Not existed

Is the inspection result normal?

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

2.CHECK SONAR SYSTEM SWITCH INDICATOR SIGNAL CIRCUIT FOR OPEN

Check the continuity between sonar control unit harness connector and sonar system switch harness connector.

Sonar control unit		Sonar system switch		Continuity
Connector	Terminal	Connector	Terminal	
B101	17	M142	5	Existed

Is the inspection result normal?

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

3.CHECK SONAR SYSTEM SWITCH INDICATOR SIGNAL GROUND CIRCUIT

Check the continuity between sonar system switch harness connector and ground.

Sonar system switch		Ground	Continuity
Connector	Terminal		
M142	6		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK SONAR SYSTEM SWITCH

Check the sonar system switch. Refer to SN-75, "Component Inspection".

Is the inspection result normal?

YES >> Replace sonar control unit. Refer to SN-111, "Removal and Installation".
NO >> Replace sonar system switch. Refer to SN-112, "Removal and Installation".

Component Inspection

INFOID:0000000011009611

1.CHECK SONAR SYSTEM SWITCH (1)

1. Turn ignition switch OFF.
2. Remove sonar system switch. Refer to SN-112, "Removal and Installation".
3. Check the continuity between sonar system switch terminals.

Sonar system switch		Continuity
Terminals		
(+)	(–)	
Terminal		
5	6	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace sonar system switch. Refer to SN-112, "Removal and Installation".

2.CHECK SONAR SYSTEM SWITCH (2)

Check the continuity between sonar system switch terminals as per the following condition.

Sonar system switch		Condition		Continuity
Terminal				
1	2	Sonar system switch	Press	Existed
			Except for above	Not existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace sonar system switch. Refer to SN-112, "Removal and Installation".

B2729-12 CORNER SENSOR [FL]

DTC Description

INFOID:0000000010735586

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2729-12	CORNER SENSOR [FL] (Corner sensor front-left)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and corner sensor front LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Corner sensor front LH circuit)
- Corner sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2729-12 detected?

YES >> Proceed to SN-76, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735587

1.CHECK CORNER SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor front LH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	3	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT (2)

Check the continuity between corner sensor front LH harness connector ground.

Terminals			Continuity
(+)		(–)	
Corner sensor front LH			
Connector	Terminal		
E132	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace corner sensor front LH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2729-14 CORNER SENSOR [FL]

DTC Description

INFOID:0000000010735588

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2729-14	CORNER SENSOR [FL] (Corner sensor front-left)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and corner sensor front LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Corner sensor front LH circuit)
- Corner sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2729-14 detected?

YES >> Proceed to SN-78, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735589

1.CHECK CORNER SENSOR SIGNAL FRONT LH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor front LH harness connector.
3. Check the continuity between sonar control unit harness connector and corner sensor front LH harness connector.

Sonar control unit		Corner sensor front LH		Continuity
Connector	Terminal	Connector	Terminal	
B101	3	E132	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	3	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK FRONT SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and corner sensor front LH harness connector.

Sonar control unit		Corner sensor front LH		Continuity
Connector	Terminal	Connector	Terminal	
B101	13	E132	1	Existed

Is the inspection result normal?

YES >> Replace corner sensor front LH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2729-55 CORNER SENSOR [FL]

DTC Description

INFOID:0000000010735590

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2729-55	CORNER SENSOR [FL] (Corner sensor front-left)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Corner sensor front LH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2729-55 detected?

YES >> Proceed to SN-80, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735591

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-41, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-80, "DTC Description".

Is DTC B2729-55 detected again?

YES >> Replace corner sensor front LH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> INSPECTION END.

B2729-92 CORNER SENSOR [FL]

DTC Description

INFOID:0000000010735592

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2729-92	CORNER SENSOR [FL] (Corner sensor front-left)	SENSOR (Sensor)	Corner sensor front LH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Corner sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2729-92 detected?

YES >> Proceed to SN-81, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735593

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-81, "DTC Description".

Is DTC B2729-92 detected again?

YES >> Replace corner sensor front LH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> INSPECTION END

B272A-12 CENTER SENSOR [FL]

DTC Description

INFOID:0000000010919340

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272A-12	CENTER SENSOR [FL] (Center sensor front-left)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and center sensor front LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Center sensor front LH circuit)
- Center sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272A-12 detected?

YES >> Proceed to SN-82, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010919341

1.CHECK CENTER SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor front LH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	2	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT (2)

Check the continuity between center sensor front LH harness connector ground.

Terminals			Continuity
(+)		(–)	
Center sensor front LH			
Connector	Terminal		
E131	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace center sensor front LH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272A-14 CENTER SENSOR [FL]

DTC Description

INFOID:0000000010919342

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272A-14	CENTER SENSOR [FL] (Center sensor front-left)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and center sensor front LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Center sensor front LH circuit)
- Center sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272A-14 detected?

YES >> Proceed to SN-84, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010919343

1.CHECK CENTER SENSOR SIGNAL FRONT LH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor front LH harness connector.
3. Check the continuity between sonar control unit harness connector and center sensor front LH harness connector.

Sonar control unit		Center sensor front LH		Continuity
Connector	Terminal	Connector	Terminal	
B101	2	E131	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	2	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK FRONT SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and center sensor front LH harness connector.

Sonar control unit		Center sensor front LH		Continuity
Connector	Terminal	Connector	Terminal	
B101	13	E131	1	Existed

Is the inspection result normal?

YES >> Replace center sensor front LH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272A-55 CENTER SENSOR [FL]

DTC Description

INFOID:0000000010919344

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272A-55	CENTER SENSOR [FL] (Center sensor front-left)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Center sensor front LH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272A-55 detected?

YES >> Proceed to SN-86, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010919345

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-41, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-86, "DTC Description".

Is DTC B272A-55 detected again?

YES >> Replace center sensor front LH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> INSPECTION END.

B272A-92 CENTER SENSOR [FL]

DTC Description

INFOID:0000000010919346

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272A-92	CENTER SENSOR [FL] (Center sensor front-left)	SENSOR (Sensor)	Center sensor front LH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Center sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272A-92 detected?

YES >> Proceed to SN-87, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010919347

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-87, "DTC Description".

Is DTC B272A-92 detected again?

YES >> Replace center sensor front LH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> INSPECTION END

B272B-12 CENTER SENSOR [FR]

DTC Description

INFOID:0000000010919348

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272B-12	CENTER SENSOR [FR] (Center sensor front-right)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and center sensor front RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (center sensor front RH circuit)
- Center sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272B-12 detected?

YES >> Proceed to SN-88, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010919349

1.CHECK CENTER SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor front RH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	1	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT (2)

Check the continuity between center sensor front RH harness connector and ground.

Terminals			Continuity
(+)		(–)	
Center sensor front RH			
Connector	Terminal		
E133	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace center sensor front RH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272B-14 CENTER SENSOR [FR]

DTC Description

INFOID:0000000010919350

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272B-14	CENTER SENSOR [FR] (Center sensor front-right)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and center sensor front RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (center sensor front RH circuit)
- Center sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272B-14 detected?

YES >> Proceed to SN-90, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010919351

1.CHECK CENTER SENSOR SIGNAL FRONT RH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor front RH harness connector.
3. Check the continuity between sonar control unit harness connector and center sensor front RH harness connector.

Sonar control unit		Center sensor front RH		Continuity
Connector	Terminal	Connector	Terminal	
B101	1	E133	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	1	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK FRONT SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and center sensor front RH harness connector.

Sonar control unit		Center sensor front RH		Continuity
Connector	Terminal	Connector	Terminal	
B101	13	E133	1	Existed

Is the inspection result normal?

YES >> Replace center sensor front RH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272B-55 CENTER SENSOR [FR]

DTC Description

INFOID:0000000010919352

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272B-55	CENTER SENSOR [FR] (Center sensor front-right)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Center sensor front RH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272B-55 detected?

YES >> Proceed to SN-92, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010919353

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-41, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-92, "DTC Description".

Is DTC B272B-55 detected again?

YES >> Replace center sensor front RH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> INSPECTION END.

B272B-92 CENTER SENSOR [FR]

DTC Description

INFOID:0000000010919354

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272B-92	CENTER SENSOR [FR] (Center sensor front-right)	SENSOR (Sensor)	Center sensor front RH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Center sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272B-92 detected?

YES >> Proceed to SN-93, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010919355

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-93, "DTC Description".

Is DTC B272B-92 detected again?

YES >> Replace center sensor front RH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> INSPECTION END

B272C-12 CORNER SENSOR [FR]

DTC Description

INFOID:0000000010735594

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272C-12	CORNER SENSOR [FR] (Corner sensor front-right)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and corner sensor front RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (corner sensor front RH circuit)
- Corner sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272C-12 detected?

YES >> Proceed to SN-94, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735595

1.CHECK CORNER SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor front RH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	4	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT (2)

Check the continuity between corner sensor front RH harness connector and ground.

Terminals			Continuity
(+)		(–)	
Corner sensor front RH			
Connector	Terminal		
E134	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace corner sensor front RH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272C-14 CORNER SENSOR [FR]

DTC Description

INFOID:0000000010735596

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272C-14	CORNER SENSOR [FR] (Corner sensor front-right)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and corner sensor front RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (corner sensor front RH circuit)
- Corner sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272C-14 detected?

YES >> Proceed to SN-96, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735597

1.CHECK CORNER SENSOR SIGNAL FRONT RH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor front RH harness connector.
3. Check the continuity between sonar control unit harness connector and corner sensor front RH harness connector.

Sonar control unit		Corner sensor front RH		Continuity
Connector	Terminal	Connector	Terminal	
B101	4	E134	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	4	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK FRONT SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and corner sensor front RH harness connector.

Sonar control unit		Corner sensor front RH		Continuity
Connector	Terminal	Connector	Terminal	
B101	13	E134	1	Existed

Is the inspection result normal?

YES >> Replace corner sensor front RH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272C-55 CORNER SENSOR [FR]

DTC Description

INFOID:0000000010735598

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272C-55	CORNER SENSOR [FR] (Corner sensor front-right)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Corner sensor front RH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272C-55 detected?

YES >> Proceed to SN-98, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735599

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-41, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-98, "DTC Description".

Is DTC B272C-55 detected again?

YES >> Replace corner sensor front RH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> INSPECTION END.

B272C-92 CORNER SENSOR [FR]

DTC Description

INFOID:0000000010735600

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272C-92	CORNER SENSOR [FR] (Corner sensor front-right)	SENSOR (Sensor)	Corner sensor front RH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Corner sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272C-92 detected?

YES >> Proceed to SN-99, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735601

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-99, "DTC Description".

Is DTC B272C-92 detected again?

YES >> Replace corner sensor front RH. Refer to SN-113, "FRONT : Removal and Installation".
NO >> INSPECTION END

B272D-12 FRONT BUZZER

DTC Description

INFOID:0000000010735606

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detection condition
B272D-12	FRONT BUZZER (Front buzzer)	SHORT-BAT (Short to battery)	A short circuit is detected in harness between sonar control unit and buzzer (frontward) with an obstacle detected.

POSSIBLE CAUSE

Harness between sonar control unit and buzzer (frontward)

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272D-12 detected?

YES >> Proceed to SN-100, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735607

1.CHECK BUZZER (FRONTWARD) POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and buzzer (frontward) connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit harness connector and ground.

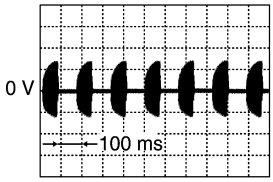
Sonar control unit		Ground	Reference value (Approx.)
Connector	Terminal		
B101	19		0 V

Is the inspection result normal?

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

2.CHECK BUZZER DRIVE SIGNAL CIRCUIT

Check voltage between sonar control unit harness connector and ground.

Sonar control unit			Reference value (Approx.)
Connector	Terminal		
B101	18	Ground	**NOTE:** • Voltage depends on volume. • Cycle depends on distance between sensor and obstacle.  JSNIA5232GB

Is the inspection result normal?

YES >> Replace buzzer (frontward). Refer to SN-116, "FRONT : Removal and Installation".
NO >> Repair harness or connector.

B272D-14 FRONT BUZZER

DTC Description

INFOID:0000000010735608

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detection condition
B272D-14	FRONT BUZZER (Front buzzer)	OPEN/SHORT-GND (Open/Short to ground)	A break in harness between sonar control unit and buzzer (frontward) or a short circuit between sonar control unit and ground is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Harness between sonar control unit and buzzer (frontward)

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272D-14 detected?

YES >> Proceed to SN-102, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735609

1.CHECK CONTINUITY BUZZER (FRONTWARD) POWER SUPPLY CIRCUIT

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

Sonar control unit		Buzzer (frontward)		Continuity
Connector	Terminal	Connector	Terminal	
B101	19	M79	2	Existed

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
B101	19		Not existed

Is the inspection result normal?

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

2.CHECK CONTINUITY BUZZER DRIVE SIGNAL CIRCUIT

1. Check continuity between sonar control unit harness connector and buzzer (frontward) harness connector.

Sonar control unit		Buzzer (frontward)		Continuity
Connector	Terminal	Connector	Terminal	
B101	18	M79	3	Existed

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
B101	18		Not existed

Is the inspection result normal?

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

3. CHECK CONTINUITY SONAR CONTROL UNIT

1. Check continuity between terminals of sonar control unit.

Sonar control unit		Continuity.
Terminal		
19	18	Not existed

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

Sonar control unit	Ground	Continuity
Terminal		
19		Not existed
18		

Is the inspection result normal?

YES >> Replace buzzer (frontward). Refer to SN-116, "FRONT : Removal and Installation".
NO >> Replace sonar control unit. Refer to SN-111, "Removal and Installation".

U1000-01 CAN COMM CIRCUIT

DTC Description

INFOID:0000000010735602

DESCRIPTION

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-41, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)	Detecting condition
U1000	CAN COMM CIRCUIT (CAN communication circuit)	Sonar control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.

POSSIBLE CAUSE

CAN communication system

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 2 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC U1000 detected?

YES >> Proceed to SN-104, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735603

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-104, "DTC Description".

Is DTC U1000 detected again?

YES >> Perform the trouble diagnosis for CAN communication system. Refer to LAN-17, "Trouble Diagnosis Flow Chart".
NO >> INSPECTION END

U1010-49 CONTROL UNIT (CAN)

DTC Description

INFOID:0000000010735604

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)	Detecting condition
U1010-49	CONTROL UNIT (CAN) [Control unit (CAN)]	Malfunction is detected during initial diagnosis of the sonar control unit CAN controller.

POSSIBLE CAUSE

Sonar control unit

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 2 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC U1010-49 detected?

YES >> Proceed to SN-105, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010735605

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-105, "DTC Description".

Is DTC U1010-49 detected again?

YES >> Replace sonar control unit. Refer to SN-111, "Removal and Installation".
NO >> INSPECTION END

POWER SUPPLY AND GROUND CIRCUIT
SONAR CONTROL UNIT

SONAR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000010735610

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ON or START	#30

Is the inspection result normal?

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

2.CHECK IGNITION POWER SUPPLY CIRCUIT

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

Terminals			Condition	Standard	Voltage
(+)		(–)			
Sonar control unit					
Connector	Terminal				
B101	12	Ground	Ignition switch ON	9.0 - 16.0 V	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 the continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
B101	15		Existed

Is the inspection result normal?

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

SONAR SYSTEM SWITCH

Description

INFOID:0000000010792463

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

Diagnosis Procedure

INFOID:0000000010792465

1.CHECK SONAR SYSTEM SWITCH SIGNAL

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

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B101	16	Ground	12.0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace sonar control unit. Refer to SN-111, "Removal and Installation".

2.CHECK SONAR SYSTEM SWITCH SIGNAL CIRCUIT

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

Sonar control unit		Sonar system switch		Continuity
Connector	Terminal	Connector	Terminal	
B101	16	M142	1	Existed

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
B101	16		Not existed

Is the inspection result normal?

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

3.CHECK SONAR SYSTEM SWITCH GROUND CIRCUIT

Check the continuity between sonar system switch harness connector and ground.

Sonar system switch		Ground	Continuity
Connector	Terminal		
M142	2		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK SONAR SYSTEM SWITCH

Check the sonar system switch.

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair sonar system switch. Refer to SN-108, "Component Inspection".

Component Inspection

INFOID:0000000011009620

1. CHECK SONAR SYSTEM SWITCH (1)

1. Turn ignition switch OFF.
2. Remove sonar system switch. Refer to SN-112, "Removal and Installation".
3. Check the continuity between sonar system switch terminals.

Sonar system switch		Continuity
Terminals		
(+)	(–)	
Terminal		
5	6	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace sonar system switch. Refer to SN-112, "Removal and Installation".

2. CHECK SONAR SYSTEM SWITCH (2)

Check the continuity between sonar system switch terminals as per the following condition.

Sonar system switch		Condition		Continuity
Terminal				
1	2	Sonar system switch	Press	Existed
			Except for above	Not existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace sonar system switch. Refer to SN-112, "Removal and Installation".

SYMPTOM DIAGNOSIS

SONAR SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000010735611

Symptom	Check item		Diagnosis method
All sonar sensors do not activate.	—		Check sonar control unit power supply and ground circuit. Refer to SN-106, "SONAR CONTROL UNIT : Diagnosis Procedure". When there is no malfunction in those components, replace the sonar control unit. Refer to SN-111, "Removal and Installation".
Front sonar sensors do not activate.	Buzzer does not beeps when indicating “On” on “FRONT BUZZER” screen of the ACTIVE TEST. Refer to SN-19, "CONSULT Function".	Buzzer is beeped.	Check front sensor ground circuit. Refer to SN-76, "Diagnosis Procedure".
		Buzzer is not beeped.	Check frontfront buzzer drive signal circuit. Refer to SN-100, "Diagnosis Procedure".
Rear sonar sensors do not activate.	Buzzer does not beeps when indicating “On” on “REAR BUZZER” screen of the ACTIVE TEST. Refer to SN-19, "CONSULT Function".	Buzzer is beeped.	Check rear sensor ground circuit. Refer to SN-43, "Diagnosis Procedure".
		Buzzer is not beeped.	Check front rear buzzer drive signal circuit. Refer to SN-100, "Diagnosis Procedure".

NORMAL OPERATING CONDITION

Description

INFOID:0000000010735612

Symptom	Possible cause
Unstable object detection	• The vehicle is on a rough surface, such as stone or gravel. • When used in poor weather conditions, such as heavy snow/rain or strong wind. • When subjected to an ultrasonic noise generated from exhaust muffler or brakes. • When left standing in the hot sun or in a cold climate. • When the surface of the sensor is frozen or covered with snow/dirt/moisture. • When a retrofitted xenon lamp, lighted license plate, or harness is close to the sensor body or sensor harness. • When subjected to loop coil noises generated from a vehicle detector placed at an intersection or coin parking area.
Object undetectable	• Air-containing objects, such as cloth, cotton, glass wool, dust, and snow. • Thin objects, such as rope, chain, and wire. • Smooth-faced objects placed in a slanting direction. • Fast-moving small animals. • A corner of an angular object. **NOTE:** If the sensor detection part is scratched, obstacles cannot be detected.

REMOVAL AND INSTALLATION

SONAR CONTROL UNIT

Removal and Installation

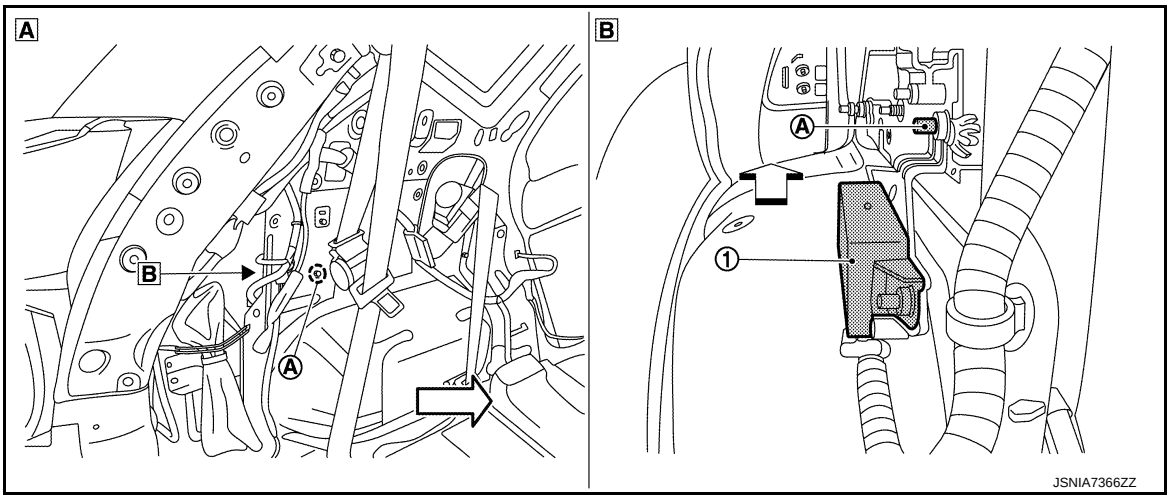
INFOID:0000000010735613

REMOVAL

CAUTION:

Before replacing sonar control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to SN-41, "ADDITIONAL SERVICE WHEN REPLACING SONAR CONTROL UNIT : Description".

1. Remove luggage side lower finisher LH. Refer to INT-43, "LUGGAGE SIDE LOWER FINISHER : Removal and Installation".
2. Remove sonar control unit mounting bolt Ⓐ and connector, And than remove sonar control unit ① from the vehicle.



A Luggage room left side

B Luggage panel inside

⇦ : Vehicle front

3. Remove bracket from sonar control unit.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

Be sure to perform “Read/Write Configuration” when replacing sonar control unit. For details, refer to SN-41, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

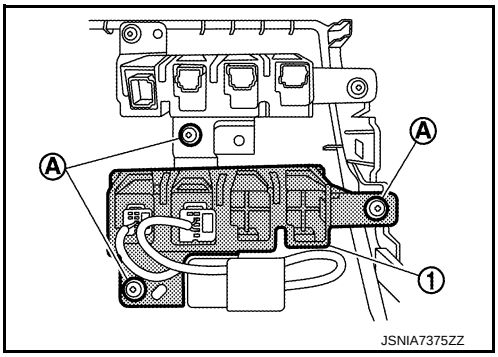
SONAR SYSTEM SWITCH

Removal and Installation

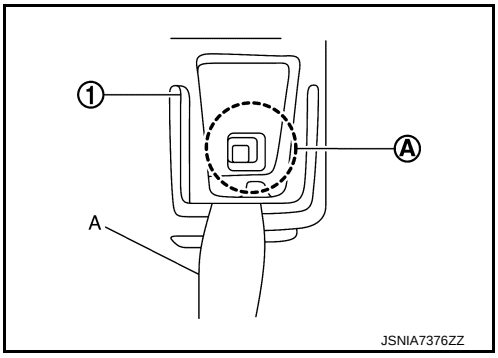
INFOID:0000000010917671

REMOVAL

1. Remove the instrument lower panel LH (LHD models) or RH (RHD models). Refer to following.
   - LHD models: IP-13, "Exploded View"
   - RHD models: IP-40, "Exploded View"
2. Remove the switch bracket mounting screw Ⓐ. And than remove the lower switch bracket ①.



3. Disengage the pawls Ⓐ using a suitable tool (A). And then remove sonar system switch ①.



INSTALLATION

Install in the reverse order of removal.

SONAR SENSOR

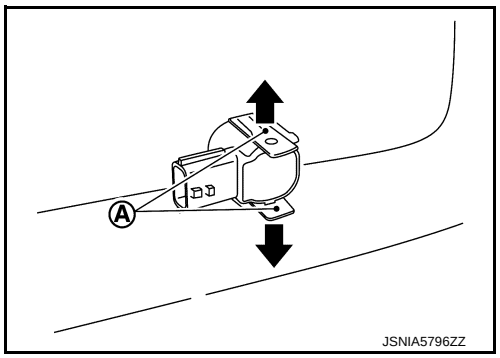
FRONT

FRONT : Removal and Installation

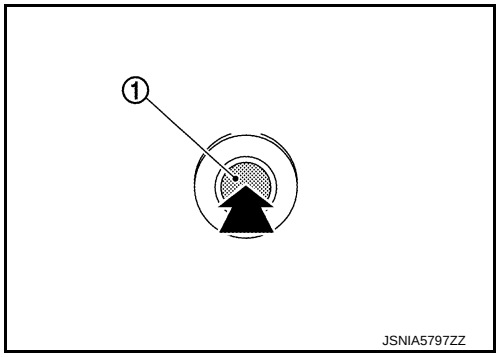
INFOID:0000000010735614

REMOVAL

1. Remove front bumper. Refer to EXT-15, "Removal and Installation".
2. Push Ⓐ fixing sonar sensor in the direction shown by arrow and unhook the pawl of sonar sensor.



3. Push sonar sensor ① in the direction shown by arrow and remove sonar sensor from bumper.



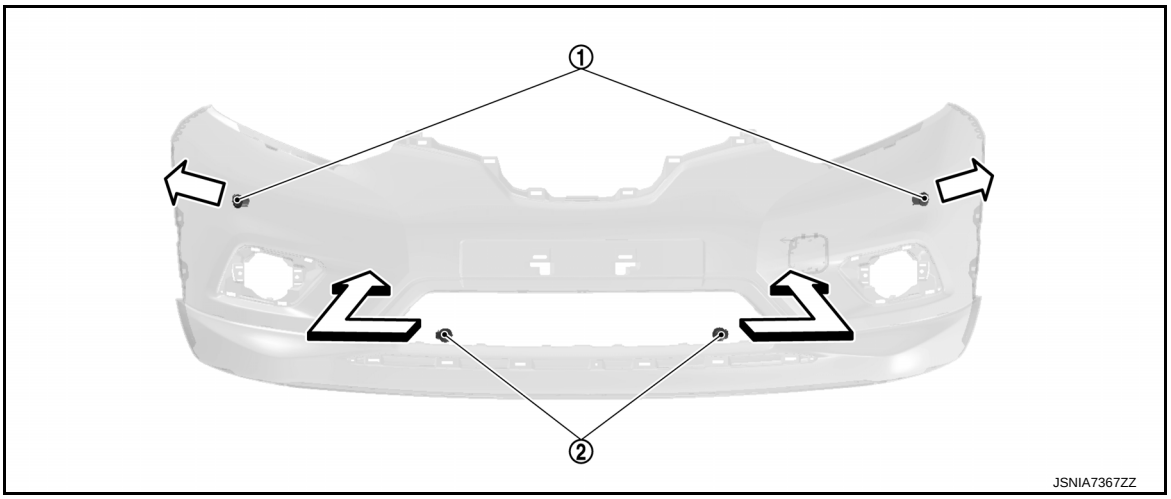
4. Remove sonar sensor connector from sonar sensor.
5. Remove sonar sensor finisher and sonar sensor packing from bumper.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

- **Check sonar sensor packing for damage before installation.**
- **Check that the packing is properly installed to the sonar sensor.**
- **Install it so that the connector of the sensor turns to the arrow direction of the figure.**



① Corner sensor front ② Center sensor front

⇦ : Connector direction

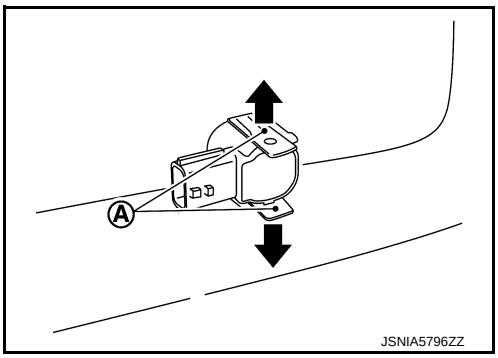
REAR

REAR : Removal and Installation

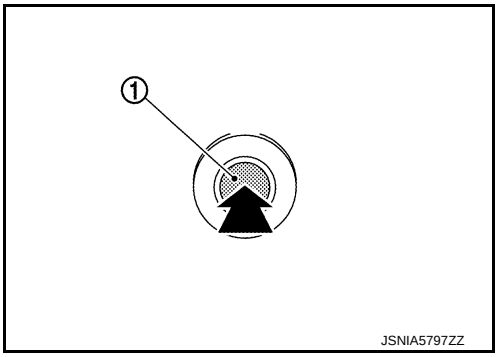
INFOID:0000000010735615

REMOVAL

1. Remove sonar sensor connector from sonar sensor.
2. Push Ⓐ fixing sonar sensor in the direction shown by arrow and unhook the pawl of sonar sensor.



3. Push sonar sensor ① in the direction shown by arrow and remove sonar sensor from bumper.



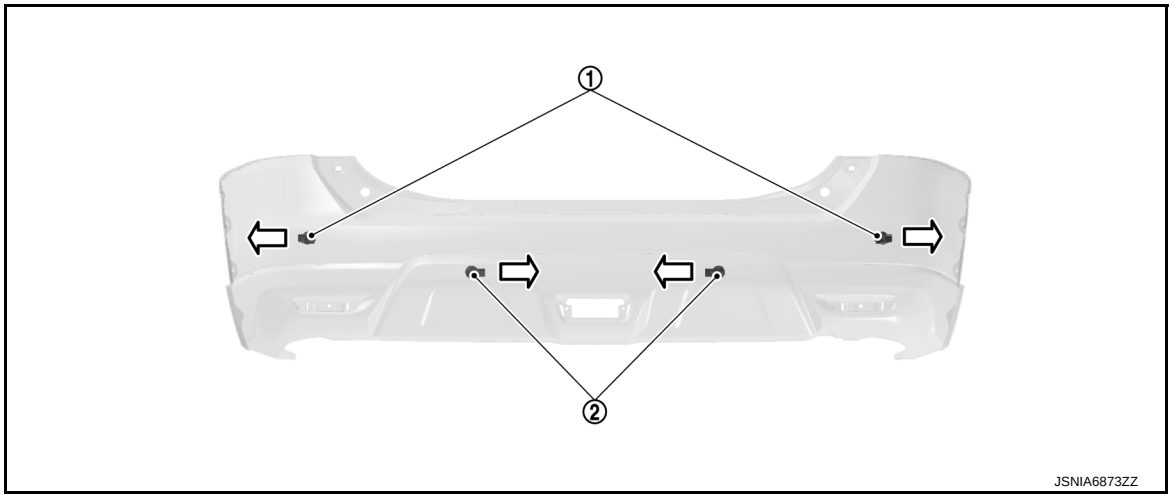
4. Remove sonar sensor finisher and sonar sensor packing from bumper.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

- **Check sonar sensor packing for damage before installation.**
- **Check that the packing is properly installed to the sonar sensor.**
- **Install it so that the connector of the sensor turns to the arrow direction of the figure.**



① Corner sensor rear
② Center sensor rear
⇦ : Connector direction

BUZZER

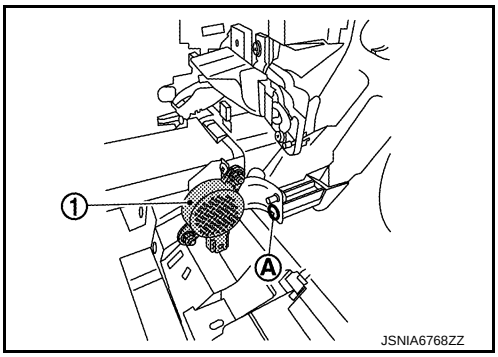
FRONT

FRONT : Removal and Installation

INFOID:0000000010917672

REMOVAL

1. Remove instrument lower panel LH (LHD models) or RH (RHD models). Refer to the following.
   - LHD models: IP-13, "Exploded View"
   - RHD models: IP-40, "Exploded View"
2. Remove buzzer (frontward) mounting screw Ⓐ and buzzer (frontward) connector.
3. Remove buzzer (frontward) ①.



INSTALLATION

Install in the reverse order of removal.

REAR

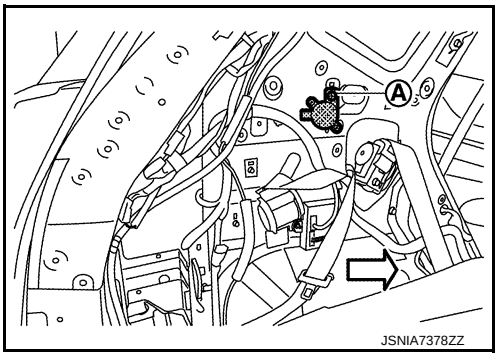
REAR : Removal and Installation

INFOID:0000000010917673

REMOVAL

1. Remove luggage side lower finisher LH. Refer to INT-43, "LUGGAGE SIDE LOWER FINISHER : Removal and Installation".
2. Remove buzzer (backward) mounting screw Ⓐ and buzzer (backward) connector.

   ⇦ : Vehicle front
3. Remove buzzer (backward).



INSTALLATION

Install in the reverse order of removal.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000010922257

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. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

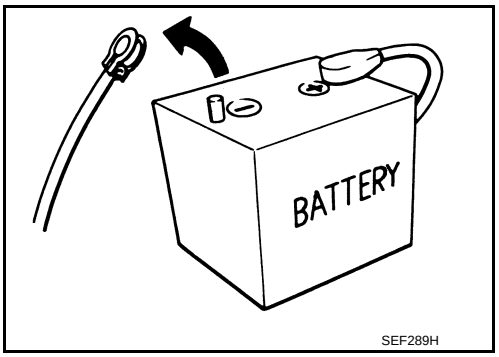
Always observe the following items for preventing accidental activation.

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

Precautions for Removing Battery Terminal

INFOID:0000000010922258

- With the adoption of Auto ACC function, ACC power is automatically supplied by operating the intelligent key or remote keyless entry or by opening/closing the driver side door. In addition, ACC power is supplied even after the ignition switch is turned to the OFF position, i.e. ACC power is supplied for a certain fixed time.
- When disconnecting the 12V battery terminal, turn off the ACC power before disconnecting the 12V battery terminal, observing “How to disconnect 12V battery terminal” described below.
  NOTE:
  Some ECUs operate for a certain fixed time even after ignition switch is turned OFF and ignition power supply is stopped. If the battery terminal is disconnected before ECU stops, accidental DTC detection or ECU data damage may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.



SEF289H

HOW TO DISCONNECT 12V BATTERY TERMINAL

Disconnect 12V battery terminal according to Instruction 1 or Instruction 2 described below.
For vehicles parked by ignition switch OFF, refer to Instruction 2.

INSTRUCTION 1

1. Open the hood.

2. Turn key switch to the OFF position with the driver side door opened.
3. Get out of the vehicle and close the driver side door.
4. Wait at least 3 minutes. For vehicle with the engine listed below, remove the battery terminal after a lapse of the specified time.

D4D engine	: 20 minutes
HRA2DDT	: 12 minutes
K9K engine	: 4 minutes
M9R engine	: 4 minutes
R9M engine	: 4 minutes
V9X engine	: 4 minutes

CAUTION:
While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the Auto ACC function.

5. Remove 12V battery terminal.
CAUTION:
After installing 12V battery, always check self-diagnosis results of all ECUs and erase DTC.

INSTRUCTION 2 (FOR VEHICLES PARKED BY IGNITION SWITCH OFF)

1. Unlock the door with intelligent key or remote keyless entry.
NOTE:
At this moment, ACC power is supplied.
2. Open the driver side door.
3. Open the hood.
4. Close the driver side door.
5. Wait at least 3 minutes.
CAUTION:
While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the Auto ACC function.
6. Remove 12V battery terminal.
CAUTION:
After installing 12V battery, always check self-diagnosis results of all ECUs and erase DTC.

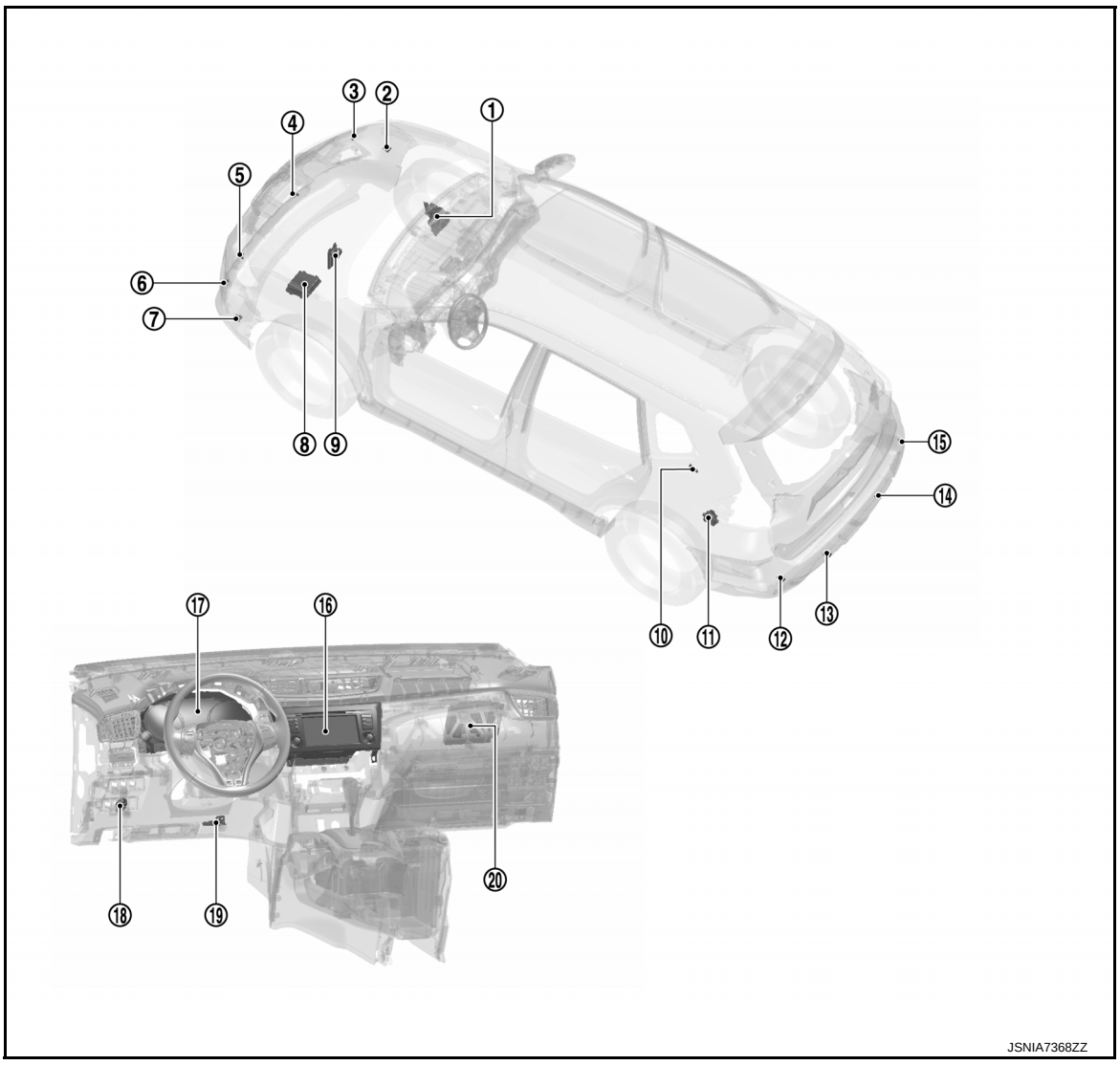
SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000010736627

LHD MODELS

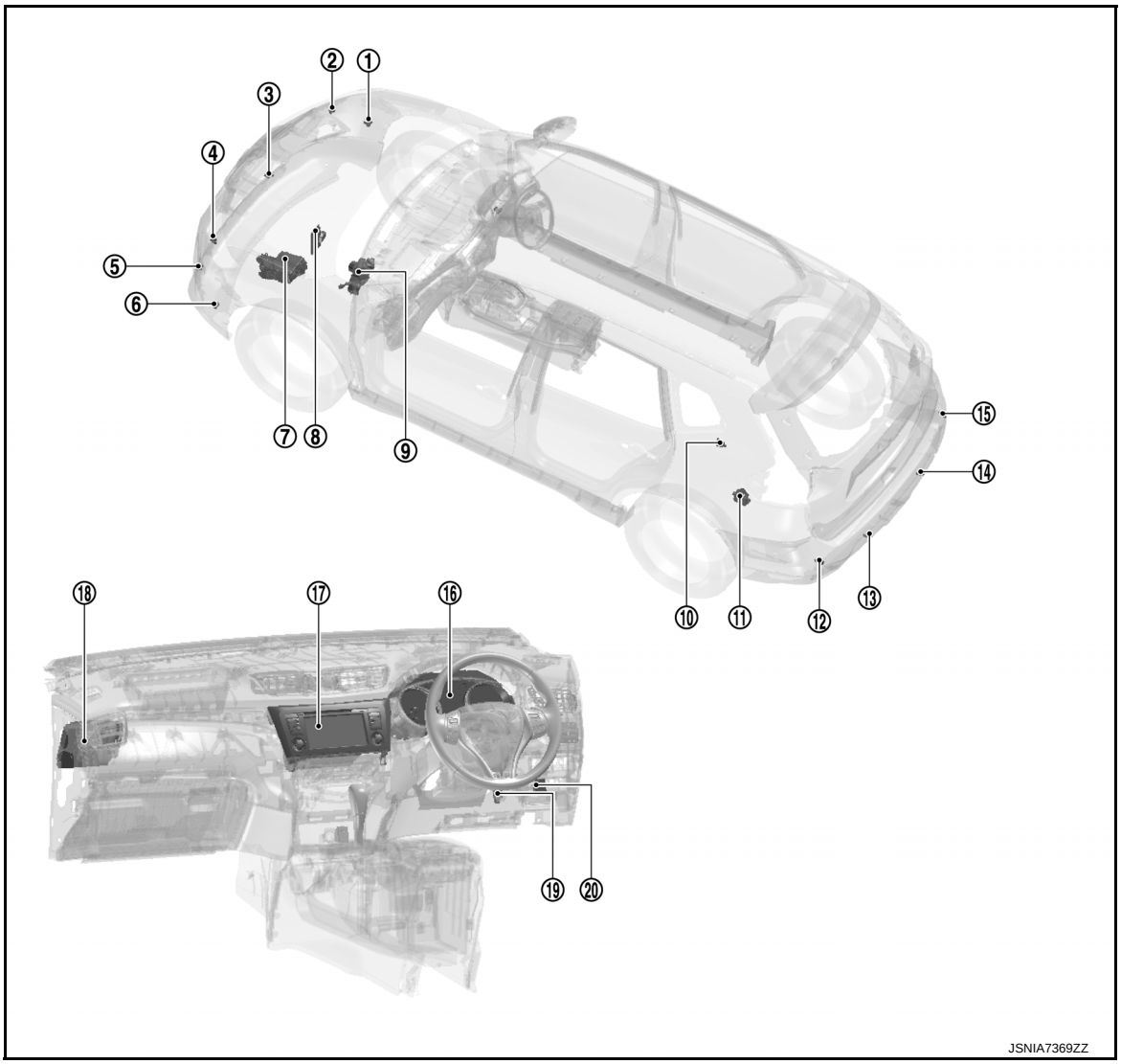


JSNIA7368ZZ

No.	Component	Function
①	ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the sonar control unit via CAN communication. Refer to BRC-14, "Component Parts Location", for detailed installation location.
②	Side sensor front RH	Refer to SN-123, "Sonar Sensor".
③	Corner sensor front RH	Refer to SN-123, "Sonar Sensor".
④	Center sensor front RH	Refer to SN-123, "Sonar Sensor".
⑤	Center sensor front LH	Refer to SN-123, "Sonar Sensor".
⑥	Corner sensor front LH	Refer to SN-123, "Sonar Sensor".
⑦	Side sensor front LH	Refer to SN-123, "Sonar Sensor".
⑧	IPDM E/R (M/T models)	Transmits the gear position signal to the sonar control unit via CAN communication. Refer to PCS-5, "Component Parts Location", for detailed installation location.

No.	Component	Function
⑨	TCM (CVT models)	Transmits the shift position signal to the sonar control unit via CAN communication. Refer to the following, for detailed installation location. • RE0F10D: TM-235, "CVT CONTROL SYSTEM : Component Parts Location" • RE0F10G: TM-466, "CVT CONTROL SYSTEM : Component Parts Location"
⑩	Buzzer (backward)	Refer to SN-123, "Buzzer".
⑪	Sonar control unit	Refer to SN-122, "Sonar Control Unit".
⑫	Corner sensor rear LH	Refer to SN-123, "Sonar Sensor".
⑬	Center sensor rear LH	Refer to SN-123, "Sonar Sensor".
⑭	Center sensor rear RH	Refer to SN-123, "Sonar Sensor".
⑮	Corner sensor rear RH	Refer to SN-123, "Sonar Sensor".
⑯	NAVI control unit	When receiving a sonar indicator display signal from the sonar control unit, the around view monitor control unit synthesizes sonar indicator with a camera image and transmits to an NAVI control unit. Refer to AV-64, "Component Parts Location", for detailed installation location.
⑰	Combination meter	• The sonar control unit transmits the sonar indicator display signal to the combination meter via CAN communication. • The combination meter shows the sonar indicator on the information display, according to the signal. Refer to MWI-7, "METER SYSTEM : Component Parts Location", for detailed installation location.
⑱	Sonar system switch	Refer to SN-122, "Sonar System Switch".
⑲	Buzzer (frontward)	Refer to SN-123, "Buzzer".
⑳	Around view monitor control unit	When receiving a sonar indicator display signal from the sonar control unit, the around view monitor control unit synthesizes sonar indicator with a camera image and transmits to an NAVI control unit. Refer to AV-64, "Component Parts Location", for detailed installation location.

RHD MODELS



No.	Component	Function
①	Side sensor front RH	Refer to SN-123, "Sonar Sensor".
②	Corner sensor front RH	Refer to SN-123, "Sonar Sensor".
③	Center sensor front RH	Refer to SN-123, "Sonar Sensor".
④	Center sensor front LH	Refer to SN-123, "Sonar Sensor".
⑤	Corner sensor front LH	Refer to SN-123, "Sonar Sensor".
⑥	Side sensor front LH	Refer to SN-123, "Sonar Sensor".
⑦	IPDM E/R (M/T models)	Transmits the gear position signal to the sonar control unit via CAN communication. Refer to PCS-5, "Component Parts Location", for detailed installation location.
⑧	TCM (CVT models)	Transmits the shift position signal to the sonar control unit via CAN communication. Refer to the following, for detailed installation location. • RE0F10D: TM-235, "CVT CONTROL SYSTEM : Component Parts Location" • RE0F10G: TM-466, "CVT CONTROL SYSTEM : Component Parts Location"
⑨	ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the sonar control unit via CAN communication. Refer to BRC-14, "Component Parts Location", for detailed installation location.
⑩	Buzzer (backward)	Refer to SN-123, "Buzzer".

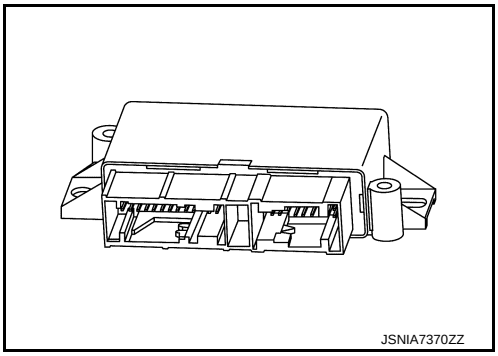
No.	Component	Function
⑪	Sonar control unit	Refer to SN-122, "Sonar Control Unit".
⑫	Corner sensor rear LH	Refer to SN-123, "Sonar Sensor".
⑬	Center sensor rear LH	Refer to SN-123, "Sonar Sensor".
⑭	Center sensor rear RH	Refer to SN-123, "Sonar Sensor".
⑮	Corner sensor rear RH	Refer to SN-123, "Sonar Sensor".
⑯	Combination meter	• The sonar control unit transmits the sonar indicator display signal to the combination meter via CAN communication. • The combination meter shows the sonar indicator on the information display, according to the signal. Refer to MWI-7, "METER SYSTEM : Component Parts Location", for detailed installation location.
⑰	NAVI control unit	When receiving a sonar indicator display signal from the sonar control unit, the around view monitor control unit synthesizes sonar indicator with a camera image and transmits to an NAVI control unit. Refer to AV-64, "Component Parts Location", for detailed installation location.
⑱	Around view monitor control unit	When receiving a sonar indicator display signal from the sonar control unit, the around view monitor control unit synthesizes sonar indicator with a camera image and transmits to an NAVI control unit. Refer to AV-64, "Component Parts Location", for detailed installation location.
⑲	Buzzer (frontward)	Refer to SN-123, "Buzzer".
⑳	Sonar system switch	Refer to SN-122, "Sonar System Switch".

Sonar Control Unit

INFOID:0000000010736628

- The warning buzzer outputs by inputting the sensor signal from sonar sensor. The warning buzzer outputs the separated buzzer.
- The sonar indicator shows a warning according to a sensor signal received from the sonar sensor.

NOTE:
The information display of the combination meter displays a distance between an obstacle and the sensor as well.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Sonar System Switch

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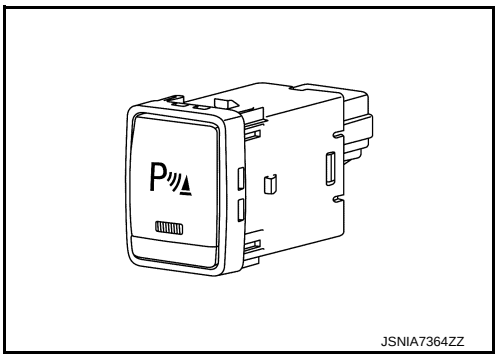
- The sonar system switch is installed instrument lower panel LH (LHD models) or instrument lower panel RH (RHD models).
- The sonar system switch signal is transmitted to the sonar control unit.
- Non-operational status or standby status of the sonar system (obstacle detection function) can be selected using sonar system switch.
- Sonar system indicator lamp indicates the operation status of function.



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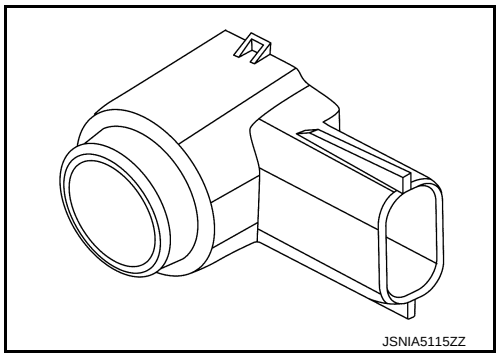
Sonar system indicator lamp	Sonar system
ON	Standby status
OFF	Non-operational status

Sonar Sensor

INFOID:0000000010736629

When a distance from an obstacle is detected, a distance signal is transmitted to the sonar control unit.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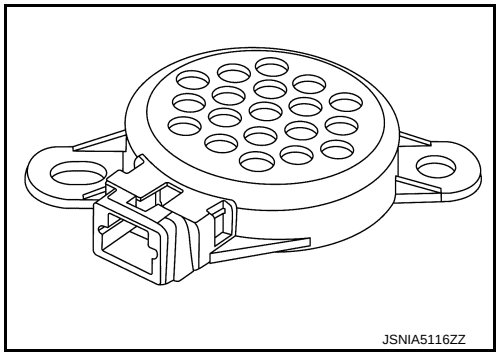
Buzzer

INFOID:0000000010792888

- The warning buzzer sounds with the signal from the sonar control unit.
- Buzzer (front ward) is installed to instrument lower panel LH (LHD models) or instrument lower panel RH (RHD models).
- Buzzer (backward) is installed inside the luggage side lower finisher LH.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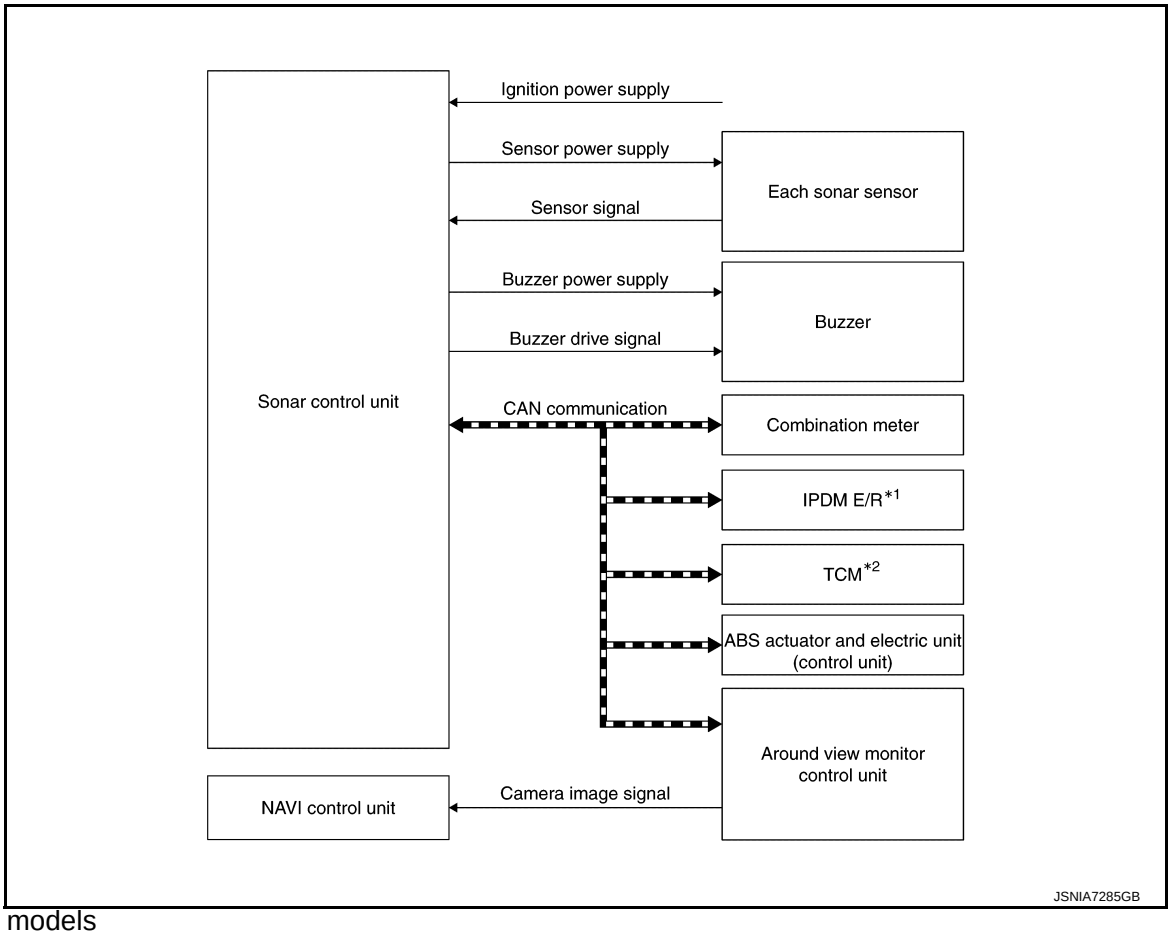
SYSTEM
SONAR SYSTEM
SONAR SYSTEM : System Description

INFOID:0000000010736631

SYSTEM DIAGRAM



*1: M/T models
*2: CVT models

Sonar Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
IPDM E/R (M/T models)	Gear position signal
TCM (CVT models)	Shift position signal
ABS actuator and electric unit (control unit)	Vehicle speed signal (ABS)
Combination meter	System setting signal

Sonar Control Unit Output Signal (CAN Communication)

Receiver unit	Signal name
Combination meter	• Sonar indicator display signal • Parking sensor error signal
Around view monitor control unit	Sonar indicator display signal

DESCRIPTION

- The sonar sensor installed to the front bumper and the rear bumper detects obstacles around the bumper.
- The sonar control unit changes the buzzer cycle and the warning of the sonar indicator (combination meter and NAVI control unit display), according to a distance from an obstacle detected by the sonar sensor.
- The sonar control unit controls the buzzer cycle according to a buzzer drive signal.

- The sonar control unit controls the sonar indicator according to a sonar indicator display signal transmitted to the combination meter and the around view monitor control unit via CAN communication.
- The sonar system is used in Park assist. Refer to DAS-287, "System Description".

SONAR SYSTEM ACTIVATION CONDITION

The sonar system warns the driver of the presence or absence of obstacles by buzzer and the sonar indicator when the following conditions are satisfied while the ignition switch is turned ON.

×: Activation

Sonar activation condition				Sonar operation		
Sonar system OFF switch indicator	Shift position	Vehicle speed	Obstacle detecting sensor	Buzzer		Sonar indicator
				Front	Rear	
ON	R	Approx. 10 km/h (6.2 MPH) or less	Front sensor	×		×
			Rear sensor		×	×
	D		Front sensor	×		×
			Rear sensor	—	—	—
OFF	—	—	—	—	—	—

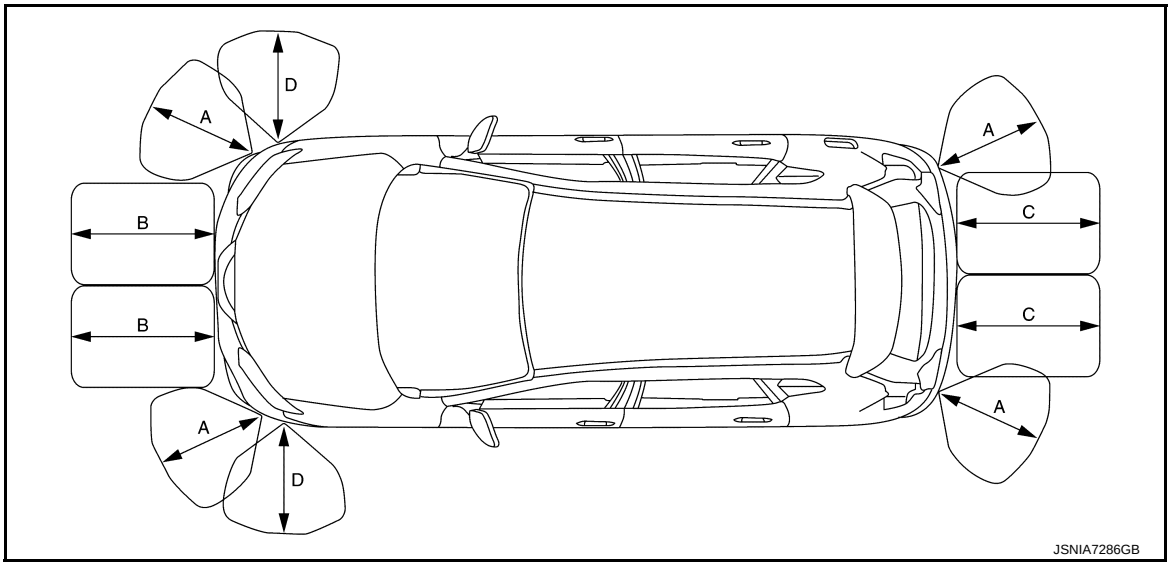
NOTE:

- When a sonar system OFF switch is turned OFF, obstacle detection function stops.
- When an obstacle is detected by the sensor, Buzzer sounds.
- The sonar control unit activates the warning buzzer for approximately 0.5 seconds after detecting the reverse signal.
- The following items can be set for the sonar system on the settings screen of the combination meter.
- Only ON/OFF/Fr of sonar sensor
- Detection range of sonar sensor
- Buzzer volume

OBSTACLE DETECTION DISTANCE

- The sonar control unit changes a buzzer cycle and a sonar indicator indication according to a distance from an obstacle.

Obstacle detection range image



A. Approx. 60 cm (23.62 in) (default value)
B. Approx. 100 cm (39.37 in) (default value)
C. Approx. 150 cm (59.06 in) (default value)
D. Approx. 45 cm (17.71 in)

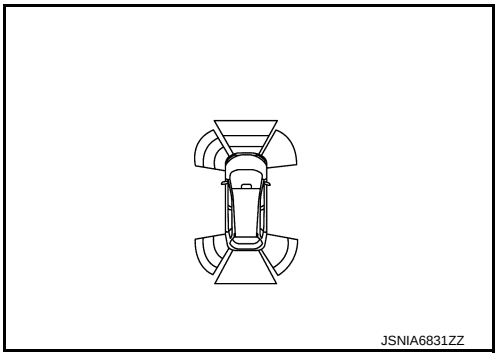
- Detection distance of an obstacle changes, as shown in the table below, when the detection sensitivity is changed on the settings screen of the information display of the combination meter. Refer to MWI-71, "INFORMATION DISPLAY : System Description".

Detection distance

Item (detection range)	Corner sensor	Side sensor	Front center sensor	Rear center sensor
FAR	60 cm (23.62 in) + 10%	Approx. 45 cm (17.71 in)	100 cm (39.37 in) + 10%	150 cm (59.06 in) + 10%
NORMAL (default value)	Approx. 60 cm (23.62 in)	Approx. 45 cm (17.71 in)	Approx. 100 cm (39.37 in)	Approx. 150 cm (59.06 in)
NEAR	60 cm (23.62 in) – 10%	Approx. 45 cm (17.71 in)	100 cm (39.37 in) – 10%	150 cm (59.06 in) – 10%

Sonar Indicator

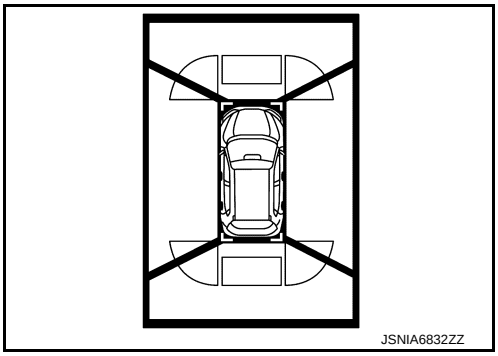
- Sonar indicator is displayed on the information display in combination meter.



- The sonar control unit displays a warning on sonar indicator in 3 stages (green, yellow, and red), according to a distance from an obstacle.

NOTE:

- A distance from an obstacle is also displayed on the information display of the combination meter.
- Sonar indicator is displayed also on Bird-Eye view and Front-side view screen of around view monitor.



- Warning displayed on the sonar indicator and a distance change according to a distance between an obstacle and sensor as shown in the following table.

Detection distance (default value)

Status of warning	Detection distance		
	Corner sensor and side sensor	Front center sensor	Rear center sensor
Red	0 – 30 cm (0 in – 11.81 in)	0 – 30 cm (0 in – 11.81 in)	0 – 30 cm (0 in – 11.81 in)
Yellow	31 – 50 cm (12.2 in – 19.69 in)	31 – 60 cm (12.2 in – 23.62 in)	31 – 60 cm (12.2 in – 23.62 in)
Green	51 – 60 cm (20.08 in – 23.62 in)	61 – 100 cm (24.02 in – 39.37 in)	61 – 150 cm (24.02 in – 59.06 in)

Warning Buzzer

- The warning buzzer output frequency changes levels according to the detection distance.
- As the vehicle approaches an obstacle, the buzzer-sounding cycle becomes shorter.
- The nearest sensor from the detected obstacle applies the buzzer output frequency if plural sensors detect any obstacle simultaneously.

NOTE:

Buzzer stops when the vehicle moves away from an obstacle and the warning level decreases.

Detection distance (default value)

Detection distance	Warning buzzer frequency
Less than 30 cm (Less than 11.81 in)	Continuous tone
31 – 40 cm (12.2 – 15.75 in)	10.0 Hz
41 – 50 cm (16.14 – 19.69 in)	8.0 Hz
51 – 60 cm (20.08 – 23.62 in)	6.7 Hz
61 – 70 cm (24.02 – 27.56 in)	5.7 Hz
71 – 80 cm (27.95 – 31.5 in)	5.0 Hz
81 – 90 cm (31.89 – 35.43 in)	4.4 Hz
91 – 100 cm (35.83 – 39.37 in)	4.0 Hz
101 – 110 cm (39.76 – 39.37 in)	3.6 Hz
111 – 120 cm (35.83 – 43.31 in)	3.3 Hz
121 – 130 cm (47.64 – 51.18 in)	3.1 Hz
131 – 140 cm (51.57 – 55.12 in)	2.9 Hz
141 – 150 cm (55.51 – 59.06 in)	2.7 Hz
151 – 160 cm (59.45 – 62.99 in)	2.5 Hz
161 – 170 cm (63.39 – 66.93 in)	2.2 Hz
More than 171 cm (More than 66.93 in)	2.0 Hz

Trailer Hitch Mode

The trailer hitch mode allows the setting that the sonar sensor does not accidentally detect the trailer hitch as an obstacle when connecting a trailer hitch.

SETTINGS

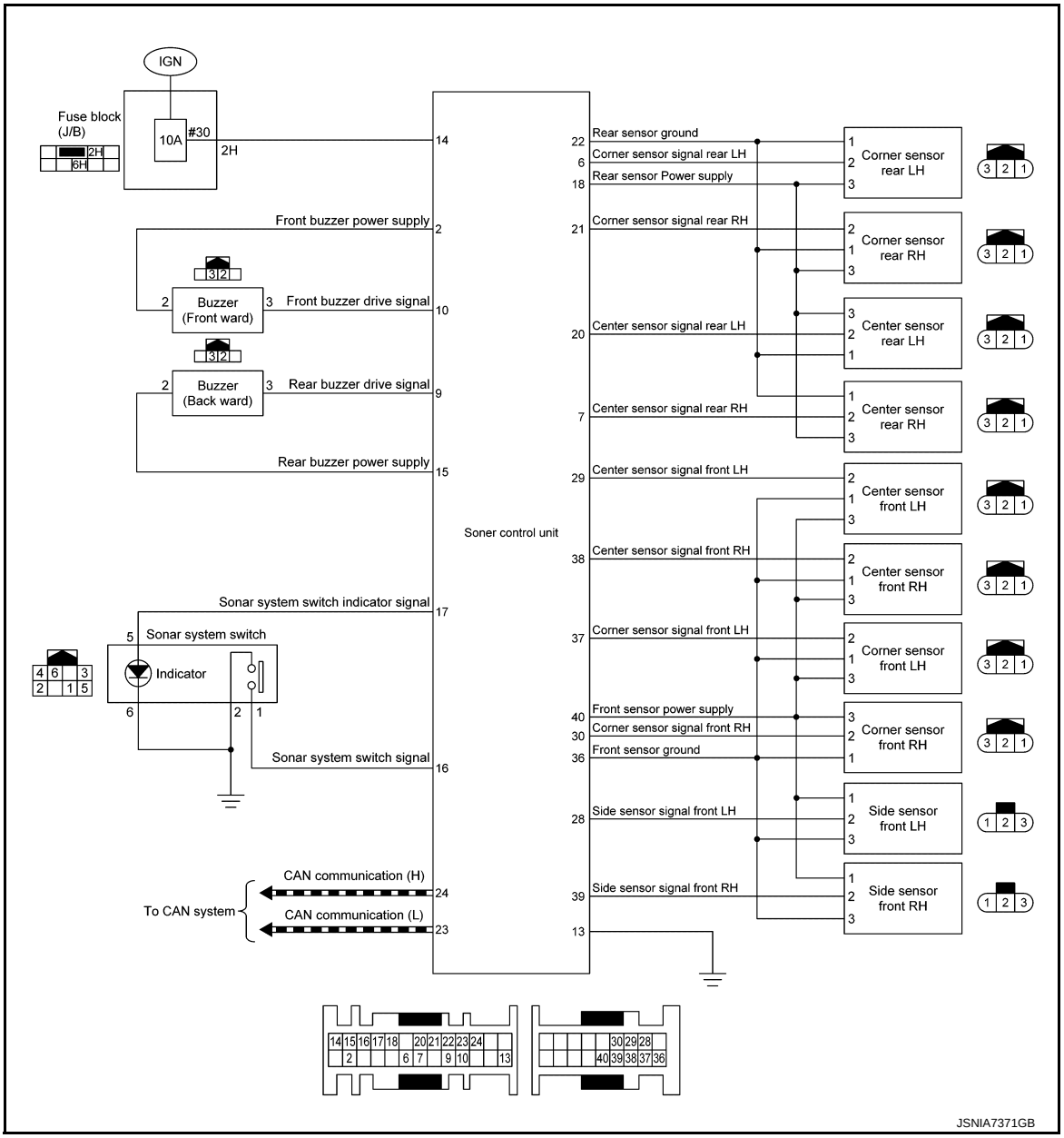
- Use “Work Support” of CONSULT and enter the distance to trailer hitch. Refer to SN-131, "CONSULT Function".
- Connect trailer hitch to the vehicle and drive approximately 10 seconds or more at 5 km/h (3.1 MPH).

How To Cancel The Setting

- Disconnect trailer hitch from the vehicle. Turn the ignition switch ON and maintain this state for 10 seconds or more.

SONAR SYSTEM : Circuit Diagram

INFOID:0000000010736633



SONAR SYSTEM : Fail-Safe (Sonar Control Unit)

INFOID:0000000010828198

The sonar control unit controls as follows if it detects a malfunction in the sonar sensor:
- Obstacle detection function is stopped.
- Alarm display is displayed on the information display of combination meter.
- Parking Assist in parallel mode is stopped.

INFORMATION DISPLAY (COMBINATION METER)

INFORMATION DISPLAY (COMBINATION METER) : Parking Sensor Error

INFOID:0000000010792891

DESIGN/PURPOSE

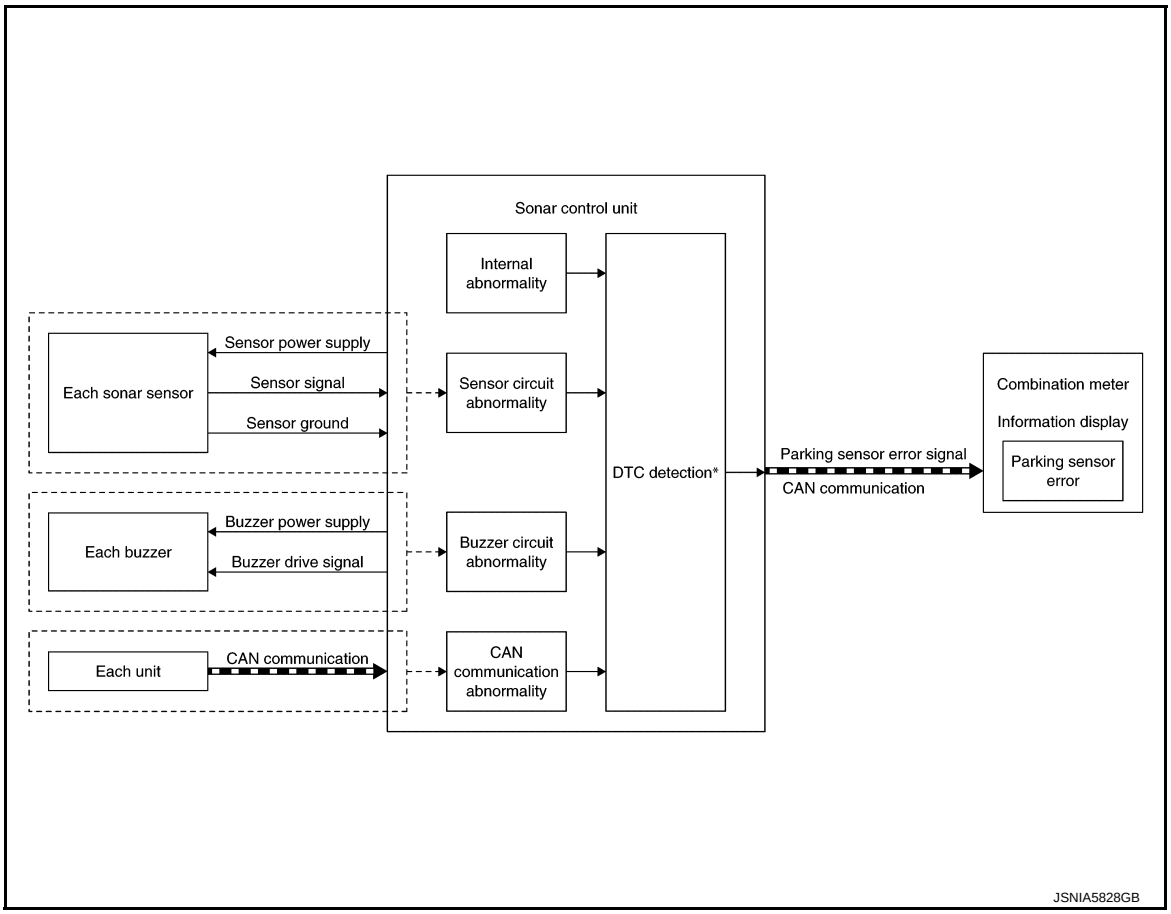
This warning is displayed when an error occurs in the sonar system.

Symbol	Message
—	Parking Sensor Error: See Owner's Manual.

SYNCHRONIZATION WITH MASTER WARNING LAMP

Synchronization is applied. Refer to MWI-47, "WARNING LAMPS/INDICATOR LAMPS : Master Warning Lamp".

SYSTEM DIAGRAM



NOTE:

*: For DTCs that parking sensor error turns ON, Refer to SN-143, "DTC Index".

SIGNAL PATH

- Sonar control unit transmits parking sensor error signal to the ON/OFF state of the combination meter via CAN communication when detecting DTC.
- Combination meter turns ON parking sensor error when receiving parking sensor error signal.

NOTE:

*: For DTCs that parking sensor error turns ON, Refer to SN-143, "DTC Index".

WARNING OPERATING CONDITION

When all of the following conditions are satisfied:

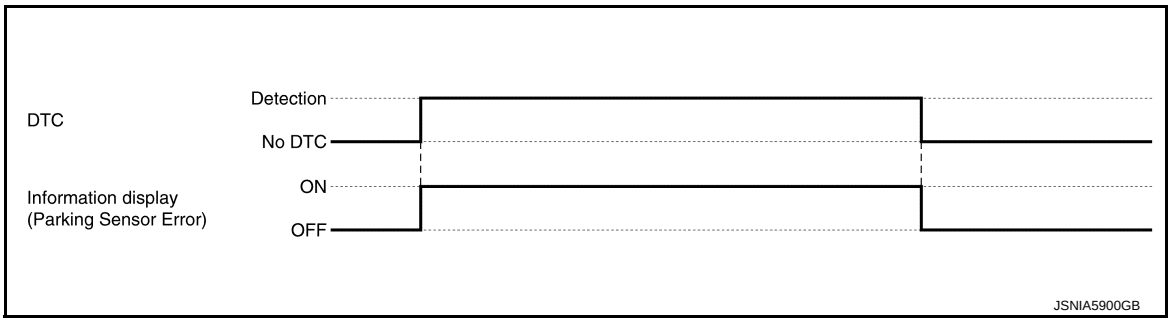
- Ignition switch ON
- DTC is detected.

WARNING CANCEL CONDITION

When any of the following conditions is satisfied:

- The ignition switch is in a position other than ON.
- DTC is deleted.

TIMING CHART



DIAGNOSIS SYSTEM (SONAR CONTROL UNIT)

CONSULT Function

INFOID:0000000010736636

APPLICATION ITEMS

CONSULT 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.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing sonar control unit.

ECU IDENTIFICATION

Displays the part number of the sonar control unit.

SELF-DIAGNOSTIC RESULTS

For details, refer to SN-143, "DTC Index".

Freeze Frame Data (FFD)

The following vehicle status is recorded when DTC is detected and is displayed on CONSULT.

Item name	Display content
ODO/TRIP METER (km)	Total driving distance (odometer value) upon DTC detection is displayed.
IGN counter (0 ～ 39)	Numerical value is displayed indicating the number of times that ignition switch is turned ON after the DTC is detected. • When “0”is displayed, it indicates that the system is presently malfunctioning. • When any numerical number other than “0” is displayed, it indicates that system malfunction in the past is detected, but the system is presently normal. **NOTE:** Each time when ignition switch turns OFF→ON, numerical number increases from 1→2→3...38→39. When number of times exceeds 39, numeric display does not increase and 39 is displayed until self-diagnosis is erased.

DATA MONITOR

NOTE:

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

Monitor Item	Display/ UNIT	Description
VEHICLE SPEED	km/h	Value of vehicle speed signal.
SONAR C/U POWER SUPPLY	V	Value of battery voltage (Ignition signal)
SENSOR VOLTAGE	V	Value of sensor voltage
DETECTION MODE	MODE1/ MODE2	**NOTE:** This item is displayed, but cannot be monitored.
SW OPRT AFTER IGN ON	Yes/No	Temporary/permanent OFF operation by the user after turning ON the ignition switch.

Monitor Item	Display/ UNIT	Description
SONAR TEMPORARY OFF	Yes/No	Sonar system is in temporary OFF state. **NOTE:** The user can set temporary OFF by canceling the sonar indicator displayed on the combination meter.
SONAR PERMANENT OFF	Yes/No	Sonar system is in permanent OFF state. **NOTE:** The user can set permanent OFF on the settings screen of the combination meter.
P N RANGE	On/Off	Status of shift position
LED	On/Off	**NOTE:** This item is displayed, but cannot be monitored.
TRAILER CONNECT	On/Off	**NOTE:** This item is displayed, but cannot be monitored.
REVERSE RANGE	On/Off	Status of shift position
SHRT DST FRM RR SENS	cm	Display the closest approach detection distance that rear sensor detects.
SHRT DST FRM FR SENS	cm	Display the closest approach detection distance that front sensor detects.
COR[RL]	cm	Distance according to oscillation from corner sensor rear LH and detection by corner sensor rear LH.
COR[RL]->CEN[RL]/ CEN[R]	cm	Distance according to oscillation from corner sensor rear LH and detection by center sensor rear LH.
CEN[RL]/CEN[R]- >COR[RL]	cm	Distance according to oscillation from center sensor rear LH and detection by corner sensor rear LH.
CEN[RL]/CEN[R]	cm	Distance according to oscillation from center sensor rear LH and detection by center sensor rear LH.
CEN[RL]->CEN[RR]	cm	Distance according to oscillation from center sensor rear LH and detection by center sensor rear RH.
CEN[RR]->CEN[RL]	cm	Distance according to oscillation from center sensor rear RH and detection by center sensor rear LH.
CEN[RR]	cm	Distance according to oscillation from center sensor rear RH and detection by center sensor rear RH.
CEN[RR]/CEN[R]- >COR[RR]	cm	Distance according to oscillation from center sensor rear RH and detection by corner sensor rear RH.
COR[RR]->CEN[RR]/ CEN[R]	cm	Distance according to oscillation from corner sensor rear RH and detection by center sensor rear RH.
COR[RR]	cm	Distance according to oscillation from corner sensor rear RH and detection by corner sensor rear RH.
COR[FL]	cm	Distance according to oscillation from corner sensor front LH and detection by corner sensor front LH.
COR[FL]->CEN[FL]/ CEN[F]	cm	Distance according to oscillation from corner sensor front LH and detection by center sensor front LH.
CEN[FL]/CEN[F]- >COR[FL]	cm	Distance according to oscillation from center sensor front LH and detection by corner sensor front LH.
CEN[FL]/CEN[F]	cm	Distance according to oscillation from center sensor front LH and detection by center sensor front LH.
CEN[FL]->CEN[FR]	cm	Distance according to oscillation from center sensor front LH and detection by center sensor front RH.
CEN[FR]->CEN[FL]	cm	Distance according to oscillation from center sensor front RH and detection by center sensor front LH.
CEN[FR]	cm	Distance according to oscillation from center sensor front RH and detection by center sensor front RH.

Monitor Item	Display/ UNIT	Description
CEN[FR]/CEN[F]->COR[FR]	cm	Distance according to oscillation from center sensor front RH and detection by corner sensor front RH.
COR[FR]->CEN[FR]/CEN[F]	cm	Distance according to oscillation from corner sensor front RH and detection by center sensor front RH.
COR[FR]	cm	Distance according to oscillation from corner sensor front RH and detection by corner sensor front RH.
RVRB TIME COR[RL]	ms	Reverberating time of corner sensor rear LH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME COR[RR]	ms	Reverberating time of corner sensor rear RH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME CEN[RL]	ms	Reverberating time of center sensor rear LH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME CEN[RR]	ms	Reverberating time of center sensor rear RH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME COR[FL]	ms	Reverberating time of corner sensor front LH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME COR[FR]	ms	Reverberating time of corner sensor front RH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME CEN[FL]	ms	Reverberating time of center sensor front LH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME CEN[FR]	ms	Reverberating time of center sensor front RH. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
FRONT BUZZER	On/Off	The operating state of buzzer (frontward) is displayed. • On: Buzzer (frontward) operation • Off: Buzzer (frontward) non-operation
REAR BUZZER	On/Off	The operating state of buzzer (backward) is displayed. • On: Buzzer (backward) operation • Off: Buzzer (backward) non-operation
PSM SYSTEM	NORMAL/ ERROR	The state of a parking space measurement system is displayed.
PARKING MODE	PARA/PER	The parking method is displayed. • PARA: Parallel parking • PER: Perpendicular parking
PSM ACTIVATION	On/Off	The operating state of parking space measurement system is displayed.
PARKING DIRECTION	RIGHT/ LEFT	Parking position is displayed.
PARKING START POSITION	NG/OK	Detection of a parking starting position is displayed.
PARKING SPACE DETECT	NON/DETECT	The detection state of a parking space is displayed.

Monitor Item	Display/ UNIT	Description
COR X POSI FOR VEHICLE 1	mm	X position of the vehicles next to a parking space is displayed (horizontal axis).
COR Y POSI FOR VEHICLE 1	mm	Y position of the vehicles next to a parking space is displayed (vertical axis).
COR X POSI FOR VEHICLE 2	mm	X position of the vehicles next to a parking space is displayed (horizontal axis).
COR Y POSI FOR VEHICLE 2	mm	Y position of the vehicles next to a parking space is displayed (vertical axis).
ANGLE BETWEEN 2 CORNERS	deg	The angle of the line which connected the angle of the vehicles of parking space neighbors is displayed.
SIDE[FL]	cm	Distance according to oscillation from side sensor front LH and detection by side sensor front LH.
SIDE[FL]->COR[FL]	cm	Distance according to oscillation from side sensor front LH and detection by corner sensor front LH.
COR[FL]->SIDE[FL]	cm	Distance according to oscillation from corner sensor front LH and detection by side sensor front LH.
COR[FR]->SIDE[FR]	cm	Distance according to oscillation from corner sensor front RH and detection by side sensor front RH.
SIDE[FR]->COR[FR]	cm	Distance according to oscillation from side sensor front RH and detection by corner sensor front RH.
SIDE[FR]	cm	Distance according to oscillation from side sensor front RH and detection by side sensor front RH.
SIDE[RL]	cm	**NOTE:** This item is displayed, but cannot be monitored.
SIDE[RL]->COR[RL]	cm	
COR[RL]->SIDE[RL]	cm	
COR[RR]->SIDE[RR]	cm	
SIDE[RR]->COR[RR]	cm	
SIDE[RR]	cm	
ATTENUATION TIME SIDE[FL]	ms	Attenuation time of side sensor front LH.
ATTENUATION TIME SIDE[FR]	ms	Attenuation time of side sensor front RH.
ATTENUATION TIME SIDE[RL]	ms	**NOTE:** This item is displayed, but cannot be monitored.
ATTENUATION TIME SIDE[RR]	ms	

ACTIVE TEST

Active test item	Function
FRONT BUZZER	This test is able to check buzzer (frontward) operation.
REAR BUZZER	This test is able to check buzzer (backward) operation.
LED	**NOTE:** This item is displayed, but cannot be tested

WORK SUPPORT

Work support item	Function
VOLUME SETTING	Adjusts the volume of buzzer.
TRAILER HITCH DETECTION RANGE ADJUSTMENT	Adjusts the distance to trailer hitch. **NOTE:** After adjusting the distance to trailer hitch, the adjustment value automatically turns to 0 after a lapse of 10 seconds or more after turning the ignition switch from OFF to ON if the trailer hitch is not connected to the vehicle.

CONFIGURATION

Configuration has three functions as follows.

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

ECU DIAGNOSIS INFORMATION

SONAR CONTROL UNIT

Reference Value

INFOID:0000000010792892

VALUES ON THE DIAGNOSIS TOOL

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

CONSULT MONITOR ITEM

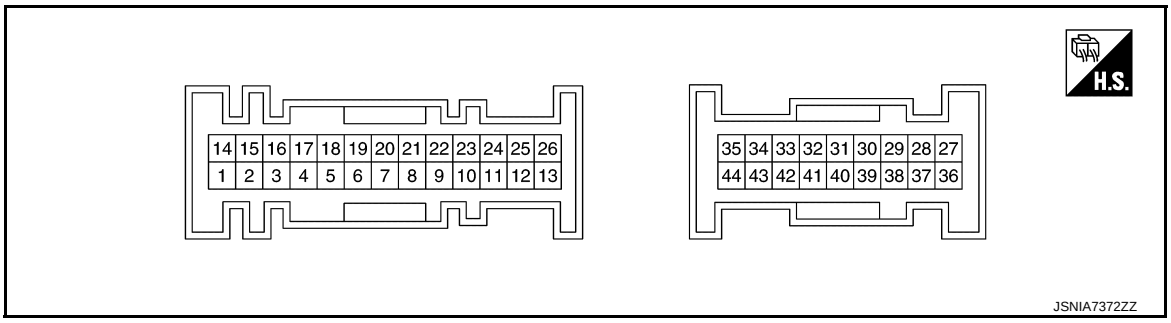
Monitor Item	Condition		Value/Status
VEHICLE SPEED	Ignition switch ON	While driving	Input value of vehicle speed signal
SONAR C/U POWER SUPPLY	Ignition switch ON	While driving	Input value of battery voltage
SENSOR VOLTAGE	Ignition switch ON	While driving	Output value of power supply voltage (Approx. 8.0 V)
DETECTION MODE	Ignition switch ON	**NOTE:** This item is displayed, but cannot be monitored.	
SW OPRT AFTR IGN ON	Ignition switch ON	Temporary OFF or permanent OFF is set by the user after the ignition switch ON.	Yes
		Other than the above	No
SONAR TEMPORARY OFF	Ignition switch ON	Sonar system is in temporary OFF state.	Yes
		Other than the above	No
SONAR PERMANENT OFF	Ignition switch ON	Sonar system is in permanent OFF state.	Yes
		Other than the above	No
P N RANGE	Ignition switch ON	Shift position: “P” or “N” position	On
		Other than the above	Off
LED	Ignition switch ON	**NOTE:** This item is displayed, but cannot be monitored.	
TRAILER CONNECT	Ignition switch ON	**NOTE:** This item is displayed, but cannot be monitored.	
REVERSE RANGE	Ignition switch ON	Shift position: “R” position	On
		Other than the above	Off
SHRT DST FRM RR SENS	Ignition switch ON	When obstacles exist around rear bumper.	Distance between rear bumper and obstacle.
SHRT DST FRM FR SENS	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
COR[RL]	Ignition switch ON	When an obstacle is detected by corner sensor rear LH. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]
		When no obstacles exist around corner sensor rear LH.	255 cm (100.39 in)
COR[RL]->CEN[RL]/CEN[R]	Ignition switch ON	When obstacles exist around rear bumper.	Distance between rear bumper and obstacle.
CEN[RL]/CEN[R]->COR[RL]	Ignition switch ON	When obstacles exist around rear bumper.	Distance between rear bumper and obstacle.

Monitor Item	Condition		Value/Status
CEN[RL]/CEN[R]	Ignition switch ON	When an obstacle is detected by center sensor rear LH. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]
		When no obstacles exist around center sensor rear LH.	255 cm (100.39 in)
CEN[RL]->CEN[RR]	Ignition switch ON	When obstacles exist around rear bumper.	Distance between rear bumper and obstacle.
CEN[RR]->CEN[RL]	Ignition switch ON	When obstacles exist around rear bumper.	Distance between rear bumper and obstacle.
CEN[RR]	Ignition switch ON	When an obstacle is detected by center sensor rear RH. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]
		When no obstacles exist around center sensor rear RH.	255 cm (100.39 in)
CEN[RR]/CEN[R]->COR[RR]	Ignition switch ON	When obstacles exist around rear bumper.	Distance between rear bumper and obstacle.
COR[RR]->CEN[RR]/CEN[R]	Ignition switch ON	When obstacles exist around rear bumper.	Distance between rear bumper and obstacle.
COR[RR]	Ignition switch ON	When an obstacle is detected by corner sensor rear RH. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]
		When no obstacles exist around corner sensor rear RH.	255 cm (100.39 in)
COR[FL]	Ignition switch ON	When an obstacle is detected by corner sensor front LH. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]
		When no obstacles exist around corner sensor front LH.	255 cm (100.39 in)
COR[FL]->CEN[FL]/CEN[F]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
CEN[FL]/CEN[F]->COR[FL]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
CEN[FL]/CEN[F]	Ignition switch ON	When an obstacle is detected by center sensor front LH. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]
		When no obstacles exist around center sensor front LH.	255 cm (100.39 in)
CEN[FL]->CEN[FR]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
CEN[FR]->CEN[FL]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
CEN[FR]	Ignition switch ON	When an obstacle is detected by center sensor front RH. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 100 cm (Approx. 10.63 in - 39.73 in)]
		When no obstacles exist around center sensor front RH.	255 cm (100.39 in)
CEN[FR]/CEN[F]->COR[FR]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.

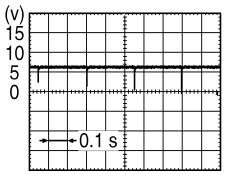
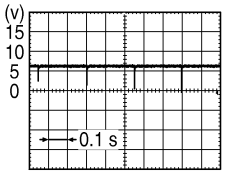
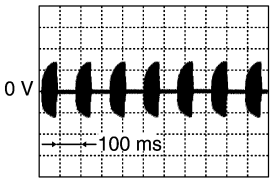
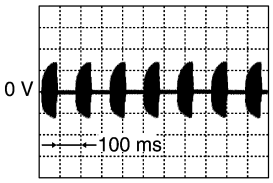
Monitor Item	Condition		Value/Status
COR[FR]->CEN[FR]/CEN[F]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
COR[FR]	Ignition switch ON	When an obstacle is detected by corner sensor front RH. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]
		When no obstacles exist around corner sensor front RH.	255 cm (100.39 in)
RVRB TIME COR[RL]	Ignition switch ON		Approx. 1.5 ms
RVRB TIME COR[RR]	Ignition switch ON		Approx. 1.5 ms
RVRB TIME CEN[RL]	Ignition switch ON		Approx. 1.5 ms
RVRB TIME CEN[RR]	Ignition switch ON		Approx. 1.5 ms
RVRB TIME COR[FL]	Ignition switch ON		Approx. 1.5 ms
RVRB TIME COR[FR]	Ignition switch ON		Approx. 1.5 ms
RVRB TIME CEN[FL]	Ignition switch ON		Approx. 1.5 ms
RVRB TIME CEN[FR]	Ignition switch ON		Approx. 1.5 ms
FRONT BUZZER	When the buzzer (frontward) is operating		On
	Except above		Off
REAR BUZZER	When the buzzer (backward) is operating		On
	Except above		Off
LED	**NOTE:** This item is displayed, but cannot be monitored.		
PSM SYSTEM	PSM function of park assist is Normal		NORMAL
	PSM function of park assist is Malfunctioning		ERROR
PARKING MODE	Parallel parking		PARA
	Perpendicular parking		PER
PSM ACTIVATION	PSM function of park assist is activated		On
	PSM function of park assist is deactivated		Off
PARKING DIRECTION	Parking the right-hand side.		RIGHT
	Parking the left-hand side.		LEFT
PARKING START POSITION	A parking starting position is reached.		OK
	A parking starting position is not reached.		NG
PARKING SPACE DETECT	The parking space non-detection		NON
	The parking space detection		DETECT
COR X POSI FOR VEHICLE 1	Ignition switch ON		Distance with the vehicles which the sensor detected is displayed. (Horizontal axis)
COR Y POSI FOR VEHICLE 1	Ignition switch ON		Distance with the vehicles which the sensor detected is displayed.(Vertical axis)
COR X POSI FOR VEHICLE 2	Ignition switch ON		Distance with the vehicles which the sensor detected is displayed. (Horizontal axis)
COR Y POSI FOR VEHICLE 2	Ignition switch ON		Distance with the vehicles which the sensor detected is displayed.(Vertical axis)

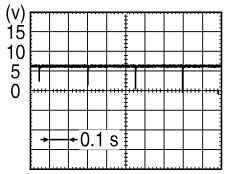
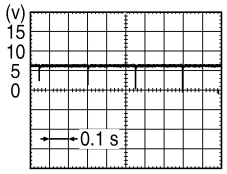
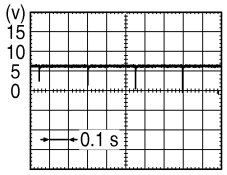
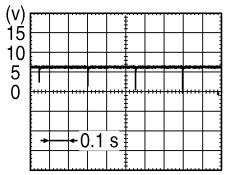
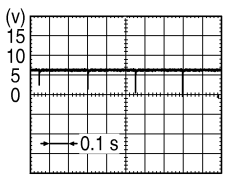
Monitor Item	Condition		Value/Status
ANGLE BETWEEN 2 CORNERS	Ignition switch ON		The angle by the position of the vehicles which the sensor detected is displayed.
SIDE[FL]	Ignition switch ON	When an obstacle is detected by side sensor front LH. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]
		When no obstacles exist around side sensor front LH.	255 cm (100.39 in)
SIDE[FL]->COR[FL]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
COR[FL]->SIDE[FL]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
COR[FR]->SIDE[FR]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
SIDE[FR]->COR[FR]	Ignition switch ON	When obstacles exist around front bumper.	Distance between front bumper and obstacle.
SIDE[FR]	Ignition switch ON	When an obstacle is detected by side sensor front RH. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]	Distance between sensor and obstacle. [Approx. 27 cm - 70 cm (Approx. 10.63 in - 27.56 in)]
		When no obstacles exist around side sensor front RH.	255 cm (100.39 in)
SIDE[RL]	**NOTE:** This item is displayed, but cannot be monitored.		
SIDE[RL]->COR[RL]	**NOTE:** This item is displayed, but cannot be monitored.		
COR[RL]->SIDE[RL]	**NOTE:** This item is displayed, but cannot be monitored.		
COR[RR]->SIDE[RR]	**NOTE:** This item is displayed, but cannot be monitored.		
SIDE[RR]->COR[RR]	**NOTE:** This item is displayed, but cannot be monitored.		
SIDE[RR]	**NOTE:** This item is displayed, but cannot be monitored.		
ATTENUATION TIME SIDE[FL]	Ignition switch ON		0.01 - 2.55 ms
ATTENUATION TIME SIDE[FR]	Ignition switch ON		0.01 - 2.55 ms
ATTENUATION TIME SIDE[RL]	**NOTE:** This item is displayed, but cannot be monitored.		
ATTENUATION TIME SIDE[RR]	**NOTE:** This item is displayed, but cannot be monitored.		

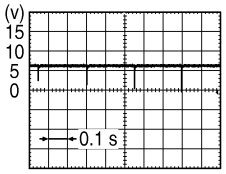
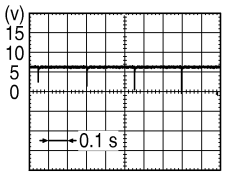
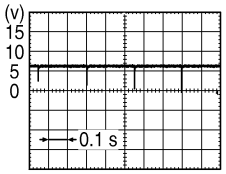
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)
+	–	Signal name	Input/ Output			
2 (Y)	13 (B)	Front buzzer power supply	Output	[Ignition switch ON]	—	0 V
6 (R)	22 (P)	Corner sensor signal rear LH	Input	[Ignition switch ON] Shift position is in R position.	Waveform according to sensor signal is input	 SKIB8942E
7 (V)	22 (P)	Center sensor signal rear RH	Input	[Ignition switch ON] Shift position is in R position.	Waveform according to sensor signal is input	 SKIB8942E
9 (G)	13 (B)	Rear buzzer drive signal	Input	[Ignition switch ON] When the distance between the sensor and obstacle is approx 60 cm (23.62 in).	—	**NOTE:** • Voltage depends on volume. • Cycle depends on distance between sensor and obstacle.  JSNIA5232GB
10 (SB)	13 (B)	Front buzzer drive signal	Input	[Ignition switch ON] When the distance between the sensor and obstacle is approx 60 cm (23.62 in).	—	**NOTE:** • Voltage depends on volume. • Cycle depends on distance between sensor and obstacle.  JSNIA5232GB
13 (B)	Ground	Ground	—	—	—	0 V
14 (BR)	13 (B)	Ignition power supply	Input	—	9.0 - 16.0 V	Battery voltage
15 (Y)	13 (B)	Rear buzzer power supply	Output	[Ignition switch ON]	—	0 V
16 (V)	Ground	Sonar system switch signal	Input	[Ignition switch ON] While pressing the sonar system switch.	2.0 V	2.0 V
				Other than above.	12.0 V	12.0 V

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)
+	–	Signal name	Input/ Output			
17 (SB)	Ground	Sonar system switch indicator signal	Output	[Ignition switch ON] Sonar system switch indicator lamp is ON.	12.0 V	12.0 V
				[Ignition switch ON] Sonar system switch indicator lamp is OFF.	0 V	0 V
18 (SB)	22 (P)	Rear sensor power supply	Output	—	—	8.0 V
20 (G)	22 (P)	Center sensor signal rear LH	Input	[Ignition switch ON] Shift position is in R position.	Waveform according to sensor signal is input	 SKIB8942E
21 (LG)	22 (P)	Corner sensor signal rear RH	Input	[Ignition switch ON] Shift position is in R position.	Waveform according to sensor signal is input	 SKIB8942E
22 (P)	Ground	Rear sensor ground	—	—	—	0 V
23 (P)	—	CAN–L	Input/ Output	—	—	—
24 (L)	—	CAN–H	Input/ Output	—	—	—
28 (BR)	36 (P)	Side sensor signal front LH	Input	[Ignition switch ON] Shift position is in D position.	Waveform according to sensor signal is input	 SKIB8942E
29 (G)	36 (P)	Center sensor signal front LH	Input	[Ignition switch ON] Shift position is in D position.	Waveform according to sensor signal is input	 SKIB8942E
30 (V)	36 (P)	Corner sensor signal front RH	Input	[Ignition switch ON] Shift position is in D position.	Waveform according to sensor signal is input	 SKIB8942E

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)
+	–	Signal name	Input/ Output			
36 (P)	Ground	Front sensor ground	—	—	—	0 V
37 (W)	36 (P)	Corner sensor signal front LH	Input	[Ignition switch ON] Shift position is in D position.	Waveform according to sensor signal is input	 SKIB8942E
38 (LG)	36 (P)	Center sensor signal front RH	Input	[Ignition switch ON] Shift position is in D position.	Waveform according to sensor signal is input	 SKIB8942E
39 (R)	36 (P)	Side sensor signal front RH	Input	[Ignition switch ON] Shift position is in D position.	Waveform according to sensor signal is input	 SKIB8942E
40 (SB)	36 (P)	Front sensor power supply	Output	—	—	8.0 V

Fail-Safe (Sonar Control Unit)

INFOID:0000000010792893

The sonar control unit controls as follows if it detects a malfunction in the sonar sensor:
- Obstacle detection function is stopped.
- Alarm display is displayed on the information display of combination meter.
- Parking Assist in parallel mode is stopped.

DTC Inspection Priority Chart

INFOID:0000000010792894

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

Priority	Detected items (DTC)
1	• U1000-01: CAN COMM CIRCUIT • U1010-49: CONTROL UNIT (CAN)

Priority	Detected items (DTC)
2	B2724-55: SONAR CONTROL UNIT
3	• B2720-12: CORNER SENSOR [RL] • B2720-14: CORNER SENSOR [RL] • B2720-55: CORNER SENSOR [RL] • B2720-92: CORNER SENSOR [RL] • B2721-12: CENTER SENSOR [RL] • B2721-14: CENTER SENSOR [RL] • B2721-55: CENTER SENSOR [RL] • B2721-92: CENTER SENSOR [RL] • B2722-12: CENTER SENSOR [RR] • B2722-14: CENTER SENSOR [RR] • B2722-55: CENTER SENSOR [RR] • B2722-92: CENTER SENSOR [RR] • B2723-12: CORNER SENSOR [RR] • B2723-14: CORNER SENSOR [RR] • B2723-55: CORNER SENSOR [RR] • B2723-92: CORNER SENSOR [RR] • B2725-12: REAR BUZZER • B2725-14: REAR BUZZER • B2728-11: LED • B2728-12: LED • B2728-14: LED • B2729-12: CORNER SENSOR [FL] • B2729-14: CORNER SENSOR [FL] • B2729-55: CORNER SENSOR [FL] • B2729-92: CORNER SENSOR [FL] • B272A-12: CENTER SENSOR [FL] • B272A-14: CENTER SENSOR [FL] • B272A-55: CENTER SENSOR [FL] • B272A-92: CENTER SENSOR [FL] • B272B-12: CENTER SENSOR [FR] • B272B-14: CENTER SENSOR [FR] • B272B-55: CENTER SENSOR [FR] • B272B-92: CENTER SENSOR [FR] • B272C-12: CORNER SENSOR [FR] • B272C-14: CORNER SENSOR [FR] • B272C-55: CORNER SENSOR [FR] • B272C-92: CORNER SENSOR [FR] • B272D-12: FRONT BUZZER • B272D-14: FRONT BUZZER • B272E-12: SIDE SENSOR [FL] • B272E-14: SIDE SENSOR [FL] • B272E-55: SIDE SENSOR [FL] • B272E-92: SIDE SENSOR [FL] • B272F-12: SIDE SENSOR [FR] • B272F-14: SIDE SENSOR [FR] • B272F-55: SIDE SENSOR [FR] • B272F-92: SIDE SENSOR [FR]

DTC Index

INFOID:0000000010792895

×: Applicable

DTC	Display item		Reference
U1000-01	CAN COMM CIRCUIT		SN-231, "DTC Description"
U1010-49	CONTROL UNIT (CAN)		SN-232, "DTC Description"
B2720-12	CORNER SENSOR [RL]	SHORT-BAT	SN-158, "DTC Description"
B2720-14		OPEN/SHORT-GND	SN-160, "DTC Description"
B2720-55		CONFIG ERROR	SN-162, "DTC Description"
B2720-92		SENSOR	SN-163, "DTC Description"

DTC	Display item		Reference
B2721-12	CENTER SENSOR [RL]	SHORT-BAT	SN-164, "DTC Description"
B2721-14		OPEN/SHORT-GND	SN-166, "DTC Description"
B2721-55		CONFIG ERROR	SN-168, "DTC Description"
B2721-92		SENSOR	SN-169, "DTC Description"
B2722-12	CENTER SENSOR [RR]	SHORT-BAT	SN-170, "DTC Description"
B2722-14		OPEN/SHORT-GND	SN-172, "DTC Description"
B2722-55		CONFIG ERROR	SN-174, "DTC Description"
B2722-92		SENSOR	SN-175, "DTC Description"
B2723-12	CORNER SENSOR [RR]	SHORT-BAT	SN-176, "DTC Description"
B2723-14		OPEN/SHORT-GND	SN-178, "DTC Description"
B2723-55		CONFIG ERROR	SN-180, "DTC Description"
B2723-92		SENSOR	SN-181, "DTC Description"
B2724-55	SONAR CONTROL UNIT	CONFIG ERROR	SN-182, "DTC Description"
B2725-12	REAR BUZZER	SHORT-BAT	SN-183, "DTC Description"
B2725-14		OPEN/SHORT-GND	SN-185, "DTC Description"
B2728-11	LED	SHORT-GND	SN-187, "DTC Description"
B2728-12		SHORT-BAT	SN-188, "DTC Description"
B2728-14		OPEN/SHORT-GND	SN-189, "DTC Description"
B2729-12	CORNER SENSOR [FL]	SHORT-BAT	SN-191, "DTC Description"
B2729-14		OPEN/SHORT-GND	SN-193, "DTC Description"
B2729-55		CONFIG ERROR	SN-195, "DTC Description"
B2729-92		SENSOR	SN-196, "DTC Description"
B272A-12	CENTER SENSOR [FL]	SHORT-BAT	SN-197, "DTC Description"
B272A-14		OPEN/SHORT-GND	SN-199, "DTC Description"
B272A-55		CONFIG ERROR	SN-201, "DTC Description"
B272A-92		SENSOR	SN-202, "DTC Description"
B272B-12	CENTER SENSOR [FR]	SHORT-BAT	SN-203, "DTC Description"
B272B14		OPEN/SHORT-GND	SN-205, "DTC Description"
B272B-55		CONFIG ERROR	SN-207, "DTC Description"
B272B-92		SENSOR	SN-208, "DTC Description"
B272C-12	CORNER SENSOR [FR]	SHORT-BAT	SN-209, "DTC Description"
B272C-14		OPEN/SHORT-GND	SN-211, "DTC Description"
B272C-55		CONFIG ERROR	SN-213, "DTC Description"
B272C-92		SENSOR	SN-214, "DTC Description"
B272D-12	FRONT BUZZER	SHORT-BAT	SN-215, "DTC Description"
B272D-14		OPEN/SHORT-GND	SN-217, "DTC Description"
B272E-12	SIDE SENSOR [FL]	SHORT-BAT	SN-219, "DTC Description"
B272E-14		OPEN/SHORT-GND	SN-221, "DTC Description"
B272E-55		CONFIG ERROR	SN-223, "DTC Description"
B272E-92		SENSOR	SN-224, "DTC Description"
B272F-12	SIDE SENSOR [FR]	SHORT-BAT	SN-225, "DTC Description"
B272F-14		OPEN/SHORT-GND	SN-227, "DTC Description"
B272F-55		CONFIG ERROR	SN-229, "DTC Description"
B272F-92		SENSOR	SN-230, "DTC Description"

WIRING DIAGRAM

SONAR SYSTEM

Wiring Diagram

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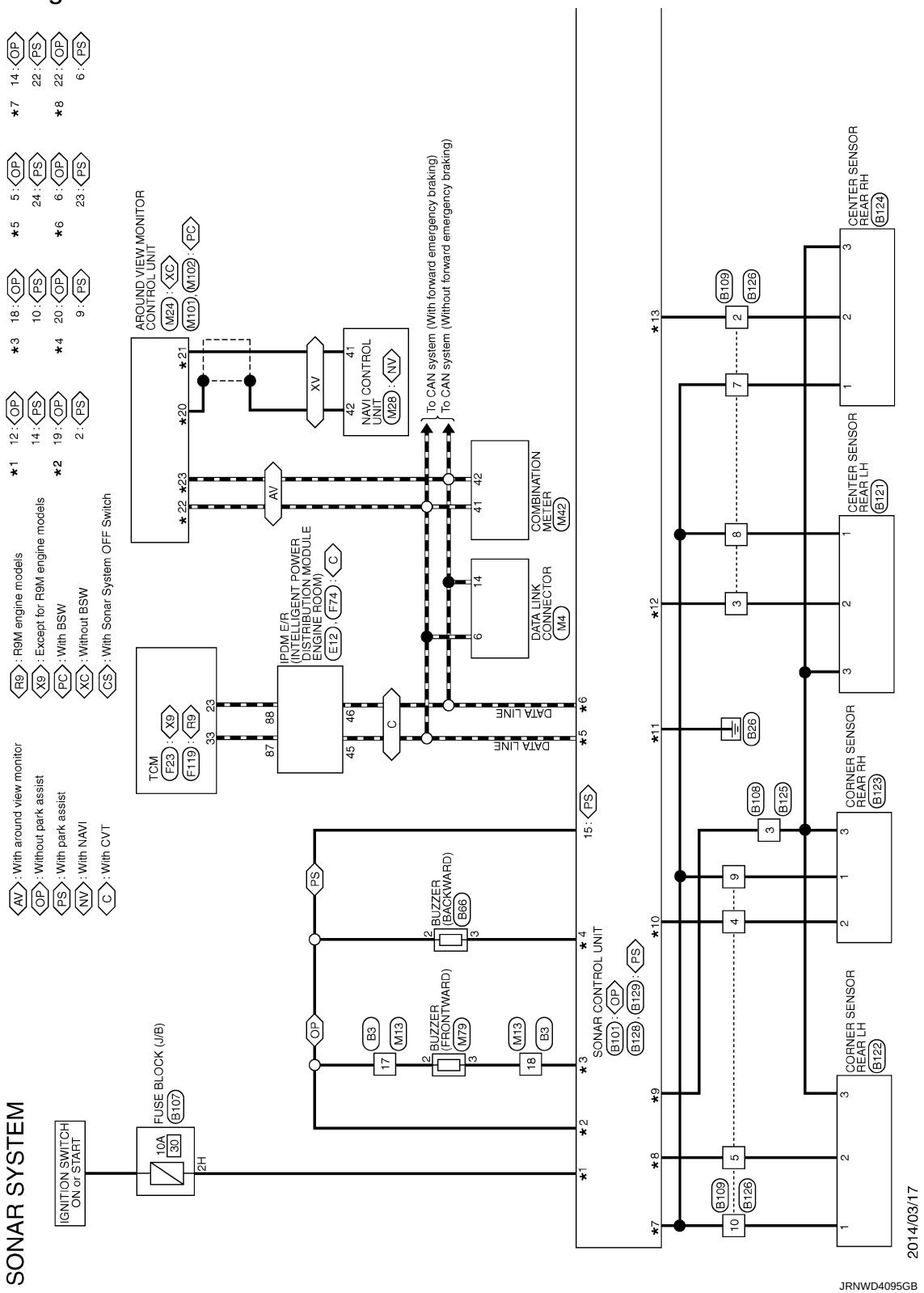
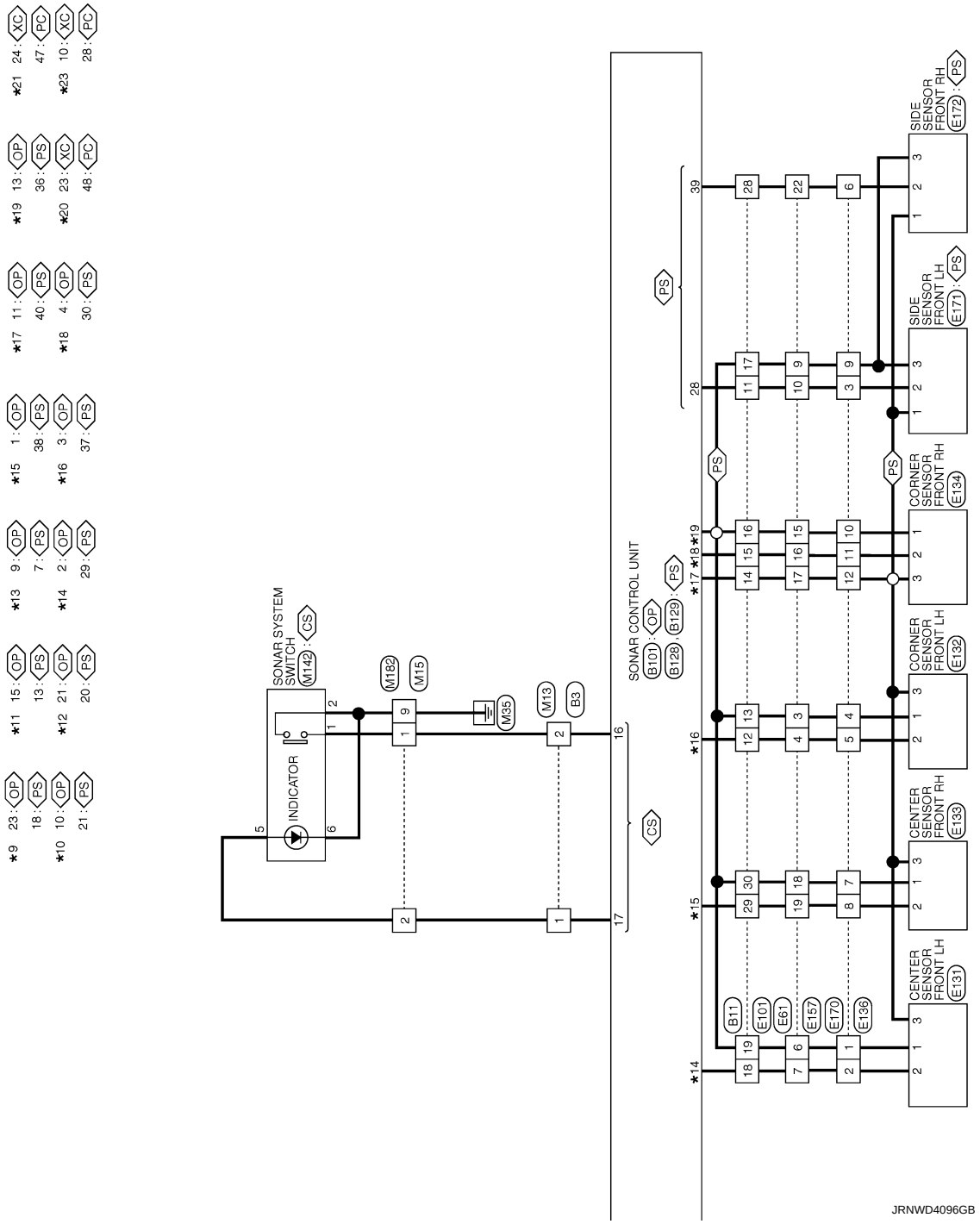
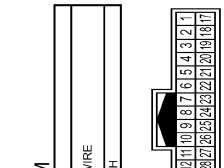


AV : With around view monitor
OP : Without park assist
PS : With park assist
NV : With NAVI
C : With CVT
R9 : R9M engine models
X9 : Except for R9M engine models
PC : With BSW
XC : Without BSW
CS : With Sonar System OFF Switch


SONAR SYSTEM SWITCH M142 : CS
INDICATOR
M182
M15
M35
M13
B3
SONAR CONTROL UNIT
B101 : OP
B128 : B129 : PS
CS
PS
SIDE SENSOR FRONT RH E172 : PS
SIDE SENSOR FRONT LH E171 : PS
CORNER SENSOR FRONT RH E134
CORNER SENSOR FRONT LH E132
CENTER SENSOR FRONT RH E133
CENTER SENSOR FRONT LH E131
B11
E101
E61
E157
E170
E136
JRNWD4096GB

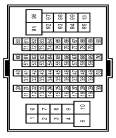
SONAR SYSTEM

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	V	-
3	LA/R	-
4	V	-
5	GR	-
6	Y	-
7	LG	-
8	BG	-
9	W	-
10	LA/Y	-
11	BR	-
12	Y	-
13	W	-
14	V	-
15	L	-
16	BR	-
17	Y	-
18	LA/L	- [Without PSM]
18	SB	- [With PSM]
20	LG	-
21	G	-
22	V	-
23	BR	-
24	P	-
25	L	-
26	G	-
29	SHIELD	-
30	W	-
31	B	-
32	R	-

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MDGY-CS16-TM4

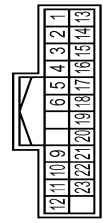


Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	LA/BR	-
5	BG	-
11	BR	-
12	W	-
13	P	-
14	SB	-
15	V	-
16	P	-
17	P	-
18	G	-
19	P	-
20	R	-
21	BR	-
22	Y	-
23	BG	-
24	SB	-
25	G	-
26	B	-
27	P	-
28	R	-
29	LG	-
30	P	-
92	BR	-
93	GR	-
94	Y	-
95	LG	-
97	LG	-

Connector No.	B66
Connector Name	BUZZER (BACKWARD)
Connector Type	TH04FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
2	Y	-
3	G	- [With PSM]
3	LA/G	- [Without PSM]

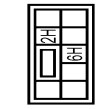
Connector No.	B101
Connector Name	SONAR CONTROL UNIT
Connector Type	TH24FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	CENTER SENSOR SIGNAL FRONT RH
2	G	CENTER SENSOR SIGNAL FRONT LH
3	W	CORNER SENSOR SIGNAL FRONT LH
4	V	CORNER SENSOR SIGNAL FRONT RH
5	L	CAN-H
6	P	CAN-L
9	V	CENTER SENSOR SIGNAL REAR RH
10	LG	CORNER SENSOR SIGNAL REAR RH
11	SB	FRONT SENSOR POWER SUPPLY
12	BR	IGNITION POWER SUPPLY
13	P	FRONT SENSOR GROUND
14	P	REAR SENSOR GROUND
15	B	GROUND
16	V	SONAR SYSTEM OFF SWITCH SIGNAL
17	SB	SONAR SYSTEM OFF SWITCH INDICATOR SIGNAL
18	LA/L	FRONT BUZZER DRIVE SIGNAL

19	Y	BUZZER POWER SUPPLY
20	LA/G	REAR BUZZER DRIVE SIGNAL
21	G	CENTER SENSOR SIGNAL REAR LH
22	R	CORNER SENSOR SIGNAL REAR LH
23	SB	REAR SENSOR POWER SUPPLY

Connector No.	B107
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
2H	BR	-
6H	LA/L	-

Connector No.	B108
Connector Name	WIRE TO WIRE
Connector Type	RH08MB

Terminal No.	Color Of Wire	Signal Name [Specification]
3	SB	-

JRNWD4097GB

SONAR SYSTEM

Connector No.	B109
Connector Name	WIRE TO WIRE
Connector Type	RH10MB

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	V	-
3	G	-
4	LG	-
5	R	-
7	P	-
8	P	-
9	P	-
10	P	-

Connector No.	B121
Connector Name	CENTER SENSOR REAR LH
Connector Type	RH03FB

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	R	-
3	SB	-

Connector No.	B122
Connector Name	CORNER SENSOR REAR LH
Connector Type	RH03FB

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	R	- [With PSM]
2	W	- [Without PSM]
3	SB	-

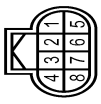
Connector No.	B124
Connector Name	CENTER SENSOR REAR RH
Connector Type	RH03FB

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	G	-
3	SB	-

Connector No.	B125
Connector Name	WIRE TO WIRE
Connector Type	RH08FB

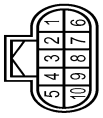
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3	SB	-

Connector No.	B126
Connector Name	WIRE TO WIRE
Connector Type	RH10FB

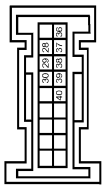
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
2	G	-
3	R	-
4	V	-
5	R	- [Without PSM]
5	W	- [With PSM]
7	P	-
8	P	-
9	P	-
10	P	-

Connector No.	B128
Connector Name	SONAR CONTROL UNIT
Connector Type	renault_8200280830

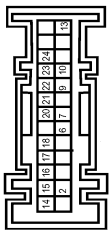
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
28	BR	SIDE SENSOR SIGNAL FRONT LH
29	G	CENTER SENSOR SIGNAL FRONT LH
30	V	CORNER SENSOR SIGNAL FRONT RH
36	P	FRONT SENSOR GROUND
37	W	CORNER SENSOR SIGNAL FRONT LH
38	LG	CENTER SENSOR SIGNAL FRONT RH
39	R	SIDE SENSOR SIGNAL FRONT RH
40	SB	FRONT SENSOR POWER SUPPLY

Connector No.	B129
Connector Name	SONAR CONTROL UNIT
Connector Type	renault_8200176157

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
2	Y	FRONT BUZZER POWER SUPPLY
6	R	CORNER SENSOR SIGNAL REAR LH
7	V	CENTER SENSOR SIGNAL REAR RH
9	G	REAR BUZZER DRIVE SIGNAL
10	SB	FRONT BUZZER DRIVE SIGNAL
13	B	GROUND
14	BR	IGNITION POWER SUPPLY
15	Y	REAR BUZZER POWER SUPPLY
16	V	SONAR SYSTEM OFF SWITCH SIGNAL
17	SB	SONAR SYSTEM OFF SWITCH INDICATOR SIGNAL
18	SB	REAR SENSOR POWER SUPPLY
20	G	CENTER SENSOR SIGNAL REAR LH

JRNWD4098GB

SONAR SYSTEM

21	LG	CORNER SENSOR SIGNAL REAR RH
22	P	REAR SENSOR GROUND
23	P	CAN-L
24	L	CAN-H

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH24FGY-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
25	LG	-
26	W	-
27	SB	-
28	P	-
30	L	-
31	G	-
32	B	-
33	BG	-
34	LG	-
35	V	-
36	Y	-
37	B	-
38	GR	-
39	BR	-
45	L	-
46	P	-
47	W	-
48	R	-

Connector No.	E61
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	L	-
3	P	-
4	W	-
6	P	-
7	G	-
9	P	-
10	BR	-
12	GR	-
13	SHIELD	-
14	LG	-
15	P	-
16	V	-
17	SB	-
18	P	-
19	LG	-
22	R	-
23	Y	-
24	GR	-

Connector No.	E101
Connector Name	WIRE TO WIRE
Connector Type	TH80FDGY-CS16-TM4

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
5	G	-
11	BR	-
12	W	-
13	P	-
14	SB	-
15	V	-
16	P	-
17	P	-
18	G	-
19	P	-
20	G	-
21	BR	-
22	LG	-
23	Y	-
24	SB	-
25	G	-
26	B	-
27	P	-
28	R	-
29	LG	-
30	P	-
92	BR	-
93	GR	-
94	R	-
95	L	-
97	LG	-

Connector No.	E131
Connector Name	CENTER SENSOR FRONT LH
Connector Type	RH03FB

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	GND
2	G	SIGNAL_GND
3	SB	POWER

Connector No.	E132
Connector Name	CORNER SENSOR FRONT LH
Connector Type	RH03FB

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	W	SIGNAL
3	SB	POWER

Connector No.	E133
Connector Name	CENTER SENSOR FRONT RH
Connector Type	RH03FB

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	GND
2	LG	SIGNAL_GND
3	SB	POWER

JRNWD4099GB

SONAR SYSTEM

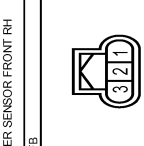
Connector No.	E134
Connector Name	CORNER SENSOR FRONT RH
Connector Type	RHK03FB

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	V	-
3	SB	POWER

Connector No.	E136
Connector Name	WIRE TO WIRE
Connector Type	RH12FB

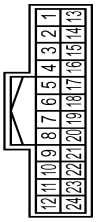
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	G	-
3	BR	-
4	P	-
5	W	-
6	R	-
7	P	-
8	LG	-
9	P	-
10	P	-
11	V	-
12	SB	-

Connector No.	E157
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH

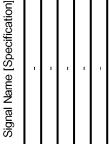
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	L	-
3	P	-
4	W	-
6	P	-
7	G	-
9	P	-
10	BR	-
12	GR	-
13	SHIELD	-
14	LG	-
15	P	-
16	V	-
17	SB	-
18	P	-
19	LG	-
22	R	-
23	V	-
24	GR	-

Connector No.	E170
Connector Name	WIRE TO WIRE
Connector Type	RH12MB

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	GND
2	G	SIGNAL
3	BR	SIGNAL
4	P	GND
5	W	SIGNAL
6	R	SIGNAL
7	P	GND
8	LG	SIGNAL
9	P	GND
10	P	GND
11	V	SIGNAL
12	SB	POWER

Connector No.	E171
Connector Name	SIDE SENSOR FRONT LH
Connector Type	ADZ03FB-1V

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	POWER
2	BR	SIGNAL_GND
3	P	GND

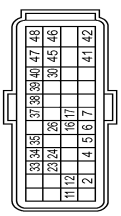
Connector No.	E172
Connector Name	SIDE SENSOR FRONT RH
Connector Type	ADZ03FB-1V

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	POWER
2	R	SIGNAL_GND
3	P	GND

Connector No.	F23
Connector Name	TCM
Connector Type	RH40FB-RZ8-L-RH

H.S.

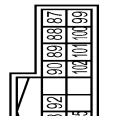


Terminal No.	Color Of Wire	Signal Name [Specification]
2	GR	-
4	Y	D RANGE SWITCH
5	BR	N RANGE SWITCH
6	G	R RANGE SWITCH
7	V	P RANGE SWITCH
11	LG	SENSOR GROUND
12	BR	CVT FLUID TEMPERATURE SENSOR
16	SB	SECONDARY PRESSURE SENSOR
17	R	PRIMARY PRESSURE SENSOR
23	P	CAN-L
24	LG	INPUT SPEED SENSOR
26	BG	SENSOR POWER SUPPLY
30	GR	LINE PRESSURE SOLENOID VALVE
33	L	CAN-H
34	W	OUTPUT SPEED SENSOR
35	GR	PRIMARY SPEED SENSOR
37	Y	SELECT SOLENOID VALVE
38	G	TORQUE CONVERTER CLUTCH SOLENOID VALVE
39	W	SECONDARY PRESSURE SOLENOID VALVE
40	V	PRIMARY PRESSURE SOLENOID VALVE
41	B	GROUND
42	B	GROUND
45	V	BATTERY POWER SUPPLY
46	V	BATTERY POWER SUPPLY
47	BG	IGNITION POWER SUPPLY
48	BG	IGNITION POWER SUPPLY

JRNWD4100GB

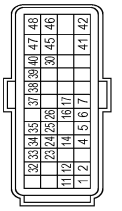
SONAR SYSTEM

Connector No.	F74
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH24FB-NH



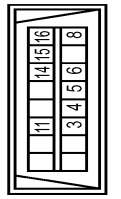
Terminal No.	Color Of Wire	Signal Name [Specification]
87	L	-
88	P	-
89	W	-
90	R	-
92	GR	-
93	G	- [With R9M Engine]
93	P	- [With MR20 or QR25 Engine]
94	SB	-
95	LG	-
96	W	-
97	P	-
98	Y	-
99	BG	-
100	LG	-
101	V	-
102	Y	-
105	W	-
106	BR	-
107	V	-
110	SB	-

Connector No.	F119
Connector Name	TCM
Connector Type	RH40FB-RZ8-L-LH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	ELECTRIC OIL PUMP RELAY
2	GR	-
4	Y	D RANGE SWITCH
5	BR	N RANGE SWITCH
6	G	R RANGE SWITCH
7	V	P RANGE SWITCH
11	LG	SENSOR GROUND
12	BR	CVT FLUID TEMPERATURE SENSOR
14	V	G SENSOR
16	SB	SECONDARY PRESSURE SENSOR
17	R	PRIMARY PRESSURE SENSOR
23	P	CAN-L
24	LG	INPUT SPEED SENSOR
25	R	ELECTRIC OIL PUMP COMMAND SIGNAL
26	BG	SENSOR POWER SUPPLY
30	GR	LINE PRESSURE SOLENOID VALVE
32	SB	ELECTRIC OIL PUMP STATUS SIGNAL
33	L	CAN-H
34	W	OUTPUT SPEED SENSOR
35	GR	PRIMARY SPEED SENSOR
37	Y	SELECT SOLENOID VALVE
38	G	TORQUE CONVERTER CLUTCH SOLENOID VALVE
39	W	SECONDARY PRESSURE SOLENOID VALVE
40	V	PRIMARY PRESSURE SOLENOID VALVE
41	B	GROUND
42	B	GROUND
45	V	BATTERY POWER SUPPLY
46	V	BATTERY POWER SUPPLY
47	BG	IGNITION POWER SUPPLY
48	BG	IGNITION POWER SUPPLY

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

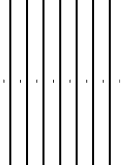


Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
8	Y	-
11	SB	-
14	P	-
15	BR	-
16	W	-

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	V	-
3	V	-
3	SB	-
4	BR	-
5	L	-
6	Y	-
7	LG	-
8	BG	-
9	W	-
10	Y	-
11	R	-
12	SB	-
13	LG	-
14	V	-
15	SB	-
16	Y	-
17	LA/BR	-
18	LA/L	-
20	BG	-
21	BG	-
22	GR	-
23	GR	-
24	P	-
25	L	-
26	BR	-
29	SHIELD	-
30	W	-
31	B	-
32	R	-

Connector No.	M15
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	- [With corner sensor]
1	Y	- [Without corner sensor]
2	B	- [Without corner sensor]
2	SB	- [With corner sensor]
7	LA/L	-
8	B	-
9	B	- [With corner sensor]
9	G	- [Without corner sensor]
10	B	- [Without corner sensor]
10	Y	- [With corner sensor]
11	B	-
15	G	-
16	B	-

JRNWD4101GB

SONAR SYSTEM

Connector No.	M24
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FW-NH

H.S.

2	4			10	12							24	26	28	30	32	34	36	38	40
1												23	25	27	29	31	33	35	37	39

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
2	Y	BATTERY POWER SUPPLY
4	SB	IGNITION SIGNAL
10	R	CAN-L
12	L	CAN-H
23	SHIELD	CAMERA IMAGE SIGNAL GROUND
24	G	CAMERA IMAGE SIGNAL
25	B	REAR CAMERA GROUND
26	R	REAR CAMERA POWER SUPPLY
27	SHIELD	REAR CAMERA IMAGE SIGNAL (-)
28	W	REAR CAMERA IMAGE SIGNAL (+)
29	Y	SIDE CAMERA DRIVER SIDE GROUND
30	L	SIDE CAMERA DRIVER SIDE POWER SUPPLY
31	SHIELD	SIDE CAMERA DRIVER SIDE IMAGE SIGNAL (-)
32	G	SIDE CAMERA DRIVER SIDE IMAGE SIGNAL (+)
33	L	SIDE CAMERA PASSENGER SIDE CAMERA GROUND
34	B	SIDE CAMERA PASSENGER SIDE CAMERA POWER SUPPLY
35	SHIELD	SIDE CAMERA PASSENGER SIDE CAMERA IMAGE SIGNAL (-)
36	Y	SIDE CAMERA PASSENGER SIDE CAMERA IMAGE SIGNAL (+)
37	V	FRONT CAMERA GROUND
38	L	FRONT CAMERA POWER SUPPLY
39	SHIELD	FRONT CAMERA IMAGE SIGNAL (-)
40	LG	FRONT CAMERA IMAGE SIGNAL (+)

Connector No.	M28
Connector Name	NAVI CONTROL UNIT
Connector Type	TH24FW-NH

H.S.

21	22	23		25					30	31	32
	34	35	36	37	38	39	40	41	42		

Terminal No.	Color Of Wire	Signal Name [Specification]
21	G	AUX AUDIO SIGNAL RH
22	Y	AUX AUDIO SIGNAL GROUND
23	L	AUX AUDIO SIGNAL LH
25	BR	REVERSE SIGNAL
30	BG	DIMMER SIGNAL
31	SB	AV COMMUNICATION SIGNAL (H)
32	LG	AV COMMUNICATION SIGNAL (L)
34	W	MICROPHONE SIGNAL
35	B	MICROPHONE VCC
36	SHIELD	MICROPHONE GROUND
37	SHIELD	SHIELD
38	SB	AV COMMUNICATION SIGNAL (H)
39	LG	AV COMMUNICATION SIGNAL (L)
40	LG	IGNITIO NSIGNAL
41	G	CAMERA IMAGE SIGNAL
42	SHIELD	CAMERA IMAGE SIGNAL GROUND

Connector No.	M42
Connector Name	COMBINATION METER
Connector Type	TH12FW-NH

H.S.

41	42	43	44	45	46
47	48	49	50	51	52

Terminal No.	Color Of Wire	Signal Name [Specification]
41	L	CAN-H
42	P	CAN-L
43	W	ILLUMINATION CONTROL SIGNAL
44	LA/B	FUEL LEVEL SENSOR GROUND
45	LA/G	BATTERY POWER SUPPLY
46	LA/BR	IGNITION SIGNAL [Without ISS]
46	V	IGNITION SIGNAL [With ISS]
47	SB	AV COMMUNICATION SIGNAL (H)
48	LG	AV COMMUNICATION SIGNAL (L)
49	Y	OIL LEVEL SENSOR SIGNAL
50	BG	OIL LEVEL SENSOR GROUND
51	LA/L	FUEL LEVEL SENSOR SIGNAL
52	B	GROUND

Connector No.	M79
Connector Name	BUZZER (FRONTWARD)
Connector Type	TH04FW-NH

H.S.

3	2

Terminal No.	Color Of Wire	Signal Name [Specification]
2	LA/BR	POWER
3	LA/L	INPUT

Connector No.	M101
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FW-NH

H.S.

2	8								28				38	38
1	3	7							27				37	37

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
2	Y	BATTERY POWER SUPPLY
3	SB	IGNITION SIGNAL
7	R	BSW INDICATOR LH
8	G	BSW INDICATOR RH
27	L	CAN-H
28	R	CAN-L
36	Y	COMMUNICATION SIGNAL (CAMERA → PUMP)
37	V	COMM GND
38	SB	COMMUNICATION SIGNAL (PUMP → CAMERA)

Connector No.	M102
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH32FW-NH

H.S.

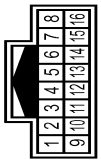
48	50	52	54	56	58	60	62	64	66	68	70	72
47	49	51	53	55	57	59	61	63	65	67	69	71

Terminal No.	Color Of Wire	Signal Name [Specification]
47	G	CAMERA IMAGE SIGNAL
48	SHIELD	CAMERA IMAGE SIGNAL GROUND
49	LG	REAR CAMERA COMMUNICATION SIGNAL
50	R	REAR CAMERA POWER SUPPLY
52	B	REAR CAMERA GROUND
53	W	REAR CAMERA IMAGE SIGNAL (+)
54	SHIELD	REAR CAMERA IMAGE SIGNAL (-)
56	L	SIDE CAMERA DRIVER SIDE POWER SUPPLY
58	Y	SIDE CAMERA DRIVER SIDE GROUND
59	G	SIDE CAMERA DRIVER SIDE IMAGE SIGNAL (+)
60	SHIELD	SIDE CAMERA DRIVER SIDE IMAGE SIGNAL (-)
62	B	SIDE CAMERA PASSENGER SIDE CAMERA POWER SUPPLY
64	L	SIDE CAMERA PASSENGER SIDE CAMERA GROUND
65	Y	SIDE CAMERA PASSENGER SIDE CAMERA IMAGE SIGNAL (+)
66	SHIELD	SIDE CAMERA PASSENGER SIDE CAMERA IMAGE SIGNAL (-)
68	L	FRONT CAMERA POWER SUPPLY
70	V	FRONT CAMERA GROUND
71	LG	FRONT CAMERA IMAGE SIGNAL (+)
72	SHIELD	FRONT CAMERA IMAGE SIGNAL (-)

JRNWD4102GB

SONAR SYSTEM

Connector No.	M182
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	- [With corner sensor]
1	Y	- [Without corner sensor]
2	B	- [Without corner sensor]
2	SB	- [With corner sensor]
7	L	-
8	B	-
9	B	- [With corner sensor]
9	R	- [Without corner sensor]
10	B	- [Without corner sensor]
10	Y	- [With corner sensor]
11	B	-
15	P	-
16	B	-

JRNWD4103GB

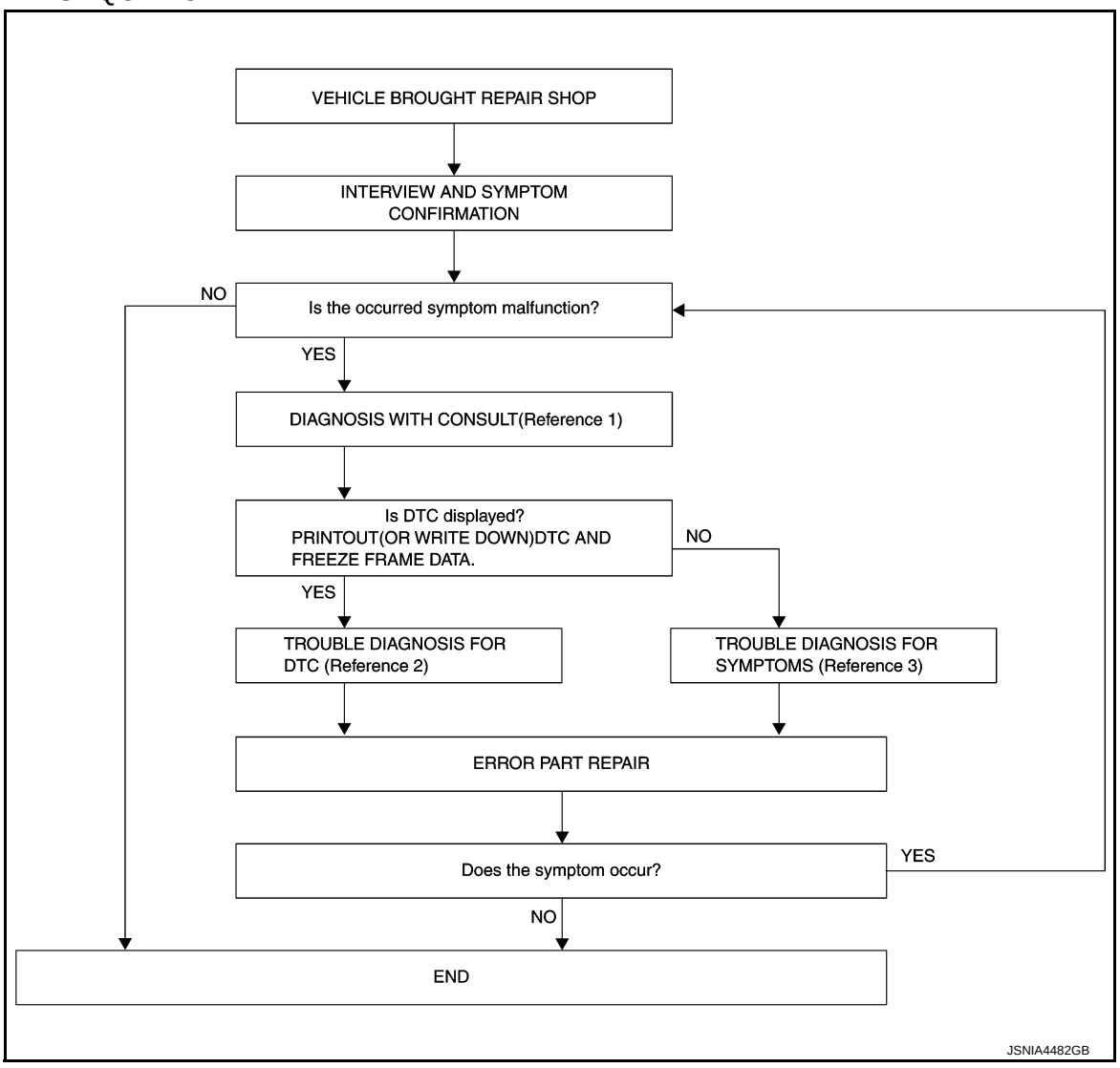
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000010736641

OVERALL SEQUENCE



- Reference 1··· Refer to SN-131, "CONSULT Function".
- Reference 2··· Refer to SN-143, "DTC Index".
- Reference 3··· Refer to SN-235, "Symptom Table".

DETAILED FLOW

1.INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check if 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.
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.

NO >> INSPECTION END

2.DIAGNOSIS WITH CONSULT

1. Connect CONSULT and perform a self-diagnosis for “SONAR”. Refer to SN-131, "CONSULT Function".
2. When DTC is detected, follow the instructions below:

- Record DTC and Freeze Frame Data.

Is DTC displayed?

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

3.TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to SN-143, "DTC Index".

>> GO TO 5.

4.TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to SN-235, "Symptom Table".

>> GO TO 5.

5.ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “SONAR” with CONSULT.
3. Check that the symptom does not occur.

Does the symptom occur?

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

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING SONAR CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING SONAR CONTROL UNIT : Description

INFOID:0000000010736642

Perform the following operations when replacing sonar control unit.
Configuration, refer to SN-156, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

CONFIGURATION (SONAR CONTROL UNIT)

CONFIGURATION (SONAR CONTROL UNIT) : Description

INFOID:0000000010736643

- Since vehicle specifications are not included in the sonar control unit after replacement, it is required to write vehicle specifications with CONSULT.
- The sonar control unit configuration includes functions as follows.

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

CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure

INFOID:0000000010736644

1.WRITE VEHICLE SPECIFICATION

CONSULT Configuration
Write vehicle specification into sonar control unit.

To write vehicle specification stored in CONSULT into the sonar control unit>>GO TO 2.
To write vehicle specification into the sonar control unit by hand>>GO TO 3.

2.WRITE STORED DATA

CONSULT Configuration
Select “After Replace ECU” in “Read/Write Configuration.” Write data stored in CONSULT with the “Before Replace ECU” function into the sonar control unit.

>> GO TO 4.

3.MANUALLY WRITE VEHICLE SPECIFICATION

CONSULT Configuration
Select “Manual Configuration”, and write the setting value as shown in the following table to sonar control unit according to the vehicle specification.

CAUTION:
Grasp vehicle specifications precisely. The control of ECU may not function normally if the specifications are misread.
NOTE:
- The items shown in this list depend on vehicle specifications.
- The config list may not be displayed depending on vehicle specifications. This is not a malfunction.
- If selection items are not displayed on the CONSULT screen, touch “NEXT”.

MANUAL SETTING ITEM		Detail
Items	Setting value	
FRONT SENSOR	NONE	Without front sonar sensor
	4 SENSORS	With front corner and center sensor

MANUAL SETTING ITEM		Detail
Items	Setting value	
LDW FUNCTION	WITHOUT	With LDW
	WITH	Without LDW
TRANSMISSION	A/T	A/T models
	M/T	M/T models

>> GO TO 4.

4. OPERATION CHECK

Check that the operation of the sonar control unit is normal.

>> WORK END

DTC/CIRCUIT DIAGNOSIS

B2720-12 CORNER SENSOR [RL]

DTC Description

INFOID:0000000010736645

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2720-12	CORNER SENSOR [RL] (Corner sensor rear-left)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and corner sensor rear LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Corner sensor rear LH circuit)
- Corner sensor rear LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2720-12 detected?

YES >> Proceed to SN-158, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736646

1.CHECK CORNER SENSOR SIGNAL REAR LH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor rear LH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B129	6	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR SIGNAL REAR LH CIRCUIT FOR SHORT (2)

Check the continuity between corner sensor rear LH harness connector and ground.

Terminals			Continuity
(+)		(–)	
Corner sensor rear LH			
Connector	Terminal		
B122	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace corner sensor rear LH. Refer to SN-240, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2720-14 CORNER SENSOR [RL]

DTC Description

INFOID:0000000010736647

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2720-14	CORNER SENSOR [RL] (Corner sensor rear-left)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and corner sensor rear LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Corner sensor rear LH circuit)
- Corner sensor rear LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2720-14 detected?

YES >> Proceed to SN-160, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736648

1.CHECK CORNER SENSOR SIGNAL REAR LH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor rear LH harness connector.
3. Check the continuity between sonar control unit harness connector and corner sensor rear LH harness connector.

Sonar control unit		Corner sensor rear LH		Continuity
Connector	Terminal	Connector	Terminal	
B129	6	B122	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR SIGNAL REAR LH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B129	6	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK REAR SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and corner sensor rear LH harness connector.

Sonar control unit		Corner sensor rear LH		Continuity
Connector	Terminal	Connector	Terminal	
B129	22	B122	1	Existed

Is the inspection result normal?

YES >> Replace corner sensor rear LH. Refer to SN-240, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2720-55 CORNER SENSOR [RL]

DTC Description

INFOID:0000000010736649

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2720-55	CORNER SENSOR [RL] (Corner sensor rear-left)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Corner sensor rear LH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2720-55 detected?

YES >> Proceed to SN-162, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736650

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-156, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-160, "DTC Description".

Is DTC B2720-55 detected again?

YES >> Replace corner sensor rear LH. Refer to SN-240, "REAR : Removal and Installation".
NO >> INSPECTION END.

B2720-92 CORNER SENSOR [RL]

DTC Description

INFOID:0000000010736651

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2720-92	CORNER SENSOR [RL] (Corner sensor rear-left)	SENSOR (Sensor)	Corner sensor rear LH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Corner sensor rear LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2720-92 detected?

YES >> Proceed to SN-163, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736652

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-160, "DTC Description".

Is DTC B2720-92 detected again?

YES >> Replace corner sensor rear LH. Refer to SN-240, "REAR : Removal and Installation".
NO >> INSPECTION END

B2721-12 CENTER SENSOR [RL]

DTC Description

INFOID:0000000010736653

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2721-12	CENTER SENSOR [RL] (Center sensor rear-left)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and center sensor rear LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Center sensor rear LH circuit)
- Center sensor rear LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2721-12 detected?

YES >> Proceed to SN-164, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736654

1.CHECK CENTER SENSOR SIGNAL REAR LH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor rear LH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B129	20	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL REAR LH CIRCUIT FOR SHORT (2)

Check the continuity between center sensor rear LH harness connector and ground.

Terminals			Continuity
(+)		(–)	
Center sensor rear LH			
Connector	Terminal		
B121	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace center sensor rear LH. Refer to SN-240, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2721-14 CENTER SENSOR [RL]

DTC Description

INFOID:0000000010736655

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2721-14	CENTER SENSOR [RL] (Center sensor rear-left)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and center sensor rear LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Center sensor rear LH circuit)
- Center sensor rear LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2721-14 detected?

YES >> Proceed to SN-166, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736656

1.CHECK CENTER SENSOR SIGNAL REAR LH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor rear LH harness connector.
3. Check the continuity between sonar control unit harness connector and center sensor rear LH harness connector.

Sonar control unit		Center sensor rear LH		Continuity
Connector	Terminal	Connector	Terminal	
B129	20	B121	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL REAR LH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B129	20	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK REAR SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and center sensor rear LH harness connector.

Sonar control unit		Center sensor rear LH		Continuity
Connector	Terminal	Connector	Terminal	
B129	22	B121	1	Existed

Is the inspection result normal?

YES >> Replace center sensor rear LH. Refer to SN-240, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2721-55 CENTER SENSOR [RL]

DTC Description

INFOID:0000000010736657

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2721-55	CENTER SENSOR [RL] (Center sensor rear-left)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Center sensor rear LH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2721-55 detected?

YES >> Proceed to SN-168, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736658

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-156, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-168, "DTC Description".

Is DTC B2721-55 detected again?

YES >> Replace center sensor rear LH. Refer to SN-240, "REAR : Removal and Installation".
NO >> INSPECTION END.

B2721-92 CENTER SENSOR [RL]

DTC Description

INFOID:0000000010736659

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2721-92	CENTER SENSOR [RL] (Center sensor rear-left)	SENSOR (Sensor)	Center sensor rear LH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Center sensor rear LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2721-92 detected?

YES >> Proceed to SN-169, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736660

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-169, "DTC Description".

Is DTC B2721-92 detected again?

YES >> Replace center sensor rear LH. Refer to SN-240, "REAR : Removal and Installation".
NO >> INSPECTION END

B2722-12 CENTER SENSOR [RR]

DTC Description

INFOID:0000000010736661

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2722-12	CENTER SENSOR [RR] (Center sensor rear-right)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and center sensor rear RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Center sensor rear RH circuit)
- Center sensor rear RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2722-12 detected?

YES >> Proceed to SN-170, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736662

1.CHECK CENTER SENSOR SIGNAL REAR RH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor rear RH connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B129	7	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL REAR RH CIRCUIT FOR SHORT (2)

Check the continuity between center sensor rear RH harness connector and ground.

Terminals			Continuity
(+)		(–)	
Center sensor rear RH			
Connector	Terminal		
B124	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace center sensor rear RH . Refer to SN-240, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2722-14 CENTER SENSOR [RR]

DTC Description

INFOID:0000000010736663

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2722-14	CENTER SENSOR [RR] (Center sensor rear-right)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and center sensor rear RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Center sensor rear RH circuit)
- Center sensor rear RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2722-14 detected?

YES >> Proceed to SN-172, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736664

1.CHECK CENTER SENSOR SIGNAL REAR RH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor rear RH harness connector.
3. Check the continuity between sonar control unit harness connector and center sensor rear RH harness connector.

Sonar control unit		Center sensor rear RH		Continuity
Connector	Terminal	Connector	Terminal	
B129	7	B124	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL REAR RH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B129	7	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK REAR SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and center sensor rear RH harness connector.

Sonar control unit		Center sensor rear RH		Continuity
Connector	Terminal	Connector	Terminal	
B129	22	B124	1	Existed

Is the inspection result normal?

YES >> Replace center sensor rear RH . Refer to SN-240, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2722-55 CENTER SENSOR [RR]

DTC Description

INFOID:0000000010736665

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2722-55	CENTER SENSOR [RR] (Center sensor rear-right)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Center sensor rear RH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2722-55 detected?

YES >> Proceed to SN-174, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736666

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-156, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-174, "DTC Description".

Is DTC B2722-55 detected again?

YES >> Replace center sensor rear RH . Refer to SN-240, "REAR : Removal and Installation".
NO >> INSPECTION END.

B2722-92 CENTER SENSOR [RR]

DTC Description

INFOID:0000000010736667

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2722-92	CENTER SENSOR [RR] (Center sensor rear-right)	SENSOR (Sensor)	Center sensor rear RH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Center sensor rear RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2722-92 detected?

YES >> Proceed to SN-175, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736668

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-175, "DTC Description".

Is DTC B2722-92 detected again?

YES >> Replace center sensor rear RH . Refer to SN-240, "REAR : Removal and Installation".
NO >> INSPECTION END

B2723-12 CORNER SENSOR [RR]

DTC Description

INFOID:0000000010736669

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2723-12	CORNER SENSOR [RR] (Corner sensor rear-right)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and corner sensor rear RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Corner sensor rear RH circuit)
- Corner sensor rear RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2723-12 detected?

YES >> Proceed to SN-176, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736670

1.CHECK CORNER SENSOR REAR RH SIGNAL CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor rear RH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B129	21	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR REAR RH SIGNAL CIRCUIT FOR SHORT (2)

Check the continuity between corner sensor rear RH harness connector and ground.

Terminals			Continuity
(+)		(–)	
Corner sensor rear RH			
Connector	Terminal		
B123	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace corner sensor rear RH. Refer to SN-240, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2723-14 CORNER SENSOR [RR]

DTC Description

INFOID:0000000010736671

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2723-14	CORNER SENSOR [RR] (Corner sensor rear-right)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and corner sensor rear RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Corner sensor rear RH circuit)
- Corner sensor rear RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2723-14 detected?

YES >> Proceed to SN-178, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736672

1.CHECK CORNER SENSOR REAR RH SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor rear RH harness connector.
3. Check the continuity between sonar control unit harness connector and corner sensor rear RH harness connector.

Sonar control unit		Corner sensor rear RH		Continuity
Connector	Terminal	Connector	Terminal	
B129	21	B123	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR REAR RH SIGNAL CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B129	21	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3. CHECK CORNER SENSOR REAR RH GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and corner sensor rear RH harness connector.

Sonar control unit		Corner sensor rear RH		Continuity
Connector	Terminal	Connector	Terminal	
B129	22	B123	1	Existed

Is the inspection result normal?

YES >> Replace corner sensor rear RH. Refer to SN-240, "REAR : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2723-55 CORNER SENSOR [RR]

DTC Description

INFOID:0000000010736673

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2723-55	CORNER SENSOR [RR] (Corner sensor rear-right)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Corner sensor rear RH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2723-55 detected?

YES >> Proceed to SN-180, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736674

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-156, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-180, "DTC Description".

Is DTC B2723-55 detected again?

YES >> Replace corner sensor rear RH. Refer to SN-240, "REAR : Removal and Installation".
NO >> INSPECTION END.

B2723-92 CORNER SENSOR [RR]

DTC Description

INFOID:0000000010736675

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2723-92	CORNER SENSOR [RR] (Corner sensor rear-right)	SENSOR (Sensor)	Corner sensor rear RH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Corner sensor rear RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2723-92 detected?

YES >> Proceed to SN-181, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736676

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-181, "DTC Description".

Is DTC B2723-92 detected again?

YES >> Replace corner sensor rear RH. Refer to SN-240, "REAR : Removal and Installation".
NO >> INSPECTION END

B2724-55 SONAR CONTROL UNIT

DTC Description

INFOID:0000000010736677

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)	Detecting condition
B2724-55	SONAR CONTROL UNIT (Sonar control unit)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2724-55 detected?

YES >> Proceed to SN-182, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736678

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-156, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-182, "DTC Description".

Is DTC B2724-55 detected again?

YES >> Replace sonar control unit. Refer to SN-237, "Removal and Installation".
NO >> INSPECTION END

B2725-12 REAR BUZZER

DTC Description

INFOID:0000000010920190

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detection condition
B2725-12	REAR BUZZER (Rear buzzer)	SHORT-BAT (Short to battery)	A short circuit is detected in harness between sonar control unit and buzzer (backward) with an obstacle detected.

POSSIBLE CAUSE

Harness between sonar control unit and buzzer (backward)

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC “B2725-12” detected?

YES >> Proceed to SN-183, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010920191

1.CHECK BUZZER (BACKWARD) POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and buzzer (backward) connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit harness connector and ground.

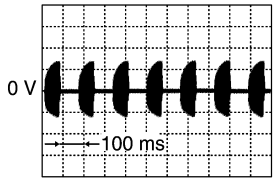
Sonar control unit		Ground	Standard	Reference value (Approx.)
Connector	Terminal			
B129	15		—	0 V

Is the inspection result normal?

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

2.CHECK BUZZER DRIVE SIGNAL CIRCUIT

Check voltage between sonar control unit harness connector and ground.

Sonar control unit			Standard	Reference value (Approx.)
Connector	Terminal			
B129	9	Ground	—	**NOTE:** • Voltage depends on volume. • Cycle depends on distance between sensor and obstacle.  JSNIA5232GB

Is the inspection result normal?

YES >> Replace buzzer (backward). Refer to SN-242, "REAR : Removal and Installation".
NO >> Repair harness or connector.

B2725-14 REAR BUZZER

DTC Description

INFOID:0000000010920192

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detection condition
B2725-14	REAR BUZZER (Rear buzzer)	OPEN/SHORT-GND (Open/Short to ground)	A break in harness between sonar control unit and buzzer (backward) or a short circuit between sonar control unit and ground is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Harness between sonar control unit and buzzer (backward)

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC “B2725-14” detected?

YES >> Proceed to SN-185, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010920193

1.CHECK CONTINUITY BUZZER (BACKWARD) POWER SUPPLY CIRCUIT

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

Sonar control unit		Buzzer (backward)		Continuity
Connector	Terminal	Connector	Terminal	
B129	15	B66	2	Existed

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
B129	15		Not existed

Is the inspection result normal?

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

2.CHECK CONTINUITY BUZZER DRIVE SIGNAL CIRCUIT

1. Check continuity between sonar control unit harness connector and buzzer (backward) harness connector.

Sonar control unit		Buzzer (backward)		Continuity
Connector	Terminal	Connector	Terminal	
B129	9	B66	3	Existed

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
B129	9		Not existed

Is the inspection result normal?

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

3.CHECK CONTINUITY SONAR CONTROL UNIT

1. Check continuity between terminals of sonar control unit.

Sonar control unit		Continuity.
Terminal		
15	9	Not existed

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

Sonar control unit	Ground	Continuity
Terminal		
15		Not existed
9		

Is the inspection result normal?

YES >> Replace buzzer (backward). Refer to SN-242, "REAR : Removal and Installation".
NO >> Replace sonar control unit. Refer to SN-237, "Removal and Installation".

B2728-11 LED

DTC Description

INFOID:0000000011009383

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detection condition
B2728-11	LED (Light emitting diode)	SHORT-GND (Short to ground)	Short circuit to ground is detected in harness between sonar control unit and sonar system switch when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness between sonar control unit and sonar system switch
- Sonar control unit

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2728-11 detected?

YES >> Proceed to SN-187, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011009384

1.CHECK SONAR SYSTEM SWITCH INDICATOR SIGNAL CIRCUIT FOR SHORT

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
B129	17		Not existed

Is the inspection result normal?

YES >> Replace sonar control unit. Refer to SN-237, "Removal and Installation".
NO >> Repair harness or connector.

B2728-12 LED

DTC Description

INFOID:0000000011009385

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detection condition
B2728-12	LED (Light emitting diode)	SHORT-BAT (Short to battery)	Short circuit to battery is detected in harness between sonar control unit and sonar system switch when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness between sonar control unit and sonar system switch
- Sonar control unit

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2728-12 detected?

YES >> Proceed to SN-73, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011009386

1.CHECK SONAR SYSTEM SWITCH INDICATOR SIGNAL CIRCUIT FOR SHORT

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

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B129	17	Ground	0 V

Is the inspection result normal?

YES >> Replace sonar control unit. Refer to SN-237, "Removal and Installation".
NO >> Repair harness or connector.

B2728-14 LED

DTC Description

INFOID:0000000011009387

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detection condition
B2728-14	LED (Light emitting diode)	OPEN/SHORT-GND (open/short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and sonar system switch when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness between sonar control unit and sonar system switch
- Sonar control unit
- Sonar system switch

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2728-14 detected?

YES >> Proceed to SN-74, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011009388

1.CHECK SONAR SYSTEM SWITCH INDICATOR SIGNAL CIRCUIT FOR SHORT

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
B129	17		Not existed

Is the inspection result normal?

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

2.CHECK SONAR SYSTEM SWITCH INDICATOR SIGNAL CIRCUIT FOR OPEN

Check the continuity between sonar control unit harness connector and sonar system switch harness connector.

Sonar control unit		Sonar system switch		Continuity
Connector	Terminal	Connector	Terminal	
B129	17	M142	5	Existed

Is the inspection result normal?

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

3.CHECK SONAR SYSTEM SWITCH INDICATOR SIGNAL GROUND CIRCUIT

Check the continuity between sonar system switch harness connector and ground.

Sonar system switch		Ground	Continuity
Connector	Terminal		
M142	6		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK SONAR SYSTEM SWITCH

Check the sonar system switch. Refer to SN-190, "Component Inspection".

Is the inspection result normal?

YES >> Replace sonar control unit. Refer to SN-237, "Removal and Installation".
NO >> Replace sonar system switch. Refer to SN-238, "Removal and Installation".

Component Inspection

INFOID:0000000011009618

1.CHECK SONAR SYSTEM SWITCH (1)

1. Turn ignition switch OFF.
2. Remove sonar system switch. Refer to SN-112, "Removal and Installation".
3. Check the continuity between sonar system switch terminals.

Sonar system switch		Continuity
Terminals		
(+)	(–)	
Terminal		
5	6	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace sonar system switch. Refer to SN-112, "Removal and Installation".

2.CHECK SONAR SYSTEM SWITCH (2)

Check the continuity between sonar system switch terminals as per the following condition.

Sonar system switch		Condition		Continuity
Terminal				
1	2	Sonar system switch	Press	Existed
			Except for above	Not existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace sonar system switch. Refer to SN-112, "Removal and Installation".

B2729-12 CORNER SENSOR [FL]

DTC Description

INFOID:0000000010736679

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2729-12	CORNER SENSOR [FL] (Corner sensor front-left)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and corner sensor front LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Corner sensor front LH circuit)
- Corner sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2729-12 detected?

YES >> Proceed to SN-191, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736680

1.CHECK CORNER SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor front LH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B128	37	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT (2)

Check the continuity between corner sensor front LH harness connector ground.

Terminals			Continuity
(+)		(–)	
Corner sensor front LH			
Connector	Terminal		
E132	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace corner sensor front LH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2729-14 CORNER SENSOR [FL]

DTC Description

INFOID:0000000010736681

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2729-14	CORNER SENSOR [FL] (Corner sensor front-left)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and corner sensor front LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Corner sensor front LH circuit)
- Corner sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2729-14 detected?

YES >> Proceed to SN-193, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736682

1.CHECK CORNER SENSOR SIGNAL FRONT LH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor front LH harness connector.
3. Check the continuity between sonar control unit harness connector and corner sensor front LH harness connector.

Sonar control unit		Corner sensor front LH		Continuity
Connector	Terminal	Connector	Terminal	
B128	37	E132	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B128	37	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK FRONT SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and corner sensor front LH harness connector.

Sonar control unit		Corner sensor front LH		Continuity
Connector	Terminal	Connector	Terminal	
B128	36	E132	1	Existed

Is the inspection result normal?

YES >> Replace corner sensor front LH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2729-55 CORNER SENSOR [FL]

DTC Description

INFOID:0000000010736683

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2729-55	CORNER SENSOR [FL] (Corner sensor front-left)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Corner sensor front LH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2729-55 detected?

YES >> Proceed to SN-195, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736684

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-156, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-156, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

Is DTC B2729-55 detected again?

YES >> Replace corner sensor front LH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> INSPECTION END.

B2729-92 CORNER SENSOR [FL]

DTC Description

INFOID:0000000010736685

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B2729-92	CORNER SENSOR [FL] (Corner sensor front-left)	SENSOR (Sensor)	Corner sensor front LH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Corner sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B2729-92 detected?

YES >> Proceed to SN-196, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736686

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-196, "DTC Description".

Is DTC B2729-92 detected again?

YES >> Replace corner sensor front LH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> INSPECTION END

B272A-12 CENTER SENSOR [FL]

DTC Description

INFOID:0000000010920194

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272A-12	CENTER SENSOR [FL] (Center sensor front-left)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and center sensor front LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Center sensor front LH circuit)
- Center sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272A-12 detected?

YES >> Proceed to SN-197, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010920195

1.CHECK CENTER SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor front LH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B128	29	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT (2)

Check the continuity between center sensor front LH harness connector ground.

Terminals			Continuity
(+)		(–)	
Center sensor front LH			
Connector	Terminal		
E131	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace center sensor front LH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272A-14 CENTER SENSOR [FL]

DTC Description

INFOID:0000000010920196

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272A-14	CENTER SENSOR [FL] (Center sensor front-left)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and center sensor front LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (Center sensor front LH circuit)
- Center sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272A-14 detected?

YES >> Proceed to SN-199, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010920197

1.CHECK CENTER SENSOR SIGNAL FRONT LH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor front LH harness connector.
3. Check the continuity between sonar control unit harness connector and center sensor front LH harness connector.

Sonar control unit		Center sensor front LH		Continuity
Connector	Terminal	Connector	Terminal	
B128	29	E131	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B128	29	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK FRONT SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and center sensor front LH harness connector.

Sonar control unit		Center sensor front LH		Continuity
Connector	Terminal	Connector	Terminal	
B128	36	E131	1	Existed

Is the inspection result normal?

YES >> Replace center sensor front LH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272A-55 CENTER SENSOR [FL]

DTC Description

INFOID:0000000010920198

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272A-55	CENTER SENSOR [FL] (Center sensor front-left)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Center sensor front LH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272A-55 detected?

YES >> Proceed to SN-201, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010920199

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-156, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-201, "DTC Description".

Is DTC B272A-55 detected again?

YES >> Replace center sensor front LH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> INSPECTION END.

B272A-92 CENTER SENSOR [FL]

DTC Description

INFOID:0000000010920200

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272A-92	CENTER SENSOR [FL] (Center sensor front-left)	SENSOR (Sensor)	Center sensor front LH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Center sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272A-92 detected?

YES >> Proceed to SN-202, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010920201

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-202, "DTC Description".

Is DTC B272A-92 detected again?

YES >> Replace center sensor front LH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> INSPECTION END

B272B-12 CENTER SENSOR [FR]

DTC Description

INFOID:0000000010920202

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272B-12	CENTER SENSOR [FR] (Center sensor front-right)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and center sensor front RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (center sensor front RH circuit)
- Center sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272B-12 detected?

YES >> Proceed to SN-203, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010920203

1.CHECK CENTER SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor front RH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B128	38	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT (2)

Check the continuity between center sensor front RH harness connector and ground.

Terminals			Continuity
(+)		(–)	
Center sensor front RH			
Connector	Terminal		
E133	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace center sensor front RH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272B-14 CENTER SENSOR [FR]

DTC Description

INFOID:0000000010920204

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272B-14	CENTER SENSOR [FR] (Center sensor front-right)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and center sensor front RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (center sensor front RH circuit)
- Center sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272B-14 detected?

YES >> Proceed to SN-205, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010920205

1.CHECK CENTER SENSOR SIGNAL FRONT RH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and center sensor front RH harness connector.
3. Check the continuity between sonar control unit harness connector and center sensor front RH harness connector.

Sonar control unit		Center sensor front RH		Continuity
Connector	Terminal	Connector	Terminal	
B128	38	E133	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CENTER SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B128	38	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK FRONT SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and center sensor front RH harness connector.

Sonar control unit		Center sensor front RH		Continuity
Connector	Terminal	Connector	Terminal	
B128	36	E133	1	Existed

Is the inspection result normal?

YES >> Replace center sensor front RH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272B-55 CENTER SENSOR [FR]

DTC Description

INFOID:0000000010920206

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272B-55	CENTER SENSOR [FR] (Center sensor front-right)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Center sensor front RH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272B-55 detected?

YES >> Proceed to SN-207, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010920207

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-156, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-207, "DTC Description".

Is DTC B272B-55 detected again?

YES >> Replace center sensor front RH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> INSPECTION END.

B272B-92 CENTER SENSOR [FR]

DTC Description

INFOID:0000000010920208

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272B-92	CENTER SENSOR [FR] (Center sensor front-right)	SENSOR (Sensor)	Center sensor front RH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Center sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272B-92 detected?

YES >> Proceed to SN-208, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010920209

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-208, "DTC Description".

Is DTC B272B-92 detected again?

YES >> Replace center sensor front RH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> INSPECTION END

B272C-12 CORNER SENSOR [FR]

DTC Description

INFOID:0000000010736687

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272C-12	CORNER SENSOR [FR] (Corner sensor front-right)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and corner sensor front RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (corner sensor front RH circuit)
- Corner sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272C-12 detected?

YES >> Proceed to SN-209, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736688

1.CHECK CORNER SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor front RH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B128	30	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT (2)

Check the continuity between corner sensor front RH harness connector and ground.

Terminals			Continuity
(+)		(–)	
Corner sensor front RH			
Connector	Terminal		
E134	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace corner sensor front RH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272C-14 CORNER SENSOR [FR]

DTC Description

INFOID:0000000010736689

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272C-14	CORNER SENSOR [FR] (Corner sensor front-right)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and corner sensor front RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (corner sensor front RH circuit)
- Corner sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272C-14 detected?

YES >> Proceed to SN-211, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736690

1.CHECK CORNER SENSOR SIGNAL FRONT RH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and corner sensor front RH harness connector.
3. Check the continuity between sonar control unit harness connector and corner sensor front RH harness connector.

Sonar control unit		Corner sensor front RH		Continuity
Connector	Terminal	Connector	Terminal	
B128	30	E134	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK CORNER SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B128	30	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK FRONT SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and corner sensor front RH harness connector.

Sonar control unit		Corner sensor front RH		Continuity
Connector	Terminal	Connector	Terminal	
B128	36	E134	1	Existed

Is the inspection result normal?

YES >> Replace corner sensor front RH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272C-55 CORNER SENSOR [FR]

DTC Description

INFOID:0000000010736691

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272C-55	CORNER SENSOR [FR] (Corner sensor front-right)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Corner sensor front RH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272C-55 detected?

YES >> Proceed to SN-213, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736692

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-156, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-213, "DTC Description".

Is DTC B272C-55 detected again?

YES >> Replace corner sensor front RH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> INSPECTION END.

B272C-92 CORNER SENSOR [FR]

DTC Description

INFOID:0000000010736693

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272C-92	CORNER SENSOR [FR] (Corner sensor front-right)	SENSOR (Sensor)	Corner sensor front RH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Corner sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272C-92 detected?

YES >> Proceed to SN-214, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736694

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-214, "DTC Description".

Is DTC B272C-92 detected again?

YES >> Replace corner sensor front RH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> INSPECTION END

B272D-12 FRONT BUZZER

DTC Description

INFOID:0000000010736699

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detection condition
B272D-12	FRONT BUZZER (Front buzzer)	SHORT-BAT (Short to battery)	A short circuit is detected in harness between sonar control unit and buzzer (frontward) with an obstacle detected.

POSSIBLE CAUSE

Harness between sonar control unit and buzzer (frontward)

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272D-12 detected?

YES >> Proceed to SN-215, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736700

1.CHECK BUZZER (FRONTWARD) POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and buzzer (frontward) connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit harness connector and ground.

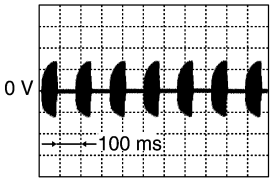
Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
B129	2		0 V

Is the inspection result normal?

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

2.CHECK BUZZER DRIVE SIGNAL CIRCUIT

Check voltage between sonar control unit harness connector and ground.

Sonar control unit			Standard	Reference value (Approx.)
Connector	Terminal			
B129	10	Ground	—	**NOTE:** • Voltage depends on volume. • Cycle depends on distance between sensor and obstacle.  JSNIA5232GB

Is the inspection result normal?

YES >> Replace buzzer (frontward). Refer to SN-242, "FRONT : Removal and Installation".
NO >> Repair harness or connector.

B272D-14 FRONT BUZZER

DTC Description

INFOID:0000000010736701

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detection condition
B272D-14	FRONT BUZZER (Front buzzer)	OPEN/SHORT-GND (Open/Short to ground)	A break in harness between sonar control unit and buzzer (frontward) or a short circuit between sonar control unit and ground is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Harness between sonar control unit and buzzer (frontward)

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272D-14 detected?

YES >> Proceed to SN-217, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736702

1.CHECK CONTINUITY BUZZER (FRONTWARD) POWER SUPPLY CIRCUIT

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

Sonar control unit		Buzzer (frontward)		Continuity
Connector	Terminal	Connector	Terminal	
B129	2	M79	2	Existed

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
B129	2		Not existed

Is the inspection result normal?

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

2.CHECK CONTINUITY BUZZER DRIVE SIGNAL CIRCUIT

1. Check continuity between sonar control unit harness connector and buzzer (frontward) harness connector.

Sonar control unit		Buzzer (frontward)		Continuity
Connector	Terminal	Connector	Terminal	
B129	10	M79	3	Existed

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
B129	10		Not existed

Is the inspection result normal?

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

3.CHECK CONTINUITY SONAR CONTROL UNIT

1. Check continuity between terminals of sonar control unit.

Sonar control unit		Continuity.
Terminal		
2	10	Not existed

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

Sonar control unit	Ground	Continuity
Terminal		
2		Not existed
10		

Is the inspection result normal?

YES >> Replace buzzer (frontward). Refer to SN-242, "FRONT : Removal and Installation".
NO >> Replace sonar control unit. Refer to SN-237, "Removal and Installation".

B272E-12 SIDE SENSOR [FL]

DTC Description

INFOID:0000000010776920

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272E-12	SIDE SENSOR [FL] (Side sensor front-left)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and side sensor front LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (side sensor front LH circuit)
- Side sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272E-12 detected?

YES >> Proceed to SN-225, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010776921

1.CHECK SIDE SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and side sensor front LH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B128	28	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK SIDE SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT (2)

Check the continuity between side sensor front LH harness connector and ground.

Terminals			Continuity
(+)		(–)	
Side sensor front LH			
Connector	Terminal		
E171	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace side sensor front LH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272E-14 SIDE SENSOR [FL]

DTC Description

INFOID:0000000010776922

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272E-14	SIDE SENSOR [FL] (Side sensor front-left)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and side sensor front LH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (side sensor front LH circuit)
- Side sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272E-14 detected?

YES >> Proceed to SN-227, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010776923

1.CHECK SIDE SENSOR SIGNAL FRONT LH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and side sensor front LH harness connector.
3. Check the continuity between sonar control unit harness connector and side sensor front LH harness connector.

Sonar control unit		Side sensor front LH		Continuity
Connector	Terminal	Connector	Terminal	
B128	28	E171	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK SIDE SENSOR SIGNAL FRONT LH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B128	28	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK FRONT SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and side sensor front LH harness connector.

Sonar control unit		Side sensor front LH		Continuity
Connector	Terminal	Connector	Terminal	
B128	36	E171	3	Existed

Is the inspection result normal?

YES >> Replace side sensor front LH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272E-55 SIDE SENSOR [FL]

DTC Description

INFOID:0000000010776924

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272E-55	SIDE SENSOR [FL] (Side sensor front-left)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Side sensor front LH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272E-55 detected?

YES >> Proceed to SN-229, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010776925

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-156, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-229, "DTC Description".

Is DTC B272E-55 detected again?

YES >> Replace side sensor front LH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> INSPECTION END.

B272E-92 SIDE SENSOR [FL]

DTC Description

INFOID:0000000010776926

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272E-92	SIDE SENSOR [FR] (Side sensor front-left)	SENSOR (Sensor)	Side sensor front LH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

Side sensor front LH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272E-92 detected?

YES >> Proceed to SN-230, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010776927

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-230, "DTC Description".

Is DTC B272E-92 detected again?

YES >> Replace side sensor front LH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> INSPECTION END

B272F-12 SIDE SENSOR [FR]

DTC Description

INFOID:0000000010777009

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272F-12	SIDE SENSOR [FR] (Side sensor front-right)	SHORT-BAT (Short to battery)	Short circuit to power supply is detected in harness between sonar control unit and side sensor front RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (side sensor front RH circuit)
- Side sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272F-12 detected?

YES >> Proceed to SN-225, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010777010

1.CHECK SIDE SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT (1)

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and side sensor front RH harness connector.
3. Turn ignition switch ON.
4. Check the voltage between sonar control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B128	39	Ground	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK SIDE SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT (2)

Check the continuity between side sensor front RH harness connector and ground.

Terminals			Continuity
(+)		(–)	
Side sensor front RH			
Connector	Terminal		
E172	2	Ground	Not existed

Is the inspection result normal?

YES >> Replace side sensor front RH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272F-14 SIDE SENSOR [FR]

DTC Description

INFOID:0000000010777011

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272F-14	SIDE SENSOR [FR] (Side sensor front-right)	OPEN/SHORT-GND (Open/Short to ground)	Short circuit to ground or open circuit is detected in harness between sonar control unit and side sensor front RH when ignition switch is turned ON.

POSSIBLE CAUSE

- Harness or connectors (side sensor front RH circuit)
- Side sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272F-14 detected?

YES >> Proceed to SN-227, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010777012

1.CHECK SIDE SENSOR SIGNAL FRONT RH CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect sonar control unit harness connector and side sensor front RH harness connector.
3. Check the continuity between sonar control unit harness connector and side sensor front RH harness connector.

Sonar control unit		Side sensor front RH		Continuity
Connector	Terminal	Connector	Terminal	
B128	39	E172	2	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK SIDE SENSOR SIGNAL FRONT RH CIRCUIT FOR SHORT

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

Terminals			Continuity
(+)		(–)	
Sonar control unit			
Connector	Terminal		
B128	39	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK FRONT SENSOR GROUND CIRCUIT

Check the continuity between sonar control unit harness connector and side sensor front RH harness connector.

Sonar control unit		Side sensor front RH		Continuity
Connector	Terminal	Connector	Terminal	
B128	36	E172	3	Existed

Is the inspection result normal?

YES >> Replace side sensor front RH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B272F-55 SIDE SENSOR [FR]

DTC Description

INFOID:0000000010777013

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272F-55	SIDE SENSOR [FR] (Side sensor front-right)	CONFIG ERROR (Configuration error)	Control unit setting of sonar control unit is incomplete or is not set normally.

POSSIBLE CAUSE

- Side sensor front RH
- Control unit setting of sonar control unit is incomplete

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272F-55 detected?

YES >> Proceed to SN-229, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010777014

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

Perform configuration of sonar control unit. Refer to SN-156, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to SN-229, "DTC Description".

Is DTC B272F-55 detected again?

YES >> Replace side sensor front RH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> INSPECTION END.

B272F-92 SIDE SENSOR [FR]

DTC Description

INFOID:0000000010777015

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)		Detecting condition
B272F-92	SIDE SENSOR [FR] (Side sensor front-right)	SENSOR (Sensor)	Side sensor front RH malfunction is detected when ignition switch is turned ON.

POSSIBLE CAUSE

- Side sensor front RH

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC B272F-92 detected?

YES >> Proceed to SN-230, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010777016

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-230, "DTC Description".

Is DTC B272F-92 detected again?

YES >> Replace side sensor front RH. Refer to SN-239, "FRONT : Removal and Installation".
NO >> INSPECTION END

U1000-01 CAN COMM CIRCUIT

DTC Description

INFOID:0000000010736695

DESCRIPTION

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-41, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)	Detecting condition
U1000	CAN COMM CIRCUIT (CAN communication circuit)	Sonar control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.

POSSIBLE CAUSE

CAN communication system

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 2 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC U1000 detected?

YES >> Proceed to SN-231, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736696

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-231, "DTC Description".

Is DTC U1000 detected again?

YES >> Perform the trouble diagnosis for CAN communication system. Refer to LAN-17, "Trouble Diagnosis Flow Chart".
NO >> INSPECTION END

U1010-49 CONTROL UNIT (CAN)

DTC Description

INFOID:0000000010736697

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)	Detecting condition
U1010-49	CONTROL UNIT (CAN) [Control unit (CAN)]	Malfunction is detected during initial diagnosis of the sonar control unit CAN controller.

POSSIBLE CAUSE

Sonar control unit

FAIL-SAFE

- Obstacle detection function is stopped
- Alarm display is displayed on the information display of combination meter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 2 seconds or more.
4. Select “Self Diagnostic Result” mode of “SONAR” using CONSULT.
5. Check DTC.

Is DTC U1010-49 detected?

YES >> Proceed to SN-232, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000010736698

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to SN-232, "DTC Description".

Is DTC U1010-49 detected again?

YES >> Replace sonar control unit. Refer to SN-237, "Removal and Installation".
NO >> INSPECTION END

POWER SUPPLY AND GROUND CIRCUIT
SONAR CONTROL UNIT

SONAR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000010736703

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ON or START	#30

Is the inspection result normal?

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

2.CHECK IGNITION POWER SUPPLY CIRCUIT

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

Terminals			Condition	Standard	Reference value
(+)		(–)			
Sonar control unit					
Connector	Terminal				
B129	14	Ground	Ignition switch ON	9.0 - 16.0 V	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 the continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
B128	13		Existed

Is the inspection result normal?

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

SONAR SYSTEM SWITCH CIRCUIT

Description

INFOID:0000000010828083

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

Diagnosis Procedure

INFOID:0000000010828084

1.CHECK HARNESS SONAR SYSTEM SWITCH SIGNAL CIRCUIT

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

Sonar control unit		Sonar system switch		Continuity
Connector	Terminal	Connector	Terminal	
B128	16	M142	16	Existed

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
B128	16		Not existed

Is the inspection result normal?

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

2.CHECK HARNESS SONAR SYSTEM SWITCH GROUND CIRCUIT

Check the continuity between sonar system switch harness connector and ground.

Sonar system switch		Ground	Continuity
Connector	Terminal		
M142	2		Existed

Is the inspection result normal?

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

3.CHECK VOLTAGE SONAR CONTROL UNIT

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

(+)		(–)	Voltage (Approx.)
Sonar control unit			
Connector	Terminal		
B128	16	Ground	12.0 V

Is the inspection result normal?

YES >> Replace sonar system switch. Refer to SN-238, "Removal and Installation".
NO >> Replace sonar control unit. Refer to SN-237, "Removal and Installation".

SYMPTOM DIAGNOSIS

SONAR SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000010792966

Symptom	Check item		Diagnosis method
All sonar sensors do not activate.	—		Check sonar control unit power supply and ground circuit. Refer to SN-233, "SONAR CONTROL UNIT : Diagnosis Procedure". When there is no malfunction in those components, replace the sonar control unit. Refer to SN-237, "Removal and Installation".
Front sonar sensors do not activate.	Buzzer does not beeps when indicating “On” on “FRONT BUZZER” screen of the ACTIVE TEST. Refer to SN-131, "CONSULT Function".	Buzzer is beeped.	Check front sensor ground circuit. Refer to SN-191, "Diagnosis Procedure".
		Buzzer is not beeped.	Check front buzzer drive signal circuit. Refer to SN-215, "Diagnosis Procedure".
Rear sonar sensors do not activate.	Buzzer does not beeps when indicating “On” on “REAR BUZZER” screen of the ACTIVE TEST. Refer to SN-131, "CONSULT Function".	Buzzer is beeped.	Check rear sensor ground circuit. Refer to SN-158, "Diagnosis Procedure".
		Buzzer is not beeped.	Check front rear buzzer drive signal circuit. Refer to SN-215, "Diagnosis Procedure".

NORMAL OPERATING CONDITION

Description

INFOID:0000000010736705

Symptom	Possible cause
Unstable object detection	• The vehicle is on a rough surface, such as stone or gravel. • When used in poor weather conditions, such as heavy snow/rain or strong wind. • When subjected to an ultrasonic noise generated from exhaust muffler or brakes. • When left standing in the hot sun or in a cold climate. • When the surface of the sensor is frozen or covered with snow/dirt/moisture. • When a retrofitted xenon lamp, lighted license plate, or harness is close to the sensor body or sensor harness. • When subjected to loop coil noises generated from a vehicle detector placed at an intersection or coin parking area.
Object undetectable	• Air-containing objects, such as cloth, cotton, glass wool, dust, and snow. • Thin objects, such as rope, chain, and wire. • Smooth-faced objects placed in a slanting direction. • Fast-moving small animals. • A corner of an angular object. **NOTE:** If the sensor detection part is scratched, obstacles cannot be detected.

REMOVAL AND INSTALLATION

SONAR CONTROL UNIT

Removal and Installation

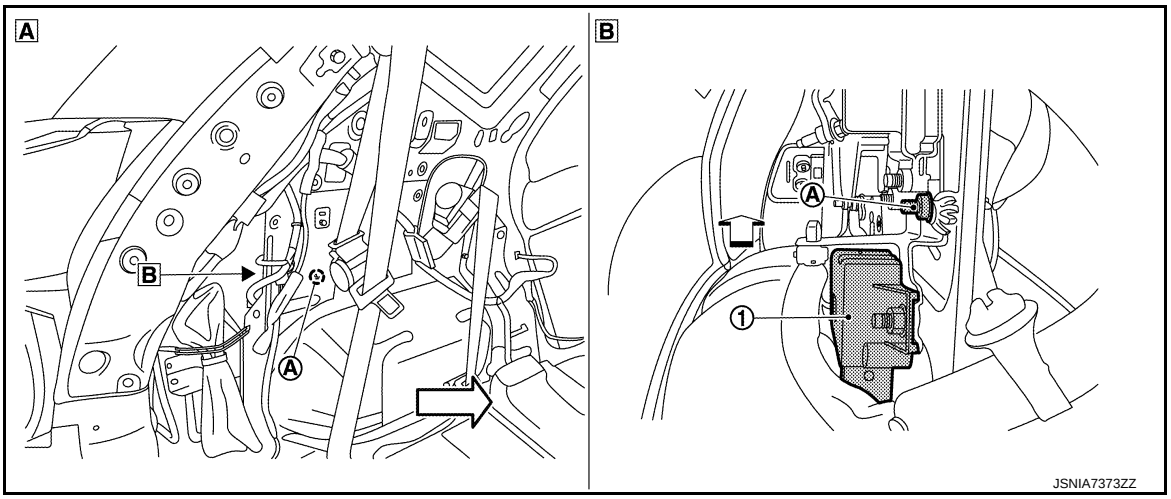
INFOID:0000000010792967

REMOVAL

CAUTION:

Before replacing sonar control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to SN-156, "ADDITIONAL SERVICE WHEN REPLACING SONAR CONTROL UNIT : Description".

1. Remove luggage side lower finisher LH. Refer to INT-43, "LUGGAGE SIDE LOWER FINISHER : Removal and Installation".
2. Remove sonar control unit mounting bolt Ⓐ, And than remove sonar control unit ① from the vehicle.

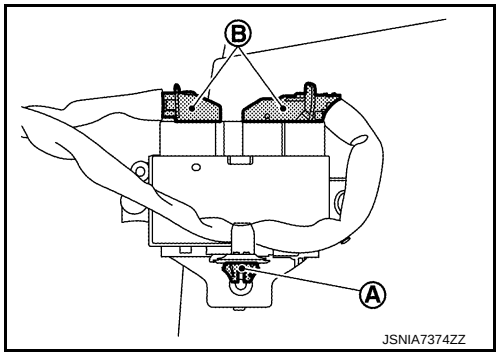


A Luggage room left side

B Luggage panel inside

⇦ : Vehicle front

3. Remove the harness clip Ⓐ and disconnect connectors Ⓑ.
4. Remove bracket from sonar control unit.



INSTALLATION

Install in the reverse order of removal.

CAUTION:

Be sure to perform “Read/Write Configuration” when replacing sonar control unit. For details, refer to SN-156, "CONFIGURATION (SONAR CONTROL UNIT) : Work Procedure".

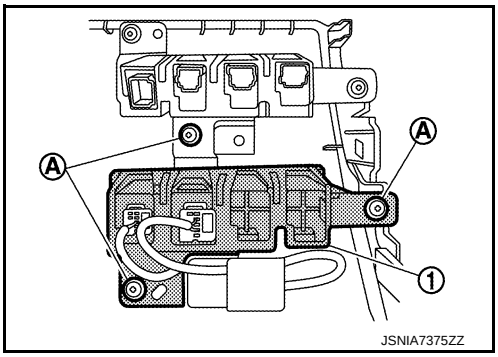
SONAR SYSTEM SWITCH

Removal and Installation

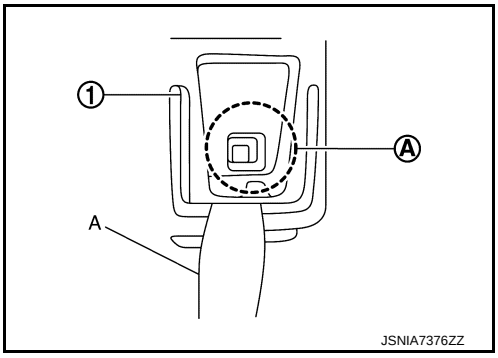
INFOID:0000000010792968

REMOVAL

1. Remove the instrument lower panel LH (LHD models) or RH (RHD models). Refer to following.
   - LHD models: IP-13, "Exploded View"
   - RHD models: IP-40, "Exploded View"
2. Remove the switch bracket mounting screw Ⓐ. And than remove the lower switch bracket ①.



3. Disengage the pawls Ⓐ using a suitable tool (A). And then remove sonar system switch ①.



INSTALLATION

Install in the reverse order of removal.

SONAR SENSOR

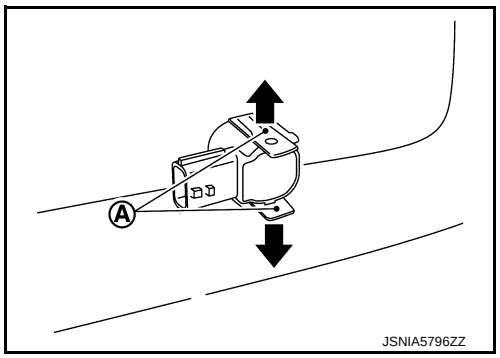
FRONT

FRONT : Removal and Installation

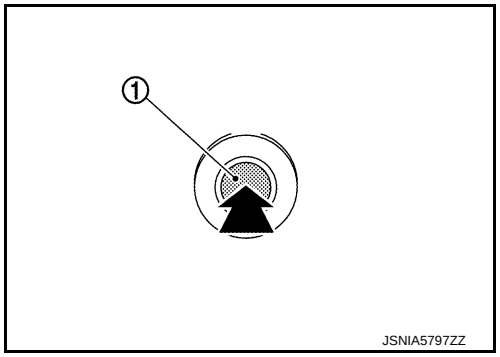
INFOID:0000000010792969

REMOVAL

1. Remove front bumper. Refer to EXT-15, "Removal and Installation".
2. Push Ⓐ fixing sonar sensor in the direction shown by arrow and unhook the pawl of sonar sensor.



3. Push sonar sensor ① in the direction shown by arrow and remove sonar sensor from bumper.



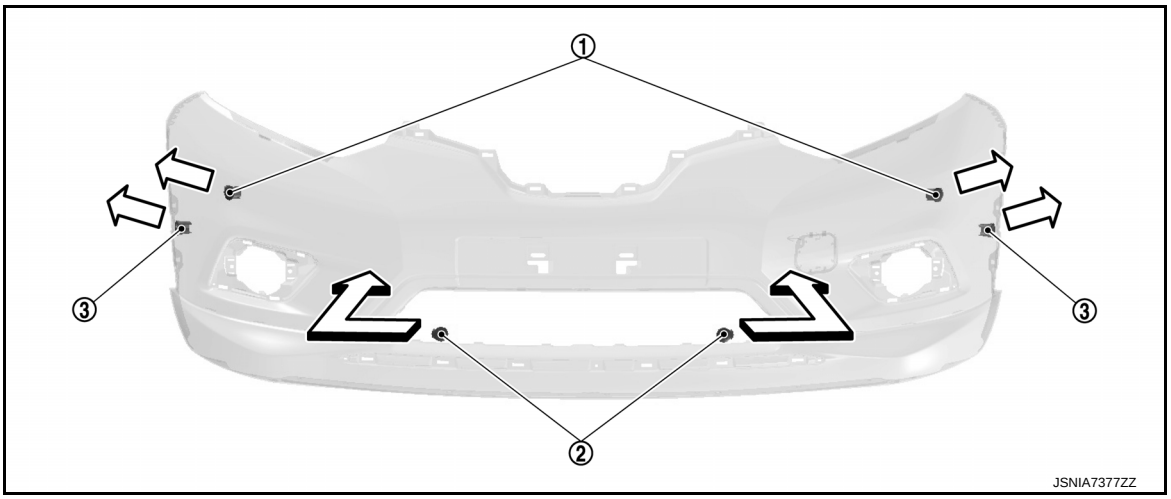
4. Remove sonar sensor connector from sonar sensor.
5. Remove sonar sensor finisher and sonar sensor packing from bumper.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

- **Check sonar sensor packing for damage before installation.**
- **Check that the packing is properly installed to the sonar sensor.**
- **Install it so that the connector of the sensor turns to the arrow direction of the figure.**



① Corner sensor front ② Center sensor front ③ Side sensor front
⇦ : Connector direction

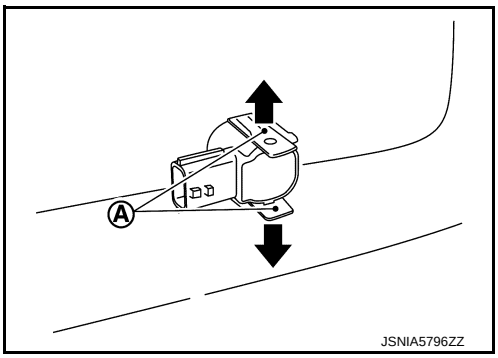
REAR

REAR : Removal and Installation

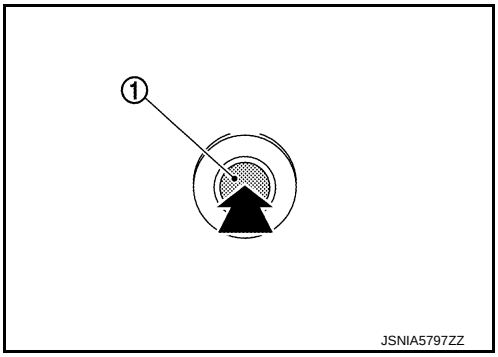
INFOID:0000000010792970

REMOVAL

1. Remove sonar sensor connector from sonar sensor.
2. Push Ⓐ fixing sonar sensor in the direction shown by arrow and unhook the pawl of sonar sensor.



3. Push sonar sensor ① in the direction shown by arrow and remove sonar sensor from bumper.



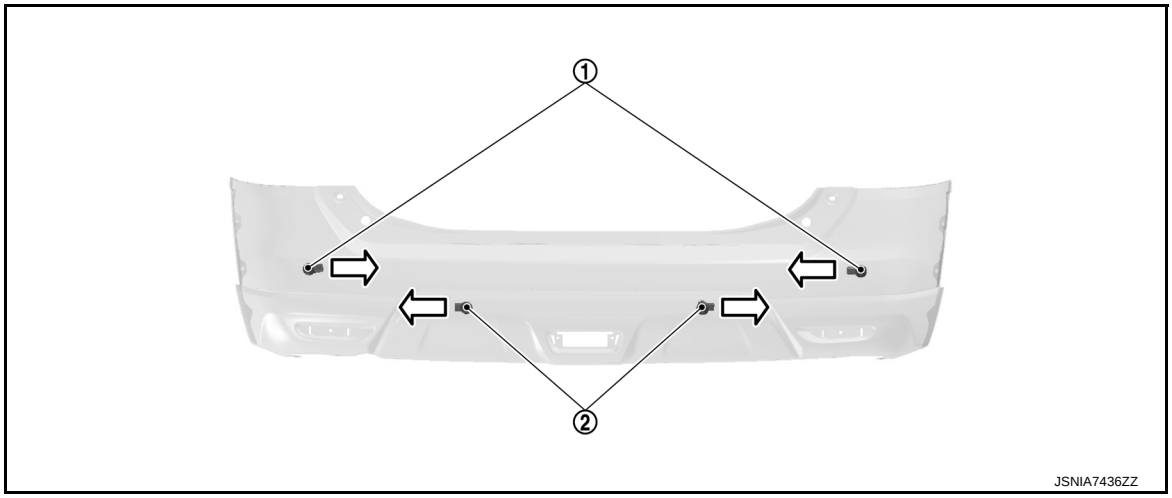
4. Remove sonar sensor finisher and sonar sensor packing from bumper.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

- **Check sonar sensor packing for damage before installation.**
- **Check that the packing is properly installed to the sonar sensor.**
- **Install it so that the connector of the sensor turns to the arrow direction of the figure.**



① Corner sensor rear
② Center sensor rear
⇦ : Connector direction

BUZZER

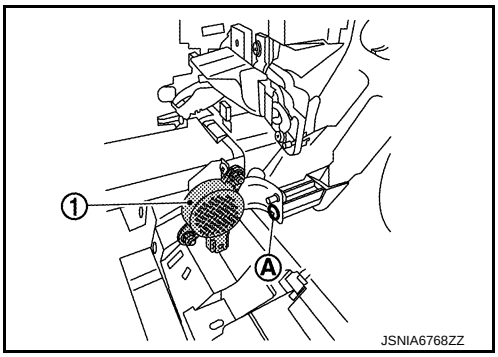
FRONT

FRONT : Removal and Installation

INFOID:0000000010792971

REMOVAL

1. Remove instrument lower panel LH (LHD models) or RH (RHD models). Refer to the following.
   - LHD models: IP-13, "Exploded View"
   - RHD models: IP-40, "Exploded View"
2. Remove buzzer (frontward) mounting screw Ⓐ and buzzer (frontward) connector.
3. Remove buzzer (frontward) ①.



INSTALLATION

Install in the reverse order of removal.

REAR

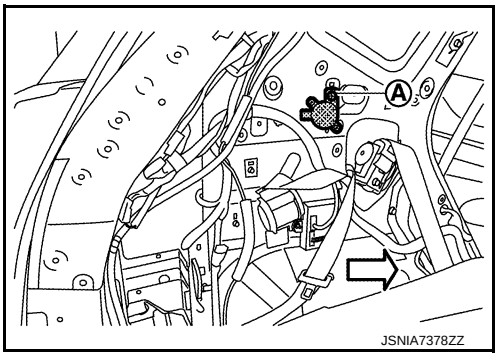
REAR : Removal and Installation

INFOID:0000000010792972

REMOVAL

1. Remove luggage side lower finisher LH. Refer to INT-43, "LUGGAGE SIDE LOWER FINISHER : Removal and Installation".
2. Remove buzzer (backward) mounting screw Ⓐ and buzzer (backward) connector.

   ⇦ : Vehicle front
3. Remove buzzer (backward).



INSTALLATION

Install in the reverse order of removal.